



FORRESTFIELD/HIGH WYCOMBE
INDUSTRIAL AREA

STAGE 1 – LOCAL STRUCTURE PLAN
December 2019

This structure plan is prepared under the provisions of the City of Kalamunda Local Planning Scheme No. 3.

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

11 November 2013

In accordance with Schedule 2, Part 4, Clause 28 (2) and refer to Part 1, 2. (b) of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Date of Expiry: 19 October 2028

DOCUMENT CONTROL

Issue	Date	Status	Prepared by	Approved by
1	16.04.12	Draft	Murray Casselton	David Caddy
2	05.07.12	Final	Murray Casselton	David Caddy
3	08.03.13	Final	Murray Casselton	David Caddy
4	24.08.18	Draft	City of Kalamunda	WAPC
5	09.12.19	Final	City of Kalamunda	WAPC

The Forrestfield/High Wycombe Industrial Area Local Structure Plan (LSP) was initially prepared by Town Planning Group (TPG) in 2012/13 on behalf of the City of Kalamunda.

The LSP was endorsed by the Western Australian Planning Commission on 12 November 2013.

As a result of community concerns regarding the take up of development within the Forrestfield/High Wycombe Industrial Area, the City of Kalamunda commenced a review of the LSP in 2017. In October 2017 a report containing proposed modifications to the LSP was submitted to the WAPC.

This LSP has been updated by the City of Kalamunda to incorporate the modifications proposed together with updating the document to align with the provisions of the Planning and Development (Local Planning Schemes) Regulations 2015.

TABLE OF AMENDMENTS

Amendment No.	Summary of the Amendment	Amendment Type	Date Approved by WAPC
1	Amendments including: - Part 1 updated with composite development and subdivision requirements for Lot 50 Sultana Road West. - Structure Plan Map updated to reflect the Part 1 requirements. - Movement Network Map updated with current. - Appendix E – G attached to Structure Plan.	Minor	24 February 2020

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EXECUTIVE SUMMARY

Item	Data
Gross Structure Plan Area	69.0481 ha
Area of each land use proposed:	
Industrial	Approx. 49.7 ha
Special Use	Approx. 1.089 ha
Bush Forever	15.2938 ha
Road Reserve	2.9044 ha
Estimated Lot Yield	71 lots
Minimum Lot Size	Lot 50 Sultana Road West: 3,000m ² All other lots: 1ha

The Forrestfield/High Wycombe Industrial Area – Stage 1 Local Structure Plan (Structure Plan) relates to 71 land parcels held in various public and private ownership and generally bounded by Roe Highway, Berkshire Road, Milner Road and Sultana Road West (the subject land).

The Structure Plan was initially prepared by Town Planning Group (TPG) in 2012/13 on behalf of the City of Kalamunda, following on from previous work undertaken on behalf of SPM West Pty Ltd to facilitate a Metropolitan Region Scheme (MRS) amendment from 'Rural' to 'Urban' zoning for the subject land. The Structure Plan was initially endorsed by the Western Australian Planning Commission on 12 November 2013. The City of Kalamunda completed a review of the Structure Plan in 2017.

This Structure Plan has been prepared in accordance with the requirements of the Planning and Development (Local Planning Schemes) Regulations 2015 and other identified relevant local and State level planning policies and strategies and considers all environmental, planning and engineering matters appropriate to the structure planning process.

The Structure Plan identifies the preferred land use arrangements, required lot sizes, future road layout, traffic management measures and developer contribution items relevant to the structure planning area. These are generally set out in Part 1 – Implementation Section of the Structure Plan report and replicated on the Structure Plan Map.

Several detailed investigations have been undertaken as part of the preparation of the original MRS amendment and Structure Plan in regard to environmental, transport and servicing considerations and further detailed investigations will be undertaken as part of the preparation of subsequent plans of subdivision and/or development proposals.

PART 1

1.0 RELATIONSHIP WITH THE PLANNING AND DEVELOPMENT (LOCAL PLANNING SCHEMES) REGULATIONS 2015

As provided for under the provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* (Regulations), the provisions of this part of the Forrestfield/High Wycombe Industrial Area - Stage 1 LSP is to be given due regard when deciding on an application for development or subdivision approval.

Given this Structure Plan was initially approved prior to the Regulations coming into effect, amendments to the Structure Plan are not be required to be updated to the manner and form contained in the WAPC Structure Plan Framework (August 2015). The Structure Plan has however been updated to the extent needed to undertake the amendment proposed and all references to statutory provisions and having the force and effect of the City's Local Planning Scheme No. 3 have been removed.

2.0 APPLICATION

2.1 Structure Plan Area

The Forrestfield/ High Wycombe Industrial Area - Stage 1 Local Structure Plan (referred to hereafter as the Structure Plan) relates to the structure plan area as shown on Figure 1 – Local Structure Plan Area.

Refer to Figure 1 – Local Structure Plan Area

2.2 Operation

The provisions of this part shall apply to the land contained within the Structure Plan area as follows:

- a. The Structure Plan commences operation on the date it is adopted by the Western Australian Planning Commission.
- b. Under the Structure Plan:
 - i. In the areas designated as zones, the permissibility of uses is to be the same as set out in Table 1 in the Scheme as if those areas were zones under the Scheme having the same designation. In considering the permissibility of uses identified in the Scheme as 'D' or 'A' uses within the zone, guidance shall be taken from any related provisions within this part.
 - ii. the standards and requirements applicable to the zones under the Scheme apply to the areas having corresponding designations under the Structure Plan. In considering any variations to site and development standards and requirements, guidance shall be taken from any related provisions within this part.
- c. If a provision of the Structure Plan, which imposes a classification on the land, included in it by reference to reserves or zones is inconsistent with a provision of the Scheme, then the provision of the Scheme prevails to the extent of any inconsistency.

2.3 Interpretation

The words and expressions used in this Structure Plan have the corresponding meanings given to them in the Scheme, unless otherwise stated. Words and expressions not defined by the Scheme or the Structure Plan are to have their normal and common meaning.

3.0 STRUCTURE PLAN

3.1 THE STRUCTURE PLAN

The Forrestfield/High Wycombe Industrial Area – Stage 1 Local Structure Plan Map ('Structure Plan Map' at Attachment 1) contains the following features:

- a) Zoning that corresponds to Scheme zoning.
- b) Existing and proposed road structure.
- c) Intersection modifications.
- d) Key internal and external bicycle and pedestrian links.
- e) Setback requirements.
- f) Landscaping strip requirements to road frontages.
- g) Interface treatment area to Sultana West Road.
- h) Bush Forever and other environmental features.
- i) Bushfire management requirements.
- j) Composite Residential / Light Industry Subdivision Requirements for Lot 50 Sultana Road West.

3.2 STRATEGIES AND PLANS

Plans, strategies, studies, planning policies and design guidelines either undertaken to inform the initial structure planning development process or required to inform the subsequent preparation of subdivision and/or development applications, include the following:

- a) Local Water Management Strategy
- b) Environmental Review
- c) Flora and Vegetation Survey
- d) Drainage Management Plan
- e) Infrastructure Servicing Report
- f) Traffic Report
- g) Forrestfield/High Wycombe Industrial Area Design Guidelines

3.3 STRUCTURE PLAN AMENDMENTS

Where proposed amendments are not considered to materially affect the intent of the Structure Plan in relation to the requirements of the Scheme, or the development criteria in Section 5, the City may give consideration to the amendment of the Structure Plan and waive the requirement for advertising. An amendment to the Structure Plan shall be accompanied by the following:

- a) A summary report outlining how the 'development criteria' detailed in the adopted Structure Plan are to be addressed.
- b) If required, an updated version of the Structure Plan, with appropriate modified text addressing the relevant components of the development criteria.
- c) Relevant reports, documents and studies as may be required to justify the amendments sought.

4.0 SUBDIVISION AND STRATA TITLING REQUIREMENTS

4.1 LOT SIZE

- a) Industrial subdivision is to meet the requirements of the Scheme and WAPC Policy DC4.1 – Industrial Subdivision unless otherwise specified.
- b) The following minimum lot sizes apply to any subdivision within the Structure Plan area:
 - i. Lot 50 Sultana Road West - 3,000m², subject to:
 - i. The construction of Road 2A;
 - ii. Minimum lot frontage of 30m; and
 - iii. Compliance with 5.2.9 (1) of this Structure Plan.
 - ii. All other lots within the Structure Plan area - approximately one (1) hectare.

4.2 BATTLEAXE DEVELOPMENT

- a) No battleaxe subdivision will be supported unless otherwise depicted on the Structure Plan Map.
- b) Single or shared battleaxe legs are not permitted to service industrial development on existing Lots 50, 51 and 52 Sultana Road West and Lots 5, 6 and 8 Ashby Close. Approval to non-residential development is contingent on securing direct access to a constructed public road.
- c) No further subdivision will be permitted on Lots 50, 51 and 52 Sultana West Road and Lots 5, 6 and 8 Ashby Close based on a shared battleaxe leg access arrangement.

4.3 INDUSTRIAL STRATA TITLING

- a) Industrial unit strata titling will only be supported in circumstances where a management statement is imposed as a condition of strata approval to the satisfaction of the City that ensures appropriate management arrangements and ongoing compliance with all development criteria as contained with the Scheme, this Structure Plan, any supporting planning policy or design guidelines, or any other requirements specified by the City.

5.0 DEVELOPMENT CRITERIA

Development applications lodged in respect of land the subject of the Structure Plan are to be accompanied by information that clearly demonstrates that the proposal is generally in accordance with the requirements of the Structure Plan and any associated planning policy or design guidelines. The provided information is required to address all development criteria and requirements as detailed in Section 5.2 and adhere to all other requirements established within the Structure Plan.

5.1 INDUSTRIAL DEVELOPMENT ZONE OBJECTIVES

The subject land is included in the Industrial Development Zone under the Scheme. The objectives of the Industrial Development Zone are:

- To provide for orderly and proper planning through the preparation and adoption of a Structure Plan establishing the overall design principles for the area.
- To permit the development of the land for industrial purposes and for commercial and other uses normally associated with industrial development.

5.2 DEVELOPMENT CRITERIA AND REQUIREMENTS

5.2.1 Land Use Permissibility

- a) Although the permissibility of uses is as set out in Table 1 in the Scheme, the Structure Plan intent is to facilitate land uses that take advantage of the lands strategic location in respect to major transport infrastructure, including Perth Airport, Roe Highway and Tonkin Highway. On this basis, logistics and other transport based industries are preferred land uses to take advantage of the lands locational attributes.
- b) When considering development applications for 'D' and 'A' uses under the Scheme, due regard will be given to the extent that the proposed use supports the Structure Plan intent in accordance with (a) above and 5.2.9 below.

5.2.2 Built Form

- a) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, any wall or building facing any street is to be painted or otherwise treated to ensure an appropriate standard of visual amenity to the satisfaction of the City.
- b) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, service areas, bin and storage areas and services such as air conditioners and other machinery are to be screened such that they are not visible from the street.

5.2.3 Vehicle Access and Movement

- a) Vehicular access for non-residential development is not permitted via existing battleaxe legs.
- b) Vehicular access for all non-residential development is to be taken directly from a gazetted and constructed public road.

- c) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, internal driveways and car parks are to be designed to ensure slow speeds. Lengths of driveway or car parks exceeding 50 metres are to incorporate speed control devices including minor level changes.
- d) In regard to Lot 50 Sultana Road West, vehicle access from Sultana Road West shall be permitted for residential purposes only. All other Vehicle access shall be from Road 2a (Nardine Close).

5.2.4 Pedestrian Movement and Amenity

- a) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, footpaths are to be provided connecting car parking areas to buildings to the satisfaction of the City.

5.2.5 Landscaping

- a) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, landscaping is to be provided within any development site of a sufficient quality to ensure an attractive well-landscaped environment.
- b) Landscaping within car parks throughout the Structure Plan area is to be in accordance with the requirements of the Scheme, any applicable planning policy and design guidelines.
- c) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, the tree species implemented, when not used for screening purposes, shall be of a type having high branch free stems to facilitate surveillance and visibility of building fronts and with a large canopy to achieve adequate shading of car parking areas.

5.2.6 Signage

- a) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, signage is to relate directly to the building containing the use or service and any associated products for advertising purposes, and is not to be excessive or unnecessary. Third party signage is not permitted.

5.2.7 Energy Efficiency

- a) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, building openings should be orientated to benefit from passive climatic heating and cooling opportunities to reduce fixed energy consumption.
- b) In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, all new buildings should incorporate energy saving design and technology where practical to do so.

5.2.8 Design Guidelines

- a) For additional development criteria and requirements applicable in the Structure Plan area, refer to the Forrestfield/High Wycombe Industrial Area Design Guidelines.

5.2.9 Development Requirements for Lot 50 Sultana Road West, High Wycombe

- a) Any development on lots created under the provisions of 4.1 above is required to demonstrate compliance with the following composite Residential / Light Industry provisions:
 - i. The land within 30 metres of the front lot boundary, taken from Sultana Road West, shall be used for residential purposes only.
 - ii. Notwithstanding the provisions contained within the Structure Plan, any development for residential purposes, shall be subject to those provisions of the Scheme relating to the Residential Zone and State Planning Policy 3.1 – Residential Design Codes (R5).
 - iii. Any development for the light industrial component of the composite land uses shall be subject to those provisions of the Scheme relating to the Light Industry zone.
 - iv. Any development for Light Industrial purposes shall be subject to the provisions of the Forrestfield / High Wycombe Industrial Area Design Guidelines Local Planning Policy.
 - v. The lot shall not be developed or used for light industry purposes unless a dwelling is built to plate height first.
 - vi. Vehicle access from Sultana Road West shall be permitted for residential purposes only. All other Vehicle access shall be from Road 2a (Nardine Close).
- b) Any light industrial development which does not form part of a composite Residential/Light Industrial subdivision and development in 4.1 (b)(i) and 5.2.9 above, shall be subject to those provisions of the Scheme relating to the Light Industry zone and the Forrestfield / High Wycombe Industrial Area Design Guidelines Local Planning Policy.

5.2.10 Bushfire

- a) Any development requires assessment in accordance with State Planning Policy 3.7 – Planning in Bushfire Prone Areas, which may take the form of a bushfire management plan.

5.2.11 Noise Attenuation for Residential Land Uses

- a) Any residential land uses are required to noise attenuation in accordance with State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning.

5.3 DEVELOPER CONTRIBUTIONS

- a) Developer contributions within this Structure Plan are as set out in Schedule 12 – Development Contribution Areas of the City of Kalamunda Local Planning Scheme No. 3.

6.0 PROCESS OF STRUCTURE PLAN ADOPTION

The process for adoption of the Structure Plan is described in the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Table 2 outlines the information requirements at the structure plan, subdivision and development application stages of the planning process.

Table 2 – Plan and Strategy Provision

Strategy/Plan	Structure Plan	Subdivision	Development Application
Local Water Management Strategy	✓		
Preliminary Hydrological Investigation		✓	✓ (if not previously undertaken as a result of subdivision)
Acid Sulphate Soil Investigation	✓		
Environmental Review		✓ (if required)	✓(if not previously undertaken as a result of subdivision)
Flora and Vegetation Survey	✓		
Drainage Management Plan	✓		
Infrastructure Servicing Report	✓		
Traffic and Transport Study	✓		
Landscaping Strategy	✓		✓
Developer Contributions to infrastructure		✓	✓(if not previously undertaken as a result of subdivision)

Indigenous Heritage / Ethnographic Survey		✓ (if required)	✓(if not previously undertaken as a result of subdivision)
Preliminary Site Investigation – Contamination		✓ (if required)	✓(if not previously undertaken as a result of subdivision)
Detailed Site Investigation		✓ (if required)	✓(if not previously undertaken as a result of subdivision)

ATTACHMENT 1 - LOCAL STRUCTURE PLAN MAP





Structure Plan Notes
Subdivision and Strata Titling Requirements

- General**
1. Berkshire Road / Milner Road / Dundas Road is a full movement intersection.
- Lot Size**
2. Industrial subdivision is to meet the requirements of the Scheme and WAPC Policy DC4.1 – Industrial Subdivision unless otherwise specified.
3. The following minimum lot sizes apply to any subdivision within the Structure Plan area:
- a. Lot 50 Sultana Road West - 3,000m², subject to:
- i. The construction of Road 2A;
- ii. Minimum lot frontage of 30m; and
- iii. Compliance with all development requirements of this Structure Plan.
- b. All other lots within the Structure Plan area - approximately one (1) hectare.

