



NOTICE

of

COUNCIL ASSESSMENT PANEL MEETING

Pursuant to the provisions of Section 82 of the Planning, Development and Infrastructure Act 2016

TO BE HELD IN

**COUNCIL CHAMBERS
PLAYFORD CIVIC CENTRE
10 PLAYFORD BOULEVARD, ELIZABETH**

MEMBERS MAY PARTICIPATE BY ELECTRONIC MEANS

ON

THURSDAY, 18 JUNE 2026 AT 6:00 PM

THIS MEETING WILL ALSO BE VIEWABLE AT
<https://www.youtube.com/user/CityOfPlayford>

A handwritten signature in black ink, appearing to read "Leif Burdon".

**LEIF BURDON
MANAGER - PLANNING SERVICES**

Issue Date: Thursday, 11 June 2026

MEMBERSHIP

MR GEOFF PARSONS – PRESIDING MEMBER

Mr Aaron Curtis

Mr Adam Squires

Mr Paul Mickan

Ms Misty Norris

Ms Tanya Smiljanic (Deputy)

**City of Playford
Council Assessment Panel Meeting**

AGENDA

THURSDAY, 18 JUNE 2026 AT 6:00 PM

ACKNOWLEDGEMENT OF COUNTRY

We would like to acknowledge that this land we meet on today is the traditional land of the Kaurna people, and that we respect their spiritual relationship with their country. The City of Playford would also like to pay respects to Elders past, present and emerging.

1 ATTENDANCE RECORD

- 1.1 Present
- 1.2 Apologies
- 1.3 Not Present

2 CONFIRMATION OF MINUTES

RECOMMENDATION

The Minutes of the Council Assessment Panel Meeting held 16 April 2026 be confirmed as a true and accurate record of proceedings.

3 APPLICATIONS WITHDRAWN

4 DECLARATIONS OF INTEREST

5 APPLICATIONS FOR CONSIDERATION – PERSONS WISHING TO BE HEARD

- 5.1 25000116 - Lot 202 Legoe Road, Buckland Park - Conventional land division creating four (4) allotments from one (1) fragmented allotment together with the construction of 12 residential flat buildings comprising 45 dwellings for the purpose of supported accommodation with associated earthworks and tree-damaging activity (Attachments)6

Representors: Gordana Mitletic
 Jessica Matthews
 Tanya Roylance
 Sukhvir Singh
 Jeff Coley
 Niamh Shannon
 Subin Sunny
 Aneesh Joy
 Kesavaraj Govindasamy

Martin Hart
Alen Baby
Marshal Koorappillil Mathai
Wazil Hakizimana
Betty Brownlow
Sharon Molier
Daniel Shadbolt
Rebecca Wood
Russel Lindsay

Applicant: Mr Theodoor de Lyster C/- URPS

6 APPLICATIONS FOR CONSIDERATION – NO PERSONS TO BE HEARD

Nil

7 APPLICATIONS FOR CONSIDERATION - CATEGORY 1

Nil

8 OUTSTANDING MATTERS – APPEALS AND DEFERRED ITEMS

Nil

9 OTHER BUSINESS

9.1 STAFF REPORTS

Matters to be considered by the Committee Only

Matters delegated to the Committee

9.1.1 Review of Delegations by the Council Assessment Panel (Attachment).....346

10 CONFIDENTIAL MATTERS

Nil

11 POLICY DISCUSSION FORUM

Nil

12 CLOSURE

APPLICATIONS FOR CONSIDERATION

APPLICATIONS FOR CONSIDERATION – PERSONS WISHING TO BE HEARD

5.1 25000116 - LOT 202 LEGOE ROAD, BUCKLAND PARK - CONVENTIONAL LAND DIVISION CREATING FOUR (4) ALLOTMENTS FROM ONE (1) FRAGMENTED ALLOTMENT TOGETHER WITH THE CONSTRUCTION OF 12 RESIDENTIAL FLAT BUILDINGS COMPRISING 45 DWELLINGS FOR THE PURPOSE OF SUPPORTED ACCOMMODATION WITH ASSOCIATED EARTHWORKS AND TREE-DAMAGING ACTIVITY

Author: Mahmoud Hasaneen / Rhiya Singh

Proposal: Conventional land division creating four (4) allotments from one (1) fragmented allotment together with the construction of 12 residential flat buildings comprising 45 dwellings for the purpose of supported accommodation with associated earthworks and tree-damaging activity

Development Number: 25000116

Date of Lodgement: 19 Mar 2025

Owner: Mr Theodoor de Lyster

Applicant: Mr Theodoor de Lyster C/- URPS

Location: Lot 202 Legoe Road, Buckland Park SA 5120

Zone: Open Space and Rural Horticulture

Classification: Code Assessed – Performance Assessed

Public Notification Category: Yes

Representation Received: Yes

Request for Additional Information Made? Yes

Recommendation: **To Refuse Planning Consent**

Attachments:

- 1 [↓](#). Architectural Plans
- 2 [↓](#). Plan of Division
- 3 [↓](#). Planning Report
- 4 [↓](#). Agronomist Report
- 5 [↓](#). Stormwater Management Plan
- 6 [↓](#). Preliminary Civil Plans
- 7 [↓](#). LIDAR Flooding Snippet
- 8 [↓](#). Traffic Report
- 9 [↓](#). Waste Management Plan
- 10 [↓](#). Preliminary Tree Assessment Report
- 11 [↓](#). Wastewater Report
- 12 [↓](#). Combined Representations
- 13 [↓](#). Flood Emergency Access and Evacuation Management Plan

1. Background

Windamere Park is a registered NDIS provider located along the Gawler River and provides a specialist rural environment catering for adults with intellectual disabilities and other neuro-developmental disorders.

The Windamere Park service provides a unique farm environment and offers a range of services and programmes including education and training opportunities for participants. This includes limited supported accommodation in the form of independent living and overnight accommodation.

The development application proposes to construct 12 residential flat buildings comprising of 45 dwellings to provide supported accommodation for disability services within Windamere Park. The development also proposes a land division to create three (3) new allotments with associated minimal earthworks and minor tree damaging activity.

2. The Subject Land

The subject land consists of the entire Windamere Park commonly identified as Lot 202 Legoe Road and Lot 101 (493) Carmelo Road, Buckland Park.

Lot 202 consists of two (2) pieces, more formally identified as Piece 201 and Piece 202 on Deposited Plan 93614, within Certificate of Title Volume 6141 Folio 88. Lot 202 has a total area of 62.74ha. 493 Carmelo Road is formally identified as Lot 101 on Deposited Plan 93614 within Certificate of Title Volume 6218 Folio 59 and has a total area of 14.43ha. The whole area is known as Windamere Park.

Piece 202, which includes the subject site extends along the eastern most portion of Windamere Park, with a frontage of 170m to Legoe Road. Piece 202 contains predominantly horticultural activities and associated buildings to support the horticultural activities. It must be noted that the subject site (i.e. portion of Piece 202) contains an irrigation basin with associated wetland vegetation and scattered matures trees. Piece 201 has a frontage of 665.5m to the unmade section of Legoe Road and is used for horticultural purposes.

Lot 101 (493) Carmelo Road contains both horticultural activities and the existing Windamere Park's disability support services inclusive of two accommodation units. It must be noted that Lot 101 (493) Carmelo Road does not have a road frontage, however, the allotment is accessed through a right of way easement (shown as easement C within the certificate of title).

The subject land is bound by the Gawler River on the north-west side, rural horticulture parcels to the east and south.

The certificate of title for Allotment 202 (referenced as CT 6141/88) encompasses several easements as reflected within figure 1:

- Easement (A) – for the transmission of electricity by overhead cable.
- Easement (B) – for the transmission of electricity by overhead cable.
- Easement (C) – free and unrestricted right(s) of way.

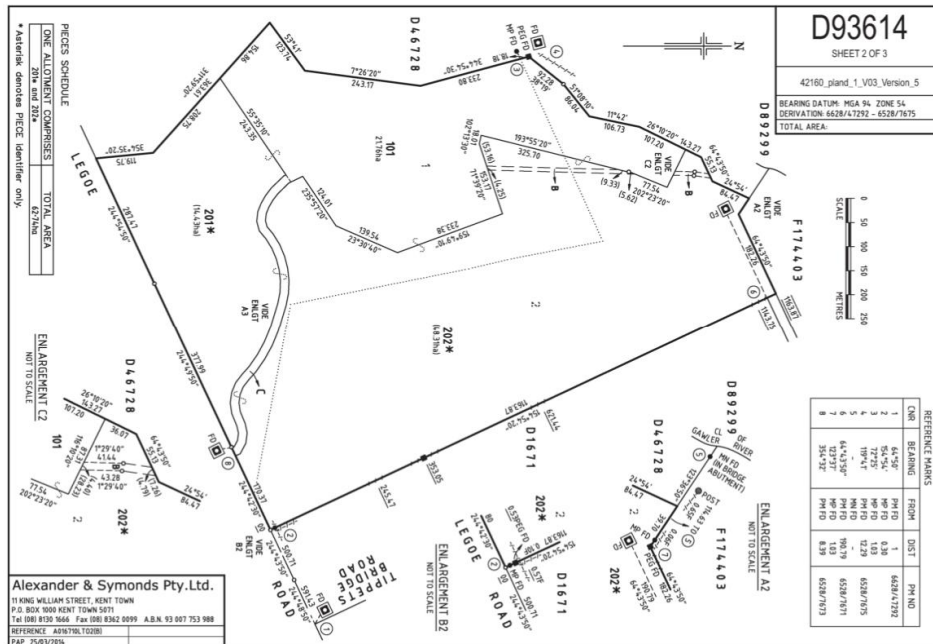


Figure 1: Extract of Certificate of Title

2.1 The Subject Site

It is important to note that the subject land on which the development is proposed to be established is different from the defined subject site of the development.

While the subject land is identified in yellow below, the proposed development is limited to the south-eastern portion of the subject land as identified in red in the subject land and site map below.

The subject site is primarily vacant with some scattered vegetation.

Site visit photographs of the subject site are attached below.

2.2 Subject Land and Subject Site Map

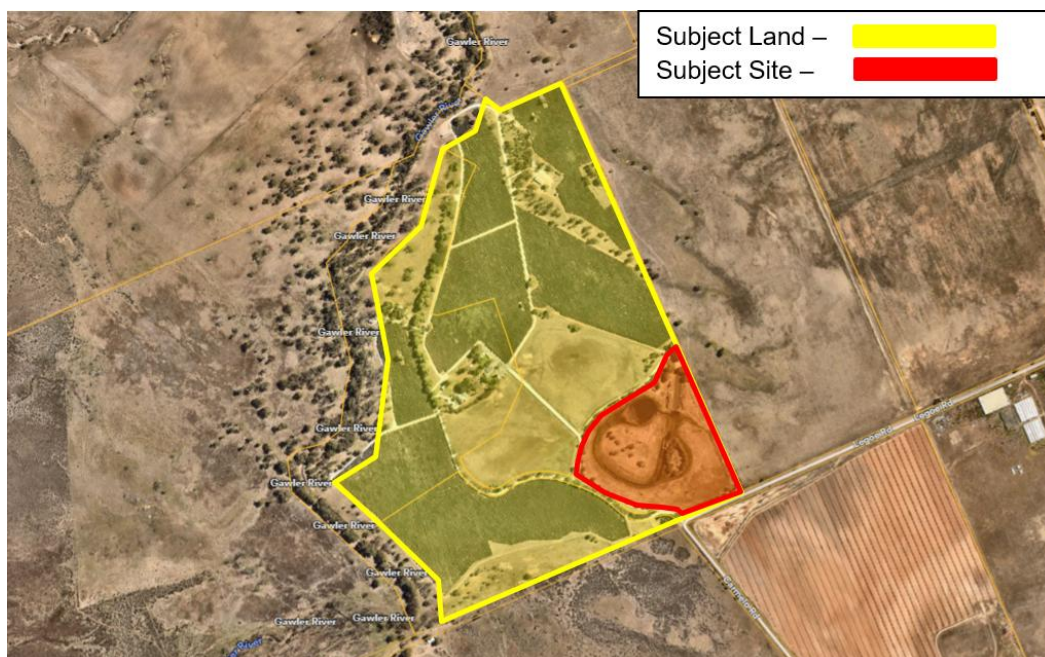


Figure 2: Subject Land and Subject Site Map

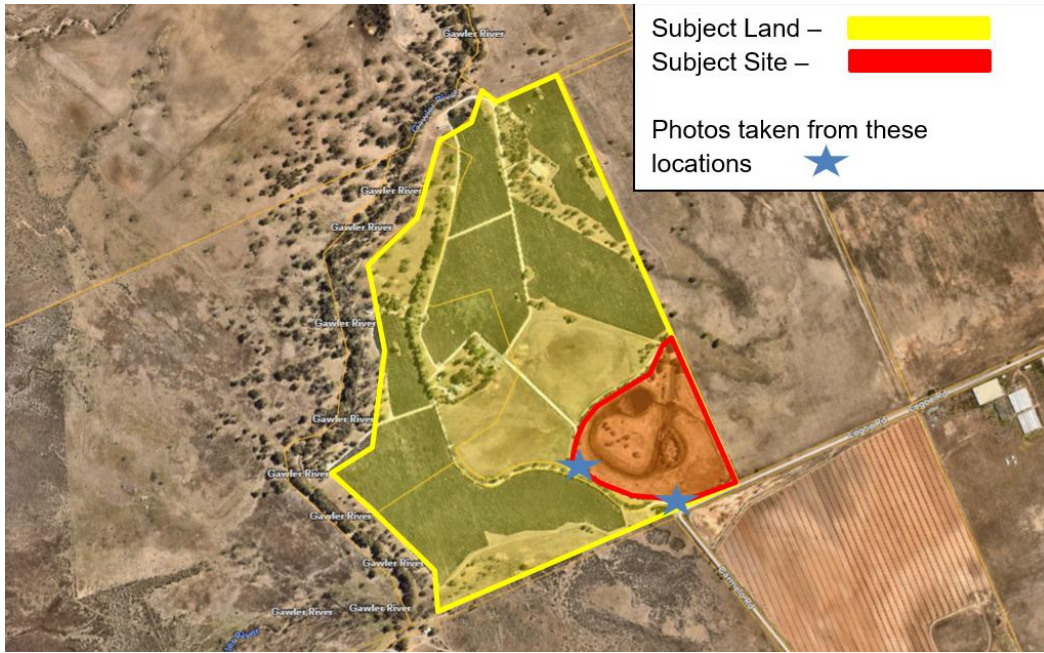


Figure 3: Location of Photographs



Figure 4: Photographs of the Subject Site

3. The Locality

The surrounding locality has an open rural character. The locality is characterised by vacant land and some horticultural allotments.

The allotment sizes within the locality are ranging in size between 3ha to 40ha. The variance of the allotment sizes within the locality is to provide a range of agricultural / horticultural opportunities within the vicinity of the proposed development.

The locality also contains the Gawler River as a key watercourse for the area, along with a wide range of native vegetation given the proximity to environmentally sensitive areas such as the Gawler River conservation area and Thompson Creek. Given the rural setting, the wider locality includes rural roads and a large extent of greenhouses to support the horticultural value of the area.

It also must be noted that adjoining the site to the east is the Riverlea major project area which offers a variance for future residential allotments ranging between 125m² to 500m², given its Master Planned Neighbourhood zoning.

Significant earthworks are being undertaken for the Riverlea Master Planned Development area (Buckland Park Township development - declared a Major Development under Section 46 of the former *Development Act 1993* by the then Minister for Urban Development and Planning). These earthworks will extend further into the locality given the ultimate discharge route of stormwater following Legoe Road to then extend further south to the outlet of Thompson Creek. It must be noted that the earthworks are undertaken following the cultural heritage requirements of the area and to avoid any impact to adjoining land inclusive of Windamere Park.

3.1 Locality Plan

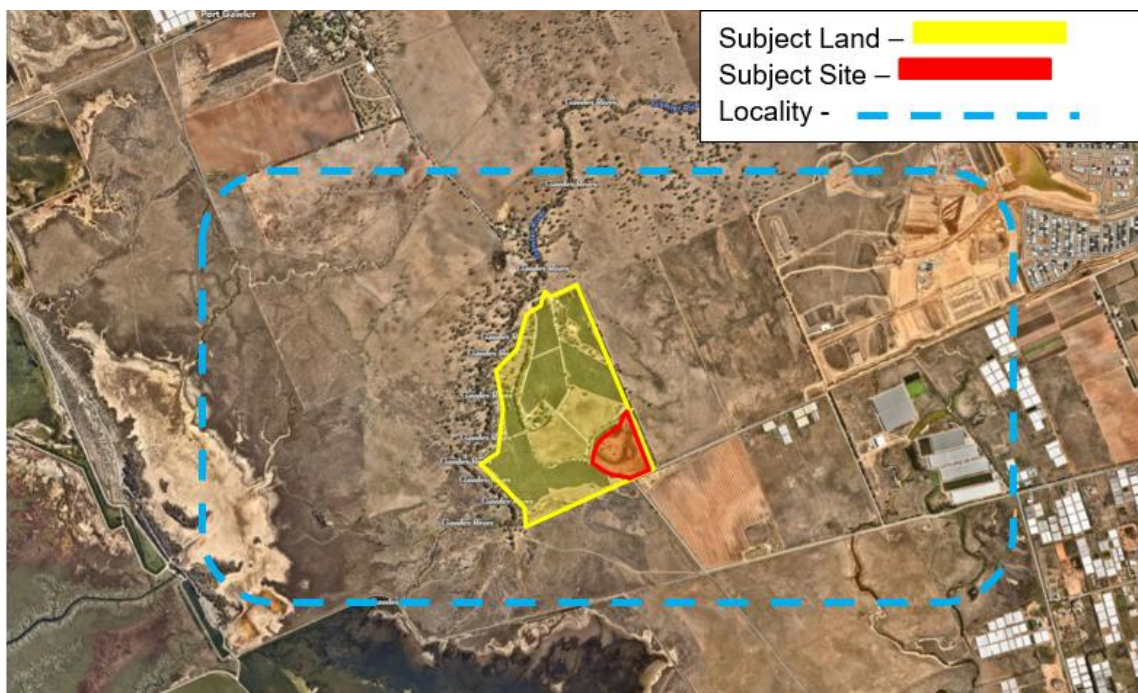


Figure 5: Subject site outlined in red, and locality shown in blue line

3.2 Zoning

The subject site is located entirely within the Rural Horticulture Zone and the Windamere Park Subzone as identified in the Planning and Design Code (the Code). In addition, the following Overlays and Technical and Numerical Variations (TNVs) also apply:

Overlays:

- Defence Aviation Area (all structures over 90m)
- Hazards (Acid Sulfate Soils)
- Hazards (Flooding)
- Hazards (Bushfire – General) (General)
- Hazards (Flooding – General)
- Limited Dwelling
- Limited Land Division
- Native Vegetation
- Prescribed Watercourses

- Prescribed Wells Area
- Regulated and Significant Tree
- Water Resources

TNVs:

- Minimum Site Area (minimum site area is 10ha)
- Concept Plan (Concept Plan 14 – Buckland Park)

Noteworthy, 4,470m² of the subject land to the north is located within the Open Space Zone. However, this is outside of the subject site. Therefore, the Open Space Zone is not considered to be relevant for the purposes of the assessment.

3.3 Zone and Sub Zone Maps

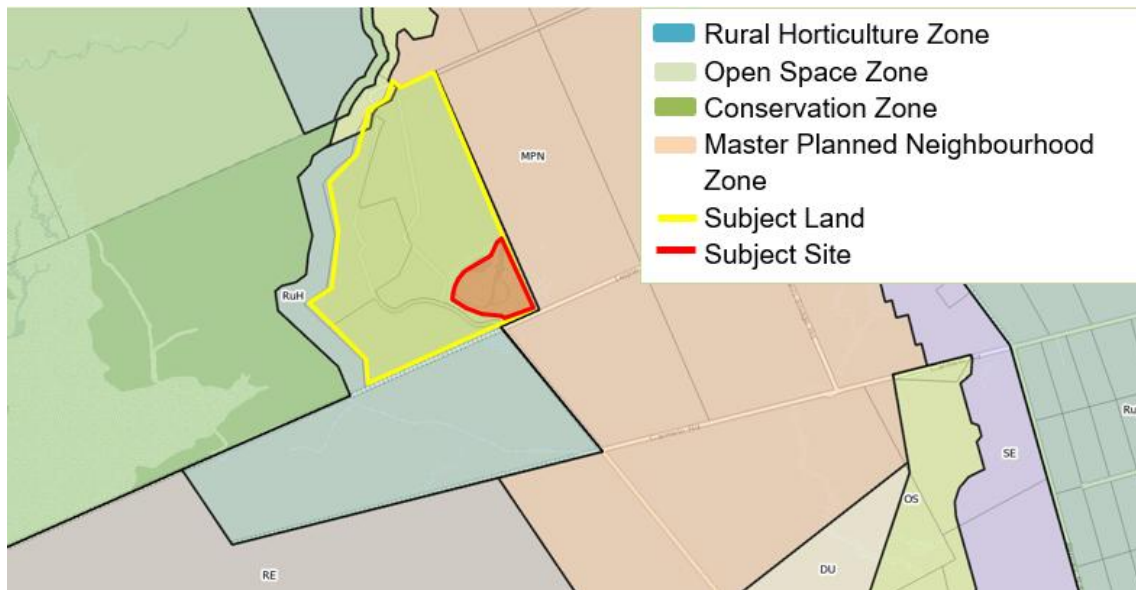


Figure 6: Zoning Map

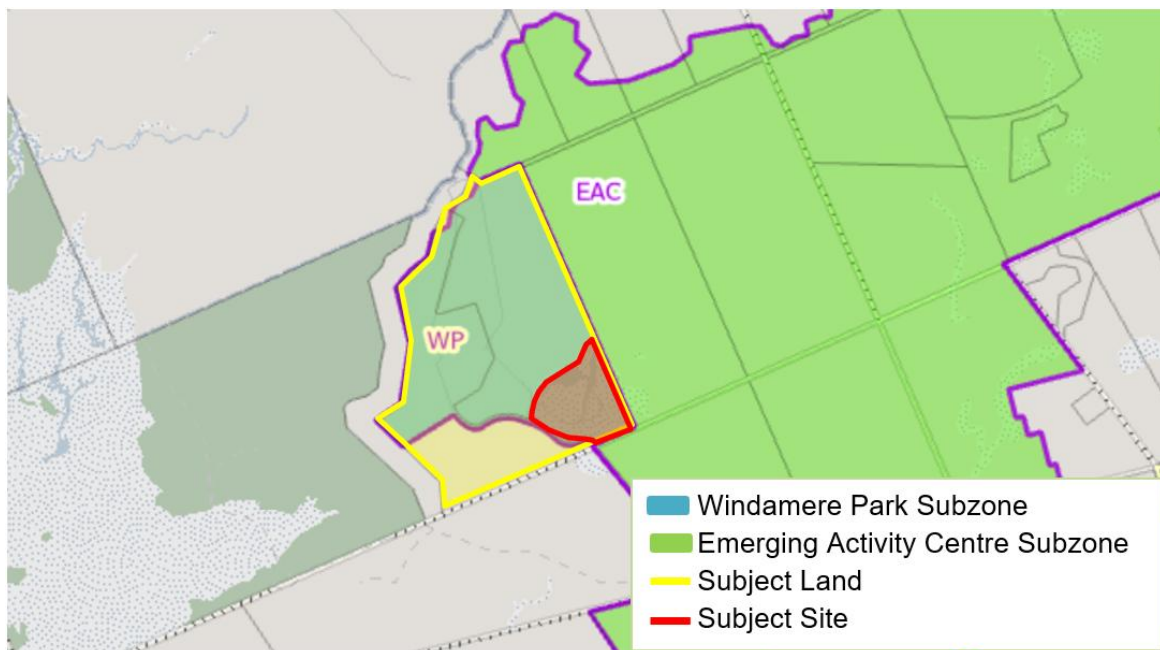


Figure 7: Sub Zone Map

4. Policy and Strategic Context

The Greater Adelaide Regional Plan (GARP), released in March 2025, is a 30-year strategic framework designed to guide land use, infrastructure and housing growth across Adelaide, the Adelaide Hills, the Barossa, and Fleurieu regions.

New growth areas for future rezoning have been identified within the GARP. Growth areas will be prioritised based on demand and the cost to deliver infrastructure and services.

Within the GARP, the subject land has been identified as a Future Greenfield Growth Area, as seen in Figures 8 and 9.

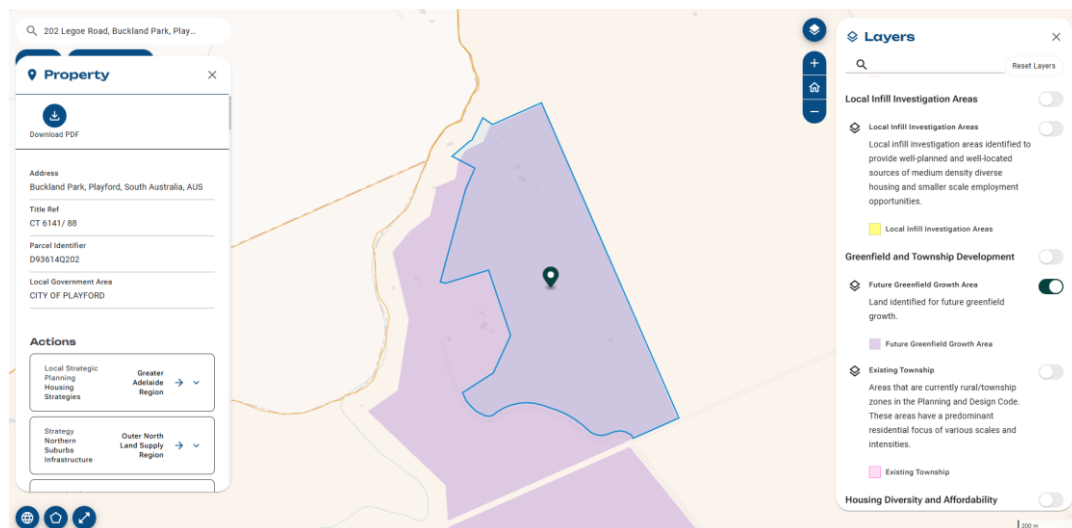


Figure 8: Subject site within Greater Adelaide Regional Plan

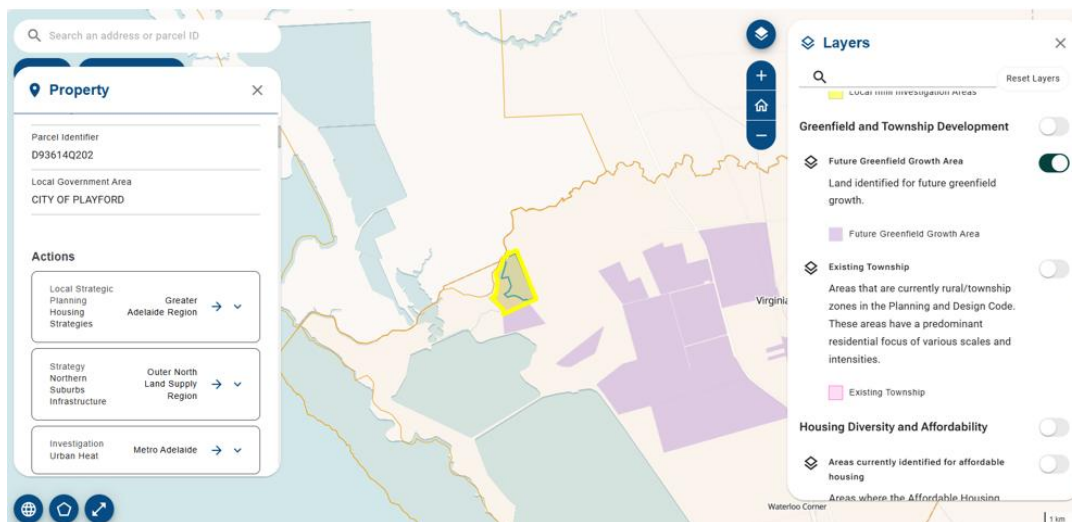


Figure 9: Subject land shown in the wider locality within Greater Adelaide Regional Plan

While future growth areas and potential rezoning are not directly relevant to the current assessment, they provide important strategic context for long-term planning.

5. The Proposal

The applicant seeks Planning Consent for the construction of 12 residential flat buildings comprising of 45 dwellings to provide supported accommodation for disability services within Windamere Park. The development also proposes a land division to create three (3) new allotments identified as Site 1, 2 & 3 in Figure 10.



Figure 10: Site plan for the proposed development

Each residential flat building has been designed to accommodate three (3) to four (4) independent living / supported accommodation units which are linked via corridors to common spaces including, staff areas, shared living, laundry and courtyard. This promotes and allows for a choice of the occupants between communal interaction or privacy and seclusion, depending on individual circumstances. Each supported accommodation unit consists of one (1) bedroom, one (1) bathroom, a kitchen, living room and study room.

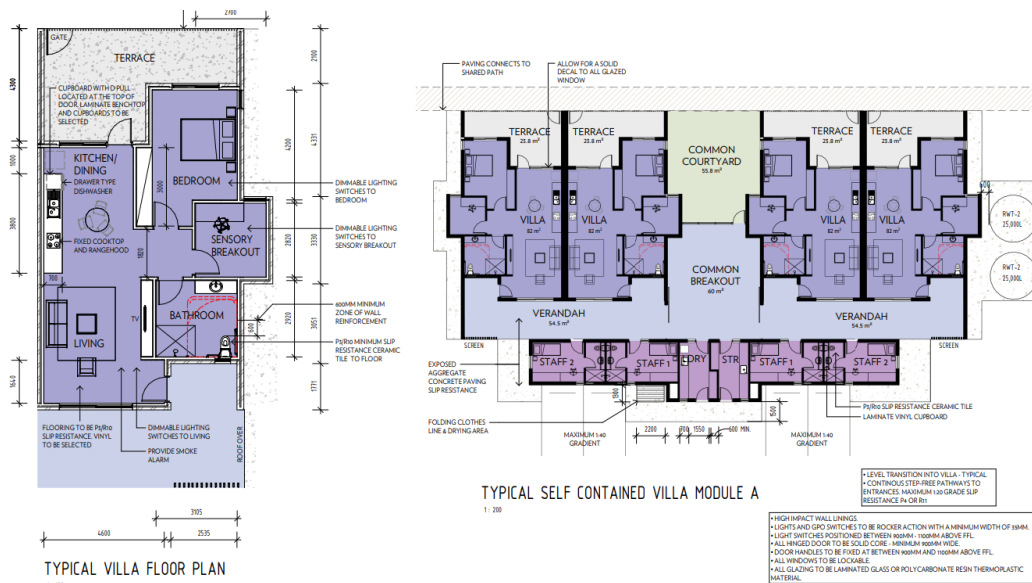


Figure 11: Typical floor plan for self-contained support accommodation units

The buildings are also designed to have integrated spaces for carers who will provide 24-hour on-site support on a rotating shift basis.

The proposed supported accommodation units have been designed to allow for additional occupants accessing the existing disability support services offered by Windamere Park.

The proposed development also includes on-site parking for each building. These parking spaces will primarily be used by carers, visitors and shuttle vehicles for Windamere Park. Access to each building is provided via three (3) common driveway accesses from Legoe Road.

As a result of the proposed supported accommodation units and associated land division, the proposed development includes minor earthworks and tree-damaging activity. As per the FMG Engineering Stormwater Management Plan (Attachment 5) and civil plans, the earthworks are limited to the supported accommodation units to ensure that the natural grading of the land is allowing the stormwater to discharge to the existing irrigation lagoon basin. The earthworks ranging between 230mm to 500mm are substantially less than 1.5m in excavation, approximately 800mm of filling to ensure that the subject site drains appropriately.

The tree damaging activity as part of this application is minimal and only includes the removal of Tree 12 and Tree 10. Tree 12 is proposed to be removed through a separate application through the Native Vegetation Council given its value and Tree 10 is not controlled vegetation under the Regulated and Significant Tree Overlay, therefore, it can be removed without approval. The regulated and significant trees on the perimeter of the subject site are retained. The development proposes a level of encroachment into the tree protection zones of these trees. However, the earthworks associated with the proposed development do not impact their retention value.

In addition to the development of buildings and associated works, the proposal seeks to subdivide Lot 202 to create the following three new allotments:

- Lot 501 with an area of 1.052ha
- Lot 502 with an area of 1.018ha
- Lot 503 with an area of 1.153ha.

Within each of these allotments, it is proposed to construct four (4) residential flat buildings, each consisting of 15 supported accommodation units and separate accommodation for a staff member per accommodation unit.

The development will be constructed in three (3) stages as follows:

- Stage 1 – Lot 501; Four (4) residential flat buildings consisting of 15 supported accommodation units.
- Stage 2 – Lot 502; Four (4) residential flat buildings consisting of 15 supported accommodation units.
- Stage 3 – Lot 503; Four (4) residential flat buildings consisting of 15 supported accommodation units.

6. Procedural Matters

6.1. Classification

The proposed development comprises of the following classes of development:

- Land Division within the Limited Land Division Overlay
- Residential Flat Building
- Supported Accommodation
- Tree-Damaging Activity

These elements are not classified as Accepted, Deemed-to-Satisfy, or Restricted development within the relevant Tables of the Rural Horticulture Zone.

The proposed development is therefore a Code Assessed – Performance Assessed development pursuant to Sections 105(b) and 107 of the *Planning, Development and Infrastructure Act 2016* (the Act), requiring an on-merit assessment against the relevant provisions of the Code.

6.2. Public Notification

All classes of performance assessed development require public notification unless, pursuant to Section 107(6) of the Act, the class of development is excluded from notification by the Code in Table 5 – Procedural Matters (PM) – Notification, within the relevant Zone.

Table 5 of the Rural Horticulture Zone includes references to land uses and development which are exempt from Public Notification. Supported accommodation is not listed as a class of development that is exempt from notification, and it is considered that the proposed development is not minor in nature. As such, public notification is required.

Public notification commenced on 29 April 2025 and concluded on 19 May 2025.

18 representations were received during the public notification period.

All representors are in support to the proposal, with two (2) representors requesting to be heard before the Council Assessment Panel (CAP).

It must be noted that an additional representation was received after the closure of the public notification period, although this is invalid, this representation has been included as part of the report and provided to the applicant. The late representation is presented to CAP to issue their discretion as to whether they should or should not form part of the Authority's decision process.

A copy of the representations are included within Attachment 12.

As noted previously, the late representation has been included as it illustrates concerns and objection with the proposal.

The representors are listed below:

Representor received		Summary of Issues Raised	Position	Wish to be heard
1	Gordana Miletic	<ul style="list-style-type: none"> Supports the additional accommodation services at Windamere Park. Significant step forward for the community and offers a wider variety of services for disabled people including further employment opportunities for disability support workers. 	Support	No
2	Jessica Matthews	<ul style="list-style-type: none"> Supports the supported accommodation housing for adults with disabilities. Believes that housing is essential for promoting independence, dignity and inclusion within the community. 	Support	No

Representor received		Summary of Issues Raised	Position	Wish to be heard
3	Tanya Roylance	<ul style="list-style-type: none"> Proposed accommodation is needed in the disability sector, as opposed to offer of smaller houses. Believes large allotments will benefit the residents to have further space such as swings and sensory gardens which benefit people's physical and mental well-being. 	Support	No
4	Sukhvir Singh	<ul style="list-style-type: none"> Supports the development with no further comments. 	Support	No
5	Jeff Coley	<ul style="list-style-type: none"> Supports the development given it's much needed for special need adults. 	Support	No
6	Niamh Shannon	<ul style="list-style-type: none"> Supports the development with no further comments. 	Support	No
7	Subin Sunny	<ul style="list-style-type: none"> Supports the development as it offers services to a wider variety of clients, while stating that the unique farm environment and the engaging activities are not just therapeutic but also deeply refreshing for clients. 	Support	No
8	Aneesh Joy	<ul style="list-style-type: none"> Supports the development as it is much needed for disabled people. 	Support	No
9	Kesavaraj Govinadamy	<ul style="list-style-type: none"> Supports the development with no further comments. 	Support	Yes
10	Martin Hart	<ul style="list-style-type: none"> Supports the development as it will give further freedom to residents and they will take ownership of the space. 	Support	No
11	Alen Baby	<ul style="list-style-type: none"> Supports the development with no further comments. 	Support	No
12	Marshal Koorappillil Mathai	<ul style="list-style-type: none"> Supports the development with no further comments. 	Support	No
13	Wazili Hakizimina	<ul style="list-style-type: none"> Supports the development with no further comments. 	Support	No
14	Betty Brownlow	<ul style="list-style-type: none"> Supports the development as it provides much-needed accommodation for people with disabilities, as new houses are not built to be suitable for them. Notes the wide range of services, Windamere has provided for disabled people over the years and will continue to do so through this new development. 	Support	Yes
15	Sharon Molier	<ul style="list-style-type: none"> Supports the development as it aids families in the northern suburbs. Notes that Windamere Park has provided many services to her family members, and she is seeing the benefits of the development every day. 	Support	No
16	Daniel Shadbolt	<ul style="list-style-type: none"> Believe that the development would greatly help those living with 	Support	No

Representor received		Summary of Issues Raised	Position	Wish to be heard
		disabilities to have adequate support while living in a quiet area that has more than enough facilities and equipment to benefit their wants/needs.		
17	Rebecca Wood	<ul style="list-style-type: none"> Supports the development and has provided pictures of adults utilising the existing Windamere Park facilities. 	Support	No
18	Russel Lindsay	<ul style="list-style-type: none"> Supports the development as Windamere is a unique location with a unique service. The services proposed are unique, as participants can live on a property situated along the Gawler River, on a working farm, and yet still connected to the services. For participants that benefit from extra space and a quieter location surrounded by nature. 	Support	No
19	Walker Corporation	<ul style="list-style-type: none"> Misalignment of the proposal against the limited land division overlay specifically, given that the size of allotments are less than 10ha. Land division does not keep the rural setting of the area or horticultural value of land. Insufficient infrastructure to service the proposed development including access to portable water and a wastewater disposal scheme. 	Objects	No

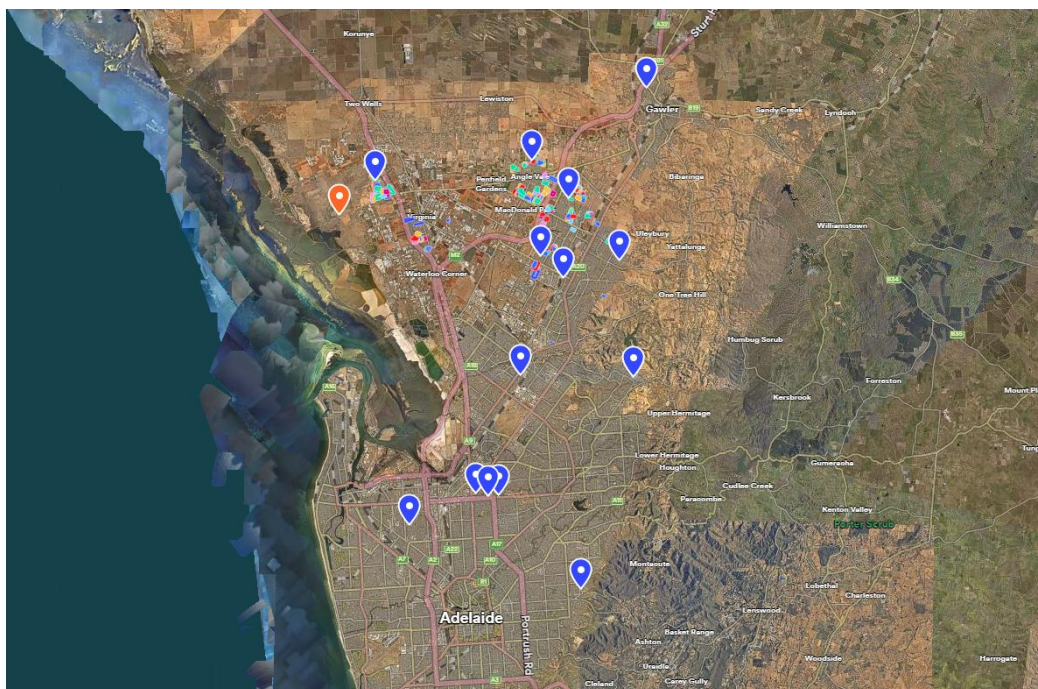


Figure 12: Received representations shown as blue markers and location of proposed development shown as red marker.

As the valid representations are supportive of the development, the applicant and the Planning Officer agreed that there is no requirement to provide a response to the representations. It must be noted that the late representation objects to the development. However, this has been ruled as invalid given that it was received after the closure of the public notification period. This representation was forwarded to the applicant. However, no response was received given that it is a late representation.

Moreover, as this form of development required public notification, the development is of a form which the Act identifies CAP as the relevant authority for the purpose of decision making.

6.3. Statutory Referrals

Pursuant to the *Planning, Development and Infrastructure (General) Regulations 2017*, in particular Regulation 76 and Regulation 76(4), referral was made to SPC Planning Services and the South Australian Water Corporation.

Both agencies issued standard conditions of approval.

No other statutory referrals were triggered as part of the development application.

6.4. Internal Referrals

Internal referrals to Council's technical staff were undertaken to review traffic management, waste management, car parking, access and stormwater management.

Waste Management

Council's Environmental Health Officer was largely satisfied with the development, however, has stated that a reserved matter is required to ensure that a wastewater approval is undertaken prior to issue of a development approval.

Traffic Management, Car Parking and Access

Council's Traffic Engineer was satisfied with the slight increase to traffic volumes proposed by the development. However, given that the development relies upon Legoe Road being an all-weather road and the inability to access the site during a 1% AEP flood event there is high concern for access to the site. The following comments demonstrate the detailed concern associated with the proposed development:

- Legoe Road is a Council-maintained road. Council's GIS asset data identifies the road as an unsealed crushed rock pavement with a pavement depth of 150mm and a condition rating of 3. This is consistent with a formed, low-volume rural road that is trafficable year-round under normal weather conditions and capable of accommodating passenger vehicles, service vehicles, and emergency access vehicles.

This also is consistent with the visual inspection of the pavement on street imagery.

- In terms of generated volume, the proposed supported accommodation is expected to generate low and dispersed traffic volumes that are consistent with the operation of unsealed rural roads. Traffic volumes on Carmelo Road at its western end are forecast to increase from approximately 150 vehicles per day to around 240 vehicles per day, while traffic volumes on Legoe Road are expected to remain below 200 vehicles per day.

These volumes are well within the range typically accommodated by unsealed roads and remain below commonly adopted by the Department for

Infrastructure and Transport guidance levels at which sealing of an unsealed road is generally considered, which is in the order of 500 vehicles per day.

- Although the traffic volume is able to service the development, the Water Technology Report within the FMG Stormwater Management Plan (Attachment 5) appears to show floodwaters over the main access roads during 1% AEP flood events, therefore, the roads become inaccessible during major flood events.

Stormwater Management

Council's Land Development Engineer formed the view that the proposed development adequately addresses the required stormwater requirements in accordance with Council's Stormwater Guidelines. However, the flooding concerns associated with the access roads have not been adequately addressed. If CAP considers issuing Planning Consent, the following conditions are to be applied to the decision notification form in line with the FMG Engineering Stormwater Management Plan Attachment 5):

- Flood management: the landowners shall maintain levee and its height (800mm above adjacent land levels to a top level of ~5mAHD) along the boundary of the site in Legoe Road (including driveway crossover ridge line), internal road and eastern boundary to ensure this is not compromised during flood event.
- Stormwater management: the existing recycled water feed into the lagoon is to be modified with a float switch or similar arrangement, to ensure recycled water feed is turned off with a minimum of 4,200m³ storage capacity below the overflow culvert elevation is achieved (i.e. nominally cutoff at 3.0mAHD).
- Stormwater treatment measures: the owner shall inspect OceanGuard pit inserts every four (4) months and post-major storm events, with full debris removal required once the bags reach approximately 70% capacity to prevent bypass.

For the roadside swales, the landowner is obligated to maintain healthy vegetation cover, including regular mowing (retaining a height of 50mm-100mm) and the removal of accumulated sediment at entry points every 3- 4 years. Failure to adhere to these intervals may lead to system blockages and non-compliance with Council's discharge quality requirements.

- FMG Report captured the water technology floodwaters for Carmelo Road / Legoe Road, Tippets Bridge / Carmelo Road and sections of Carmelo Road, therefore, the flooding concern to the development has been resolved, however, no infrastructure upgrades have been realised for the road infrastructure, therefore, the site is not accessible during major flood events.

7. Key Issues

The following matters are considered pertinent in reaching a recommendation for the proposal:

- Whether the proposal is an appropriate form of development in the Rural Horticulture Zone.
- Whether the proposal is an envisaged land use within the Subzone and consideration whether it is not seriously at variance with the Limited Land Division and Limited Dwelling Overlays.
- Whether the proposal is consistent with the general policies of the Code.

- Whether the proposal for housing vulnerable people is appropriately sited away from flood prone areas reducing the likelihood of entrapment. Additionally, whether the development is on land which evaluation is possible in a 1% AEP flood event and can be access by emergency services during such an event.

8. Rules of Interpretation and Approach to Assessment

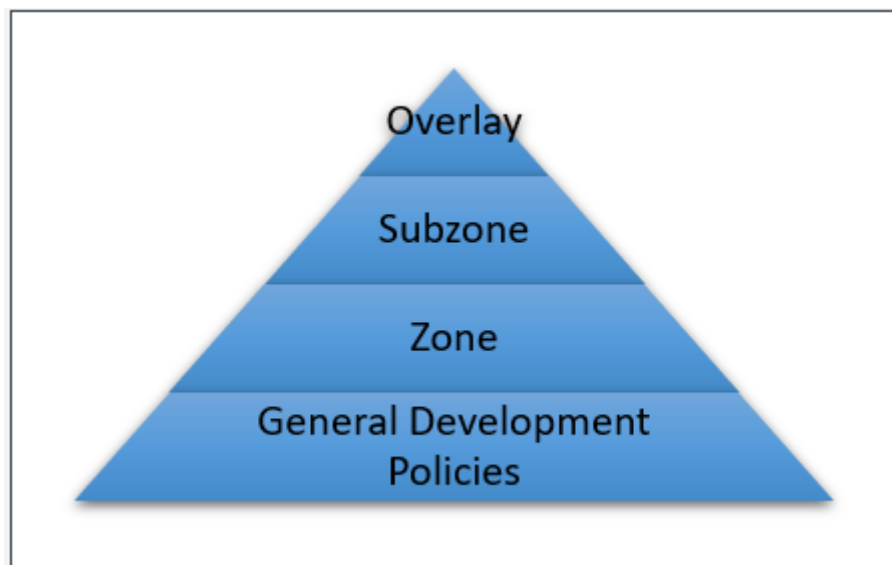
Part 1 of the Code entitled “Rules of Interpretation” is relevant to this development application, specifically, to the inconsistency between the intent of the Rural Horticulture Zone, Windamere Park Subzone and Limited Land Division / Limited Dwelling Overlays.

It must be noted that the hierarchy of policies / modification of provisions speaks to the following:

“If there is an inconsistency between provisions in the relevant policies for a particular development, and for the purpose of section 66(3)(b) of the Act, the following rules will apply to the extent of any inconsistency between policies:

- *the provisions of an overlay will prevail over all other policies applying in the particular case;*
- *a subzone policy will prevail over a zone policy or a general development policy; and*
- *a zone policy will prevail over a general development policy”.*

This hierarchy is represented by the following diagram:



Part 1 of the Code also illustrates the role and application of various policies as follows:

“Zone, subzone, overlay and general development policies are comprised of desired outcomes (DOs) and performance outcomes (POs). These are applicable to performance assessed development and to restricted development”.

“Desired outcome are policies designed to aid the interpretation of performance outcomes by setting a general policy agenda for a zone, subzone, overlay or general development policies module. Where a relevant authority is uncertain as to whether or how a performance outcome applies to a development, the desired outcome(s) may inform its consideration of the relevance and application of a

performance outcome or assist in assessing the merits of the development against the applicable performance outcomes collectively”.

“Performance outcomes are policies designed to facilitate assessment according to specified factors, including land use, site dimensions and land division, built form, character and hazard risk minimisation”.

“In order to assist a relevant authority to interpret the performance outcomes, in some cases the policy includes a standard outcome which will generally meet the corresponding performance outcome (a designated performance feature or DPF). A DPF, including a Technical and Numeric Variation (TNV) or other numeric value which forms part of a DPF, provides a guide to a relevant authority as to what is generally considered to satisfy the corresponding performance outcome but does not need to necessarily be satisfied to meet the performance outcome, and does not derogate from the discretion to determine that the outcome is met in another way, or from the need to assess development on its merits against all relevant policies”.

Therefore, the assessment of this application has followed Part 1 of the Code by setting the following parameters:

- The proposal will ultimately succeed or fail depending on how the relevant Authority assess it against the relevant Performance Outcomes.
- Designated Performance Features (DPFs) simply represent one way to satisfy the corresponding PO, but is not the only way, especially as it is a performance assessed application.
- Following the hierarchy of the Code’s rules of interpretation and applying a “specialist merit lense” over the inconsistencies between the Windamere Park Subzone and the Rural Horticulture Zone and applicable Overlays.
- Understanding the constraints of the land and if the development creates a misalignment from the Limited Dwelling and Limited Land Division Overlays or is this a unique departure, justified by the intent of the Windamere Park Subzone.
- Understanding the constraints of the Hazards (Flooding) Overlay concerning the land not being able to be accessed by emergency vehicles or essential utility service vehicles during 1% AEP flood events.

9. Planning Assessment - Overlays

9.1 Limited Land Division and Limited Dwelling Overlay

The existing services of Windamere Park and two (2) accommodation units are located on the an allotment adjoining the subject site but are included in what has been considered to constitute the subject land. The subject land also has established olive groves which form part of the whole operation.

The proposed development has been sited and located in an area that is currently not being used for horticulture and has mainly been used as a walking space for Windamere Park.

Limited Land Division Overlay DO 1 seeks that:

The long-term use of land for primary production is maintained by minimising fragmentation through division of land.

Limited Land Division Overlay PO 1.1 seeks that:

Land Division does not result in the creation of an additional allotment.

Limited Dwelling Overlay DO 1 seeks that:

Establishment of additional dwellings in primary production areas is limited to avoid undermining primary production.

Limited Dwelling Overlay PO 1 seeks that:

Development does not result in the establishment of a dwelling.

The proposed development seeks the creation of three (3) additional allotments and, does not satisfy Limited Land Division Overlay PO 1.1. This is guided by the DO which seeks to avoid further fragmentation of land within the applicable Overlay area.

Nevertheless, the applicant has provided an Agronomist report (Attachment 4) that states that there is a constraint on horticultural production on the subject site of the proposed development, given its irregular shape as well as poor quality of the soil and the endemic salinity.

The report states that most crops are grown in straight lines and in rows so that they can be easily worked on with the equipment that is used to produce them. In a site where long runs are impossible and much of the land would be taken up with turning areas, that would negate their use for cropping and would be inefficient.

For row cropping, the land would have to be reformed in a number of different directions to ensure the proper movement of water along the rows. This would entail a significant cost.

Approximately 25ha of the subject land has existing horticulture. The proposed supported accommodation and additional allotments are located on approximately 3ha of subject land in the southern end. Furthermore, the proposed development proposes 45 supported accommodation units. Therefore, Limited Dwelling Overlay PO 1.1 is not met.

As outlined earlier within the report, the subject land is used for existing horticulture and disability services. The adjoining site, Lot 101 within Deposited Plan 93614 (commonly known as 493 Carmelo Rd) contains the disability support facilities inclusive of two (2) accommodation units. It is considered that the proposed supported accommodation units do not limit or undermine the primary production potential of the wider subject land due to the irregular shape of the subject site, along with the poor quality of the soil and the endemic salinity for the subject site as reflected within the submitted Agronomist report. Overlaid here is that the subzone envisages supported accommodation and the proposal seeks to appropriately locate this use in an area of reduced primary production potential. Therefore, Limited Land Division Overlay DO 1 is considered to be met. This is further reinforced by the separation of the proposed supported accommodation and land division from the remaining subject land, which provides the existing horticultural value and productivity associated with the land, while maintaining legal road connection.

The constraints discussed above and the proposed siting of the development allows for the continued ongoing long-term primary production for the remaining area of the subject land whilst still seeking to facilitate the desired outcomes of the subzone on land which is unproductive. The fragmentation of the land proposed does not reduce the existing and future primary production potential for the subject land.

A key consideration of staff has been the merits associated with the introduction of additional allotments for a supported land use, without an intrinsic tie and formalised association to the broader Windamere Park land use. Whilst the subzone does not speak

to the need for association, the Limited Land Division overlay, specifically PO 1.1 ensures a formalised association is maintained through restriction of land division. What gives staff comfort is that the limited land division overlay continues to apply to the balance land, ensuring an adjacent farming type use is maintained.

