

ATTACHMENTS

Planning and Development Committee Meeting

02 MARCH 2016

6.00pm

City of Albany Council Chambers

PLANNING AND DEVELOPMENT COMMITTEE
ATTACHMENTS –02/03/2016

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CITY OF ALBANY LOCAL PLANNING SCHEME No. 1

AMENDMENT No. 16

SCHEDULE OF SUBMISSIONS AND MODIFICATIONS

No.	Name/Address of Submitter	Summary of Submission	Officer Comment	Staff Recommendation
1	Environmental Protection Authority Locked Bag 33 Cloisters Square PERTH WA 6850	The Environmental Protection Authority (EPA) considers that the proposed scheme amendment should not be assessed under Part IV Division 3 of the <i>Environmental Protection Act 1986</i> (EP Act) and that it is not necessary to provide any advice or recommendations.	Nil.	The submission of no recommendation necessary is noted.
2	Telstra Locked Bag 2525 PERTH WA 6001	Telstra has no objection.	Nil.	The submission of no objection is noted.
3	Water Corporation PO Box 100 LEEDERVILLE WA 6902	The Water Corporation has no objection.	Nil.	The submission of support is noted.
4		The proposed amendment looks to include 'Park Home Park' as a land use with 'D' permissibility, allowing Boronia Gardens Village to operate under this use. I support this amendment as I see it as a benefit to the wider community. The amendment will enable a superior management structure that will undertake consistent, quality landscaping and maintenance. This benefits residents as it allows them to 'lock and leave' their home, whilst having surety that their home and garden will be maintained by management. The 'Park Home Park' land use will also allow for greater provision of communal facilities for residents.	Nil.	The submission of support is noted.

**CITY OF ALBANY LOCAL PLANNING SCHEME No. REPORT ITEM PD117 REFERS
AMENDMENT No. 16
SCHEDULE OF SUBMISSIONS AND MODIFICATIONS**

No.	Name/Address of Submitter	Summary of Submission	Officer Comment	Staff Recommendation
		<p>This development and the associated amendment provides the ageing community of Albany with an affordable, high-quality living option that has not been addressed in the area. On the basis that this amendment has no significant environmental, social or economic impacts, I wholeheartedly support Council's recommendation to administer this amendment.</p>		
5	<p>Portstyle Enterprises Pty Ltd (J Richards) PO Box 235 NORTH PERTH WA 6906</p>	<p>The proposed amendment looks to include 'Park Home Park' as a land use with 'D' permissibility, allowing Boronia Gardens Village to operate under this use. I support this amendment as I see it as a benefit to the wider community. The amendment will enable a superior management structure that will undertake consistent, quality landscaping and maintenance. This benefits residents as it allows them to 'lock and leave' their home, whilst having surety that their home and garden will be maintained by management. The 'Park Home Park' land use will also allow for greater provision of communal facilities for residents.</p> <p>This development and the associated amendment provides the ageing community of Albany with an affordable, high-quality living option that has not been addressed in the area. On the basis that this amendment has no significant environmental, social or</p>	Nil.	The submission of support is noted.

CITY OF ALBANY LOCAL PLANNING SCHEME No. REPORT ITEM PD117 REFERS

AMENDMENT No. 16

SCHEDULE OF SUBMISSIONS AND MODIFICATIONS

No.	Name/Address of Submitter	Summary of Submission	Officer Comment	Staff Recommendation
		economic impacts, I wholeheartedly support Council's recommendation to administer this amendment.		
6	Western Corporate Project Managers and Consultants (R Dixon) PO Box 235 NORTH PERTH WA 6906	<p>The proposed amendment looks to include 'Park Home Park' as a land use with 'D' permissibility, allowing Boronia Gardens Village to operate under this use. I support this amendment as I see it as a benefit to the wider community. The amendment will enable a superior management structure that will undertake consistent, quality landscaping and maintenance. This benefits residents as it allows them to 'lock and leave' their home, whilst having surety that their home and garden will be maintained by management. The 'Park Home Park' land use will also allow for greater provision of communal facilities for residents.</p> <p>This development and the associated amendment provides the ageing community of Albany with an affordable, high-quality living option that has not been addressed in the area. On the basis that this amendment has no significant environmental, social or economic impacts, I wholeheartedly support Council's recommendation to administer this amendment.</p>	Nil.	The submission of support is noted.



Harley Dykstra

PLANNING & SURVEY SOLUTIONS

Amendment No.16

City of Albany Local Planning Scheme No.1

Lot 734 (No.33) Barker Road, Centennial Park

Special Use Site No.17

Prepared by Harley Dykstra Pty Ltd for Portstyle Enterprises Pty Ltd

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Planning and Development Act 2005

**RESOLUTION TO ADOPT AMENDMENT TO
LOCAL PLANNING SCHEME**

CITY OF ALBANY LOCAL PLANNING SCHEME No. 1, SCHEME AMENDMENT No. 16

Resolved that the local government pursuant to section 75 of the Planning and Development Act 2005, amend the above Local Planning Scheme by:

- (1) *Modifying Schedule 4 – Special Use Zones No. SU17, Condition 1 to include ‘Park Home Park’ as a land use with ‘D’ permissibility; and*
- (2) *Modifying Schedule 4 – Special Use Zones No. SU17, to insert a new Condition 6 stating ‘The development of the Park Home Park use will be subject to demonstrating compliance of proposed park homes with the Residential Design Codes as well as the Caravan Parks and Camping Grounds Regulations 1997’.*

The Amendment is standard under the provisions of the Planning and Development (Local Planning Schemes) Regulations 2015 for the following reason(s):

- *The amendment is consistent with the objective identified in the scheme for the zone, which is to provide for residential or tourist residential uses;*
- *The amendment is consistent with the Albany Local Planning Strategy, which identifies the site as part of the ‘City Centre’ area and sets a strategic objective to support urban infill development based on compatibility of land uses and infrastructure capacity; and*
- *The amendment does not result in any significant environmental, social, economic or governance impacts on land in the scheme area.*

Dated this.....day of.....20.....

..... (Chief Executive Officer)

DOCUMENT CONTROL

Control Version	DATE	Status	Distribution	Comment
A	28.05.15	Draft	Client	Draft for Comment and Approval
B	24.09.2015	Final	City of Albany	Lodged with CoA for Approval
C	25.09.2015	Final	City of Albany	Resolution page revised per CoA request

Prepared for: Portstyle Enterprises Pty ltd

Prepared by: DC

Reviewed by: HD

Date: 23.09.2015

Job No & Name: 14456 Portstyle

Version: C

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1 INTRODUCTION & PROPOSAL

This Scheme Amendment is in relation to Lot 734 (No.33) Barker Road, Centennial Park (herein referred to as the 'subject site'). It establishes the strategic suitability of amending the conditions guiding development on Special Use Site No.17, contained in Schedule 4 of the City of Albany Local Planning Scheme No.1.

The purpose of the proposed amendment to the City of Albany Local Planning Scheme No.1 is to insert 'Park Home Park' as a discretionary ('D') use on the subject site. The purpose of this is not to change the form of the development that will eventuate on the subject site, rather the management of the subject site. This is outlined in further detail throughout this report.

1.1 Purpose and Benefits of the Proposal

The proposal to amend the Special Conditions applicable to Special Use Site No.17 seeks to include 'Park Home Park' as a discretionary use on the subject site, benefitting the management of the development. It will have the following benefits:

- Provide a good quality built form demanded by the aging population of Albany;
- Provide a highly demanded model of home ownership and management in close proximity to the central area and other high quality amenities of the City of Albany;
- Provide a management structure that ensures a high standard of landscaping and maintenance is undertaken consistently, resulting in a complex with high amenity in the long term; and
- Provide low maintenance, medium density housing.

Initial consultation with the City of Albany indicated that their main concern regarding the proposal was that it would reduce the quality of the development on the subject site. However, consideration should be given to the fact that the grouped dwelling development granted Planning Scheme Consent by the City of Albany will not change to accommodate the proposed additional land use. This grouped dwelling application showed a layout and housing design that would be synonymous with a 'Park Home Park'. Therefore, the form and quality of development will not change, with the proposal purely required to allow the management and ownership of the dwellings to be undertaken under the *Caravan Parks and Camping Grounds Regulations 1997*. This allows for more flexible leasing and management arrangements for a form of housing that is highly desired by the over 50 demographic.

With the inclusion of the 'Park Home Park' as a discretionary use within Special Use Site No.17, we would anticipate the City of Albany would require a condition applicable to 'Park Home Park', requiring that if a 'Park Home Park' was approved, the residential buildings would still have to comply with the Residential Design Codes. This therefore resolves the notion that type of development will be somewhat modified by the proposal to amend the scheme.

2 SITE DETAILS

2.1 Site Overview

The subject site is located on Barker Road, approximately 1km from the Albany CBD and contains an area of approximately 2.7ha. A location plan is included in Figure 1 below.



Figure 1: Location Plan

[Source: Google Earth]

Surrounding land uses include:

- The Albany Leisure and Aquatic Centre (north);
- Hercules Crescent 'Regional Centre Mixed Business' zoned land (south);
- Albany Garden Holiday Resort zoned 'Caravan and Camping' (west);
- Park Home Park zoned 'Tourist Residential R30/50' (west); and
- Centennial Park 'Light Industry' zoned land (east).

The surrounding area is made up of a mix of land uses typical with this area. It is important to note that the question concerning this application is not that the site will be developed for residential uses, it is the strategic question of the site being used for 'Park Home Park'. This does not differ greatly from the previously approved grouped dwelling proposed. It should also be considered that adjoining the subject site is an existing 'Park Home Park' which provides a good quality of accommodation and is appropriate for the area.

The subject site is flat and currently being constructed in accordance with City of Albany Planning Scheme Consent P2130535. All necessary services and infrastructure are being developed on the site in accordance with this approval.

2.2 Planning History

Planning Scheme Consents have been issued by the City of Albany for the subject site for the development of grouped dwellings (P2130535 & P2150050). These approvals apply to the development of the first stage of Grouped Dwellings (x 21) and second and third stages of Grouped Dwellings (x 50). A copy of the approved Development Plans are included in **Appendix A**.

This approval applied to the layout of the subject grouped dwelling development. However, the development of the grouped dwellings themselves was subject to further refinement, with any additional design required to be provided to the City of Albany to be added to the Planning Scheme Consents, subject to compliance with the Residential Design Codes and other applicable planning framework (Condition A2 of Planning Scheme Consent P2130535 and Condition A5 of Planning Scheme Consent P2150050).

The reason for this process was to give flexibility to the final design of dwellings to be placed on the grouped dwelling sites, so long as they were fully compliant with the necessary requirements, thus voiding the necessity for separate planning applications and approvals to be undertaken and issued for each grouped dwelling if varying designs were progressed.

3 PLANNING REQUIREMENTS

3.1 City of Albany Local Planning Scheme No.1

The purpose of the proposed amendment is to amend the discretionary uses allowed on Special Use Site No.17 of the City of Albany Local Planning Scheme No.1 (LPS 1) to include 'Park Home Park'. The definition of 'Park Home Park' is listed within the *Caravan Parks and Camping Grounds Regulations 1997*, as follows:

“means a caravan park at which park homes, but not any other caravans or camps, are situated for habitation;”

The above definition specifically precludes the site being used for a caravan park or camping ground and must be used for permanent park home accommodation.

As outlined above, the subject site is identified as Special Use Site No.17 by LPS 1. This Special Use Site identifies the types of uses that are allowable, one of which is a 'Grouped Dwelling' which has been approved and is being constructed on the subject site. Other conditions of Special Site No.17 relate to noise attenuation and treatment/setback to Yakamia Creek.

The proposed amendment to LPS 1 will result in 'Park Home Park' being added as a discretionary ('D') use on Special Use Site No.17. The proposed amendment is to be judged on merit only and will have no implications for other sites across the City of Albany.

3.2 Albany Local Planning Strategy

The Albany Local Planning Strategy (ALPS) classifies the subject site as *City Centre*. This use applies to a broad area and mix of uses that are contained within the centre of Albany, including residential, mixed business, recreation and industry.