- Battleaxe Development**
4. No battleaxe subdivision will be supported unless otherwise depicted on the Structure Plan Map.
5. Single or shared battleaxe legs are not permitted to service industrial development on existing Lots 50, 51 and 308 Sultana Road West and Lots 305, 306 and 307 Ashby Close. Approval to non-residential development is contingent on securing direct access to a constructed public road.
6. No further subdivision will be permitted on Lots 50, 51 and 308 Sultana Road West and Lots 305, 306 and 307 Ashby Close based on a shared battleaxe leg access arrangement.

- Industrial Strata Titling**
7. Industrial unit strata titling will only be supported in circumstances where a management statement is imposed as a condition of strata approval to the satisfaction of the City that ensures appropriate management arrangements and ongoing compliance with all development criteria as contained with the Scheme, this Structure Plan, any supporting planning policy or design guidelines, or any other requirements specified by the City.

Development Criteria and Requirements

- Land Use Permissibility**
8. Although the permissibility of uses is as set out in Table 1 in the Scheme, the Structure Plan intent is to facilitate land uses that take advantage of the lands strategic location in respect to major transport infrastructure, including Perth Airport, Roe Highway and Tonkin Highway. On this basis, logistics and other transport based industries are preferred land uses to take advantage of the lands locational attributes.
9. When considering development applications for 'D' and 'A' uses under the Scheme, due regard will be given to the extent that the proposed use supports the Structure Plan intent in accordance with 8 above and the requirements relating to Lot 50 Sultana Road West as specified below.

- Built Form**
10. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, any wall or building facing any street is to be painted or otherwise treated to ensure an appropriate standard of visual amenity to the satisfaction of the City.
11. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, service areas, bin and storage areas and services such as air conditioners and other machinery are to be screened such that they are not visible from the street.

- Vehicle Access and Movement**
12. Vehicular access for non-residential development is not permitted via existing battleaxe legs.
13. Vehicular access for all non-residential development is to be taken directly from a gazetted and constructed public road.
14. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, internal driveways and car parks are to be designed to ensure slow speeds. Lengths of driveway or car parks exceeding 50 metres are to incorporate speed control devices including minor level changes.
15. In regard to Lot 50 Sultana Road West, vehicle access from Sultana Road West shall be permitted for residential purposes only. All other vehicle access shall be from Road 2A (Nardine Close Extension).
16. Vehicle access at the intersection of Ashby Close and Berkshire Road will be restricted to left in, left out only.

- Pedestrian Movement and Amenity**
17. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, footpaths are to be provided connecting car parking areas to buildings to the satisfaction of the City.

- Landscaping**
18. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, landscaping is to be provided within any development site of a sufficient quality to ensure an attractive well-landscaped environment.
19. Landscaping within car parks throughout the Structure Plan area is to be in accordance with the requirements of the Scheme, any applicable planning policy and design guidelines.
20. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, the tree species implemented, when not used for screening purposes, shall be of a type having high branch free stems to facilitate surveillance and visibility of building fronts and with a large canopy to achieve adequate shading of car parking areas.

- Signage**
21. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, signage is to relate directly to the building containing the use or service and any associated products for advertising purposes, and is not to be excessive or unnecessary. Third party signage is not permitted.

- Energy Efficiency**
22. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, building openings should be orientated to benefit from passive climatic heating and cooling opportunities to reduce fixed energy consumption.
23. In addition to the requirements of the Scheme, any applicable planning policy and design guidelines, all new buildings should incorporate energy saving design and technology where practical to do so.

- Design Guidelines**
24. For additional development criteria and requirements applicable in the Structure Plan area, refer to the Forrestfield/High Wycombe Industrial Area Design Guidelines.

- Development Requirements for Lot 50 Sultana Road West, High Wycombe**
25. Any development on lots created under the provisions of 3 above is required to demonstrate compliance with the following composite Residential / Light Industry provisions:
- a. The land within 30 metres of the front lot boundary, taken from Sultana Road West, shall be used for residential purposes only.
- b. Notwithstanding the provisions contained within the Structure Plan, any development for residential purposes, shall be subject to those provisions of the Scheme relating to the Residential Zone and State Planning Policy 3.1 – Residential Design Codes (R5).
- c. Any development for the light industrial component of the composite land uses shall be subject to those provisions of the Scheme relating to the Light Industry Zone.
- d. Any development for light industrial purposes shall be subject to the provisions of the Forrestfield / High Wycombe Industrial Area Design Guidelines Local Planning Policy.
- e. The lot shall not be developed or used for light industry purposes unless a dwelling is built to plate height first.
- f. Vehicle access from Sultana Road West shall be permitted for residential purposes only. All other vehicle access shall be from Road 2A (Nardine Close Extension).

26. Any light industrial development which does not form part of a composite residential/light Industrial subdivision and development in 3(a)(i) and 25 above, shall be subject to those provisions of the Scheme relating to the Light Industry Zone and the Forrestfield / High Wycombe Industrial Area Design Guidelines Local Planning Policy.

- Bushfire**
27. Any development requires assessment in accordance with State Planning Policy 3.7 – Planning in Bushfire Prone Areas, which may take the form of a bushfire management plan.

- Noise Attenuation for Residential Land Uses**
28. Any residential land uses are required to noise attenuation in accordance with State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning.

- Developer Contributions**
29. Developer contributions within this Structure Plan are as set out in Schedule 12 – Development Contribution Areas of the City of Kalamunda Local Planning Scheme No. 3.

Structure Plan
Forrestfield/High Wycombe Industrial Area

LEGEND

- Structure Plan Boundary
- Metropolitan Region Scheme Reserve - Parks and Recreation
- Local Planning Scheme No. 3 - Industrial Development Zone
- Local Planning Scheme No. 3 - Special Use Zone - Composite

- Existing Road
- New Road
- Potential New Road
- New road connection/intersection
- Emergency Access

- Roe Highway
- Pedestrian Path
- Shared Path
- 20 metre setback line (main street)
- Potential Road Subject to Subdivision of Lot 50 Sultana Road West

- 10 metre Setback Line (minor street)
- 8 metre Landscaped Buffer to Sultana West Road
- 6 metre Landscaping Strip
- Bush Forever Interface Treatment



File:19-521 STH1A Staff: LR Checked: MC
Date: 26 November 2019 Scale: 1:5000 @ A3

ATTACHMENT 2 – MOVEMENT NETWORK PLAN

Milner Road

Proposed improvements:

1. Milner Road design up to Nardine Close to accomodate category Restricted Access Vehicles 7.

2. Widen carriageway to accomodate Restricted Access Vehicles 7.

3. Construction of a shared path to provide connection between Berkshire Road and Milner Road.

4. Construction of a shared path along one side of Milner Road to provide continuous path between Sultana Road West and Berkshire Road.

Bonser Road (Road 1)

Proposed improvements:

5. Bonser Road (Road 1) design to accommodate category Restricted Access Vehicles 7.

6. Construction of a carriageway between Nardine Close and Berkshire Road to accommodate Restrict Access Vehicles 7.

7. Construction of drainage swales along the road verge sections in accordance with the Drainage strategy.

8. Construction of a shared path along the north side to provide connection between Nardine Close and Berkshire Road.

9. Creation of a new road reserve section between Berkshire Road and Nardine Close.

Berkshire Road

Proposed improvements:

10. Berkshire Road design to accomodate category Restricted Access Vehicles 7.

11. Construction of a shared path along the north side of Berkshire Road to provide a continuous path between Milner Road and Roe Highway, including upgrading of the existing pedestrian path in this location.

Ashby Close

Proposed improvements:

12. Ashby Close design to accommodate category Restricted Access Vehicles 7.

13. Construction of a carriageway between Nardine Close and the cul-de-sac to accommodate Restricted Access Vehicles 7.

14. Construction of drainage swales along the road verge sections in accordance with the Drainage Strategy.

15. Construction of a shared path along the south side to provide connection between Nardine Close and Berkshire Road.

16. Creation of a new road reserve section between the cul-de-sac and Nardine Close.

17. Modifications to the Ashby Close and Berkshire Road intersection to restrict access to left in, left out only.

Nardine Close

Proposed improvements:

18. Nardine Close design to accommodate category Restricted Access Vehicles 7.

19. Creation of new road reserve section between existing cul-de-sac and Ashby Close alignment.

20. Widen carriageway between Nardine Close and the cul-de-sac to accommodate Restricted Access Vehicles 7.

21. Construction of a new road section from the existing cul-de-sac south to provide connection to Ashby Close to accommodate Restricted Access Vehicles 7.

22. Construction of drainage swales along the road verge sections in accordance with the Drainage Strategy.

23. Construction of a shared path along the east side to provide connection between Milner Road and Ashby Close.

Sultana Road West

Proposed improvements:

24. Widen carriageway provide to accommodate Restricted Access Vehicles 4.

25. Construction of drainage swales along the road verge sections for stormwater disposal.

26. Construction of a shared path along the west side to provide connection between Milner Road and the cul-de-sac.

Road 2A

Proposed improvements:

27. Road 2A design to accommodate category Restricted Access Vehicles 4.

28. Construction of a new road section to service current battleaxe configured lots.

29. Construction of drainage swales along the road verge sections in accordance with the Drainage Strategy.

30. Roads will only be constructed to service current battleaxe configured lots if land assembly and consolidation processes do not provide the affected lands with access from gazetted and constructed public roads.

31. Creation of a new 18 metre road reserve section as required.

32. Construction of a shared path along the southeast side of Road 2A. Continuous path to connect with shared path on southeast side of Ashby Close.

Roe Highway

Proposed improvement:

33. Construction of a shared path along the south-east boundary of the subject land between the Ashby Close and Berkshire Road intersection and Sultana Road West.

Movement Network Map

Forrestfield/High Wycombe Industrial Area

LEGEND

Structure Plan Boundary

Existing Road

Proposed Road

New road connection/intersection

Potential New Road

Pedestrian Path

Shared Path

Existing Footpath (retained)

Roe Highway

Emergency Access

Potential Road Subject to Subdivision of Lot 50 Sultana Road West

0

50m

File:19-521 STH1A Staff: LR Checked: MC

Date: 16 December 2019 Scale: 1:5000 @ A3

City of Kalamunda

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PART 2 - EXPLANATORY SECTION

1.0 INTRODUCTION

The Structure Plan was prepared in 2012 following on from previous work undertaken on behalf of SPM West Pty Ltd to facilitate a Metropolitan Region Scheme (MRS) amendment from 'Rural' to 'Urban' zoning.

The Structure Plan will, in conjunction with relevant local planning policies and design guidelines, inform the future subdivision and development of Stage 1 of the Forrestfield /High Wycombe Industrial Area in an appropriate and coordinated manner. The Structure Plan is intended to primarily facilitate the development of logistics and transport-based industries that can take advantage of the location of the land and its proximal relationship with key transport infrastructure.

The Structure Plan was first approved by the WAPC in 2013, prior to the Planning and Development (Local Planning Schemes) Regulations 2015 coming into effect. Any amendments to the Structure Plan made subsequent to the Gazettal of the Regulations are not be required to be updated to the manner and form contained in the WAPC Structure Plan Framework (August 2015). The Structure Plan has however been updated to the extent needed to undertake the amendment proposed and all references to statutory provisions and having the force and effect of the City's Local Planning Scheme No. 3 have been removed.

This section of the report addresses opportunities and constraints, the planning context, land use, lot configurations and sizes, infrastructure considerations, vehicular and pedestrian access arrangements, development staging and infrastructure contribution arrangements.

Key issues addressed by the Structure Plan include:

- Lot sizes to meet logistic and transport industry requirements.
- Development criteria to ensure a high quality of development.
- Modifications to road access arrangements and in particular future arrangements for Berkshire Road.
- The approach to water management, including the application of Water Sensitive Urban Design (WSUD) principles. Several detailed investigations have been undertaken as part of the preparation of the Structure Plan regarding environmental, transport and servicing considerations and further detailed investigations will be undertaken as part of the preparation of subsequent plans of subdivision and/or development applications as necessary.

2.0 THE SUBJECT LAND

2.1 LOCATION

The site is within the municipality of the City of Kalamunda within the locality of Forrestfield. It is located approximately 13 kilometres east south east of the Perth CBD and located five kilometres from Kalamunda District Centre and covers an area of land of approximately 85 hectares (excluding road reserves). The boundary of the Structure Plan area is depicted in Figure 1 –Local Structure Plan Area.

Refer to Figure 1 – Local Structure Plan Area

2.2 THE SITE

The Structure Plan relates to 71 land parcels held in various private and public ownership and is generally bounded by Roe Highway, Berkshire Road, Milner Road, and Sultana Road West (the subject land).

Refer to Figure 1 – Local Structure Plan Area

FIGURE 1 - LOCAL STRUCTURE PLAN AREA



2.3 LAND USE

The subject land currently comprises a mixture of industrial development and special rural land parcels. The use of the land prior to industrial development occurring is characteristic of many small rural land holdings within the broader area, comprising a mixture of:

- Vacant cleared lots with no vegetation on site.
- Vacant lots with a scattering of lowland shrubs and larger trees.
- Lots comprising a residential dwelling and a number of outbuildings. These lots range from having no vegetation on site, to having a small orchard to having a considerable clustering of trees and vegetation.
- Located at the southern end of the subject area is an established stand of pine trees.
- A 'Bush Forever' site containing rare and threatened flora, fauna and ecological communities, within the north eastern corner of the subject area. It should be noted that many of the landholdings currently use their properties for what might be considered light industrial or commercial uses such as the parking of commercial vehicles and related business activities.

Refer to Figure 2 – Aerial Overview

2.4 SITE HISTORY

The Structure Plan was informed by the Kewdale Hazelmere Integrated Masterplan (KHIM) and the Economic and Employment Land Strategy (EELS) which identified the land as suitable for light industry land uses with an emphasis on freight and logistics given the proximity of the land to major transport linkages including Roe Highway and Perth Airport.

As part of a detailed investigation by the City and the State Government, it was proposed that the subject land form part of an MRS amendment to rezone the area from 'Rural' to 'Urban' and 'Industrial' in line with the recommendations of the KHIM. At that time however, the City did not support the rezoning of the land for these purposes (late 2004) and it was proposed that the land should remain 'Special Rural' under the then draft Town Planning Scheme.

Since this time, however, the City and the community has acknowledged that the subject land is ideally suited to provide for industrial uses and that it is largely inevitable that the area will change from the existing rural lifestyle to provide for a more intensive land use.

Notwithstanding the City's initial reluctance to rezone the subject land, the KHIM states that the subject land (which forms part of a larger area of land) is of 'strategic importance to the State in terms of its location within a freight transport hub and where appropriate it should facilitate additional general industrial land uses and more intensive urban development where appropriate'.

At the time of finalisation of the KHIM, this was identified as being of the highest priority for completion.

Due to the above considerations an MRS amendment was initiated by the City in relation to the subject land that rezoned it from 'Rural' to 'Urban' zoning in order to suit light industrial use. MRS Amendment 1198/57 (Minor Amendment) was gazetted on the 29 April 2011.

FIGURE 2 - AERIAL OVERVIEW



2.5 CULTURAL HERITAGE

2.5.1 European Heritage

Within the boundary of the Structure Plan, there are no places of cultural heritage value identified within the City's Municipal Heritage Inventory 2015.

2.5.2 Aboriginal Heritage

There is one Aboriginal heritage site within the immediate vicinity of the subject land. Suitable buffer zones will be established to ensure there is no impact on the heritage site. The nature of the buffer zone will depend upon any proposed development.