The general rationale for users of the facility is the association with Windamere Park and whilst not appropriate merit in the first instance, the progression of the adjacent Masterplanned Neighbourhood Zone will ensure the land use is not 'stand-alone' in the longer term.

While both PO 1.1 are not strictly satisfied for either the Limited Land Division Overlay or the Limited Dwelling Overlay, it is considered that the proposal does not undermine the overall intent or Desired Outcomes of either Overlay.

Having regard to the specific constraints and characteristics of the subject land, together with the broader policy context and envisaged character of the Windamere Park Subzone, the proposal is considered to represent a reasonable planning outcome on balance. This is further discussed within Section 10.1 of the report.

9.2 Defence Aviation Area Overlay

The proposed development has a maximum building height of 4.9m. The Defence Area Overlay building height trigger within this locality is 90m. The proposed building is to have a negligible impact on the operational and safety requirements of the Defence Aviation Areas.

No referrals were triggered.

9.3 Hazards (Acid Sulfate Soils) Overlay

As seen in Figure 13, the subject site is not located within the actual Hazards (Acid Sulfate Soils) Overlay and has no impact.

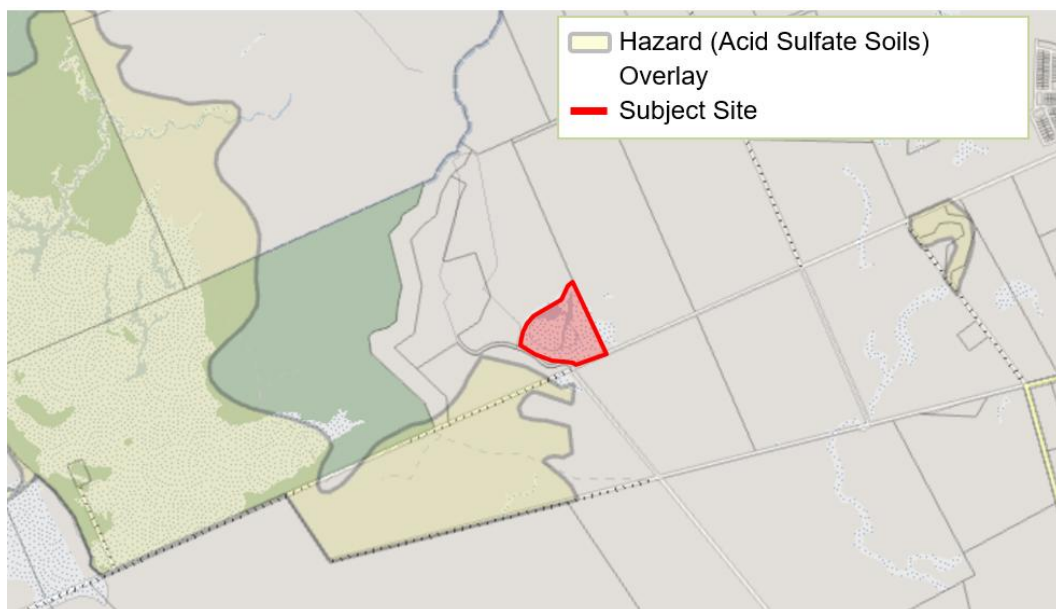


Figure 13 – Hazards (Acid Sulfate Soils) Overlay

9.4 Hazards (Bushfire – General Risk) Overlay

The development is not located within an unmanaged grassland or hazardous bushland vegetation. There are trees scattered within the southern portion of the site. The olive grove to the west is managed by Windamere Park.

The proposed supported accommodation and associated additional allotments are located on a flat portion of the allotment and sited away from vegetated areas that pose an unacceptable bushfire risk.

Should CAP consider issuing Planning Consent, a condition of approval would be recommended to ensure that a dedicated area is available that can accommodate a bushfire protection system comprising firefighting equipment and water supply in accordance with *Ministerial Building Standard MBS 008 Designated bushfire prone areas - additional requirements*.

All buildings are serviced by sealed, shared driveways with a minimum width of 6m. Since the common driveways are longer than 60m, common driveways have a “Y” shaped turnaround area to allow for fire trucks to enter and exit each allotment in a forward direction.

It is considered that the proposed development has been designed to mitigate the threat and impact of bushfires on life and property. The proposed development meets the intent of the Overlay.

9.5 Hazards (Flooding) and Hazards (Flooding – General)

The Hazards (Flooding) Overlay DO 1 seeks that:

Impacts on people, property, infrastructure and the environment from high flood risk are minimised by retaining areas free from development, and minimising intensification where development has occurred.

Similarly, Hazards (Flooding – General) DO 1 seeks that:

Impacts on people, property, infrastructure and the environment from general flood risk are minimised through the appropriate siting and design of development.

Council's Senior Land Development Engineer has reviewed the Stormwater Management Plan and Report and is generally satisfied. The proposed development meets the following requirements –

- Underground stormwater drainage network to be sized for the minor of 10 year Average Recurrence Interval (ARI).
- Storms up to and including the 1% AEP storm event (100-year ARI) shall be contained wholly within the property, with safe overland flow paths provided towards Council road reserves for greater storm events.
- Stormwater run-off must not impact adjacent properties and be contained within the property boundary.
- Stormwater quality will need to comply with the Environmental Protection Authority (EPA) quality policy as below.

Suspended solids	80% retention of average annual load
Total phosphorus	45% retention of average annual load
Total nitrogen	45% retention of average annual load
Litter	Retention of litter greater than 50mm, for up to 3 month ARI peak flow
Coarse sediment	Retention of sediment coarser than 0.125mm for up to 3 month ARI peak flow
Oils & grease	No visible oils for up to 3 month ARI peak flow.

Table 2: Requirements for EPA water quality policy (2003)

Although, the stormwater management and flood mitigation to the development site are appropriate based on the proposed measures, the development does not satisfy the possibility of the access roads being used during a 1% AEP flood event. This is further discussed against the relevant performance outcomes of the Hazards (Flooding) Overlay.

Hazards (Flooding) Overlay PO 2.1 seeks that:

Development sited and designed to minimise exposure of people and property to unacceptable flood risk.

Hazards (Flooding) Overlay PO 2.2 seeks that:

Buildings housing vulnerable people, community services facilities, key infrastructure and emergency services are sited away from flood prone areas to enable uninterrupted operation of services and reduce likelihood of entrapment.

This PO is informed by the associated DPF 2.2 which seeks that:

Childcare facilities, educational facilities, retirement and supported accommodation, emergency services facilities, hospitals and prisons are not located within the Overlay area.

Hazards (Flooding) Overlay PO 6.1 seeks that:

Development does not occur on land:

(a) from which evacuation to areas not vulnerable to flood risk is not possible during a 1% AEP flood event.

(b) which cannot be accessed by emergency services vehicles or essential utility service vehicles during a 1% AEP flood event.

Hazards (Flooding) Overlay PO 6.2 seeks that:

Access driveways and tracks to significant development (i.e. dwellings, places of work, etc.) consist of a safe, all-weather trafficable surface that is accessible during a 1% AEP flood event.

Concern is raised in the ability to support a land use for vulnerable people in a location that is cut off during a 1% AEP flood event resulting in entrapment, interruption to operation of services and restricted access to emergency services by road. The applicant has provided a Flood Emergency Access and Evacuation Management Plan, prepared by Southfront (Attachment 13) to demonstrate the evacuation scheme required in the event of a 1% AEP flood event. This plan seeks to mitigate the risk of flood and entrapment for the residents of the supported accommodation by removing them from the site prior to

flood water reaching a level where roads would no longer be accessible. However, within the evacuation management plan (Section 3.4), key concern is that the listed route (i.e. available roads providing access to the site) will show flood depth of 0.25m to 1.5m, which exceeds the allowable passable conditions required for emergency service vehicles of 0.3m (maximum) and therefore, does not satisfy PO 6.1(b).

Although, the Flood Emergency Access and Evacuation Management Plan speaks to the evacuation parameters to be in place, specifically the flood response triggers including a 12-20 hour alert timeframe before a flood event to activate the evacuation plan, it does not reduce the concern that the access road flood locations will be mitigated to allow emergency services vehicles or essential utility service vehicles to access the land during a 1% AEP flood event. PO 2.2 further reinforces that vulnerable people are to be housed away from flood prone areas and not becoming entrapped during flood event. Therefore, a question is raised of how private vehicles and emergency vehicles access a site housing vulnerable people to ensure their safety.



Figure 14 – Extract of SAPPA Hazards (Flooding Overlay) showing flood depths at key access roads

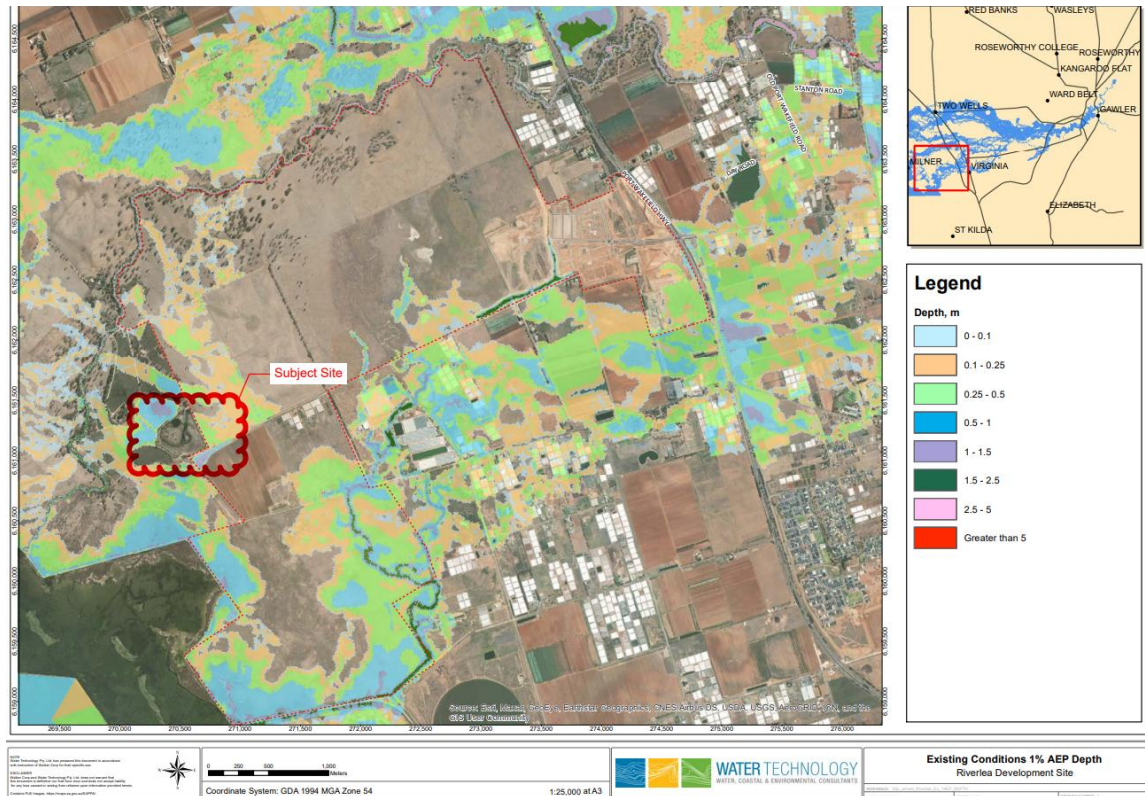


Figure 15 – Extract of Existing Flood Conditions 1% AEP Event (Water Technology Report)

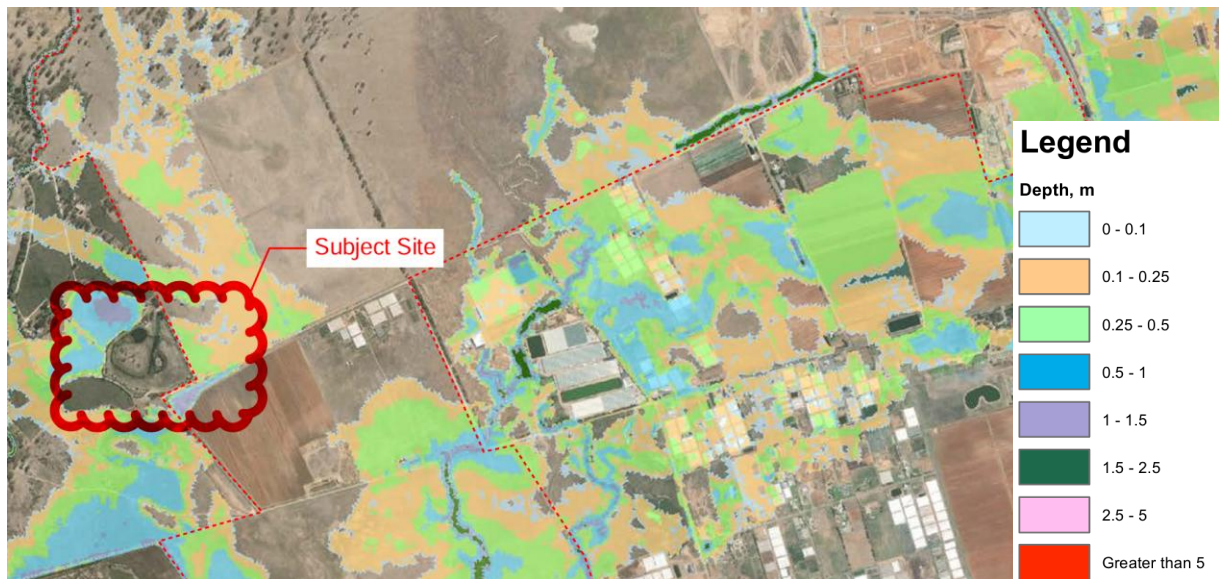


Figure 16 – Existing Flooding Conditions showing flood depths for Carmelo Rd/ Legoe Rd (1-1.5m depth), Tippetts Bridge Rd/ Carmelo Rd (0.5-1.5m depth) & sections of Carmelo Rd (0.25-1.5m depth)

It is important to note that the plan is structured only around the evacuation of people with appropriate level of warning of the flood event and the impact of inundating the access road network. However, if the rainfall prior to the flood event results in unsafe and unusable road network, there is substantial concern that vulnerable people will become entrapped in the proposed supported accommodation buildings during 1% AEP flood event. Therefore, not satisfying PO 2.2. This is also supported by DPF 2.2 which nominates that sensitive land uses, including supported accommodation, not be located within the Hazard (Flooding) Overlay area due to the concern that the area will become isolated and result in essential services not being able to be provided to vulnerable people.

This is further reinforced in Section 5.4 of the Southfront Evacuation Management Plan, with a temporary isolation contingency proposed if evacuation is delayed or if flood forecast timing is inaccurate. Although this is a secondary measure, the isolation

parameters include the provision of sufficient medications, food and supplies located onsite. Again, concern is raised in these instances in the inability for emergency services to access the subject site for support or medical emergency consistent with PO 6.1(a) which notes that development does not occur on land from which evacuation is not possible during a 1% AEP flood event.

The proposed evacuation of vulnerable people prior to a 1% AEP flood event is not considered appropriate. This relies on rainfall monitoring, evacuation being undertaken by staff in an efficient manner which could result in human error and the appropriateness of the road network at the time of evacuation. The need for the upgrades to the access roads to allow all-weather access is considered fundamental to the operation of any development, specifically, a development housing vulnerable people.

The development is inconsistent with PO 6.2 as the floodwaters referenced within the Water Technology Report in the FMG SMP shows flood depths ranging between 0.25m to 1.5m for critical sections such as Carmelo Road / Legoe Road intersection, Tippets Bridge Road / Carmelo Road and sections of Carmelo Road. Therefore, as no stormwater / road infrastructure upgrades have been proposed to minimise flood depths to passable levels to ensure accessibility during a 1% AEP flood event, the proposed development exposes a high level of people to unacceptable flood risk.

In summary the proposed development introduces additional vulnerable people in a locality that will be cut-off during a 1% AEP flood event. Notwithstanding the mitigation measures proposed by the applicant to facilitate evacuation and access to and from the site, it is considered that the residual flood risk remains unacceptable. As such, it is considered that the relevant PO identified above have not been satisfied.

9.6 Native Vegetation Overlay

The applicant has sought a separate approval for the removal of Tree 12 from the Native Vegetation Council and has been completed by an accredited consultant. No other native vegetation is proposed to be removed.

9.7 Prescribed Watercourses and Prescribed Wells Area Overlay

Prescribed Watercourses PO 1.1 and Prescribed Wells Area PO 1.1 seek that:

All development, but in particular development involving any of the following:

- (a) Horticulture*
- (b) Activities requiring irrigation*
- (c) Aquaculture*
- (d) Industry*
- (e) Intensive animal husbandry*
- (f) Commercial forestry*

Has a lawful, sustainable, and reliable water supply that does not place undue strain on prescribed watercourses.

The proposed development does not alter / propose any additional horticulture on site. Each residential flat building has two rainwater tanks proposed. There is a Reclaimed Water Main line to the south-east corner of the subject land. There will be no undue strain on prescribed watercourses.

The runoff from the development is not directed to a prescribed watercourse. No referrals are triggered.

9.8 Regulated and Significant Tree Overlay

No regulated or significant trees are proposed to be removed as part of the development. However, as per the provided Preliminary Tree Assessment Report (Attachment 10), several regulated and significant trees exist on the site and are not proposed for removal. The development proposes a level of encroachment into the tree protection zones of the trees. However, it will not cause their decline in health and therefore, the encroachment is deemed appropriate.

It must be noted that removal of Tree 12 is required through an application through Native Vegetation Council and Tree 10 is not as dead and doesn't classify as regulated or significant tree, therefore, this tree can be removed.

9.9 Water Resources Overlay

The proposed development and the stormwater management plan have been designed to meet the EPA standards for water quality. This has been reviewed by Council's Senior Land Engineer and considered acceptable.

10. Planning Assessment – Subzone

10.1 Windamere Park Subzone – Desired Outcomes and Land Use

The subject site is located entirely within the Windamere Park Subzone.

Windamere Park Subzone DO 1 seeks that:

Development primarily involving the provision of disability services in a rural setting.

Windamere Park Subzone PO 1.1 seeks that:

Development involving the provision of disability services including training facilities, allied health services, administrative facilities, and accommodation for disability clients and their families.

This PO is informed by the associated DPF 1.1 which seeks that:

Development comprises one or more of the following:

(d) Supported accommodation

Windamere Park Subzone PO 1.2 seeks that:

Farming activities in association with disability services undertaken in a manner that is compatible with on-site accommodation.

The proposed supported accommodation is considered to be an appropriate land use within the Windamere Park Subzone due to the farming activities undertaken on the subject land separated from the subject site, which forms part of the wider Windamere Park area. The development incorporates the provision of disability services in the existing rural setting through the provision of the supported accommodation units, specifically, as the units are for the purposes of the existing Windamere Park clients to "live on" and utilise the land to its full capabilities. Although the supported accommodation is separated from the existing agricultural uses associated with Windamere Park, there is

connection through the shared services on the land and the existing right of way providing support to residents.

The introduction of a supported accommodation land use allows Windamere Park's clients to feel a connection to the land through several activities and services which teaches them about the horticulture value, to ensure their sense of belonging to the area. The proposed development also focuses on limiting the resident's travel time by ensuring that the accommodation supports the longevity of Windamere Park and its disability support services in accordance with PO 1.2.

10.2 Windamere Park Subzone – Built Form and Siting

Windamere Park Subzone PO 2.1 seeks that:

Development is sited and designed to maintain a primarily open rural setting.

Windamere Park Subzone PO 2.2 seeks that:

Buildings associated with the provision of disability services are sited in a cluster to provide easy access for clients and families.

The proposed supported accommodation and additional allotments have been designed in a cluster on the southern edge of the land to ensure easy access for residents and their respective families from the existing public roads of Legoe Road and Carmelo Road. The designation of the supported accommodation units are sited at the edge of the land to ensure that the wider rural setting is maintained. It is considered that the units are designed appropriately as they incorporate the following design parameters:

- Units are setback a minimum of 14.4m from the boundary with Legoe Road.
- Units are setback a minimum of 12.4m from external boundaries with properties beyond Windamere Park.
- The units feature a mixed materials palette such as neutral toned brickwork and cladding with timber architectural elements to reflect the rural setting.
- The units show a single storey building height to minimise observation of the development from Legoe Road and minimises visual impacts within the rural locality.

11. Planning Assessment – Zone

11.1 Rural Horticulture Zone – Desired Outcomes and Land Use

Rural Horticulture Zone Desired Outcome (DO 1) seeks that:

Intensive agriculture in the form of horticulture and associated value-adding enterprises and activities.

Rural Horticulture Zone PO 1.1 seeks that:

The productive value of horticultural land for a range of agricultural, intensive horticultural activities and associated value adding, processing, warehousing and distribution activities is supported, protected and maintained. The proliferation of other land uses that may be sensitive to those activities is avoided.

The Rural Horticulture Zone seeks agricultural and horticultural-based activities and land uses. It does not specifically envisage supported accommodation. However, as stated

previously in the report, the policy hierarchy established by the Code provides that where there is inconsistency, the provisions of the Subzone prevail over Zone policy. Therefore, although supported accommodation is not a land use envisaged within the Rural Horticulture Zone, it is an envisaged land use within the Windamere Park subzone.

Furthermore, as the land use is envisaged within DPF 1.1 of the Subzone, the proposed scale of developments aligns with the intent of providing disability services while still adequately maintaining the extent of the subject land for horticulture in accordance with PO 1.1.

As per the Agronomist report, the subject site currently is unable to provide horticultural production given its irregular shape along with the poor quality of the soil and the endemic salinity. However, the rest of the Windamere Park subject land will still allow agricultural production.

11.2 Rural Horticulture Zone – Siting and Design / Built Form and Character

Rural Horticulture Zone PO 2.1 seeks that:

Development is provided with suitable vehicle access.

This PO is informed by the associated DPF 2.1 which seeks that:

Development is serviced by an all-weather public road.

Rural Horticulture Zone PO 2.2 seeks that:

Buildings are generally located on flat land to avoid cut and fill and the associated visual impacts.

This PO is informed by the associated DPF 2.2 which seeks that:

Buildings:

(a) are sited on land with a slope not greater than 10% (1-in-10); and

(b) do not result in excavation and filling of land greater than 1.5m from natural ground level.

Rural Horticulture Zone PO 11.1 seeks that:

Large buildings are designed and sited to reduce impacts on scenic and rural vistas by:

(a) having substantial setbacks from boundaries and adjacent public roads.

(b) using low-reflective materials and finishes that blend with the surrounding landscape.

(c) being located below ridgelines.

The proposed development includes three (3) allotments containing the supported accommodation units which are serviced by new crossovers to Legoe Road. Each of the four (4) residential flat building within each allotment are accessible via sealed driveways connected to Legoe Road. As per the Council's Traffic Engineer's comment, although Legoe Road is an unsealed road with crushed rock pavement, its compaction surface and road-side swale allows access to the subject site. However, having regard to the above assessment against the Hazards (Flooding) Overlay and the Hazards (Flooding – General) provisions, it is considered that PO 2.1 has not been satisfied. This is due to the

proposed supported accommodation being located in an area that would become inaccessible during a 1% AEP flood event, resulting in an unacceptable level of risk to future occupants and emergency service access.

The proposed supported accommodation is considered to be sited appropriately, and the built form design maintains a primarily open rural setting. This is achieved as the supported accommodation units have been sited within an area of minimal slope i.e. less than 10% with minimal excavation, sufficiently below 1.5m from natural ground level.

Therefore, the proposed development is sited and designed appropriately in accordance with PO 2.2 and PO 11.1 under the Rural Horticulture Zone. Given that the supported accommodation units are sited in the flattest area of the subject land minimal cut and fill is required and appropriate access to the residents and their respective families is achieved from Legoe Road. It is also noted that supported accommodation units are constructed as a large building and clustered to maintain the rural character of the locality with substantial setbacks and neutrally toned materials consistent with the rural setting.

11.3 Rural Horticulture Zone – Land Division

Rural Horticulture Zone PO 12.1 seeks that:

Land division, including boundary realignments, promotes productive, efficient and sustainable horticulture by establishing allotments that are of sufficient dimension and area to support these outcomes and the intended use of the land for primary production.

This PO is informed by the associated DPF 12.1 which seeks that:

Allotments have an area not less than:

Minimum site area is 10ha.

Rural Horticulture Zone PO 12.2 seeks that:

Allotment boundaries, including by realignment, are positioned to incorporate sufficient space around existing residential, tourist accommodation and other habitable buildings (including boarding houses, hostels, dormitory style accommodation, student accommodation and workers' accommodation) to:

- (a) maintain a pleasant rural character and amenity for occupants.*
- (b) manage vegetation within the same allotment to mitigate bushfire hazard.*

This PO is informed by the associated DPF 12.2 which seeks that:

Allotment boundaries are located no closer to an existing residential, tourist accommodation or other habitable building than the greater of the following:

- (a) 40m or*
- (b) the distance required to accommodate an asset protection zone wholly within the relevant allotment.*

The proposed development includes three (3) new allotments each approximately 1ha in size and this is less than the requirements under the Rural Horticulture Zone.

It must be noted that provisions guiding land division in the Rural Horticulture Zone apply similar guidance (to that of the Limited Land Division Overlay) where land division is not purely restricted. However, land division must be limited to ensure that preservation and

promotion of intensive and productive horticultural activities to be the main purpose of the Zone.

While the intent of the Rural Horticulture Zone is to limit land division and maintain allotment sizes that support ongoing horticultural use, it is important to recognise the unique circumstances of the subject site. Specifically, the Windamere Park Subzone provides a distinct policy context for the assessment of supported accommodation and expressly envisages development that provides convenient and accessible living arrangements for residents. Accordingly, consideration must be given to the intent and outcomes of the Subzone, in addition to the broader intent of the Rural Horticulture Zone. Therefore, a land division to create additional allotment to facilitate the outcomes sought by the Subzone along with creating access to the public road of Legoe Road is considered reasonable.

It must be noted that the proposed land division maintains the intent of the zoning policies by:

- creating allotments which will not fragment the rest of the subject land to be used for primary production or horticulture;
- creating allotments that do not limit the viability or scale of farming activities associated with the land; and
- establishes clustered accommodation to preserve the rural character of the Rural Horticulture Zone, while supporting the provision of disability services as envisaged within the Windamere Park Subzone.

12. General Development Policies

12.1 Design

The Design section of the Code contains a suite of development policies which seek to guide contextual, durable, inclusive and sustainable development. Buildings are designed by considering, recognising and carefully responding to its natural surroundings or built environment and positively contributes to the character of the immediate area.

Development should be fit for purpose, adaptable and long lasting. Development should be sustainable by integrating sustainable techniques into the design and siting of development and landscaping to improve community health, urban heat, water management, environmental performance, biodiversity and local amenity and to minimise energy consumption.

In accordance with PO 1.1 and 1.3 in the Design Module, it states:

Design PO 1.1 seeks that:

Buildings reinforce corners through changes in setback, articulation, materials, colour and massing (including height, width, bulk, roof form and slope)

Design PO 1.3 seeks that:

Building elevations facing the primary street (other than ancillary buildings) are designed and detailed to convey purpose, identify main access points and complement the streetscape.

The proposed development is of basic design and appearance. However, articulation is provided through breaking up the walls through windows, cladding and a mix of roof pitches to demonstrate the natural environment of the wider Windamere Park land. The

elevations also incorporate cladding and rendering of neutral tones which are consistent with the green environment associated with the subject land. It must be noted that the elevations offer a neutral colour palette to ensure that blank walls are avoided.

The abovementioned POs seeks for a mixture of materials, and distinct building elements to reduce visual mass, the proposed units are considered to fully satisfy these policies.

The supported accommodation units are designed to ensure that within each of the proposed allotments, the four (4) units are sited to provide a communal 'feel' by ensuring that they front onto the irrigation basin with its natural habitat and native plantings/ trees. The development has been designed to ensure that residents feel a natural connection to the environment to assist with the disability services and "connection to land" which Windamere Park offers.

Design PO 27.1 seeks that:

Supported accommodation and housing for aged persons and people with disabilities is located where on-site movement of residents is not unduly restricted by the slope of the land.

The proposed development satisfies the above provision given that the supported accommodation units have been designed to provide appropriate circulation space within living spaces, bathrooms and hallways to support people living with limited mobility and physical disabilities.

The units are single storey and incorporate a consistent floor level between the communal spaces and the buildings, while being sited on the only parcel of the subject land which has minimal slope, therefore, resulting in minimal earthworks. The proposed development has been designed to be accessible to people with all levels of disabilities, while being in an existing area which provides the required services to residents. It must also be noted that the units are shown as single storey to ensure that the low-density feel to the subject land is maintained. While ensuring that the development does not develop a cluttered residential design, rather keeping the rural character attached to the land.

On balance, the proposed development is not considered to prejudice existing agricultural land and is suitably designed to minimise any visual bulk and scale.

12.2 Interface Between Land Uses

A suite of policies are contained within the General Development Policies which relate specifically to land use interface, suitability and mitigation of unreasonable impacts. The subject site is suitably placed to house the proposed development as it is an existing horticultural land in proximity to nearby future sensitive receivers within the Riverlea Masterplan area and nearby rural residential dwellings within existing agricultural land.

Interface Between Land Uses PO 8.1 seeks that:

Development in rural and remote areas does not unreasonably diminish or result in the loss of existing communication services due to electrical interference.

The proposed buildings are appropriate within the context of the area, as the structures have a building height of 4.97m to the ridge, and are not within a line of sight between a fixed transmitter and fixed receiver (antenna). The proposed development is also not in proximity to communication services; therefore, no electrical interference occurs to the wider area.

Interface Between Land Uses PO 9.1 seeks that:

Sensitive receivers are located and designed to mitigate impacts from lawfully existing horticultural and farming activities (or lawfully approved horticultural and farming activities), including spray drift and noise and do not prejudice the continued operation of these activities.

Interface Between Land Uses PO 9.7 seeks that:

Urban development does not prejudice existing agricultural and horticultural activities through appropriate separation and design techniques.

The proposed development is located at the southern edge of the subject land to provide adequate separation from the existing horticultural aspects associated with Windamere Park. The siting of the units is also assisted through the existing irrigation basin and separation from agricultural buildings through the retention of existing trees and vegetation.

The units and associated allotments are designed to be low scale to maintain the majority of the land for the existing horticultural activities. As described earlier in the report and reflected within the agronomist report, the subject site for the proposed development does not have horticultural value given its irregular shape and does not reduce the agricultural operation of the rest of the subject land.

12.3 Site Contamination

Site Contamination PO 1.1 seeks that:

Ensure land is suitable for use when land use changes to a more sensitive use.

The proposed supported accommodation will introduce a more sensitive land use through the establishment of residential accommodation. Therefore, a Preliminary Site Investigation (PSI) report prepared by Agon Environmental was provided. The PSI report showed that no classed activities were identified and therefore, the land does not require further contamination remediation or an associated site audit report.

Part 9 of the Code requires a referral to the EPA in the following instances:

“Change in the use of land to a more sensitive use on land at which site contamination exists or may exist as a result of one of the following:

(a) class 1 activity (including where a class 1 activity exists or previously existed on adjacent land)

(b) class 2 activity and the proposed use is a sensitive use

Referring to Table 1 Land Use Sensitivity Hierarchy within Practice Direction 14: Site Contamination Assessment 2021, the proposed development constitutes an increase in land use sensitivity noting that the subject land was identified for agricultural / horticultural activities. The change for supported accommodation, therefore, results in an increase in sensitivity.

A historical analysis of past land uses undertaken through the Preliminary Site Investigation (PSI) performed by Agon Environmental on behalf of the applicant has identified that the likelihood for site contamination to be present at the site is considered to be low without a potentially contaminating activity not known to have occurred on the subject land. Therefore, completion of a Detailed Site Investigation (DSI) is not considered to be warranted, and as a result, referral to the EPA was not required.

12.4 Stormwater Management

The proposal includes a Stormwater Management Report with associated modelling and plans prepared by FMG Engineering (Attachment 5). The intent of the report is to demonstrate the suitability of the development on the subject land and to ensure appropriate management of stormwater. Whilst not impacting upon adjoining land and increase any flooding risk to the land and adjoining unsealed roads and adjacent properties.

In summary, the FMG Engineering report notes that the site does not take benefit of existing internal infrastructure to drain to. While ensuring that the development has been designed to manage stormwater onsite through rainwater harvesting tanks and surface drainage to existing vegetated areas. It also notes that the proposed buildings demonstrate finished floor levels (FFLs) being 300mm above the adjacent flood level to protect the supported accommodation against flooding. The development is firmly designed on water re-use within the land through the modification of the existing recycled water discharge to the existing basin by achieving a minimum storage capacity of 4,200m³ within the irrigation basin (i.e. lagoon).

Stormwater and flooding detail has been reviewed by Council's Land Development Engineer who is comfortable with the built form and the stormwater strategy, subject to implementation of the following conditions to ensure that flooding mitigation and stormwater measures are implemented to the development:

- Flooding management: the landowners shall maintain levee and its height (800mm above adjacent land levels to a top level of ~5mAHD) along the boundary of the site in Legoe Road (Including driveway crossover ridge line), internal road and eastern boundary to ensure this is not compromised during flood event.
- Stormwater management: the existing recycled water feed into the lagoon is to be modified with a float switch or similar arrangement, to ensure recycled water feed is turned off with a minimum of 4,200m³ storage capacity below the overflow culvert elevation is achieved (i.e. nominally cutoff at 3.0mAHD).
- Stormwater treatment measures: the owner shall inspect OceanGuard pit inserts every four (4) months and post-major storm events, with full debris removal required once the bags reach approximately 70% capacity to prevent bypass. For the roadside swales, the landowner is obligated to maintain healthy vegetation cover, including regular mowing (retaining a height of 50mm-100mm) and the removal of accumulated sediment at entry points every 3-4 years. Failure to adhere to these intervals may lead to system blockages and non-compliance with Council's discharge quality requirements.

Although from a stormwater perspective, the development meets several parameters, there appears to be fundamental issue to the access to the development during 1% AEP flood event. The applicant has provided a response to the concern including a Southfront Flood Emergency Access and Evacuation Management Plan (Attachment 13).

As reflected within Sections 3.3 and 3.4 of the Southfront plan, the primary evacuation route of Legoe Road to Beagle Hole Road to Park Road / Carmelo Road to Port Wakefield Road remains trafficable under normal conditions. However, no formal assessment has been made regarding the accessibility of the unsealed roads during rainfall events prior to a major flood event, therefore, the evacuation between 12-20 hours prior to a flood event may not be possible due to the lack of stormwater infrastructure for the roads. It must also be noted that the rainfall data for flooding may cause unsafe driving conditions to the unsealed sections of road and therefore, may not only entrap vulnerable people but also not allow emergency services vehicles to access the land.

12.5 Traffic, Access and Car Parking

The applicant has engaged Empirical Traffic Advisory (ETA) Traffic and Parking Consultants (Attachment 8) to provide expert and technical reporting relating to traffic, access and vehicle parking.

PO 3.8 of the Transport, Access and Parking Module seeks that:

Driveways, access points, access tracks and parking areas are designed and constructed to allow adequate movement and manoeuvrability having regard to the types of vehicles that are reasonably anticipated.

PO 3.9 of the Transport, Access and Parking Module seeks that:

Development is designed to ensure vehicle circulation between activity areas occurs within the site without the need to use public roads.

PO 4.1 of the Transport, Access and Parking Module seeks that:

Development is sited and designed to provide safe, dignified and convenient access for people with a disability.

The proposed development incorporates access for each allotment with a two-way access point to Legoe Road with a suitable crossover between the property and the road. The access points are designed to provide easy access to people with a disability and their families. Council's Traffic Engineer is satisfied that the sight distance for each access point is satisfactory given the straight road alignment. However, as clarified previously in the report, upgrades to the surrounding access roads inclusive of Legoe Road are required to ensure appropriate all-weather access for emergency service vehicles is maintained during high rainfall events and flood events.

The carparking areas for each supported accommodation are consistent with the above provisions given that:

- Turnaround spaces for each of the supported accommodation units and end of circulation roads, which is minimum of 6m wide.
- 90-degree angled parking spaces are incorporated, which are 2.4m wide and 5.4m long, consistent with Australian Road Standard 2890.1 Off-Street Car Parking.

PO 5.1 of the Transport, Access and Parking Module seeks:

Sufficient on-site vehicle parking and specifically marked accessible car parking places are provided to meet the needs of the development or land use having regard to factors that may support a reduced on-site rate such as:

(a) availability of on-street car parking

(b) shared use of other parking areas

(c) in relation to a mixed-use development, where the hours of operation of commercial activities complement the residential use of the site, the provision of vehicle parking may be shared

(d) the adaptive reuse of a State or Local Heritage Place.

(e) proximity to high frequency public transport

This PO is informed by the associated Designated Performance Feature (DPF) 1.1 which seeks that:

Development provides a number of car parking spaces on-site at a rate no less than the amount calculated using one of the following, whichever is relevant:

- (a) Transport, Access and Parking Table 2 - Off-Street Vehicle Parking Requirements in Designated Areas if the development is a class of development listed in Table 2 and the site is in a Designated Area*
- (b) Transport, Access and Parking Table 1 - General Off-Street Car Parking Requirements where (a) does not apply*
- (c) if located in an area where a lawfully established carparking fund operates, the number of spaces calculated under (a) or (b) less the number of spaces offset by contribution to the fund.*

As the site is not within a Designated Area, the following vehicle parking rate for the supported accommodation as reflected within Table 1 of the Module is applicable:

0.3 spaces per bed.

The proposed supported accommodation units comprise 90 beds across the three (3) proposed allotments. The minimum amount of car parking required is 27 spaces as per requirements of Table 1 of the Module. The proposal provides 15 car parking spaces within each allotment, with a total of 45 car parking spaces across the subject site thereby meeting the intent of the policy. The proposal provides a higher number of car parking spaces to allow residents to have families visit them and ensure that no spill on to the public road occurs.

For waste collection the Design section of the Code contains the following provisions relevant to waste collection:

PO 1.5

The negative visual impact of outdoor storage, waste management, loading and service areas is minimised by integrating them into the building design and screening them from public view (such as fencing, landscaping and built form), taking into account the form of development contemplated in the relevant zone.

PO 26.5

Where waste bins cannot be conveniently collected from the street, provision is made for on-site waste collection, designed to accommodate the safe and convenient access, egress and movement of waste collection vehicles.

PO 30.6

Provision is made for on-site waste collection where 10 or more bins are to be collected at any one time.

As per the Colby Phillips Advisory waste management plan, it is noted that each allotment has their own bins and waste collection will be by a private waste collection contractor, consistent with the existing waste collection services to Windamere Park. It is noted that the ETA traffic and parking report speaks to the bin collection being undertaken by Council services, while the waste management plan speaks to the bin collection being undertaken by a private waste collection contractor.

The Colby Phillips Advisory waste management plan is considered an appropriate collection methodology for this proposal and is considered to take priority over the traffic and parking report. Bins will be collected on Legoe Road adjacent each proposed driveway for collection by a private waste contractor who will transport these bins to and from the bin enclosure. Deliveries to the proposed supported accommodation will be minimal as staff of the subject land will assist residents to take care of living requirements for shopping for food and goods. Therefore, the proposed waste collection method outlined within the Colby Phillips Advisory waste management plan is considered appropriate on its merit against PO 30.6.

As per the Colby Phillips Advisory waste management plan, the bin storage collection area located for each of the three (3) allotments are located 4m from Legoe Road. Therefore, the proposed bin storage area is considered appropriate on its merit against PO 26.5. The bin storage area is at least 170m away from the nearest unit and as per the waste management plan, staff will dispose household waste when transporting residents off site. It must be noted that the waste management plan is inconsistent with the proposal given that it speaks to four staff members per each 15 units and that only 19 bedrooms are proposed for each allotment.

13 Conclusion

The proposal is for land division creating four (4) allotments from one (1) fragmented allotment together with the construction of 12 residential flat buildings comprising 45 dwellings for the purpose of supported accommodation with associated earthworks and tree-damaging activity. It is considered an appropriate development form of development within the Windamere Park Subzone and is not seriously at variance with the Limited Dwelling and Limited Land Division Overlay given the limited horticultural opportunity of the subject site. In summary:

- The supported accommodation has been sited and designed to support residents living with disability with a range of mobility needs.
- The proposed development of supported accommodation is wholly consistent with the purpose of the Windamere Park Subzone.
- The proposed land division is not seriously at odds with the Limited Land Division Overlay given that the subject site does not have horticultural opportunity as demonstrated within the Agronomist report.
- Suitable processes have been displayed to manage stormwater / vehicle impacts, vehicle parking / movements and waste management of the subject site.
- The proposed development incorporates allotments fit for purpose while preserving the rural setting and does not deter the wider parcel of land from further horticulture or agriculture consistent with the provisions of the Rural Horticulture zone.
- The supported accommodation units have been designed to be low-scale and incorporate neutral toned materiality and colours consistent with the rural locality.

However, the proposed development does not incorporate required road and stormwater infrastructure upgrades to remove the flooding risk to the access roads servicing the development. The floodwaters will not enable emergency accessibility to the site during 1% AEP flood event, specifically as stated by PO 6.1 in the Hazards (Flooding) Overlay, which clearly states that development does not occur on land which cannot be accessed by emergency service vehicles or essential utility service vehicles during a 1% AEP flood event.

Additionally, the proposal does not satisfy several key POs within the Hazards (Flooding) Overlay, including PO 2.1, PO 2.2 and PO 6.2. The development would introduce

additional vulnerable occupants to a locality that is expected to become isolated during a 1% AEP flood event. While the applicant has proposed mitigation measures to facilitate evacuation and maintain access to and from the site, it is considered that these measures do not adequately address the residual flood risk. Accordingly, the residual risk to occupants remains unacceptable.

As such, that on balance, the proposed development does not warrant support and is recommended for refusal.

14 Recommendation

STAFF RECOMMENDATION

It is therefore recommended that the Council Assessment Panel:

1. DETERMINES that the proposed development is not seriously at variance with the policies in the Planning and Design Code; and
2. REFUSES Planning Consent and Land Division Consent to the application by Mr Theodoor de Lyster C/- URPS for Conventional land division creating four (4) allotments from one (1) fragmented allotment together with the construction of 12 residential flat buildings comprising 45 dwellings for the purposes of supported accommodation with associated earthworks and tree-damaging activity, as detailed in application ID 25000116.
 - a. The proposal is inconsistent with the provisions of the Hazards (Flooding) Overlay and the Rural Horticulture Zone. Therefore, the development is considered inappropriate due to the inaccessibility to the development during 1% AEP flood event. Furthermore, the proposed land division and supported accommodation is not appropriate as it exposes vulnerable people to unacceptable flood risk and increases the likelihood of entrapping vulnerable people during 1% AEP flood events.
 - b. In particular, it falls short of the following:
 - i. Rural Horticulture Zone PO 2.1 – Development is provided with suitable vehicle access.
 - ii. Hazards (Flooding) Overlay DO 1 – Impacts on people, property, infrastructure and the environment from high flood risk are minimised by retaining areas free from development, and minimising intensification where development has occurred.
 - iii. Hazards (Flooding) Overlay PO 2.1 – Development sited and designed to minimise exposure of people and property to unacceptable flood risk.
 - iv. Hazards (Flooding) Overlay PO 2.2 – Buildings housing vulnerable people, community services facilities, key infrastructure and emergency services are sited away from flood prone areas to enable uninterrupted operation of services and reduce likelihood of entrapment.
 - v. Hazards (Flooding) Overlay PO 6.1 – Development does not occur on land:
 - (a) from which evacuation to areas not vulnerable to flood risk is not possible during a 1% AEP flood event.
 - (b) which cannot be accessed by emergency services vehicles or essential utility service vehicles during a 1% AEP flood event.
 - vi. Hazards (Flooding) Overlay PO 6.2 – Access driveways and tracks to a significant development (i.e. dwellings, places of work, etc.) consist of a safe, all-weather trafficable surface that is accessible during a 1% AEP flood event.

DRAWING: Aerial Plot Date: 21/11/2025 10:29 AM Client: Windmere Park SDA, 24-0848, Project Name: Windmere Park SDA, 24-0848



REASON FOR ISSUE	REV	DATE
Revisions	E	11/10/2025
Revisions	F	21/11/2025

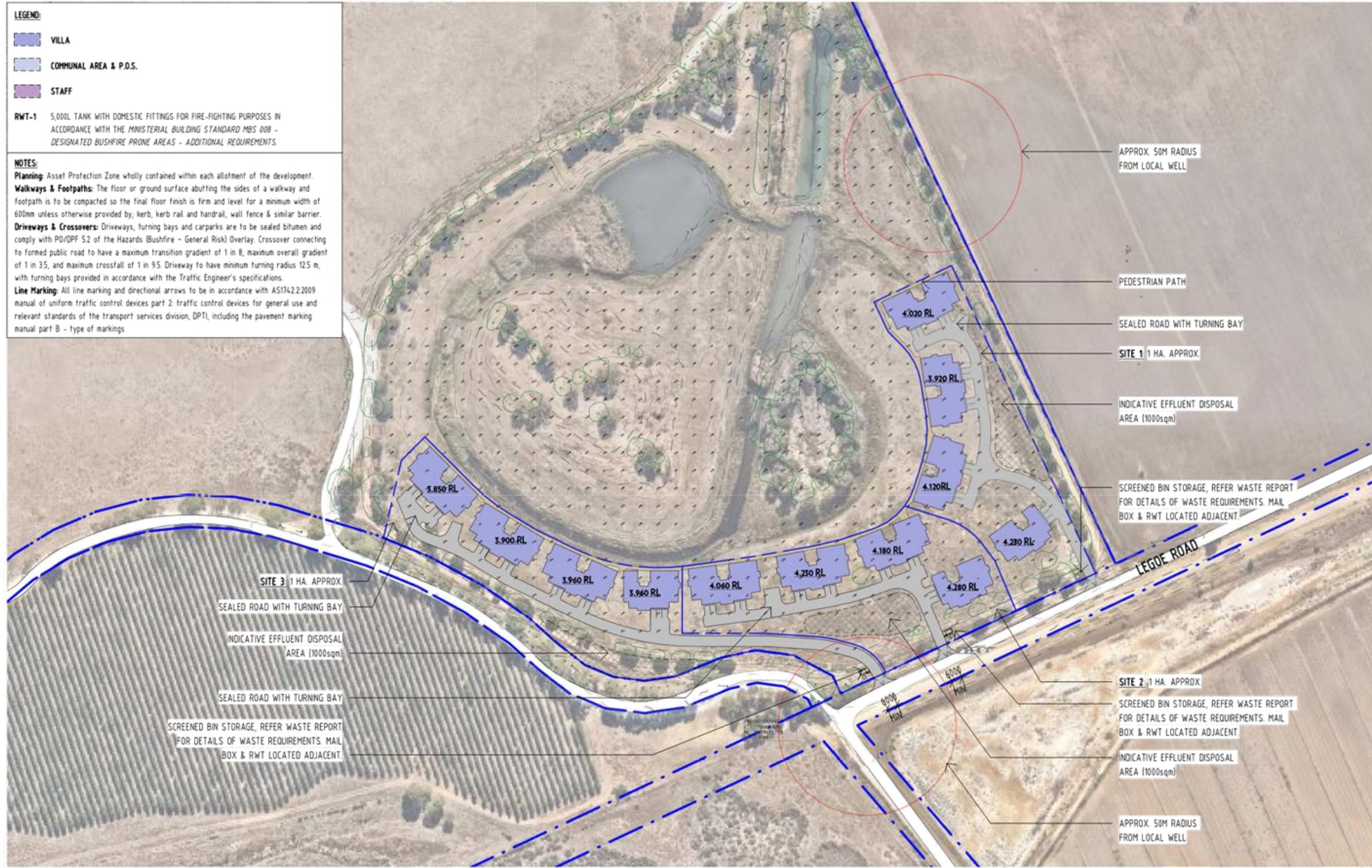
PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windmere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

LOCATION PLAN	DRAWING — SK00
21/11/2025	REVISION — F
1 : 5000 @A3	PROJECT — 24-0848



LEGEND:

- VILLA
- COMMUNAL AREA & P.O.S.
- STAFF

RWT-1 5,000L TANK WITH DOMESTIC FITTINGS FOR FIRE-FIGHTING PURPOSES IN ACCORDANCE WITH THE MINISTERIAL BUILDING STANDARD MBS 008 - DESIGNATED BUSHFIRE PRONE AREAS - ADDITIONAL REQUIREMENTS.

NOTES:

Planning: Asset Protection Zone wholly contained within each allotment of the development.

Walkways & Footpaths: The floor or ground surface abutting the sides of a walkway and footpath is to be compacted so the final floor finish is firm and level for a minimum width of 600mm unless otherwise provided by, kerb, kerb rail and handrail, wall fence & similar barrier.

Driveways & Crossovers: Driveways, turning bays and carparks are to be sealed bitumen and comply with PD/DPF 52 of the Hazards (Bushfire - General Risk) Overlay. Crossover connecting to formed public road to have a maximum transition gradient of 1 in 8, maximum overall gradient of 1 in 35, and maximum crossfall of 1 in 95. Driveway to have minimum turning radius 12.5 m, with turning bays provided in accordance with the Traffic Engineer's specifications.

Line Marking: All line marking and directional arrows to be in accordance with AS1742.2:2009 manual of uniform traffic control devices part 2: traffic control devices for general use and relevant standards of the transport services division, DPTI, including the pavement marking manual part B - type of markings.