The main purpose of identifying the *City Centre* classification is to preserve the integrity of the centre of Albany as the main retail, economic and social hub of the City. The proposal to identify *Park Home Park* as a discretionary use within Special Use Site No.17 will not compromise the use of the land. It will still be used for residential uses, as per the approval applicable to the land. However, the management of the subject site will then be able to be altered to a model compliant with the *Caravan Parks and Camping Grounds Regulations 1997*. Therefore, the use and form of development on the subject site for permanent residential will not change, only the model of management and tenure applicable to it, should the proposed discretionary use be supported.

Further to the above, ALPS highlights that medium density urban infill should be promoted in the Albany City Centre, as is approved/proposed on the subject site. As the proposed amendment is not changing the form of the approved uses on the subject site (only the management) and it will still constitute medium density urban infill - it is deemed consistent with the requirements of the Albany Local Planning Strategy.

3.3 Caravan Parks and Camping Grounds Regulations 1997

3.3.1 Introduction

The *Caravan Parks and Camping Grounds Regulations 1997* guide the development of caravan parks and camping grounds in Western Australia, but more importantly, apply to the development, management and tenure of park home parks. In some circumstances park home parks are established within existing caravan parks, but this does not always occur, particularly the neighbouring site which is zoned 'Tourist Residential' by LPS 1.

3.3.2 Land Use

Should the proposal to include *Park Home Park* as a discretionary use on Special Use Site No.17 be permitted by the City of Albany, the use on the subject site would then require approval of the City of Albany as an Application for Grant of Planning Scheme Consent. The purpose of this section of the report is to demonstrate that the approved grouped dwelling on the subject site will not need to change form, layout or proposed house design to comply with the requirements of the *Caravan Parks and Camping Grounds Regulations 1997*.

As shown on the attached Development Site Plans (**Appendix A**), which are approved by the City of Albany in separate Planning Scheme Consents as 'Grouped Dwellings', the following design parameters were applicable to the proposed development:

- 6m wide internal roads, with a 1.2m portion of the road surface (excepting entry) allocated as a pedestrian footpath, allowing vehicles to pass one-another, but also allowing a contained road environment. The *Caravan Parks and Camping Grounds Regulations 1997* requires a 6m minimum separation between sites for the provision of a road;
- Provision of 19 bays for visitors parking;
- Provision of courtyards for each unit, in excess of 20m², with most having a dimension greater than 4m;
- Setbacks between dwellings that are compliant with the Residential Design Codes. The minimum setback between units in the *Caravan Parks and Camping Grounds Regulations 1997* is 3m, which is achieved in all circumstances; and
- Provision of a 754m² landscaped Communal Open Space central and accessible within the development.

When considering the proposal, it should be considered by the City of Albany that the approved grouped dwelling has been designed to comply with the requirements of a Park Home Park. Therefore, the proposal to allow a change to the use of the land will not lead to a change in the use implemented on the site. The primary purpose of the amendment is to implement a change of management structure and tenure that would not be permitted for a grouped dwelling development.

Should it be required to ensure that the quality of the development is maintained, the inclusion of a condition applicable to development within Special Use Site No.17 could state that:

“The development of the Park Home Park use will be subject to demonstrating compliance of proposed park homes with the Residential Design Codes as well as the Caravan Parks and Camping Grounds Regulations 1997”

The above clause recognises that the use of the subject site must be permanent residential by nature and will result in a good quality of housing that complies with the Residential Design Codes. However, if approved as a *Park Home Park*, this will permit the management and tenure of the subject site in accordance with the requirements of the *Caravan Parks and Camping Grounds Regulations 1997*. This form of tenure that is more flexible and more desirable for the desired target market of the subject site which is seniors. This is also a form of development which results in good management and maintenance of landscaping and infrastructure, which is provided for under the park home park management structure.

3.3.3 Tenure and Management

The purpose of the proposal is to simplify the management of the subject site in the long term and not to modify the form of development that will eventuate. In simple terms, the difference between a grouped dwelling and park home park is summarised in the following:

- Within a park home park, the owner of the park home will pay for ownership of the park home, with a lease being paid to the manager for upkeep of common areas and facilities as well as the use of the site. It is then the manager’s responsibility to organise park home park maintenance.
- Within a grouped dwelling, each of the dwellings can either be leased and remain under a single ownership, or should a survey-strata subdivision be completed, each of the individual units can be owned as a separate entity. An annual payment to the body corporate for upkeep and maintenance of the facility.

The predominant benefit of a park home park is that it is a lock and leave facility. In most cases, all gardens and common areas are managed separate to the owners of the park homes, thus removing responsibility and providing for a well maintained facility in the long run. This type of development is well suited to retirees, as it enables them to have a home at a relatively cheap price whilst allowing them to leave and travel should they wish. In many cases, park home park development results in better management and maintenance of landscaping and infrastructure to ensure that the whole complex maintains a high amenity at all times. This is not always achieved in large grouped housing development with individual strata owners.

Within a survey-strata subdivision the arrangement can be more complicated. These properties are normally managed by a body corporate which is usually composed of owners, who arrange and determine maintenance, manage the budget of spending to be undertaken and other tasks. In a park home park development this is all managed separate to the owners of the dwellings, whilst still allowing them to own and occupy a permanent home.

4 REASON TO REQUIRE CHANGE

'Park Home Park' can also be identified as a 'Lifestyle Village'. Lifestyle Villages generally:

- Offer a different experience for the resident than a traditional grouped dwelling development, or even a retirement village by comparison. They are more formally developed with amenities such as clubhouses and the like. In this instance, the approval to lifestyle village would allow us to establish a village park liaison committee with residents that would better maintain standards for the village, look at the use of any facilities such as the addition of a clubhouse, organise activities for residents and the like.
- Lifestyle villages are dealt with under the Residential Parks (Long-stay tenants) Act 2006, which provides somewhat clearer guidance for both the operator and the tenant in terms of obligations and benefits. While this can be dealt with through normal lease agreements it is beneficial for all parties to operate under the village model. This act also provides more clearly for 'Park Rules' to be made for the communal benefit of the village that might address noise, parking, sharing of common areas and the like. Again these can be dealt with through traditional tenancy agreements but the village model deals with these with greater clarity for all parties.
- Importantly the setting of park rules and the obligations to manage home alterations and additions can be clearly managed (controlled) through the lifestyle village model. We do not believe it is this model that provides for a myriad of home extensions, but in fact the operator of a particular village. Good management and village rules can ensure a high amenity development is maintained. There is a clear opportunity to control extensions and/or have requirements in place to be of materials, colours and finishes that match the home. We are happy to have any such approval linked to this, as we ourselves would retain this to ensure continued high standards.
- (Note that Development Approval to Stages 2 & 3 has been obtained, consistent with Stage 1, for all homes and there's no intention to modify these).
- The park village model can often mean that residents are entitled to Rent Assistance. While this will always relate to an individual persons circumstances, the "El Cabello Lifestyle Village" north of Perth highlights this in their website See: <http://www.eclv.com.au/faq.html> (mid way down page).
- There is no desire in this case to run "short-stay" or caravan / camping style rental. The landowner is seeking to progress the project as a lifestyle village comprising long-stay tenants who own their home, while renting the home site. In this sense they are all "owner occupier" and have a vested interest in the village being maintained and operating well.

Good lifestyle villages can function as important communities for those seeking to downsize, while not wanting to pursue retirement villages with high cost rent / deposit schemes or more general villa developments where there is no opportunity for resident interaction.

Many lifestyle villages are developed remotely from town centres on the basis that "everything's on site". In this case we believe that the Centennial Park area offers an opportunity to operate a

high quality lifestyle village in the heart of Albany, with some facilities on site yet easy access to transport, hospitals, shops and the like. The lifestyle village model will provide an opportunity for residents who could not otherwise afford to live in such a location to do so.

5 CONCLUSION

The proposal to include the discretionary ('D') use of 'Park Home Park' on Special Use Site No.17 by amending the City of Albany Local Planning Scheme No.1 has sound planning grounds and is a standard amendment.

The proposal will not result in a reduced quality of development and will essentially mirror that which has been previously approved on the subject site by Planning Scheme Consents P2130535 and P2150050.

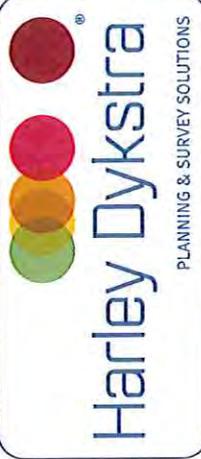
The proposal ensures that the use of the subject site for medium density housing can continue, but allows a modified form of ownership and management that is more desirable to the target market (being over 50's housing) in compliance with the *Caravan Parks and Camping Grounds Regulation 1997*. Without the use of 'Park Home Park' being permitted, this ownership and management would not be able to occur on the subject site within the current parameters of Special Use Site No.17.

It is respectfully requested that the City of Albany provides its support for the initiation of a Scheme Amendment to the City of Albany Local Planning Scheme No.1 allowing 'Park Home Park' to be added as a discretionary ('D') use within Special Use Site No.17.

APPENDIX A – APPROVED DEVELOPMENT SITE PLANS

DEVELOPMENT SITE PLAN

BORONIA LIFESTYLE VILLAGE
Lot 734 Barker Road
Albany



SCALE AT A3 1:1000
ALL DISTANCES ARE IN METRES

DRAWN CHECKED DRAWING NO DATE
ABS 17/12/2014 SDP 17/12/2014 14456-12A.dgn 17/12/2014
REV DESCRIPTION
A Original Drawing

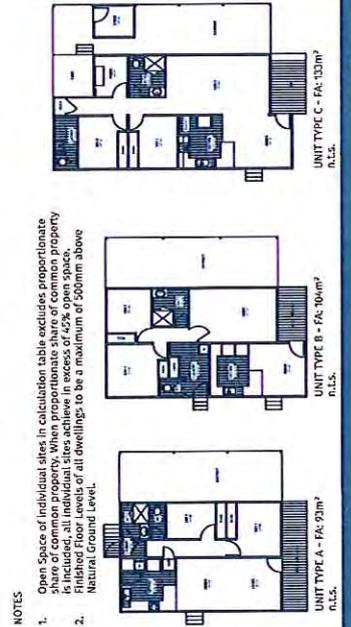
LEGEND

- OPEN SPACE / LANDSCAPE AREAS
- VEGETABLE GARDEN AREA
- GAZEBO & BBQ
- STAGE BOUNDARY
- BUILDINGS
- MASONRY ACOUSTIC WALL
- COMMON DRIVEWAY
- PEDESTRIAN FOOTPATH

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NOTES

- Open Space of individual sites in calculation table exclude open spaces included in the development. When appropriate share of common property is included, all individual sites achieve in excess of 45% open space. Finished Floor Levels of all dwellings to be a maximum of 500mm above Natural Ground Level.