Refer to Figure 3 - Aboriginal Heritage Site (Located Outside Of The Subject Land)

FIGURE 3 - ABORIGINAL HERITAGE SITE (LOCATED OUTSIDE OF THE SUBJECT LAND)



3.0 LOCAL AND REGIONAL CONTEXT

3.1 LOCAL CONTEXT

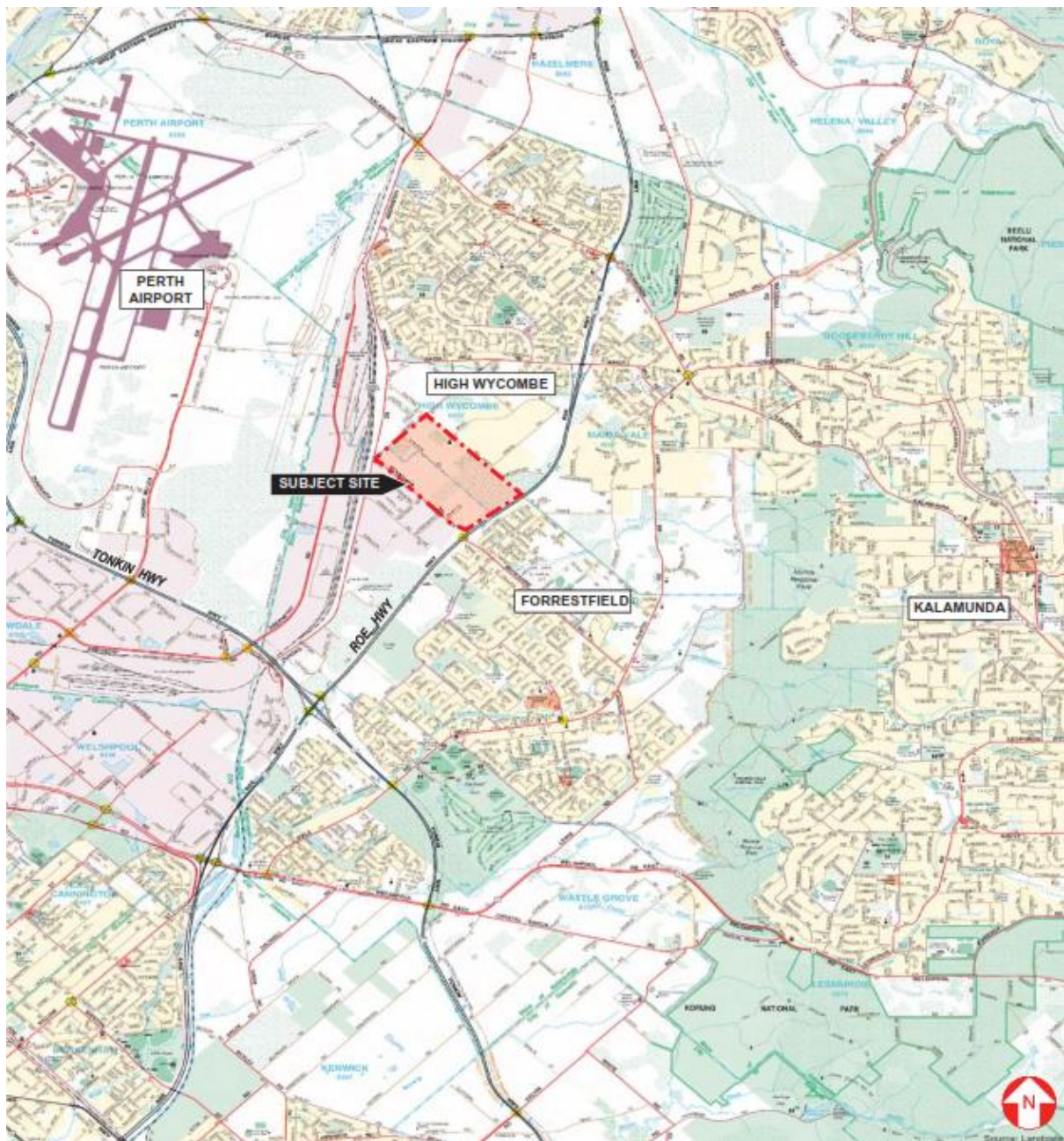
Roe Highway is located immediately east of the subject land, is a Primary Regional Road under the MRS and services the subject land and surrounding area. Located immediately north of the subject land are smaller special rural landholdings that are proposed to ultimately form part of the Forrestfield/High Wycombe Industrial Area and to the west are light industrial uses.

The subject land is also located within close proximity of the Forrestfield Marshalling Yard and Access Park, being a bulk grain depot. The subject land is strategically located within:

- Three kilometres of the Kewdale Industrial Area.
- Three kilometres of the Perth International Airport.
- Five kilometres from Kalamunda District Activity Centre.
- Two kilometres of the Forrestfield District Activity Centre.
- Close proximity of established residential areas in High Wycombe and Forrestfield that are identified to accommodate higher residential densities.

Refer to Figure 4 – Location Plan

FIGURE 4 - LOCATION PLAN



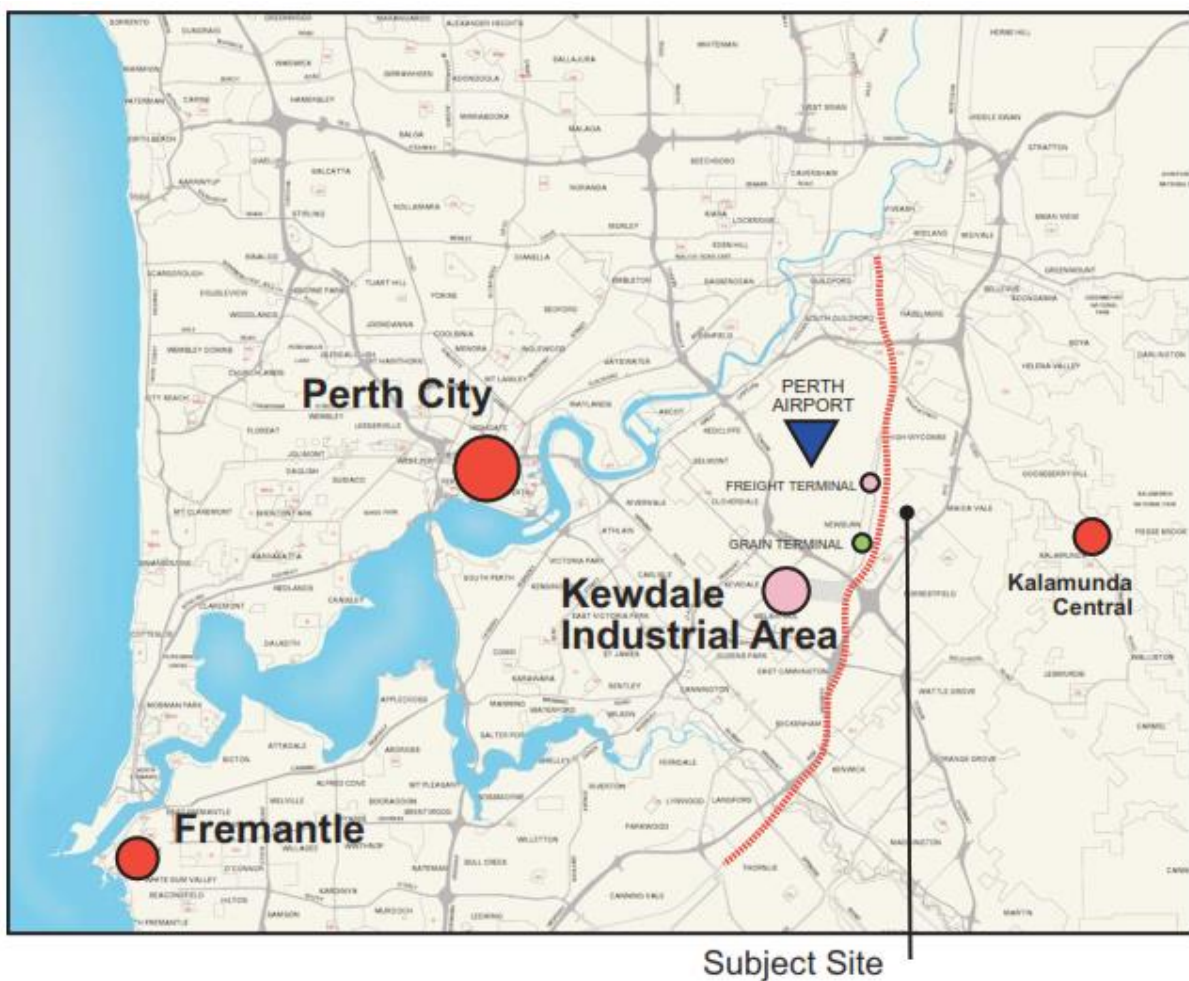
3.2 REGIONAL CONTEXT

The subject land is located approximately 13 kilometres east south east from the Perth CBD. It forms part of the Kewdale-Hazelmere area, being a major strategic area for the freight industry in Perth and Western Australia. The area has an extensive road and rail intermodal freight infrastructure network and the subject land is strategically located adjoining Roe Highway which is an important Primary Regional Road, connecting Perth and the State to a larger transport network.

The Kewdale-Hazelmere area is the major origin-destination in the Perth Metropolitan Region for heavy freight vehicles as it includes WA's primary intermodal facility located at Kewdale, the Perth Airport and significant areas of industrial land located in close proximity to these facilities. The KHIM included a number of recommendations for land located within proximity of the subject land, and generally included the need to review opportunities for integrated land use planning and development between the airport and the Forrestfield Industrial Area.

Refer to Figure 5 – Context Plan

FIGURE 5 - CONTEXT PLAN



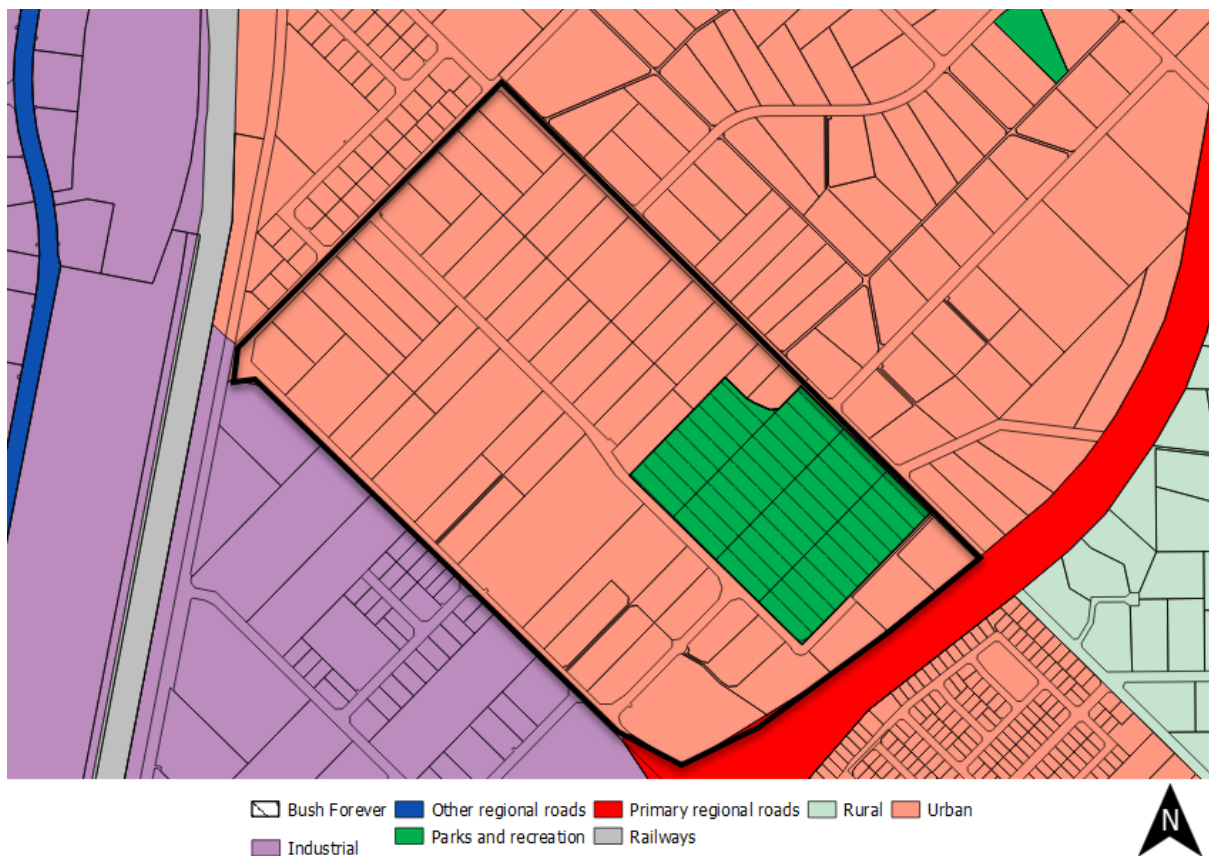
4.0 ZONING

4.1 METROPOLITAN REGION SCHEME

The subject land is zoned 'Urban' under the provisions of the MRS with the exception of Lots 223, 497, 498 and 499 Sultana Road West, which are zoned 'Parks and Recreation' and are identified as Bush Forever. This indicates that the zoned land may be used for a range of urban purposes.

Refer to Figure 6 - Metropolitan Region Scheme

FIGURE 6 - METROPOLITAN REGION SCHEME



4.2 CITY OF KALAMUNDA LOCAL PLANNING SCHEME NO. 3

The subject land is predominantly zoned 'Industrial Development' under the City's Scheme with the following exceptions:

a) The Bush Forever site being identified as an MRS Reserve for 'Parks and Recreation'.

b) Special Use 21- Lot 50 Sultana Road West, High Wycombe

SU21	Lot 50 Sultana Road West, High Wycombe AMD 91 GG 01/06/18 AMD 91 GG 19/06/18 (correction notice)	Those use classes listed under Light Industry Zone in Table One - Zoning Table, except the use classes of Motor Vehicle Wrecking and Fast Food Outlet which are uses not permitted. Single House - (P) Home Occupation - (D)	Those use classes listed under Light Industry in Table One - Zoning Table, their permissibility being in accordance with the symbols cross referenced in Table One except that all 'P' uses become 'D' uses. Subdivision and development requirements are subject to the Forrestfield/High Wycombe Industrial Area Stage 1 - Local Structure Plan (as amended).
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c) Additional Use 56 – Lot 65 Milner Road, Forrestfield