REASON FOR ISSUE	REV	DATE
Revisions	M	17/02/2025
Revisions - RWT	N	17/03/2026

PRELIMINARY

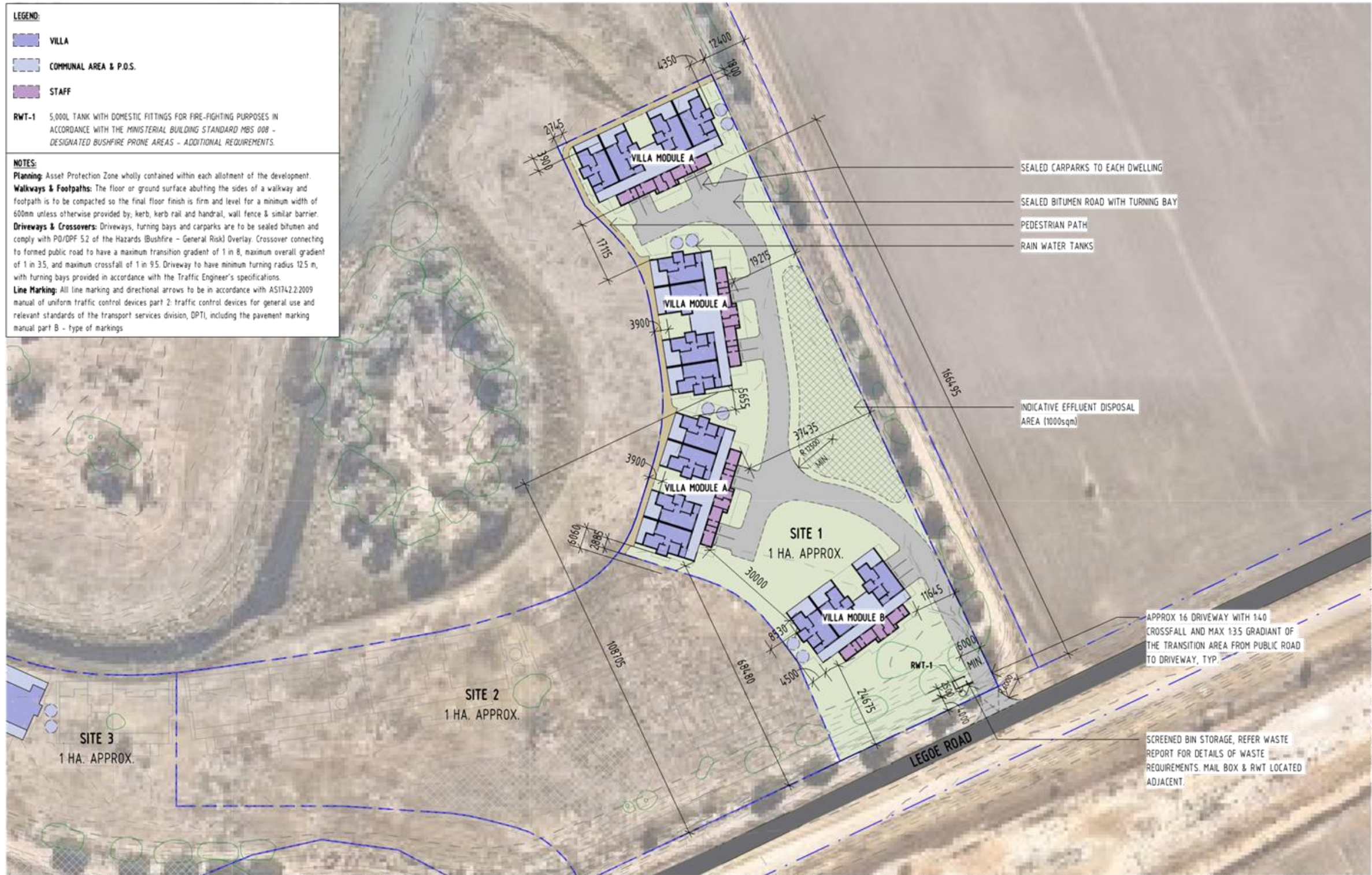
WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

SITE PLAN	DRAWING — SK01
17/03/2026	REVISION — N
As indicated @A3	PROJECT — 24-0848

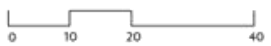
DRAWING: Adam FLOTT DATE: 17/03/2026 11:14 AM Client: Windamere Park SDA, 202 Legoe Road, Buckland Park



REASON FOR ISSUE	REV	DATE
Revisions	M	17/02/2025
Revisions - RWT	N	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING

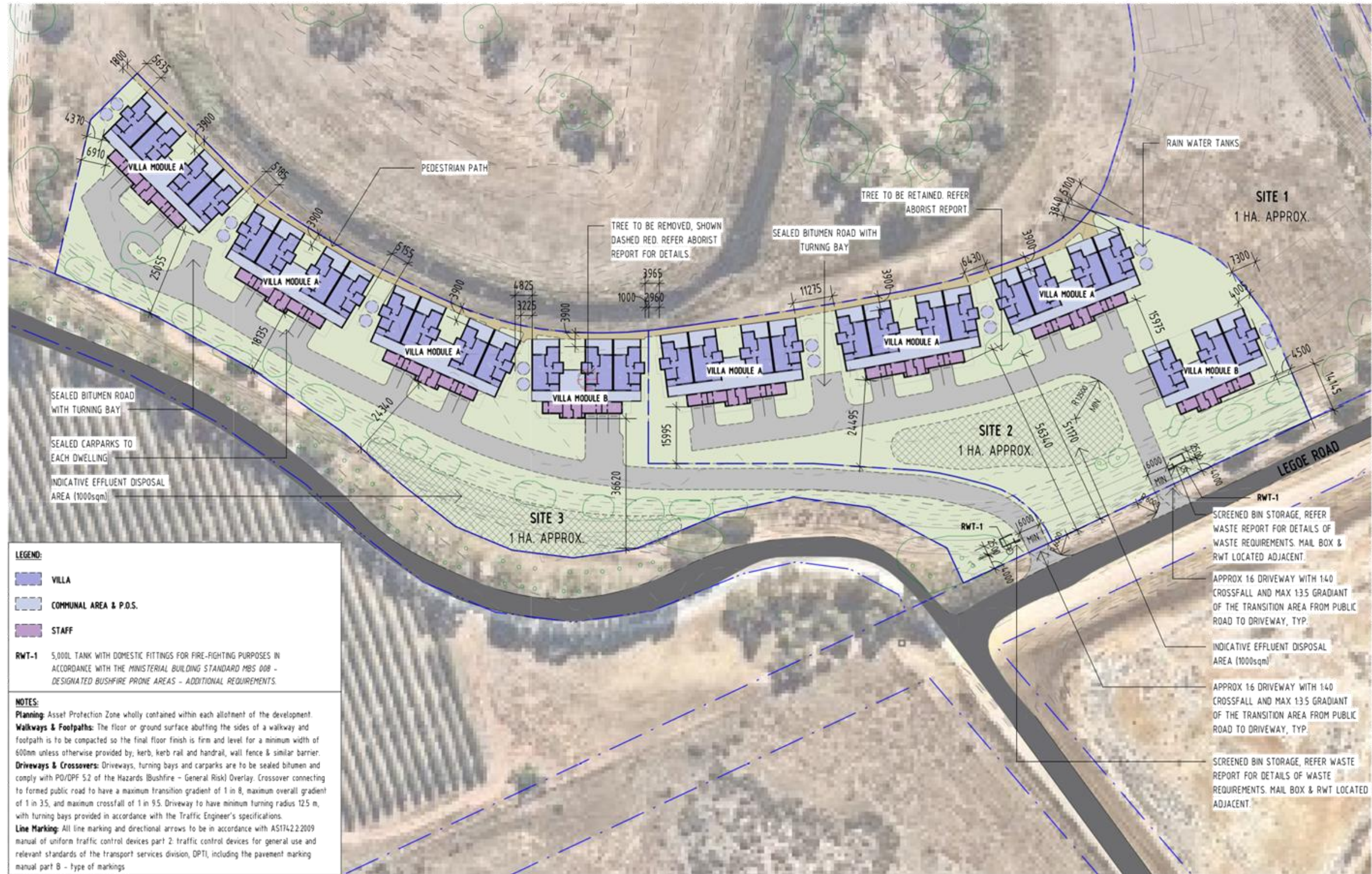


Windmere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

SITE PLAN - SITE 1
 1 : 1000

SITE PLAN - SITE 1	DRAWING	SK02
17/03/2026	REVISION	N
As indicated @A3	PROJECT	24-0848

DRAWING NO: 24-0848-11-17-2026 Client: Windmere Park SDA, 202 Legoe Road, Buckland Park, SA. Drawing: Architectural



LEGEND:

- VILLA
- COMMUNAL AREA & P.D.S.
- STAFF

RWT-1 5,000L TANK WITH DOMESTIC FITTINGS FOR FIRE-FIGHTING PURPOSES IN ACCORDANCE WITH THE MINISTERIAL BUILDING STANDARD MBS 008 - DESIGNATED BUSHFIRE PRONE AREAS - ADDITIONAL REQUIREMENTS.

NOTES:

Planning: Asset Protection Zone wholly contained within each allotment of the development.

Walkways & Footpaths: The floor or ground surface abutting the sides of a walkway and footpath is to be compacted so the final floor finish is firm and level for a minimum width of 600mm unless otherwise provided by, kerb, kerb rail and handrail, wall fence & similar barrier.

Driveways & Crossovers: Driveways, turning bays and carparks are to be sealed bitumen and comply with PD/DPF 5.2 of the Hazards (Bushfire - General Risk) Overlay. Crossover connecting to formed public road to have a maximum transition gradient of 1 in 8, maximum overall gradient of 1 in 3.5, and maximum crossfall of 1 in 9.5. Driveway to have minimum turning radius 12.5 m, with turning bays provided in accordance with the Traffic Engineer's specifications.

Line Marking: All line marking and directional arrows to be in accordance with AS1742.2:2009 manual of uniform traffic control devices part 2: traffic control devices for general use and relevant standards of the transport services division, DPTI, including the pavement marking manual part B - type of markings

REASON FOR ISSUE	REV	DATE
Revisions	G	17/02/2025
Revisions - RWT	H	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



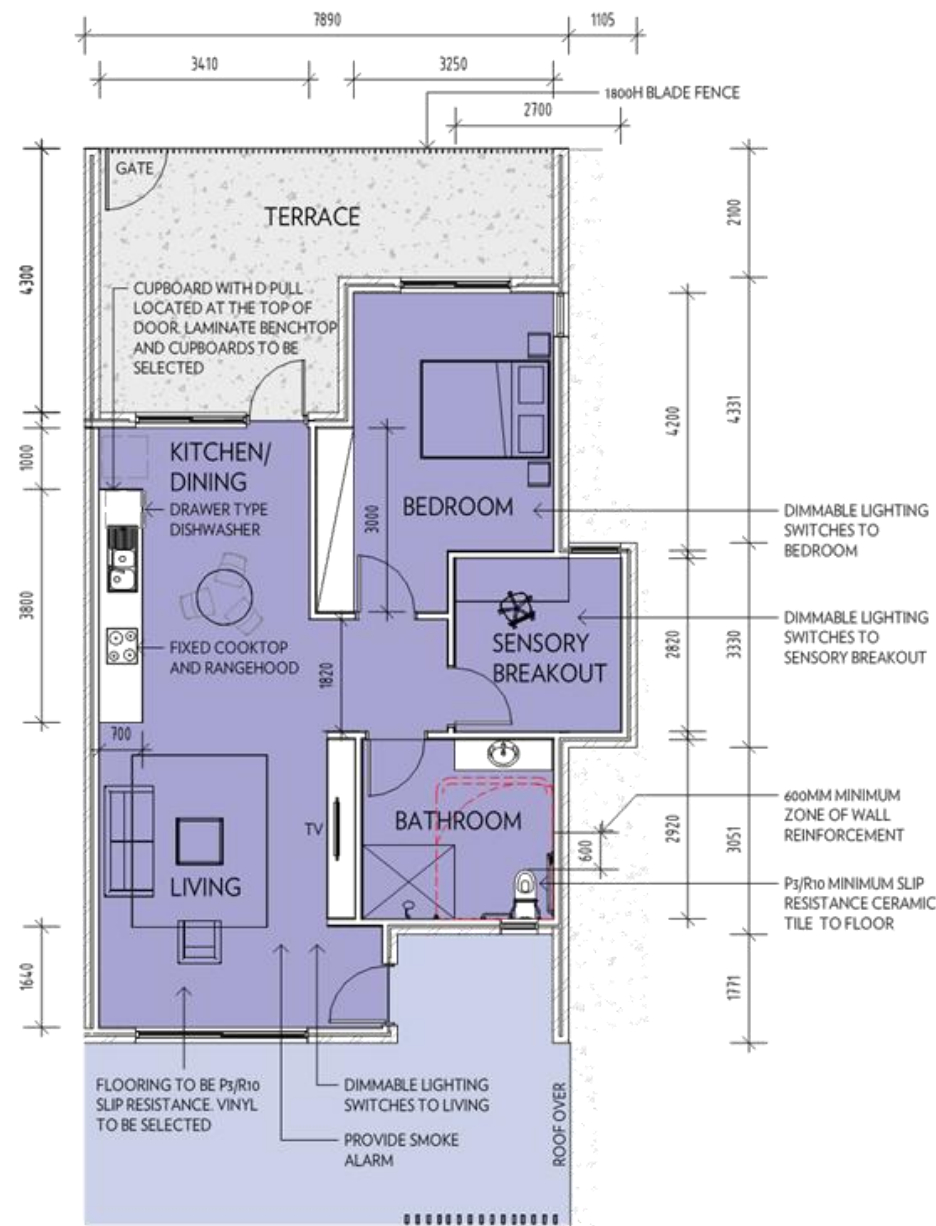
Windmere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

SITE PLAN - SITE 2 & 3

1:1000

SITE PLAN - SITE 2 & 3	DRAWING	SK03
17/03/2026	REVISION	H
As indicated @A3	PROJECT	24-0848

DRAWING NO: LOT 202 LEGOE ROAD SDA - CIVIL AND LANDSCAPE ARCHITECTURE PLAN SDA, 24-0848-08-01-01



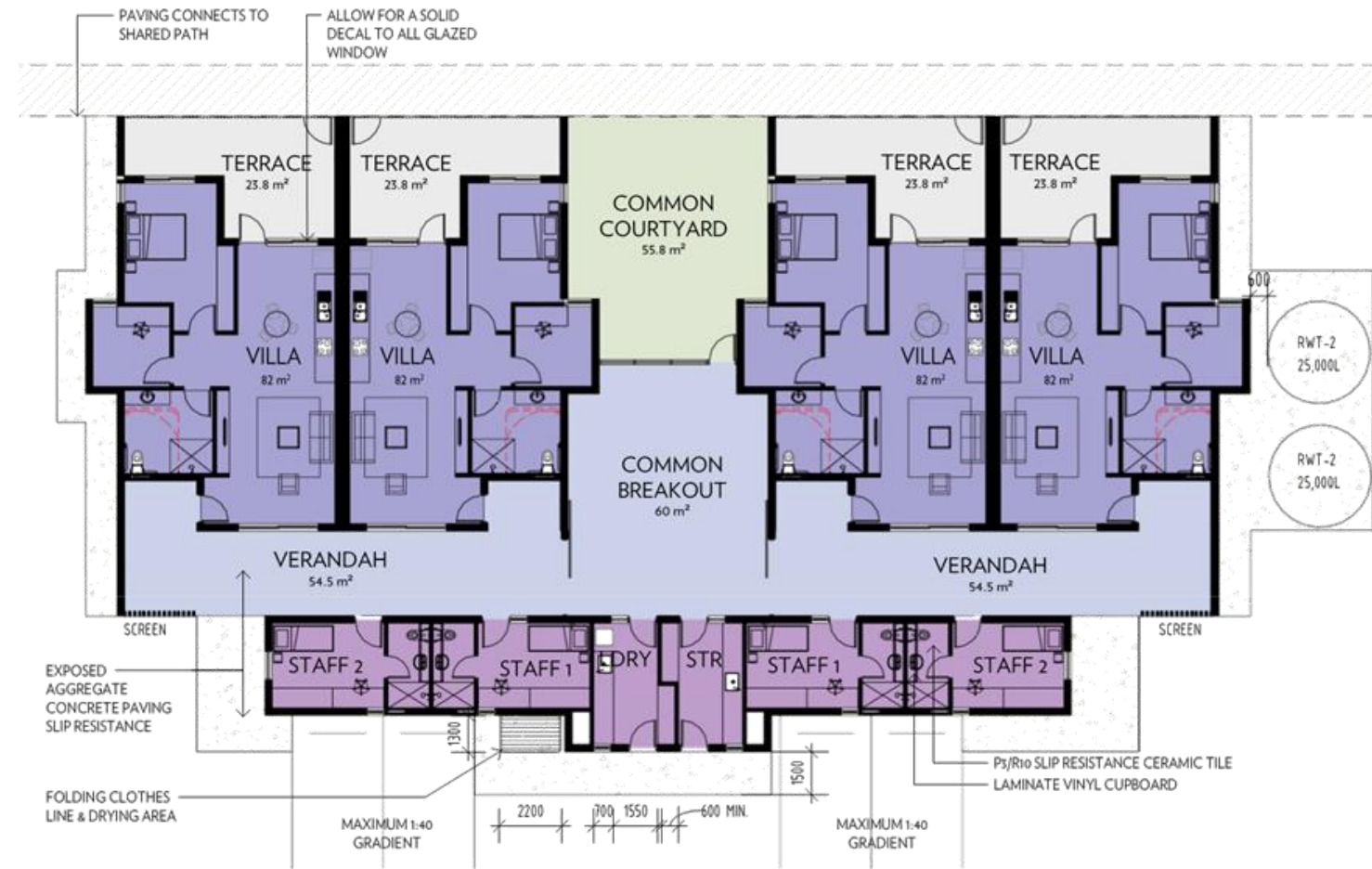
TYPICAL VILLA FLOOR PLAN

1 : 100

REASON FOR ISSUE	REV	DATE
Revisions	G	17/02/2025
Revisions - RVT	H	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



TYPICAL SELF CONTAINED VILLA MODULE A

1 : 200

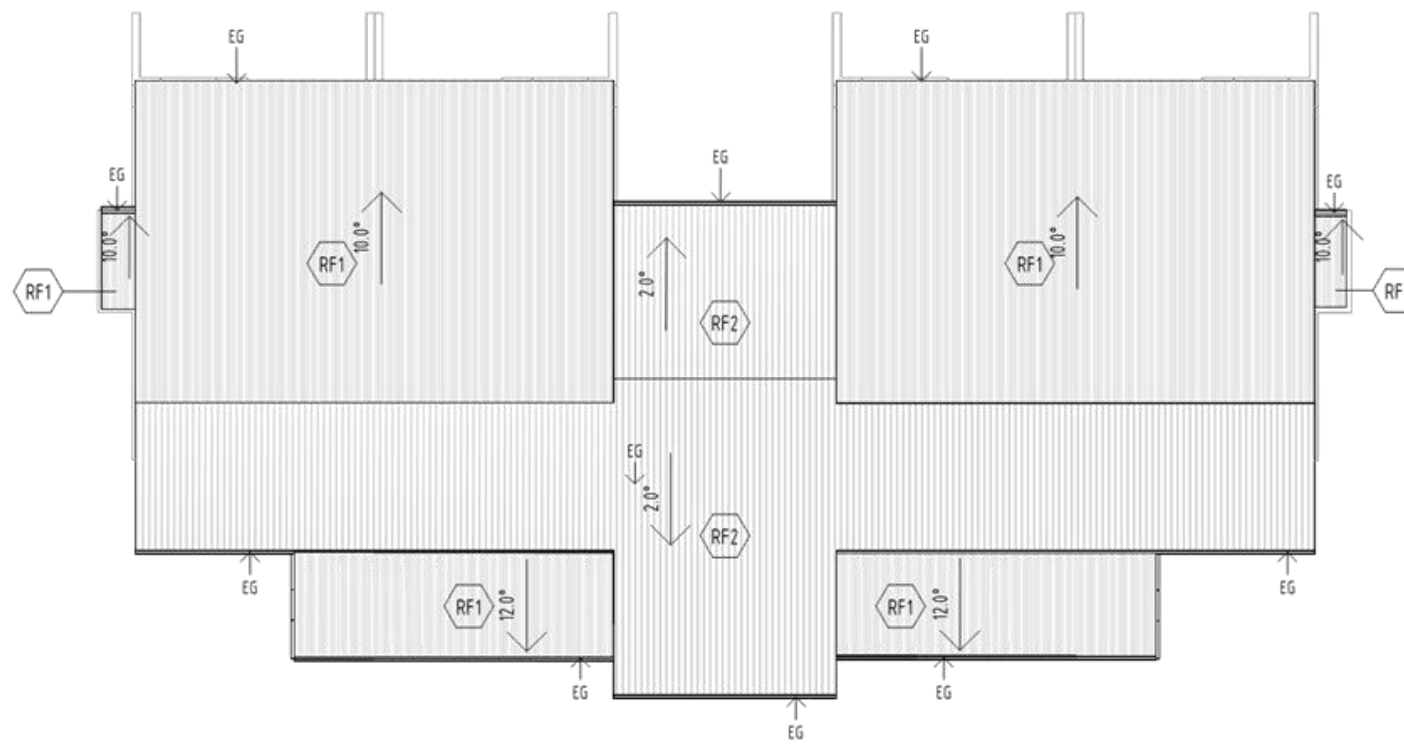
- LEVEL TRANSITION INTO VILLA - TYPICAL
- CONTINUOUS STEP-FREE PATHWAYS TO ENTRANCES. MAXIMUM 1:20 GRADE SLIP RESISTANCE P4 OR R11

- HIGH IMPACT WALL LININGS.
- LIGHTS AND GPO SWITCHES TO BE ROCKER ACTION WITH A MINIMUM WIDTH OF 35MM.
- LIGHT SWITCHES POSITIONED BETWEEN 900MM - 1100MM ABOVE FFL.
- ALL HINGED DOOR TO BE SOLID CORE - MINIMUM 900MM WIDE.
- DOOR HANDLES TO BE FIXED AT BETWEEN 900MM AND 1100MM ABOVE FFL.
- ALL WINDOWS TO BE LOCKABLE.
- ALL GLAZING TO BE LAMINATED GLASS OR POLYCARBONATE RESIN THERMOPLASTIC MATERIAL.

Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE A - FLOOR PLAN	DRAWING	SK05
17/03/2026	REVISION	H
As indicated @A3	PROJECT	24-0848

DRAWING: Villa - R01 DATE: 11/20/2025 09:59 AM Client: Windmere Park SDA, 24-0848, Project: Villa



ROOF PLAN - MODULE A
1 : 200

ROOF TYPE SCHEDULE	
CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

GUTTER SCHEDULE	
CODE	DESCRIPTION
EG	Mosman Eaves gutter

REASON FOR ISSUE	REV	DATE
Revisions	B	20/01/2025
Revisions	C	31/10/2025

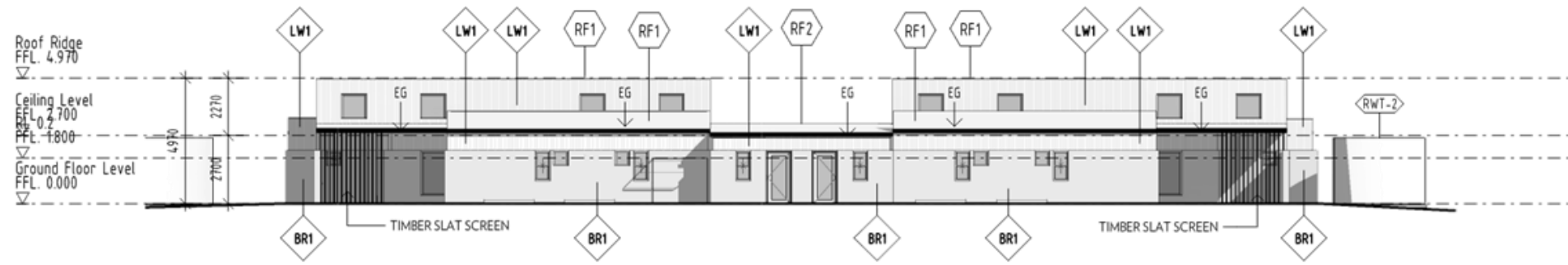
PRELIMINARY

WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING



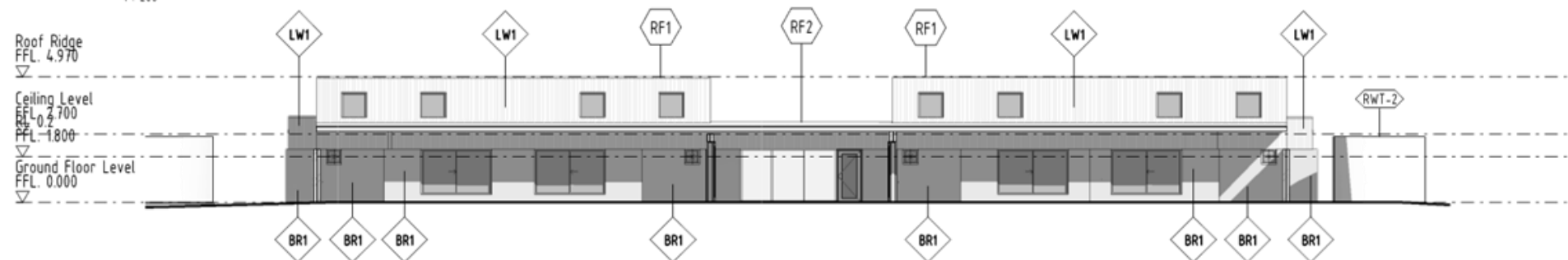
Windmere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE A - ROOF DRAWING — SK06	
PLAN	REVISION — C
31/10/2025	
1 : 200 @A3	PROJECT — 24-0848



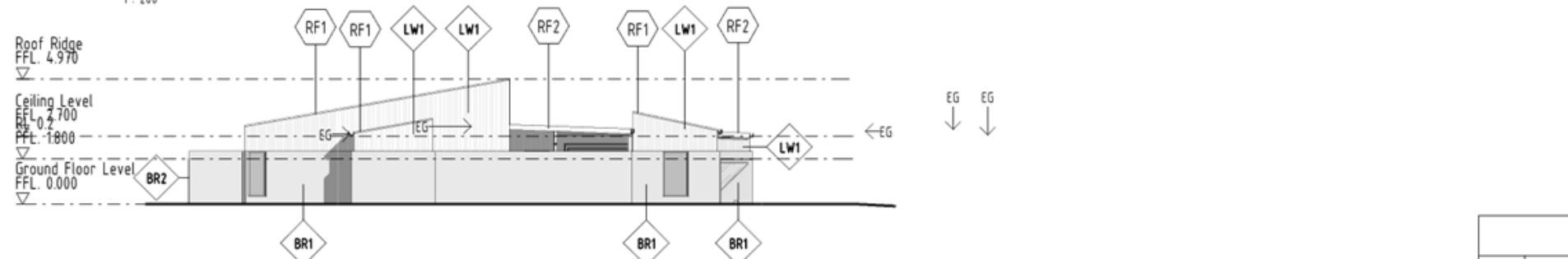
MODULE A_ELEVATION 01

1:200



MODULE A_ELEVATION 02

1:200



MODULE A_TYP SIDE ELEVATION

1:200



MODULE A_ELEVATION 04

1:200

REASON FOR ISSUE	REV	DATE
Revisions	C	31/10/2025
Revisions - RWT	D	17/03/2026

PRELIMINARY
WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

ROOF TYPE SCHEDULE	
CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

GUTTER SCHEDULE	
CODE	DESCRIPTION
EG	Mosman Eaves gutter

WALL TYPE SCHEDULE	
CODE	WALL DESCRIPTION
BR1	110mm wide brickwork / 40mm air gap / Thermal insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Villaboard to wet areas) /
BR2	110mm wide brickwork / 40mm air gap / 110mm wide brickwork /
FT1	Aluminium blade fencing, 1800H /
LW1	25mm Metal Cladding / 35mm sub-framing / Thermal insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Villaboard to wet areas) /

TYPICAL SELF CONTAINED VILLA MODULE A - DRAWING — SK07
 ELEVATIONS
 17/03/2026 REVISION — D
 1:200 @A3 PROJECT — 24-0848

DRAWING/Author: RWT/DATE: 17/03/2026/PROJECT: Windamere Park SDA/LOT 202 LEGOE ROAD/BUCKLAND PARK/SCALE: 1:200/PROJECT NO: 24-0848



TYPICAL SELF CONTAINED VILLA MODULE B

1: 200

REFER TO SHEET SK-05 FOR TYPICAL VILLA FLOOR PLAN

- HIGH IMPACT WALL LININGS.
- LIGHTS AND GPO SWITCHES TO BE ROCKER ACTION WITH A MINIMUM WIDTH OF 35MM.
- LIGHT SWITCHES POSITIONED BETWEEN 900MM - 1100MM ABOVE FFL.
- ALL HINGED DOOR TO BE SOLID CORE - MINIMUM 900MM WIDE.
- DOOR HANDLES TO BE FIXED AT BETWEEN 900MM AND 1100MM ABOVE FFL.
- ALL WINDOWS TO BE LOCKABLE.
- ALL GLAZING TO BE LAMINATED GLASS OR POLYCARBONATE RESIN THERMOPLASTIC MATERIAL.

REASON FOR ISSUE	REV	DATE
Revisions	G	17/02/2025
Revisions - RWT	H	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING

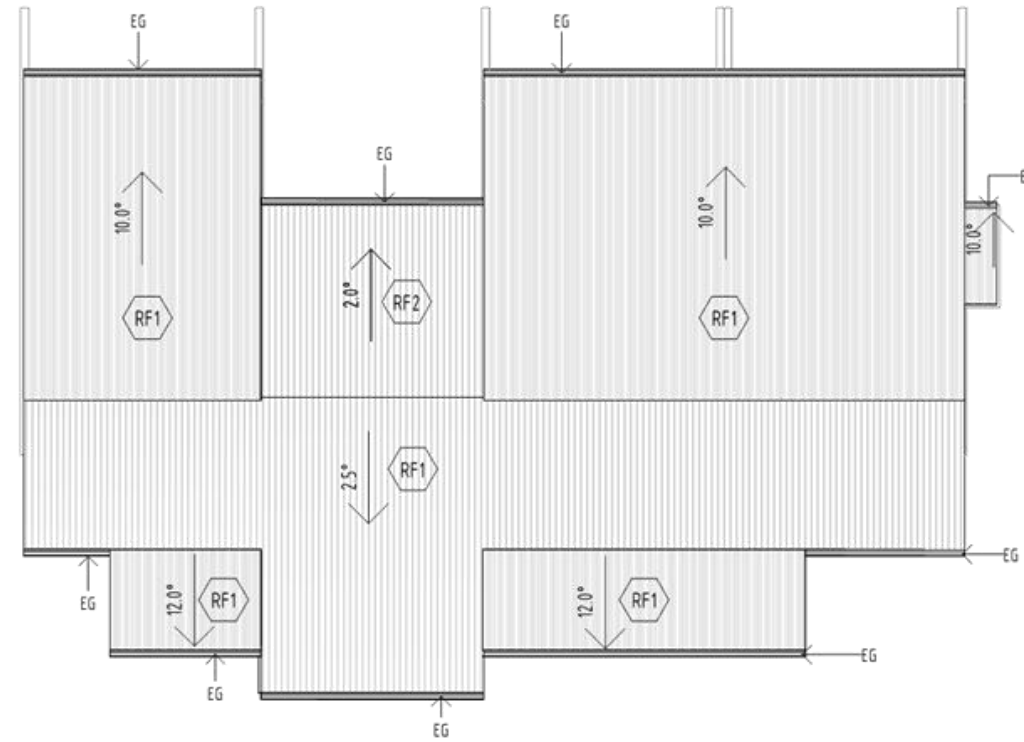


Windamere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE B - FLOOR PLAN	DRAWING	SK10
17/03/2026	REVISION	H
1: 200 @A3	PROJECT	24-0848

DRAWING: 17/03/2026 09:00:00 AM Client: Windamere Park SDA, 202 Legoe Road, Buckland Park

DRAWING AUTHOR: PLOT DATE: 10/2020; DESIGNER: WALTER BROOKE ARCHITECTURE; PROJECT: WINDAMERE PARK SDA, 202 LEGOE ROAD, BUCKLAND PARK



ROOF PLAN - MODULE B

1 : 200

REASON FOR ISSUE	REV	DATE
Revisions	B	20/01/2025
Revisions	C	31/10/2025

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING

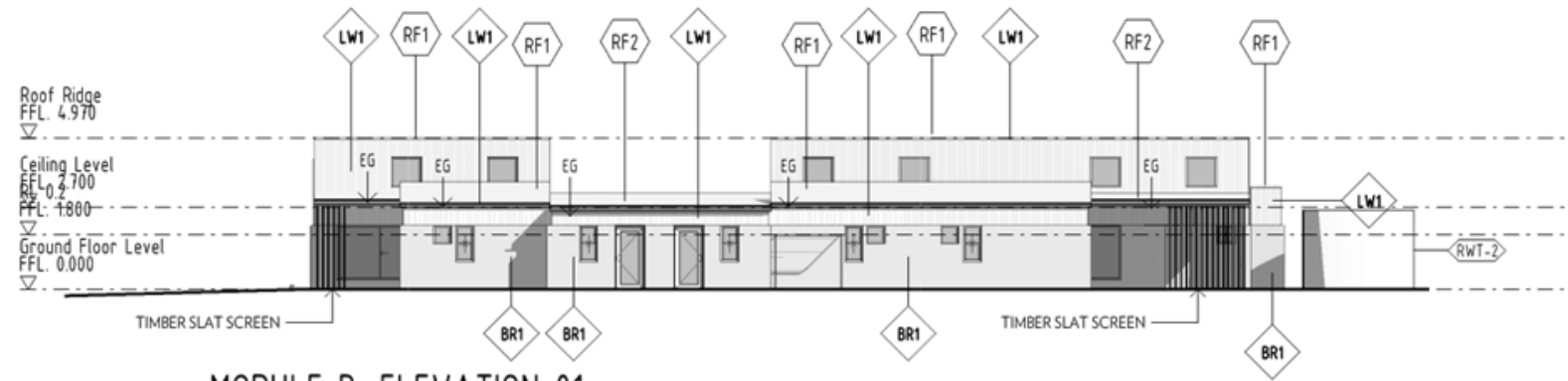


Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

ROOF TYPE SCHEDULE	
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RF1	2mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

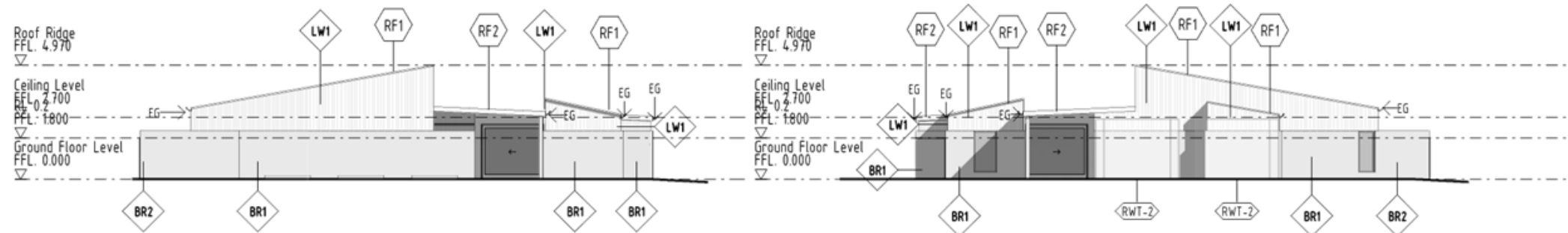
GUTTER SCHEDULE	
CODE	DESCRIPTION
EG	Mosman Eaves gutter

TYPICAL SELF CONTAINED VILLA MODULE B - ROOF DRAWING — SK11
 PLAN: 31/10/2025 REVISION — C
 1 : 200 @A3 PROJECT — 24-0848



MODULE B_ELEVATION 01

1 : 200

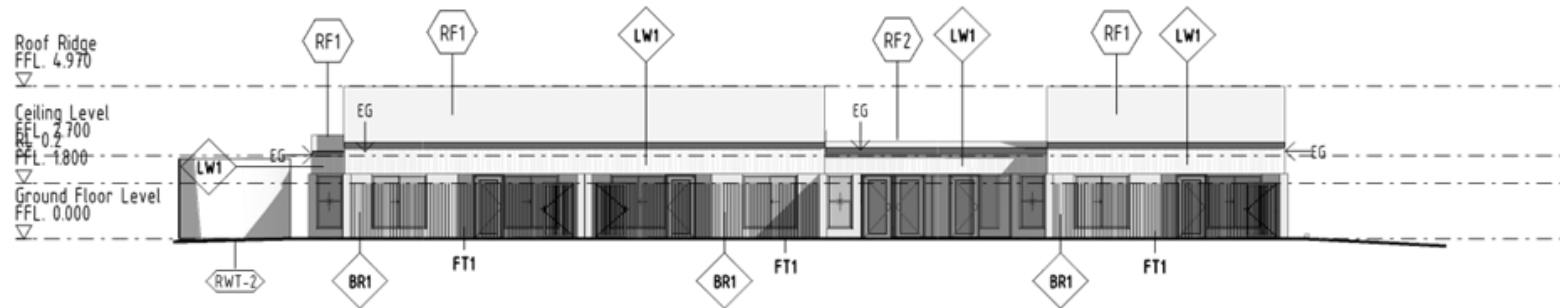


MODULE B_ELEVATION 02

1 : 200

MODULE B_ELEVATION 03

1 : 200



MODULE B_ELEVATION 04

1 : 200

REASON FOR ISSUE	REV	DATE
Revisions	C	31/10/2025
Revisions - RWT	D	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

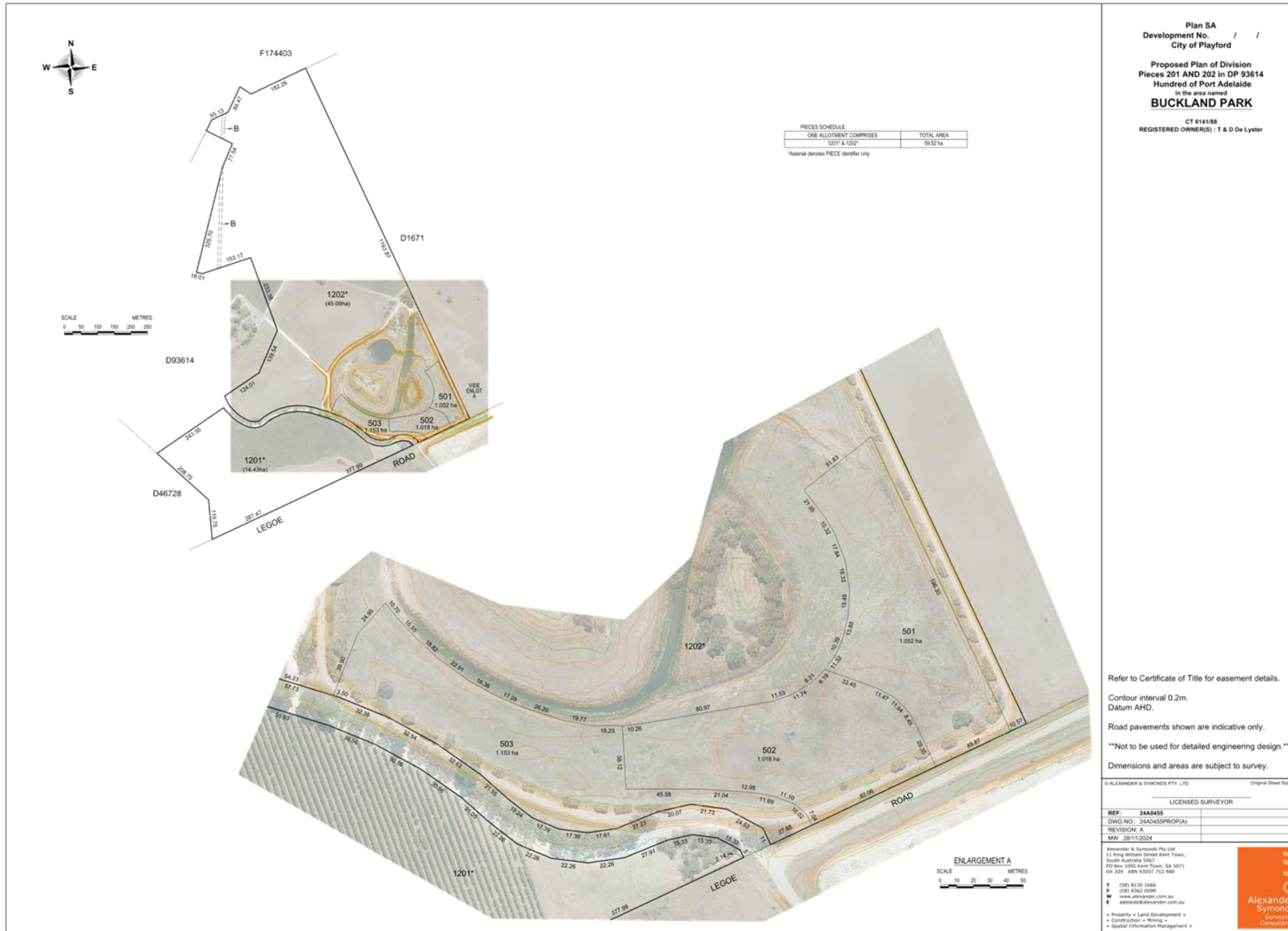
ROOF TYPE SCHEDULE	
CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

GUTTER SCHEDULE	
CODE	DESCRIPTION
EG	Mosman Eaves gutter

WALL TYPE SCHEDULE	
CODE	WALL DESCRIPTION
BR1	110mm wide brickwork / 40mm air gap / Thermal insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Villaboard to wet areas) /
BR2	110mm wide brickwork / 40mm air gap / 110mm wide brickwork /
FT1	Aluminium blade fencing, 1800H /
LW1	25mm Metal Cladding / 35mm sub-framing / Thermal insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Villaboard to wet areas) /

TYPICAL SELF CONTAINED VILLA MODULE B - ELEVATIONS	DRAWING	SK12
17/03/2026	REVISION	D
1 : 200 @A3	PROJECT	24-0848

DRAWING: 17/03/2026 17:03:2026 17/03/2026 17/03/2026 17/03/2026 17/03/2026 17/03/2026 17/03/2026 17/03/2026 17/03/2026



Plan SA
 Development No. / /
 City of Playford
 Proposed Plan of Division
 Pieces 201 AND 202 in DP 93614
 Hundred of Port Adelaide
 in the area named
BUCKLAND PARK
 CT 6141/88
 REGISTERED OWNER(S) : T & D De Lyster

Refer to Certificate of Title for easement details.
 Contour interval 0.2m.
 Datum AHD.
 Road pavements shown are indicative only.
****Not to be used for detailed engineering design.****
 Dimensions and areas are subject to survey.

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LICENSED SURVEYOR

REF: 24A0455	
DWG NO.: 24A0455PROP(A)	
REVISION: A	
MW 28/1/2024	

Alexander & Symonds Pty Ltd
 11 King William Street Kent Town,
 South Australia 5067
 PO Box 1050 Kent Town, SA 5071
 DX 209 ABR 93007 753 980

T (08) 8130 1666
 F (08) 8362 0099
 W www.alexander.com.au
 E alexander@alexander.com.au

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 + Construction + Mining +
 + Spatial Information Management +



22ADL-0484
28 MARCH 2025

Supported Accommodation

Lot 202 Legoe Road, Buckland Park



WINDAMERE PARK



Supported Accommodation

28 March 2025

Lead consultant	URPS 27 Halifax Street Enter via Symonds PI Adelaide SA 5000 (08) 8333 7999 urps.com.au
In association with	Walter Brooke Architects Alexander Symonds FMG Engineering Empirical Traffic Advisory (ETA) Treesolve Arboricultural Consultancy Agon Environmental Pty Ltd
Prepared for	Mr Theodoor de Lyster
Consultant Project Manager	Matilda Asser, Consultant masser@urps.com.au
URPS Ref	24ADL-0484

Document history and status

Revision	Date	Author	Reviewed	Details
V1	02/12/24	M.Asser		Initiation of report
V2	20/03/25	M.Asser	G.Maiorano	

We acknowledge the Kurna People as the Traditional Custodians of the land on which we work and pay respect to their Elders past, present and emerging.

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Executive Summary

Applicant and Owner:	Theodoor and Diana de Lyster
Site Location:	Part Lot 202 Legoe Road, Buckland Park
Site Area:	3.22ha
Council and Relevant Authority:	City of Playford
Planning and Design Code:	Version 2025.5 – 13 March 2025
Zone and Subzone:	Rural Horticulture Zone Windamere Park Subzone
Overlays:	<ul style="list-style-type: none"> • Defence Aviation Area – All structures over 90 metres • Hazards (Flooding) • Hazards (Flooding – General) • Hazards (Bushfire – General) • Limited Land Division • Native Vegetation • Prescribed Wells Area • Regulated and Significant Tree • Water Resources
Concept Plan:	Concept Plan 14 – Buckland Park
Current Land Uses:	Vacant
Description of Development:	Land division creating three (3) new allotments together with the construction of 12 buildings, consisting of 45 independent accommodation units for the purpose of supported accommodation, including associated works and landscaping.

1. Introduction

URPS has been engaged by the landowner Mr Theodoor de Lyster to prepare this planning report in support of the proposed land division and development within part of Lot 202 Legoe Road, Buckland Park.

Lot 202 forms part of the property identified as Windamere Park.

This report provides an overview of the subject land and locality, details of the proposed development and an assessment against the relevant provisions of the Planning and Design Code (the Code).

This report is accompanied by:

- A copy of Deposited Plan DP93614.
- Development Plans prepared by Walter Brooke Architects.
- Preliminary Infrastructure Assessment prepared by FMG Engineering.
- Traffic and Parking Report prepared by ETA.
- Detail and Level Survey prepared by Alexander Symonds.
- Proposed Plan of Division prepared by Alexander Symonds.
- Preliminary Tree Assessment prepared by Treesolve Arboricultural Consultancy.
- Preliminary Site Investigation prepared by Agon Environmental.

2. Background

Windamere Park¹ is an accredited disability services provider. It currently offers a range of education and training opportunities for participants, alongside limited supported independent living accommodation and overnight accommodation.

This development proposes to construct accommodation services, providing necessarily additional disability housing through the development of dwellings for supported accommodation. Each dwelling includes provision for carers who will provide dedicated 24-hour assistance to occupants on-site.

The development and land division aligns with the provisions of the Windamere Park Subzone which was established to support the longevity of Windamere Park and its disability support services.

The proposed development of supported accommodation is to be undertaken along with division of the land. The proposed creation of 3 new allotments is fundamental to the application. This allows our client to seek financial support for the development via shared investment. The establishment of titles provides financial institutions and investors security over a title, either jointly or wholly.

¹ <https://www.windamerepark.com.au/>

3. Site and Locality

3.1 Subject Land

The subject site forms part of Lot 202 D93614 which is identified as Lot 202 Legoe Road, Buckland Park (CT6141/88).

Lot 202 has a total area of 48.31 hectares, however the site of this development comprises an area of 3.223 hectares in the south-eastern corner of the allotment (see **Figure 1** below).

Lot 202 is an irregular shaped allotment which has a 170m boundary with Legoe Road to the south. The lot forms the eastern-most parcel of the Windamere Park property. Much of the western boundary of the allotment adjoins a right of way which provides access for the existing services of Windamere Park.

The lot is currently used for agricultural purposes, with established olive groves and ancillary structures/infrastructure in the northern part of the lot. The south-eastern corner of the lot features a man-made irrigation basin which supports the existing agricultural uses. The irrigation basin features wetland vegetation types and scattered mature trees.

The site of the development is a primarily vacant portion of Lot 202 between the man-made irrigation basin and Legoe Road (see **Figure 2 and 3** below). The site preserves a 10.57 metre-wide portion of land with a boundary to Legoe Road.

The development site is relatively flat and features mature trees around the perimeter of the site and two unregulated trees within the interior of the site.

The development site is in the Rural Horticulture Zone and the Windamere Park Subzone.

From a strategic planning perspective, we note that the Greater Adelaide Regional Plan has designated the land as "greenfield and township development", thereby flagging its intended use for urban development.



Figure 1 – Aerial image showing Lot 202 highlighted by red





Figure 2 and 3 – Aerial images showing Subject Site within Lot 202 boundary

3.2 Locality

At present the locality is a rural setting with adjoining allotments used for agricultural purposes of varying scales and intensities. Notably however, there is limited high-intensity or high-impacting agricultural uses on neighbouring land.

Land to the east of the site is in the Master Planned Neighbourhood Zone. The Walker Corporation Riverlea development is anticipated to develop this zone for urban purposes, see **Figure 4** below.

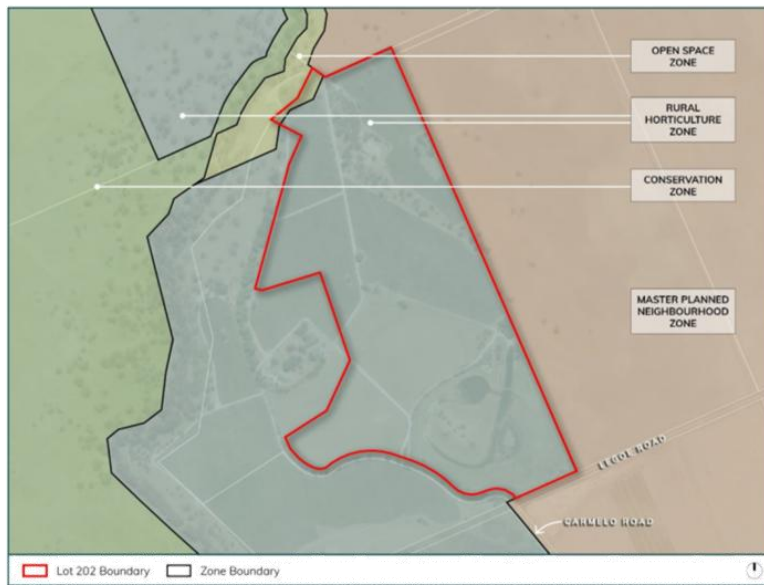


Figure 4: Locality and Zoning Map

4. Proposed Development

4.1 Development Summary

The proposal seeks to develop 12 single-storey buildings, consisting of 45 independent accommodation units for use as supported accommodation. The buildings have been architecturally designed and will each accommodate between 3 to 4 occupants.

The design features individual accommodation villas for each occupant to foster a sense of independent living. However, the villas are integrated within the overall building footprint and include linked corridors to common spaces including shared living, laundry and courtyard. This caters for the variation in occupants, promoting interaction as well as privacy and seclusion when required.

The building layout has also been designed to comply with specialist disability accommodation (SDA) housing requirements.

The buildings also include integrated spaces for carers who will provide on-site support 24 hours per day on a rotating shift basis.

A unique advantage of this proposal is the supported accommodation has been designed with known occupants in mind due to the availability of the existing disability support offered by Windamere Park. The accommodation style and internal configuration has been developed with first-hand knowledge of the service requirements of these occupants.

The development also includes on-site parking for each building. These parking spaces will primarily be used by carers, visitors and shuttle vehicles from Windamere Park. Access to each building is provided via private driveways from Legoe Road.

In addition to the development of buildings and associated works, the proposal seeks to subdivide Lot 202 to create the following three new allotments:

- Lot 501 with an area of 1.052ha.
- Lot 502 with an area of 1.018ha.
- Lot 503 with an area of 1.153ha.

4.2 Nature of Development

The proposal will provide residential accommodation for people who require varying levels of disability support, assistance or care. Occupants will have diverse needs that requires support from carers. They will also have access to medical and allied health professional on-site where required.

As above, carers will be accommodated in small quarters alongside the residential villas during a 24-hour period with shift lengths of up to 12 hours. As such, carers do not reside at the property.

The development is designed to be managed in a way that provides flexible home-like environments but also allows occupants to socialise, develop skills and some degree of independence.

What is the proposed land use?

Part 7 of the Code includes the following land use definitions:

Land Use	Definition	Includes	Excludes
Supported Accommodation	<i>Means premises in which residential accommodation is provided to persons requiring/together with regular medical and/or personal care assistance, but does not include home care.</i>	<i>Nursing home; Residential care</i>	<i>Hospital; Retirement facility.</i>
Dwelling	<i>Means a building or part of a building used as a self-contained residence.</i>		<i>Ancillary accommodation</i>

The proposed development of housing for disability support is best defined as supported accommodation by the Code.

Part 7 also defines whether uses are included or excluded from other land use definitions. Importantly, this establishes that supported accommodation is a unique land use and does not include dwelling in its definition.

4.3 Development Staging

The development will be constructed in three stages commencing with the development of the 4 buildings within Lot 501. This initial stage (Stage 1) is to be completed within 2 years of receiving development approval. Subsequent development of buildings within Lot 502 (Stage 2) and then Lot 503 (Stage3) are each anticipated to be completed within a two-three year period.

We respectfully request that planning consent conditions reflect this intent to complete the development within three stages.

5. Procedural Matters

5.1 Planning and Design Code

The subject site is in the Rural Horticulture Zone. It is acknowledged that a portion of Lot 202 is within with Open Space Zone, however the development site is not proposed within this area.

The site is also in the Windamere Park Sub-Zone.

The following Overlays in the Code apply to the site:

- Defence Aviation Area – All Structures over 90 metres.
- Hazards (Flooding).
- Hazards (Flooding – General).
- Hazards (Bushfire – General).
- Limited Land Division.
- Native Vegetation.
- Prescribed Wells Area.
- Regulated and Significant Tree.
- Water Resources.

The site is also subject to Concept Plan 14 – Buckland Park identified within Part 12 – Concept Plans, Playford in the Code.

5.2 Assessment Pathway

The proposed development is subject to the Performance Assessed pathway as designated in the Rural Horticulture Zone.

The City of Playford is the relevant authority and will assess the application on its merits against the relevant provisions of the Code.

5.3 Notification

Table 5 – Procedural Matters – Notification in the Rural Horticulture Zone lists classes of development that are excluded from notification.

No exemption is prescribed for the use and development of supported accommodation. As such the application will be publicly notified.

5.4 Referrals

The application is not subject to any statutory referrals.

5.5 Approach to Assessment

Part 1 of the Code is entitled "Rules of Interpretation". It includes the following information on the:

Hierarchy of Policies/Modification of Provisions

If there is an inconsistency between provisions in the relevant policies for a particular development, and for the purpose of section 66(3)(b) of the Act, the following rules will apply to the extent of any inconsistency between policies:

- (a) the provisions of an overlay will prevail over all other policies applying in the particular case; and***
- (b) a subzone policy will prevail over a zone policy or a general development policy; and***
- (c) a zone policy will prevail over a general development policy.***

(Underlining added)

This hierarchy is represented by the following diagram.



Figure 4: Hierarchy of Policies

Part 1 - Rules of Interpretation also includes the following information on the role and the application of various policies.

Policies - Desired Outcomes and Performance Outcomes

Zone, subzone, overlay and general development policies are comprised of desired outcomes (DOs) and performance outcomes (POs). These are applicable to performance assessed development and to restricted development.

Desired outcomes

Desired outcome are policies designed to aid the interpretation of performance outcomes by setting a general policy agenda for a zone, subzone, overlay or general development policies module. Where a relevant authority is uncertain as to whether or how a performance outcome applies to a development, the desired outcome(s) may inform its consideration of the relevance and application of a performance outcome, or assist in assessing the merits of the development against the applicable performance outcomes collectively.

Performance outcomes

Performance outcomes are policies designed to facilitate assessment according to specified factors, including land use, site dimensions and land division, built form, character and hazard risk minimisation.