UNIT	Area	Open Space	Private Open Space	Private Open Space %
1	104	200	200	19.2
2	104	200	200	19.2
3	104	200	200	19.2
4	104	200	200	19.2
5	104	200	200	19.2
6	104	200	200	19.2
7	104	200	200	19.2
8	104	200	200	19.2
9	104	200	200	19.2
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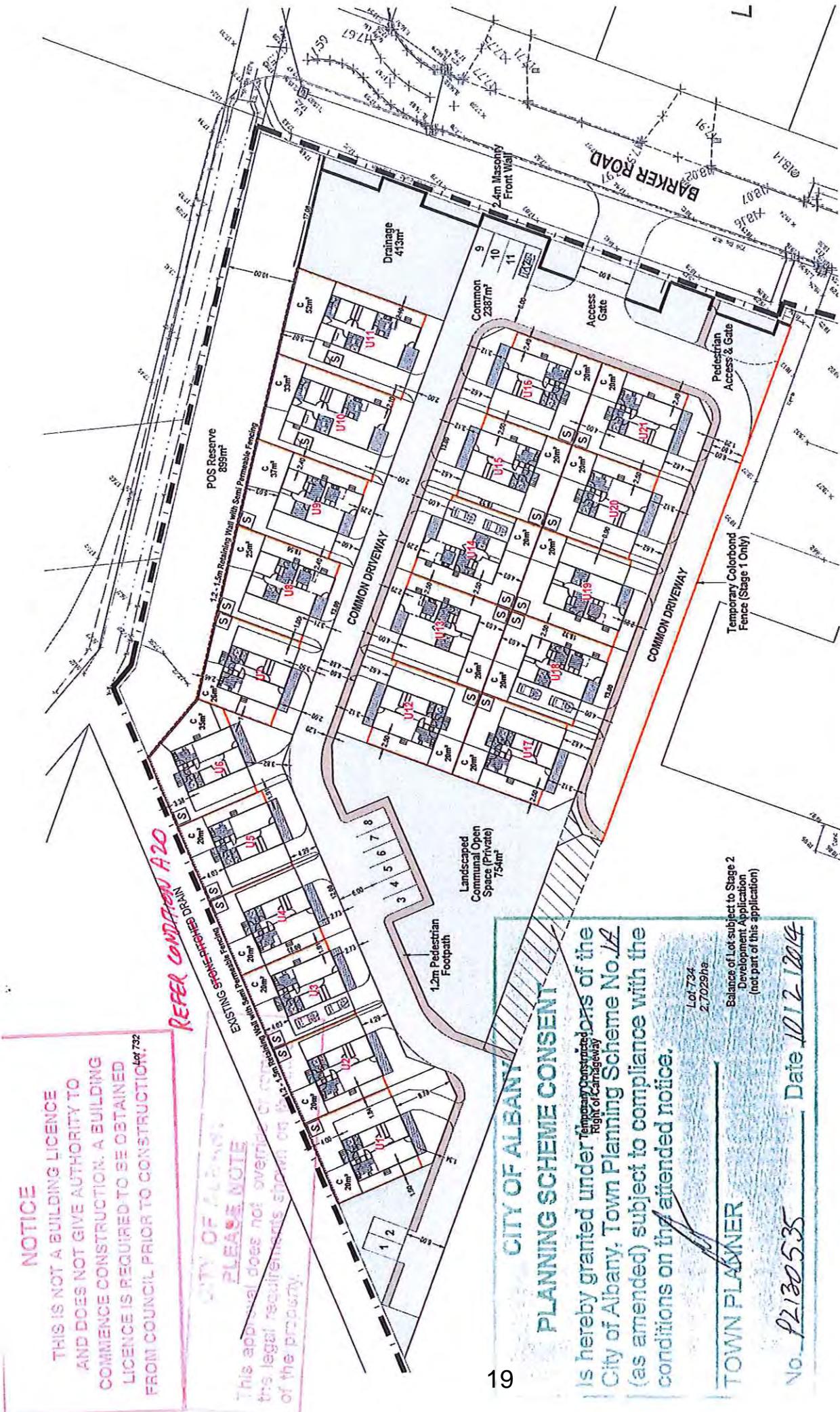


Figure 4
 Note: This document may only be used for the purpose for which it was prepared. It is not to be construed as a contract. The dimensions, areas and number of lots are subject to survey and also the requirements of the relevant legislation.
 0074608-POSU4-Dwg-1311114

27 November 2013

 1:500 @ A3

NOTICE
 THIS IS NOT A BUILDING LICENCE AND DOES NOT GIVE AUTHORITY TO COMMENCE CONSTRUCTION. A BUILDING LICENCE IS REQUIRED TO BE OBTAINED FROM COUNCIL PRIOR TO CONSTRUCTION.
 Lot 732

REFER CONDITION A20

CITY OF ALBANY
 PLEASE NOTE
 This approval does not override any other legal requirements shown on the plans of the property.

CITY OF ALBANY
PLANNING SCHEME CONSENT
 Is hereby granted under Temporary Constructed Bars of the Right of Carriageway City of Albany, Town Planning Scheme No. 12 (as amended) subject to compliance with the conditions on the attached notice.
 Lot 734
 2,702sqm
 Balance of Lot subject to Stage 2 Development Application (not part of this application)
TOWN PLANNER
 No. PL130535 Date 10.12.2014

DB
DYKSTRA
PLANNING

Subdivision, Planning, Structure
 Surveying, Management, Planning,
 Design, Advisory
 PO Box 376 Melbourne, VIC 3001
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 admin@dykstra.com.au

PART DEVELOPMENT SITE PLAN
 Lot 734 Barker Road
 ALBANY

REPORT ITEM PD118 REFERS



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Town Planner & Chartered Surveyor

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SUBMISSION TO THE COUNCIL OF THE CITY OF ALBANY REQUESTING MODIFICATIONS TO THE BIG GROVE OUTLINE DEVELOPMENT PLAN INsofar AS IT RELATES TO LOT 2 [No877] FRENCHMAN BAY ROAD.

PART A BACKGROUND

1 Introduction

The owner of Lot 2 [No 877] Frenchman Bay Road, Big Grove (the subject land) has commissioned this practice to prepare a submission to the Council of the City of Albany (the Council) requesting modifications to the Big Grove Outline Development Plan (BGODP) with the objective of achieving the outcome of subdividing a portion of the subject land into lots having areas of around 2500m² without the requirement to connect to reticulated sewerage.

2 The Land

The subject land is more particularly described as Lot 2 on Diagram No 32760 within part of Plantagenet Location 111, Certificate of Title Volume No 1940 Folio No 165.

It contains an area of 9.4266 ha and has a frontage to Frenchman Bay Road of 130.43m, a depth of 728.65m, a frontage to the Foreshore Reserve to Princess Royal Harbour of 113.28m and has a general north-north-east to south-south-west orientation.

It is located at the eastern end of the privately held land areas in Big Grove north of Frenchman Bay Road and is adjoined on its eastern boundary by bushland reserves and to its north by a foreshore reserve to Princess Royal Harbour. Properties to the west are held in private ownership and used generally as large rural-residential holdings in common with the subject land itself. Opposite the land in Frenchman Bay Road is part of the extensive Torndirrup National Park.

Lot 2 is identified on a copy of the BGODP Plan at Appendix No 1.

3 Physical Features

Although there is extensive vegetation on the land, much of it comprises a plantation of eucalypt trees extending from an area of natural vegetation approximately 75m deep along the Frenchman Bay Road frontage northwards to a point some 450m distant from that road. Land beyond that point comprises disturbed natural vegetation, planted areas and gardens associated with the established dwelling in the north-east corner of the Lot. The driveway to the dwelling follows the eastern boundary of the Lot.

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Topographically, in common with adjoining land areas, the subject land rises from Frenchman Bay Road but thereafter slopes gently down to Princess Royal Harbour with only very minor fluctuations. A Site Topography and Features Map is included within the Aurora Environmental Report attached to this submission.

4 Local Planning Scheme Provisions

The currently operative planning scheme for the City of Albany is Local Planning Scheme No 1 (the Scheme) gazetted on 28th April 2014. Under that Scheme, the subject land together with most of the privately held lots in the Big Grove enclave north of Frenchman Bay Road is classified "Future Urban".

In part, and relevantly, the Objectives of this Zone state the following:-

Provide for structure planning of land within the zone to guide and coordinate land use and infrastructure provision where multiple ownerships or larger parcels of land requiring the staging of development is involved so that:

- (i) Future urban land is not fragmented or developed in such a way as to make urban development more costly or difficult;**
- (ii) Development does not create an unreasonable or uneconomic demand for agencies to provide or extend public infrastructure or services;**
- (iii) There is equitable sharing of the costs of infrastructure between owners and to ensure that cost contributions are only required towards such infrastructure as is reasonably required as a result of the subdivision and development of land; and**
- (iv) Servicing agencies and Local Government can coordinate the timely provision of infrastructure to support the subdivision and development.**

Consistent with this objective, a structure plan, known as the Big Grove Outline Development Plan (copy of plan at Appendix No 1) was prepared in December 2009 and finally adopted as Policy by Council on 26th August 2014. It covers the entire enclave known as Big Grove being the privately held land north of Frenchman Bay Road.

The preparation of Structure Plans is specifically authorised under the provisions of Clause 5.9 of the Scheme Text which sets the form which such Plans should take and the procedures through which they should pass prior to approval. Further the Scheme provisions also allow certain aspects of a Structure Plan to have force and effect as if enacted as part of the Scheme (although it is understood that this provision will be negated by the operation of the Planning and Development (Local Planning Scheme) Regulations 2015 due to be gazetted within a few weeks with operative effect to be on or around 19th October. After the commencement of the operation of those Regulations, structure plans will become instruments to which "due regard" must be paid in decision making by planning agencies). To the extent that the BGODP has been adopted by Council as Policy it will be more consistent with the position produced by the proposed new Regulations.

5 Provisions of the Big Grove Outline Development Plan (ODP)

It is not the function of this submission to address all of the provisions of this ODP but rather to focus upon those aspects that have relevance to the subject land.

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There are significant variations from the general norm within the ODP with respect to the way the Lots at the western and eastern (Lot 2) extremes are treated for future subdivision and land use. Insofar as concerns Lot 2, apart from the entire Frenchman Bay Road frontage being shown as an area of Public Open Space to a depth of some 75m, the balance of the holding is shown as being within a residential land use area with, variously, the R 10, R 17.5 and R 40 Density Codes of the Residential Design Codes being applied.

The area allocated to an R 10 density coding occupies some two-thirds of the eastern portion of the lot and has been so designated because of the recommendations of the Fire Management Plan Report (FMP) prepared to complement and justify the ODP. That FMP advocated that the eastern part of the lot should comprise lower density development so that fewer dwellings would be at risk of damage in the event of a fire. With respect to precautions in the event of fire, the ODP also shows a 40m wide building setback area from the eastern boundary which would comprise a 6m wide trafficable accessway for fire fighting vehicles and Building Protection and Fire Hazard separation Zones.

The balance of the holding apart from the Public Open Space and the R 10 coded area is allocated to the R 17.5 Code with the exception of an area of approximately 3500m² in the extreme north-west corner of the lot which is allocated to the R 40 Code and has a common boundary at its northern end with the Foreshore Reserve to Princess Royal Harbour.

Among the other provisions of the ODP that are addressed in the Text to the ODP are statements in Paragraphs 14 and 21 that all new subdivision and development is to be connected to reticulated sewerage infrastructure.

PART B PROPOSED MODIFICATIONS TO BIG GROVE OUTLINE DEVELOPMENT PLAN

6 Proposed subdivision of Lot 2

The owner of Lot 2 proposes to subdivide that portion of his land shown coded R 10 within the BGODP with the intention of creating a homestead lot over the existing dwelling on the land but also a number of other lots having areas of around 2500m² which is quite permissible within the R 10 coding as that represents a maximum density only. However, in practice the subdivision density would be lower than R 5. A schematic sketch of that form of subdivision is shown at Appendix No 3 B.

While the R10 coding selection applied to this portion of the BGODP was predicated on the recommendations of the FMP, that lower density development occur closer to areas of bushland within adjoining reserves, it is submitted that it did not take into account the likely patterns of subdivision of that area as largely dictated by the configuration of the land so coded. As such the R10 coding is considered inappropriate for the following reasons;

- i) Using the diagrammatic road layout for the BGODP area, the R10 density of 1,000 sqm lot size is unachievable as demonstrated by the schematic sketch of subdivision at Appendix 3A showing the minimum lot sizes achievable are 1,520 sqm based on the minimum frontage allowable of 20m and the depth of 76m (as determined by the area

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designated R 10 Code - low density). The actual lot size achievable represents an R coding of approximately R6.5.

- ii) In trying to achieve the density of R10 coding, if 1,520m² lots were to be created they would have very poor proportions in terms of their frontage to depth ratio at close to 1:4. Such lots would be most unattractive given that the extra space would not result in greater separation between buildings with improved residential amenity that a low density subdivision might normally be expected to deliver and would result in dwellings being erected in a pattern similar to traditional subdivisions with very little separation distances from one another. This would also not achieve the objective of the FMP as argued in paragraph 4 below.
- iii) Rather than lots of that shape being created, orderly and proper planning suggests a more appropriate ratio of around 1:2. To achieve such a subdivision on the low density land, frontages would need to be approximately 33m with the set depth of 76m, yielding a lot size of around 2,500m² as shown in the schematic subdivisional design at Appendix 3B. This, it is submitted, would be more consistent with an R5 coding; a more appropriate coding than R10.
- iv) It might be expected that the philosophy behind the low density requirement would be that dwellings would have greater separation distances between them; reducing the prospects of fire spreading from one to another and with better access to defend each property in the event of fire. In trying to achieve the density of R10 coding the 1,520m² lots with a 20m frontage would not be likely to achieve that outcome. Creating larger lots according to an R5 coding with frontages of around 33m would provide increased and more practical separation distances between dwellings. This is more than adequately demonstrated by reference to Appendices 3A and 3B; the former showing building envelopes at 17m width and separation distances at 3m, the latter using the same building envelope size showing 16m separation distances between them. It is submitted that the above reasons justify that the most appropriate R coding for the low density land on part of Lot 2 is R5 rather than R10 and as such is more likely to satisfy the objectives of the FMP.