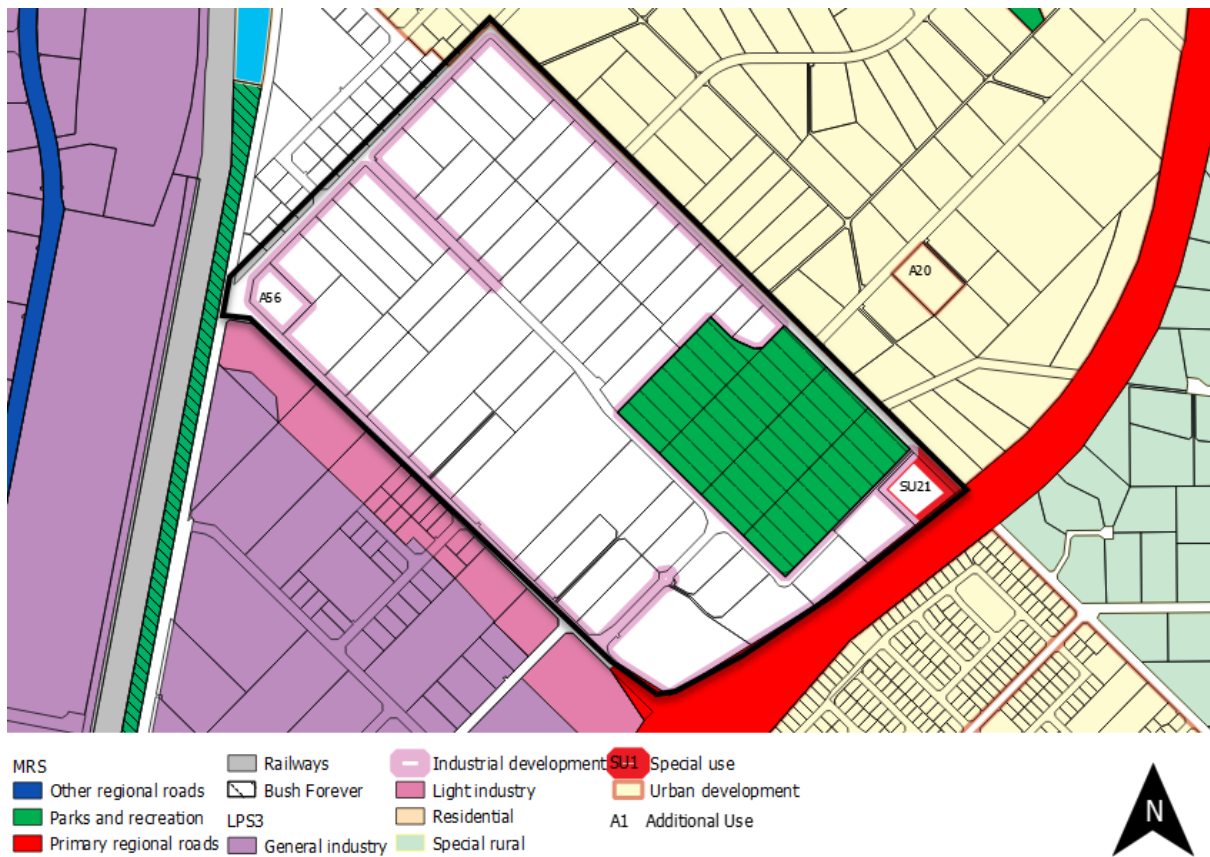
A56	Lot 65 Milner Road, Forrestfield AMD 93 GG 1/5/18	Motor Vehicle Wash - (P) Service Station - (P) Fast Food - (D) Restaurant - (D) Motor Vehicle Repairs - (D) Convenience Store - (D)	(a) Subdivision and development requirements are subject to the Forrestfield/High Wycombe Industrial Area Stage 1 - Local Structure Plan (as amended) and the Forrestfield/High Wycombe Industrial
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			Area Design Guidelines. (b) The applicant/owner shall prepare and implement a traffic impact assessment for any proposed development or change of use. (c) The development of a fast food outlet or restaurant may only be permitted if it is an incidental use.
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The 'Industrial Development' zoning is intended to provide for the orderly and proper planning of the locality through the preparation and adoption of a structure plan establishing the overall design principles for the area.

Refer to Figure 7 - City of Kalamunda Local Planning Scheme No. 3 Zoning

FIGURE 7 - CITY OF KALAMUNDA LOCAL PLANNING SCHEME NO. 3 ZONING



5.0 STATE PLANNING FRAMEWORK

5.1 KEWDALE-HAZELMERE INTEGRATED MASTERPLAN (AUGUST 2006)

The Kewdale-Hazelmere Integrated Masterplan (KHIM) identified the Kewdale-Hazelmere area as a major strategic area for the freight industry in Perth and Western Australia. The KHIM was prepared by the then Department for Planning and Infrastructure, in consultation with a number of stakeholders, to provide a broad framework to facilitate the rapid expansion and change occurring in the freight industry and to accommodate the existing population of residents within the area.

Within the KHIM, the subject land forms part of the Forrestfield Precinct. The Forrestfield Precinct is identified as being 'a significant freight related industrial precinct adjacent to the main interstate freight rail line, the airport, and the residential suburb of High Wycombe'. Existing industrial land uses in this precinct identified by the KHIM included SCT, Australian Railroad Group, and Co-operative Bulk Handling.

The KHIM made two recommendations relevant to the planning of the subject land as detailed below.

Recommendation 34 stated: 'identify the land in the Shire [City] of Kalamunda (Forrestfield Precinct – generally bounded by Berkshire Road, Dundas Road, Poison Gully and Roe Highway) as being of strategic importance to the State in terms of its location within this freight transport hub and potential to facilitate additional general industrial land uses and more intensive urban development where appropriate'. The KHIM identified its priority for completion as being 'high'.

It is considered that recommendation 34 supports the proposed use of the subject land for light industrial purposes and in particular for freight related activities. It should be noted that this task was identified at the time as being of a high priority.

Recommendation 35 stated: 'prepare a structure plan for land in the Shire [City] of Kalamunda (Forrestfield Precinct generally bounded by Berkshire Road, Dundas Road, Poison Gully and Roe Highway) to identify any suitable areas of additional industrial and residential land uses. This work is to include urban design investigations and involve consultation with the local landowners and community to identify areas suitable for rezoning and appropriate land use treatments to create a transition buffer between existing and planned residential and general industrial land uses'. The KHIM identified its priority for completion as being 'medium/high'.

As part of the initial planning for the subject land, discussions were entered into between the City and the State Government in respect of the potential to reduce the scope and size of the structure planning area to the land bound by Roe Highway, Berkshire Road, Milner Road and Sultana Road West (the area of Stage 1). This was considered to be acceptable for the following reasons"

- It presented a logical boundary for the incremental structure planning of the area (effectively a sub-precinct based approach as adopted elsewhere).
- It would allow better management of public consultation and engagement processes using a staged approach to precincts.
- It would allow for a more timely response to the provision of industrial land.
- It would be likely to avoid some of the planning issue complexities and political sensitivities associated with properties located further north that will need to be addressed as part of separate processes.
- It is likely to avoid most areas of environmental sensitivity in the initial stage and may represent a logical boundary in terms of groundwater management and surface water drainage.
- It can be planned with minimal impact on other landholdings in terms of road layout and connectivity.

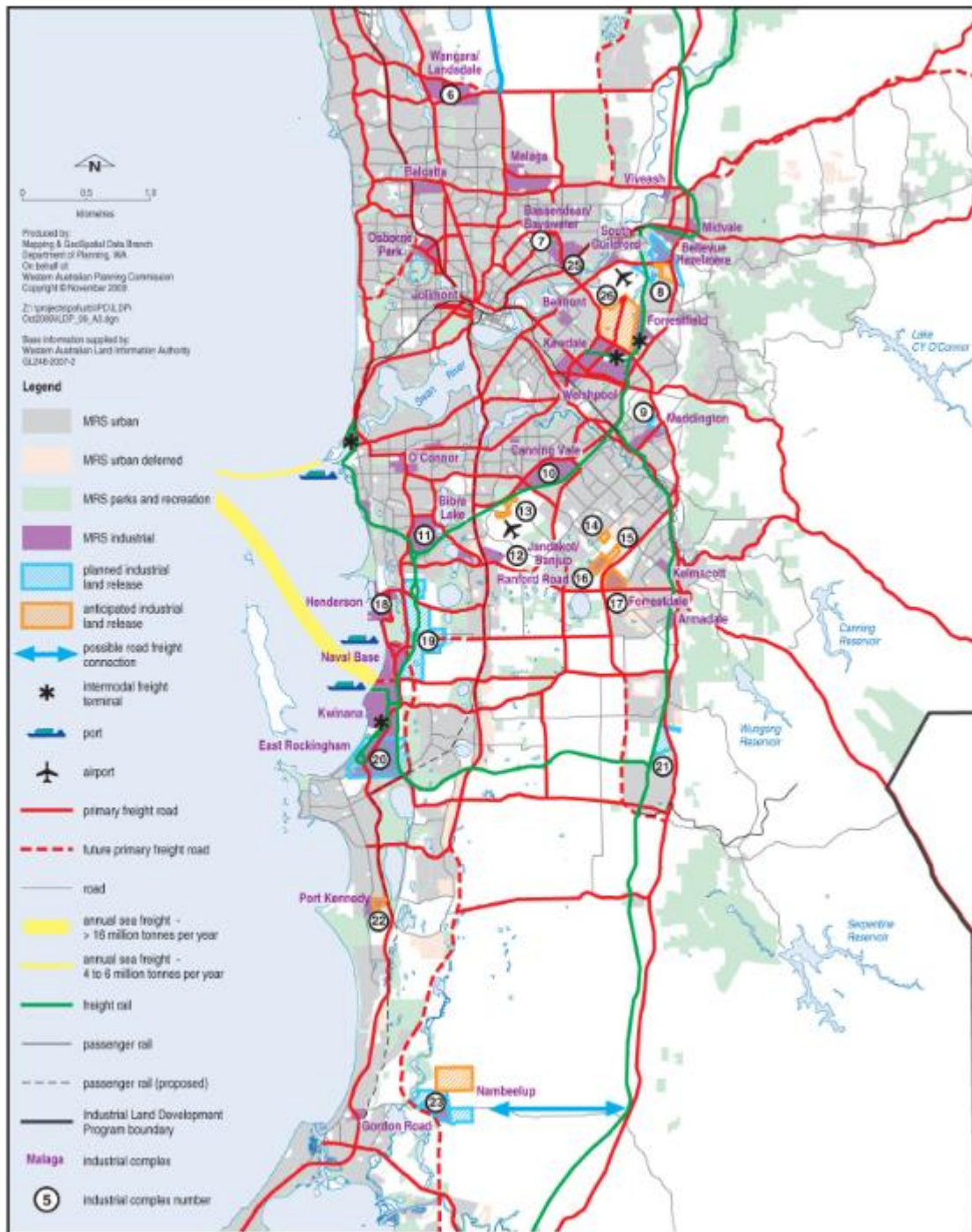
5.2 PERTH AND PEEL INDUSTRIAL LAND STRATEGY (NOVEMBER 2009)

The Perth and Peel Industrial Land Strategy (Industrial Land Strategy) identifies Forrestfield as a 'possible future industrial site (land bank)' and suitable for industrial development. The strategy identifies that possible future industrial sites should be considered as a landbank for future industrial land supply to ensure that the long-term demand for industrial land can be met.

As a result of consultation associated with the Industrial Land Strategy and taking into consideration the recommendations of the KHIM and other strategic industrial planning initiatives, it is understood that the area will be identified as a key strategic site in the final version of the strategy.

Refer To Figure 8 – Extract of Figure 8: Priority And Possible Future Industrial Sites (Industrial Land Strategy, November 2009)

FIGURE 8 - EXTRACT OF FIGURE 8: PRIORITY AND POSSIBLE FUTURE INDUSTRIAL SITES
(INDUSTRIAL LAND STRATEGY, NOVEMBER 2009)



5.3 DIRECTIONS 2031

Whilst not specifically recognized in Directions 2031, the Forrestfield/High Wycombe Industrial Area will function effectively as a north eastern extension of the identified Kewdale/Welshpool Strategic Industrial Area, and offers a significant opportunity to be developed as a major industrial centre and employment hub for Perth's North-East Sub-region.

Refer to Figure 9 – Extract of North-East Sub Region (Directions 2031, August 2010)

5.4 PLANNING GUIDELINES FOR ACID SULPHATE SOIL

As detailed under separate heading, Acid Sulphate Soils (ASS) are found across the subject land. It should be noted that these maps have been prepared on broad-scale mapping (+/- 125 metres), which will require confirmation by on-site investigations. Lots 223, 222 and 547 Berkshire Road; 220 and 221 Nardine Close; and 63 Milner Road is identified in State Government ASS mapping as having 'high to moderate risk' of ASS occurring within three metres of the soils natural surface. The balance of the subject land is classified as 'moderate to low' risk of ASS.

The impacts associated with ASS can be associated with the increase in acidity and/or the release of heavy metals into the environment. This can result in:

- Wetland degradation.
- Localized reduction in habitat and biodiversity.
- Deterioration of surface and groundwater quality.
- Loss of groundwater for irrigation.
- Increased health risks associated with arsenic and heavy metals contamination in surface and groundwater, and acid dust.
- Risk of long-term infrastructure damage through corrosion of sub-surface pipes and foundations by acid water.
- Invasion by acid tolerant water plants and dominance of acid tolerant plankton species causing loss of biodiversity.

There are a number of ways of dealing with ASS to avoid the impacts listed above. These will be addressed in an ASS Management Plan, if necessary, at the time of subdivision or development.

5.5 BUSH FOREVER

Bush Forever is a 10-year strategic plan to identify, protect and manage around 51,000 ha of regionally significant bushland, identified as Bush Forever sites, within the Perth Metropolitan Region. Bush Forever is the result of Perth's Bushland Project, which is part of a process that began with recommendations for System Six in the 1970's. Bush Forever recommendations supersede the System 6 recommendations for the Perth Metropolitan Region portion of the Swan Coastal Plain.

Bush Forever aims to conserve, where possible, at least 10% of each of the original 26 vegetation complexes of the Perth Metropolitan Region portion of the Swan Coastal Plain (Government of Western Australia, 2000). The subject land contains an area of Bush Forever, designated for 'Parks and Recreation' under both the MRS and the Scheme, being Lots 223, 497, 498 and 499 Sultana Road West. Previously, it was agreed with the Strategic Biodiversity Planning section at the Department of Planning that the interface between the Bush Forever land and any proposed light industrial activity could be a masonry wall. However, the current intention is to fence those sections of the Bush Forever land that abut public roads with fencing consisting of pine posts and rails with a chainmesh infill between the posts.

FIGURE 9 - EXTRACT OF NORTH-EAST SUB REGION (DIRECTIONS 2031, AUGUST 2010)



5.6 WESTERN AUSTRALIAN PLANNING COMMISSION STATEMENT OF PLANNING POLICY NO 4 – STATE INDUSTRIAL BUFFER POLICY

The purpose of the State Industrial Buffer Policy is to provide a consistent Statewide approach for the protection and long-term security of industrial zones, transport terminals (including ports) other utilities and special uses. The policy is to provide for the safety and amenity of surrounding land uses while having regard to the rights of landowners who may be affected by residual emissions and risk. Planning Policy No.4 defines light industry as:

Light Industry—means an industry;

- 'in which the processes carried on, the machinery used, and the goods and commodities carried to and from the premises, will not cause any injury to, or will not adversely affect the amenity of the locality by reason of the emission of light, noise, electrical interference, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water or other waste products; and
- the establishment of which will not, or the conduct of which does not, impose an undue load on any existing or proposed service for the supply or provision of water, gas, electricity, sewerage facilities, or any other like services.'

In accordance with the requirements set out in this policy, it is considered that a buffer is not required for the subject land. The following statement contained in the policy supports this:

- 'in the case of industries of a light/service nature and technology parks, the impacts can usually be retained on-site or within the technology park or industrial area boundaries. This is a normal requirement of the performance-based definitions used for these industries/activities.'

Notwithstanding the above, it is considered that the setback of buildings generally within a light industrial area provides for a sufficient buffer to surrounding land uses. In this instance the Structure Plan also proposed an additional setback and landscaping requirements to land to the south of Sultana Road West due to the interface to the rural residential land on the northern side of the road.

5.7 WESTERN AUSTRALIAN PLANNING COMMISSION POLICY DC 4.1 – INDUSTRIAL SUBDIVISION

This WAPC development control policy applies to the subdivision of industrial land and provides guidance on matters the WAPC considers when determining applications for industrial subdivision. There are a number of policy measures relevant to the planning of the subject land, including access and road layout, the provision of adequate infrastructure services, and the supply of appropriately sized and shaped lots. In this regard, the layout of the Structure Plan has been prepared to provide for the most efficient and beneficial utilization of the land involved and will allow flexibility in the layout of subsequent plans of subdivision.

Relevantly, the development control policy indicates that: 'battleaxe lots may be acceptable for light and service industries which are not serviced by larger vehicles. Details such as the shape of the effective lot area, the need for truncations within the lot and the width of the access leg will be determined on the basis of each proposal in consultation with the local authority and other relevant authorities'.