Designated performance features

In order to assist a relevant authority to interpret the performance outcomes, in some cases the policy includes a standard outcome which will generally meet the corresponding performance outcome (a designated performance feature or DPF). A DPF provides a guide to a relevant authority as to what is generally considered to satisfy the corresponding performance outcome but does not need to necessarily be satisfied to meet the performance outcome, and does not derogate from the discretion to determine that the outcome is met in another way, or from the need to assess development on its merits against all relevant policies.

(Underlining added)

Recent judgements of the ERD Court have expanded upon the above approach to performance assessed development. In summary

- Designated Performance Features (DPFs) simply represent one way to satisfy the corresponding Performance Outcome (PO), but not the only way.
- A DPF is its own thing and is “advisory”, it is one way to satisfy a PO. “If a DPF was the only way a PO was to be satisfied, the PO has no work to do”.
- A departure from a DPF is, in itself, not a reason to refuse a development.
- The proposal will ultimately succeed or fail depending on how it is assessed against the relevant Performance Outcomes.

It is with the above approach in mind that we have assessed this application.

6. Planning Assessment

6.1 Summary

The key planning considerations for the proposed development are:

- Land Use.
- Supported Accommodation.
- Built Form and Siting
- Land Division.
- Vegetation.
- Stormwater Management and Flooding.
- Traffic, Access and Parking.
- Site Contamination.

An assessment of the above matters against relevant Code provisions is provided below.

6.2 Land Use

While the Rural Horticulture Zone seeks agricultural and horticultural-based activities and land uses, the Windamere Park Subzone applies to the land.

The policy hierarchy established by the Code provides that where there is inconsistency, the provisions of the subzone prevail over zone policy. In this instance, the provisions of the Windamere Subzone which guide land use prevail:

DO 1 *Development primarily involving the provision of disability services in a rural setting.*

PO 1.1 *Development involving the provision of disability services including training facilities, allied health services, administrative facilities, and accommodation for disability clients and their families.*

DPF 1.1 *Development comprises one or more of the following:*

- (a) *Community facilities*
 - (b) *Consulting room*
 - (c) *Dwelling*
 - (d) *Supported accommodation*
 - (e) *Temporary accommodation.*
- (Underlining added)*

As discussed above, the proposed development is best defined as supported accommodation. This is because the buildings will provide residential accommodation to occupants who require varied scales of personal care in the form of disability support. This support will be provided on-site in a 24-hour assistance basis.

As the development of supported accommodation is directly anticipated in DPF 1.1 of the subzone this is a wholly appropriate land use for the site.

Further, the proposed scale of development aligns with the overarching desired outcome of the subzone to provide disability services as the primary development outcome on the land.

6.3 Supported Accommodation

The following provisions in Design in Urban Areas - General Development Policy guide development of supported accommodation:

PO 37.1 *Supported accommodation and housing for aged persons and people with disabilities is located where on-site movement of residents is not unduly restricted by the slope of the land.*

PO 37.2 *Universal design features are incorporated to provide options for people living with disabilities or limited mobility and / or to facilitate ageing in place.*

The proposed development satisfies the above provisions because:

- The development has been sited on a portion of the land which features a very minimal slope. This is confirmed on the Detail and Level Survey prepared by Alexander Symonds.
- The supported accommodation villas have been designed to provide appropriate circulation space within bathrooms, hallways and living spaces to support people living with physical disabilities or limited mobility. Similarly, the buildings are single-storey and feature a consistent floor level between the villas and communal spaces.

6.4 Built Form and Siting

The Windamere Park Subzone seeks:

PO 2.2 *Buildings associated with the provision of disability services are sited in a cluster to provide easy access for clients and families.*

Further the Rural Horticulture Zone seeks:

PO 2.1 *Development is provided with suitable vehicle access.*

DPF 2.1 *Development is serviced by an all-weather public road.*

PO 2.2 *Buildings are generally located on flat land to avoid cut and fill and the associated visual impacts.*

DPF 2.2 *Buildings:*

(a) *are sited on land with a slope not greater than 10% (1-in-10)*

(b) *do not result in excavation and filling of land greater than 1.5m from natural ground level.*

PO 11.1 *Large buildings are designed and sited to reduce impacts on scenic and rural vistas by:*

(a) *having substantial setbacks from boundaries and adjacent public roads*

(b) *using low-reflective materials and finishes that blend with the surrounding landscape*

(c) *being located below ridgelines.*

Each allotment is to be serviced by new crossovers to Legoe Road. The four buildings within each allotment will be accessible via sealed driveways connected to Legoe Road. While Legoe Road is an un-

sealed road, it features a compacted surface and road-side swale drainage ensuring it is trafficable in all-weather conditions. For these reasons the development satisfies PO and DPF 2.1 above.

The supported accommodation buildings have been sited within an area of minimal slope (less than 10%). This means that the development primarily utilises the natural ground level of the site and does not require excavation or filling exceeding 1.5m from natural ground level. This satisfies PO and DPF 2.2 above.

While the Code does not provide a definition for "large buildings" the development satisfies PO 11.1 above because:

- Buildings are setback a minimum of 17m from the boundary with Legoe Road.
- Building are also setback a minimum of 13.3m from external boundaries with properties beyond Windamere Park.
- The buildings feature a mixed materials palette which reflects the rural setting, see **Figure 6** below.
- The single-storey building height minimises observation of the development from Legoe Road and minimises visual impacts within the rural locality, see **Figures 7 and 8** below.



Figure 6: External materials concept palette



Figure 7 and 8: 3D perspective images showing conceptual building form



6.5 Land Division

The following provisions are considered in relation to the proposed land division associated with the development. They include provisions within a relevant overlay, the subzone and the zone.

The provisions are not inconsistent and therefore Part 1 of the Code establishes that the provisions must be considered in balance.

The first consideration is the Limited Land Division Overlay which provides the following:

DO 1 *The long term use of land for primary production is maintained by minimising fragmentation through division of land.*

PO 1.1 *Land division does not result in the creation of an additional allotment.*

DPF 1.1 *No additional allotments are created.
(Underlining added)*

Secondary is the Windamere Park Subzone. While it does not provide provisions specific to land division, it provides that primarily the land should involve the provision of disability services. Notably, the subzone establishes that farming activities (desired by the Limited Land Division Overlay and Zone) be undertaken only in association with disability services and on-site accommodation.

DO 1 *Development primarily involving the provision of disability services in a rural setting.*

PO 1.1 *Development involving the provision of disability services including training facilities, allied health services, administrative facilities, and accommodation for disability clients and their families.*

PO 1.2 *Farming activities in association with disability services undertaken in a manner that is compatible with on-site accommodation.
(Underlining added)*

Finally, the Zone seeks:

DO 1 *Intensive agriculture in the form of horticulture and associated value-adding enterprises and activities.*

DO 2 *The establishment of appropriately scaled industries for washing, processing, bottling and packaging primary produce and servicing and supporting horticulture.*

DO 3 *Manage interface conflict between horticulture and other land uses.*

PO 12.1 *Land division, including boundary realignments, promotes productive, efficient and sustainable horticulture.*

DPF 12.1 *Allotments have an area not less than:
Minimum site area is 10ha.*

PO 12.2 *Allotment boundaries, including by realignment, are positioned to incorporate sufficient space around existing residential, tourist accommodation and other habitable buildings (including boarding houses, hostels, dormitory style accommodation, student accommodation and) to:*

(a) *maintain a pleasant rural character and amenity for occupants*

(b) *manage vegetation within the same allotment to mitigate bushfire hazard.*

DPF 12.2 *Allotment boundaries are located no closer to an existing residential, tourist accommodation or other habitable building than the greater of the following:*

(a) *40m*

(b) the distance required to accommodate an asset protection zone wholly within the relevant allotment.

(Underlining added)

This application proposes land division to create three new allotments each approximately 1ha in size.

The desired outcome of the Limited Land Division Overlay does not prevent land division. Instead, the intent of the overlay is to minimise division of land where the long-term use of the land is, has or can be primary production.

Provisions guiding land division in the Zone apply similar guidance. Land division is not restricted. However, provisions seek to limit or minimise land division with the intent of preserving and promoting intensive and productive horticultural activities.

The existing and long-term use of the subject land is neither for primary production or intensive horticultural activities. This is firmly established by the Windamere Park Subzone.

Therefore, provisions which seek to limit land division for the purpose of preserving or supporting these alternative land uses do not act to restrict the division of land in this instance.

Unique to this site, the intent of the subzone must inform the assessment of the proposed land division. That is to provide provision of disability services in a rural setting, with farming activities undertaken in association with disability services.

The proposed land division achieves the intent of the above policies because:

- The creation of three new allotments will not fragment land used for primary production or horticulture.
- The land division supports the provision of disability services and accommodation for disability clients established by the Windamere Park Subzone.
- The land division does not limit the viability or scale of farming activities associated with the disability services as sought by the Windamere Park Subzone.
- The establishment of clustered accommodation within allotments of over 1ha will preserve the rural setting anticipated by the Windamere Park Subzone.

6.6 Vegetation

6.6.1 Regulated and Significant Tree Overlay

The development has been designed and sited to maximise the retention of mature trees on the site.

Given the presence of the Regulated and Significant Tree Overlay, Treesolve were engaged to complete a site inspection and prepare a Preliminary Tree Assessment for the site. Their report identified several regulated and significant trees within the site. However, these protected trees are not proposed for removal and the development poses an accepted level of encroachment to these trees.

We note that Tree 10 is not controlled vegetation under this overlay.

6.6.2 Native Vegetation Overlay

The site is subject to the Native Vegetation Overlay. This means that there is a requirement to consider whether the proposed removal of trees constitutes clearance of native vegetation.

We have sought advice from the Native Vegetation Branch of the Department for Environment and Water as part of our preliminary investigations. This has confirmed that the removal of Tree 12 requires approval via a desktop application with the Native Vegetation Council. This approval has been sought separate to this application and was completed by accredited consultant, Andrew Sinel of Ecosphere Solutions.

While Treesolve's Preliminary Tree Assessment notes that removal of Tree 10 may require application via the Native Vegetation Council, this has been confirmed as incorrect by both Andrew Sinel and the Native Vegetation Branch. This is because Tree 10 is dead and does not provide habitat for an EPBC listed species in this instance.

6.7 Stormwater Management and Flooding

6.7.1 Stormwater Management

FMG Engineering have considered stormwater management for the proposed development and any impacts to the wider site within their Preliminary Infrastructure Assessment.

Noting that the site does not take benefit of existing infrastructure to drain to, the development has been design to manage stormwater on-site via rainwater harvesting in tanks and surface drainage to vegetated areas.

6.7.2 Flooding

While there are portions of the broader allotment (Lot 202) which are subject to the Hazards (Flooding) and Hazards (Flooding – General) Overlays, each of these Overlays do not apply to the location of the supported accommodation development.

This is further discussed by FMG Engineering in their Preliminary Infrastructure Assessment for the site and proposed finished floor levels for each dwelling have been designed to protect the habitable buildings against any potential flood impacts.

6.8 Traffic, Access and Parking

The Code provides provisions which ensures development is designed to enable safe and convenient vehicular access to and from a site and that sufficient parking spaces are provided on-site to meet the needs of the development.

Empirical Traffic Advisory has been engaged to prepare a Traffic and Parking Review for the proposed development. Their report considers relevant Code provisions and confirms:

- Each allotment is provided legal access via independent crossovers to Legoe Road.

- Legoe Road services the primarily rural land uses and experiences low traffic volumes. Given the nature of the development a minimal additional demand is anticipated as a result of the proposal and this can be accommodated safely by the existing road network.
- The proposal will provide 15 dedicated on-site car parking spaces per allotment to exceed the Code's on-site car parking space requirement.
- On-site parking spaces have been designed in accordance with Australian Standard A2890.1.
- Waste collection can occur via Council collection on Legoe Road. The requirement to present bins along Legoe Road will be managed as part of site operations.

6.9 Site Contamination

While supported accommodation is not directly listed in Table 1: Land Use Sensitivity Hierarchy of Practice Direction 14, it is accepted that the development will introduce a more sensitive land use through the establishment of residential accommodation.

A preliminary site investigation (PSI) has been prepared by Agon Environmental Pty Ltd. The PSI has concluded that no classed activities were identified to have been undertaken on the land or on adjacent land and no referral to the EPA is required.

7. Conclusion

The proposed land division and development satisfies the relevant Planning and Design Code policies because:

- The proposed development of supported accommodation is wholly consistent with the intent of the Windamere Park Subzone.
- The supported accommodation has been sited and designed to support occupants living with disability including limited mobility.
- The architecturally-designed buildings feature universal design features and have been designed to respond to known occupants and the existing services provided by Windamere Park.
- The allotments are fit for purpose and preserve the rural setting sought by the subzone.
- The land division does not fragment land used for primary production or horticulture.
- The proposal provides an appropriate built-form, building height and materials palette to reflect the rural setting.
- The proposal will provide a purpose-built solution and high level of amenity for occupants.
- The application does not impact existing regulated or significant trees on the site and native vegetation removal approval has been sought for Tree 12.
- The proposal response to flooding risks and stormwater/wastewater will be appropriately managed on-site.
- The provision of car parking within each allotment will satisfy the anticipated demand of the land use and has been designed in accordance with relevant standards.

Adelaide

27 Halifax Street
Enter via Symonds Place
Adelaide SA 5000

(08) 8333 7999

Melbourne

Level 3 107 Elizabeth Street
Melbourne VIC 3001

(03) 8593 9650

Perth

Level 17 1 Spring Street
Perth WA 6000

(08) 6285 3177



urps.com.au

Report for:

City of Playford

Potential for Horticultural Production

Lot 202 Legoe Road, BUCKLAND PARK

22nd May, 2025

Charles Kidd

Charles Kidd

INSIGHT AGRICULTURE

insight ag 

ABN: 39 887 144 633

Mob: 0417 336 458

E-mail: charles.kidd@ausknow.com



AGRICULTURAL ASSESSMENT

HORTICULTURAL PRODUCTIVITY of LAND, 2025

ABSTRACT:

Due to the fact this site is located in what would be regarded as the southernmost part of the Sapphire Coast makes it extremely prone to the effects of salinity, which would make it a particularly hostile environment for the production of any horticultural crops. This circumstance is exacerbated by its irregular shape which means that efficient long rows cannot be used for open field tree or vegetable crops as well as its proximity to existing and proposed urban residential areas, making it a very inefficient and uneconomic site for the conduct of all types of horticultural enterprises.

Other forms of horticultural production which could potentially be prosecuted on the land includes cheap shade houses covered with translucent plastic under which fruit and vegetable crops potentially can be grown, but these would also be disqualified due to the poor quality of the soil and the endemic salinity. Converting these cheap shade houses to a low-cost form of hydroponics would also fail due to lack of capital and limited and poor-quality irrigation water supplies.

Building and operating high tech greenhouses would also fail on this site, not only due to the large amount of capital required, but also the extensive operating costs (e.g. electricity), as well as the limited water supply. In conclusion, this particular allotment of land is not suitable for horticultural production in any form and any attempts to do so would likely result in significant economic losses.



INTRODUCTION:

Council has requested an assessment of a parcel of land located within a larger property which is situated at Lot 202 Legoe Road, BUCKLAND PARK (see Fig. 1.). This land which is the subject of the assessment comprises approximately 3 ha in size and is located in the southeast corner of the main property. It is bounded by Legoe Road along the southeast portion of the area and is generally flat with some trees dotted at irregular intervals around the perimeter.

It has previously been used mostly as a walking space and although the land is generally flat in this location, the subject land has been land-formed to drain water into the drainage basin at the centre of Fig. 1. and ensure water does not sit on the surface. Natural soil types are sandy,



Fig. 1. Subject land of report

and they are typical of low rainfall areas that have low organic carbon levels and relatively high pH's as is common in that part of SA.

SOIL QUALITY ASSESSMENT

In the first assessment of this site, it must be noted that it forms part of what is known as the Samphire Coast, which is a strip of coastal land that runs from Port Gawler in the South, all around the top of Gulf St Vincent almost to Ardrossan. It is so named because of the natural predominance of Samphire Grass (*Samphire* spp.) which grows in the relatively saline soils that are a geographical feature of this part of SA.

Consequently, most of the land in this immediate area is subject to surges or spikes of saline soil water which may be intermittent or endemic depending on what anthropogenic infrastructure is around or in the proximity of various sites. Salts that are in the soil water come from a large drainage area that encompasses the lower Mid North and takes in areas as far north as Snowtown and as far east as the ranges which run through Clare south towards Gawler (see Fig. 2.). These salts which are moving towards the Gulf St Vincent have been deposited on the land mass in rainfall and form part of the natural cycle of salts moving from the oceans to the landmass and back to the oceans via drainage systems.

There are a number of different ways the salts drain back to the oceans, and these include normal surface systems such as creeks and rivers, which move a relatively small part of the salts received back into the sea. However, there are two sub-surface drainage systems which carry more of the salt away from where it is deposited by rainfall and these are the



surficial drainage systems which are located between 0.5 m to 3 deep in the soil (relatively fast moving) and the deeper drainage systems that are at 5 m to > 300 m depth and are quite slow moving.

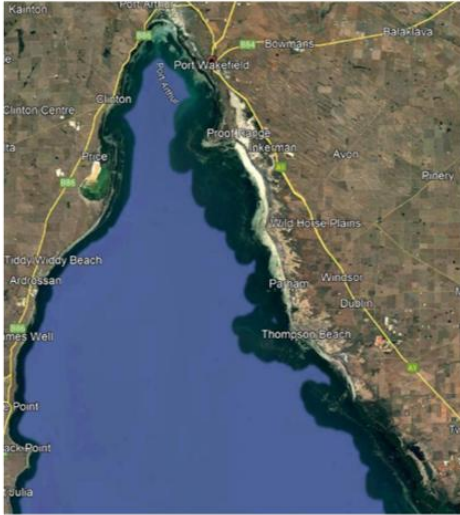


Fig. 2. *Sapphire Coast of SA*

In most circumstances the surface drains which form part of this system are not impeded to any great extent but are left to travel through their normal pathways, and where structures are imposed (roads, railways, etc.), then culverts and bridges are provided to ensure their normal route is not interrupted.

However, the intermediate or surficial drainage systems are often significantly affected by the advance of infrastructure since the Europeans arrived on this continent and started putting in roads and railways. While doing this they were quite unaware that they were impacting on these surficial drains, but eventually what can be

seen now is that in many places these infrastructures have compressed or compacted those surficial waterways to the point that the flow of water through them has been slowed or sometimes stopped.

When this occurs, it results in a build-up of water on the upside of the road or barrier that that is slowing the movement of the water and it will often rise to the surface, where the water is then evaporated away and salts are left isolated at the soil surface. Over a period of times the amount of salt concentrated at these points shows up as white salt scalds that are often seen along roadways in the affected regions.

While the most of the time the flow of water is not completely stopped in these situations, it does mean that the water that still manages to flow through becomes increasingly saline, and as it oozes under the barrier it ensures that soil in the immediate proximity of the impediment carries a high salt load that can damage plants trying to grow in its proximity. As more rain falls this salt is dissolved and is washed and/or leached away back into its previous pathways and what is seen is a declining level of salinity the further away from the barrier you go.

So, what we see with the land which is the subject of this report is that it is located in a fairly saline region already and that there will be spikes or surges of salinity that will



move across it periodically according to the pattern of rainfall events. What this means is that any horticultural crops that are grown in this area would have to be highly tolerant to salinity just to survive, let alone thrive.

At present there are groves of olive trees growing on other parts of the property and while these are a plant which are highly tolerant of saline conditions, they have struggled to produce any worthwhile fruit or oil. While soil salinity is one of the issues that the olives have to deal with, the limited supply of suitable irrigation water is another.

At this site, some irrigation water is available from the Bolivar recycled water scheme, but according to the owner of the property the quality is variable, with sometimes quite high levels of saline water being supplied. It is also capped at a set quota of 150,000 kl per annum and costs around \$25,800. Even with this irrigation water though the olive trees have never really prospered, possibly mainly due to the influence of the salinity at the site which means that plants cannot use all the water that is present due to the small differences in water potential between water in the soil and water in the plant.

This has made the olive trees a non-commercial proposition, even before the logistics of processing and retailing the crop are taken into consideration.

To give some background to how salinity works against plants, it is based on the principle of the movement of water through a membrane, where water of low concentration can be drawn through a membrane (such as a root hair) into water of a higher concentration such as that which is in a root or plant. When the water outside the plant is of almost equal concentration to the water inside a plant due to the presence of salts in it, then almost no water can be drawn into the plant, causing it to die essentially of drought.

Consequently, salinity can be quite subtle at times and manifests itself as drying out or early drought of the plant, despite there being what most might consider to be adequate conditions of soil moisture. Therefore, due to the level of salinity that is endemic to this particular site, it makes it impossible to carry out any sustainable production of common fruit or vegetable crops on this soil, even with unlimited irrigation which is also not currently available.

In speculating about the use of horticultural vegetable and/or fruit tree crops, there is another constraint on horticultural production on this subject land, which is its irregular shape. Most crops are grown in straight lines and in rows so that they can be easily worked on with the equipment that is used to produce them. In a site where long runs are impossible and much of the land



would be taken up with turning areas, that would negate their use for cropping as it would be simply too inefficient.

Additionally, where row cropping is sometimes used for vegetable crops, the land would have to be reformed in a number of different directions to ensure the proper movement of water along the rows. This would entail a significant cost which would be exacerbated by having to be constrained by the use of short irregular length rows trying to fit inside the allocated land.

Another impediment to keeping open field horticultural crops in this area is from the use of crop protection agents in the vicinity of other nearby and proposed residential developments. While most pesticides in the modern era are very low toxicity and usually pose no harm to humans, animals or other non-target life forms, they are frequently accused by nearby residents of 'poisoning' the environment when normal agronomic practice operations are taken to remove or manage pests from the crop.

Sometimes this labelling occurs when the smell of a pesticide is detected, although often these are stenches which have been formulated with the pesticide to allow users to know where they have been used, rather than having any malign effect on human life. However, despite this there is nearly always constant criticism of agricultural production

when it is conducted in the proximity of residential and urban areas.

Consequently, given all these various limitations it would make it virtually impossible to have a profitable or sustainable open field horticultural fruit tree or vegetable crop production enterprise at this particular location.

ALTERNATE HORTICULTURE

There are other forms of horticulture which need not be carried out in open fields, and these include crops grown inside shade houses which are covered with cheap translucent plastic. While these are typically used for vegetable crops, they are relatively cheap to erect (\$100K - \$150K per ha.) and can be placed in any formation on an irregular shaped block and still be functional. However, in the case of this site it will still experience the same constraints of soil that open field crops would endure, so that is ruled out as a useful option. There is a property within a few hundred metres of this site on Legoe Road which has tried this form of horticulture but was forced to abandon it due to lack of productivity.

Other options that exist include taking a shade house as a starting point and then turning it into a hydroponics system and not use the soil that the shade house covers. There are cheap versions of hydroponic systems available which use a type of plastic bag which is filled with a neutral media and then water and nutrients are pumped into these bags to support the plants that are grown in them. These are common in the Two Wells and Virginia area for vegetable



production (e.g. tomatoes), but they do rely on a good supply of irrigation water and does require more capital (\$150-\$200 K) for a medium sized (~ 1 ha.) shade house, and these are two things which are not available to the particular enterprise that currently occupies this subject land.

Another alternative for use of an irregular shaped block on poor quality soil for horticultural production is the use of high-end greenhouse structures. While these recreate a completely new environment inside their structure, insulated from issues such as poor soil quality or irregular shaped areas, they are

quite expensive (\$ 3 million per ha) to put up, and the operating costs (energy, water, equipment, etc.) are also quite extensive (\$1.4 million per ha per year) as well.

This option would also fail at this site due to lack of capital and limited supply of irrigation water. Therefore, in conclusion this site presents a number of significant issues that would prevent the sustainable and profitable production of horticultural crops, and there is nothing on the immediate horizon (e.g. super salt tolerant crops, improved irrigation supplies, novel methods of horticultural production, etc.) to change that particular dynamic.

QUALIFICATIONS and EXPERIENCES**CHARLES KIDD****QUALIFICATIONS:**

Dip. App. Sci. (Agric.)
Grad. Cert. App. Sci. (Agric.)
Master App. Sci. (Agric)

PROFESSIONAL ROLES:

- 1980-1991 Research Officer, Agricultural Research Institute, NSW Agric. Weeds Unit
- 1992-1994 Research Agronomist, Contract Trials Company (ARMS) SA
- 1995-2006 Manager, IAMA/Landmark R & D Group
- 2007 - Agricultural Education and Training, AusKnowledge NetWork
- 2007 – 2019 Product complaints officer for all Landmark broadacre and horticultural crops
- 2008 - External scientific reviewer APVMA
- 2015 – Expert witness/consultant for various Adelaide Hills and adjacent environs local government administrations and residents

RELEVANT EXPERIENCE:

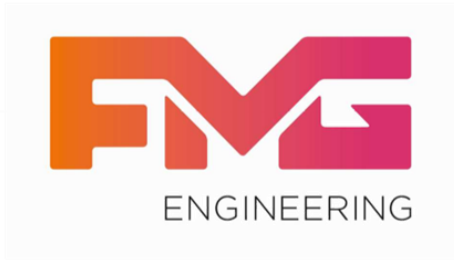
From 1980 until 2009 I undertook or was involved in multiple experiments/trials which were conducted to investigate all issues (protection and nutrition) relating to production of broadacre and horticultural crops. These trials were carried out in all agricultural production areas over Australia including Tasmania.

Involvement in the National Dryland Salinity project overseen by Land and Water Australia which ran from 1993 – 2004.

From 2007 – 2019 I was the principal contact for product complaints for the rural merchant Landmark. This involved resolving many crop production issues from all across Australia including interactions with crop protection products, climate and soil types.

In 2009 I developed a training course for commercial advisors in the fields of broadacre and horticultural agronomy as well as livestock production. Since then, I have trained participants each year on how to give commercial advice to farmers and agricultural producers on how to manage their crop or livestock production enterprises successfully. These participants come from all over Australia including Tasmania and cover all the major forms of agricultural activities that take place in this country.

Since 2015 I have acted as an expert witness or consultant for both a number of Adelaide Hill's councils as well as residents. These have included issues around zoning, classification of land, issues surrounding various agricultural activities carried out in those areas and the agricultural capacity of various areas of land in the Hills region.



Stormwater Management Plan

**Lot 202, Legoe Road, BUCKLAND PARK,
SA 5120**

JOB NUMBER:	S68404 - 292738
CLIENT:	URPS
SITE:	Lot 202, Legoe Road, BUCKLAND PARK, SA 5120
DATE:	10/04/26
REVISION:	D

**Engineering
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SYDNEY

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Introduction

FMG Engineering (FMG) has been engaged by URPS to prepare a Stormwater Management Plan for a proposed development at Lot 202, Legoe Road, BUCKLAND PARK for the purpose of planning approval. Engineering survey has been undertaken and considered in this design (Appendix B).

Windamere Park is located at Lot 202, Legoe Road, BUCKLAND PARK, SA 5120 and covers an area of approximately 85 ha. The subject site (Lot 202 Legoe Road, Buckland Park) is identified as Windamere Park which is an accredited disability services provider with the NDIS, currently offering a range of education and training opportunities for participants, alongside existing limited supported independent living accommodation. The site is currently zoned as Rural Horticulture, and the land is subject to its own sub-zone 'Windamere Park'. A portion of the site to the southeast corner adjacent Legoe Road with the area of approximately 11ha is proposed for land division and development which is considered to be the scope of work of this report and is referred to as 'subject site' in this report. It is proposed to facilitate the proposed residential development of approximately 45 villas within 12 dwelling modules in 3 separate allotments.

To inform this report, FMG Engineering has reviewed publicly available infrastructure databases, undertaken Before You Dig Australia (BYDA) queries and previous infrastructure assessment reporting by FMG.

This report also references A DPA Investigation report has been undertaken by Water Technology for Windamere Park (dated 13 December 2019) for a larger the entire 85 Ha site which has been our reference in some sections of the report where related to the proposed development. This has not been included as an appendix, but a copy can be made available upon request.

This report has been prepared to advise of the relevant stormwater and flooding design considerations for the portion of the site proposed for land division and development. This report is intended to outline the design intent for stormwater design works and be suitable for the granting of planning consent. This report is not intended to be updated following planning consent and shall be used by the future designers of the detailed site works plans as the basis of design.

Site Understanding

The subject site is located at Lot 202, Legoe Road, BUCKLAND PARK, SA 5120 within the City of Playford as shown in Figure 1 as shown in Figure 1. Any reference to subject site in this report refers to the scope of work shown below at the southeast corner adjacent the Legoe Road. A review of current satellite imagery on Nearmaps Maps reveals that the subject site is largely previous, with gravel access tracks (of negligible imperviousness) observed in some locations.

The overall Windamere Park site is bound by rural lands on the northern and eastern sides, Gawler River on the western side, and Legoe Road on the southern side. A survey of the Subject Site has been undertaken which indicates the site is relatively flat (with some local depressions and open spaces) and overall has an average surface grade of below 0.5% towards the southwest. The majority of the site is proposed to be used for disability services in a rural setting.

There is an existing man-made irrigation basin / lagoon through the centre of the Subject Site, which was constructed by the operator of Windamere Park. This lagoon currently functions as an ability to receive trickle flows from the recycled water line in Legoe Road into the site, provide some passive treatment of the stored water through the provided plantings, and then be used as an irrigation source for the olive groves. Increased availability of runoff within this lagoon is desirable for the operators of Windamere Park, reducing the reliance of the recycled water offtake, and increasing the resilience of the operation.

The lagoon consists of a lower channel portion which stores water fairly consistently throughout the year (to an unknown depth). There appears to be 500mm of freeboard to the top of the channel (approximately 3.5mAHD) in most locations. Above this, there is a larger storage plains which includes the subject site, and

this entire area is bunded to an approximate top of bund height of 5mAHD. This bund protects the site from overland flow paths to the north and east. There is a penetration within the bund to the north west with what looks to be a culvert set to approximately 3.50mAHD, which FMG takes to be a high level overflow for the lagoon in the event of inundation from rain, or recycled water.



Figure 1-Site Layout and proposed development

FMG notes this lagoon is incorrectly labelled as a "water body" across various State Government GIS layers, and instead should be assessed as a man-made recycled water storage lagoon.

Proposed Development

The concept drawing outlining the proposed development is shown in Appendix A (subject to minor change) which includes the development of 3 residential allotments. The proposal of this development is as below:

Land division of 3x 1ha allotments in the south-eastern corner of the site (indicative site plan in

- Figure 1)
- Construction of Two different type of self-contained Villa modules:
 - Module A: 4x dwellings (for supported accommodation on each allotment, accommodating a maximum of 15 people per allotment.
 - Module B: 3x dwellings (for supported accommodation on each allotment, accommodating a maximum of 15 people per allotment
- Occupants will be NDIS approved clients, with each dwelling designed to also accommodate a live-in support person/carer.

Existing Stormwater and flooding conditions

FMG have developed a high-level understanding of the existing drainage infrastructure and flooding issue in the area from review of the Windamere Park DPA Investigation (Water Technology, December 2019) and South Australian Property and Planning Atlas (SAPPA) flooding map.

Subject site is relatively flat, and a large lagoon is present through the centre of the subject site. The lagoon storage is significant (estimated to be in excess of 18,000m³) are assumed to capture all runoff from the subject site during minor and major storm events.



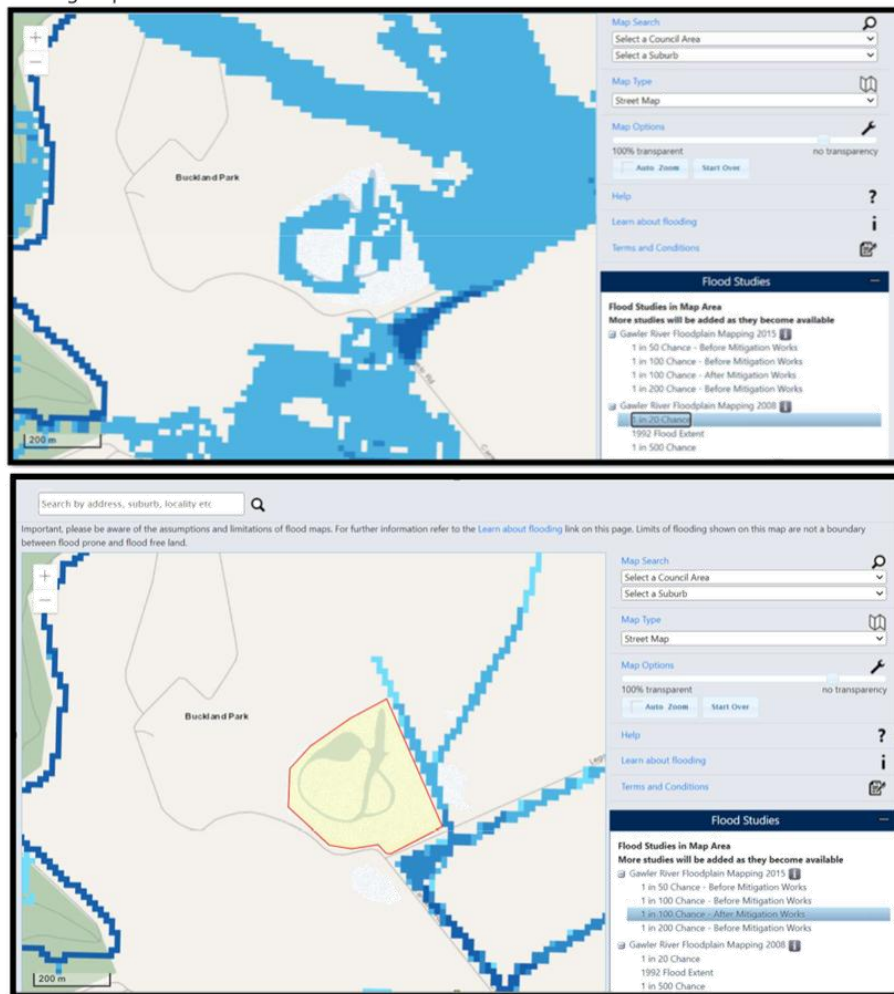
Figure 2- Existing flood map (1% AEP) (SAPPA Website)

During minor storm events, the existing basins and flat topography allow the stormwater runoff to be stored and infiltrated. SAPPA Flooding map (Figure 2) shows extent of flood (1% AEP) at the boundaries of the subject site; Along the eastern property, Legoe Road and internal driveway. Based on this map, no stormflow enters the site from boundaries as there is no extent of flooding seen within the subject site. As noted above, a bund approximately 800mm high exists along the eastern boundary to a top level of ~5mAHD. FMG can update this report should additional detailed flood depth data is available from Council.

FMG also checked the other Flood studies resources available for the subject site such as Water Connect website to check against SAPPA flooding map. Water connect has provided separate flooding maps based on different studies:

- Gawler River Floodplain Mapping 2015 - After Mitigation works (Figure 3)

After reviewing the Water Connect flooding map, it can be concluded that the 2008 flooding map shows extent of flooding within the site (stormflow entering the site from eastern boundary). However, 'After Mitigation Works 2015' flooding map demonstrates that there is no flooding within the subject site and stormflow stays along the boundary of the site in Legoe Rd, internal road and eastern boundary. The latter matches the SAPPA flooding map.



Southern Flood Levee

These max flood depth maps (refer water technology flood mapping of existing and developed conditions in appendix A) show that stormwater is contained within the boundary in Legoe Road and neighbouring property (existing open channel or potential overland flow) for up to and including the 1% AEP (100-year ARI) major storm. Floodwaters are all located within the private land on the southern side of Legoe Road. A review of the survey suggests the elevation between the invert of the roadside verge swale and top of the bund is approximately 1m, providing greater than 300mm freeboard to the adjacent flood risk along the southern boundary.

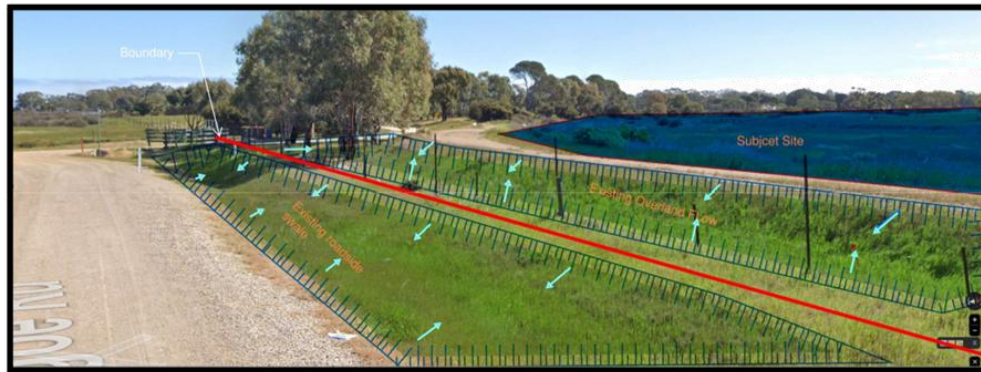


Figure 4- Existing Road side swale along the Legoe Road

Eastern Flood Levee

FMG has also identified key information on this arrangement within previous reporting by Water Technology;

“There is a levee bund along the eastern boundary which prevent flood water entering the site. Also, it would be possible for road upgrade works to be undertaken along Legoe Road, or the internal driveway along western boundary to improve the accessibility to the site in a major flood event. This means proposed development would result in a higher standard of access/egress by mitigation works such as raising the road crest elevation and the construction of new culverts. Within the site, the impact of the development on the movement of floodwaters would be minimal and the major changes in landform would be outside of the expected flood envelope. There already exists a flood levee along the eastern boundary which diverts floodwaters towards the south.”

Additional Survey was undertaken to address council’s request for information item. This survey includes information on the top and bottom levels of the bund along the site’s eastern border. Given the hypothetical worst-case scenario based on the 2008 flood mapping, a flood depth of 0.5m has been anticipated (a conservative prediction from the 0.25-0.5m flood depth range shown) along the eastern border. Presuming a 300mm freeboard, the levee bund would need to be a minimum 800mm above the adjacent property levels to the east to achieve the required freeboard. After analysing the survey levels, it can be concluded that most section along the levee bund surpass the +800mm mark. However, some northern sections of the levee are slightly below 800mm and will need modifications and additional filling to reach an 800mm bund height. This has been added refer to the Civil design drawings (Appendix B).

The landowners shall maintain levee and its height (800mm above adjacent land levels) to ensure this is not compromised during flood event.

It should be noted that within the flood study documents (by Water Technology), the post-mitigation scenario proposes the construction of a channel along the boundary below ground level, with the extent of flooding then limited to the proposed channel width, mitigating all sheet / flood flow. We have not designed for this scenario, but provide this as additional context, noting that flood risk will be close to fully mitigated in the future scenario.

Stormwater Management Requirements

FMG have contacted Council for stormwater requirements for the subject site and clarification of the drainage system but have not received a response to date of this report. The following requirements are based on FMG's assumptions from our experience with similar sites, and a review of Council's Land Division Guidelines. This report will be updated should more site specific requirements be provided.

- Underground stormwater drainage network to be sized for the minor storm of 10 yr ARI
- Storms up to and including the 1% AEP storm event (100-yr ARI) shall be contained wholly within the property, with safe overland flow paths provided towards Council road reserves for greater storm events.
- Stormwater run-off must not impact adjacent properties and be contained within the property boundary.
- Stormwater quality will need to comply with EPA water quality policy as below

Suspended solids	80% retention of average annual load
Total phosphorus	45% retention of average annual load
Total nitrogen	45% retention of average annual load
Litter	Retention of litter greater than 50mm, for up to 3 month ARI peak flow
Coarse sediment	Retention of sediment coarser than 0.125mm for up to 3 month ARI peak flow
Oils & grease	No visible oils for up to 3 month ARI peak flow.

Table 2: Requirements for EPA water quality policy (2003)

Detention/Retention storage requirements

To comply with Council's minimum detention requirements, stormwater infrastructure within the subject site would need to be provided such that the peak post-development runoff is restricted back to match the pre-development for storm events up to and including the 1% AEP (100-year ARI) storm event. Given the developer's water demand for irrigation and re-use purposes, FMG considers a retention basin with an emergency overflow in stormwater calculations. This retention basin can be accommodated within the open space area (current wetland location).

An indicative sizing exercise has been undertaken using DRAINS software to provide an estimate of the magnitude of storage which may be required to comply, however this is on the basis of the following assumptions;

- Existing site is 100% pervious.
- Based on the proposed concept layout (Appendix B), developed site is assumed to be 85% pervious and 15% impervious, for the entire 11ha site (conservatively)
- A mandatory 1,000 L of stormwater retention per dwelling would apply. Note: these tanks would not provide any contribution to the retention storage requirement for the site.
- Does not consider the external flow from the south or any upstream catchment
- Depression storage of 1mm for impervious and 5mm for pervious areas
- Soil type: Type 3 (or C); slow infiltration rates (may have layers that impede downward movement of water)
- No Infiltration rate for the perimeter/bed of the basin/wetland has been considered (more conservative)

The results of the preliminary analysis are shown below for the major storm 1% AEP (100 yr ARI) in Figure 7. The model contains the Pre-development model and the Post Development model with a basin (using the ILSAX model). The results have also been summarised in Table 1 below and show that approximately 4,200 m³ of retention storage will be required in the critical 9-hour storm event.

Currently the proportion of sealed or heavily compacted surface areas is negligible. Road runoff is proposed to be directed to the adjacent pervious areas and runoff from roof areas is connected to rainwater tanks with overflows allowed to discharge to the ground and would be managed through a combination of subsurface and surface drainage elements to direct stormwater to the main depression area which is expected to be subject to extensive revegetation. The large extent of flat area through the depression could permit runoff to

be discharged and allowed to infiltration without causing any nuisance issues. However, the retention basin can be lined due to the water demand for irrigation purposes.

Low-density housing in the south-eastern corner where the existing constructed wetland is located may result in the filling of some area of the wetland, but sufficient extents could be maintained to provide adequate water quality treatment and storage for water to be reused on-site to supplement irrigation supply. The design finished floor level of the buildings should be at least 300mm above the adjacent flood level (in case of flooding) to protect the dwellings against flooding or 300mm above the natural surface levels where there is no flooding concern.

The results show a minimum retention volume of 4,200m³ is required in the wetland to capture and retain all the runoff within the proposed development. It should be noted that 3x1ha allotments has been considered to include impervious area in modelling and the rest of the site (8ha) has been considered pervious (undeveloped).

In addition to the above, each villa will have potable water harvested by the roof runoff into a potable water tank, FMG has previously undertaken preliminary sizing of this solution to a tank of approximately 10kL, but note the unique demand requirements for these dwellings, and have referred this to a services engineer for first principals water balance calculations. Conservatively, we have not yet taken into account the retention provided by each of these tanks (totalling 160m³ for the Stage 1 dwellings, 480m³ for Stages 1-3) which would reduce the volume needed to be stored by the lagoon during a major storm event.

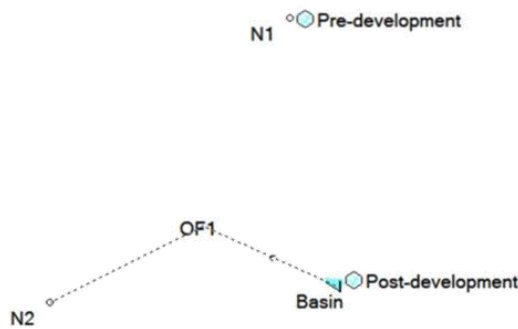


Figure 5 - DRAINS Layout

Table 1 Summary of DRAINS analysis

Storm event	Pre-development	Post Development	Approximate Detention volume required
Minor storm 10% AEP (10-Yr ARI)	0.075 m ³ /s	0.143 m ³ /s	1,050m ³
Major storm 1% AEP (100 yr ARI)	0.463 m ³ /s	0.486 m ³ /s	4,200m ³

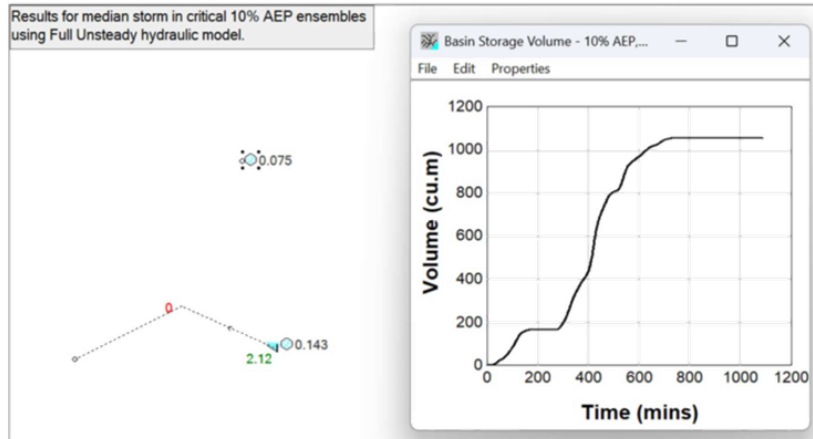


Figure 6 - 10% AEP DRAINS Results

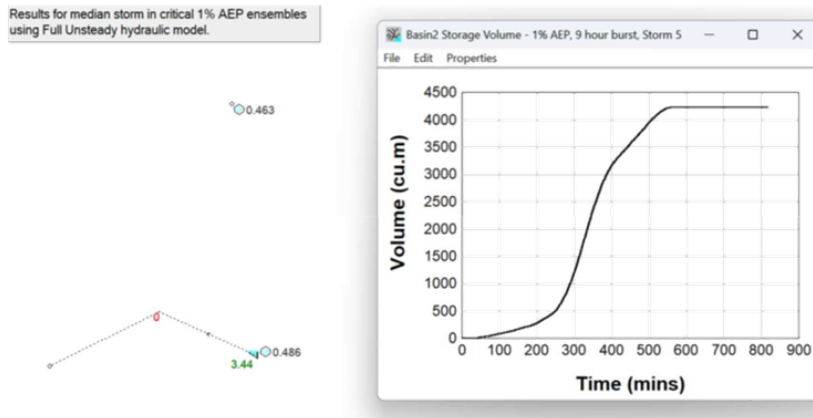


Figure 7 – Major storm 1% AEP DRAINS results

Conclusion for Stormwater Management Strategy

We adopt the guidelines of the City of Playford Land Division Guidelines – Stormwater Requirements. Our interpretation of these guidelines suggests either of the following requirements from Section 2a) would apply;

- For Commercial Rural Developments stormwater is to be managed on site via tanks and basins where there is no established infrastructure to drain to. Discharge to roadside swales is not accepted.
- Further information regarding major storm flows to be safely diverted towards the adjacent public realm (i.e. the Legoe Road reserve).

The section of the subject site where development is proposed to occur appears to already be elevated above the floodplain. We confirm that FFL's shall be set 300mm above natural levels, and achieve a minimum 300mm above the invert of the overflow culvert to the North west of the lagoon, to ensure that >150mm of freeboard is achieved to internal 1% AEP stormwater ponding levels in all circumstances. Based on the survey undertaken recently, it is understood that this invert level is 3.11mAHD, increasing to 3.26mAHD at the northern end of the channel, limiting peak water levels within the lagoon to ~3.3mAHD (given the catchment area and irrigation feed are low incoming flow levels). On this basis, any floor levels greater than 3.6mAHD will achieve the required 300mm freeboard (noting that the current civil design achieves a minimum 3.85mAHD).

Given a maximum water level of 3.3mAHD and the existing levels resulting in a ~14,000m² storage area, 4,200m³ equates to an approximate storage depth of 300mm across the balance of the lagoon, and hence can easily be accommodated within the existing infrastructure. The existing recycled water feed into the lagoon is to be modified with a float switch or similar arrangement, to ensure recycled water feed is turned off with a minimum of 4,200m³ storage capacity below the overflow culvert elevation is achieved (i.e. nominally cutoff at 3.0mAHD).



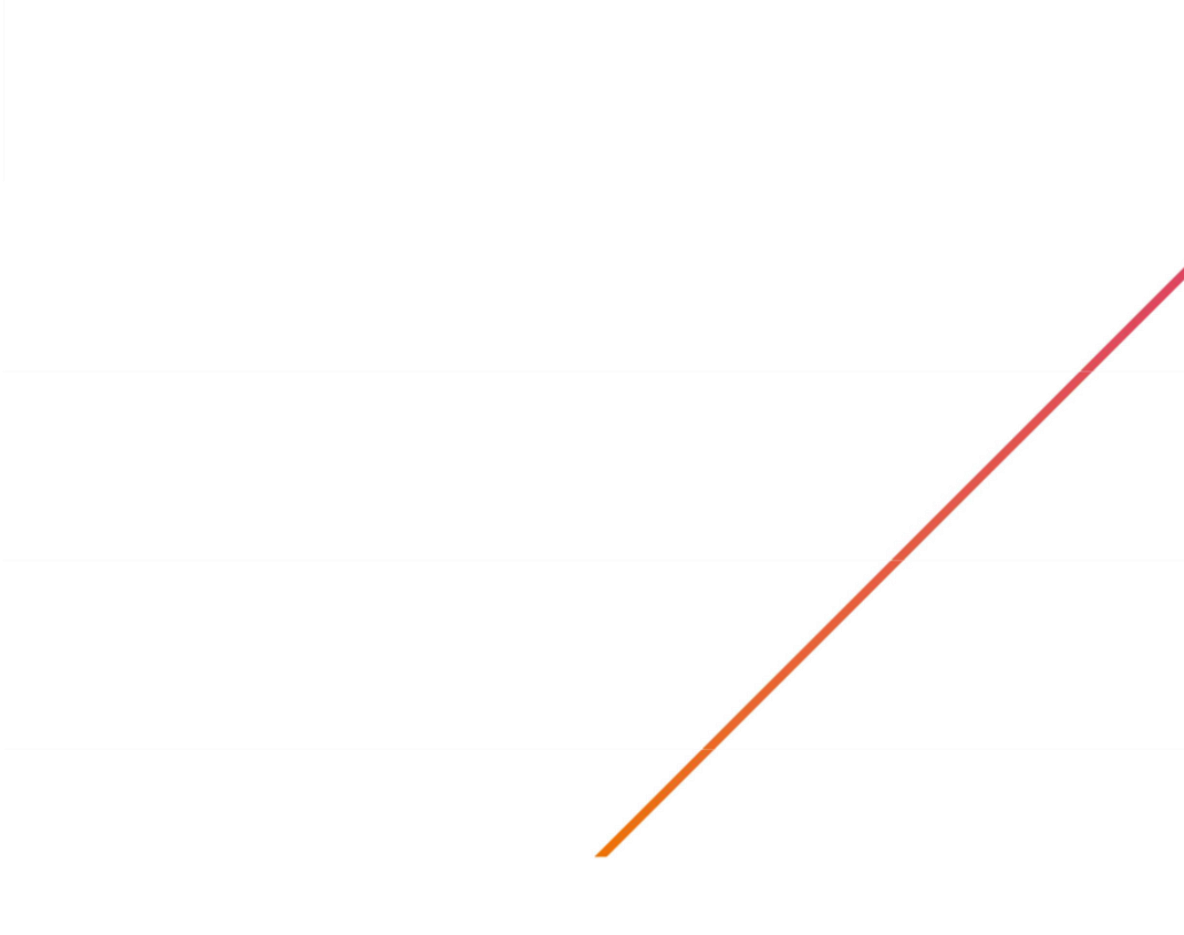
Figure 8 - Area of lagoon for retention

Water Quality requirements

We expect that the requirements would be inline with the EPA water quality policy, given all stormwater will be retained on site during the 1% AEP storm event (and therefore the 1EY storm event) inherently achieving a 100% reduction in Total Suspended Solids (TSS), Gross Pollutants (GP), Total Nitrogen (TN) and Total Phosphorus (TP). In most of the sections of driveways and access roads, the stormwater runoff will be captured by the swale along (behind) the lowest edge of the driveway (one-way crossfall) and be diverted to discharge points via pit/pipe networks. In areas where a swale cannot be applied due to a nearby wastewater treatment plant (e.g., site 1), we will install gross pollutant baskets (Oceanguard SQUIDEP approved) in pits to help minimise pollution.