While it is not necessary to amend the provisions of the BGODP to reduce the R Coding from R 10 to R 5,(given that subdivision does not have to occur at the maximum permissible density), it is considered that it would be an appropriate adjustment to make to distinguish the R 10 coded area on part of Lot 2 from other land coded in the same way.

7 Sewerage

As already noted, the BGODP states in two places in the text (Clauses 14 and 21) that all subdivision and development within the ODP area will not be supported unless the proposal concerned is connected to a reticulated sewerage service.

Presently the nearest sewerage service is some 3kms distant from Lot 2 and, economically, it would be impossible to connect the proposed new lots to that service.

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With subdivision being proposed at a density equivalent to R5 with lots of approximately 2,500m², it is submitted that, based on the arguments set out in the Draft Country Sewerage Policy September 2002, (amended in September 2003), it is not necessary for the subdivision to be connected to reticulated sewerage provided it can be demonstrated that on-site septic effluent disposal can be achieved without off-site implications of any consequence.

One of the objectives of that Draft Policy is that it should:-

“provide flexibility in the control of subdivisions or density developments for which reticulated sewerage is unlikely to be available for some time.”

Further, in respect of “Large Lots” that Draft Policy provides as follows:

Proposals for large lot subdivision or density development can be considered if they do not involve the creation of lots less than 2000m², or density development at a density greater than R5, provided the statutory authority, after considering the advice of consultative authorities, is satisfied that there is no opportunity within the area covered by the proposal for further subdivision without sewerage.

In terms of lot size, it is noted that, under a proposed future Government Sewerage Policy, (advertised for public comment but as yet not promulgated) under the heading “Minimum Lot Sizes for Unsewered Developments and Subdivisions” the Department of Health recommends a minimum lot size for unsewered subdivision of 1000m². This lends even greater credence to the adequacy of the lot sizes proposed in this submission to dispose of septic effluent on-site.

It can also be argued that the land is “Remote and Isolated” for the purposes of the presently operative Draft Country Sewerage Policy further justifying the notion that a low density subdivision of less than 25 lots at a density of R5 or less need not be connected to reticulated sewerage.

As set out below in paragraph 11, it is requested that Council initiate modifications to the BGODP to remove the requirement to connect the low density subdivision of Lot 2 to reticulated sewerage. It is also seen to be appropriate, for the purpose of distinguishing the R 10 coded land on Lot 2 from other land so coded, that the BGODP be modified to reduce the R 10 coding over that portion of Lot 2 to R5.

8 Subdivision Considerations

An Application for Approval to Subdivide could be submitted to the Western Australian Planning Commission (the Commission) to undertake the subdivision as now proposed (i.e. without connection to sewerage) irrespective of the provisions of the BGODP. However, the view is taken that, as the provisions of the BGODP have force and effect as if enacted as part of LPS No 1, (although that will change as a result of shortly-to-be-gazetted Regulations as already noted) there would be significant constraints on both the Commission and the Council to process favourably any such Application in the light of its provisions.

Section 138 of the Planning and Development Act 2005 (as amended) provides, in part, that the Commission shall have **“due regard to the provisions of any local planning scheme that applies to the land under consideration and is not to give an approval that conflicts with the provisions of a local planning scheme”**. (After the new Regulations come into effect, both the Commission and the Council will continue to be required to have “due regard” to the provisions of a local planning scheme (as complemented by any ODP) when making their respective decisions.)

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While Section 138 goes on to allow certain actions that are not inconsistent with the intent of the Scheme, it is considered that the provisions of the BGODP should be modified to remove the conflict such that the Commission may not feel constrained to refuse a Subdivision Application because of its very specific sewerage connection provisions.

Similarly, the Council is responsible for implementing the Scheme and as such is duty bound to have due regard to the provisions of its own Scheme when making recommendations to the Commission about how a Subdivision Application should be determined. Modification of the BGODP to provide for unsewered subdivision in the manner proposed in this submission would allow Council to make a favourable recommendation to the Commission. If the BGODP is modified in these ways, both the Commission and the Council would have the opportunity to deal with any such Subdivision Application without being seen to disregard its existing sewerage provisions.

9 Possible Objections to Unsewered Subdivision on Part of Lot 2

a) Potential Impact on Water Quality in Princess Royal Harbour

During the course of enquiries with respect to promoting the present submission, it was indicated that on-site septic effluent disposal would not be acceptable due to potential impacts on water quality in Princess Royal Harbour which has suffered various adverse impacts from time to time from differing sources.

In an endeavour to address this issue by those having appropriate expertise, Aurora Environmental were engaged to advise of possible impacts. Their findings are contained within the attached report (Appendix No 2) which explains the sources of pollution to the waters of the Harbour and demonstrates that urban groundwater and run-off contribute, proportionately, minimal levels of pollution. The report goes on to conclude that “**there is no appreciable risk to water quality in Princess Royal Harbour**” from a subdivision of the subject land if alternative treatment plants (ATUs) are used.

The reader is referred to that document for the detailed justification for reaching that conclusion. (Appendix No 2)

b) Precedent

The present submission for a minor modification to the provisions of BGODP, insofar as they relate to Lot 2, is not inconsistent with the land use and development expectations of the Plan. All of that land will continue to be used for the purposes stated in the Plan and, other than those portions coded R10, all other residential areas are coded R 17.5 or higher as part of the “Future Urban” expectations of LPS No 1.

For the higher density coded areas, sewerage connections would typically be required so the exemption of the portion of Lot 2 within the R 10 code would not change any requirements for sewerage in the balance of the BGODP area. A subdivision as envisaged in this submission with appropriate adjustments to the BGODP would pre-empt any further subdivision of this part of Lot 2.

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An area of R 10 Coded land is shown adjacent to the western boundary of the BGODP area for the same reasons as for Lot 2. It forms parts of three existing lots, Lots 10, 11 and 12 Panorama Road, with varying proportions over each. Those proportions in each case are, however, significantly less than the proportion of R 10 coded land over Lot 2. The corollary is that, there will be a greater need for sewerage to be connected to those lots to service the higher density portions of those lots than would be the case for Lot 2. Thus, with proportionately greater lot yields from higher density areas on each of those lots and much closer proximity to the existing/extended sewerage service, there are few similarities between the two areas Coded R 10 and certainly insufficient to suggest that the present proposal relating to part of Lot 2 would constitute some sort of precedent for similar action on the R10 coded land on Lots 10, 11 and 12. The diagrammatic road layout for Lots 10, 11 and 12 is also different and likely to lead to a different pattern of subdivision.

It is asserted, therefore, that there are distinct differences between the planning circumstances appropriate to the subject land and other land areas within the BGODP with the result that identical planning arguments to those now applied cannot be promoted with equivalent relevance to any other land in that Plan area. Consequently, no precedent would be set by permitting subdivision as proposed in this submission.

Even in the event that the foregoing arguments are not fully accepted, precedent must be considered against relevant case law. Precedent, as a planning argument, was considered by the State Administrative Tribunal in the case ***Nicholls and Western Australian Planning Commission*** (2005) WASAT 40; 149 LGERA 117 at (71) – (75). In that case, the Tribunal adopted the following criteria as to the circumstances in which precedent is a relevant consideration in a planning assessment, from ***Goldin v Minister for Transport*** (2002) 121 LGERA 101 as consistent with Western Australian authority;

- 1) That the proposed development or subdivision is not in itself unobjectionable; and
- 2) That there is more than a mere chance or possibility that there may be later undistinguishable applications.

For precedent to be a relevant factor, both tests must be satisfied. It is considered that the first test can be determined in the affirmative and the second in the negative in the sense that there are unlikely to be later undistinguishable applications. As to the first, for reasons discussed earlier, the amendment to the BGODP for the subject low density land to allow subdivision using on-site sewerage disposal is of itself unobjectionable as it conforms with all relevant planning criteria. Secondly, the subject land, for reasons also discussed earlier, is distinguishable from other land in the BGODP. The only other low density coded area in the BGODP with some similarities is a small section on the western boundary, which is considered distinguishable from the subject land in terms of road layout, proportions of land coded R10 and R17.5 and its closer proximity in the BGODP to the Water Corporation's sewerage front.

c) Reduction in Lot Yield

While some argument can be mounted along the lines that the greater the number of lots created from the BGODP the more economical the provision of sewerage will become, it is considered that the proportion of lots to be created from the R10 portion of the subject land compared to the total overall yield from the whole BGODP area is minimal.

Appendix 4 shows a projected lot yield table for the whole BGODP area from a report on the

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BGODP for an Ordinary Council Meeting & Briefing Agenda – 14/12/10. The table summarizes the projected lot yield as anticipated by the developer/applicant which prepared the BGODP. This table shows the average lot sizes as projected by the applicant for the R10 coded land at 1,500m². Based on this lot size of 1500m², which, for all practical purposes, is the minimum that can be achieved for the subject land under R10, the proportion of lots created (namely 26 as per Appendix 3A) represents 2.6% of the total BGODP. In terms of the more appropriate size lot of 2,500m² for the subject low density land (16 as per Appendix 3B) as argued in this submission, the proportion of the total BGODP is 1.6%. Impact on the viability of providing reticulated sewerage would, therefore, be barely noticeable and is unlikely to influence whether or not such a service is extended to the area.

Furthermore, in addition to the argument that a smaller number of lots be created over the low density portion of the subject land, its location within the BGODP makes the concept of contributing to the extension of services/infrastructure to the area even more impractical. The subject land is the eastern-most property in the BGODP and, as such, is the furthest from the Water Corporation's existing sewer.

Adjoining the subject land is the major landowner and applicant for the BGODP, Peet Tri State Syndicate Ltd (Peet) which owns some 58% in one contiguous parcel. Advice from the Water Corporation is that the most likely scenario of extending sewer to the area is along the foreshore to a pump station in the most westerly corner of Peet's land.

As it is not feasible to extend the sewer some 3 kms (past all the other properties in the BGODP) to service the subject land by itself due to the argued, more appropriate, lower lot yield from the low density land (which will also respond more favourably to market conditions), the only other option is to wait for Peet to extend the sewer. Peet is the largest landowner creating potentially the greatest number of lots requiring an extension to the sewer. This will inevitably take many years due to the current over-supply of small residential lots in Albany and current low market demand.

When development does occur, Peet will, most likely, extend the sewer to the western corner of their land as indicated by the Water Corporation and develop in stages from the west and work east over the years. The western point of Peet's land is some 1 km from the subject land and the cost extending sewer this distance for the subject land (considering its yield) is not viable. Once Peet has staged development over the years to a point where it is close to the subject property the viability of connection to sewer may become greater but with very low density subdivision it could conceivably still not be economic to connect. With current market conditions and the potential number of lots on Peet's land, it is expected that this time frame will be decades.

As mentioned, some two thirds of the subject land is zoned low density to achieve the objectives of the FMP which, as put forward in this submission, will still not achieve the desired outcome at R10 density. An even lower density is more likely to be more consistent with that outcome. This, combined with approximately 10% of the land being designated POS, limits the number of lots that can be created. These sacrifices in development potential for the subject land along with the extra costs to be borne by the subject property in abiding by the FMP, all in the interests and safety of the overall BGODP area, raises the question of whether it is reasonable to place an even greater impost over the subject land in being required to contribute to the cost of extending the sewer to the locality. This is especially relevant when the proportional number of lots created from the low density area of Lot 2 to the overall number of lots to be created within the BGODP is minimal.

d) Acid Sulphate Soils

Extensive testing has not been undertaken but, from information currently to hand, although there may be some acid sulphate soils along and near the foreshore to Princess Royal Harbour, there is no indication that the land is so affected. More details in this regard can be compiled as and when formal subdivision proposals are put forward.