It is acknowledged that in considering appropriate lot sizes for an industrial subdivision under the Structure Plan, the WAPC will have regard to the following factors:

- (a) the subdivision, where it involves the creation of a significant number of lots, should provide for variety in lot size.
- (b) the size of lots should provide sufficient space to accommodate the industrial operations and buildings envisaged, make allowance for possible future expansion, and allow the site to function properly and efficiently in terms of development requirements of the local authority(s) concerned. These requirements may relate to such factors as safe ingress and egress, vehicular movement within the curtilage of the site, parking, deliveries, storage and bin areas, boundary setback requirements and landscaped areas.
- (c) the overall pattern of lot sizes in the locality and the type of industrial activity characteristic of the locality in which the subdivision is located.
- (d) planning policies and other requirements of the WAPC, the local authority and other consultees (primarily relevant servicing authorities) which relate to specific areas, localities or activities.

6.0 LOCAL PLANNING FRAMEWORK

6.1 SHIRE OF KALAMUNDA LOCAL PLANNING SCHEME NO. 3

As indicated previously, the subject land is zoned 'Industrial Development' under the Shire's Local Planning Scheme No. 3 with the Bush Forever site being identified as an MRS Reserve for 'Parks and Recreation'.

The objectives of the Industrial Development Zone are:

- To provide for orderly and proper planning through the preparation and adoption of a Structure Plan establishing the overall design principles for the area.
- To permit the development of the land for industrial purposes and for commercial and other uses normally associated with industrial development.

The Structure Plan accords with the relevant zone objectives.

6.2 SHIRE OF KALAMUNDA LOCAL PLANNING STRATEGY

Under the Shire's Draft Local Planning Strategy industrial growth and employment and in particular the Forrestfield/High Wycombe Industrial Area is referenced as a 'Key Issue'.

Due to the rapid growth of the mining sector and freight industry the demand for strategically located industrial land is at a premium. In this regard the 200ha of land identified for industrial development by the Shire is recognized by both local and State Government as being strategically significant due to its proximity to Perth Airport, Forrestfield Marshaling Yards and Container Hub and key road freight routes. To this end, the Shire is currently progressing the development of the Forrestfield/High Wycombe Industrial Area north of Berkshire Road and west of Roe Highway in three stages. The planning work for Stage 1 (the area the subject of the Structure Plan) is due for completion late 2012 early 2013.

Stated strategies with the draft Local Planning Strategy include:

- 'Implementation of recommendations contained in the draft Industrial Land Strategy.'

Stated policy initiatives with the draft Local Planning Strategy Policy include:

- 'undertake comprehensive planning and analysis of the Forrestfield/High Wycombe Industrial Area.'³⁹

6.3 SHIRE OF KALAMUNDA PLANNING POLICIES, STRATEGIES AND DESIGN GUIDELINES

The Shire has developed the Forrestfield/High Wycombe Industrial Area Design Guidelines (the Guidelines) to support the development of Stages 1, 2 and 3 of the industrial area.

The Guidelines are intended to provide clear and readily understandable criteria aimed at ensuring a consistently high standard of development is achieved throughout the policy area. New development should result in a pleasant working environment, attractive streetscapes, and contribute to the protection of business investment within the area.

The Guidelines contains principles, guidelines and some mandatory requirements relating to:

- Land use.
- Site development.
- Built form (including signage).
- Environmental management.
- Landscaping.
- Site amenity

The Guidelines also contain development application submission requirements, and detailed requirements for landscape plans.

7.0 SITE ANALYSIS

7.1 PREAMBLE

A full analysis of the key biophysical opportunities and constraints applicable to the subject land was undertaken as a key element of the related MRS amendment and structure plan preparation process. Detailed information can be obtained from the relevant technical reports that have been provided as appendices to the Structure Plan.

7.2 ENVIRONMENTAL REVIEW

SUMMARY

VDM Environmental initially conducted an environmental review over the subject land in July 2008. A full copy of the environmental review is provided at Appendix A. A summary of the outcomes of the review that takes into consideration more recently obtained information is provided in the following subsections, and is summarised below.

- Climate - The prevailing wind direction is easterly in the morning swinging to westerly in the afternoon. Most rain falls between May to September, the annual average rainfall is 781.9 mm/year.
- Provided that adequate mitigation measures are taken to address the current wetland status, the presence of ASS and potential contaminated lands, the land is considered suitable for development. A number of further detailed studies will be undertaken as part of the preparation of future stages of subdivision and development.
- Geological Issues - There are ASS and flood plains found within the subject land and future subdivision and development will need to be supported by hydrological and geological studies to identify future mitigation techniques.
- Contaminated Sites - A search was conducted of the Department of Environment and Conservation (DEC) contaminated sites database. One listed contaminated site was found approximately one kilometre to the south west of the study site. The contaminated site is down stream of the ground water flow and therefore is not expected to impact the proposed subdivision and development of the subject land.
- Contamination Issues - The citrus orchard located in the north of the subject area and historic market gardens are potentially contaminating activities. Affected land may require contamination investigations to be conducted prior to redevelopment. Preliminary investigations suggest that the balance of the subject area is not affected by any contaminating activities.
- Ecological Issues - A preliminary investigation indicated that there would be unlikely to be any issues surrounding flora and fauna. However, a detailed flora survey and vegetation survey was subsequently undertaken to support the planning process. The outcomes of the flora and vegetation survey are dealt with in more detail in Section 7.5.
- Bush Forever Site - A Bush Forever site is included within the subject land and will require an appropriate interface treatment.

- Wetland Summary – Although a search of the Geomorphic Wetlands database has identified the subject land as being ‘Palusplain’ and ‘Sumpland’, due to the proximity of groundwater and the lack of specialized vegetation present on site, VDM Environmental did not believe the area in question to be characteristic of a wetland.

Refer To Figure 10 – Environmental Constraint Mapping

Refer To Appendix A – Berkshire Road And Surrounds, Forrestfield – Environmental Review (Vdm Environmental, July 2008)

7.3 CLIMATE

As part of the environmental review process, a review was undertaken of relevant climatic data and information obtained from the Bureau of Meteorology. The closest station to the site with climatic statistics is Perth Airport.

Site name: PERTH AIRPORT

Site number: 009021

Latitude: 31.93 °S Longitude: 115.98 °E

Elevation: 15 metres

Commenced: 1944, Status: Open

Latest available data: N/A

The prevailing wind direction is easterly in the morning swinging to westerly in the afternoon. Most rain falls between May to September, the annual average rainfall is 781.9 mm/year. Further climatic data is presented in Table 4 below.

Table 4 – Average Annual Climatic Data For Hazelmere

	9am	3pm
Mean Temperature (0c)	17.8	23
Mean relative humidity (%)	65	48
Mean wind speed (km/h)	14.1	18.6

7.4 TOPOGRAPHY AND GEOLOGY

The topography of the subject land is relatively low-lying and flat compared to the surrounding area. The altitude falls from approximately 43 metres Australian Height Datum (AHD) in the south eastern portion of the subject land to approximately 28 metres AHD in the north western corner of the subject land. The Department of Water’s Online Groundwater Atlas classifies lots along Milner Road (Lots 60, 61, 62, 63, 64 and 65 Milner Road) as swamp and Lacustrine deposits (peat, peaty sand and clay). The remainder of the site is classified as Bassendean Sand: quartz sand.

FIGURE 10 - ENVIRONMENTAL CONSTRAINT MAPPING (SOURCE: VDM ENVIRONMENTAL)



7.4.1 Permeability Testing

Soil Permeability tests were undertaken as per AS1547:2000: Soil Permeability Measurement – Constant Head Test. Five test pits were installed over the subject land. The locations of the test pits and the permeability test results are shown as Figure 8 of Environmental Review contained in Appendix A of this report. The permeability (Ksat) of the test pits 1 and 5 are indicative of sandy loams massively structured with a well drained indicative drainage class. Test pits 2, 3, 4 are rapidly draining, consistent with gravel and sands.

7.4.2 Acid Sulphate Soils

As indicated previously, ASS are found across the subject land (refer to Figure 11 – Acid Sulphate Soil Mapping). It should be noted that these maps have been prepared on broadscale mapping (+/-125 metres) and will require confirmation by on-site investigations.

ASS are naturally occurring soils and sediments containing iron sulfides, most commonly pyrite. When ASS are exposed to air the iron sulfides in the soil react with oxygen and water to produce a variety of iron compounds and sulfuric acid. Initially a chemical reaction, the process is accelerated by soil bacteria. The resulting acid can release other substances, including heavy metals, from the soil and into the surrounding environment.

The Perth Groundwater Atlas indicates that the water table at the subject land is between 11 and 20 metres deep whilst the Wetland. Database classifies the area as 'palusplain and sumpland wet land.' Generally actual acidity is found above the groundwater level whilst

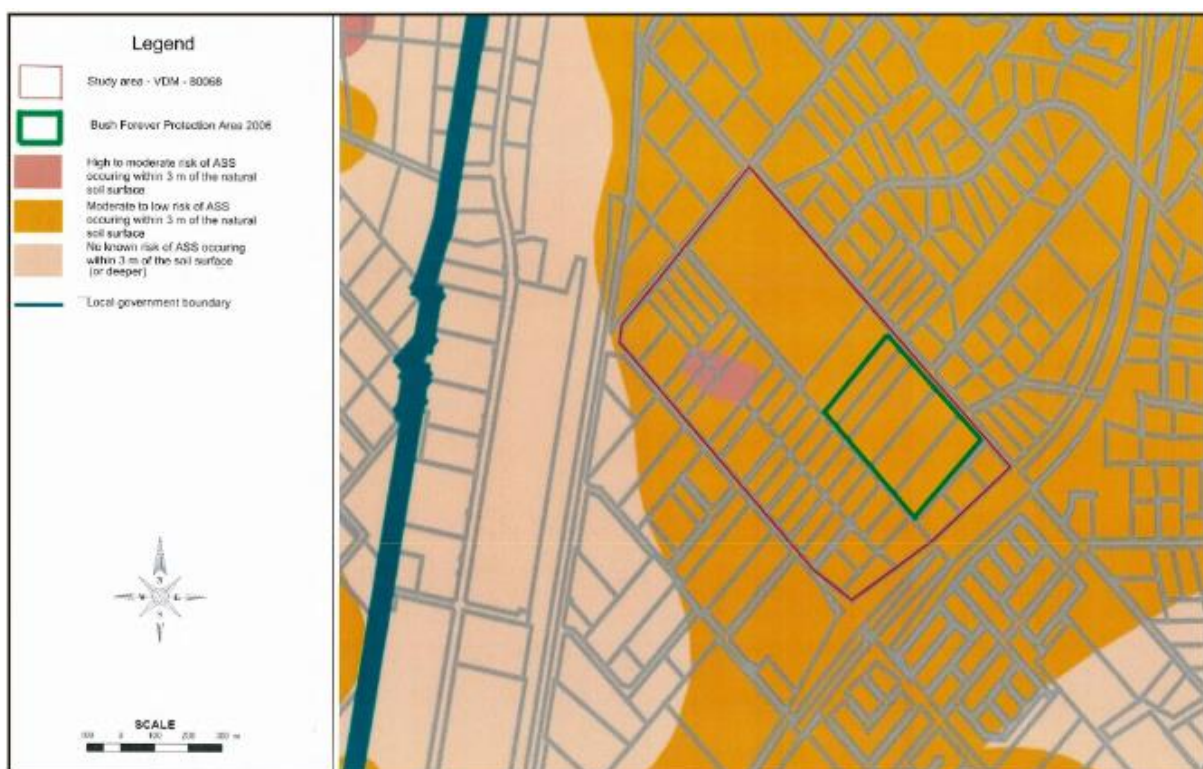
potential acidity is found below groundwater level. The situation becomes more complex where wetlands and fluctuating groundwater levels are encountered and in such cases there may be actual and potential acidity in the soil profile.

Avoiding disturbance is often the most environmentally sustainable and economic option. Without proper management, disturbing ASS can have serious environmental, economic, engineering, and health impacts, and can constrain development, construction and agriculture in affected areas. Activities that might disturb acid sulfate soils in high risk areas include:

- Major earthworks - large scale excavations for canal developments and estates.
- Infrastructure earthworks – digging for clearways, roads and railways and excavating for sewage pipes, power lines and drainage channels.
- Drainage channels - digging channels to manage water logging in agricultural areas.
- Lowering of the groundwater table – from low rainfall and over use of groundwater.

Refer To Figure 11 – Acid Sulphate Soil Mapping

FIGURE 11 - ACID SULPHATE SOIL MAPPING



7.4.3 Listed Contamination Sites

A search of the Department of Environment and Conservation's contaminated sites database identified one listed contaminated site approximately one kilometre to the south west of the study site. The contaminated site is down stream of the ground water flow and

therefore is not expected to impact the proposed subdivision and development of the subject land.

7.4.4 Contamination Investigations

An examination of a 2001 aerial photo of the northern section of the subject land shows evidence of market gardens and citrus orchards. These activities are listed by the DEC as a potentially contaminating activity. As part of the detailed planning for subdivision and development, a Preliminary Site Investigation (PSI) and possible Detailed Site Investigation (DSI) may be required for potentially affected land generally fronting Milner Road, and the north western sections of Nardine Close and Sultana Road West. A site base management plan and validation will only be necessary if there is contamination identified that requires remediation.

It is unlikely that any potentially contaminated sites will impact the balance of the subject land.

7.5 WETLANDS AND HYDROLOGY

A search of relevant databases and data set shows conflicting information on the presence and classification of wetlands. Preliminary studies of the Department of Agriculture Database and Department of Water Database indicate inconsistency in the recorded water table levels. A study of aerial photography (Landgate 2007) and a desktop vegetation/flora search of Perth's Specimen Database (DEC) indicates an absence of vegetation communities characteristic of ecologically active wetlands. A search was also done of the Department of Agriculture's online Wetlands Database. The majority of the subject area is identified as 'subject to inundation'

A spring flora/vegetation survey and hydrological investigation were subsequently commissioned to gather relevant data on vegetation communities present and current water table levels, and hence the presence or absence of a wetland environment.

Wetlands within the subject land are classified in the Geomorphic Wetlands database as 'Palusplain' and 'Sumpland'. The management classification for the area is 'Resource Enhancement'. A study of the Geomorphic Wetlands Database shows industrial development within areas classified as resource enhancement, multiple use and conservation. Management objectives for the management classification of 'Resource Enhancement', as listed by the Water and Rivers Commission, areas follows:

[The] ultimate objective is for management, restoration and protection towards improving their conservation value. These wetlands have the potential to be restored to conservation category. This can be achieved by restoring wetland structure, function and biodiversity. Protection is recommended through a number of mechanisms.'

Due to the proximity of groundwater and the lack of specialized vegetation present on site, it is considered that the area in question is not characteristic of a wetland. On this basis a request has been lodged with the DEC to reclassify the area such that it is no longer

identified as a wetland environment. The Department of Water (DoW) has 17 ground water monitoring boreholes within a one kilometre radius of Berkshire Road, Forrestfield. There is, however, only incomplete data available for many of the bore holes. The Perth online groundwater atlas identifies groundwater with a salinity of around 1000 –1500mg/L. A copy of the borehole data from the WIN database is contained in Table 4 of the Environmental Review attached at Appendix A. This data indicates a higher groundwater level than the Perth Online Groundwater Atlas, which indicates that the average depth to groundwater over the site is 11 metres from the surface. It is important to note that data from the WIN database was collected between 1899 and 1971, whilst the Perth Online Groundwater was last updated in May 2003.