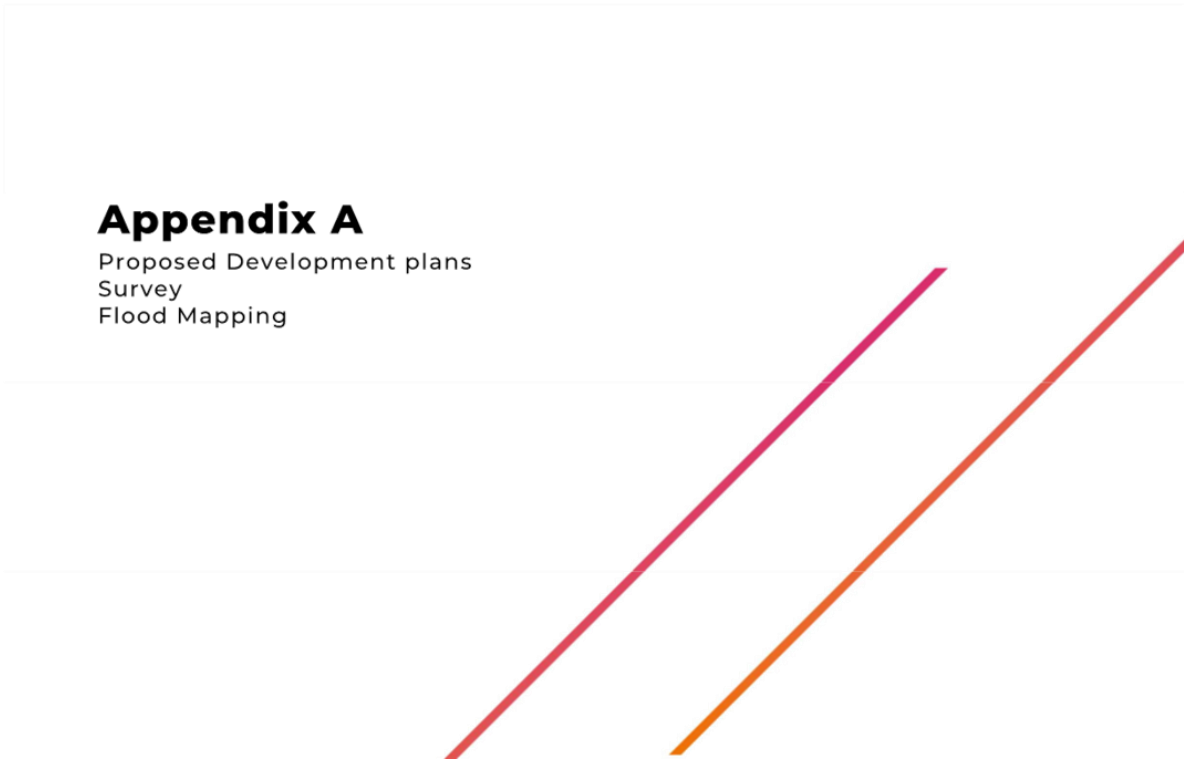
The ongoing performance of the proposed stormwater treatment system is contingent upon a regular maintenance regime, which remains the responsibility of the landowner. OceanGuard pit inserts must be inspected every 4 months and post-major storm events, with full debris removal required once the bags reach approximately 70% capacity to prevent bypass. For the roadside swales, the landowner is obligated to maintain healthy vegetation cover, including regular mowing (retaining a height of 50mm–100mm) and the removal of accumulated sediment at entry points every 3 to 4 years. Failure to adhere to these intervals may lead to system blockages and non-compliance with Council's discharge quality requirements

Reuse of stormwater for irrigation purposes is one of the highest and best practices in WSUD design, and we consider this an excellent outcome, reducing the existing reliance on recycled water mains.



Appendix A

Proposed Development plans
Survey
Flood Mapping



DRAWN BY: Adam FLOTTAGE 11/20/2025 10:29 AM Client: Windmere Park SDA, 24-0848, Project: Windmere Park SDA



REASON FOR ISSUE	REV	DATE
Revisions	E	11/20/2025
Revisions	F	21/11/2025

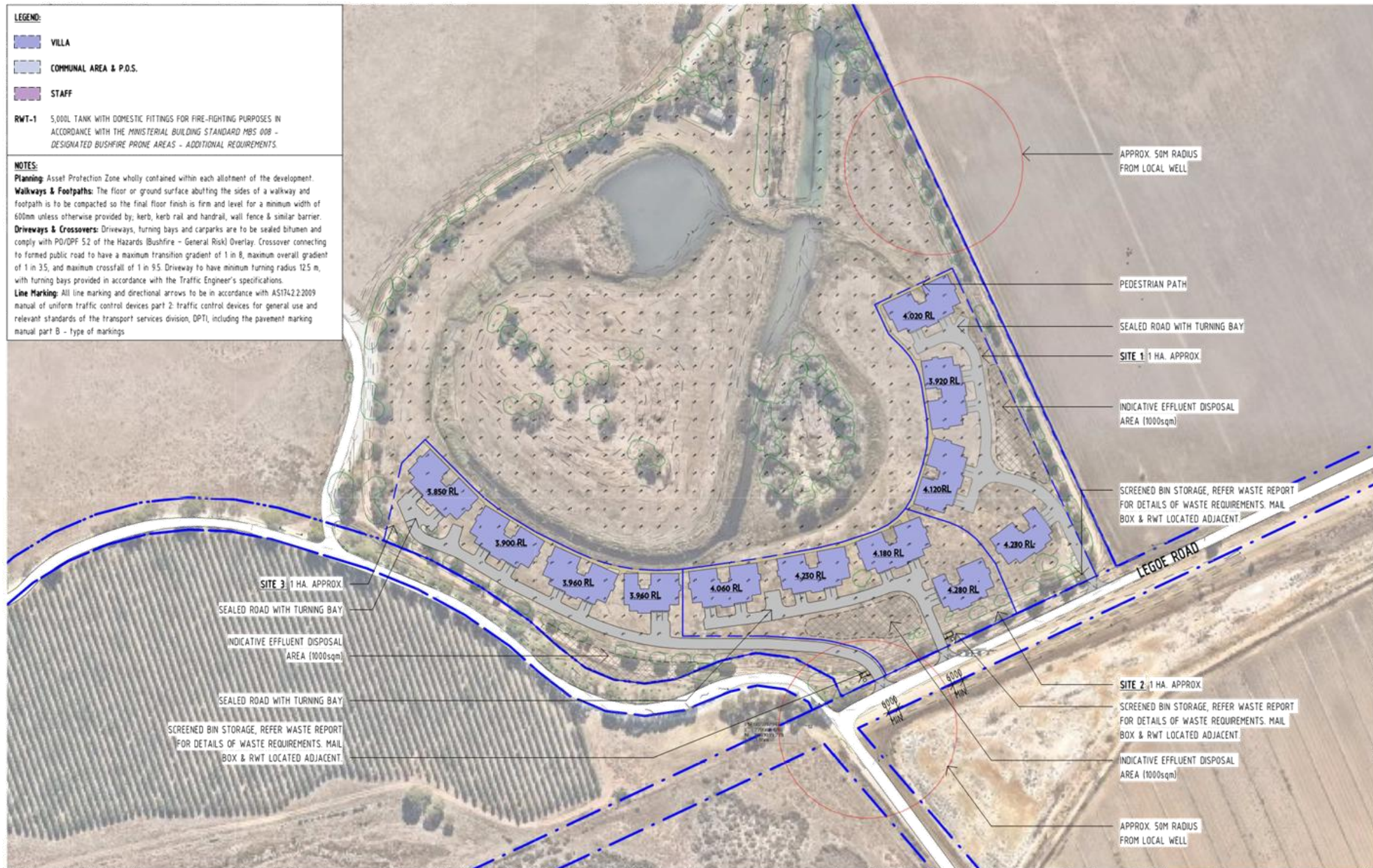
PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windmere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

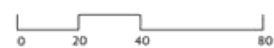
LOCATION PLAN	DRAWING — SK00
21/11/2025	REVISION — F
1 : 5000 @A3	PROJECT — 24-0848



REASON FOR ISSUE	REV	DATE
Revisions	M	17/02/2025
Revisions - RWT	N	17/03/2026

PRELIMINARY

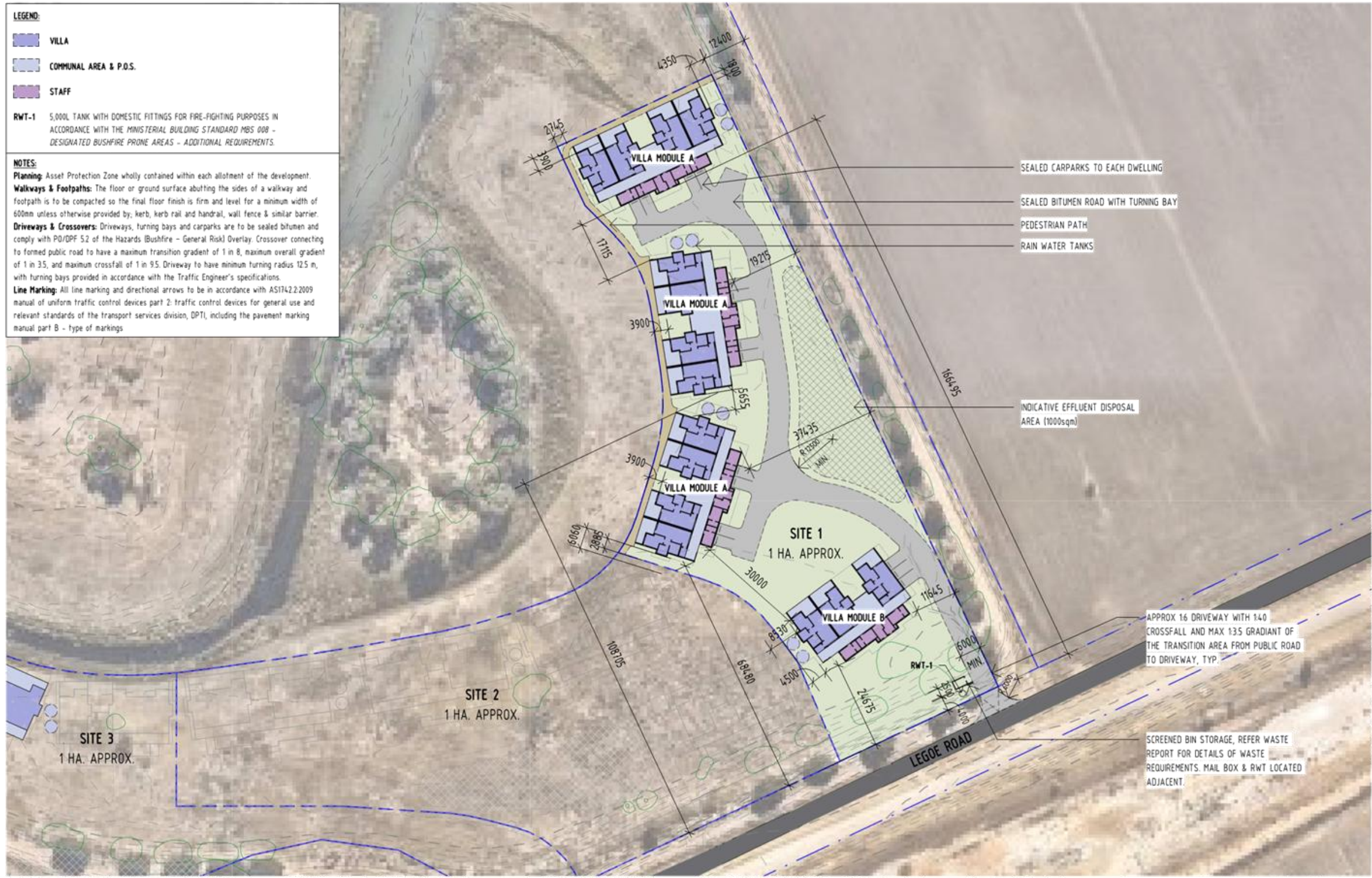
WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

SITE PLAN	DRAWING
17/03/2026	SK01
As indicated @A3	REVISION — N
	PROJECT — 24-0848

DRAWING: Aerial PHOTO DATE: 07/03/2024 11:14 AM Client: Legoe Park SDA, 202 Legoe Road, Buckland Park



REASON FOR ISSUE	REV	DATE
Revisions	M	17/02/2025
Revisions - RWT	N	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING

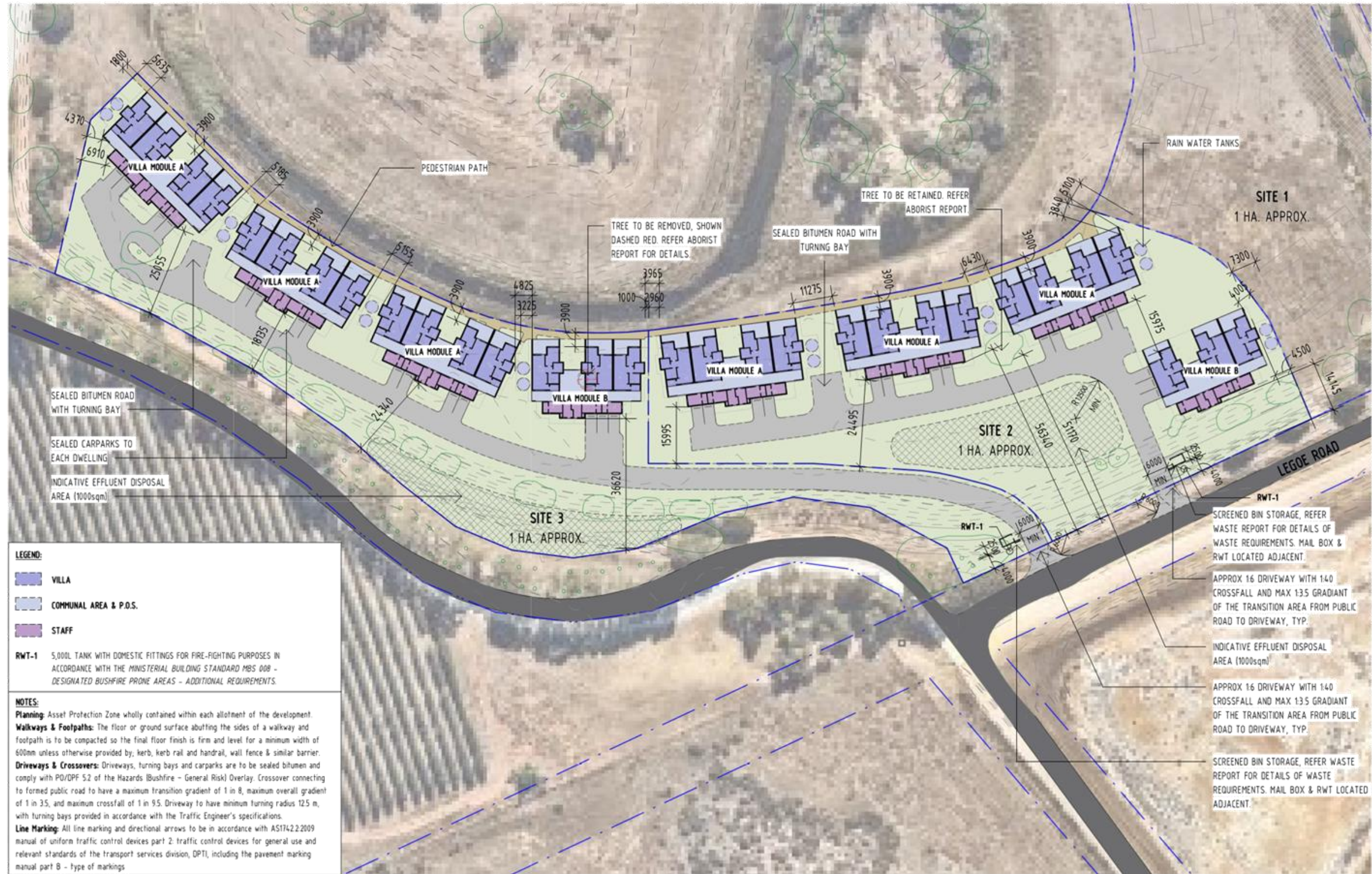


Windamere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

SITE PLAN - SITE 1
1 : 1000

SITE PLAN - SITE 1	DRAWING — SK02
17/03/2026	REVISION — N
As indicated @A3	PROJECT — 24-0848

DRAWING # 24-0848-010-01 SITE PLAN - SITE 1 - PRELIMINARY



LEGEND:

- VILLA
- COMMUNAL AREA & P.D.S.
- STAFF

RWT-1 5,000L TANK WITH DOMESTIC FITTINGS FOR FIRE-FIGHTING PURPOSES IN ACCORDANCE WITH THE MINISTERIAL BUILDING STANDARD MBS 008 - DESIGNATED BUSHFIRE PRONE AREAS - ADDITIONAL REQUIREMENTS.

NOTES:

Planning: Asset Protection Zone wholly contained within each allotment of the development.

Walkways & Footpaths: The floor or ground surface abutting the sides of a walkway and footpath is to be compacted so the final floor finish is firm and level for a minimum width of 600mm unless otherwise provided by, kerb, kerb rail and handrail, wall fence & similar barrier.

Driveways & Crossovers: Driveways, turning bays and carparks are to be sealed bitumen and comply with PD/DPF 5.2 of the Hazards (Bushfire - General Risk) Overlay. Crossover connecting to formed public road to have a maximum transition gradient of 1 in 8, maximum overall gradient of 1 in 3.5, and maximum crossfall of 1 in 9.5. Driveway to have minimum turning radius 12.5 m, with turning bays provided in accordance with the Traffic Engineer's specifications.

Line Marking: All line marking and directional arrows to be in accordance with AS1742.2:2009 manual of uniform traffic control devices part 2: traffic control devices for general use and relevant standards of the transport services division, DPTI, including the pavement marking manual part B - type of markings

REASON FOR ISSUE	REV	DATE
Revisions	G	17/02/2025
Revisions - RWT	H	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



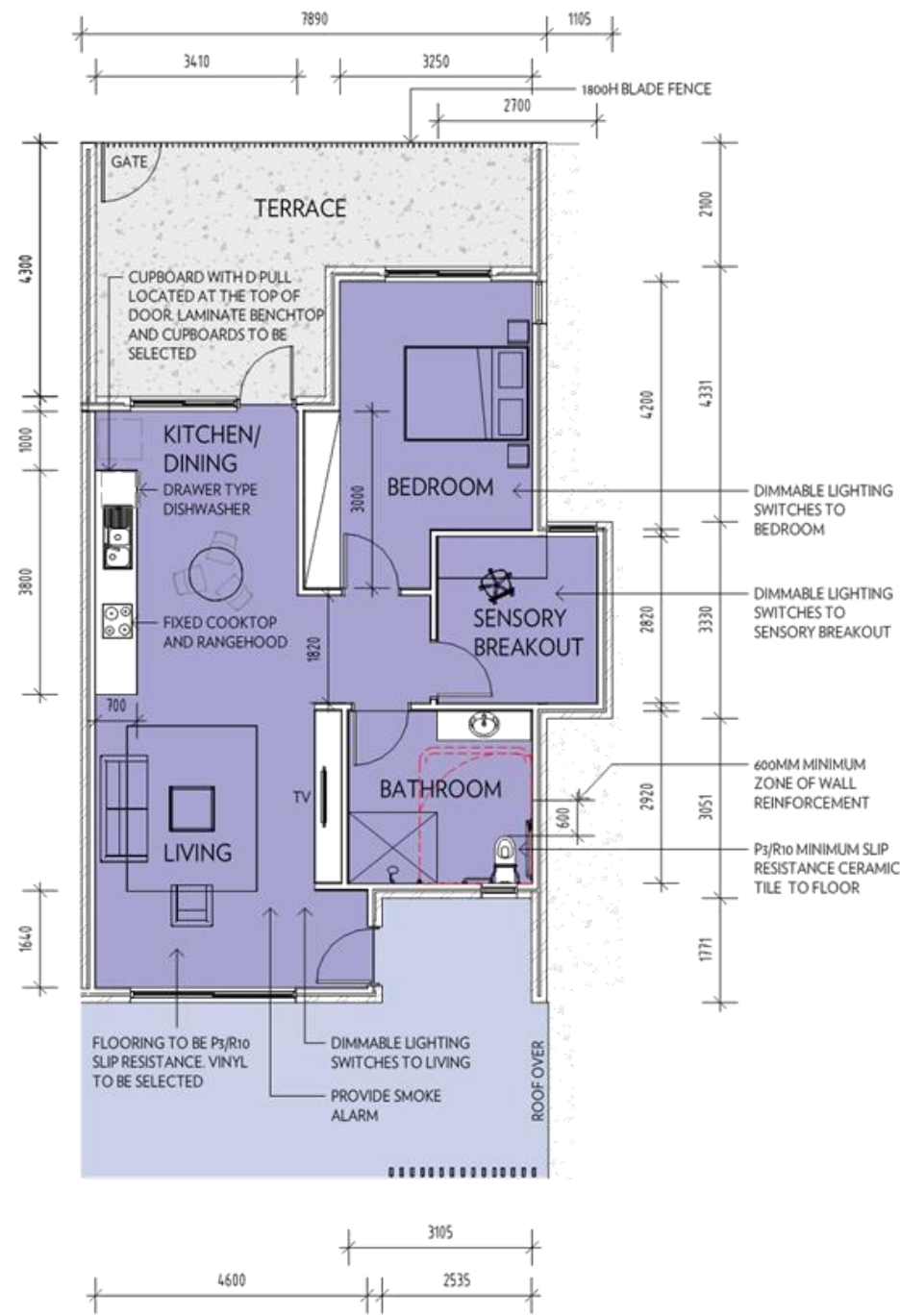
Windmere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

SITE PLAN - SITE 2 & 3

1:1000

SITE PLAN - SITE 2 & 3	DRAWING	SK03
17/03/2026	REVISION	H
As indicated @A3	PROJECT	24-0848

DRAWN BY: [Name] PLOT DATE: [Date] CLIENT: [Name] PROJECT: [Name] SHEET: [Number] OF [Total]



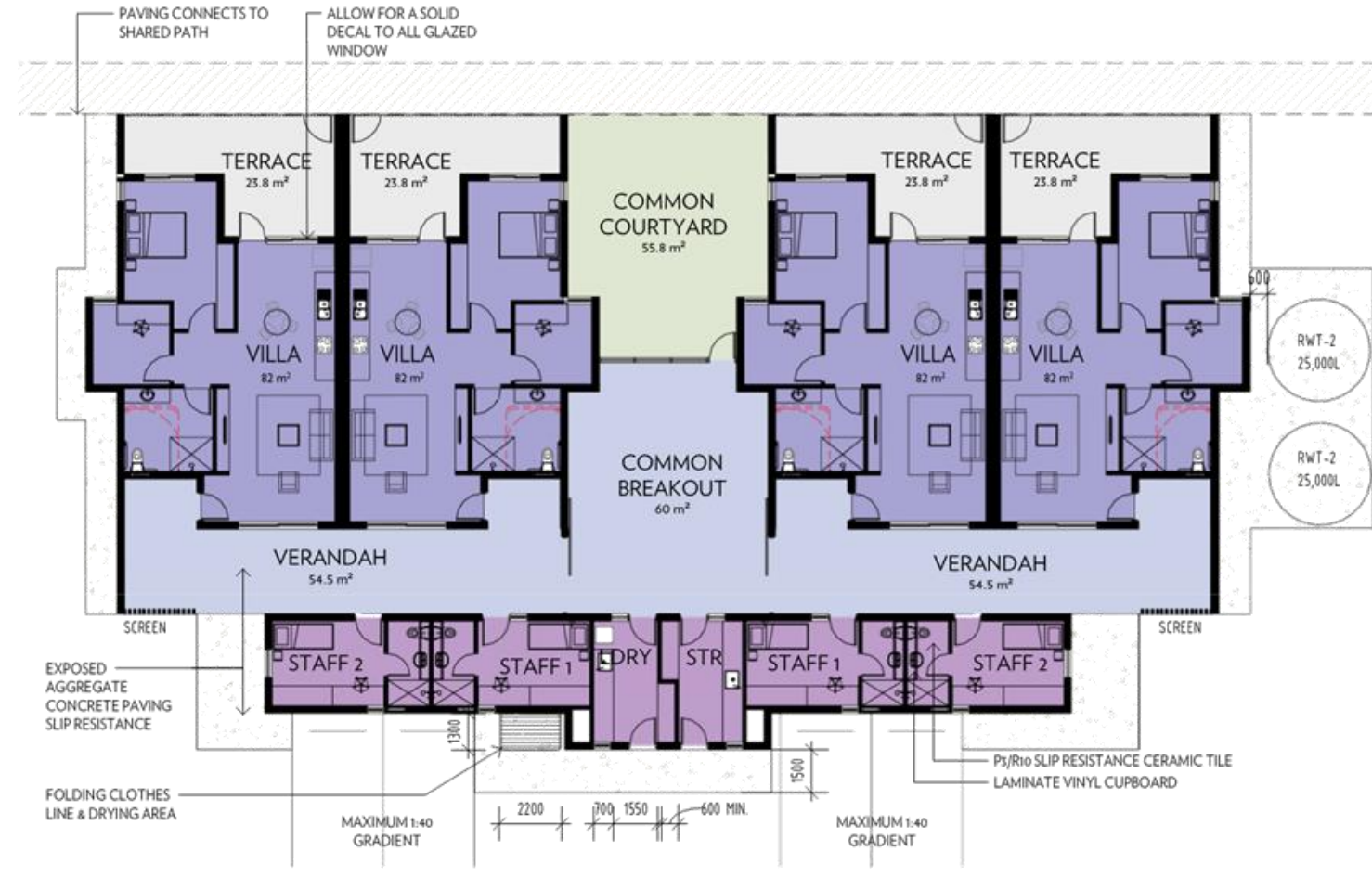
TYPICAL VILLA FLOOR PLAN

1 : 100

REASON FOR ISSUE	REV	DATE
Revisions	G	17/02/2025
Revisions - RVT	H	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING



TYPICAL SELF CONTAINED VILLA MODULE A

1 : 200

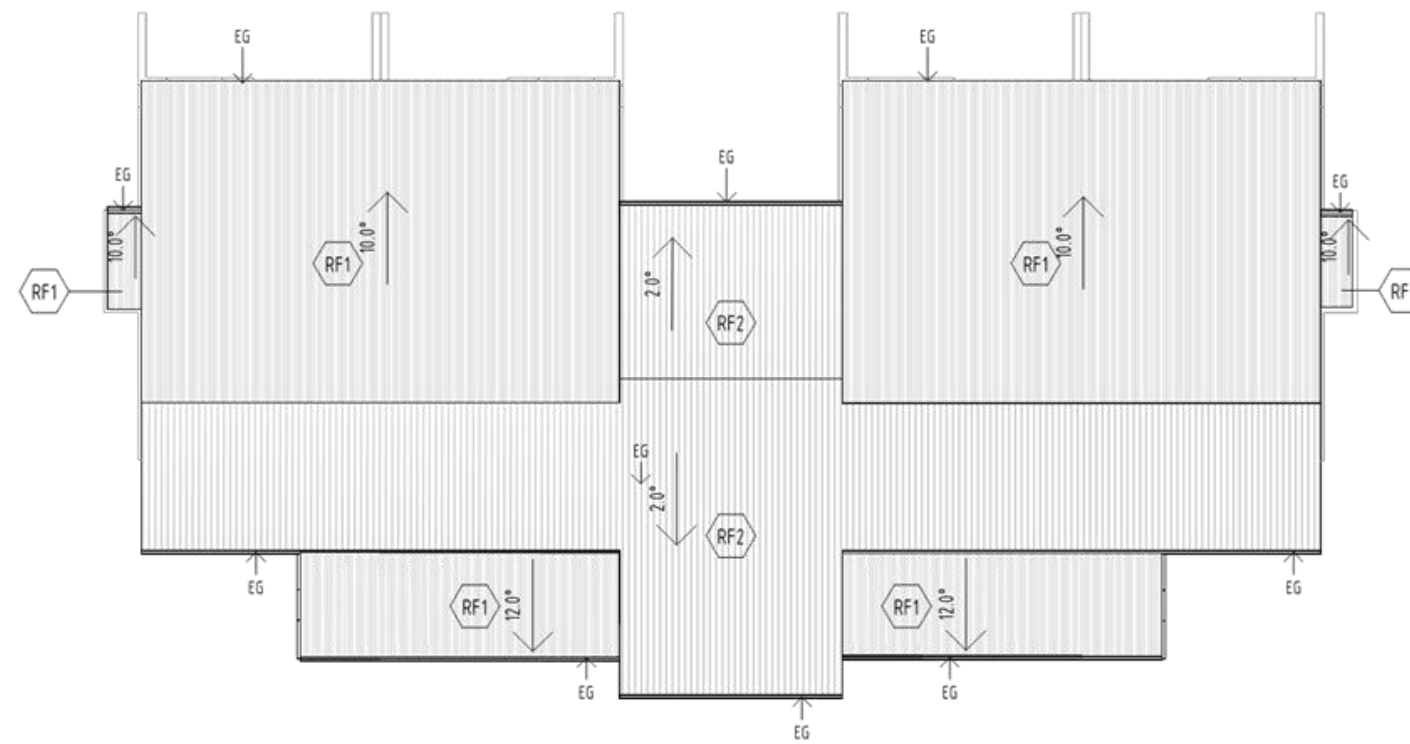
- LEVEL TRANSITION INTO VILLA - TYPICAL
- CONTINUOUS STEP-FREE PATHWAYS TO ENTRANCES. MAXIMUM 1:20 GRADE SLIP RESISTANCE P4 OR R11

- HIGH IMPACT WALL LININGS.
- LIGHTS AND GPO SWITCHES TO BE ROCKER ACTION WITH A MINIMUM WIDTH OF 35MM.
- LIGHT SWITCHES POSITIONED BETWEEN 900MM - 1100MM ABOVE FFL.
- ALL HINGED DOOR TO BE SOLID CORE - MINIMUM 900MM WIDE.
- DOOR HANDLES TO BE FIXED AT BETWEEN 900MM AND 1100MM ABOVE FFL.
- ALL WINDOWS TO BE LOCKABLE.
- ALL GLAZING TO BE LAMINATED GLASS OR POLYCARBONATE RESIN THERMOPLASTIC MATERIAL.

Windamere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE A - FLOOR PLAN	DRAWING	SK05
17/03/2026	REVISION	H
As indicated @A3	PROJECT	24-0848

DRAWING: A01 - ROOF PLAN - MODULE A - 31/10/2025 - 10:00 AM - C:\Users\jfranklin\OneDrive\Documents\Windamere Park SDA\24-0848\RoofPlan.dwg



ROOF PLAN - MODULE A
1 : 200

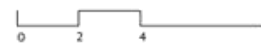
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CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

GUTTER SCHEDULE	
CODE	DESCRIPTION
EG	Mosman Eaves gutter

REASON FOR ISSUE	REV	DATE
Revisions	B	20/01/2025
Revisions	C	31/10/2025

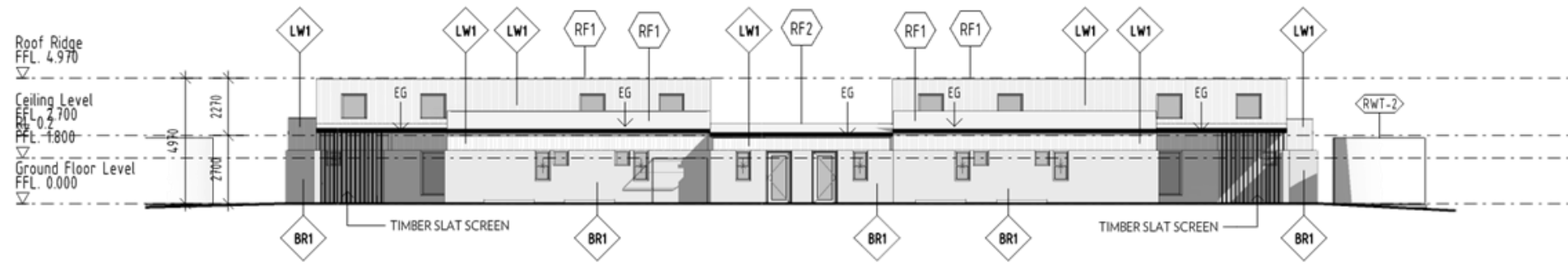
PRELIMINARY

WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING



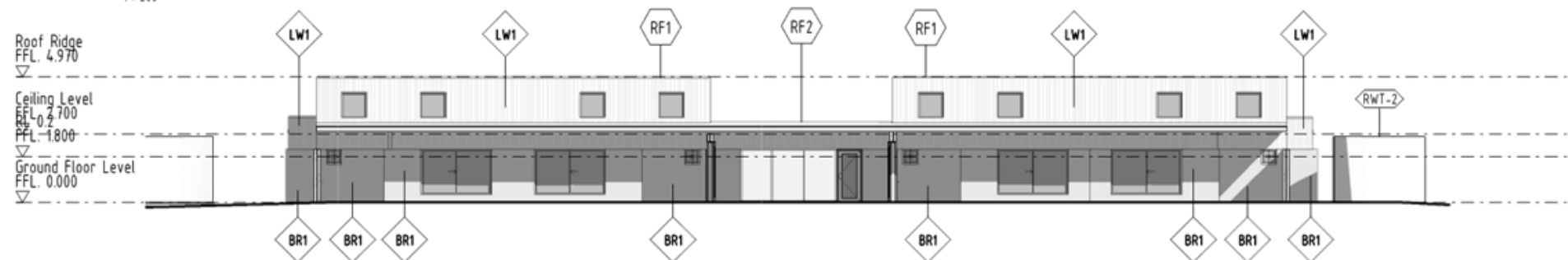
Windamere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE A - ROOF DRAWING — SK06	
PLAN	REVISION — C
31/10/2025	
1 : 200 @A3	PROJECT — 24-0848



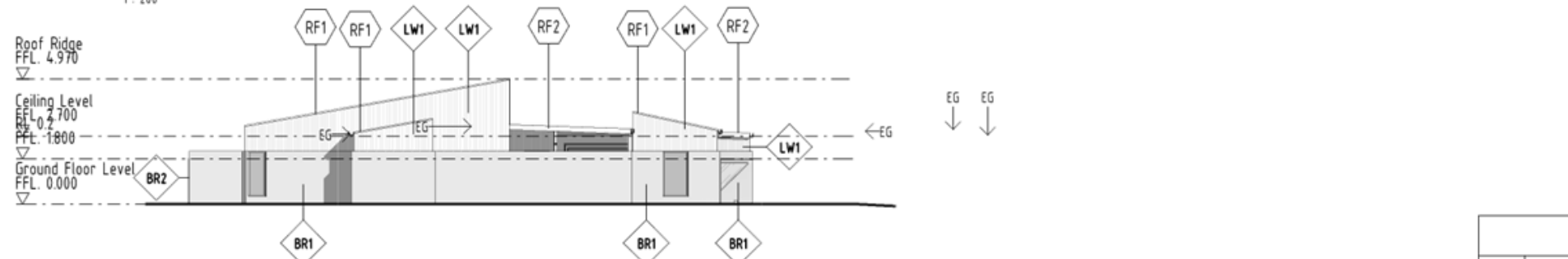
MODULE A_ELEVATION 01

1: 200



MODULE A_ELEVATION 02

1: 200



MODULE A_TYP SIDE ELEVATION

1: 200



MODULE A_ELEVATION 04

1: 200

REASON FOR ISSUE	REV	DATE
Revisions	C	31/10/2025
Revisions - RWT	D	17/03/2026

PRELIMINARY
WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

ROOF TYPE SCHEDULE	
CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

GUTTER SCHEDULE	
CODE	DESCRIPTION
EG	Mosman Eaves gutter

WALL TYPE SCHEDULE	
CODE	WALL DESCRIPTION
BR1	110mm wide brickwork / 40mm air gap / Thermal insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Villaboard to wet areas) /
BR2	110mm wide brickwork / 40mm air gap / 110mm wide brickwork /
FT1	Aluminium blade fencing, 1800H /
LW1	25mm Metal Cladding / 35mm sub-framing / Thermal insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Villaboard to wet areas) /

TYPICAL SELF CONTAINED VILLA MODULE A - DRAWING — SK07
 ELEVATIONS
 17/03/2026 REVISION — D
 1: 200 @A3 PROJECT — 24-0848

DRAWING/ Author: RWT DATE: 17/03/2026 PROJECT: Windamere Park SDA, Lot 202, Legoe Road, Buckland Park



TYPICAL SELF CONTAINED VILLA MODULE B

1: 200

REFER TO SHEET SK-05 FOR TYPICAL VILLA FLOOR PLAN

- HIGH IMPACT WALL LININGS.
- LIGHTS AND GPO SWITCHES TO BE ROCKER ACTION WITH A MINIMUM WIDTH OF 35MM.
- LIGHT SWITCHES POSITIONED BETWEEN 900MM - 1100MM ABOVE FFL.
- ALL HINGED DOOR TO BE SOLID CORE - MINIMUM 900MM WIDE.
- DOOR HANDLES TO BE FIXED AT BETWEEN 900MM AND 1100MM ABOVE FFL.
- ALL WINDOWS TO BE LOCKABLE.
- ALL GLAZING TO BE LAMINATED GLASS OR POLYCARBONATE RESIN THERMOPLASTIC MATERIAL.

REASON FOR ISSUE	REV	DATE
Revisions	G	17/02/2025
Revisions - RWT	H	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING

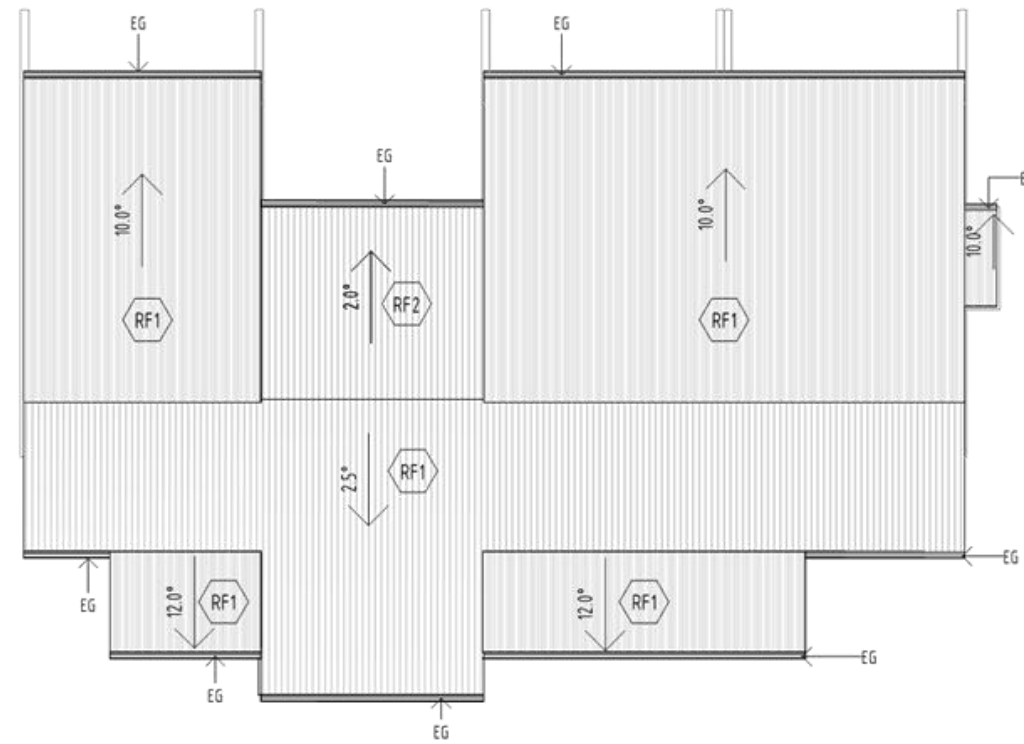


Windamere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE B - FLOOR PLAN	DRAWING	SK10
17/03/2026	REVISION	H
1: 200 @A3	PROJECT	24-0848

DRAWING: 17/03/2026 09:00:00 AM Client: Windamere Park SDA, 202 Legoe Road, Buckland Park

DRAWING AUTHOR: PLOT DATE: 10/2020; DESIGNER: WALTER BROOKE ARCHITECTURE; PROJECT: WINDAMERE PARK SDA; SHEET: 24-0848



ROOF PLAN - MODULE B
1 : 200

REASON FOR ISSUE	REV	DATE
Revisions	B	20/01/2025
Revisions	C	31/10/2025

PRELIMINARY

WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING

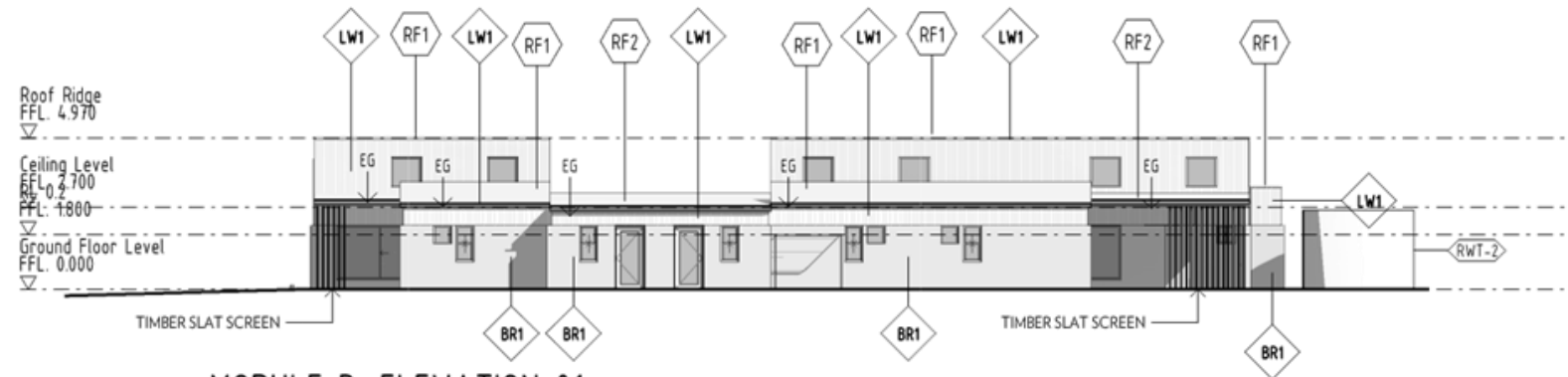


Windamere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

ROOF TYPE SCHEDULE	
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RF1	2mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

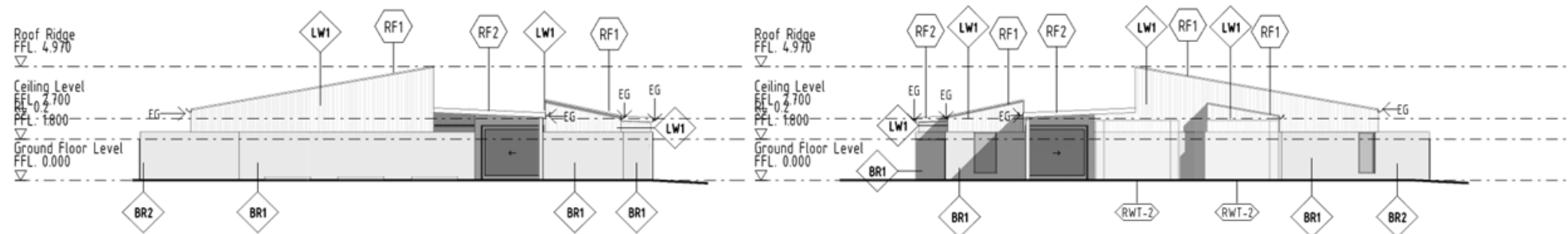
GUTTER SCHEDULE	
CODE	DESCRIPTION
EG	Mosman Eaves gutter

TYPICAL SELF CONTAINED VILLA MODULE B - ROOF DRAWING — SK11
PLAN
31/10/2025 REVISION — C
1 : 200 @A3 PROJECT — 24-0848



MODULE B_ELEVATION 01

1 : 200

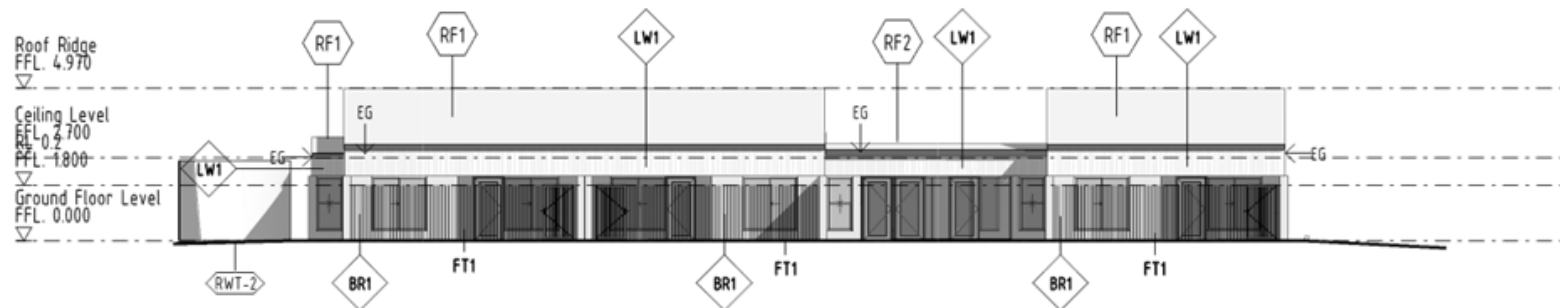


MODULE B_ELEVATION 02

1 : 200

MODULE B_ELEVATION 03

1 : 200



MODULE B_ELEVATION 04

1 : 200

REASON FOR ISSUE	REV	DATE
Revisions	C	31/10/2025
Revisions - RWT	D	17/03/2026

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

ROOF TYPE SCHEDULE	
CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

GUTTER SCHEDULE	
CODE	DESCRIPTION
EG	Mosman Eaves gutter

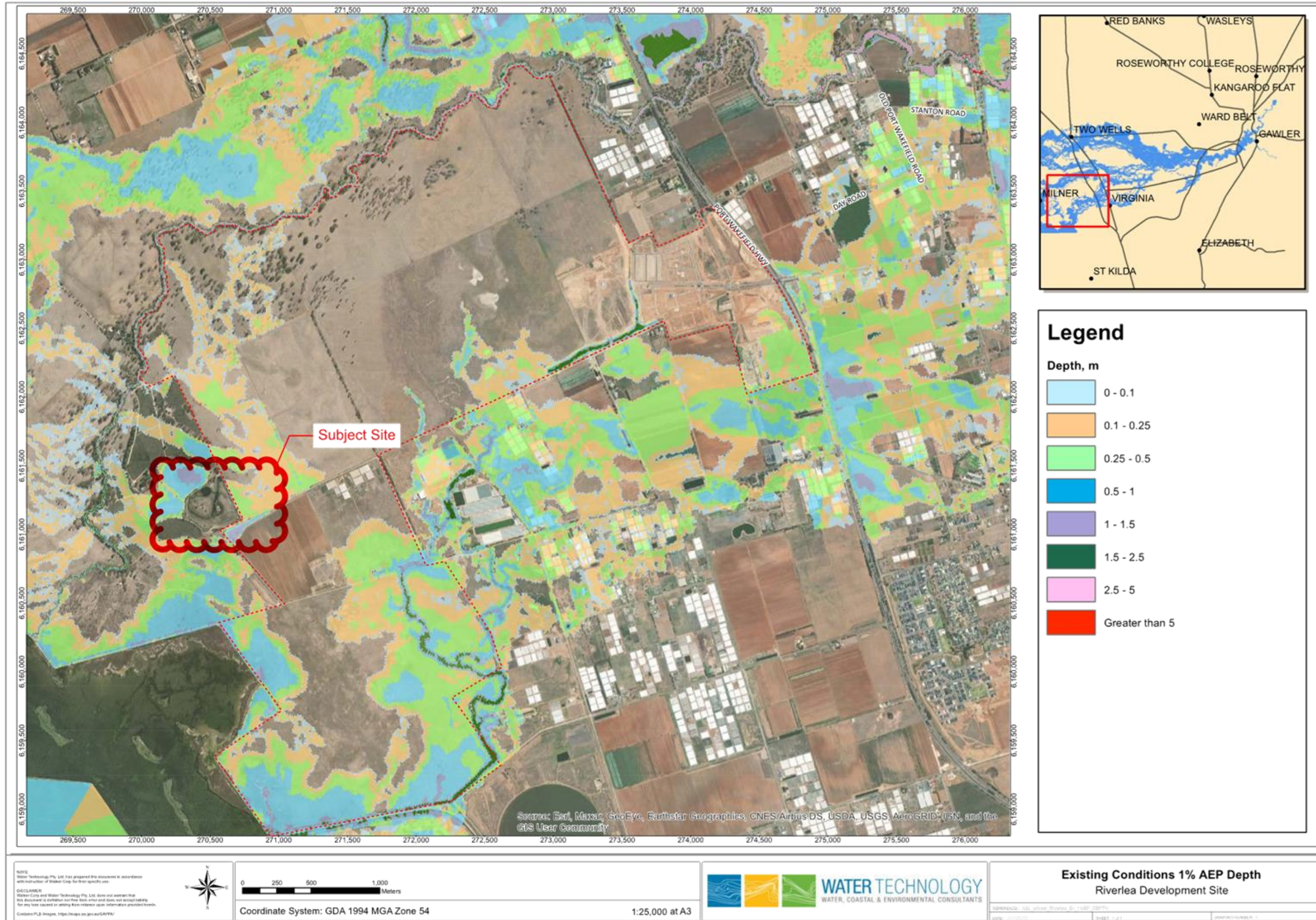
WALL TYPE SCHEDULE	
CODE	WALL DESCRIPTION
BR1	110mm wide brickwork / 40mm air gap / Thermal insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Villaboard to wet areas) /
BR2	110mm wide brickwork / 40mm air gap / 110mm wide brickwork /
FT1	Aluminium blade fencing, 1800H /
LW1	25mm Metal Cladding / 35mm sub-framing / Thermal insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Villaboard to wet areas) /

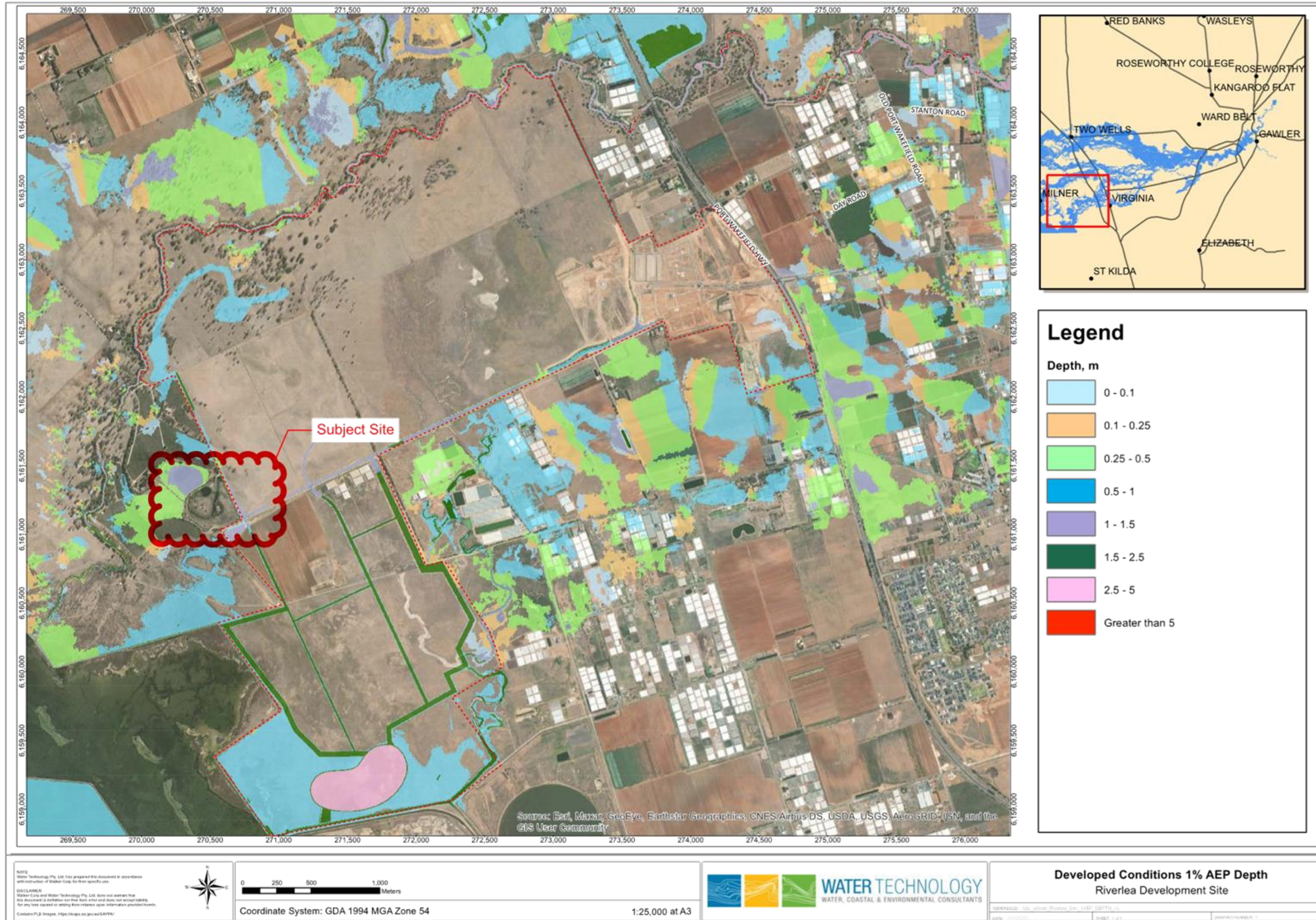
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17/03/2026	REVISION	D
1 : 200 @A3	PROJECT	24-0848