10 Benefits of Lower Density, Unsewered Subdivision

Provision of New, Atypical Lots to Meet a Particular Need.

The preparation of the BGODP was undertaken at a time when the expectations of future urban development and residential property take-up were high before the global financial crisis. A far more pragmatic and probably more realistic view of the potential for subdivision and development in this area currently prevails with future subdivision and development as envisaged by the Plan being unlikely for many years.

The sewerage requirement over the whole Plan area with all of its associated costs operates to effectively remove any present potential for subdivision and, therefore, any prospect of lots being provided for those who wish to live in the area.

The proposal to create some additional, larger lots in the locality would not only partially redress this problem but also supply lots not typically created; filling a market niche.

Improved Lot Proportions

As previously argued, subdivision of the R10 Coded area of Lot 2 to its maximum density would result in the creation of exceptionally poorly proportioned lots with a frontage to depth ratio of approximately 1 in 4. The present proposal envisages lots of much improved size and shape with a frontage to depth ratio of 1 in 2. Lots of this shape would be far simpler to develop and provide greater separation between dwellings, thus improving residential amenity.

With fewer dwellings adjoining the Bushland Reserves, the graduation between the natural bushland areas to urban development would be softened.

Improved Compliance with FMP Provisions

The creation of some 17 new lots on the fringe of the BGODP area, as distinct from the much greater number capable of being created at the maximum R 10 density, not only produces lots of significantly improved shape and proportions but also reduces the number of dwellings exposed to the risk of fire from adjoining reserves containing natural bushland. Moreover, with increased space between dwellings, there will be more likelihood that properties can be defended from one another should a fire occur. The objectives of the FMP would be realised to an even greater degree than might have been envisaged when the R 10 code was applied through the ODP.

PART C REQUESTED MODIFICATIONS TO BGODP

11 It is requested that the Council, and by extension the Commission, as the agencies involved in the approval processes for ODPs adopt modifications to the BGODP as provided for in Clause 5.9.1.6 in accordance with or generally along the lines of the following:-

- i) **Proposed Modification to Clause 14 of the Text accompanying the BGOCDP as provided for in Clause 5.9.1.6 of the Scheme Text to LPS No1 to include words in italics and underlined below.**

14) Sewer and Water Infrastructure

All future development and subdivision (except for the creation of retained lots to excise existing dwellings adjacent to the foreshore and South Coast Water Reserve Priority 2 Protection Area and lots created within that part of Lot 2 coded R5 on the ODP Plan) within the ODP area is to be provided with reticulated water and reticulated sewerage infrastructure. Subdivision and development within the ODP area shall not be supported unless the proposal can provide reticulated water and sewerage services.

- ii) **Proposed Modification to Clause 21 of the Text to include words in italics and underlined below.**

Standard conditions expected to be imposed relate to:

- Provision and connection to infrastructure (power, water, sewer (except as provided in Clause 14), telecommunications);

- iii) **Proposed Modification to the BGODP Plan as follows:-**

Amend the legend to the Plan to show a further notation under the Low Density Residential land uses of "Low Density Residential (R5)" with a suitable distinctive annotation on the Plan itself to cover the area of land presently coded R10 within Lot 2.

Gordon G Smith

OUTLINE DEVELOPMENT PLAN PROVISIONS

GENERAL

- Detailed Fire Management Plans shall be submitted with subdivision applications to the WAPC in accordance with Planning for Bushfire Protection - Edition 2.
- To the extent the creation of any road shown on the ODP requires any easement or other interest in that land to be extinguished, the proponent must at its cost (including any compensation that may be payable) arrange for the interest to be extinguished.
- For areas identified as Low Density Residential (R25) the average site area shall be 400m² rather than 350m² as per Clause 2 of the Outline Development Plan Report.

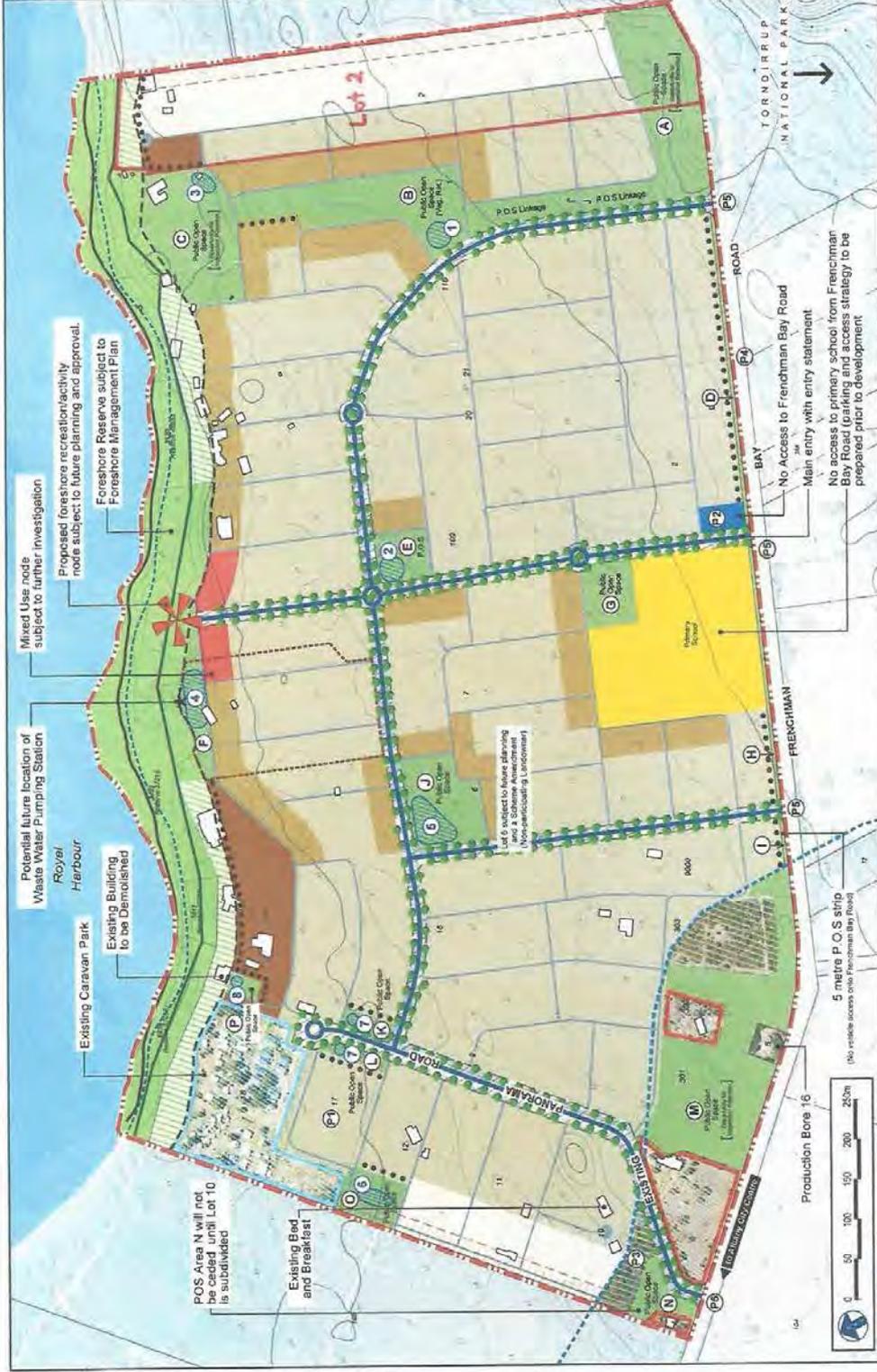
(P1) Should the owner of Lot 17 wish to change the use of the land to residential rezoning from 'Motel' to 'Residential Development' zone prior to any residential subdivision or development would be required. Any rezoning requires separate approval by the Minister for Planning.

(P2) A Detailed Area Plan is required for the Village Centre prior to development and shall be in accordance with the City of Albany Residential Design Code Policy with car parking in accordance with the City of Albany Scheme.

(P3) Land identified as "Residential" to be retained for vegetation protection and added to one lot outside the Priority 2 Protection Area at the time of subdivision. Further subdivision, erection of a dwelling or waste disposal is prohibited.

(P4) Should a need for widening of the Frenchman Bay Road be identified, such widening will need to be accommodated north of Frenchman Bay Road (to meet the City requirements, Public Open Space schedule may require adjustment at subdivision stage).

(P5) Frenchman Bay Road intersection with the Traffic Assessment Report at the subdivision stage.



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CHAPPELL
LAMBERT
EVERETT

FIGURES

Client: P & B Corporation
 Date: 29 March 2012
 Scale: 1:5,000 (A3)
 Plan No: 30054-002-01p1

S.V.: PLANNER
 R.F.: DESIGNER
 N.T.: CHECKED

OUTLINE DEVELOPMENT PLAN (O.D.P.)
 Big Grove, ALBANY

LEGEND

Land Use:

- Village Centre (R40 - R40)
- Public Open Space (R10)
- Residential (R25)
- Low Density Residential (R25)
- Medium Density Residential (R20)
- Residential
- Rural Residential
- Township
- Mixed Use (R30)

Other:

- Dual Use Park (2m width indicating agreement only)
- 5 metre P.O.S. strip (No vehicle access onto Frenchman Bay Road)
- Public Open Space (with use as a public open space)
- Future Forestry Reserve
- Fire Protection
- POSS Identify
- Development Plan Provision identifier
- Reserve Boundary as shown on P11-1001

Infrastructure:

- Primary School
- Public Open Space (with use as a public open space)
- Future Forestry Reserve
- POSS Identify
- Development Plan Provision identifier
- Reserve Boundary as shown on P11-1001

Other:

- Proposed Process and Forestry Reserve Strip (as required by the M.F.P. Region 10)
- Disposal Area Plan (DAP) for lots adjoining P.O.S. Strip (with use as a public open space)
- Fire Protection
- POSS Identify
- Development Plan Provision identifier
- Reserve Boundary as shown on P11-1001

APPENDIX No 2
REPORT DATED 7TH AUGUST 2015
BY
AURORA ENVIRONMENTAL



7 August 2014

George Vasiliu
877 Frenchman Bay Road
BIG GROVE WA 6330

Dear George,

ON SITE EFFLUENT DISPOSAL ASSESSMENT – ANALYSIS – LOT 2 (No. 887) FRENCHMAN BAY ROAD – BIG GROVE OUTLINE DEVELOPMENT PLAN

Aurora Environmental has undertaken an assessment of a portion of Lot 2 Frenchman Bay Road in Big Grove (Attachment 1) to determine suitability of the area for on-site effluent disposal.

BACKGROUND

Lot 2 is part of the Big Grove Outline Development Plan (BGODP) area (Attachment 2). The area examined comprises the portion of Lot 2 which is designated 'Low Density Residential – R10' under the BGODP, where lot sizes will be larger than 1000m² (Attachment 2). The landowner wishes to create lots greater than 2000m² to allow for lot widths of at least 34m.

The larger lot sizes of the R10 area has been assigned due to the proximity of Reserve 930 immediately to the east, which comprises native vegetation with a high fire risk. On-site effluent disposal is being considered for this portion of Lot 2 as the provision of a reticulated sewer service is not considered to be a financially feasible option in the short to medium term.

Princess Royal Harbour

The subject land is located approximately 150m south of Princess Royal Harbour. EPA Bulletin 412 (1990) states that concern regarding the water quality of Princess Royal Harbour dates back to the early 1970s when a survey of water quality was undertaken for the Albany Port Authority raised initial concerns. In 1976 the Albany Waterways Management Authority was established to ensure that the water quality of the Albany harbours remained high. Testing in 1978 and 1979 indicated that some areas of the Harbour had high levels of faecal bacteria, but that the overall nutrient status was acceptable. However, in 1983 fish tissue samples indicated relatively high levels of mercury.