Refer to figure 12 - Wetland Locations (Department of Agriculture)

Refer to figure 13 - Geomorphic Wetlands Classification, Swan Coastal Plain

Refer to figure 14 - Location of Bores Within a 1Km Radius of Berkshire Road

Refer to figure 15 - Groundwater flow direction

Refer to figure 16 - Groundwater contours and depth (Perth groundwater atlas)

Figure 12 - Wetland Locations (Department of Agriculture)

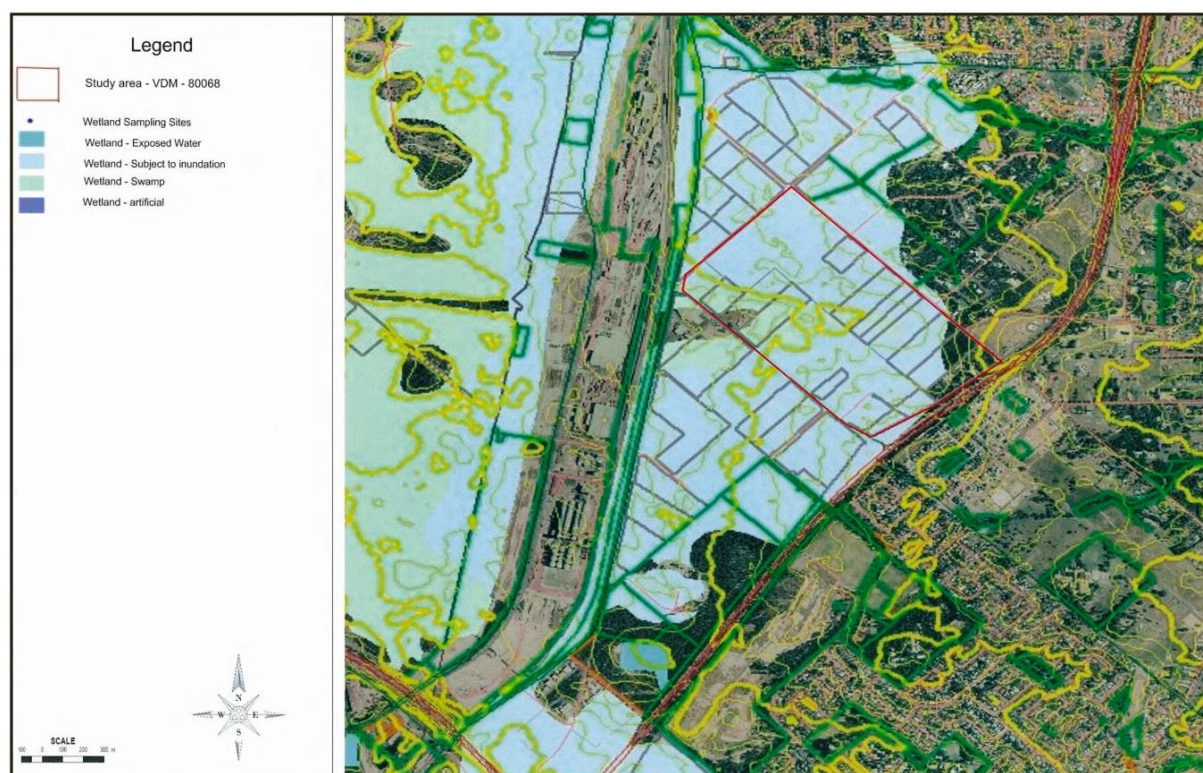


Figure 13 - Geomorphic Wetlands Classification, Swan Coastal Plain (Source: VDM Environmental)

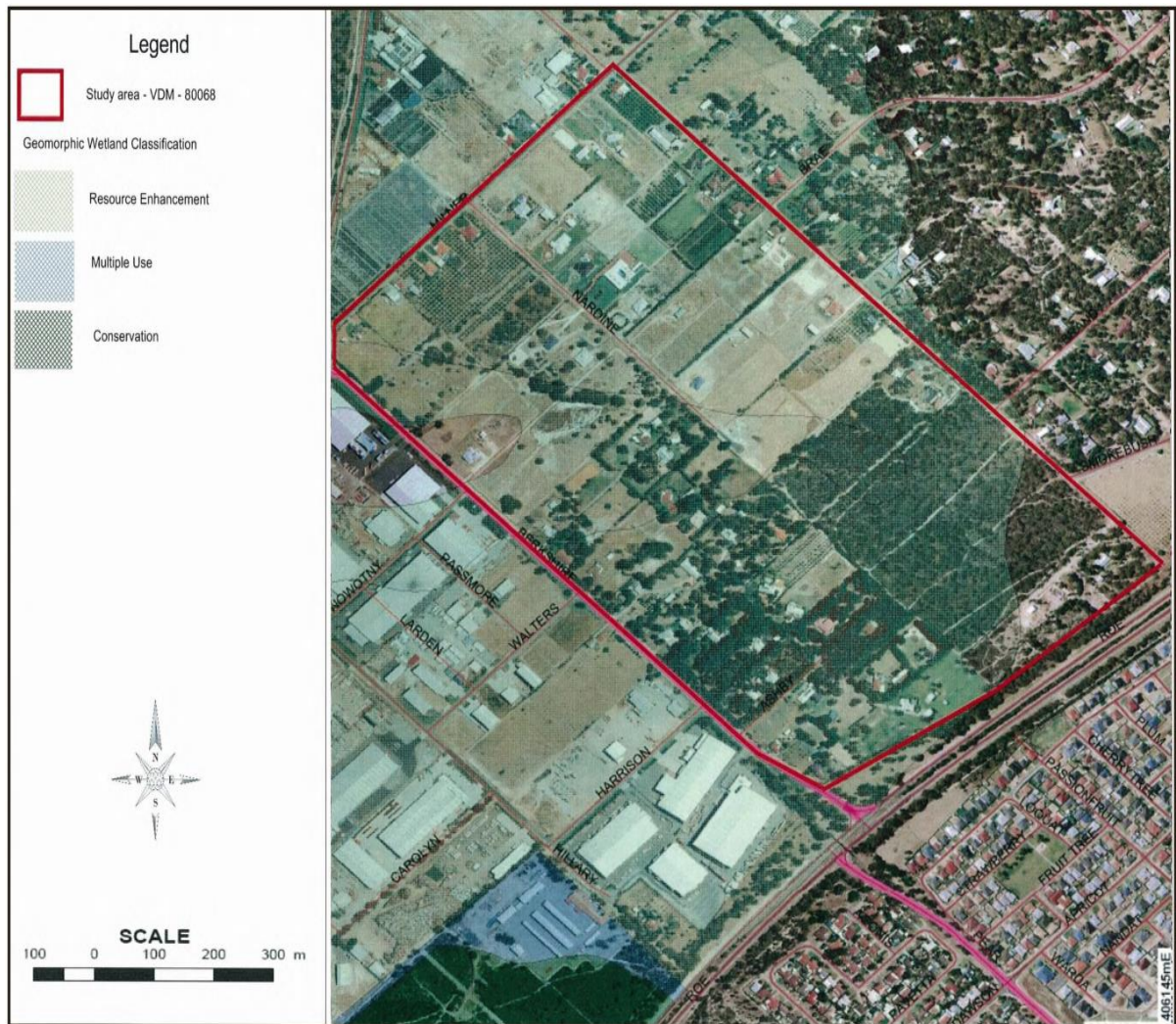


Figure 14 - Location of Bores Within a One Kilometre Radius of Berkshire Road (Source: VDM Environmental)

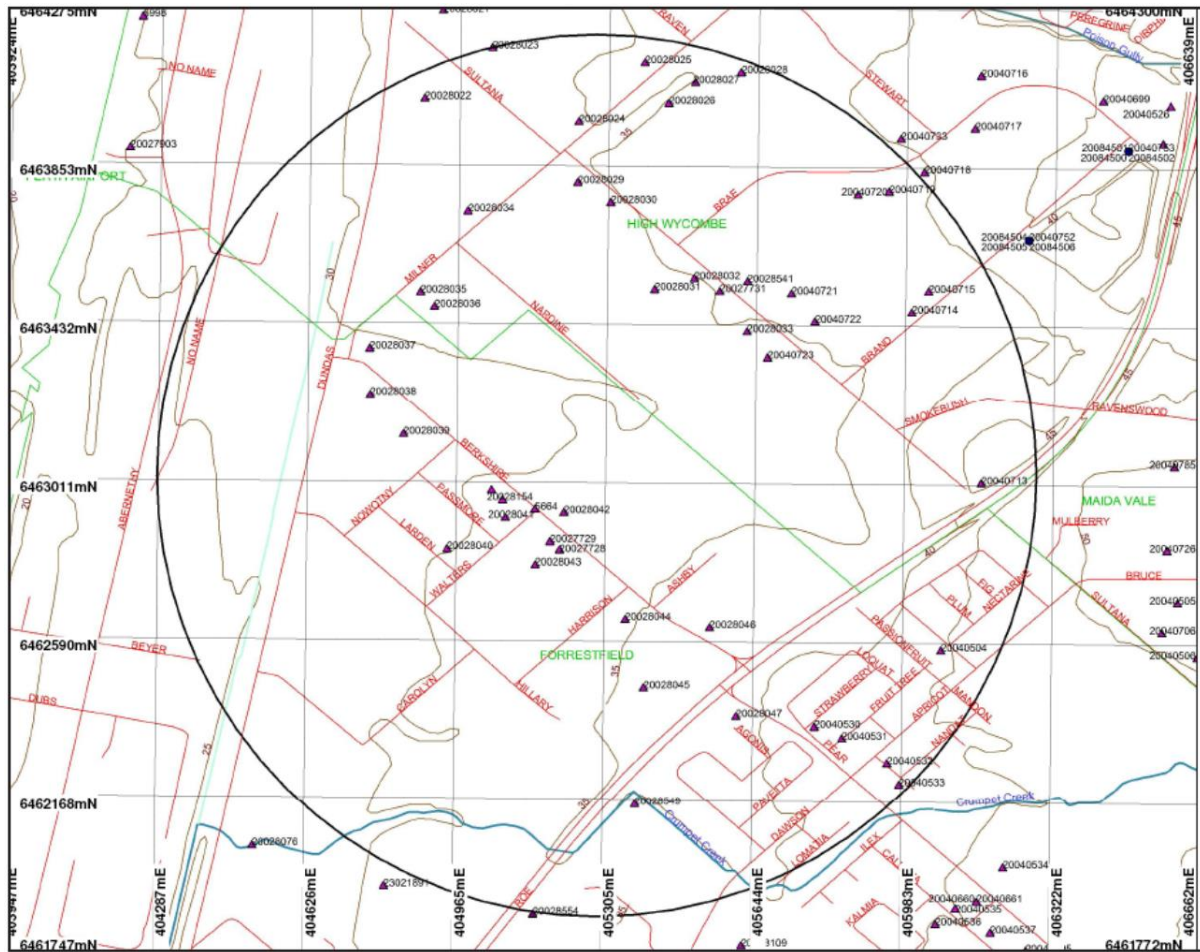


Figure 15 - Groundwater Flow Direction (Source: VDM Environmental)

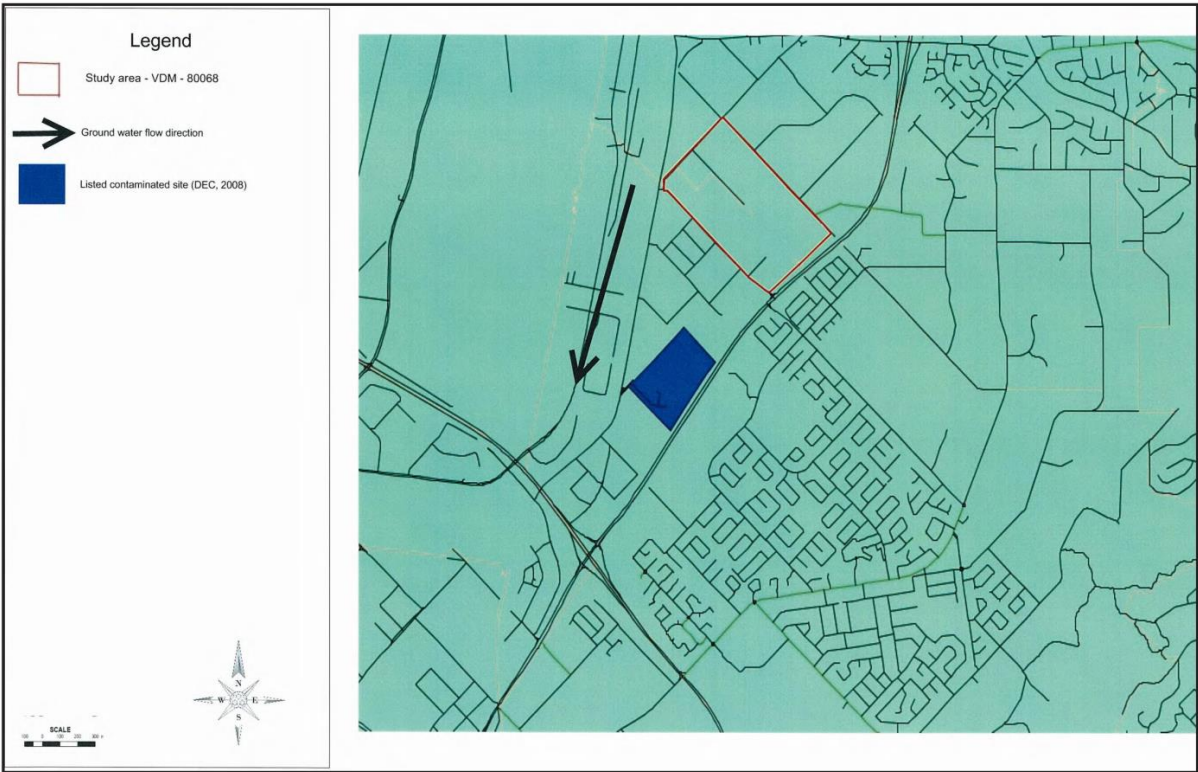
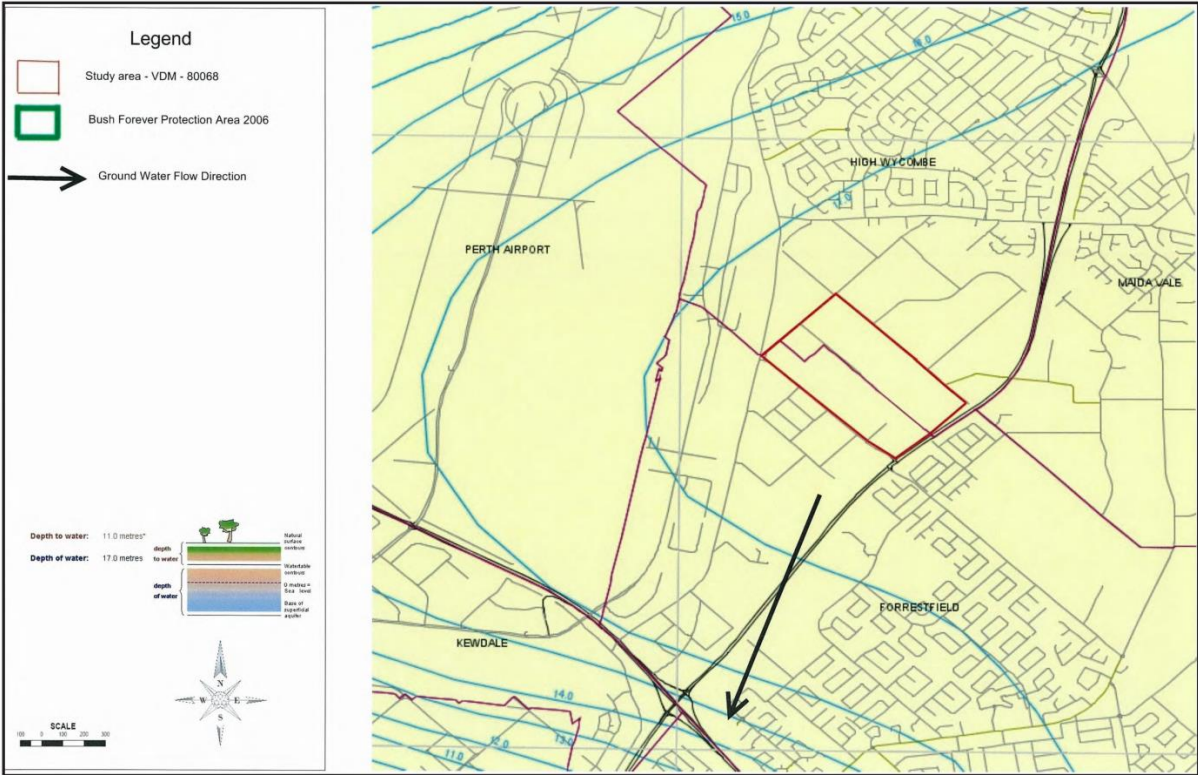


Figure 16 - Groundwater Contours and Depth (Perth Groundwater Atlas) (Source: VDM Environmental)



7.6 VEGETATION

7.6.1 Flora

As part of the environmental review process a search of Perth's specimen database was conducted for flora found in the area. Refer Appendix D contained in the Environmental Review for a complete list of results.