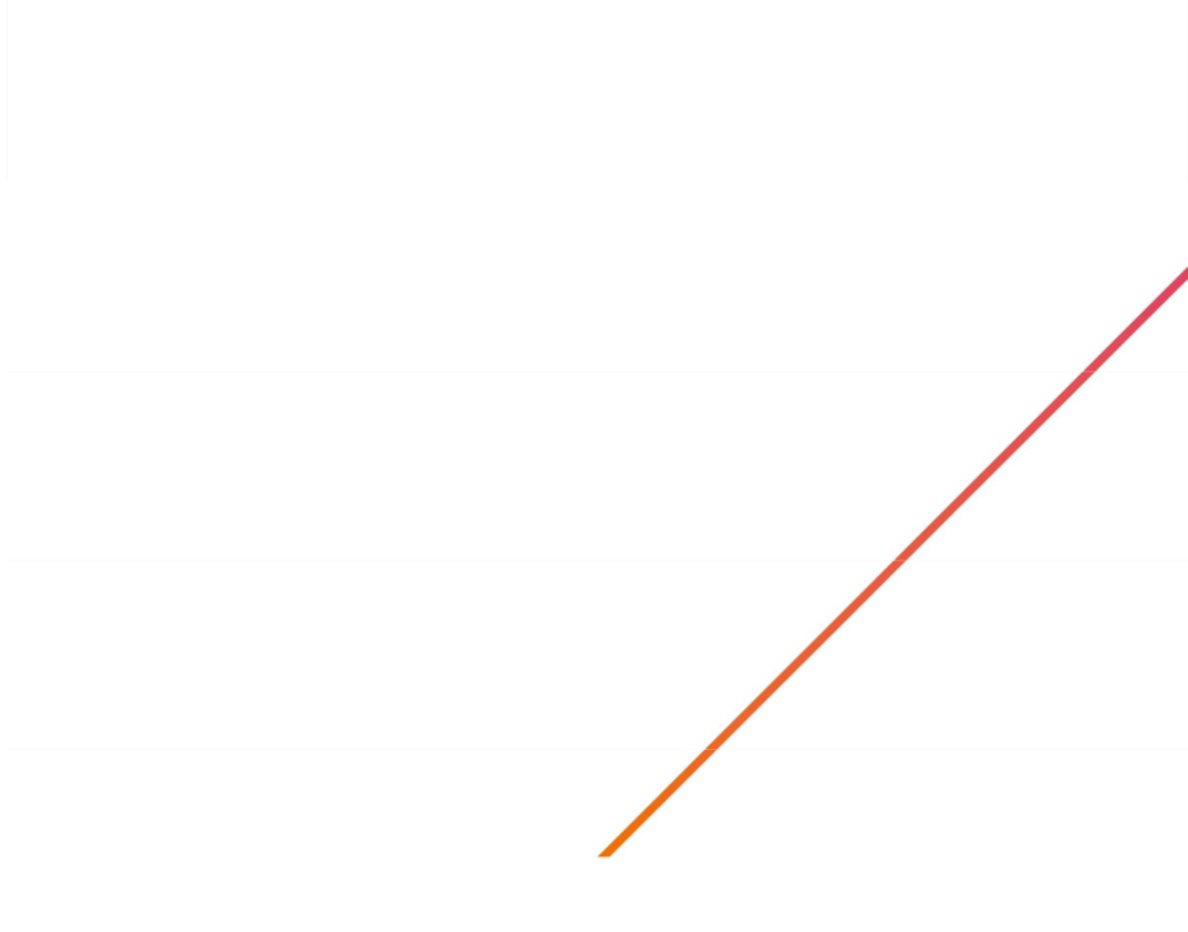
DRAWING AUTHOR: RWT DATE: 17/03/2026 DESIGNER: WALTER BROOKE ARCHITECTURE PROJECT: WINDAMERE PARK SDA LOT 202 LEGOE ROAD BUCKLAND PARK



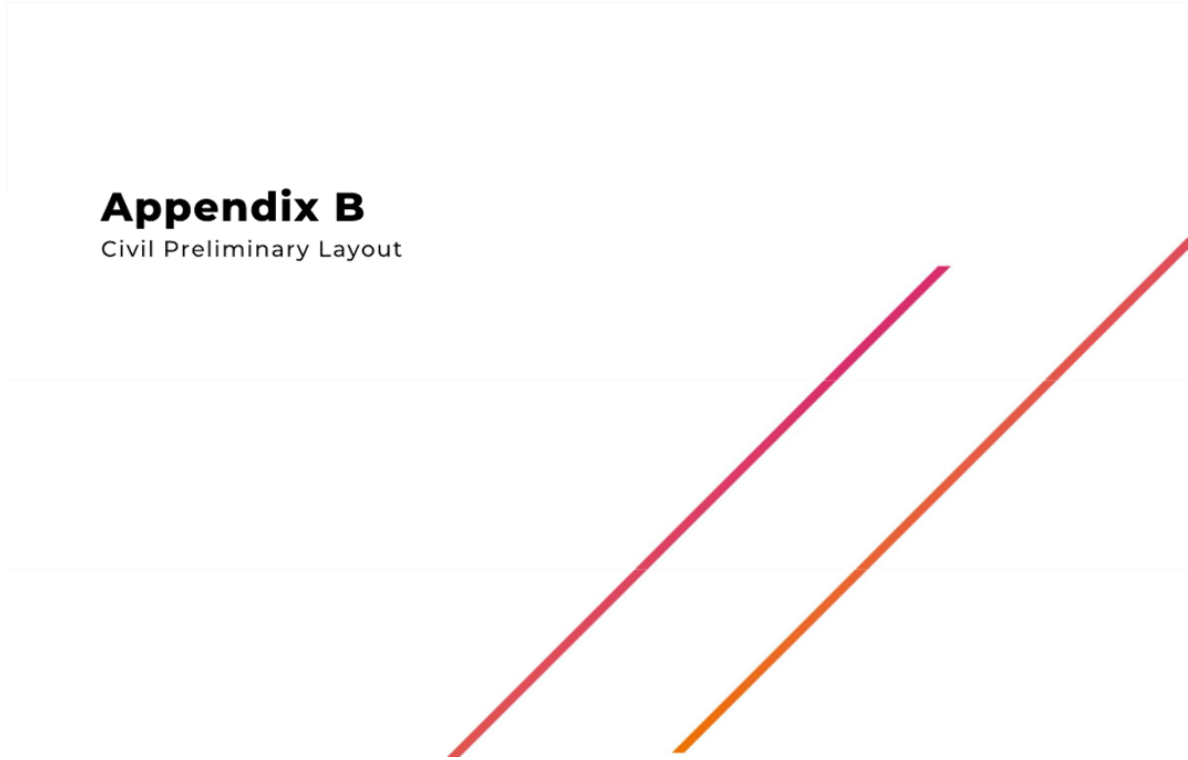
<p>0 20.05.2024 ORIGINAL ISSUE A 12.02.2026 RL'S FOR TSP AND TOE OF BATTER B 16.02.2026 STORMWATER INVERTS ADDED</p>	<p>QT MNN GT MNN MNE JJC</p>	<p>47.67% TSP/48% 48.9% WATER TABLE 48.9% FLOOR LEVEL 48.9% INVERT LEVEL 48.9% RL TSP 48.9% WATER METER 48.9% SPRINKLER/IRRIG VALVE 48.9% W/IRRIG 48.9% DOMESTIC OUTLET 48.9% DOWNPIPE 48.9% DOMESTIC DRAIN 48.9% SUBSTRAINCE/RAVINE 48.9% SEP/GRATING</p>	<p>47.67% TSP/48% 48.9% WATER TABLE 48.9% FLOOR LEVEL 48.9% INVERT LEVEL 48.9% RL TSP 48.9% WATER METER 48.9% SPRINKLER/IRRIG VALVE 48.9% W/IRRIG 48.9% DOMESTIC OUTLET 48.9% DOWNPIPE 48.9% DOMESTIC DRAIN 48.9% SUBSTRAINCE/RAVINE 48.9% SEP/GRATING</p>	<p>LEGEND</p> <p> ■ PINE ■ PEO/TEM ■ SURVEY MARKS ■ WORKHOLE ■ CABLE MARKER ■ STYRENE/PROUDEN POLE ■ POSEF/BOLLARD ■ WRENCH SW/CSF ■ WRENCH SW/CSF ■ SLEDE/LOAD METER ■ GAS SERVICE </p>	<p>COORDINATE SYSTEM</p> <p>VERTICAL: AHD HORIZONTAL: GROUND PLANE ORIENTED TO MGA 94 ZONE 54 SCALE: GROUND (CSF) 1:1000 (M:90) INVERSE CSF APPLIED (CSF) 1:1000 (M:90)</p> <p>ADOPTED STATION & AUTHORITY</p> <p>PSM 65267673 RL: 3.651 SDB PSM 65267673 E: 270066.476 SDB N: 8161019.278 SDB SDB details SA Government survey data values / (/ 2015)</p>	<p>0 10 20 40 60 80 100 M</p> <p>1:1000 ORIGINAL SHEET SIZE A1</p> <p>Alexander & Symonds Pty Ltd 11 King William Street Kent Town, South Australia 5067 PO Box 1000 Kent Town, SA 5071 ABN 93007 753 988</p> <p>T (08) 8130 1666 F (08) 8342 0099 W www.alexander.com.au E alexander@alexander.com.au</p> <p> + Property & Land Development + + Construction + Mining + + Spatial Information Management + </p>	<p>Alexander Symonds Surveying Consultants</p>	<p>DETAIL & LEVEL SURVEY LOT 202 LEGOE ROAD BUCKLAND PARK</p>	<p>DRAWING No: 24A0455_LegoeRoad Detail(B)94P SHEET 1 OF 1 REVISION B</p>
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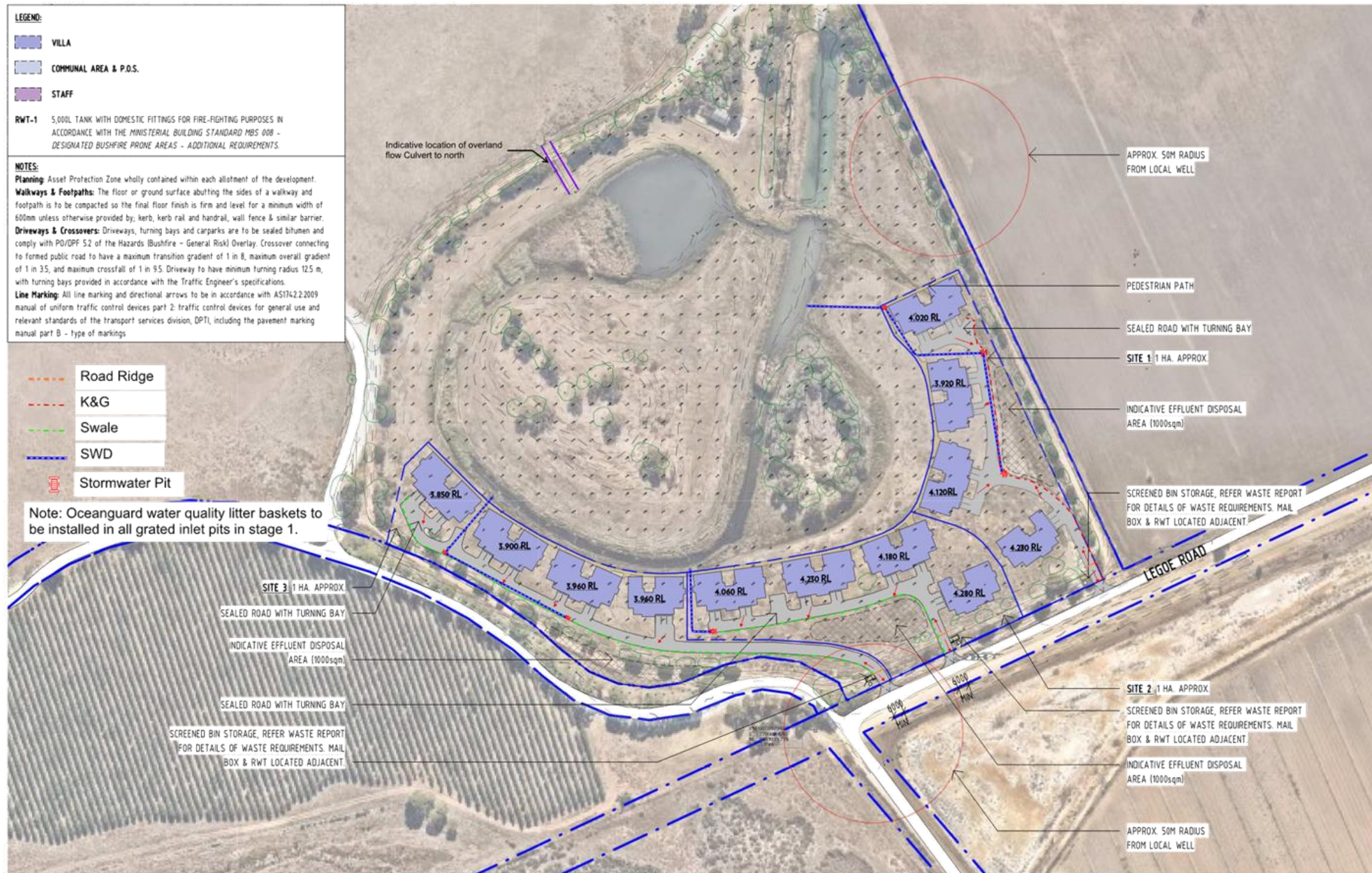






Appendix B
Civil Preliminary Layout





REASON FOR ISSUE	REV	DATE
Revisions	M	11/12/2025
Revisions - RWT	N	17/03/2026

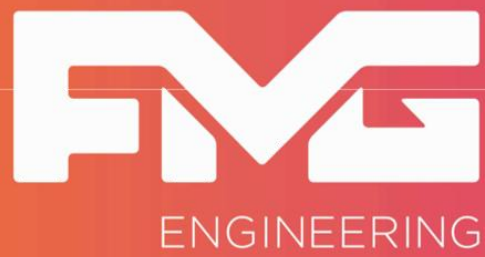
PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

SITE PLAN	DRAWING	SK01
17/03/2026	REVISION	N
As indicated @A3	PROJECT	24-0848

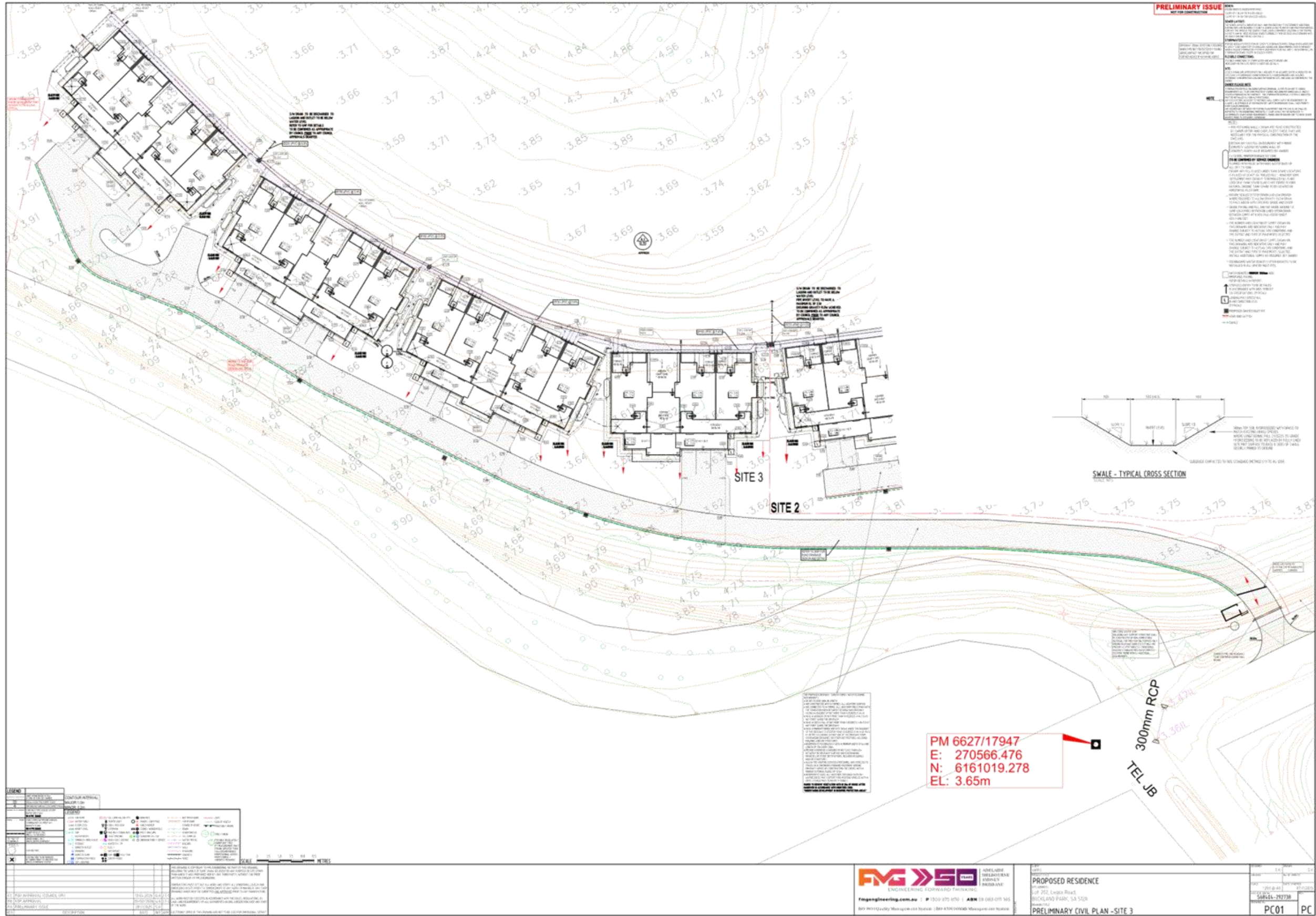


ADELAIDE
67 Greenhill Road
Wayville SA 5034
Ph: 08 8132 6600

MELBOURNE
2 Domville Ave
Hawthorn VIC 3122
Ph: 03 9815 7600

SYDNEY
Suite 28, 38 Ricketty St
Mascot NSW 2020
Ph: 1300 975 878

ABN: 58 083 071 185





PRELIMINARY ISSUE
NOT FOR CONSTRUCTION

GENERAL NOTES:

1. THIS PLAN IS A PRELIMINARY DESIGN AND IS NOT TO BE USED FOR CONSTRUCTION.
2. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.
3. THE DESIGNER HAS CONDUCTED VISUAL INSPECTIONS AND SURVEYS TO THE BEST OF HIS ABILITY.
4. THE DESIGNER HAS ASSUMED THAT ALL INFORMATION PROVIDED BY THE CLIENT IS ACCURATE.
5. THE DESIGNER HAS NOT CONDUCTED ANY SOIL TESTING OR GEOTECHNICAL ANALYSIS.
6. THE DESIGNER HAS ASSUMED THAT ALL UTILITIES ARE SHOWN ON THE PLAN.
7. THE DESIGNER HAS ASSUMED THAT ALL ADJACENT PROPERTIES ARE PROPERLY SERVED.
8. THE DESIGNER HAS ASSUMED THAT ALL NECESSARY SERVICES ARE AVAILABLE.
9. THE DESIGNER HAS ASSUMED THAT ALL NECESSARY SERVICES ARE AVAILABLE.
10. THE DESIGNER HAS ASSUMED THAT ALL NECESSARY SERVICES ARE AVAILABLE.

LEGEND:

Symbol	Description
(Symbol)	Proposed Bund Level
(Symbol)	Proposed Driveway
(Symbol)	Proposed Path
(Symbol)	Proposed Utility Line
(Symbol)	Proposed Structure
(Symbol)	Proposed Feature

527/17947
70566.476
161019.278
.65m

DATE	DESCRIPTION

FMG 50
ENGINEERING & DESIGN
ADELAIDE
MELBOURNE
SYDNEY
BRISBANE

fmgeengineering.com.au | P 1300 075 470 | A 800 083 075 545
Bldg 10/11 Quality Management and Training | Bldg 4/100/10000 Management and Training

PROPOSED RESIDENCE
17/17/17
300 LEGGEE ROAD
BUCKLAND PARK, SA 5030

SOUTHERN BUND LEVELS

DATE: 14/11/2024
DRAWN BY: [Name]
CHECKED BY: [Name]
SCALE: 1:100
PROJECT NO: 2401/24
SHEET NO: 01/01

4/16/26, 4:29 PM

Response to RFI - Windamere Park - Mahmoud Hasaneen - Outlook



Response to RFI - Windamere Park

From Matilda Asser <masser@urps.com.au>
Date Mon 4/13/2026 4:04 PM
To Mahmoud Hasaneen <MHasaneen@playford.sa.gov.au>

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Hi Mooda

FMG has provided the following comments in addition to the revised SMP and Civils uploaded to the Portal earlier today.

Let me know if there is any further questions/clarification, otherwise please confirm we remain on schedule for May CAP.

Kind regards



Matilda Asser *(she/her)*
Senior Consultant
High Rise & Commercial Development
0421 231 499

27 Halifax Street
Enter via Symonds Pl
Adelaide SA 5000
08 8333 7999

Kaurna Country

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From: Ghasem Ashtjoui <ghasem.ashtjoui@fmgeengineering.com.au>
Sent: Monday, 13 April 2026 3:49 PM
To: Matilda Asser <masser@urps.com.au>
Subject: FW: Windamere Park - final engineering comments from Council

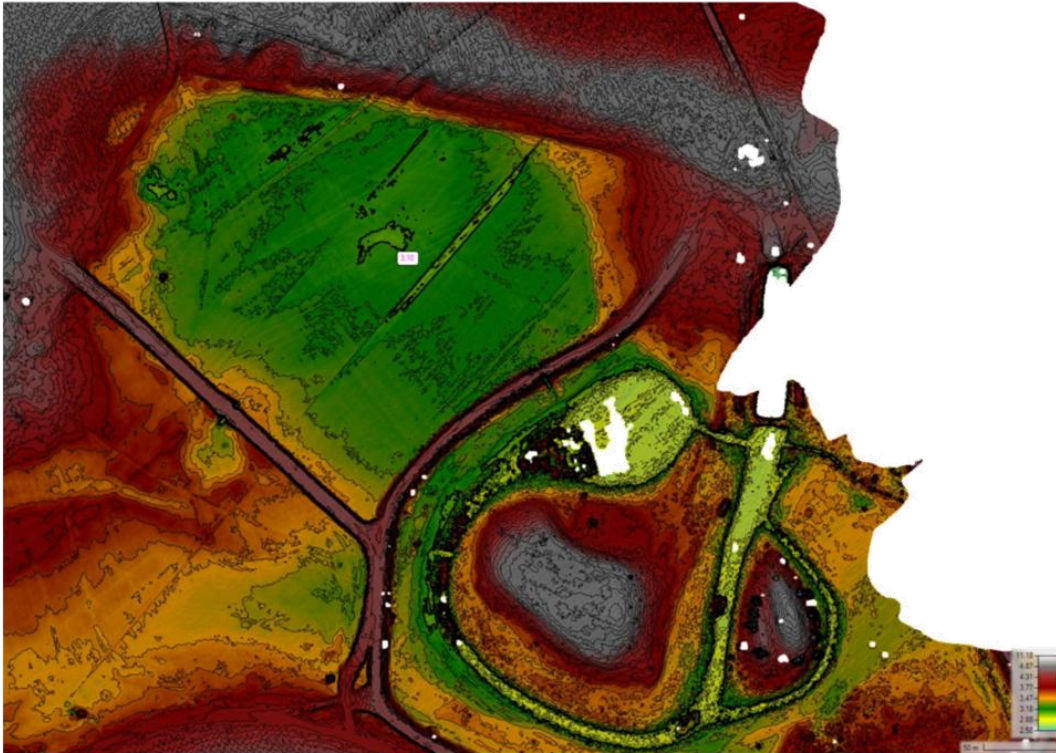
Hi Matilda,

Please refer below my responses to Council RFI (yellow highlights in RFI attached):

1. North west is a flat area of permeable land, grading towards a central low point of 3.10mAHD (refer below LiDAR snippet). This land will retain its own runoff and we do not expect any spill into the subject land.
2. Refer Lidar Except below.
3. Noted. Drawings been revised to be consistent.
4. Notation into design and legend for swale and Oceanguard
5. Cross section of swale has been added into drawings
6. Obligation by the land owner on the proposed treatment measures haven added into report
7. Maintenance interval of measures was added in report.

4/16/26, 4:29 PM

Response to RFI - Windamere Park - Mahmoud Hasaneen - Outlook



Regards,
Ghasem Ashtijou
Senior Civil Engineer



Adelaide | Melbourne | Sydney | Brisbane
D 08 8132 6668
P 08 8132 6600
ghasem_ashtijou@fmgenineering.com.au
fmgenineering.com.au

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28 November 2024

#eta1000242

URPS

27 Halifax Street

Adelaide SA 5000

Attention: Matilda Asser

WINDAMERE PARK – PROPOSED LAND DIVISION AND SUPPORTED ACCOMMODATION - TRAFFIC AND PARKING REVIEW

Dear Matilda,

This letter provides the findings of a traffic and parking assessment for a proposed land division and supported accommodation development in Windamere Park located at 493 Carmelo Rd, Buckland Park.

SUBJECT SITE

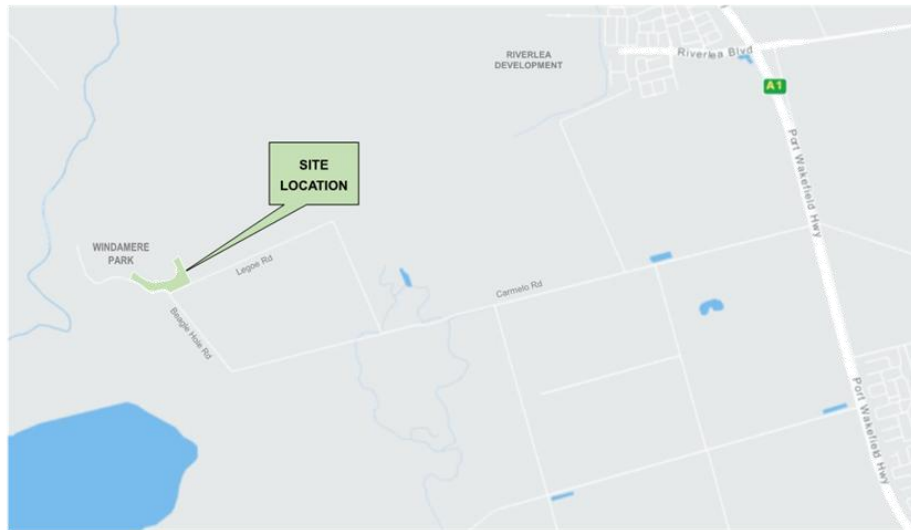
The subject site is located at 493 Carmelo Rd, Buckland Park, on the northern side of Legoe Road adjacent the intersection on Beagle Hole Road. The subject site is approximately 3 hectares in size with a frontage to Legoe Road. The subject site is part of a larger site that currently operates as a disability services and support operation with daily development programs. The larger site also provides for visits by schools and community groups for animal and farming experiences. These uses will not change.

The subject site is located within Open Space and Rural Horticulture Zone in the SA Planning and Design Code.

Access to the subject site is currently provided from the larger surrounding Windamere Park site with a fire/maintenance access track running around the edge of the site (and larger adjacent site). The current site has a single access point to Legoe Road.

The subject site is shown in Figure 1.

Figure 1: Subject Site and Surrounds



EXISTING TRANSPORT SITUATION

Legoe Road functions as a local road linking between Carmelo Road and Tippets Bridge Road aligned in an east to west direction. It is formed as an unsealed rural road. There is no street lighting along this road. Given the road has no street lighting and is not in a built-up area, a rural road speed limit would apply (100km/h) however vehicles speeds are less than this. Legoe Road is under the care and control of Playford Council and carries less than 100 vehicles per day.

Beagle Hole Road functions as a local road linking between Carmelo Road and Legoe Road aligned in a north to south direction. It is formed as an unsealed rural road. There is no street lighting along this road. Given the road has no street lighting and is not in a built-up area, a rural road speed limit would apply (100km/h). Beagle Hole Road is under the care and control of Playford Council. Beagle Hole Road carries less than 100 vehicles per day.

Carmelo Road functions as a collector road and links to Port Wakefield Highway. It is a two-way road aligned in an east-west direction and is configured with an unsealed carriageway between Beagle Hole Road and Brook Road. The road is rural in nature and has narrow unsealed shoulders on each side of the road. There is no street lighting. Given the road has no street lighting and is not in a built-up area, and with no posted speed limit, a rural road speed limit would apply (100km/h). Carmelo Road is under the care and control of Playford Council. The road, at the western end, carries approximately 150 vehicles per day and 30 vehicles per hour during the peak periods (2019).

Figure 2: View East on Legoe Road – site on left



There are no public transport, pedestrian or bicycle facilities in close proximity to the subject site on the primarily rural road network.

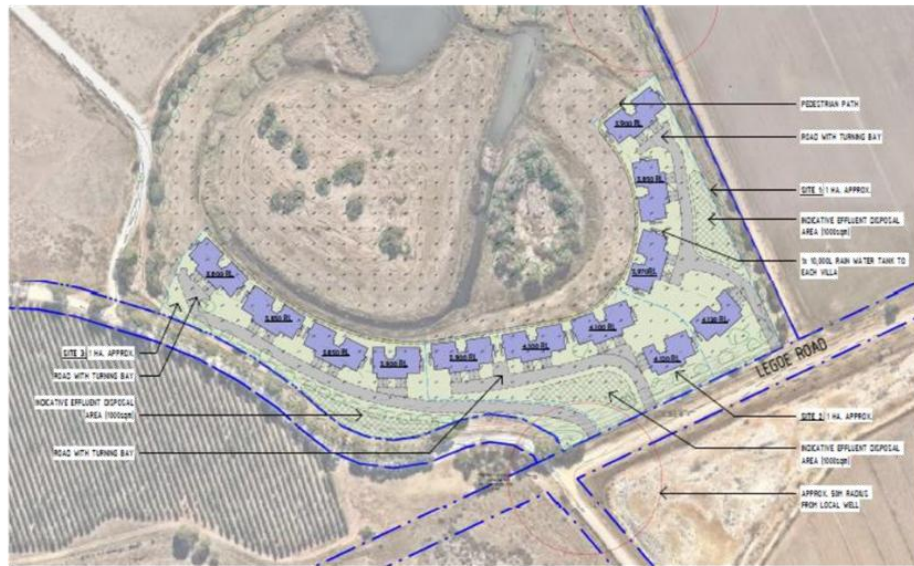
PROPOSED DEVELOPMENT

The proposed development comprises a land division to create 3 new allotments from an existing larger allotment. Supported Accommodation is proposed on the 3 new allotments which will each have separate access on Legoe Road.

Each of the 3 proposed allotments for supported accommodation will have 4 villas with 3 providing 4 living units with 2 units for staff, and 1 villa will provide for 3 living units and 2 staff units. Hence each allotment will provide 15 beds for supported accommodation and up to 8 staff.

The layout of the proposed development is shown in Figure 3.

Figure 3: Proposed Development Layout



Source: Walter Brooke Architects

PARKING

The SA Planning and Design Code in Part 4 - General Development Policies, Transport, Access and Parking: Table 1 - General Off-Street Car Parking Requirements includes a parking requirement of 0.3 spaces per bed for Supported Accommodation.

Each allotment will comprise 3 or 4 bedroom villas for supported accommodation, which will also provide quarters for 2 staff at each villa. The parking requirements and provision is shown in Table 1.

Table 1: Parking Requirements and Provision

Site	3 x Bed Villa	4 x Bed Villa	Total Beds	P&D Code Requirement (spaces per bed)	Parking Spaces Required	Parking Provided
1	1	3	15	0.3	5	15
2	1	3	15	0.3	5	15
3	1	3	15	0.3	5	15
TOTAL					15	45

The proposed parking supply of 15 spaces per allotment will exceed the requirements of the SA Planning & Design Code.

This will meet the Planning and Design Code PO 5.1 "Sufficient on-site vehicle parking and specifically marked accessible car parking places are provided to meet the needs of the development or land use having regard to factors that may support a reduced on-site rate"



BICYCLE PARKING

The SA Planning and Design Code specifies bicycle parking in *Table 3 - Off-Street Bicycle Parking Requirements* for designated areas. The subject site is not classified in a designated area.

Hence, specific bicycle parking is not required. Given the location of the site and unsealed nature of the adjacent road network, the use of bicycles for transport is not considered feasible.

PARKING LAYOUT & ACCESS

The car parking areas for each villa will be designed in accordance with *Australian Standard 2890.1 Off-Street Car Parking* with the following features:

- 90 degree angled parking spaces 2.4 metres wide and 5.4 metres long.
- Circulating roads minimum 6.0 metres wide (or wider).
- Turnaround spaces at each of the villas and end of circulation roads.

Access will be provided for each allotment with a two-way access point to Legoe Road, for which a suitable crossover between the property and road will be provided.

Sight distance for each driveway will be satisfactory given the straight road alignment. Operation of each driveway will also be satisfactory given the low traffic volumes on Legoe Road and at each site.

DELIVERIES AND WASTE COLLECTION

It is understood that waste collection will be by Council services, as occurs for the current site. Bins will be presented on Legoe Road adjacent each proposed driveway. Deliveries will be minimal as staff will assist residents to take care of living requirements for shopping for food and goods as required.

TRAFFIC IMPACT

Traffic generation estimates for the proposed development are available for supported accommodation based on aged care facilities. These have been sourced from the Transport for New South Wales '*Guide to Traffic Generating Developments*' (formerly RTA NSW, 2002) and *Updated Traffic Surveys* (May 2013). The traffic generation rates applicable to the proposed development are shown below:

Housing for aged and disabled persons

Daily trips *1-2 / dwelling*

Peak Hour trips *0.1-0.2 / dwelling*

The traffic assessment assumed that the traffic generation rates based on dwellings will apply to each bed (given the dwellings would be one bedroom typically). The traffic generation rates allow for the arrival and departure of staff based on rotating eight hour shifts typically used at supported accommodation. As a general guide, these shifts typically have most staff on day and afternoon shifts (7am–3pm, and 3pm– 11pm) and then skeleton staff on overnight shift (11pm-7am). Staff will also assist residents to undertake daily tasks including shopping for food and supplies. The predicted traffic generation of the proposed development is shown in Table 2.



Table 2: Traffic Generation Analysis

Site	Total Beds	Traffic Generation		Parking Provided	
		Peak (trips per hour)	Daily (trips per day)	Peak (vehicles per hour)	Daily (vehicles per day)
1	15	0.2	2	3	30
2	15	0.2	2	3	30
3	15	0.2	2	3	30
TOTAL				9	90

For the three allotments, the total traffic generation is predicted to be 90 trips per day and 9 trips per hour during the peak hours. The traffic volume will be distributed across the proposed driveways, with 30 vehicles per day and 3 vehicles per hour during the daily and peak hour periods respectively.

The traffic volumes on these roads will remain very low, and within the range for unsealed roads (generally less than 500 vehicles per day). Carmello Road at its western end would increase from 150 vehicles per day to 240 vehicles per day. Legoe Road would remain under 200 vehicles per day. The impact of the proposed development will be minor.

CONCLUSIONS

The traffic and parking assessment has found the following:

1. The proposed development comprises supported accommodation on a land division of the Windamere Park site in Buckland Park.
2. The proposed development will exceed the parking requirements of the SA Planning and Design Code.
3. The traffic generation of the proposed development will be low with access to and from Legoe Road, and have a minor impact on the adjacent road network.
4. The proposed car park layout and access will be designed in accordance with *Australian Standard 2890.1:2004 Off-Street Car Parking*.
5. Waste collection is proposed to occur from Council collection on Legoe Road.

Should further information be required, please contact the undersigned at your convenience.

Yours sincerely

EMPIRICAL TRAFFIC ADVISORY

Paul Morris

Director

M.TransTraff, MAITPM



Lot 202 Legoe Road, Buckland Park

Waste Management Plan

Date: 30 October 2025

Prepared for:

Windamere Park

Lot 202 Legoe Road
Waste Management Plan
30 October 2025



Colby Phillips Advisory Pty Ltd

117 / 147 Pirie Street
Adelaide, SA 5000

info@colbyphillips.com.au

Rev.	Date	Description	Doc No./Name	Originator	Approved
0	30Oct25	For lodgement	WMP	JPH	JPH

Distribution List

Matilda Asser URPS

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Lot 202 Legoe Road
Waste Management Plan
30 October 2025



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Lot 202 Legoe Road
Waste Management Plan
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1 INTRODUCTION

This document presents a waste management plan (WMP) for the proposed development at Lot 202 Legoe Road, Buckland Park (the "Development"). The Development will subdivide the site into three allotments, with each allotment to include four (4) Specialised Disability Accommodation (residential) villas.

The WMP explains how the Development can manage waste effectively to achieve regulatory requirements and desired design and operating objectives, including those recommended by the South Australian Better Practice Guide (State Guidelines) (Zero Waste SA, 2014) and the South Australia Planning and Design Code (Plan SA, 2021). The WMP should be read in conjunction with other planning approval documentation for the Development.

The objectives of the Waste Management Plan are to:

- Provide positive long-term amenity for residents and carers living at the site
- Encourage separation of recoverable wastes including recyclables and food waste through convenient disposal options
- Reduce cost of waste management

2 DEVELOPMENT DESCRIPTION

The Development is at Lot 202 Legoe Road, Buckland Park, in the City of Playford (Council) – see Figure 2-1 which shows an overview of the site and elements of the waste management system detailed in Section 5. The current project plans are contained in drawings 24-0848 SK00 to SK13, dated 15th August 2024.

The site is to be subdivided into three allotments. Each allotment will include four (4) Specialised Disability Accommodation (residential) villas each designed to house three (3) or four (4) NDIS clients plus two (2) carers. Carers will each be present 12 hours per day. Thus, each allotment will house 15 residents and the equivalent of 4 full-time carers.

Each allotment will have a separate driveway with crossover onto Legoe Road. Legoe Road is currently unsealed with low traffic volumes. See Figure 2-2.

The site is to be operated commercially, providing supported accommodation for disabled adults.

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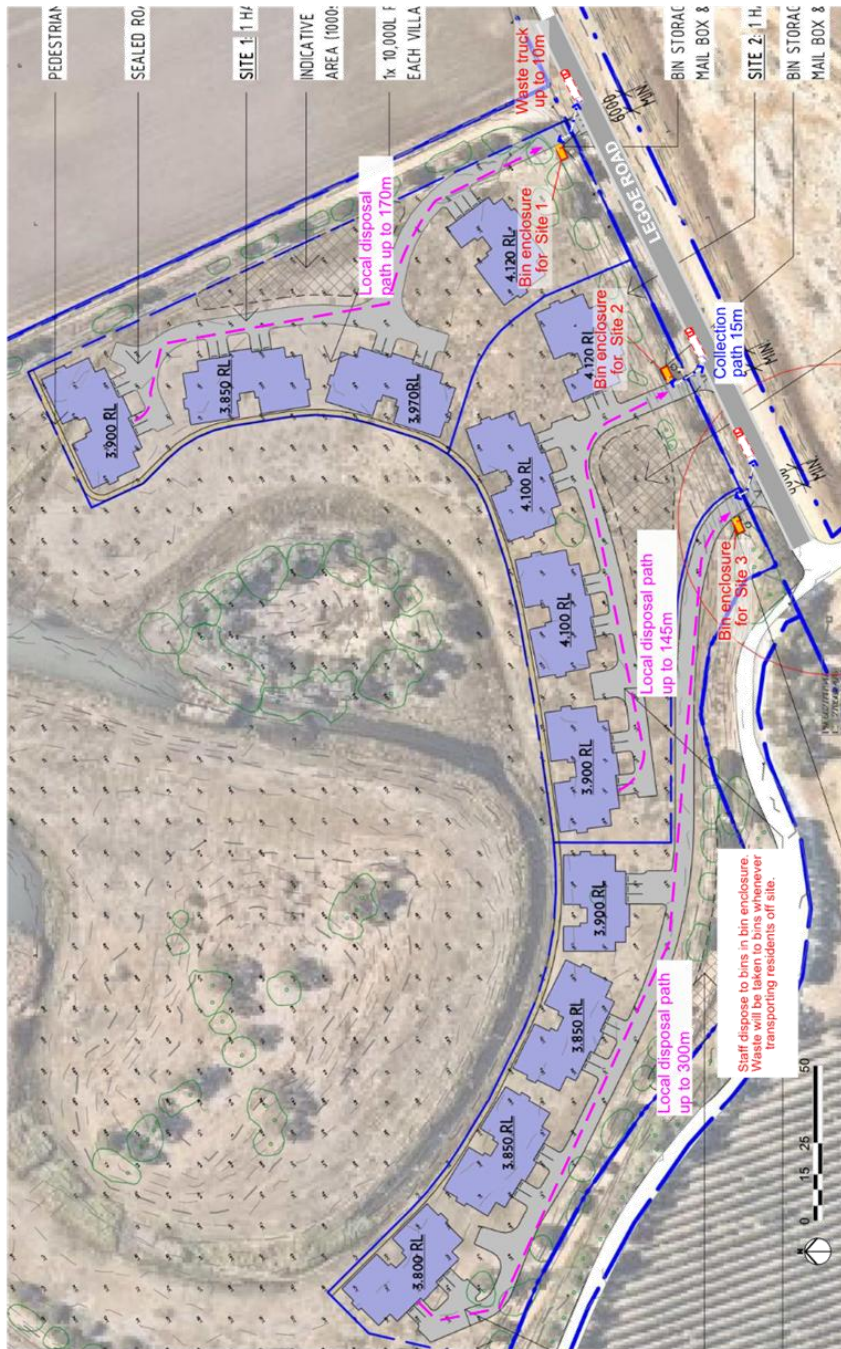


Figure 2-1 Site Overview and Waste Collection.

Lot 202 Legoe Road
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Figure 2-2 Existing Legoe Road, with subject site to the right

3 STAKEHOLDER ENGAGEMENT

Council's waste contractor (NAWMA) was consulted during development of the waste system. NAWMA confirmed that waste collection service would be restricted to a single set of Council kerbside bins per assessable property. This would be inadequate to service the properties. The waste system has therefore been designed based on collection by Private waste contractors.

4 DESIGN ASSUMPTIONS

4.1 Development Metrics

Table 4-1 gives the proposed Development Metrics. In summary, the Development will comprise of 3 allotments, each with the equivalent of 19 bedrooms. Waste volume generation has been estimated based on the Medium Density Residential Dwelling Waste Resource Generation Rate (WRGR) classification based on the State Guideline (Zero Waste SA, 2014).

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Table 4-1: Summary of land uses for the Development, their WRGR Description(s) and relevant Development Metric(s). Shop tenancy is the preliminary assumed use.

Land Use	Description	Site Location	Land Use Type	Dev. Metric(s)	
Residential	NDIS Villas	Site 1	Medium Density Residential Dwelling	4	Dwellings
				19*	Bedrooms
Residential	NDIS Villas	Site 2	Medium Density Residential Dwelling	4	Dwellings
				19	Bedrooms
Residential	NDIS Villas	Site 3	Medium Density Residential Dwelling	4	Dwellings
				19	Bedrooms

* Consists of 14 residents and 10 carers each present 12 hours per day.

4.2 Waste & Recycling Service Provision

The different waste service classifications required on site are explained below.

- **Routine Services** – These require on-site waste storage and routine and regular collections, and would include services for general waste, dry (comingled) recyclables and food waste. In the context of Specialist Disability Accommodation, general waste is expected to contain a high proportion of soiled absorbent products.
- **At-call services** – These involve non-frequent collections, such as Hard waste and are organised and provided on an as-needed basis.
- **Maintenance services** – Some waste items (e.g. lighting in common areas) and landscaping maintenance (gardening) would be removed and disposed of (off-site) by the contractor providing the related maintenance service (and hence on-site waste storage is not usually needed or provided).
- **External Services** – These are where waste items (e.g. printer cartridges, batteries, lighting) that can be dropped off by carers at external locations (e.g. Officeworks, waste depot) (and thus, separate on-site waste storage is not usually needed or provided).

It is proposed that routine waste and recycling services at the Development would be provided by a private waste contractor with waste collected in 660L 4-wheel skip bins.

4.3 Waste & Recycling Volumes

Table 4-2 estimates expected waste and recycling volumes for the Development (in Litres/week).

Table 4-2 Estimated waste & recycling volumes (Litres/week) for Development.

Waste/Recycling Service	Residential Site 1	Residential Site 2	Residential Site 3
	L/Week	L/Week	L/Week
General Waste	665	665	665
Dry Comingled Recycling	570	570	570
Food/Garden Organics	240	240	240
TOTAL	1,475	1,475	1,475

Lot 202 Legoe Road
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5 WASTE MANAGEMENT SYSTEM

All three sites are to be operated with a single Waste Management System, with each site having a separate bin storage area.

Each villa will be provided suitable kitchen bins for local disposal of wastes:

- a) *General waste bin – at least 20L in size (bag lined)*
- b) *Co-mingled recycling waste bin - at least 20L in size*
- c) *Food organics bin (compostable bag lined)*

Carers will carry landfill waste, recycling, and food waste to the shared bin enclosure associated with their allotment. Disposal distances are between 20m and 300m. For the longer disposal distances, waste will be carried out when carers are leaving site – for example when transporting residents for activities off site.

For each allotment, the following bins will be provided, with each bin being collected weekly by a private waste contractor:

- 1 x 660L General Waste skip bin
- 1 x 660L Mixed Recycling skip bin
- 1 x 240L Organics / Food Waste MGB

The site is to be operated by Windamere Park, who currently operate a small-scale farm on the adjacent property. Windamere Park currently provides activities and support programmes for adults with intellectual disabilities and other neurodevelopmental disorders. At the discretion of the operator, food waste may be transferred to the farm for composting on site. Similarly, garden clippings and prunings may be composted on site, in lieu of collection by a commercial contractor.

Bins will be collected by Private contractor, with the trucks stopping on Legoe Road. The truck would stop outside Site 3, then Site 2, then Site 1. Bins can be collected by the contractor directly from the bin enclosure then return them to the enclosure after collection. The bin transfer distance is around 20m.

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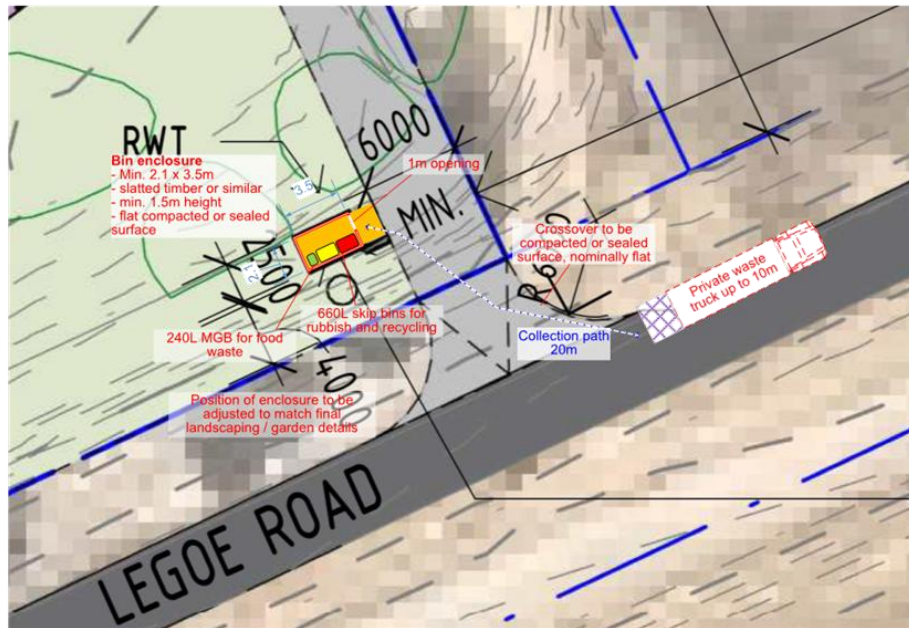


Figure 5-1: Site 1 bin storage and collection.

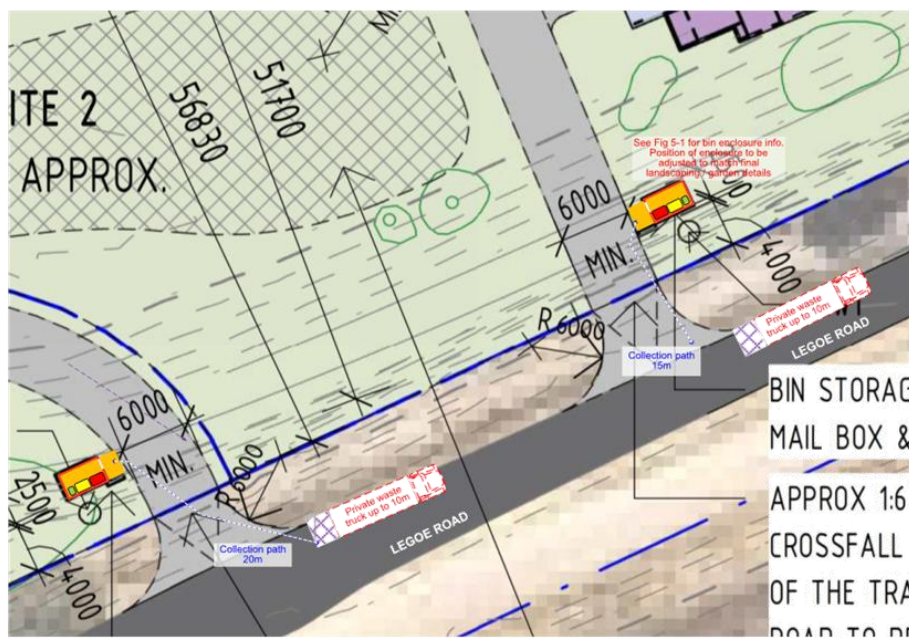


Figure 5-2: Site 2 and Site 3 bin storage and collection

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5.1 Maintenance Services

Waste would be generated by some maintenance services or activities in the development (e.g., repair work, gardening, etc.). These maintenance-generated waste materials would be handled and disposed of by the contractor undertaking these services. Dedicated on-site storage for these waste materials is therefore not needed.

5.2 Bin cleaning

When required, bins can be washed on site using a garden tap. Ample space is available on site, and a dedicated bin wash is not required or recommended. Alternatively, a mobile bin washing contractor can be engaged to clean bins periodically. These contractors have self-contained units capable of washing 240L and 660L bins.

5.3 Transfer pathways

There are several transfer pathways for the waste systems at the Development, which were described earlier. Ample open space is available on site for movements. Transfer paths should be smooth and level, with no ramps greater than 1:10 gradient.

5.4 Other Waste System Design or Management Issues

The following would be considered and/or implemented for waste systems at the Development. More details for some of these items can be resolved at detailed design stage with the waste contractor and/or Council.

- 1) **Bins** – These would comply with Australian Standard for Mobile Waste Containers (AS 4213). Bins may be supplied by the waste contractor.
- 2) **Signage** –
 - Appropriate signage should be used to ensure correct disposal of waste and recycling. The waste contractor can provide templates for signs.
 - Consider signs with pictorial diagrams and/or multiple languages.
- 3) **Vermin, hygiene & odour management (inc. ventilation)**
 - **Inspection & Cleaning** –
 - An inspection and cleaning regime would be developed and implemented by the Building / Facilities Manager for waste systems at the Development, including ensuring that surfaces and floors around disposal areas, transfer pathways and waste storage areas are kept clean and hygienic and free of loose waste and recycling materials.
 - **Odour Control** –
 - Bins are stored in open air enclosures with minimum 20m from nearest habitable window.
 - Lids for food waste bins should be closed after use.

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6 PLANNING & DESIGN CODE OBJECTIVES

The applicable policies relating to Waste are provided in the following table. The third column states how these policies have been addressed in the proposed design.