An intensive survey of the sediments and biota from the Harbour showed high levels of mercury and lead. Subsequently, the *Albany Harbours Environmental Study* was undertaken (1988 to 1989) and summarised by the Environmental Protection Authority (Bulletin 412; EPA, 1990). The main findings relating to the Harbour included that nutrients and heavy metals entering the Harbour were mostly from point sources, including King Point Wastewater Treatment Plant, Vital Foods, CSBP Wesfarmers Ltd, Princess Royal Seafoods, Metro Meats, Albany Woollen Mills, Albany Wharf and Hanrahan Road landfill (Plate 1). More diffuse sources such as groundwater and rural and urban stormwater runoff also contributed to nutrient loads.

2A Nakina Street, Albany 6330 T (08) 6914 5000 F (08) 9941 3570

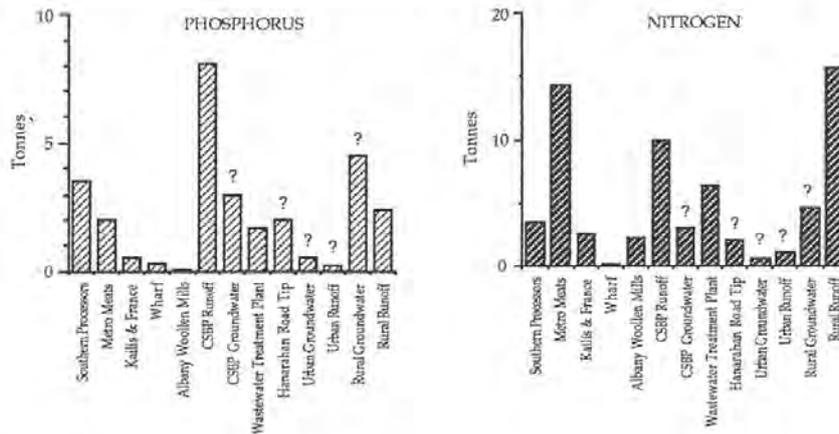
Mr G. Vasilii
 On-site Effluent Disposal Assessment and Analysis – Lot 2 Frenchman Bay Road, Big Grove

Urban groundwater was estimated to contribute less than 0.5 of a tonne of phosphorus per annum compared to the total input of 18.15 tonnes of phosphorus to the Harbour in 1988 (South Coast Rivercare, 2015). The EPA (1990) noted that urban groundwater contaminants originated from a number of sources including Hanrahan Road landfill, CSBP and to a lesser extent garden fertilising and septic tanks. This indicates that only a very small proportion of nutrients in the groundwater could be attributed to septic tanks.

Septic tanks are likely to contribute significant amounts of nitrogen and phosphorus to the soil, but the current load of nutrients entering the harbour from this source is not accurately known. *Princess Royal Harbour Nutrient Audit Tables* (South Coast Rivercare, 2015) estimated that total groundwater input, part of which comprised septic tank effluent, contributed around 0.99 tonnes of phosphorus and 5.8 tonnes of nitrogen per annum between 1988 and 2001, a small fraction of overall nutrient input (Attachment 3).

As of 2001, the annual nutrient input into Princess Royal Harbour was estimated to be 2.66 tonnes of phosphorus (6.8 fold reduction from 1988) and 20.56 tonnes of nitrogen (2.9 fold reduction from 1988) (Attachment 3). The reduction in nutrient inflow to the Harbour is mostly related to addressing nutrient export from point sources, as reticulated sewer was not extended to Little Grove until 2006.

Plate 1: Inputs of Phosphorus and Nitrogen to Princess Royal Harbour in 1988



Note: ? indicates estimate. Source: EPA, 1990 – Bulletin 412

PURPOSE AND SCOPE

The purpose of this investigation was to determine the suitability of the subject land for on-site effluent disposal.

The scope of work undertaken included the following:

- Review existing policy and guidelines to determine if the subject land meets the minimum site requirements for on-site effluent disposal. The relevant policies and guidelines included:
 1. *Draft Country Sewerage Policy* (Department of Health (DOH), 1999 as amended 2003). This document governs onsite effluent disposal until the Draft Government Sewerage Policy is finalised;

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On-site Effluent Disposal Assessment and Analysis – Lot 2 Frenchman Bay Road, Big Grove

2. *Government Sewerage Policy – Consultation Draft* which was released by DoH in 2011. When this Policy is finalised, it will replace the *Draft Country Sewerage Policy*; and
 3. *Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATUs)* (DOH 2001).
- Collect the following information for the subject land:
 - A description of soil profile to a depth of 2.0m;
 - Soil permeability;
 - Soil phosphorus retention index;
 - Groundwater levels;
 - Site topography and any other constraining features such as rock outcrops, water courses and steep slopes; and
 - Site observations (e.g. site contamination, proximity to wetlands, water courses, or conflicting land uses (for residential development)).
 - Review the data collected and comment on the type and location of appropriate wastewater treatment systems, comment on the suitability of area for irrigation and determine whether on-site effluent disposal is consistent with policy requirements and guidelines.

POLICY AND GUIDELINES REVIEW

Septic Tanks and ATUs

Modern policies (e.g. *Planning Bulletin 7 Government Sewerage Policy Perth Metropolitan Region WAPC, 1995*) consider that septic tanks in close proximity to waterways are not an appropriate method of waste disposal in the long-term, because as the surrounding soil becomes increasingly saturated with nutrients, less are retained and therefore are likely to migrate to waterways via groundwater. In the instance of Princess Royal Harbour, the reduction of septic tanks is being resolved through the provision of reticulated sewer to Little Grove and surrounding residential areas (where density, cost and accessibility allow).

The development and use of ATUs in Western Australia as an alternative to septic tanks has improved the treatment and disposal of waste water on-site. These units have allowed for larger lots in unsewered areas to be developed.

The Department of Health (DoH) recognises the use of ATU systems for which it provides approval, for single houses, multi-residential and non-residential developments where reticulated sewer cannot be connected (or connection is problematic). ATUs treat waste water to a high standard, removing pathogens and nutrients via biological (bacteria and vegetation in irrigation areas) and chemical processes (adsorption of nutrients, disinfection). The treated waste water is disposed over a dedicated irrigation area to assimilate any remaining nutrients using plants or soil with adsorption potential. Some ATUs are specially designed to remove phosphates through precipitation, irrigation and/or use of amended soils. In Western Australia, all ATUs are required be serviced quarterly to ensure optimal operation.

For these reasons, the use of ATUs in sensitive areas is considered to be a legitimate way to safely treat waste water, as long as the subject land meets criteria outlined in Western Australian on-site waste water treatment policy documents.

WESTERN AUSTRALIAN POLICY REQUIREMENTS

The *Draft Country Sewerage Policy 1999* (as amended 2003) states:

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- Section 5.2: Proposals for large lot subdivision or density development can be considered if they do not involve the creation of lots less than 2000m², or development at a density greater than R5 and provided that there is no opportunity within the area covered by the proposal for further subdivision, without reticulated sewerage.
- Section 5.3: Proposals in remote and isolated locations may be supported, depending on the nature of the site and the waste water disposal arrangement chosen, and subject to:
 - the development being a maximum density of R10 and no more than 25 lots or dwelling units in total;
 - the overall objectives of the Policy not being compromised; and
 - the statutory authority being satisfied, after considering the advice of consultative authorities, that the intended wastewater disposal arrangements are acceptable.

Due to the fire risk associated with Reserve 860 adjacent to the subject land and the desire to create lots with a frontage of at least 34m, the proposed lot sizes will be in excess of 2000m². It is unlikely that there will be further subdivision of the proposed lots. Therefore, the proposed subdivision of Lot 2 meets the above requirements of the *Draft Country Sewerage Policy 1999 (as amended 2003)*.

The *Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATUs)* (DOH, 2001) describes requirements for ATU installation, including allotment requirements, setbacks, assignment of an irrigation area, landscaping, depth to groundwater and consideration of phosphorus retention ability of the soil. These matters are considered below.

DATA ANALYSIS AND COMPLIANCE WITH SITE REQUIREMENTS

Data has been collected to inform the BGODP planning process (Coffey Environments, 2009) and provides information about the subject land and compliance with the *Draft Country Sewerage Policy (DoH 1999, As Amended 2003)* And *Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATUs)* (DoH, 2001).

Lot Size

The *Draft Country Sewerage Policy (DoH 1999, As Amended 2003)* states that proposals for large lot subdivision or density development can be considered if they do not involve the creation of lots less than 2000m². The *Draft Government Sewerage Policy (DoH, 2011)* states that minimum lot sizes could be 1000m² for areas with gravels and sands, sandy loams and loams. The R10 section of Lot 2 will meet these allotment criteria.

Topography and Groundwater

Available topographical data indicates that the highest point of the land occurs in the south eastern corner at 20m AHD and the lowest point 5mAHD adjacent to the foreshore reserve boundary in the north (Attachment 1). There are no slopes in the development area that exceed a one in five gradient.

Groundwater level data has been collected from two monitoring bores adjacent to the subject land which are reflective of conditions on the site (MB6 and MB7; Attachment 1). Data collected between 2010 and 2012 (Table 1) indicates that the maximum groundwater level in the southern portion of the subject land (MB7) is 4.51m below ground level (BGL) or 8.95m AHD. Groundwater levels in this area fluctuated by approximately 0.95m annually. The northern portion of the land, adjacent to the Princess Royal Harbour foreshore reserve (MB6) experienced a maximum ground water level of 1.63m BGL or 2.97m AHD. Groundwater levels in this

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 On-site Effluent Disposal Assessment and Analysis – Lot 2 Frenchman Bay Road, Big Grove

area fluctuated by approximately 1.1m annually. These groundwater levels indicate that the land is suitable to ensure an adequate distance to groundwater for on-site effluent disposal.

Table 1: Maximum and Minimum Groundwater Elevations and Slopes

Location	Bore Depth (mBGL)	Maximum (mBGL)	Minimum (mBGL)	Surface (mAHD)	Minimum (mAHD)	Maximum (mAHD)	Change (m)
MB6	3.55	2.73	1.63	4.60	1.87	2.97	1.10
MB7	5.45	(>5.45)	4.51	13.45	(<8.00)	8.95	>0.95
Requirement: Draft Country Sewerage Policy (DoH 1999, As Amended 2003)				Compliance:			
At least 0.5m separation between the natural ground surface and the highest known groundwater level. Correctly engineered drainage solutions may be used to increase the clearance between the natural surface and the highest known groundwater level, subject to such drainage works being environmentally acceptable.				The subject land meets this requirement as there is at least 0.5m separation to maximum groundwater levels.			
The natural land slope on which wastewater disposal is to occur shall not exceed a one in five gradient.				The subject land does not contain slopes with a greater than one in five gradient.			

Soil Profile

A review of the *Environmental Geology Series* maps prepared by the Geological Survey of Western Australia was undertaken to determine the geology of the site. The site is located on the Albany Part Sheets 2427 I, 2428 II, 2527 IV and 2528 III (Gozzard, 1989). The geological units that make up the topographical features of the site are described as:

- **L55** – comprises limestone, very pale brownish yellow, fine to medium, sub-rounded quartz and shell debris, generally friable.
- **S14** – comprises sand, white to pale grey, fine to medium, occasionally coarse, angular to sub-angular quartz, little fines, moderately sorted.

The unit L55 is predominant over the site, with the unit S14 only occurring close to Frenchman Bay Road. The soils in the study area are of adequate depth for installation and operation of ATUs, as shown by bore log information in Gozzard (1989) which indicates sandy soils to a depth of 50m BGL. There are no rock outcrops or water courses associated with the subject land.

Requirement: Draft Country Sewerage Policy (DoH 1999, As Amended 2003)	Compliance:
The site is required to have soil characteristics capable of receiving all wastewater likely to be generated on the site without risk to public health or the environment. Sites that have shallow or no permeable topsoils, underlain by rock or low permeability soils (e.g. clays, etc.) are less able to receive wastewater.	The subject land meets this requirement as there are friable loamy lime sands (L55) and a small portion of friable white to grey sands (S14) close to Frenchman Bay Road.