VDM Environmental subsequently undertook a flora and vegetation survey of remnant vegetation in October and November 2008. The survey included the area bordered by Berkshire Road, Milner Road, Sultana Road West and Roe Highway, Forrestfield (excluding lots 50, 51, 52, 221 222, 223, 497, 498, and 499 Sultana Road West) as these lots have been substantially cleared or are predominantly Bush Forever and subject to conservation requirements.

Refer to Appendix B – Flora and Vegetation Survey (VDM Environmental, December 2008)

The primary aims and objectives of this report were to ascertain:

- Plant species present.
- Plant communities present.
- Report on ecological values and the protection required.
- Weed management recommendations.
- Management recommendations for any rare or priority flora and ecological communities. The flora and vegetation survey consisted of a desktop assessment of all lots bound by Berkshire Road, Sultana Road West, Milner Road and Roe Highway to determine plant species potentially occurring on the site and identify areas of remnant vegetation requiring a more detailed study. Based on this, ground truthing was undertaken on remnant vegetation on Lots 3 and 5 Ashby Close and 19 and 20 Berkshire Road, as the remainder of the lots in the study area comprised cleared land, houses, driveways and domestic gardens.

7.6.2 Declared Rare/Threatened Flora

The initial desktop study revealed nine species of rare and threatened flora occurring in the general area and identified that due to the cleared and degraded nature of the subject land that it was very unlikely that it contained any representative rare or threatened flora. However, as a result of the properties surveyed as part of the flora and vegetation survey, it was identified that Lot 19 Berkshire Road contained vegetation of significance, with Declared Rare Flora (DRF) *Conospermum undulatum* being present on the site. The WA Herbarium was then consulted to confirm the presence of the DRF on this site. Potential threats to this DRF include degradation to the remnant bushland, weed invasion, rabbits and potential development. As such, the management options shown below in Table 5 have been recommended 53

Table 5 – Declared Rare Flora Management Options

High Priority

1	Every attempt should be made not to disturb the DRF and if the flora needs to be disturbed for any reason an application shall be made to the DEC
2	If development occurs only those species naturally occurring on the site and in the bush forever site should be planted
3	Further consideration of Lot 19 by the relevant authorities at the subdivision and development stage
4	Liaise with the DEC and land owners to effectively manage the bushland and DRF
5	Manage weeds and rabbits within the remnant bushland

Medium Priority

6	Collect seeds from the DRF
7	Undertake monitoring of bushland and DRF condition, seed production and recruitment

Low Priority

8	No recommendations
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It is considered most likely that the DRF as identified on Lot 19 Berkshire Road will be relocated with DEC approval as part of the subdivision or development process, probably to within the nearby Bush Forever area.

7.6.3 Exotic Flora

Weeds are common throughout the cleared and uncleared areas and are competing with understorey vegetation. The site should be regularly inspected for the spread or establishment of weed species during construction, and any exotic plants removed where possible.

7.7 RARE OR THREATENED ECOLOGICAL COMMUNITIES

No rare or threatened ecological communities are present within the developable area of the subject land. A Rare and Threatened Ecological Community (TEC) is present within the Bush Forever site, which contains one occurrence of the endangered *Banksia attenuata* woodland (refer Table 11 contained in the Environmental Review at Appendix A of this report for a complete list of results).

7.8 BUSH FOREVER

As indicated previously a significantly sized Bush Forever site is located within the subject land. The current intention is to fence those sections of the Bush Forever land that abut public roads with fencing consisting of pine posts and rails with a chainmesh infill between the posts.

It is considered that this interface solution offers the following advantages:

- It will limit the capacity for any rubbish to go into the Bush Forever land from adjacent roads.
- It will limit readily available public access to the Bush Forever land, particularly given that it is understood that this area has been identified for primarily conservation purposes to protect threatened ecological communities and that it is not intended for recreational purposes. It is understood that public access to the land has been an issue in the past and that new fencing was required to be constructed to preclude this access.
- It will not compromise any established ecological linkages due to the existing distribution of bushland in the area and will provide a barrier to stop any native fauna wandering into a potentially dangerous urban environment.

7.9 FAUNA

Fauna occurring within the vicinity of the subject land were obtained from the WA Museum's Fauna Database. A complete list of results is included in Table 9 of the Environmental Review contained in Appendix A of this report.

7.9.1 Rare And Endangered Species

Due to the extent of current development on the subject land and the lack of native vegetation communities, it is unlikely that the area in question will support rare and threatened fauna. A search of the DEC database was conducted and found that there are three historic records of rare and threatened fauna species occurring within a 1.5 kilometre radius of the subject land. It is likely that the Bush Forever site supports these species. Rare and threatened fauna identified from historic records consist of one species of Schedule One (rare and likely to become extinct), one species of Priority Four (taxa in need of monitoring) and one species of Priority Five (In need of monitoring) (Refer Table 9 contained in Appendix A of this report for a complete list of results). Due to the cleared nature and current development within the subject land it was considered that more detailed fauna surveys were not warranted.

8.0 LOCAL WATER MANAGEMENT STRATEGY

8.1 PREAMBLE

A Local Water Management Strategy (LWMS) has been prepared by ENV Australia to support the preparation of the Structure Plan for Stage 1 of the Forrestfield/High Wycombe Industrial Area and is provided at Appendix C of this report.

Refer to Appendix C – Forrestfield/High Wycombe Industrial Area – Stage 1 Berkshire Road, Forrestfield – Local Water Management Strategy (ENV Australia, March 2012)

8.2 TOTAL WATER CYCLE MANAGEMENT

The process of managing the total water cycle in an urban scenario is referred to as Water Sensitive Urban Design (WSUD). A LWMS seeks to support WSUD by assisting to design, develop and maintain urban water systems that are sensitive to the total water cycle. The principles of WSUD as outlined in Better Urban Water Management (BUWM) (WAPC, 2008) have been used here. These principles are to:

- Protect natural systems – protect and enhance natural water systems and their hydrological regimes in urban developments.
- Integrate stormwater treatment into the landscape – use stormwater in the landscape by incorporating multiple use corridors that maximize the visual and recreational amenity of developments.
- Protect water quality – protect the water quality draining from urban development and minimize outputs of phosphorus and nitrogen and other pollutants.
- Manage run-off and peak flows – reduce peak flows from urban developments by using local detention measures and minimizing impervious areas.
- Add value while minimising development costs – minimise the drainage infrastructure cost of development.

8.3 PRE DEVELOPMENT ENVIRONMENT

Regional mapping by GSWA indicates the majority of the subject land consists of the geological unit S10 with a small area of S12 on the northern boundary and C ps associated with an area of surface water located towards the north western corner of the subject land. An average permeability of 2m/day has been considered for design purposes based on the environmental review done by VDM Environmental in July 2008.

DEC mapping indicates that there is a moderate to low risk of ASS occurring within 3 metres of the natural soil surface across the majority of the subject land. Phosphorus Retention Index (PRI) was measured at seven groundwater bores at the site and it varies from 0.5 to 2.4 at various locations. The soils at the site have a low natural nutrient retention property with respect to phosphorus. The subject land falls from the south east to the north west. Consequently, surface water is expected to flow towards the corner of Berkshire and Milner Roads along the valley. The AAMGLs on the site were calculated from the levels measured in October 2010 and 2011, as compared with groundwater levels measured in DoW Bore (ID 4849). Depth to AAMGL ranged between 2.41 metres and 10.25 metres Below Ground Level (BGL).

8.4 WATER SUSTAINABILITY INITIATIVES

Section 5 of the LWMS includes consideration of potable, non-potable, groundwater, stormwater and recycled water resources for the subject land and how they can be managed as sustainably as possible.

8.5 STORMWATER MANAGEMENT STRATEGY

The stormwater management strategy for the subject land is based on infiltration of stormwater up to 100 year events on site, while maintaining water quality. A variety of structural and non-structural Best Management Practices (BMPs) are proposed to achieve this, including swales in road reserves and rain gardens and Under Ground Storage (for infiltration of runoff up to 100 year ARI) with open bases on each individual lot.

8.6 GROUNDWATER MANAGEMENT STRATEGY

Depth to groundwater is not considered to be a significant constraint to development of the subject land. Fill will not be required to manage groundwater levels across the site, as depth to groundwater is greater than 1.2 metres (see Section 4.5.1 of the LMWS). However, isolated areas of fill may be required to ensure adequate clearance is achieved between groundwater and the base of storage structures.

8.7 MONITORING REQUIREMENTS

Predevelopment monitoring was undertaken by ENV during 2010 and 2011. A single monitoring event was undertaken on 26 October 2010 at seven monitoring bores. An additional six months of groundwater monitoring was undertaken at six bores from July 2011 to December 2011. Through this monitoring program, two winter peaks were captured. 57

Post development monitoring will be undertaken for three years following practical completion of Stage 1. This will include monthly measurements of groundwater levels and quarterly sampling for pH, EC, redox potential, TP, phosphate (PO₄), TN, NO_x, NH₃, TKN and total heavy metals.

8.8 IMPLEMENTATION

The Shire expects development of the subject land to occur over a number of years. Water management 'best practice' procedures will likely vary during the development timeframe. If there is a need to change, then proposed practices may need to be modified in the future to comply with improvements in understanding or design. The Shire proposed to address any identified and agreed modifications through the preparation and implementation of UWMPs.

9.0 THE LOCAL STRUCTURE PLAN

9.1 PREAMBLE

The Structure Plan seeks to respond to the Shire's intent to oversee the development of a high standard, attractive, functional and sustainable industrial area, which will attract a range of businesses eager to locate within the area, offering ease of access to both customers and suppliers.

In addition to the usual industrial uses, the Shire will encourage the establishment of complementary and progressive industries such as research and development facilities.

The Structure Plan, in conjunction with the Forrestfield/High Wycombe Industrial Area Design Guidelines (the Guidelines) aims to complement the attractiveness of the industrial areas geographic and strategic location and to encourage design features, construction quality and landscaping of a high standard which will ensure the Forrestfield/High Wycombe Industrial Area is a sought after location for business relocation, and a prestigious industrial address.

The objectives for the Structure Plan are as follows:

- To provide for a structure plan layout that optimises the existing road layout and existing services infrastructure.
- To ensure that industrial development does not adversely impact on the amenity and safety of adjoining land uses.
- To provide a structure plan layout that meets the needs of landowners, allowing flexibility in the design of sites for the future subdivision and development of industrial land.

Associated objectives of the Guidelines that are also relevant to the Structure Plan are as follows:

- To encourage attractive quality developments that are well designed, with functional and efficient buildings and site layouts.
- To ensure that industries are environmentally compatible with surrounding zones and activities.
- To promote the development of high quality, attractive and sustainable landscaped areas and streetscapes.
- To promote greater sustainability through energy and water efficient building design and site development.

9.2 STRUCTURE PLAN DESIGN PHILOSOPHY

The design philosophy underpinning the preparation of the Structure Plan is to provide for a logical extension and consolidation of industrial activities that are already taking place in the locality. The subject land is currently abutted by light industrial uses along its southern boundary, a mixed use and special use area with light industry located along its western boundary (to the rear), Roe Highway to the east and rural residential uses to the north.

The Structure Plan layout, including modifications to the existing road configuration within and immediately external to the subject land are intended to accommodate the needs of transport related uses. In this respect the subject land is strategically located to access Roe Highway – a primary regional road and major heavy freight vehicle route, which is further connected to a comprehensive road network, allowing for the efficient and safe movement of heavy freight throughout the Perth Metropolitan Region and the rest of the State. Freight transport uses are currently located within the immediate vicinity of the subject land and accordingly, the Structure Plan proposes to provide further opportunities for freight transport to locate to the Forrestfield/High Wycombe area.

Berkshire Road currently provides the necessary vehicular connection to Roe Highway, and with design improvements (subject to Main Roads WA approval) this access is ideally suited to industrial uses whereby heavy transport can easily, efficiently and safely move through the Forrestfield area. The required Roe Highway design improvements are not considered as part of the structure plan or infrastructure contribution arrangements. The Structure Plan also supports the overall intent of the KHIM, which aims to ensure that the Forrestfield area achieves optimal operational efficiency and integrated transport and land use planning. The Structure Plan will also facilitate industrial subdivision and development that can capitalize on larger lot sizes (no less than approximately 1 ha) and the opportunity for the area to develop as a major road and rail freight logistics precinct. It will also provide for the retention and growth of strategic industrial land uses within the Forrestfield area, particularly those that rely on proximity to freight nodes and/or key infrastructure such as road, rail or transport. Importantly, the implementation of the Structure Plan will tie in well with the anticipated final objectives and recommendations of the WAPC's Industrial Land Strategy.

The Structure Plan has been prepared in accordance with the recommendations of the KHIM and the anticipated outcomes of the Industrial Land Strategy and represents an appropriate and strategic response to the following considerations:

- Maximizing and providing new opportunities for industrial land uses and freight transport to be located along major roads.
- The identification of the Kewdale-Welshpool Industrial Area as the major origin/destination in the Metropolitan Region for heavy freight vehicles.
- The provision of additional industrial land in response to changing markets and increased commercial property values, that have seen more demand for service industry floor space and less for manufacturing and processing.
- The anticipated increases in freight volume and freight movements in the Perth Metropolitan Region over the next 30 years. The KHIM states, 'areas such as Kewdale, Welshpool and Forrestfield industrial areas must continue to operate at optimum efficiency as this increase occurs'.
- Opportunities for freight related industries to take advantage of the immediate vicinity of a freight railway line.

- The need for industrial land to be located within close proximity of Kewdale and the Perth Airport, which is described in the KHIM as 'WA's primary intermodal facility'.

It is proposed that an interim interface arrangement be established along the Sultana Road West frontage of the subject land through the application of design guidelines, with an expanded landscaping strip requirement in order to ameliorate any potential negative impacts associated with industrial activity on the rural residential properties on the other side of the road. It is expected that this requirement may be modified in the future as planning for the industrial development of Stages 2 and 3 of the Forrestfield/High Wycombe Industrial Area progresses.

Importantly, the Structure Plan supports the aspirations of Directions 2031 and the Industrial Land Strategy in that it more closely aligns the existing transport system with the existing land use pattern to optimize accessibility and amenity and provides for the more efficient movement of goods through the Perth Metropolitan Region and throughout the State.

9.3 DEVELOPMENT STAGING

It is expected that industrial subdivision and development will commence within the subject area soon after finalisation of the Structure Plan; however, due to the following factors the Shire expects development of the subject land to occur over a number of years:

- Multiple land ownership with not all landowners wishing to proceed with industrial subdivision and development within the same timeframe.
- The significant amount of relatively recent investment that has already occurred in the subject area based on its historical 'Special Rural' zoning, including substantial dwellings, outbuildings and landscaped areas. Many of these landholdings are likely to be the last to be developed for industrial purposes.
- The requirement under the Structure Plan for modifications to the existing local road system, including the closure of the intersection of Milner Road and Berkshire Road, the linking of Nardine Close and Ashby Close and the new Road 1 connecting Nardine Close to Berkshire Road.
- Modifications to the Berkshire Road/Roe Highway intersection needing to be resolved with Main Roads WA and the associated finalisation of construction works.
- The requirement for modifications to existing servicing infrastructure to service industrial development within the subject area.