Design in Urban Areas		
PO 1.5 The negative visual impact of outdoor storage, waste management, loading and service areas is minimised by integrating them into the building design and screening them from public view (such as fencing, landscaping and built form), taking into account the form of development contemplated in the relevant zone.	DTS/DPF 1.5 None are applicable	Response: Bins are to be stored in screened enclosures near the entry of each site. Position of enclosures will be determined in line with landscaping of the site to reduce visual impact. Enclosures will be slatted timber or similar material.
PO 11.1 Development provides a dedicated area for on-site collection and sorting of recyclable materials and refuse, green organic waste and wash bay facilities for the ongoing maintenance of bins that is adequate in size considering the number and nature of the activities they will serve and the frequency of collection.	DTS/DPF 11.1 None are applicable	Response: Bin volume is provided according to the SA Better Practice Guide recommendations. Collection systems are provided for source-separated landfill, recycling, and food waste. Organics may be composted on site at the discretion of the operator. Bin washing can be done with a garden tap. Ample space is available on site and a dedicated bin wash area is not required or recommended.
PO 11.2 Communal waste storage and collection areas are located, enclosed and designed to be screened from view from the public domain, open space, and dwellings	DTS/DPF 11.2 None are applicable	Response: Bins are to be stored in screened enclosures.
PO 11.3 Communal waste storage and collection areas are designed to be well ventilated and located away from habitable rooms.	DTS/DPF 11.3 None are applicable	Response: The bin enclosures will be open air and located more than 10m from the nearest dwelling.
PO 11.4 Communal waste storage and collection areas are designed to allow waste and recycling collection vehicles to enter and leave the site without reversing.	DTS/DPF 11.4 None are applicable	Response: It is proposed that all waste will be collected by Private waste contractor stopping on Legoe Road. The road is semi-rural with low traffic volumes.
PO 40.4 Provision is made for suitable household waste and recyclable material storage facilities conveniently located away, or screened, from view	DTS/DPF 35.3 None are applicable	Response: A 3-bin system is proposed with shared bins stored within screened enclosures. Bins will not be in view.
PO 40.5 Waste and recyclable material storage areas are located away from dwellings	DTS/DPF 35.3 Dedicated waste and recyclable material storage areas are located at least 3m from any habitable room window	Response: Bin storage enclosures are significantly more than 3m from any habitable window.
PO 35.5 Provision is made for on-site waste collection where 10 or more bins are to be collected at a time.	DTS/DPF 35.4 None are applicable	Response: See response to PO 11.4.

**Preliminary Tree Assessment:
Lot 202 Legoe Road, Buckland Park**



Ref: TAC0280_Lot202_LegoeRd_BucklandPk_PTA

Date: 19th August 2024

Author: Sam Arnold

TREESOLVE PTY. LTD.
ABN: 57 675 434 376



WWW.TREESOLVE.COM.AU

Ref: TAC0280_Lot202_LegoeRd_BucklandPk_PTA
Date: 19th August 2024
Author: Sam Arnold



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Executive Summary

URPS engaged TreeSolve to conduct a Preliminary Tree Assessment on all regulated and/or significant trees at Lot 202 Legoe Road, Buckland Park. There are 12 trees (Trees 1-12) located within the allotment. This assessment will evaluate the attributes each tree possesses and their suitability for retention within the future development. This assessment has been undertaken in accordance with Australian Standard AS4970-2009 Protection of trees on development sites (AS4970-2009), the *Planning, Development, and Infrastructure Act 2016 (PDI Act 2016)* and the *Native Vegetation Act 1991 (NVA Act 1991)*.

Trees 1, 2, 3, 5, 6, 7, 8 and 9 are classified as regulated trees, whilst Tree 4 is classed as a significant tree as defined within the *PDI Act 2016*. These trees presented in fair/good condition, and achieved moderate retention ratings, indicating that their retention within any future development is warranted. However, if they cannot be incorporated within any future development and reasonable design change is not available, their removal to achieve the proposal could be supported.

Tree 10 would typically be classified as an unregulated tree as defined within the *PDI Act 2016*, as it is dead. However, as this tree has the potential to be remnant, and the surveyed area is covered by the *NVA 1991*, this tree may be controlled as native vegetation. Additionally, Tree 10 represents important habitat value for native fauna, and currently has several active hollows within its primary structure. Therefore, it achieves a high retention value, and its incorporation within any future design should be considered. However, if its removal is required, it must be applied for via the Native Vegetation Council.

Tree 11 is classified as a regulated tree as defined within the *PDI Act 2016*, this tree achieved a low retention value due to its poor current condition, the removal of this tree would be supported, however, a development application must be submitted to the City of Playford prior to the commencement of any tree damaging activity.

Tree 12 is classified as an unregulated tree as defined within the *PDI Act 2016*. However, as this species is indigenous to the area and may be a naturally occurring tree, this tree may be controlled as native vegetation. Despite this Tree 12 presents poor overall condition; therefore, achieving a low retention value. Its removal must be applied for via the Native Vegetation Council.

Once a design proposal has been developed a Project Arborist should be appointed, and an Arboricultural Impact Assessment should be conducted with impact mitigation strategies reported within the assessment. The Tree Protection Zones for Trees 1-12 have been calculated and can be viewed in **Appendix 1 – Mapping**. This will facilitate basic tree protection within any future development.

Thank you for engaging us to provide this information. If you require further clarification, please do not hesitate to contact us. Yours sincerely,

Sam Arnold
Consulting Arborist
Certified ISA Tree Risk Assessor (TRAQ)
Diploma of Arboriculture



Ref: TAC0280_Lot202_LegoeRd_BucklandPk_PTA
Date: 19th August 2024
Author: Sam Arnold



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Brief

URPS engaged TreeSolve to undertake a Preliminary Tree Assessment on all trees located within the allotment at Lot 202 Legoe Road, Buckland Park that are classed as either regulated and/or significant trees. This assessment will evaluate the attributes each tree possesses and their suitability for retention within a future development; additionally, a visual tree assessment was conducted on Assessment date 14th August 2024.

In accordance with Australian Standard AS4970-2009 *Protection of trees on development sites* the following information was assessed:

- A visual tree assessment of the subject trees including Useful Life Expectancy and overall condition.
- Legislative status of the subject trees as defined within the *Planning, Development, and Infrastructure Act 2016*.
- Calculated and defined the Tree Protection Zones of the subject trees.
- Additional relevant factors which relate to the condition of the subject trees.

This assessment has captured the following information in relation to the site:

- Existing structures adjacent to or within the allotment.
- Recent or active soil disturbances or grade changes.
- Existing topography.
- Existing hydrology.
- Recent changes to wind dynamics and/or increase or decrease to exposure.
- Recent changes to light availability.
- Evidence of abiotic and/or biotic disorders or issues within the site.



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Site Observations

The subject trees (**Figure 1**) are located within the allotment at Lot 202 Legoe Road, Buckland Park. Trees 4-9 are positioned near the entrance of the lot, while the others are dispersed across the surveyed area. The root zones of these trees mainly consist of open soil, an unsealed road, and grasslands. The surveyed area appears to be a wetland altered by human activity, with some dead remnant trees present. Additionally, the existing landscape appears unchanged; there were no observations indicating that the hydrology, light availability, or wind dynamics of the landscape have changed.



Figure 1: Survey Area.



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Tree Locations



Figure 2: Western aspect.

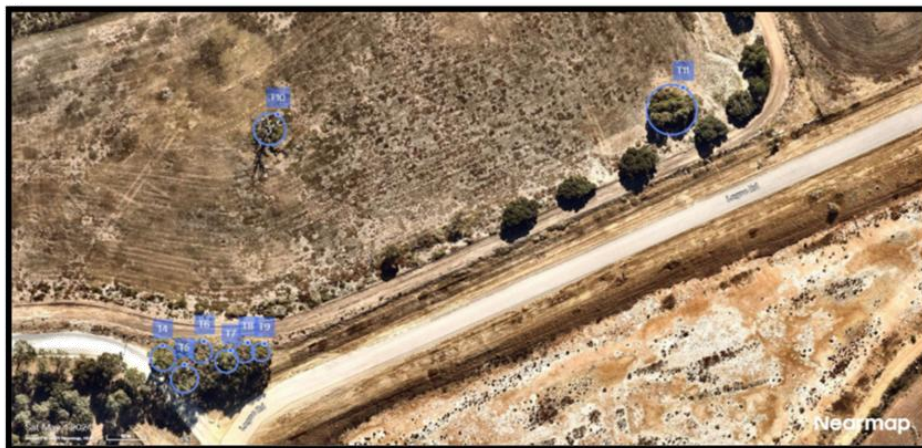


Figure 3: Eastern aspect



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Document Submission

Windamere Park SDA, LOT 202 LEGOE ROAD, BUCKLAND PARK - 09/06/2024



Figure 4: Concept Design

Legislative Assessment

The trees captured within the survey area are controlled under the *Planning, Development and Infrastructure Act 2016 (PDI Act 2016)* and are therefore protected as either regulated or significant trees as required. The survey area is also covered by the *Native Vegetation Act 1991 (NVA 1991)*, therefore any tree species within the survey area that is naturally occurring and indigenous to the area will be protected under this legislation.

In cases where an individual and/or group of trees has the potential to be protected by both the *PDI Act 2016* and the *NVA 1991*, separate applications to each respective department will be required to be submitted. Supplementary information in addition to this document will also be required for either type of application.



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Visual Tree Assessment Profile – Tree 1					
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024		
Height	5-10 metres				
Spread	5-10 metres				
Age	Mature				
Useful Life Expectancy	>30 years				
Health	Good				
Structure	Good				
Form	Good				
Legislative Status	Regulated Tree				
Circumference	>1 metre			DBH: 62cm	TPZ: 7.44 metres
Tree Retention Rating	Moderate				



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Visual Tree Assessment Profile – Tree 2					
Species	<i>Eucalyptus odorata</i> – Peppermint Box	Assessment Date	14/8/2024		
Height	5-10 metres				
Spread	5-10 metres				
Age	Mature				
Useful Life Expectancy	>30 years				
Health	Good				
Structure	Good				
Form	Good				
Legislative Status	Regulated Tree				
Circumference	>1 metre			DBH: 42cm	TPZ: 5.02 metres
Tree Retention Rating	Moderate				



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Visual Tree Assessment Profile – Tree 3				
Species	<i>Eucalyptus odorata</i> – Peppermint Box	Assessment Date	14/8/2024	
Height	5-10 metres			
Spread	5-10 metres			
Age	Mature			
Useful Life Expectancy	>30 years			
Health	Good			
Structure	Good			
Form	Good			
Legislative Status	Regulated Tree			
Circumference	>1 metre		DBH: 42cm	TPZ: 5.1 metres
Tree Retention Rating	Moderate			



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Visual Tree Assessment Profile – Tree 4					
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024		
Height	10-15 metres				
Spread	10-15 metres				
Age	Mature				
Useful Life Expectancy	>30 years				
Health	Good				
Structure	Good				
Form	Good				
Legislative Status	Significant Tree				
Circumference	>2 metres			DBH: 65cm	TPZ: 7.80 metres
Tree Retention Rating	High				



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Visual Tree Assessment Profile – Tree 5					
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024		
Height	10-15 metres				
Spread	5-10 metres				
Age	Mature				
Useful Life Expectancy	15-30 years				
Health	Fair				
Structure	Good				
Form	Good				
Legislative Status	Regulated Tree				
Circumference	>1 metre			DBH: 47cm	TPZ: 5.64 metres
Tree Retention Rating	Moderate				



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Visual Tree Assessment Profile – Tree 6					
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024		
Height	5-10 metres				
Spread	5-10 metres				
Age	Mature				
Useful Life Expectancy	>30 years				
Health	Good				
Structure	Good				
Form	Good				
Legislative Status	Regulated Tree				
Circumference	>1 metre			DBH: 38cm	TPZ: 4.56 metres
Tree Retention Rating	Moderate				



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Visual Tree Assessment Profile – Tree 7					
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024		
Height	5-10 metres				
Spread	5-10 metres				
Age	Mature				
Useful Life Expectancy	>30 years				
Health	Good				
Structure	Good				
Form	Good				
Legislative Status	Regulated Tree				
Circumference	>1 metre			DBH: 32cm	TPZ: 3.84 metres
Tree Retention Rating	Moderate				



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Visual Tree Assessment Profile – Tree 8					
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024		
Height	5-10 metres				
Spread	5-10 metres				
Age	Mature				
Useful Life Expectancy	>30 years				
Health	Good				
Structure	Good				
Form	Good				
Legislative Status	Regulated Tree				
Circumference	>1 metre			DBH: 43cm	TPZ: 5.16 metres
Tree Retention Rating	Moderate				



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Visual Tree Assessment Profile – Tree 9			
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024
Height	5-10 metres		
Spread	5-10 metres		
Age	Mature		
Useful Life Expectancy	>30 years		
Health	Good		
Structure	Good		
Form	Good		
Legislative Status	Regulated Tree		
Circumference	>1 metre		
Tree Retention Rating	Moderate		



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Visual Tree Assessment Profile – Tree 10					
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024		
Height	10-15 metres				
Spread	10-15 metres				
Age	Mature				
Useful Life Expectancy	0 years				
Health	Dead				
Structure	Fair				
Form	Fair				
Legislative Status	Controlled/ Native Vegetation				
Circumference	>2 metres			DBH: 98cm	TPZ: 11.76 metres
Tree Retention Rating	Moderate				



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Visual Tree Assessment Profile – Tree 11					
Species	<i>Eucalyptus gracilis</i> – Yorrell	Assessment Date	14/8/2024		
Height	5-10 metres				
Spread	15-10 metres				
Age	Mature				
Useful Life Expectancy	<5 years				
Health	Good				
Structure	Poor				
Form	Fair				
Legislative Status	Regulated Tree				
Circumference	>1 metre			DBH: 44cm	TPZ: 5.24 metres
Tree Retention Rating	Low				



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Visual Tree Assessment Profile – Tree 12					
Species	<i>Eucalyptus camaldulensis</i> – River Red Gum	Assessment Date	14/8/2024		
Height	<5 metres				
Spread	2-5 metres				
Age	Semi-mature				
Useful Life Expectancy	<5 years				
Health	Poor				
Structure	Fair				
Form	Good				
Legislative Status	Controlled/ Native Vegetation				
Circumference	<1 metre			DBH: 20cm	TPZ: 2.40 metres
Tree Retention Rating	Low				



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Recommendations

The following recommendations have considered the findings of the Pre-Development Assessment: -

- **Trees 1, 2, 3, 4, 5, 6, 7, 8, and 9:** are classified as regulated/significant trees as defined within the *PDI Act 2016*. They achieved moderate retention ratings, indicating that design change is required should any future development have the potential for tree damaging activity to occur. If they cannot be incorporated within any future design, their removal could be supported to achieve the proposal.
- **Tree 10:** May be controlled as native vegetation as defined within the *NVA 1991*. It achieved a high retention value, and its incorporation within any future design should be considered. However, if its removal is required, it must be applied for via the Native Vegetation Council.
- **Tree 11:** is classified as a regulated tree as defined within the *PDI Act 2016*, it achieved a low retention value due to its current condition, the removal of this tree would be supported, however, a development application must be submitted to and approved by the City of Playford prior to the commencement of any Tree-damaging Activity.
- **Tree 12:** May be controlled as native vegetation as defined within the *NVA 1991*, it achieved a low retention value. Its removal must be applied for via the Native Vegetation Council.



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Mapping

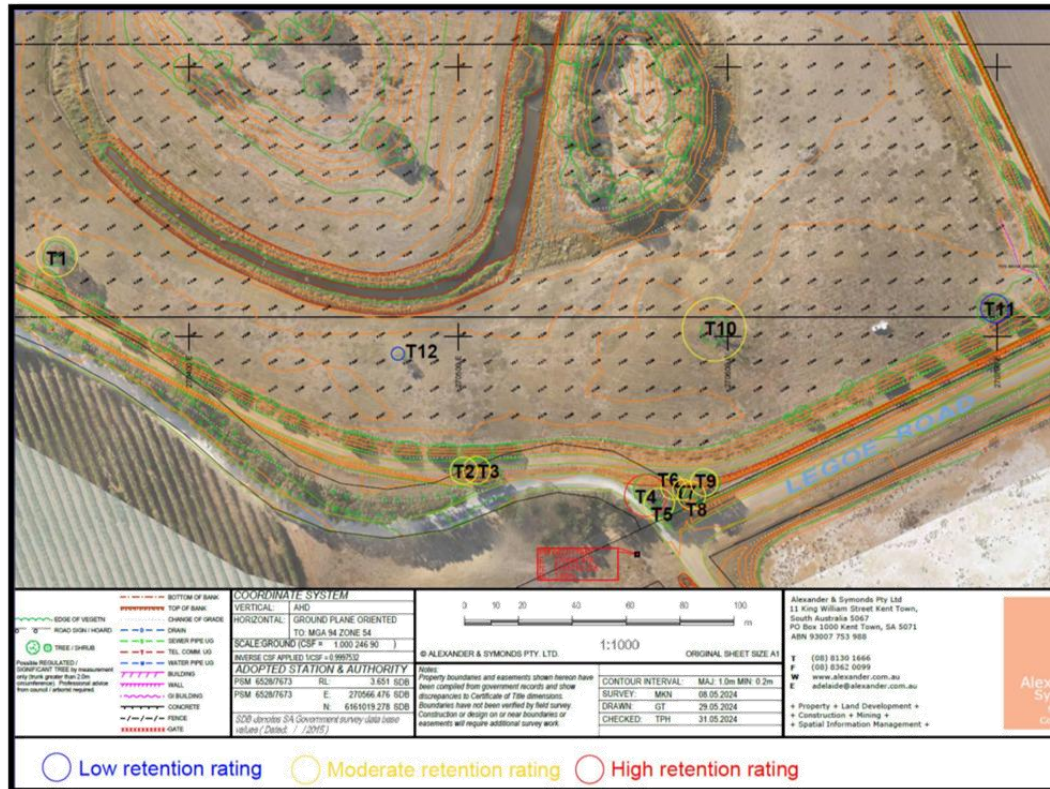


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Tree Protection Zones

The following table details the TPZ radii for Trees 1-12, their individual legislative status and retention rating.

Tree Number	Tree Protection Zone (radius) m	Legislative Status	Retention Value
1	7.44m	Regulated Tree/ <i>PDI Act 2016</i>	Moderate
2	5.02m	Regulated Tree/ <i>PDI Act 2016</i>	Moderate
3	5.1m	Regulated Tree/ <i>PDI Act 2016</i>	Moderate
4	7.8m	Significant Tree/ <i>PDI Act 2016</i>	High
5	5.64m	Regulated Tree/ <i>PDI Act 2016</i>	Moderate
6	4.56m	Regulated Tree/ <i>PDI Act 2016</i>	Moderate
7	3.84m	Regulated Tree/ <i>PDI Act 2016</i>	Moderate
8	5.16m	Regulated Tree/ <i>PDI Act 2016</i>	Moderate
9	5.04m	Regulated Tree/ <i>PDI Act 2016</i>	Moderate
10	11.76m	Controlled/ <i>NVA 1991</i>	Moderate
11	5.24m	Regulated Tree/ <i>PDI Act 2016</i>	Low
12	2.4m	Controlled/ <i>NVA 1991</i>	Low



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Tree Retention Rating

Trees assessed as part of a Preliminary Tree Assessment are awarded a retention rating. This is intended to determine the overall suitability the tree has to the site and the amenity value any tree provides within a defined area. This rating can provide design guidance to designers where either one or multiple trees are located within a building envelope. By identifying the low to high value trees, unnecessary design modification and or physiological damage to the existing vegetation should be far less likely to occur. The ratings are based primarily on the attributes collected within the Visual Tree Assessment, these basic attributes are often the biggest influence on useful life expectancy and therefore are weighted accordingly. Secondary factors such as height, width and trunk diameter are also considered and awarded accordingly.

The cultural, environmental, heritage and aesthetic value of each individual tree is also taken into consideration in relation to each tree's individual retention value. The rating also considers the loss of the tree within its environment and how that loss would affect the landscape, and the replacement of the tree, all of which are factored into the overall rating. Below are the definitions for the four categories: -

Tree Retention Rating	Criteria Required
Low	Trees in this category are usually young, easily replaced with minor environmental and/or aesthetic value. Alternatively, they are also large mature trees with substantial structural and/or functional defects and have surpassed their useful life expectancy. In either case, substantial design change to accommodate the trees that achieve this rating is not recommended within a future development.
Moderate	Trees in this category are usually between semi-maturity and maturity, however, are exotic species or are smaller examples of a native species. The environmental and aesthetic value they offer is not substantial, but they do provide some value. Trees in this category can also be large over-mature specimens with a reduced useful life expectancy however, they still provide retention value. Tree retention for trees in this category is recommended where potential impacts are low and substantial design change is not required to accommodate the trees within a future proposal.
High	Trees in this category are usually large, mature, well-formed examples providing high levels of environmental and aesthetic value. Their retention within any future development is recommended as there are no arboricultural reasons to support the removal of trees of this quality. Design change is required to be implemented should the potential impacts from any future development have the potential for tree damaging activity to occur.
Substantial	Trees in this category are usually large, mature, well-formed examples providing high levels of environmental, aesthetic, cultural and/or heritage value. They will often be associated with nearby heritage landmarks and/or sites, the loss of these trees within their landscape may have deleterious effects to the nearby vegetation and substantially detract from the potential value of any given site. Design change is essential for trees of this quality where potential impacts from future development have been identified as causing deleterious effects. Trees in this category may also present minor structural and/or health attributes, however the amenity value they provide usually overrides these flaws.



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Visual Tree Assessment Methodology

Visual Tree Assessments (VTA) conducted by TreeSolve utilise a rating system to award any given tree its appropriate rating. VTAs are based following defined criteria. Specifically, a VTA must: -

- Locate and identify the tree/s to be assessed.
- Review existing site conditions and note any factors which may affect tree viability and or stability.
- Inspect the tree/s visually.
- Inspect the tree/s structure via the use of a probe, trowel and/or sounding hammer where applicable.
- Inspect the tree/s health either macroscopically or with binoculars where applicable.
- Assess and determine expected loads and/or change in load to tree parts of concern and/or interest.
- Record any matters of concern and/or interest specifically in relation to tree condition, likelihood of failure and recommend any remedial treatments and/or advance assessment if applicable.

Below are the primary attributes recorded during each VTA and the tabulated data represents how each individual tree is awarded its individual attribute rating.

Health

Rating	Criteria Required
Good	Foliage density, colour and size normal. Terminal dieback less than 5% of entire crown, almost no epicormic growth observed less than 5% of the entire crown. Tree should be actively growing, good internodal growth and/or flowering period evident. No evidence of pest and/or disease.
Fair	Foliage density, and size to be reduced, minor chlorotic foliage expected. Terminal dieback less than 40% of entire crown, moderate volume of epicormic growth ~40% of entire crown. Tree growth may appear slightly stunted and/or disrupted. Moderate evidence of pest or/and disease. Moderate chance of recovery utilising reasonable methods.
Poor	Foliage density and size to be substantially reduced, substantial chlorotic and/or necrotic foliage evident. Terminal dieback greater than 40% of entire crown, substantial volume of epicormic growth greater than 40% of entire crown. Tree growth may appear stunted, malformed, disrupted and/or non-existent. Substantial evidence of pest or/and disease. Highly unlikely for a tree to recover fully using reasonable methods, minor recovery may occur but will never return to optimal growth functionality.
Dead	Cellular division has ceased to occur, tree is not functioning, and all physiological process have stopped with no chance of recovery.



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Rating	Criteria Required
Good	Root plate intact and with no signs of instability. Buttress formation evident and trunk taper normal. No unstable unions and/or history of branch failure. All unions well-formed and open, no evidence of decay, previous topping, lopping or pollarding. Minimal overextension of the mid-upper crown and overall branch architecture well balanced. Improbable likelihood of failure within a 5-year timeframe.
Fair	Root plate intact and with minor signs of instability. Buttress formation evident, however not notable and trunk taper normal - abnormal. Stable included bark union/s and/or moderate history of branch/stem failure. Unions sub-optimal, minor-moderate evidence of decay, previous topping, lopping or pollarding. Moderate overextension of the mid-upper crown and overall branch architecture sub-optimal. Possible likelihood of failure within a 5-year timeframe.
Poor	Root plate disturbed and with major signs of instability. Buttress formation not apparent, and trunk taper abnormal. Unstable included bark union/s and/or significant history of branch/stem failure. Unions acute, substantial evidence of decay, previous topping, lopping, or pollarding. Substantial overextension of the mid-upper crown and overall branch architecture atypical and/or substantially exposed. Probable likelihood of failure within a 5-year timeframe.
Failed	Primary/secondary structure has either partially or totally failed and/or collapsed and/or separated. Imminent likelihood of failure within a 5-year timeframe.

Structure

Useful Life Expectancy

Rating	Criteria Required	
	Health	Structure
>30 years	Good	Good
15-30 years	Good	Fair
15-30 years	Fair	Good
10-15 years	Fair	Fair
**<10 or <5 years	Poor	Fair or Good
**<10 or <5 years	Fair or Good	Poor
<5 years	Poor	Poor
*0 years	Dead	Failed

*If a tree achieves either a Dead or Failed rating then regardless of its remaining attributes its ULE will be 0 years unless extenuating circumstances deem it otherwise.

**Species dependant: certain species will have a shorter ULE if the structure or health is poor, in this case <5 years ULE may be applied.



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Form

Rating	Criteria Required
Good	High aesthetic value which is consistent with the species at maturity and/or a striking example of the species. No evidence of phototropism and/gravitropism. No bias or history of major pruning events or history of branch/stem failure or health decline which would detract from the overall aesthetic value.
Fair	Moderate aesthetic value which is moderately consistent with the species at maturity and/or a normal example of the species. Minor evidence of phototropism and/gravitropism. Minor bias or history of major pruning events or history of branch/stem failure or health decline which would detract from the overall aesthetics.
Poor	Low aesthetic value which is not consistent with the species at maturity and/or is not an aesthetical example of the species. No evidence of phototropism and/gravitropism. Major bias or history of major pruning events or history of substantial branch/stem failure which would detract from the overall aesthetics.
Atypical	No aesthetic value or is a starkly different to a typical example of the species at maturity. This will often include trees which have extraordinary levels of phototropism and/gravitropism. Multiple examples of substantial pruning events or history of branch/stem failure which would detract from the overall aesthetics.

Age

Rating*	Criteria Required
Juvenile	Tree is less than 5 years old, often still staked/supported, and watered. Growth and response to change will be rapid, however very susceptible to abiotic and biotic factors.
Young	Tree is between 5-10 years old, should not be staked, but will often still be vulnerable to abiotic/biotic factors. Growth and response to change should still be highly adaptable and quick providing the growing conditions are suitable
Semi-mature	Tree is between 10-30 years old, will be established within its growing environment and will have gained reasonable trunk diameter and crown spread. Should not be susceptible to as many abiotic and/or biotic factors. Growth and response to change should be good-moderate.
Mature	Tree is between 30-80 years old, completely established, growth will be moderate and response to change will be slow-moderate dependent on species and tree condition.
Overmature	Trees is between 80-150 years old, will either begin or actively senescing. Branch failure may occur as retrenchment begins and the trees growth shifts to a static trait as opposed to a dynamic characteristic. Responses to change/growth slow, high levels of stress and/or change within its environment can be fatal.
Veteran	Tree is greater than 150 years old, has completed its retrenchment and overmature stage and is now concentrating its resource production into survival, structural adaptation, active growth has not ceased, however has drastically reduced. Stress and/or injury is highly likely to be fatal at this age range.
Dead	Cellular division has ceased to occur, tree is not functioning, and all physiological process have stopped with no chance of recovery

*The age ranges within each age class are highly dependent on tree species and condition, and this will factor into the tree's overall performance and growth, these criteria are a guide to estimating the age of a tree.



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Glossary

Abiotic: a tree disorder which is caused by a non-living and/or non-infectious factor.

Biotic: a tree disorder which is caused by a living and/or living organism.

Health: a visual representation of how the tree is performing in its environment, largely derived from foliage colour, density and size.

Photosynthesis: The process where light energy is used to form glucose from water and carbon dioxide

Phototropism: A directional growth movement towards light

Respiration: The process where carbohydrates are converted into energy by using oxygen.

Structure: visual assessment of the tree's structural attributes, derived from the tree's union, branch and trunk formation, tree stability and historic branch failure.

Transpiration: The process where water vapour is lost through the stomata within the leaves.

Useful Life Expectancy: expected number of years that the subject tree will remain alive (cell division occurs) and is considered to provide aesthetic and/or environmental benefit, this rating is derived from the structural and health ratings which the tree is awarded.

Vigour: the inherent genetic capacity of a tree to grow and perform vital physiological processes, a static characteristic.

Vitality: the ability the tree must respond to stimulus within its environment, can differ significantly as this is a dynamic characteristic.

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ADELAIDE
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Ref: S6840468404 - 292738

14/10/20255

URPS
27 Halifax Street
ADELAIDE SA 5000

Re: Onsite Wastewater System for Sites 1-3 at Lot 202, Legoe Road, BUCKLAND PARK, SA 5120

The wastewater disposal designed in accordance with the On-Site Wastewater Systems Code, for the proposed accommodation units for NDIS participants and carers. Allowance has been made for one occupant in each villa and 2 carers per module. In total, there are 12 modules. Each site consists of four modules with a total maximum capacity of 23 persons. For every site, one Taylex ABS 28EP has been nominated. The secondary treated effluent is to be directed to a planted spray irrigation area.

Refer to drawing number S6840468404 – 292738 for details.



Note to owner

Owners/Operators of on-site wastewater systems shall ensure that they hold maintenance and service contracts for their on-site wastewater systems. Owners/operators shall ensure that all maintenance and servicing is undertaken by an appropriately trained person with experience in servicing wastewater systems. Operation and maintenance procedures are to be undertaken in accordance with manufacturer's instructions.

The system has been designed for the required loading, in accordance with the On-Site Wastewater Systems Code, for 1 occupant per villa and 1 carer per staff bedroom. It is the responsibility of the

Client: URPS
Site: Lot 202 Legoe Road BUCKLAND PARK SA 5120

owner or operator to ensure that this number is not exceeded.

The irrigation area requires planting to assist in the evaporation of the effluent and to prevent run-off. Before using the system, the surface must be planted. A recommended plant list is attached to this report. The owner should seek advice as to which plants are suitable for their local area.

Maintenance of the irrigation area includes cleaning and maintaining lines, filters and sprays in accordance with manufacturer's instructions.

Soil conditions

The six core samples taken from the site are sufficient to determine the soil category on this site. The subsurface soil was analysed and recorded on borehole logs from the site and attached.

The irrigation soils consist of silty and clayey sand over clay.

The adopted design loading rate is 4.5 L/m²/day.

Slope

Site 1 and 2 are near level. Site 3 will need to be regraded to a maximum slope of 1 in 5.

Site suitability

The site is considered suitable for long term effluent disposal, provided maintenance procedures are followed.

Flooding

Flood mitigation works are proposed as part of the development of these sites. The Infrastructure Assessment Report – Rev B attached indicates that currently flood waters are contained within the boundary of Legoe Road and a channel on the neighbouring property for up to and including the 1% AEP. Further detailed design is to be undertaken to protect the development from 1%AEP storm events. Based on this report and future works, the irrigation areas will not be subject to flooding at greater than 1 in 10 years.

Water table

The water table was encountered at a depth of 1.5 metres in core samples 1 through 4. Given the high water table and its potential to rise seasonally, primary treatment using soakage tunnels and beds is not appropriate. Instead, applying secondary treated effluent to the surface of the planted area will maintain a minimum vertical separation of 600 mm from the water table, support evapotranspiration, and provide additional protection to groundwater through the use of secondary treatment.

Bedrock

Bedrock was not encountered.

Land area

Adequate area is present for both the land application system and the equivalent of 50 percent of the land application area is available for recreational use.

Client: URPS
Site: Lot 202 Legoe Road BUCKLAND PARK SA 5120

Water bores

Adjacent water bores are indicated on the attached plan. The irrigation area is located greater than 50 metres from the closest bore.

Water courses and water bodies.

Current PlanSA maps indicate that the proposed irrigation areas are within a water body. The proposed irrigation areas are based on a 50 metre offset to the water body after mitigation works. The Infrastructure Assessment Report includes flood maps and an outline of the proposed mitigation works required to protect the development from flood waters. Thereby, maintaining the water body 50 metres from the indicated irrigation areas. This report is subject to completion of mitigation works prior to construction.

Setback distances

Setback distances have been nominated in accordance with the On-site Wastewater Systems Code.

Land use

A total of 15 villas are proposed for each site. Four type A modules and one type B module. Each module includes accommodation for two carers. Allowance has been made for one occupant in each villa. The total number of number of persons allowed for per site is 23.

Flow rate and loading

The NDIS accommodation is considered to be equivalent to "Rest Home, Boarding and Lodging Houses" in accordance with the On-site Wastewater Systems Code.

23 persons per site

Daily flow rate = 150 L/person/day.

BOD₅ loading = 50 g/person/day

Daily flow = (23 persons × 100 L/person/day) = 3450 L/day

BOD₅ loading = (23 persons × 50 g/person/day) = 1150 g/day

Climate

The adopted irrigation rate is suitable for the local weather conditions. A water balance study is not necessary.

Irrigation area calculation

DIR = 4.5mm/day

$(3450\text{L/day}) / (4.5\text{mm/day}) = 767\text{m}^2$. Adopt 800m².

Aerobic tank

Taylex ABS4200 28EP Approval Code: WWP-20113

Treatment capacity: 4200L/day, 1960g BOD₅/day

Two-tank, concrete, both vertical orientation. Tank 1 contains primary treatment chambers and sedimentation chambers. Tank 2 contains aeration chambers, clarification chambers, and

Client: URPS
Site: Lot 202 Legoe Road BUCKLAND PARK SA 5120

pump/disinfection chamber. Servicing frequency: 3 monthly. Desludge frequency: 5.4 years or as required

Sump/Pump:

Reuzit sprinkler head operating at 380L/hr (6.3lpm) at 5m of head, diameter 3.4m, maximum spray height 0.2 metres.

Indexing valve loss: 2.8m max

Head loss: 3.0m

Pipe losses: Nominal

Area of 133m² with 13 sprays.

Flow of 13 sprays, 81.9 lpm with total head required of approximately 11m of head.

Pump: Lowara Diwa 116 or equivalent

Indexing valve:

Fimco Indexing valve with 6 port outlet (or equivalent)

Header/flushing Manifold line:

25mm LD Poly Pipe Lilac

Filters in valve Box:

Provide filter after indexing valve on each line: Netafim 25mm Arkal Disc Filter (or equivalent 120 mesh filter)

Note to plumber

The plumber must ensure a Certificate of Compliance, As Constructed drawings and pre-commissioning test results are issued within 28 days of installation of the system, with copies lodged with Council and the owner.

Yours sincerely



Alice Rossiter

BE MIEAust CPEng NER

Principal Housing & Wastewater Engineer

FMG Engineering

Attachments: Borehole Location Plan
Bore Log
On-Site Wastewater Plan WW01 Ref No: S60812-281952
Groundwater Water Bore Location Plan
Maintenance of Aerobic Wastewater Treatment Systems – SA Health
Plant List
Architectural Plans
Pump Curve
Infrastructure Report

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 ISO 9001 Quality Management System | ISO 45001 OH&S Management System

CLIENT
 URPS

PROJECT TITLE
PROPOSED RESIDENCE

SITE ADDRESS
 Lot 202, Legoe Road,
 BUCKLAND PARK, SA 5120

DRAWING TITLE
BOREHOLE LOCATION PLAN

DESIGNED	DRAWN	S.K.
CHECKED	No. OF SHEETS	1 OF 1
SCALE	DATE STARTED	29.10.2025
SITE ID & JOB No	REV.	
568404-292738		
DRAWING No.	BH01	

FMG ENGINEERING**SURFACE SOIL BORE LOG.**

Job / Site: 292738/S68404
Job Date!: 15-09-2025
Sample Method: Rig Mounted Push Tube

Site: Lot 202 Legoe Road
 Buckland Park SA 5120

Horizon	Hole 1 Depth (mm)	Hole 2 Depth (mm)	Hole 3 Depth (mm)	Hole 4 Depth (mm)	Description	Plasticity	U/Symb	Moisture	Strength	Est I _{ps} %
A	0 - 150	0 - 200	0 - 250	0 - 300	SILT AND CLAYEY SAND - pale grey brown.	Low	SM-SC	Moist	Low	0.5
B	150 - 750	200 - 650	250 - 800	300 - 700	CLAY - pale grey brown orange yellow. Trace of sand.	High	CH	Moist	High	2.5
BCa	750 - 1300	650 - 1400	800 - 1700	700 - 1400	SANDY CLAY - pale grey brown yellow cream orange. Some gravels. Highly calcareous.	Medium	CI-SC	Moist to Wet	Medium	1.0
BCa1	1300 - 2000	1400 - 1600	1700 - 1900	1400 - 1700	SANDY SILTY CLAY - pale grey orange yellow brown. Some gravels. Moderately calcareous.	Medium to high	CI-CH	Moist	Medium to High	2.0
B1	2000 - 2400	1600 - 2300	1900 - 2200	1700 - 2300	SAND (FINE AND MEDIUM) - pale grey yellow orange.	Non Plastic	SP	Moist to Wet	Low	0.0
B2	2400 - 3000	2300 - 3000	2200 - 3000	2300 - 3000	SANDY SILTY CLAY - yellow grey brown.	High	CH	Moist	High	3.0
Y _s	16	14	14	13	Y _s = Characteristic surface movement (mm)					

Ground water encountered at: 1.5 m
 Groundwater encountered is considered seasonal and therefore does not effect calculation of Y_s
Surface Suction Change: 1.2 pF
Depth of design soil suction change (H_s): 4.0 m

FMG ENGINEERING**SURFACE SOIL BORE LOG.**

Job / Site: 292738/S68404
Job Date!: 15-09-2025
Sample Method: Rig Mounted Push Tube

Site: Lot 202 Legoe Road
 Buckland Park SA 5120

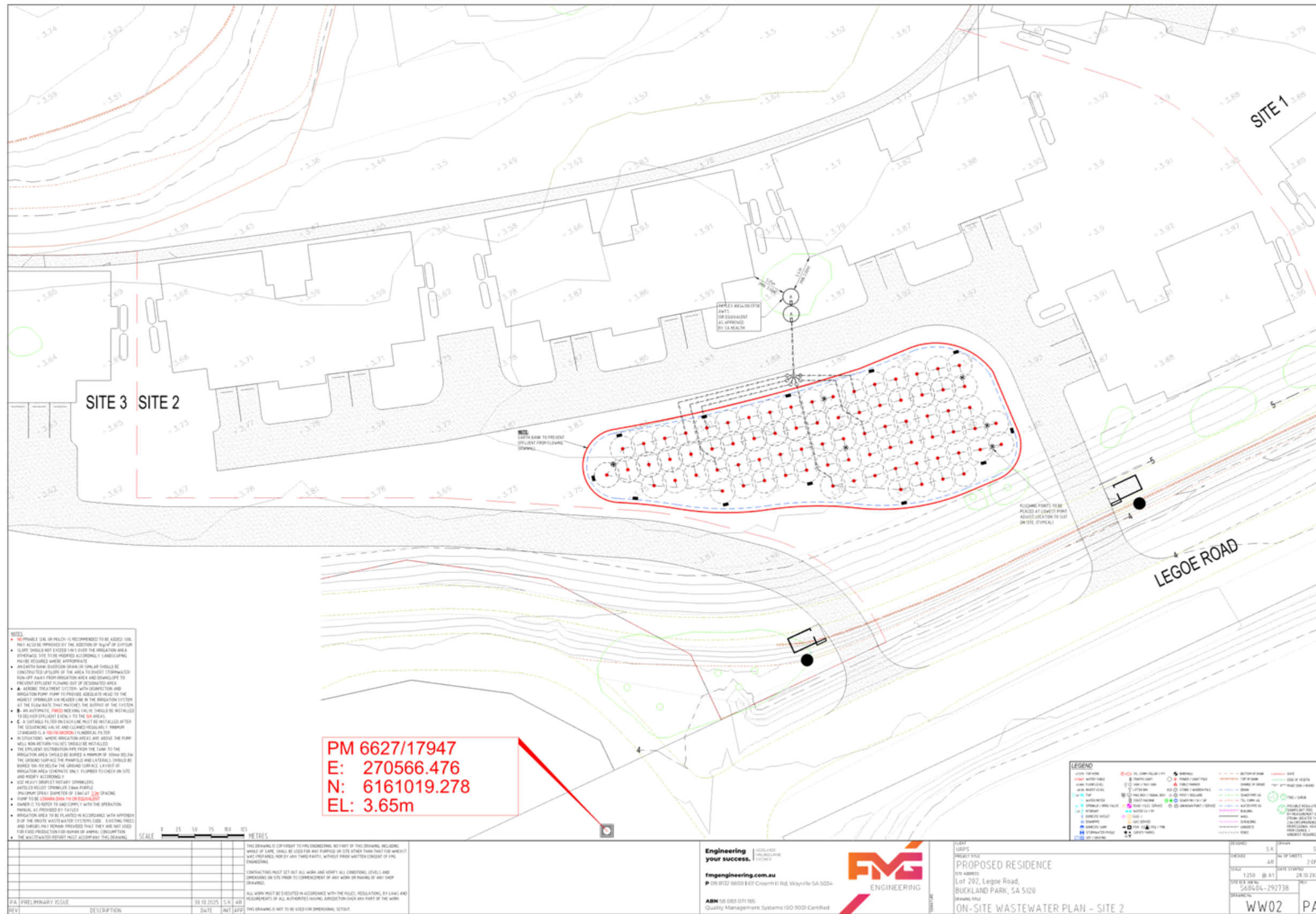
Horizon	Hole 5 Depth (mm)	Hole 6 Depth (mm)	Description	Plasticity	U/Symb	Moisture	Strength	Est Ips %
A	0 - 150	0 - 200	SILT AND CLAYEY SAND - pale grey brown.	Low	SM-SC	Moist	Low	0.5
B	150 - 450	200 - 550	CLAY - pale grey brown orange yellow. Trace of sand.	High	CH	Moist	High	2.5
BCa	450 - 700		SANDY CLAY - pale grey brown yellow cream orange. Some gravels. Highly calcareous.	Medium	CI-SC	Moist to Wet	Medium	1.0
BCa1	700 - 1400	550 - 1700	SANDY SILTY CLAY - pale grey orange yellow brown. Some gravels. Moderately calcareous.	Medium to high	CI-CH	Moist	Medium to High	2.0
B1			SAND (FINE AND MEDIUM) - pale grey yellow orange.	Non Plastic	SP	Moist to Wet	Low	0.0
B2	1400 - 3000	1700 - 3000	SANDY SILTY CLAY - yellow grey brown.	High	CH	Moist	High	3.0
Ys	16	17	Ys = Characteristic surface movement (mm)					

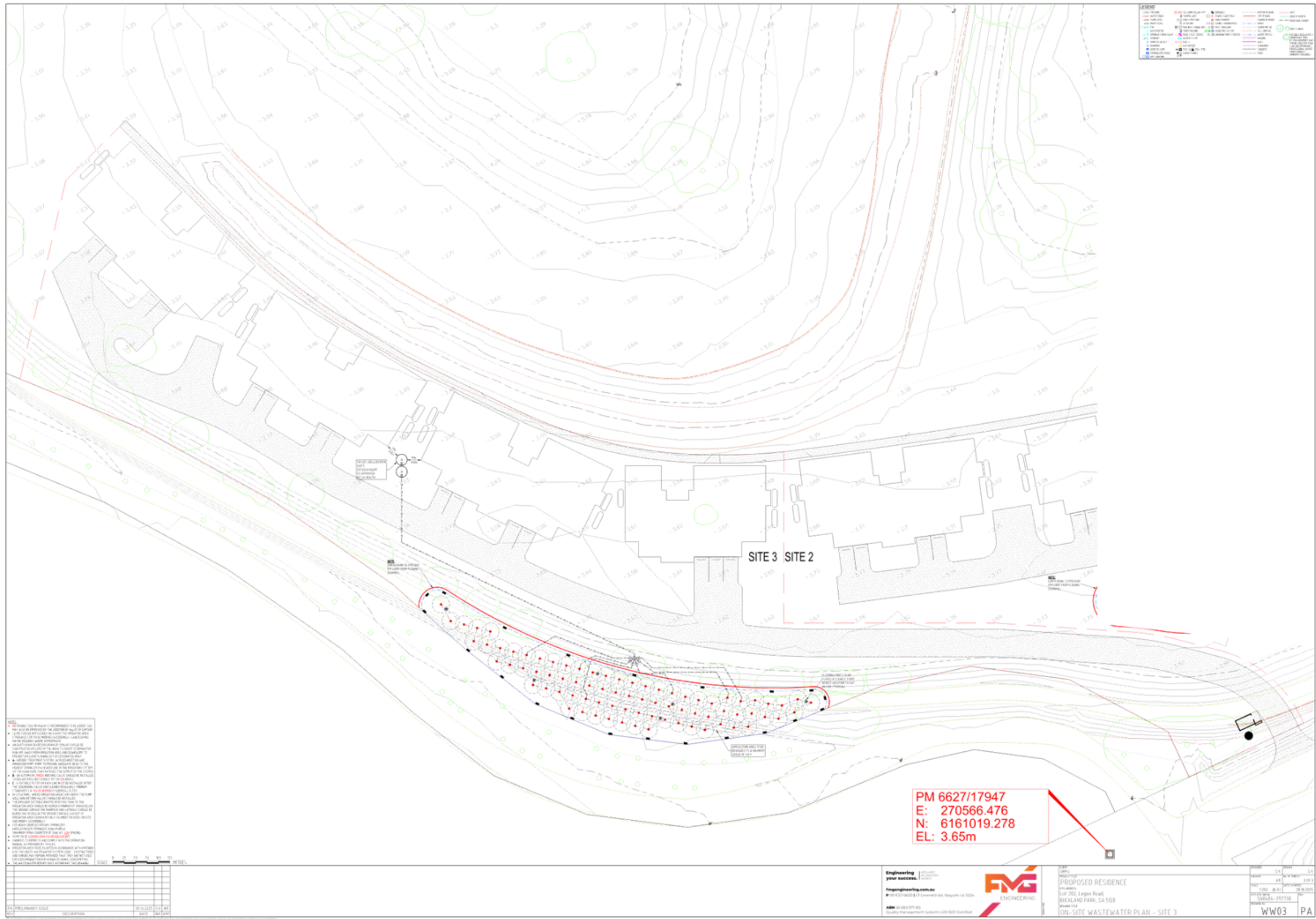
Ground water encountered at: 3.0m in borehole 5. Not encountered in borehole 6.

Groundwater encountered is considered seasonal and therefore does not effect calculation of Ys

Surface Suction Change: 1.2 pF

Depth of design soil suction change (H_s): 4.0 m





WELL LOCATIONS

Local Government Area or Suburb or 202 Legoe Road, Buckland Park SA

Filter 1 well found.

Map interface showing well locations. The map is in satellite view. A search bar at the top contains '202 Legoe Road, Buckland Park SA'. A filter sidebar on the left lists various criteria like 'Drilled date', 'Well depth', and 'Purpose'. The map shows several wells marked with IDs: 528-231, 528-241, 528-4093, 528-297, 528-13711, 528-535, and 528-235. A location marker for 'Windamere Park' is visible. The map includes navigation controls like a compass and a person icon. The text 'Gawler River / Maita Water' is visible on the left side of the map.

Wastewater Fact Sheet

Maintenance of aerobic wastewater treatment systems

This fact sheet provides basic information about types of aerobic wastewater treatment systems, obtaining approval to install them and how to operate and maintain the systems to prevent risks to health and safety.

There are basically two types of systems for aerobic wastewater treatment:

- Aerated wastewater treatment systems (AWTS)
- Aerobic sand filters.

What is an AWTS?

An AWTS is designed to treat wastewater to a level suitable for surface irrigation within the site.

Following primary treatment, the effluent is treated by a process of aeration, settling and disinfection and then pumped to a dedicated irrigation area as recycled water.

What is a sand filter?

Sand filters achieve a similar result to AWTS but the treatment process is different.

The effluent from a septic tank is filtered through a sand layer which provides natural aeration and biological oxidation through aerobic and nitrifying organisms.

From the disinfection chamber the recycled water is pumped to the dedicated irrigation area.

Aerobic systems

Both types of treatment achieve a level of water quality that permits the discharge of the recycled water to surface irrigation within a dedicated landscaped irrigation area.

Before an aerobic system can be installed, an approval must be obtained from the local council.

The approval specifies the plumbing and drainage layout, wastewater treatment system and location of the dedicated irrigation area.

The occupier of the premises should have received a comprehensive manual on the care, operation and maintenance of the system when it was installed.

As a condition of approval, the occupier of the premises served by an aerobic system must maintain the system to ensure that recycled water complies with safe water-quality standards. See below for servicing requirements.

An aerobic system may create health risks for the occupants if it is not correctly maintained.

WARNING: To prevent injury or drowning, the access covers for any septic tank and aerobic system chambers must be securely fixed to prevent access by children. Access should only be by service personnel. Damaged covers must be replaced and securely fixed in position.

Operation and maintenance

A correctly operated and maintained aerobic system provides the occupants with a safe means of using recycled water without risk to health and helps conserve water.

Wastewater Fact Sheet

Servicing

AWTS and sand filters must be serviced by an appropriately trained person at specified intervals as recommended by the manufacturer in the service manual. The [SA Health On-site Wastewater Systems Code](#) provides details of the training requirements for service providers.

Maintenance, depending on the type of system, may include checking the blowers, contact media, pipework, valves, diffusers, effluent clarity and sludge return, removal of excess scum, testing the pump and general operation of the system.

Where chlorine tablets are used, the amount supplied must be sufficient to last until the next scheduled service.

Septic tank pump-out

Where installed, a septic tank needs to be pumped out every 4 years or more often according to the installation approval conditions.

Pumping out of the septic tank must be done by a licensed contractor.

Alarm

All aerobic wastewater treatment systems must be provided with an alarm system to alert occupants to an electrical or mechanical malfunction.

The alarm must have an audible and visual (indicator light) component with muting for the audible alarm.

The fault indicators should be located inside the premises, preferably within the kitchen or laundry.

Odour

Slight odour from the system is normal. However, strong persistent odours indicate the system is not functioning correctly.

Irrigation

Remember that the dedicated surface irrigation system and irrigation area

must function every day of the year - rain, hail or shine.

When setting up the irrigation system, the following points should be considered:

- The wastewater engineer specifies the required irrigation area for the system (the size can generally be found on the installation approval).
- The irrigation area must comply with setback distances from the building, boundaries, swimming pools etc..
- The irrigation area must be landscaped with suitable salt and nutrient tolerant plants and must be designed to discourage or prevent access by pets and people.
- The recycled water must be evenly distributed over the whole area without spray drift, pooling or run-off. On some sites the design may specify drippers or sub-surface irrigation.
- The irrigation system must not be connected to the reticulated mains supply or other drinking water supply.
- All distribution pipework for the irrigation system should be buried at least 150mm below the ground surface.
- The recycled water is not to be used for growing food crops.
- Roof and surface waters must be diverted away from the irrigation area.
- The irrigation area must not be located on land subject to flooding or waterlogging.
- The irrigation area should have precautionary signs placed on all sides worded as follows:

**Warning - Recycled water
not suitable for human
contact/consumption**

Wastewater Fact Sheet

The signs should have a white background with red lettering of at least 20mm in height.

- The pump provided in the aerobic system must be of sufficient capacity to ensure an even distribution of recycled water to the whole of the irrigation area and is usually specified by the design engineer.

Aerobic system manual and approval conditions

If you did not receive a copy of the operating and service manual and the approval conditions when you moved into the premises, contact the system installer or the manufacturer to obtain this information.

SA Health codes and forms

This fact sheet is only a brief guide to the basic requirements. For more detailed information on the installation, operation and maintenance of aerobic systems see the [SA Health On-site Wastewater Systems Code](#).

To download the application form for approval to install aerobic wastewater treatment systems go to our [On-site Systems webpage](#).

Further information

Contact the Environmental Health Officer at your local council for further information. Go to the [Local Government website](#) to locate the council responsible for a particular town or suburb.

Contact

Wastewater Management
Public Health
SA Health

Level 1
Citi Centre Building
11 Hindmarsh Square
Adelaide SA 5000

PO Box 6
Rundle Mall SA 5000

Tel: (08) 8226 7100

Fax: (08) 8226 7102

Email: public.health@health.sa.gov.au

Web: www.health.sa.gov.au/pehs/environ-health-index.htm

ABN 97 643 356 590

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Government of South Australia.

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Last revised June 2013.



Appendix D

Suitable Plants for Recycled Water Irrigation

Note: This list is only intended to provide a selection of trees, shrubs and other plants which may be considered suitable for the land application area. Due to climatic and soil variations, it is essential that further investigations be made before finalising your plant choice to suit your particular locality and site conditions.