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 On-site Effluent Disposal Assessment and Analysis – Lot 2 Frenchman Bay Road, Big Grove

Soil Permeability

Infiltration tests have been undertaken at MB6 and MB7 to determine the general permeability of the soil at the site. The K_{SAT} results summarised in Table 2.

Table 2: Calculated Ksat Values and Drainage Classification

Location	K_{SAT} (m/Day)	Permeability
MB6	0.576	Low permeability
MB7	10.736	Medium permeability

* Soil Category as per Standards Australia 1547:2012.

Based on infiltration testing results, the calculated K_{SAT} values are 0.576m/day at MB6 which equates to 'low permeability' and 10.736m/day at MB7 which equates to medium permeability. Based on this permeability, the soils at MB6 fall into category 4, a loam with low permeability and MB7 a sandy loam with medium permeability (Standards Australia, 2012). These permeability rating are considered to be adequate for on-site effluent disposal and irrigation (Standards Australia, 2012).

Phosphorus Retention Index

Soil samples have been tested from locations MB6 and MB7. The PRI for the soil samples taken at MB6 is 83.1 and 0 at MB7 (Attachment 1). As noted in *Water Quality Protection Note 22: Irrigation with Nutrient Rich Wastewater* (DoW, July 2006), soils with Phosphorus Retention Index (PRI) ratings higher than 10 have a reduced risk of leaching nutrients through the soil profile and into the groundwater. The DoH published *Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units* (DoH, 2001) specifies that surface irrigation disposal areas need to contain soils with PRI values greater than 20. If soil PRI is less than 20, then high-PRI amended soil are recommended for the site. The LS5 sands have an adequate PRI for on-site effluent disposal. For areas which contain the S14 soil type, it is recommended that amended soil be used for irrigation areas.

Sensitive Receiving Bodies

The *Draft Country Sewerage Policy* (1999; as amended 2003) provides buffer distance requirements to environmentally sensitive areas. The buffers that apply to the subject land for ATUs are:

- All water features – 100m. The development area is not within 100m of a water feature (Princess Royal Harbour is 150m north of development area).
- Estuaries, watercourses and marine environment - 30m. The development area is more than 30m from an estuary/ marine environment (Princess Royal Harbour is 150m north of development area).

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 On-Site Effluent Disposal Assessment and Analysis – Lot 2 Frenchman Bay Road, Big Grove

Setbacks

Table 3 summarises the site conditions in relation to *Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATUs)* (DOH, 2001).

Table 3: Summary Table

Requirement	Site Condition	Comment
Irrigation Area – Disposal minimum area 150m ² .	An area of at least 300m ² would be available for irrigation. An additional 100m ² would still be available for recreation and social activities.	The subject land and proposed lot configuration can meet the disposal area requirement.
Setbacks for irrigation area: Fencing: 1.8m Buildings: 1.8m Paved surfaces: 1.8m Wells, bores dams, water courses used for human consumption or proclaimed water catchment area: 30m	The site is yet to have detailed planning for these elements. However, there is enough space to allow for this requirement. There are no water features within 30m of the subject land.	The subject land and proposed lot configuration can meet the disposal area requirement.
Setbacks for ATU: Boundaries or buildings: 1.2m surface irrigation disposal area: 1.8m Wells, bores dams, water courses used for human consumption or proclaimed water catchment area: 6m	The proposed lots will provide enough space to allow for these requirements. There are no water features within 6m of the proposed lots.	The subject land and proposed lot configuration can meet the disposal area requirement.
Phosphorus Retention Index: Values lower than 20 require use of amended soils.	The PRI values are 83.1 (MB6) and 0 (MB7).	Soils comprising LS5 are suitable for general ATU systems. S14 soil types require the use of amended soils to retain phosphorus.
Depth to groundwater: 500mm from upper irrigation area to highest known water table.	The maximum ground water level occurs in the norther portion of the subject land (MB6) which has been recorded at 1.63mBGL.	The subject land and proposed lot configuration can meet the disposal area requirement.

Source: Requirements from *Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATUs)* (DOH 2001).

CONCLUSIONS

Aurora Environmental has conducted a review of the available information for Lot 2 to determine whether on-site waste water treatment and disposal is suitable for the subject land. Based upon a review of the relevant Policies, Guidelines and available site data, Aurora Environmental considers the subject land meets the criteria for on-site effluent disposal and is suitable the use of systems, including ATUs. The use of ATUs

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(particularly phosphate removing systems) will ensure that there is no appreciable risk to the water quality in Princess Royal Harbour.

If you would like to discuss this assessment, please contact the undersigned on 0447 446 343 or melanie.price@auroraenvironmental.com.au.

Yours sincerely



Melanie Price

Associate Environmental Scientist
Director – Aurora Environmental Albany

Attachments

- Attachment 1: Site Maps
- Attachment 2: Big Grove Outline Development Plan
- Attachment 3: Nutrient Input – Princess Royal Harbour

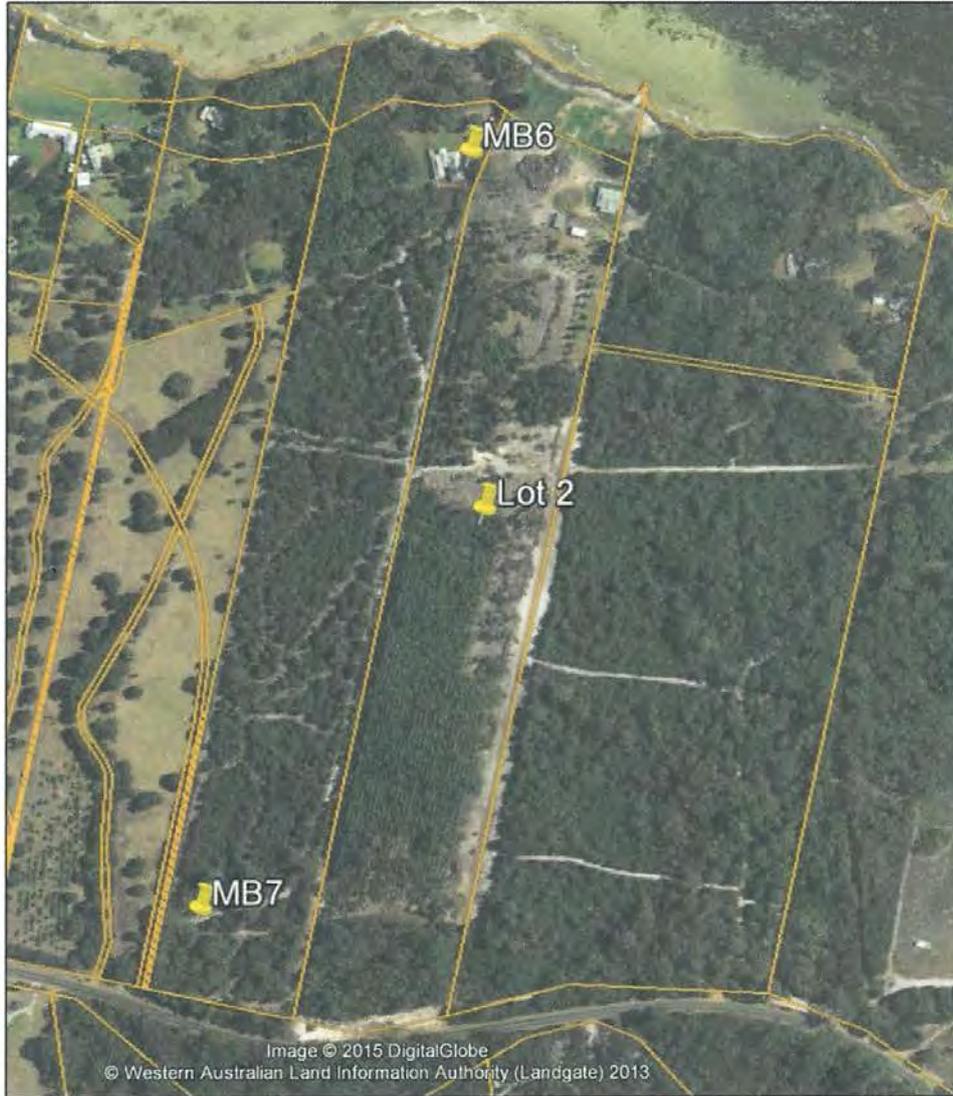
References

- Coffey Environments (2009)** Local Water Management Strategy – Big Grove Outline Development Plan Area, Albany.
- DoH, Department of Health (1999, as amended 2003)** Draft Country Sewerage Policy.
- DoH, Department of Health (2001)** Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATUs)
- DoW, Department of Water (2006)** Water Quality Protection Note 22: Irrigation with Nutrient Rich Wastewater.
- EPA, Environmental Protection Authority (1990)** Albany Harbours Environmental Study. Bulletin 412.
- Gozzard, J.R. (1989)** Albany 1:50,000 Environmental Geology Series, Part Sheets 2427 I, 2428 II, 2527 IV, & 2528 III. Geological Survey of Western Australia, Perth, WA.
- South Coast Rivercare (2015)** Sourced on 4 August 2015 from: <http://www.rivercare.southcoastwa.org.au/infodata/albanyc/princessh/tables.html>
- Standards Australia (2012)** Australian/ New Zealand Standard – On-site Domestic Wastewater Management AS/NZS 1547:2012

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On-site Effluent Disposal Assessment and Analysis – Lot 2 Frenchman Bay Road, Big Grove

Attachment 1: Lot 2 Frenchman Bay Road, Big Grove

Air photo, cadastre and testing locations



Source: Google Maps, 2015

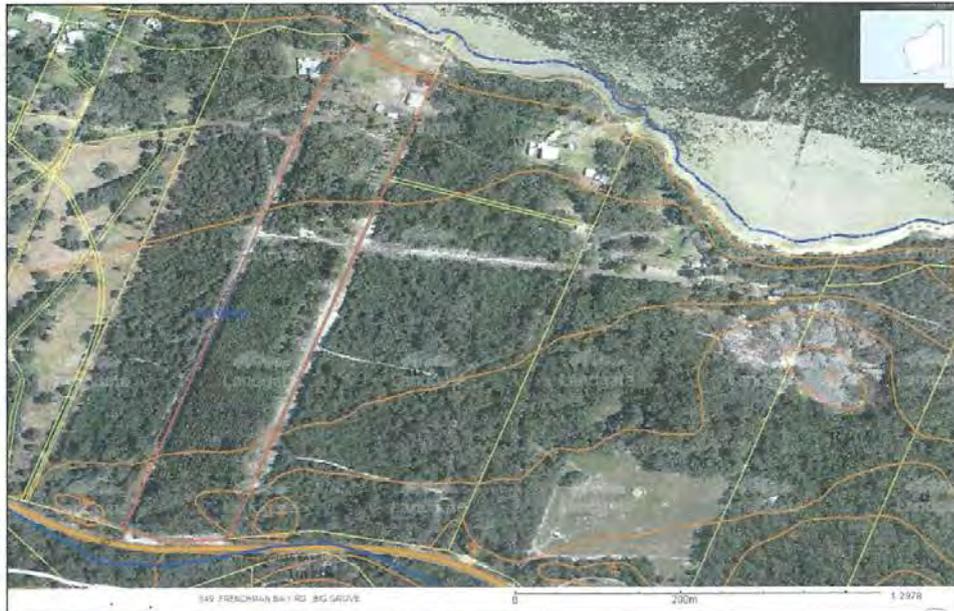
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Site Details



Site Topography and Features



Source: Landgate Map Viewer (2015)

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Attachment 2: Big Grove Outline Development Plan

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Attachment 3: Nutrient Input – Princess Royal Harbour

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Princess Royal Harbour nutrient audit tables