On the basis of the above, the Structure Plan does not pre-empt development staging, however, it is anticipated that most land within the subject area will be used for industrial purposes within a 5-7 year timeframe following finalisation of the Structure Plan. It is also expected that a proportion of the projected industrial development within the area will be able to proceed prior to major infrastructure modifications with each proposal that is received within the shorter term being required to be considered on its individual merits.

9.4 DEVELOPER CONTRIBUTIONS FOR INFRASTRUCTURE IMPROVEMENTS

A developer contribution scheme is proposed to be implemented that responds to the multiple land ownership of the subject land, and the significant improvements that will be required to local infrastructure, in particular the necessary modifications to the local road system, including existing road upgrades, the creation of additional local road connections, the installation of footpaths and WSUD drainage and associated administration costs.

The proportional contribution is proposed to be determined in accordance with the provisions of the Shire's Development Contributions on Development Areas Planning Policy and contained in the associated Development Contribution Plan.

Contributions will be required to be made towards items identified in Schedule 12 of the City's Local Planning Scheme No. 3.

10.0 MOVEMENT NETWORK

10.1 PREAMBLE

As part of the initial MRS amendment process, in August 2008, Transcore Pty Ltd undertook an assessment of the potential impact of any additional traffic that may be generated as a result of the proposed development of the subject land on abutting roads, and particularly the intersections of Berkshire Road/Roe Highway and Berkshire Road/Milner Road/Dundas Road. This traffic assessment, in conjunction with more recent input from the Shire, has informed the preparation of the Structure Plan.

10.2 PARKING PROVISION

The provision of car parking bays for staff and visitors within any future development within the subject land is to be in accordance with Clause 5.8 and Table 3 of the Scheme.

The Scheme also allows the Shire, at its discretion, to apply a greater or lesser requirement for car parking bays than that stipulated as the minimum in Table 3 of the Scheme if:

- The circumstances of a development justify such variation and there will not be any resultant lowering of safety, convenience and amenity standards.
- It is necessary to increase the required number of car parking bays in order to maintain desirable standards of safety, convenience and amenity, such extra car parking bays as the Shire considers necessary shall be provided. In imposing such extra car parking requirements, the Shire shall explain the reasons for the increase to the owner of the land.
- Where there are two separate and different developments with different hours of peak operation, but being located on the same lot or adjoining lots, the Shire may permit a reduction of the required number of parking bays on either or both lots, provided it is satisfied there would be no resultant lowering of safety, convenience and amenity standards and there is written agreement to the reciprocal use of some or all car parking bays.
- Where a proposed development is located adjacent to a constructed public car park the Shire may, where it is satisfied there would be no lowering of safety, convenience and amenity standards, reduce the quantity of required on site car parking for that development by the quantity which it considers the public car park serves the development. Where a request for the reduction in the quantity of car parking bays is received, the following principles will be applied:
 - The Shire will generally not accept a reduction in the required number of car parking bays for speculative developments. The applicant will need to provide advice from the prospective tenant as to their current and future parking needs.
 - The Shire will not consider on-street parking as part of the calculation of car parking bays for a development proposal.
 - Car parking ratios under previous town planning schemes are not relevant and are not a mitigating factor.

- A reduction in car parking requirements will only be determined by Council and not under delegated authority.
- A change in land use may invalidate any parking reduction previously granted. Disabled car parking bays are to be provided in accordance with current Australian and ACROD Standards.

10.3 PUBLIC TRANSPORT, PEDESTRIAN AND CYCLE NETWORK

There are currently no public transport services within or in close proximity to the subject land. It is proposed that ongoing liaison take place with the Public Transport Authority (PTA) in order that they be aware of the development potential for the area, and the likely future needs of visitors and employees to access industrial development using public transport services.

It is anticipated that once threshold development levels are achieved that public transport, in the initial form of bus services, will be provided to the area and incrementally improved over time. In the longer term it is expected that the area may be able to be connected to the Perth Metropolitan passenger rail network via an extension of proposed infrastructure to service the High Wycombe and Forrestfield areas.

The existing pedestrian network in the locality can be summarised as follows:

- A pedestrian path on the south western side of Berkshire Road extending from the Roe Highway footbridge to Lot 93 Berkshire Road at which point it transfers to the north eastern side of Berkshire Road (at approximately Lot 25) and extends north west to Milner Road.
- Pedestrian paths on either side of Milner Road extending north east from Berkshire Road, with the south eastern path extending through and beyond Sultana West Road (heading north east) and with the north western path extending through to the south western corner of Lot 756 Milner Road (approximately two thirds of the way to Sultana Road West).
- Nardine Close, Ashby Close and Sultana Road West do not currently accommodate pedestrian paths.

The following enhancements to the pedestrian and cycle network within and adjacent to the Structure Plan area are as follows:

- Construction of a shared path along one side of Milner Road to provide continuous path between Sultana Road West and Berkshire Road.
- Construction of a shared path along the north side of Berkshire Road to provide a continuous path between Milner Road and Roe Highway, including upgrading of the existing pedestrian path in this location.
- Construction of a shared path along the north side of Bonser Road to provide connection between Nardine Close and Berkshire Road.
- Construction of a shared path along the east side of Nardine Close to provide connection between Milner Road and Ashby Close.
- Construction of a shared path along the west side of Sultana Road West to provide connection between Milner Road and the cul-de-sac.

- Construction of a shared path along the southeast side of Road 2A. Continuous path to connect with shared path on southeast side of Ashby Close.
- Construction of a shared path along the south-east boundary of the subject land between the Ashby Close and Berkshire Road intersection and Sultana Road West.

Refer to Figure 17 – Proposed Movement Network

10.4 PROPOSED VEHICULAR ACCESS ARRANGEMENT AND INTERNAL CIRCULATION

The proposed road network to support the development of the Structure Plan area encompasses the use of the established road system with the following modifications:

- Closure of Milner Road at the intersection of Berkshire Road to alleviate potential traffic conflicts with the nearby Dundas Road intersection and the creation of a replacement cul-de-sac head with industrial vehicle specification.
- A road extension linking Nardine Close and Ashby Close running along the north eastern boundary of the lots on the south western side of Nardine Close and along the southern boundary of the Bush Forever area.
- A new road (Road 1) linking Berkshire Road and Nardine Close approximately 230 metres west of the current Milner Road and Berkshire Road intersection (on the north western side of Lot 222 Berkshire Road and Lot 221 Nardine Close).
- Potential new road connections to service current battleaxe configured lots if land assembly and consolidation processes do not provide the affected lands with access from gazetted and constructed public roads.

It is noted that no vehicular access for nonresidential development will be permitted via existing battleaxe legs with vehicular access for all non-residential development being required to be taken directly from a gazette and constructed public road.

10.5 TRAFFIC GENERATION AND DISTRIBUTION

Based on the initial traffic assessment undertaken by Transcore Pty Ltd, and subsequent assessment by the Shire, it is anticipated that once the Structure Plan area and adjoining area are fully developed, that approximately 6,000 vehicular trips (both ins and outs) would be generated per day. These increases in local traffic movement are expected to occur incrementally over time and will necessitate the identified modifications to the local road network and ultimately, significant improvements to the Roe Highway/Berkshire Road intersection.

Figure 17 – Proposed Movement Network - A3

11.0 SERVICING INFRASTRUCTURE

11.1 PREAMBLE

An Infrastructure Servicing Report has been prepared by TABEC – Civil Engineering Consultants to support the preparation of the Structure Plan for Stage 1 of the Forrestfield/High Wycombe Industrial Area and is provided at Appendix D of this report.

The purpose of the preliminary servicing assessment was to:

- Conduct an overview audit of the existing infrastructure adjacent to and within the vicinity of the subject site and to nominate existing infrastructure, which is believed to be suitable for connection for the purposes of development.
- Make preliminary assessments prior to completion of concept design for infrastructure extension and upgrade requirements to suit the development of the subject land.
- Nominate any perceived risks requiring mitigation for the project.

Refer to Appendix D – Berkshire Road Landholdings, Forrestfield – Infrastructure Servicing Report (Tabec Civil Engineering Consultants, April 2010)

11.2 WASTEWATER

The subject land exhibits a suitable topography for construction of gravity sewer systems. There should not be any requirement for construction of internal pumping stations and pressure main infrastructure within the development, as long as future planning for the subject land is completed in consideration of the topography.

The following points are worth noting:

- A small section of the subject land opposite Nowotny Way may require localized filling.
- It is expected that most sewerage construction will be no deeper than three metres, with isolated sections of deep sewer required near connections to existing infrastructure.
- Groundwater is expected to be at least 10 metres below the natural surface.
- The subject land area is expected to include Bassendean Sands and Guildford Clays.
- Groundwater salinity in the area is noted as high, however there should be minimal risk given the depth to groundwater.
- An ASS report should be undertaken on the sewer route – the Perth Groundwater Atlas notes a moderate to low risk of ASS. Bassendean Sands and Guildford Clays can exhibit potential ASS conditions. These options will be discussed with the Water Corporation at the design phase to determine the most suitable point of connection and alignment, when further details are known such as proposed lot levels, road levels and other details which may impact the route selection.

11.3 WATER SUPPLY

It is expected that an upgrade of the water system will be required to suit the full development of the subject land, however it is also expected that some initial staging of development may be negotiated with the Water Corporation prior to the construction of major external infrastructure.

Two preliminary options have been discussed with the Water Corporation, but will be contingent on confirmation of the proposed development framework:

- Option 1 – Upgrade existing main in Dundas Road and extend 400mm diameter main; or
- Option 2 – Construct 500mm diameter main along Sultana Road West (including a bore under Roe Highway).

The bore under Roe Highway would require Main Roads WA approval for construction under a 'Controlled Access Highway'. No manholes or any other infrastructure would be allowed within the Roe Highway reservation. As of April 2010 it was expected that the cost of boring would be around \$1,000 per metre (excluding GST), with a minimum bore distance of the width of the Roe Highway reservation (approximately 100 metres in this location). It is expected that the lower cost solution will be the extension of the 400mm diameter main in Dundas Road, however this will be confirmed during the detailed planning phase with the Water Corporation. The information has been provided as a preliminary assessment only. Water Corporation will confirm these requirements once detailed planning across the subject land has been formalized and approved.

11.4 POWER SUPPLY

As for water and sewer, Western Power will need to consider adjoining developments and plan for major infrastructure works based on the likely yield of development in the area. It is likely that a network consisting of a new or upgraded zone substation, transformers and HV and LV cable will be required throughout the proposed subdivision and the adjoining area.

The subject land is located within close proximity of the existing Forrestfield substation. It has been determined that capacity exists in this substation for connection, however a significant provisional sum should be allocated for provision of transformer / switchgear and pad-mount sites within the subject land as development proceeds and loads on the existing aerial infrastructure surrounding the land are increased. There are existing HV and LV lines in Berkshire Road, Milner Road and Sultana Road West.

It is expected that Western Power will require undergrounding of all infrastructure adjacent to any development works, and all internal infrastructure will be underground.

Planning for major infrastructure such as this is expected to take a minimum of three years, and a strategy should be commenced with Western

Power as soon as practical to implement network planning in consultation with adjoining developers and other requirements.

11.5 TELECOMMUNICATIONS

Existing fibre optic cables in Berkshire Road should be sufficient to service the future development of the subject land.

Telecommunications services are planned jointly by Silcar Networks and Telstra. Plans should be submitted to Silcar once the electrical layout for the development has been generated. The network and system upgrades will then be determined, with plans produced by Silcar / Telstra and a construction programme agreed to suit the development works. All system upgrade costs and external reticulation requirements will be paid for in full by the developer.

It is also important to note, given the size of the proposed development that options with other carriers may be worthwhile to explore. In addition fibre to the home and other bundled packages including digital television, highspeed internet, voice of internet protocol and other packages can be negotiated with various telecommunications providers.

11.6 ALINTA GAS SUPPLY

Gas infrastructure is present in the area. Major assets include:

- 100mm-diameter PVC medium pressure gas main in the eastern side of Nardine Close.
- 150mm-diameter PVC medium pressure gas main in the eastern side of Berkshire Road.

This infrastructure will not be suitable to service the full development, however it should have sufficient capacity to service preliminary stages. This will need to be confirmed by WestNet Energy at the time of development.

WestNet Energy's policy is for all major external infrastructure upgrades to be fully funded by the developer. As for the other services extensions, a forum for developers in the local area should be considered so as to determine load requirements, and therefore apportion a cost contributions scheme to allow the funding and construction of the proposed mains.

It is also the developers' right to consider not providing gas services for the proposed development, should system expansion costs be too prohibitive.

11.7 STORMWATER DRAINAGE

McDowall Affleck were appointed by the Shire to prepare a drainage management plan for the existing and proposed road reserves within the Structure Plan area. These include Nardine Close, Ashby Close, and the proposed new road intersecting Nardine Close and Berkshire Road (referred to as Road 1).

The objective of the plan was to set drainage management guidelines for the existing road reserves and the ultimate development of the proposed road reserves within the subject land.

In terms of flood management the drainage management plan proposes the following:

- Road reserves will be used to convey the 100yr ARI stormwater event to designated drainage areas.
- A minimum habitable floor level of 300mm above the 100-year ARU flood level should be adhered to.

In terms of stormwater management, it is proposed that the stormwater drainage system complies with the following design criteria:

- Stormwater storage shall be designed to retain up to and including the 1 in 100yr ARI storm event through the utilisation of flush kerbed roads and on-site storage.

Storages options considered included the use of swales, underground storage (Stormtech or similar) and compensation basins. Based on efficiency and cost it is recommended that a combination of swales and Stormtech at low points be used to infiltrate the road runoff.

Refer to Appendix D – Berkshire Road Landholdings. Forrestfield – Infrastructure Servicing Report (Tabec Civil Engineering Consultants, April 2010)

11.8 EARTHWORKS

Some sand fill may be required for drainage and infiltration, particularly in areas with high concentrations of Guildford Clays and Bassendean Sands exhibiting low filtration qualities.

Contamination issues from prior agricultural and other uses should also be considered, as similar projects have required removal and remediation treatments to existing soils.

Vegetation in the area is sparse. A few trees may need to be removed on the subject land.

Any demolition of existing buildings must be completed in a careful manner so as to minimize potential of soil contamination. The site should be checked for asbestos and other contaminants by a qualified environmental scientist / engineer.

It is expected that earthworks requirements for the subject land will be minimal, based on the negligible grades and the sloping topography of the subject land. The road and drainage design will need to be sympathetic to the limited topographical and vertical grade changes across the land. This may necessitate some localized filling for road and drainage construction particularly in the north-western corner of the subject land.

Stormwater drainage and earthworks requirements for future development are expected to be based on the following criteria:

- The surface level of each lot will need to given a minimum 300mm freeboard to local 1 in 100 year levels.
- The surface level of each lot should be a minimum 1.2 metres above AAMGL.

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APPENDIX A – ENVIRONMENTAL REVIEW

Berkshire Road and Surrounds, Forrestfield – Environmental Review (VDM Environmental, July 2008)

APPENDIX B – FLORA AND VEGETATION SURVEY

Flora and Vegetation Survey (VDM Environmental, December 2008)

APPENDIX C – LOCAL WATER MANAGEMENT STRATEGY

Forrestfield/High Wycombe Industrial Area – Stage 1 Berkshire Road, Forrestfield – Local Water Management Strategy (ENV Australia, March 2012)

APPENDIX D – INFRASTRUCTURE SERVICING REPORT

Berkshire Road Landholdings, Forrestfield – Infrastructure Servicing Report (TABEC Civil Engineering Consultants, April 2010)

APPENDIX E - STRUCTURE PLAN MODIFICATIONS REPORT

APPENDIX F - PRE-LODGMET CONSULTATION

APPENDIX G - TAYLOR BURRELL BARNETT – PLANNING AND MOVEMENT NETWORK REVIEW