Table 1. Total Phosphorus (tonnes) Entering Princess Royal Harbour 1988-2001

Source	1988	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	EPA Target
Vital Food ¹	3.50	5.60	3.40	2.98	0.35	0.60	0.48	0.46	0.46	0.69	2.71	0.58	0.66
Metro Meat ²	2.00	2.10	1.70	1.77	0	0	0	0	0	0	0	0	0.43
Wesfarmers-CSBP ³	8.10	2.10	0.26	0.02	0.04	0.01	0.05	0.02	0.01	0.03	0.06	0.07	0.80
Princess Royal Seafoods ⁴	0.50	0.50	0.10	0.30	0	0.14	0.06	0.06	0.10	0.28	0.23	0.08	0.10
Albany Spinning Mills ⁵	0.10	0.10	0.10	0.03	0.02	0.04	0.01	0.02	0.02	0.01	0	0	0.15
Total Industry	14.20	10.40	5.56	5.10	0.41	0.79	0.60	0.56	0.59	1.01	3.00	0.73	2.14
Albany Drainage District ⁶	1.10	0.70	1.80	1.00	0.90	0.66	1.31	0.75	0.65	0.98	0.61	0.68	4.60
WAWA Treatment Plant ⁷	1.60	1.60	1.60	1.60	1.60	0	0	0	0	0	0	0	0
Urban Surface Water ⁸	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.30
Total Groundwater ⁹	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	-
Total Other Sources	3.95	3.55	4.65	3.85	3.75	1.91	2.56	2.00	1.90	2.23	1.86	1.93	5.00
Total All Sources ¹⁰	18.15	13.95	10.21	8.95	4.16	2.70	3.16	2.56	2.49	3.24	4.86	2.66	7.14

Table 2. Total Nitrogen (tonnes) Entering Princess Royal Harbour 1988-2001

Source	1988	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	EPA Target
Vital Food ¹	3.40	7.70	7.80	10.00	1.93	2.84	2.86	3.11	1.50	1.66	2.89	1.46	2.19
Metro Meat ²	14.3	8.40	11.20	10.30	0	0	0	0	0	0	0	0	1.42
Wesfarmers-CSBP ³	10.00	6.00	2.40	2.24	1.71	2.02	2.13	2.55	1.37	1.47	3.29	1.92	3.35
Princess Royal Seafoods ⁴	2.50	2.50	0.40	0.30	0	1.22	1.02	0.85	0.77	0.54	1.64	0.84	0.34
Albany Spinning Mills ⁵	2.30	1.00	0.70	0.67	0.57	0.55	0.12	0.24	0.24	0.12	0	0	0.78
Total Industry	32.5	25.60	22.50	23.51	4.21	6.63	6.13	6.75	3.88	3.79	7.82	4.22	5.98
Albany Drainage District ⁶	10.00	8.50	11.50	9.50	9.50	8.03	9.35	10.58	6.49	9.04	10.14	5.24	13.50
WAWA Treatment Plant ⁷	6.40	6.40	6.40	6.40	6.40	0	0	0	0	0	0	0	0
Urban Surface Water ⁸	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	0.06
Total Groundwater ⁹	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	-
Total Other Sources	27.50	26.00	29.00	27.00	27.00	19.13	20.45	21.68	17.59	20.14	21.24	16.34	14.10
Total All Sources ¹⁰	60.00	51.60	51.50	50.51	31.21	25.76	26.58	28.43	21.47	23.93	29.06	20.56	20.10

Notes

- Formerly Southern Processors. Reports of overflows into harbour received during year, and it is likely monitored discharge underestimates true discharge.
- Metro Meat ceased operations in April 1993.
- CSBP discharge into Munster Hill drain. See 6 below.
- Formerly Kailis and France. No processing in 1994, restarted in June 1995. Connected to sewer May 2001. No discharge information for January-May 2001. Austral Fisheries took over late 2001.
- Formerly Albany Woollen Mills. Connected to sewer mid 1999. 1999 figures estimated at half 1998 figures, as not licenced and no information available. Company ceased operating 2000.
- Data infrequent or absent for years 1988-1994. 1995 to 2001 figures considered reliable. Includes both Robinson Road and Munster Hill Drains.
- WAWA Treatment Plant ceased discharge into harbours from Point King outfall in February 1995.
- Figures based on initial study by Town of Albany. Estimated 1993 figures used for each year, and no annual monitoring.
- Figures based on Albany groundwater study (Yu and Williamson, WRC 1998). Figures replaced earlier estimates.
- Does not include spillage at Port, which has been unpractical to measure. The number of fertiliser shipments vary from year to year. Also does not include Woolstores Drain, the catchment of which includes Hanrahan Road Landfill Site. Monitoring in 2001 suggests 9,759 kg of TN, 9 kg of TP into drain.

Table 3. Foreshore Industry Nutrient Discharge (tonnes) to Princess Royal Harbour 2001

Industry	Total Phosphorus	EPA Target Phosphorus	Total Nitrogen	EPA Target Nitrogen
Vital Food	0.58	0.66	1.46	2.19
Wesfarmers-CSBP	0.07	0.80	1.92	3.35
Princess Royal Seafoods	0.08	0.10	0.84	0.34
Albany Spinning Mills	Nil	0.15	Nil	0.78

8/5/2015

South coast river catch: Princess Royal Harbour nutrient audit tables

Metro Meats	Nil	0.43	Nil	1.42
Industry Total	0.73	2.14	4.22	5.98

* assumes discharge in 2001 same as same period for 2000, as no monitoring undertaken.

Table 4. Foreshore Industry Parameter Variations 2001

Parameter	Vital Food	Wesfarmers-CSBP	Princess Royal Seafoods ^a	EPA Guidelines
TSS (mg/L)	31 - 580	1 - 20	17 - 3100	80 mg/L
BOD (mg/L)	400 - 2100	N/A	210 - 2600	100 mg/L
TN (mg/L)	9 - 150	3.5 - 80	16 - 145	10 mg/L
TP (mg/L)	2 - 12	0.4 - 2.4	1.1 - 50	3 mg/L
O&G (mg/L)	N/A	N/A	7 - 780	30 mg/L

* assumes discharge in 2001 same as in same period for 2000, as no monitoring undertaken.

Table 5. Foreshore Industry Discharge Load and Parameter Compliance 2001

Industry	Phosphorus		Nitrogen	
	Load	Concentrations	Load	Concentrations
Vital Food	3	8	3	8
Wesfarmers-CSBP	3	3	3	8
Princess Royal Seafoods ^a	3	8	8	8

* assumes discharge in 2001 same as in same period for 2000, as no monitoring undertaken.

3 = Compliance with EPA recommendations

8 = Non-compliance with EPA recommendations

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APPENDICES Nos 3A & 3 B

**SCHEMATIC SKETCHES OF SUBDIVISION
OF
LOT 2, FRENCHMAN BAY ROAD,
BIG GROVE,
ALBANY**

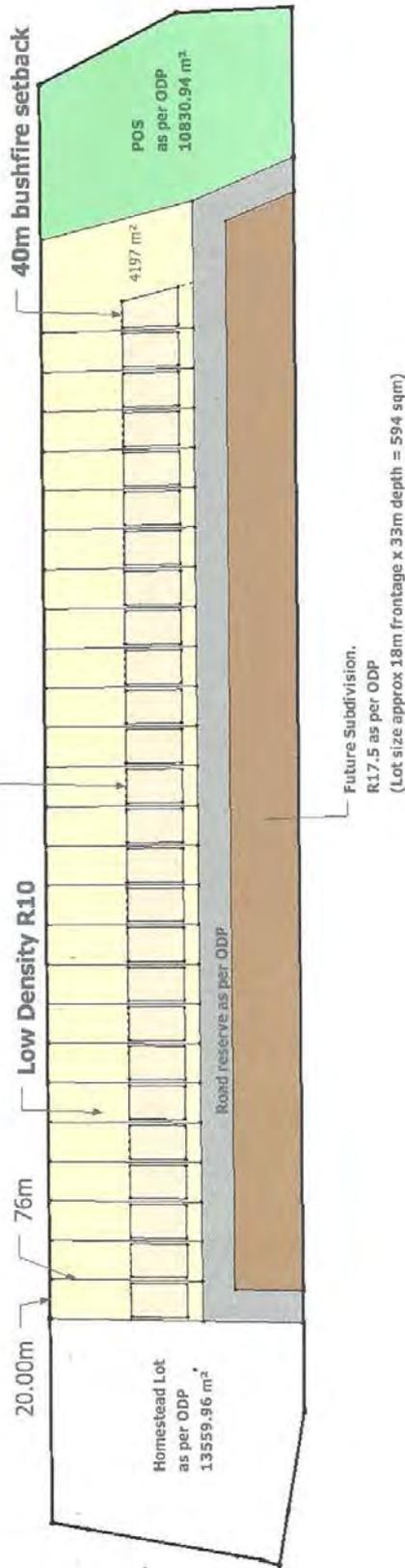
Appendix 3A

Schematic sketch of subdivision of low density land coded R10 as per ODP

Showing minimum lot sizes achievable

(20m min. frontage x 76m depth = 1520 sqm)

Maximum building envelope.
17m wide at minimum side boundary setback
of 1.5m. 3m separation between envelopes

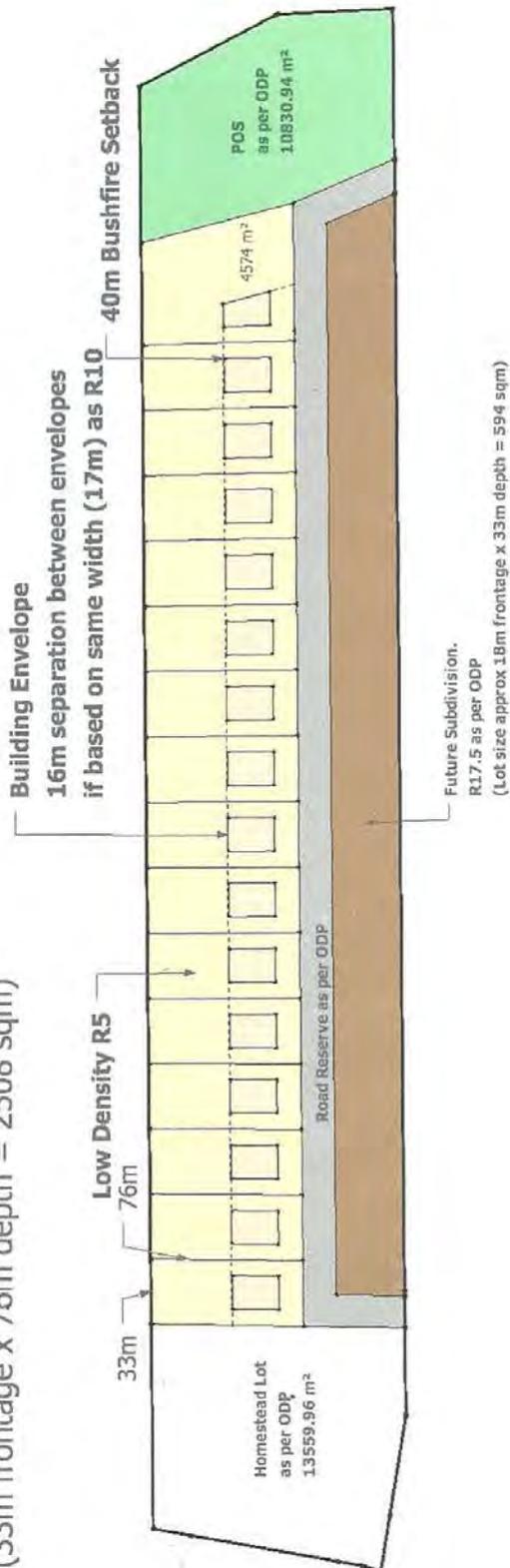


Appendix 3B

Schematic sketch of subdivision of low density land if coded R5

Showing improved shape and size lots

(33m frontage x 76m depth = 2508 sqm)



APPENDIX No 4

**LOT YIELD SCHEDULE FOR
BIG GROVE OUTLINE DEVELOPMENT PLAN**

18. The table below summarises the 'projected' lot yield as anticipated by the developer(s) based on market demand for larger lots, and the potential maximum yield permissible under the Codes.

Lot type	Net Residential Area (hectares)	Average Lot size in m ² (applicant projection)	Total yield (applicant projection)	Average Lot size (as per R Codes)	Total yield (based on R Codes)
R10	5.33ha	1500	35	1000	53
R20	48.5ha	670	721	500	967
R30	5.97ha	400	149	300	199
R40	2.48ha	300	82	220	112
Rural Residential	3.29ha	N/A	4	N/A	4
Total			991	Total	1335

Table 1 – Potential lot yields