Trees

Botanical Name	Common Name	Approximate height in metres
<i>Agonis flexuosa</i>	Willow Myrtle	5-6
<i>Allocasuarina verticillata</i>	Drooping She Oak	3-5
<i>Banksia</i> spp.		3-10
<i>Callistemon salignus</i>	White Bottlebrush	3-6
<i>Callistemon viminalis</i>	Red Bottlebrush	3-6
<i>Casuarina cunninghamiana</i>	River She Oak	6-10
<i>Eucalyptus camaldulensis</i>	River Red Gum	15-20
<i>Eucalyptus cosmophylla</i>	Cup Gum	5-6
<i>Eucalyptus grandis</i>	Flooded Gum	10-20
<i>Eucalyptus robusta</i>	Swamp Mahogany	6-9
<i>Eucalyptus saligna</i>	Sydney Blue Gum	15-20
<i>Hymenosporum flavum</i>	Native Frangipani	3-6
<i>Melaleuca nesophila</i>	Western Tea Myrtle	2-4
<i>Melaleuca quinquenervia</i>	Broad Paperbark	5-7
<i>Syzygium paniculatum</i>	Bush Cherry	8-10
<i>Tristaniopsis laurina</i>	Kanuka	3-5

Appendix D

Shrubs

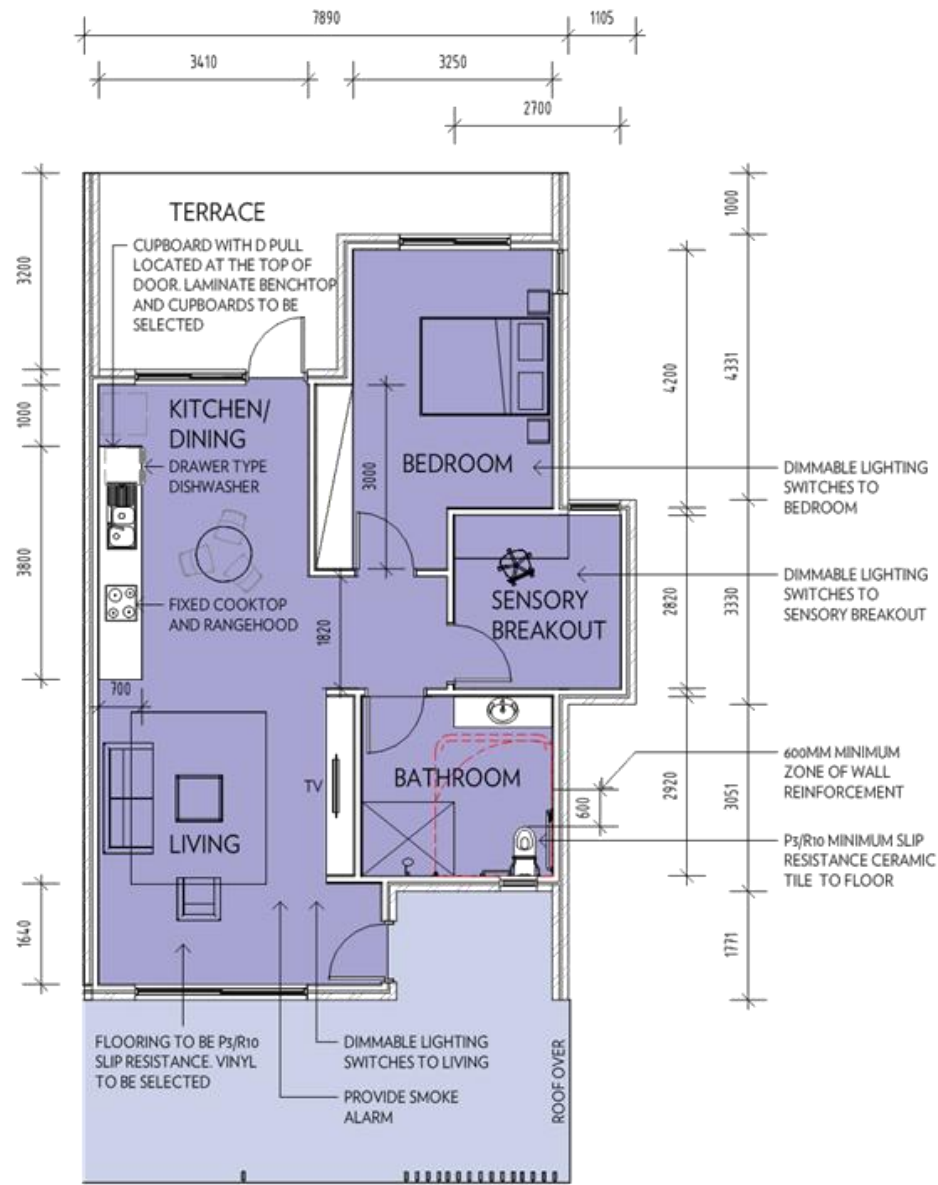
Botanical Name	Common Name	Approximate height in metres
<i>Abelia grandiflora</i>	Abelia	2-3
<i>Acacia floribunda</i>	Gossamer Wattle	2-4
<i>Argyranthemum frutescens</i>	Marguerite Daisy	1
<i>Chamaelucium uncinatum</i>	Geraldton Wax	2-4
<i>Cyperus alternifolius</i>	Umbrella Grass	0.5-1
<i>Cyperus papyrus</i>	Papyrus	1-2
<i>Dryandra Formosa</i>		1-3
<i>Eremophila</i> spp.		1-2
<i>Grevillea</i> spp. (apart from <i>G. rosmarinifolia</i>)		1-3
<i>Hebe</i> spp.	Veronica	0.5-1
<i>Iris pseudacorus</i>	Yellow Flag Iris	0.5-1
<i>Melaleuca decussata</i>	Cross Leaved Honey Myrtle	1-2
<i>Phormium tenax</i>	New Zealand Flax	2-2.5
<i>Senna</i> spp. (<i>S. artemisioides</i>)		1-3

Perennials/Ground Cover

Botanical Name	Common Name	Approximate height in metres
<i>Aster novi-belgii</i>	Perennial Aster	0.5-1
<i>Canna</i>		1-2
<i>Chrysanthemum maximum</i>	Shasta Daisy	1
<i>Impatiens</i> spp.		0.4
<i>Salvia uliginosa</i>	Bog Salvia	0.4
<i>Viola hederacea</i> , <i>eminens</i> or <i>sieberana</i>		0.4

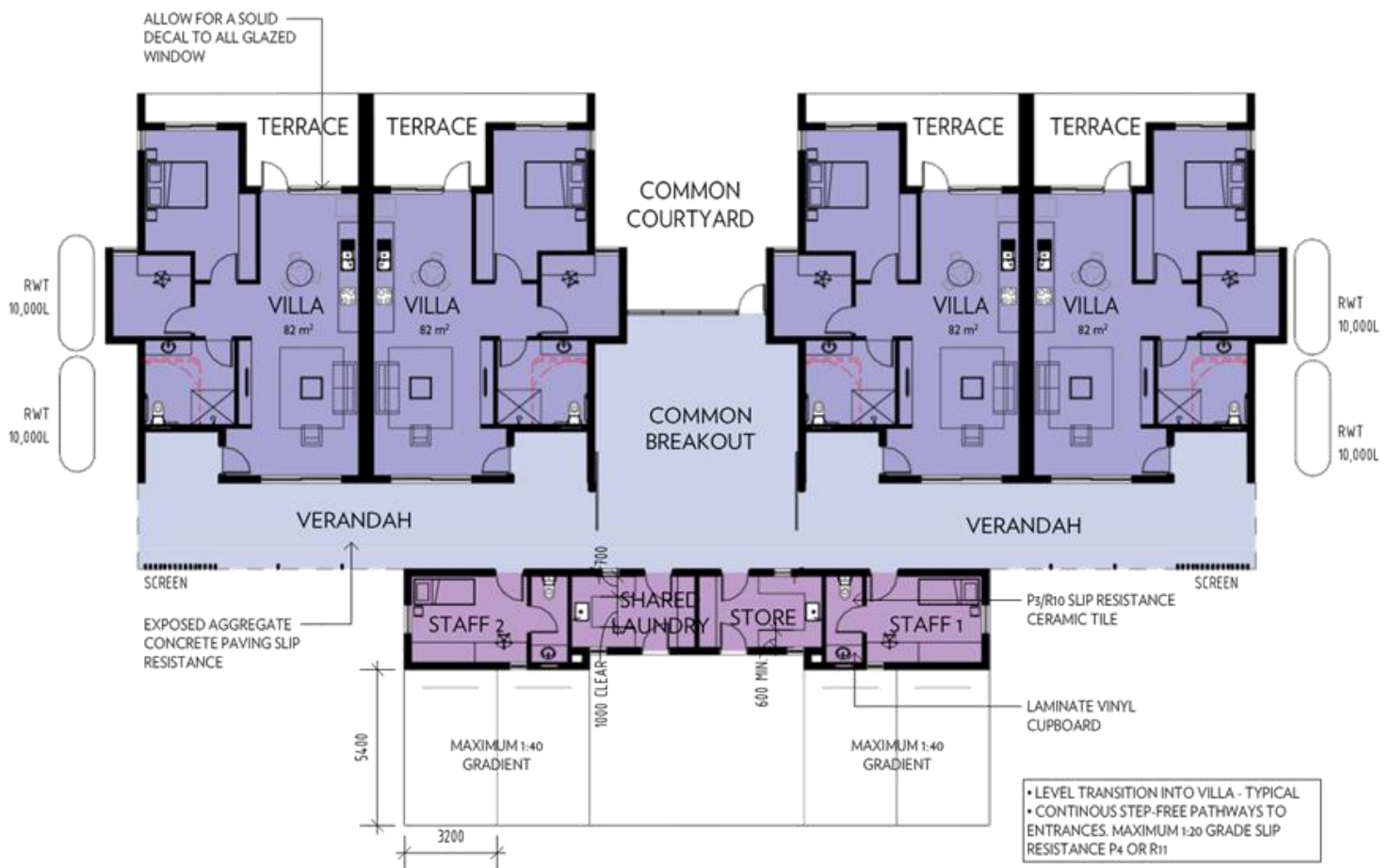
Climbers

Botanical Name	Common Name	Approximate height in metres
Bougainvillea spp.		Variable
Clematis microphylla		Variable
Hardenbergia violacea	Purple Coral Pea	Variable
Hibbertia scandens	Snake Vine	Variable
Jasminum grandiflorum		Variable
Jasminum officinale	Common Jasmine	Variable
Jasminum polyanthum		Variable
Kennedia rubicunda	Dusky Coral Pea	Variable
Passiflora spp.	Passion Flower	Variable
Vitis coignetiae	Glory Vine	Variable



TYPICAL VILLA FLOOR PLAN

1 : 100



TYPICAL SELF CONTAINED VILLA MODULE A

1 : 200

- HIGH IMPACT WALL LININGS.
- LIGHTS AND GPO SWITCHES TO BE ROCKER ACTION WITH A MINIMUM WIDTH OF 35MM.
- LIGHT SWITCHES POSITIONED BETWEEN 900MM - 1100MM ABOVE FFL.
- ALL HINGED DOOR TO BE SOLID CORE - MINIMUM 900MM WIDE.
- DOOR HANDLES TO BE FIXED AT BETWEEN 900MM AND 1100MM ABOVE FFL.
- ALL WINDOWS TO BE LOCKABLE.
- ALL GLAZING TO BE LAMINATED GLASS OR POLYCARBONATE RESIN THERMOPLASTIC MATERIAL.

REASON FOR ISSUE	REV	DATE
Sketch Design	B	19/06/2024
Sketch Design	C	08/08/2024

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE A - FLOOR PLAN	DRAWING	SK05
08/08/2024	REVISION	C
As indicated @A3	PROJECT	24-0848

DRAWING: 08/08/2024 10:00:00 AM C:\Users\p34\OneDrive\Documents\24-0848\24-0848-01.dwg



TYPICAL SELF CONTAINED VILLA MODULE B

1 : 200

REFER TO SHEET SK-05 FOR TYPICAL VILLA FLOOR PLAN

• LEVEL TRANSITION INTO VILLA - TYPICAL
 • CONTINUOUS STEP-FREE PATHWAYS TO ENTRANCES. MAXIMUM 1:20 GRADE SLIP RESISTANCE P4 OR R11

• HIGH IMPACT WALL LININGS.
 • LIGHTS AND GPO SWITCHES TO BE ROCKER ACTION WITH A MINIMUM WIDTH OF 35MM.
 • LIGHT SWITCHES POSITIONED BETWEEN 900MM - 1100MM ABOVE FFL.
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 • ALL GLAZING TO BE LAMINATED GLASS OR POLYCARBONATE RESIN THERMOPLASTIC MATERIAL.

REASON FOR ISSUE	REV	DATE
Sketch Design	B	19/04/2024
Concept Design	C	15/08/2024

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



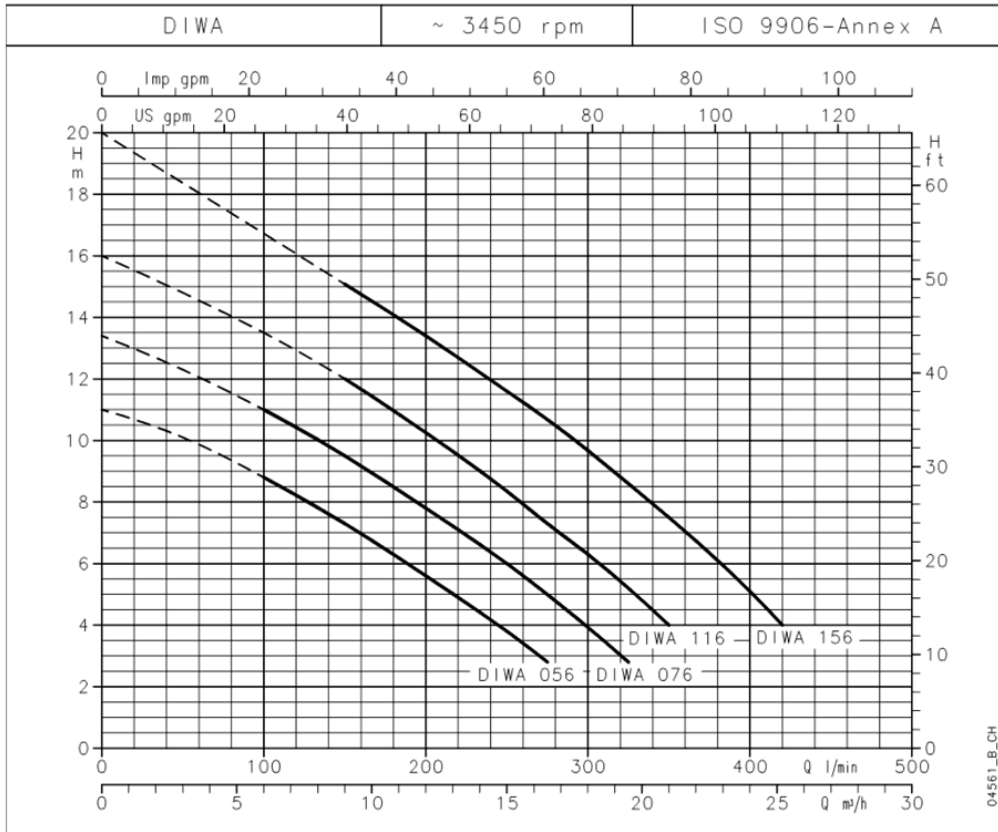
Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE B - FLOOR PLAN	DRAWING	SK10
15/08/2024	REVISION	C
1 : 200 @A3	PROJECT	24-0848

DRAWING: 15/08/2024 15:08:00 15/08/2024 15:08:00 15/08/2024 15:08:00 15/08/2024 15:08:00 15/08/2024 15:08:00



**DIWA SERIES
OPERATING CHARACTERISTICS AT 60 Hz**



HYDRAULIC PERFORMANCE TABLE

PUMP TYPE	RATED POWER		Q = DELIVERY													
	kW	HP	H = TOTAL HEAD METERS COLUMN OF WATER													
			l/min	0	100	125	150	200	225	250	275	300	325	350	420	
DIWA 056(T)	0,55	0,75	11	8,7	8,1	7,3	5,6	4,7	3,8	2,8	-	-	-	-		
DIWA 076(T)	0,75	1	13,4	11	10,3	9,5	7,8	6,9	6	5	3,9	2,8	-	-		
DIWA 116(T)	1,1	1,5	16	-	-	12	10,3	9,3	8,3	7,3	6,3	5,2	4	-		
DIWA 156T	1,5	2	20	-	-	15	13,4	12,5	11,6	10,7	9,7	8,6	7,5	4		

These performances are valid for liquids with density $\rho = 1.0\text{kg/dm}^3$ and kinematic viscosity $\nu = 1\text{mm}^2/\text{sec}$ diwa-2p60-en_b_th

ELECTRICAL DATA TABLE

PUMP TYPE	INPUT POWER*	INPUT CURRENT*	CAPACITOR
SINGLE-PHASE	kW	220-230 V A	$\mu\text{F} / 450\text{ V}$
DIWA 056	0,92	4,53	20
DIWA 076	1,18	5,73	22
DIWA 116	1,39	6,27	30
	-	-	-

PUMP TYPE	INPUT POWER*	INPUT CURRENT*	INPUT CURRENT*
THREE-PHASE	kW	220-230 V A (1)	380-400 V A
DIWA 056T	0,81	2,46	1,42
DIWA 076T	1,13	3,62	2,09
DIWA 116T	1,29	4	2,31
DIWA 156T	1,78	5,56	3,21

*Maximum value in specified range
(1) Available on request

diwa-2p60-en_b_te



Preliminary Infrastructure Assessment

**Lot 202, Legoe Road, BUCKLAND PARK,
SA 5120**

JOB NUMBER:	S68404 - 289788
CLIENT:	URPS
SITE:	Lot 300 Daddow Court, KADINA
DATE:	12/12/2024
REVISION:	B

**Engineering
your success.**

ADELAIDE
MELBOURNE
SYDNEY

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B	Preliminary	Ghasem Ashtijou	Jordan Colbert	12.12.2024	Jordan Colbert	12.12.2024

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Executive Summary

FMG Engineering (FMG) has been engaged by URPS to undertake a preliminary services investigation of the existing infrastructure in the area to support a proposed Code Amendment.

The subject site is located at Lot 202, Legoe Road, BUCKLAND PARK, SA 5120 and covers an area of approximately 11ha. The site is currently zoned Rural Horticulture and is used for agricultural purposes. It is proposed to be Development involving the provision of disability services including training facilities, allied health services, administrative facilities, and accommodation for disability clients and their families and to facilitate the proposed residential development of approximately 15 dwellings within 3 allotments. The site is named Windamere Park.

The purpose of our investigation is to provide a desktop assessment of the infrastructure currently available to the subject site and to assess the current capacity of the existing infrastructure. We note that some authorities have not provided detailed feedback, and in these instances, we have utilised our engineering judgement and relevant previous experience to provide context where appropriate. The following table summarises our findings:

Table 1 Summary of service availability and constraints

Service (Asset) Type	Existing Capacity	Constrain on development?
Stormwater	There is no existing infrastructure for the site. There is a roadside swale in front of Legoe Rd which is inundated during 1%AEP.	<p>Potential allotment fill for proposed site/buildings due the flood levels within the internal to the west of the development</p> <p>Retention storage of ~4,300 m³ required to restrict flows from the site, can be accommodated in existing wetland areas.</p> <p>Formalised overland flows/ bunds required to protect the proposed development from flooding to the east and south if the existing bund/overland flow not adequate or damaged</p> <p>Gravity discharge to the wetland TBC during detailed design</p> <p>Wetland modification should not affect the ground water. Appropriate vegetation for the wetland as a basin required for water quality purposes. No effluent to be discharged to the wetland</p>
Potable water	No infrastructure available adjacent the site There is a DN250 at the intersection of Legoe Rd and Port Wakefield 4km away, which has recently been extended into Riverlea Park	Yes, augmentation and extending SA Water main from Port Wakefield Road to the proposed development and costs related subject to SA Water confirmation.

Wastewater	No SA Water or CWMS available for the subject site. Onsite treatment/disposal will be required	<p>Yes</p> <p>On-site wastewater treatment and disposal required. Proposed dwelling density is expected to provide more than sufficient space for effluent disposal.</p> <p>Disposal method of the wastewater from the proposed development may have significant impact on receptors (wetland, bores etc.).</p> <p>Minimum offset of a wastewater disposal area from a water course, bore, and well is 50 metres.</p>
Electrical	HV overhead networks to the existing dwelling in the middle of the Windamere Park and also in Carmelo Road. But no SAPN infrastructure immediately adjacent the subject site, so an extension of infrastructure will be required.	<p>Yes</p> <p>SAPN advised:</p> <p>Connection point from north would be the better option as its closer to the site, but its single phase only (limited capacity). The augmentation and extension work further depends on the demand load and phase. If you want single phase, we will have to extend our network from North by adding approximately 7-8 poles at an estimated cost of \$300-\$400k. If more than 200A and/or 3 phase is required the cost will increase significantly</p>
Communications	Limited communications infrastructure to the site (for the existing dwelling).	Not expected to be, but likely to require augmentation to the network to increase data capacity.
Gas	Not available	No, not required
Recycled water	Available adjacent Legoe Road at the southeast corner.	Can be used as an alternative to the wetland for irrigation and reuse, subject to confirmation of appropriate water quality

Introduction

FMG Engineering (FMG) has been engaged by URPS to undertake a preliminary services infrastructure investigation of the existing infrastructure in the area to support a proposed Code Amendment.

Windamere Park is located at Lot 202, Legoe Road, BUCKLAND PARK, SA 5120 and covers an area of approximately 85 ha. The subject site (Lot 202 Legoe Road, Buckland Park) is identified as Windamere Park which is an accredited disability services provider with the NDIS, currently offering a range of education and training opportunities for participants, alongside existing limited supported independent living accommodation. The site is currently zoned as Rural Horticulture and the land is subject to its own sub-zone 'Windamere Park'. A portion of the site to the southeast corner adjacent Legoe Road with the area of approximately 11ha is proposed for land division and development which is considered to be the scope of work of this report and is referred to as 'subject site' in this report. It is proposed to facilitate the proposed residential development of approximately 45 villas within 12 dwelling modules in 3 separate allotments. The proposal of this development is as below:

- Land division of 3x 1ha allotments in the south-eastern corner of the site (indicative site plan in Figure 1)
- Construction of 4x dwellings (for supported accommodation on each allotment, accommodating a maximum of 15 people per allotment.
- Occupants will be NDIS approved clients, with each dwelling designed to also accommodate a live-in support person/carer

To inform this report, FMG Engineering has reviewed publicly available infrastructure databases, undertaken Dial Before You Dig (DBYD) queries, reviewed previous code amendment undertaken by Water Technology (Appendix B), and contacted key service authorities to confirm their ability to service the proposal, or notify any augmentation required to facilitate the works. This review included;

- Playford Council (Stormwater and Wastewater)
- SA Power Networks (Electricity)
- SA Water (Potable Water)
- NBN and Telstra (Communications)

The DBYD search, suggests that Gas reticulation mains are not present in this area, and therefore gas has not been discussed any further in this report. FMG is also aware of an existing recycled water service adjacent the Southeast corner of the subject site at Legoe Rd. FMG does not have details of this system (eg water quality) but it is expected this could be utilised for irrigation on the site if there was a significant demand.

FMG are preparing an assessment which considers stormwater, flooding and service availability (electricity, wastewater and potable water) for the portion of the site proposed for land division and development.

The purpose of our investigation is to provide a desktop assessment of the infrastructure currently available to the subject site and to assess the current capacity of the existing infrastructure. We note that some authorities have not provided detailed feedback, and in these instances, we have utilised our engineering judgement and relevant previous experience to provide context where appropriate.

A DPA Investigation report has been undertaken by Water Technology for Windamere Park (dated 13 December 2019) for the entire 85 Ha site which has been our reference in some sections of the report where related to the proposed development.

Site understanding

The subject site is as shown in Figure 1 below. Any reference to subject site in this report refers to the scope of work shown below at the southeast corner adjacent the Legoe Road.



Figure 1-Site Layout and proposed development

Windamere Park is bound by rural lands on the northern and eastern sides, Gawler River on the western side, and Legoe Road on the southern side. A detailed survey of the site has not been undertaken; However, high-level contours indicate the site is relatively flat (with some local depressions and open spaces) and overall has an average surface grade of below 0.5% towards the southwest.

The majority of the site is proposed to be used for disability services in a rural setting. There is an existing open space at the eastern corner of the subject development which can be an appropriate option for retaining/detaining stormwater runoff for re-use purposes. There is also an existing recycled water pipe in Legoe Road that currently terminates at the south east corner of the site adjacent the front boundary.

The shallow wetland in the southeastern corner of the property sits at around 3.5mAHD. Olive groves occupy the southwest quadrant, and areas north of the existing residence and buildings. The Gawler River channel runs along the western boundary of the property, flanked by large river redgums.

Services investigation

Stormwater and flooding assessment

Existing conditions

FMG have developed a high-level understanding of the existing drainage infrastructure and flooding issue in the area from review of the Windamere Park DPA Investigation (Water Technology, December 2019) and South Australian Property and Planning Atlas (SAPPA) flooding map.

Subject site is relatively flat, and a large pond/wetland exists at the north and northeastern portion of the site. In minor storm events the existing basins and flat topography allow the stormwater runoff to be stored and infiltrated. SAPPA Flooding map (Figure 2) shows extent of flood (1% AEP) at the boundaries of the subject site; Along the eastern property, Legoe Road and internal driveway. Based on this map, no stormflow enters the site from boundaries as there is no extent of flooding seen within the subject site.

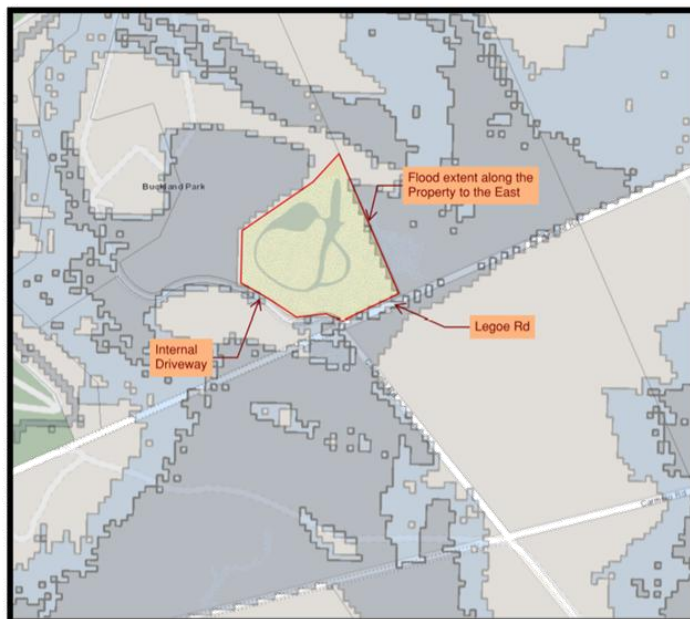


Figure 2- Existing flood map (1% AEP) (SAPPA Website)

FMG also checked the other Flood studies resources available for the subject site such as Water Connect website to check against SAPPA flooding map. Water connect has provided separate flooding maps based on different studies:

- Gawler River Floodplain Mapping 2015 - After Mitigation works (Figure 3)
- Gawler River Floodplain Mapping 2008 (Figure 4)

After reviewing the Water Connect flooding map, it can be concluded that the 2008 flooding map shows extent of flooding within the site (stormflow entering the site from eastern boundary). However, 'After Mitigation Works 2015' flooding map demonstrates that there is no flooding within the subject site and stormflow stays along the boundary of the site in Legoe Rd, internal road and eastern boundary. The latter matches the SAPPA flooding map.

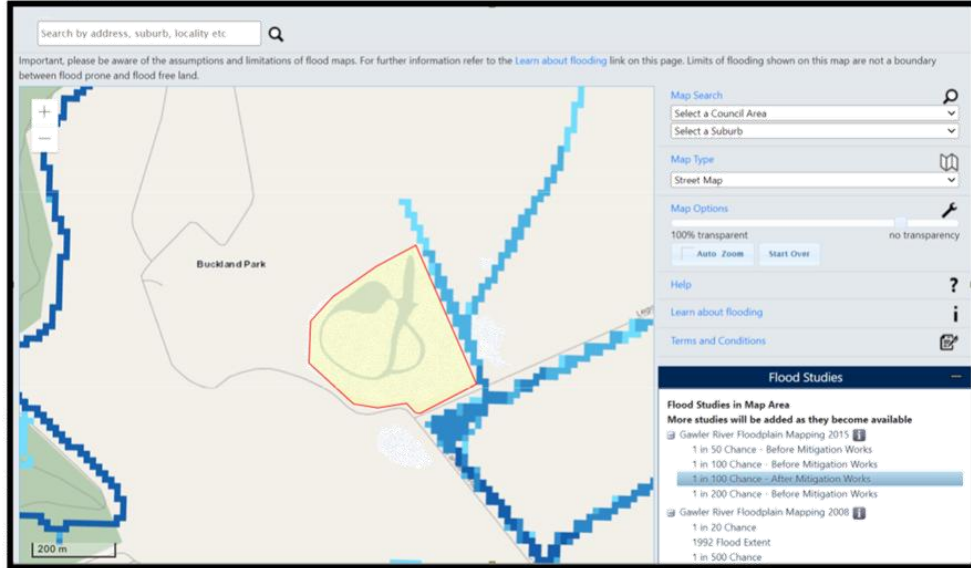


Figure 3- Gawler River Floodplain Mapping 2015 - After Mitigation works (Waterconnect Website)

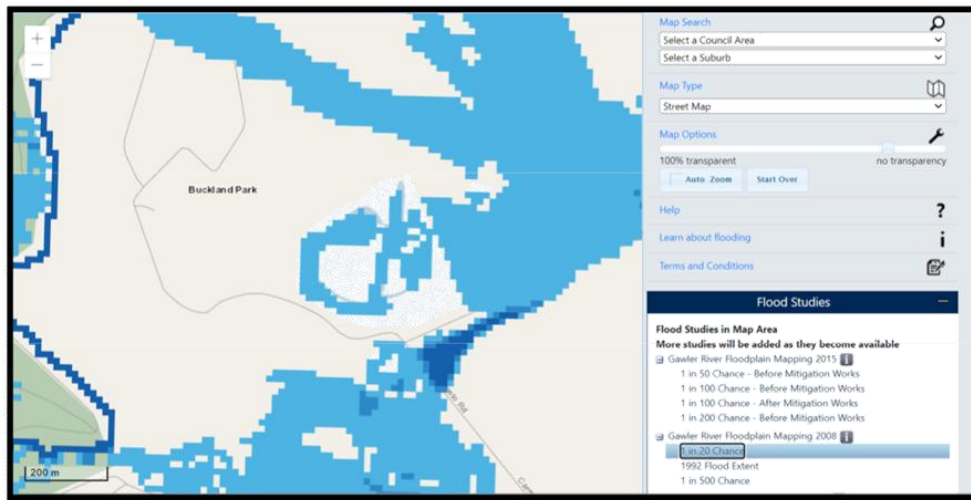


Figure 4- Gawler River Floodplain Mapping 2008 (Waterconnect Website)

The above flood max depth maps (After Mitigation Works 2015) show that stormwater is contained within the boundary in Legoe Road and neighbouring property (existing open channel or potential overland flow) for up to and including the 1% AEP 100-yr major storm and the flood depth is expected to be approximately within the range of 0.6 to 0.8m.

A check of the roadside swale and embankments along the Legoe Rd based on the flood depths should be undertaken during the detailed design to ensure proposed development is protected.

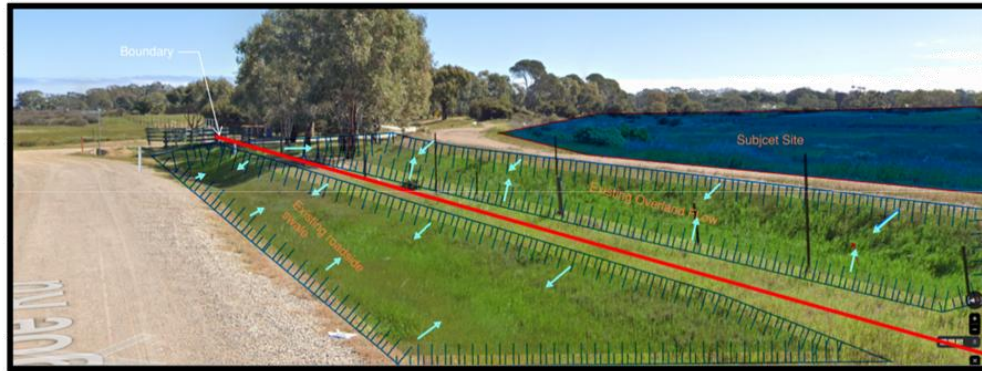


Figure 5- Existing Road side swale along the Legoe Road

Based on previous report by Water Technology (Appendix B):

"There is a levee bund along the eastern boundary which prevent flood water entering the site. Also, it would be possible for road upgrade works to be undertaken along Legoe Road, or the internal driveway along western boundary to improve the accessibility to the site in a major flood event. This means proposed development would result in a higher standard of access/egress by mitigation works such as raising the road crest elevation and the construction of new culverts. Within the site, the impact of the development on the movement of floodwaters would be minimal and the major changes in landform would be outside of the expected flood envelope. There already exists a flood levee along the eastern boundary which diverts floodwaters towards the south."

Regarding the review of the recent online GIS available data and based on our knowledge of the neighborhood, it should be noted that, expanding earthworks upstream of the subject site along Legoe Rd is tangible and it may impact the flooding issue near the subject site in future and more up-to-date flood studies might be required during detail design.

Council Stormwater Requirements

FMG have contacted Council for stormwater requirements for the subject site and clarification of the drainage system but have not received a response to date of this report. The following requirements are based on FMG's assumptions from our experience with similar sites. This report will be updated once more specific and relevant requirements are received.

- Underground stormwater drainage network to be sized for the minor storm of 10 yr ARI
- Storms up to and including the 1% AEP storm event (100-yr ARI) shall be contained within the road reserve or dedicated drainage reserve
- Stormwater run-off must not impact adjacent properties and be contained within the property boundary.
- Post development flows must not exceed that of the pre-development flows.
- Stormwater quality will need to comply with EPA water quality policy as below

Suspended solids	80% retention of average annual load
Total phosphorus	45% retention of average annual load
Total nitrogen	45% retention of average annual load
Litter	Retention of litter greater than 50mm, for up to 3 month ARI peak flow
Coarse sediment	Retention of sediment coarser than 0.125mm for up to 3 month ARI peak flow
Oils & grease	No visible oils for up to 3 month ARI peak flow.

Table 2: Requirements for EPA water quality policy (2003)

Detention/Retention storage requirements

To comply with Council's minimum detention requirements, stormwater infrastructure within the subject site (11 ha) would need to be provided such that the peak post-development runoff is restricted back to match the pre-development for storm events up to and including the 1% AEP (100-year ARI) storm event. Given the developer's water demand for irrigation and re-use purposes, FMG considers a retention basin with an emergency overflow in stormwater calculations. This retention basin can be accommodated within the open space area (current wetland location).

An indicative sizing exercise has been undertaken using DRAINS software to provide an estimate of the magnitude of storage which may be required to comply, however this is on the basis of the following assumptions;

- Existing site is 100% pervious.
- Based on the proposed concept layout (Appendix C), developed site is assumed to be 85% pervious and 15% impervious, for the entire 11 ha site (conservatively)
- A mandatory 1,000 L of stormwater retention per dwelling would apply. Note: these tanks would not provide any contribution to the retention storage requirement for the site.
- Does not consider the external flow from the south or any upstream catchment
- Depression storage of 1mm for impervious and 5mm for pervious areas
- Soil type: Type 3 (or C); slow infiltration rates (may have layers that impede downward movement of water)
- No Infiltration rate for the perimeter/bed of the basin/wetland has been considered (more conservative)

The results of the preliminary analysis are shown below for the major storm 1% AEP (100 yr ARI) in Figure 6. The model contains the Pre-development model and the Post Development model with a basin (using the ILSAX model). The results have also been summarised in Table 2 below and show that approximately 4,400 m³ of retention storage will be required in the critical 9-hour storm event.

Currently the proportion of sealed or heavily compacted surface areas is negligible. Road runoff is proposed to be directed to the adjacent pervious areas and runoff from roof areas is connected to rainwater tanks with overflows allowed to discharge to the ground and would be managed through a combination of subsurface and surface drainage elements to direct stormwater to the main depression area which is expected to be subject to extensive revegetation. The large extent of flat area through the depression could permit runoff to be discharged and allowed to infiltration without causing any nuisance issues. However, the retention basin can be lined due to the water demand for irrigation purposes.

Low-density housing in the south-eastern corner where the existing constructed wetland is located may result in the filling of some area of the wetland, but sufficient extents could be maintained to provide adequate water quality treatment and storage for water to be reused on-site to supplement irrigation supply. The design finished floor level of the buildings should be at least 300mm above the adjacent flood level to protect the dwellings against flooding.

The results show a minimum retention volume of 4,300m³ is required in the wetland to capture and retain all the runoff within the proposed development. It should be noted that 3x1ha allotments has been considered

to include impervious area in modelling and the rest of the site (8ha) has been considered pervious (undeveloped). The modelling and design would be updated in the presence of building/road layout.

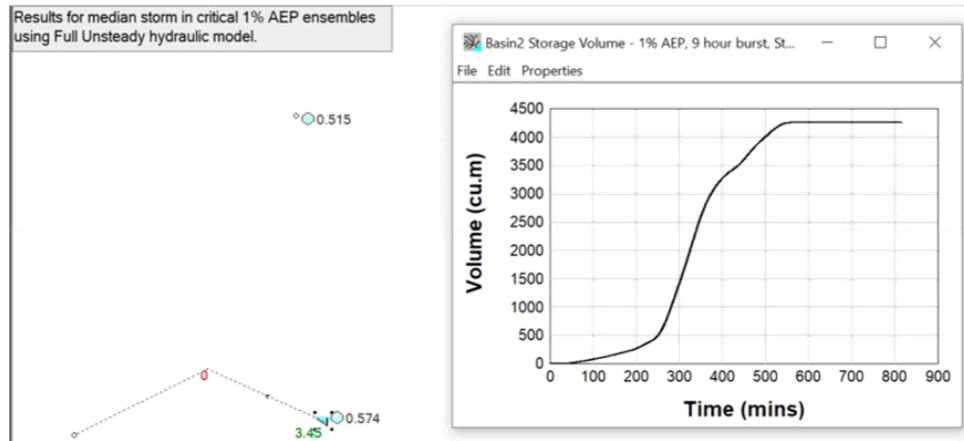


Figure 6 – Major storm 1% AEP DRAINS results

Table 2 Summary of DRAINS analysis

Storm event	Pre-development	Post Development	Approximate Detention volume required
Minor storm 10% AEP (10-Yr ARI)	0.109 m ³ /s	0.185 m ³ /s	850m ³
Major storm 1% AEP (100 yr ARI)	0.515 m ³ /s	0.57 m ³ /s	4,300m ³

The above quantity of detention/retention is expected to be readily accommodated within the proposed reserve areas on the site. As for the irrigation demand for the site, it should be mentioned that a water balance study is required to calculate the extra storage required within the wetland to accommodate required volume for the purpose of irrigation which can be undertaken during detailed design process.

Conclusion for Stormwater Management Strategy

We adopt the guidelines of the City of Playford Land Division Guidelines, Appendix A – Stormwater Requirements. Our interpretation of these guidelines suggests either of the following requirements from Section 2a) would apply;

- For Residential Rural Developments stormwater shall be attenuated on site via tanks when there is no established infrastructure to drain to. This water may be used for non-potable purposes and excess discharged to soak-aways. Discharge to roadside swales is not accepted unless agreed with Council.
- For Commercial Rural Developments stormwater is to be managed on site via tanks and basins where there is no established infrastructure to drain to. Discharge to roadside swales is not accepted.

Further information regarding major storm flows to be safely diverted towards the adjacent public realm (i.e. the Legoe Road reserve). Given our strategy for rainwater harvesting, our proposal complies with dot point two.

The section of the subject site where development is proposed to occur appears to already be elevated above the floodplain. We confirm that FFL's shall be set in the order of 150-300mm above natural levels, subject to any detailed stormwater drainage

Water Quality requirements

Council have not provided site specific water quality targets, but we expect that they would be inline with the EPA water quality policy. These targets are expected to be achieved using the wetland/vegetation within open space area. However, further investigation of options would be more appropriate once the site layout is further refined.

In summary stormwater quality improvement would be achieved through the inclusion of the following water sensitive urban design (WSUD) elements:

- Rainwater tanks connected to residential property roofs;
- Passive street tree watering;
- Biofiltration systems;
- Detention basins;
- Tree pits (infiltration structures to maximise losses to surrounding soils) along the road network

Potential Stormwater Capture and Reuse for Residential Dwellings

Based on the information provided from the developer, the proposed allotments include construction of 5x dwellings for supported accommodation on each allotment, accommodating a maximum of 15 people per allotment. Therefore, number of residents is assumed to be 3ppl/dwelling. Also, potential roof area contribute to the rainwater tank for each dwelling is assumed to be approximately 250m². It is also assumed that a 10kL Rainwater tank is installed on each dwelling.

Refer Section 4.5 of Water Technology report (Appendix B) for the internal, external, and irrigation demand for dwellings and also water balance modelling. Based on Figure 4.4 of the above-mentioned report, 10kL rainwater tank can supply approximately 40% of the total demands which means rainwater capture and reuse would fall short of the expected demand and alternative water supply source might be required. However, a more detailed water balance would be required to investigate the viability of this option. Furthermore, there will be the requirement for onsite disposal of wastewater due to the absence of access to an existing sewer.

At the land division concept stage, development of concept design strategies can be supported through more detailed modelling and accordingly a more detailed whole of site water balance adopting more clearly defined water demands such as for open spaces and estimated volumes of water available from other sources i.e. wastewater would be helpful. It would also be a guide to estimate the volumes of mains water that would need to be required to supply the proposed development.

Ground Water

Refer Section 5 of the Water Technology report (Appendix B) for tests, analysis, and results. The results demonstrate that ground water can be an alternative supply of water for this development subject to aquifer bore testing including pumping tests and water quality tests. It is worthwhile mentioning that while the existing wetland may be interfering with shallow ground water, modifications to the wetland (to provide retention basin for irrigation purposes as discussed in stormwater section above) or the potential disposal of wastewater from the proposed development may have impact on receptors.

Section 6 of the above-mentioned report provides information resulted from Borelogs. Based on the results, there are 2 borelogs within the extent of the subject site in which depth to groundwater has reported to be 2.4mAHD and 2.5mAHD respectively. Hence, possible modification to the wetland (earthwork, lining, etc.) or the potential disposal of the wastewater from the proposed development may have significant impact on receptors.

Potable water service

A review of the Dial Before You Dig investigation and SA Water's online database Aquamaps® indicates that the subject site is not serviced by potable water mains. to the nearest potable water supply is the Riverlea development adjacent Port Wakefield Road.

FMG have contacted SA Water for advice on any capacity constraints in the existing system and to confirm the feasibility of servicing the proposed development. SA Water have submitted a request to their systems planning department, but no feedback has been received at the time of this report. FMG are aware that the previous service assessment report from Water Technology for Windamere Park includes some feedback from SA Water plus some recommendations (Appendix B). This report will be updated once we receive appropriate information/advice from SA Water.

To summarise the findings from the Water Technology Report, SA Water initially (feedback dated 2019) mentioned that a 250mm main supply has been extended along Angle Vale Road to Port Wakefield Road for the future Buckland Park Development funded by Walker Corporation. FMG reviewed the SA Water network in 2019 (report published date) and realised that at that time there were no connections off this 250mm water main. Referring SA Water feedback, it was designed to supply water to the equivalent to approximately 1000 residential dwellings. FMG have reviewed the developments using this pipe to service their allotments (example: Riverlea Park) since the date of SA Water feedback. Since then, a considerable number of allotments have been serviced by the DN250mm. Although SA Water agreed that this service is available for use for Windamere Park development, an updated confirmation and assessment from SA Water will be required prior to any further actions. In addition, FMG estimates that there would be significant augmentation and an extension from the existing SA Water asset to the subject site of approximately 3.5km would be required.

8 MAINS WATER SUPPLY

SA Water have been consulted about the availability and viability of potable water supply for the proposed development at Windamere Park.

SA Water were informed of the following requirements for Windamere Park.

- The development proposes to reuse water on site where possible, and portable mains may be used to supplement alternative sources, or be supplemented by alternative sources;
- The development would include mixed use areas and accommodation on approx. 20ha, and a low-density residential development;
- Peak supply would be around 150kL per day for the development, based on an initial assumption of around 180 titled allotments; and
- The existing Boliver reclaimed water supply to the property is currently used for irrigation of olive groves, and while the area of olives would be reduced by the development, would be retained for irrigation and other re-use.

Correspondence with Debbie Snoswell, Accounts Manager at SA Water, provided the following information.

- There is an existing 250mm capped main in Legoe Road at the junction of Legoe Rd and Port Wakefield Road.
- A 250mm main supply has been extended along Angle Vale Road to Port Wakefield Road for the future Buckland Park Development funded by Walker Corporation.
- Currently there are no connections off this 250mm water main, and it was designed to supply water to the equivalent to approximately 1000 residential dwellings.
- The supply is available for use for the Windamere Park development, and where capacity in future may be required, SA Water would be able to extend its network to augment supply.
- Any extension of this water main would need to be in a currently gazetted roadway, and it is understood that Walker Corporation may be altering the road configuration as part of their proposed Riverlea Development (Buckland Park).

The extension along Legoe Rd to Windamere Park would be approximately 4km, however this may be subject to design in collaboration with the Walker Corporation (Riverlea Development) to determine its alignment, and cost of construction.

At this stage SA Water have indicated that a supply could be achieved, subject to their further network analysis.

Figure 7- SA Water Feedback dated 2019 (Water Technology Service Assessment Report)

Conclusion of Potable Water Management Strategy

As discussed, securing a potable water supply from SA Water appears to be a long term scenario given the costs to extend infrastructure to service the site immediately are likely not feasible. We are awaiting formal confirmation from SA Water on the timeframes a future extension may be installed in Legoe Road based on SA Water's program (or facilitated by others such as the neighbouring Riverlea site).

The short term solution is to harvest rainwater on site from the roof areas, into rainwater tanks, and provide top up supplementary supply from water tankers on occasion as required. FMG has undertaken a desktop study to check relevant guidelines and information. The relevant guidance document in this field is the "Guidance on the use of rainwater tanks" which is issued by EnHealth (Australian Government Department of Health and Aged Care, Environmental Health Standing Committee). This paper includes a wide range of useful guidance, and in summary we have deduced the following design parameters as a feasible starting point, subject to finer analysis by a services engineer during detailed design;

- Harvesting from roof water is a viable standalone water source, provided the roof area meets the annual demands of the users
- The current roof areas are close to providing reliable supply, however the demand for these dwellings is not clearly understood, and some supplementary tankering may be required in drier years.
- Efficient water use fittings would be advised
- Supplementary systems for external irrigation (i.e. Council's recycled water) should be considered to reduce demand
- Individual tanks should be used for each dwelling (i.e. 4x tanks for each of the villa modules of 4xdwellings) to limit the consequences for contaminants within the tanks

It seems a 10kL tank is an appropriate concept sizing for a rainwater tank based on the available roof size and demands, subject to detailed analysis during detailed design.

Wastewater Management

Currently there is no access to SA Water sewerage system and wastewater would need to be managed on site. A review of the previous Service assessment Report (Water Technology 2019 in Appendix B) has been undertaken by FMG and accordingly FMG confirms that the majority of the assumptions can be used for the proposed allotments as well. FMG have done a separate analysis based on Section 9 of SA Health On-Site Wastewater System Code:

(https://www.sahealth.sa.gov.au/wps/wcm/connect/ba6ead0048f0d8ab828287f25a3eb7d6/2013SAHealth_On-site_Wastewater_Systems_Code_April.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-ba6ead0048f0d8ab828287f25a3eb7d6-oDt0a.e).

Regarding the 'Hydraulic Loading' table in Appendix E of "On-Site Wastewater Systems Code" by SA Health (attached), for accommodation and resident staff in nursing homes, number of persons required in daily flow rate calculations are total number of beds plus resident staff.

Following assumptions have been utilised in calculations and confirmed by FMG:

- Hydraulic load: 150 L/person/day
- Permeability of 0.5m/day (refer soil test results- Appendices of Water Technology Report)
- Design irrigation rate for subsurface wastewater effluent disposal based on Water Technology report is 8mm/day (AS1547:2012, Table L1), However, Borelogs indicate that the depth to impermeable clays is variable. Each site will need to be assessed individually to determine its suitability of subsurface disposal.
- Design irrigation rate for surface wastewater effluent disposal: 3.5mm/day (AS1547:2012, Table M)
- EPR: 10L/ m²/d
- On each allotment there will be:
 - 3x building with 4 rooms for clients + 2 carer's rooms (Villa module A)
 - 1x building with 3 rooms for clients + 2 carer's rooms (Villa module B)

Premises	Fixtures	Sludge/scum rate		Daily flow rate		BOD ₅ loading
		Number of persons (P1)	Rate: L/p/y (S)	Number of persons (P2)	Rate: L/p/d (DF)	Rate: g/p/d
CONSTRUCTION CAMPS - TEMPORARY						
	W.C./urinal, basin, shower, laundry, kitchen sink, dishwasher	total number of persons using facilities	80 x number of years to be used	total number of persons using facilities	150	50
FLATS / UNITS						
	W.C., basin, bath/shower, laundry, kitchen sink, dishwasher	2 per bedroom or as determined by relevant authority	80	2 per bedroom or as determined by relevant authority	150	50
HOLIDAY CAMPS						
e.g. scout, youth and church centres with casual occupation	W.C./urinal, basin, shower, kitchen sink, dishwasher	total number of beds (single equivalents)	48	highest daily number using facilities	100	50
Note: Staff and/or residential caretaker data to be included where applicable						
HOSPITALS & NURSING HOMES						
Accommodation and resident staff	W.C./urinal, basin, bath/shower, laundry, kitchen sink, dishwasher	total number of beds plus resident staff	80	total number of beds plus resident staff	150	200
Non-resident staff	W.C./urinal, basin, kitchen sink (tea service area only)	number of staff per shift x number of shifts	25	number of staff per shift x number of shifts	30	20
	shower			number of staff per shift x number of shifts	10	5

Summary of results:

- Total number of beds + resident staff would be $3 \times 4 + 1 \times 3 + 4 \times 2 = 23$ persons
- Area required for subsurface wastewater: $23 \times 150 / 10 \sim 400\text{m}^2$ subject to borelog testing and impermeability equivalent to EPR of $10\text{L/m}^2/\text{d}$ (subject to additional soil sampling to determine impermeable horizon depth)
- If a surface irrigation is applied, required area for each allotment is: $23 \times 150 / 3.5 \sim 1000\text{m}^2$
- Minimum allotment size to allow for onsite wastewater systems: 850m^2

In conclusion it is presumed that the 4 dwellings per lot (1 Ha) would provide ample area for wastewater management in either option (surface or subsurface irrigation).

Potential Risks:

- **Minimum offset of a wastewater disposal area from a water course, bore, and well is 50 metres.** The allotments will need to be configured or located in a way to allow for this requirement as shown in table B3 of SA Health Code (Figure 8).
- Figure 8, demonstrates that there are two local wells located near the eastern and southern boundaries of the subject site and accordingly further consideration and risk assessment required for determining the disposal method and area.
- Referring section 5.4 of the Water Technology report: "Current land use is farming land and olive groves which are irrigated with treated effluent rather than relying on shallow groundwater (M. Allester-Briggs, pers. comm. 26/7/19). FMG believe this effluent need to be assessed (whether it is agricultural or not) as this may affect the proposed development significantly; especially in terms of wastewater management and feasibility of developing the site/buildings, etc.

Table B3: Setbacks for all land application systems from inland or coastal waters

Physical characteristics/ site aspects	Minimum setback	Additional information
Well, bore or dam used or likely to be used for human or domestic purposes	50 metres	
Watercourse used or likely to be used for human or domestic purposes	50 metres	Watercourse (see glossary for definition) identified on a current series 1:50,000 topographic map published by the Department of Environment, Water and Natural Resources A watercourse is delineated as a blue line on a 1:50,000 topographic map. However, there are situations where a watercourse exists but is poorly delineated on the 1:50,000 topographic map or is obscured by other detail. Therefore it is important to ensure that the 50 metre setback is maintained
Water source used for agricultural, aquacultural or stock purposes	50 metres	
Pool level for the River Murray and its lakes	100 metres and above the 1956 flood level	Disposal of effluent is not permitted within the 1956 River Murray and lakes flood zone
Mean high water spring along coastal foreshore areas	100 metres	The setback distance of the land application system should be at least 100 metres from mean high water spring along coastal foreshore areas

Figure 8 - Setback for all land application systems

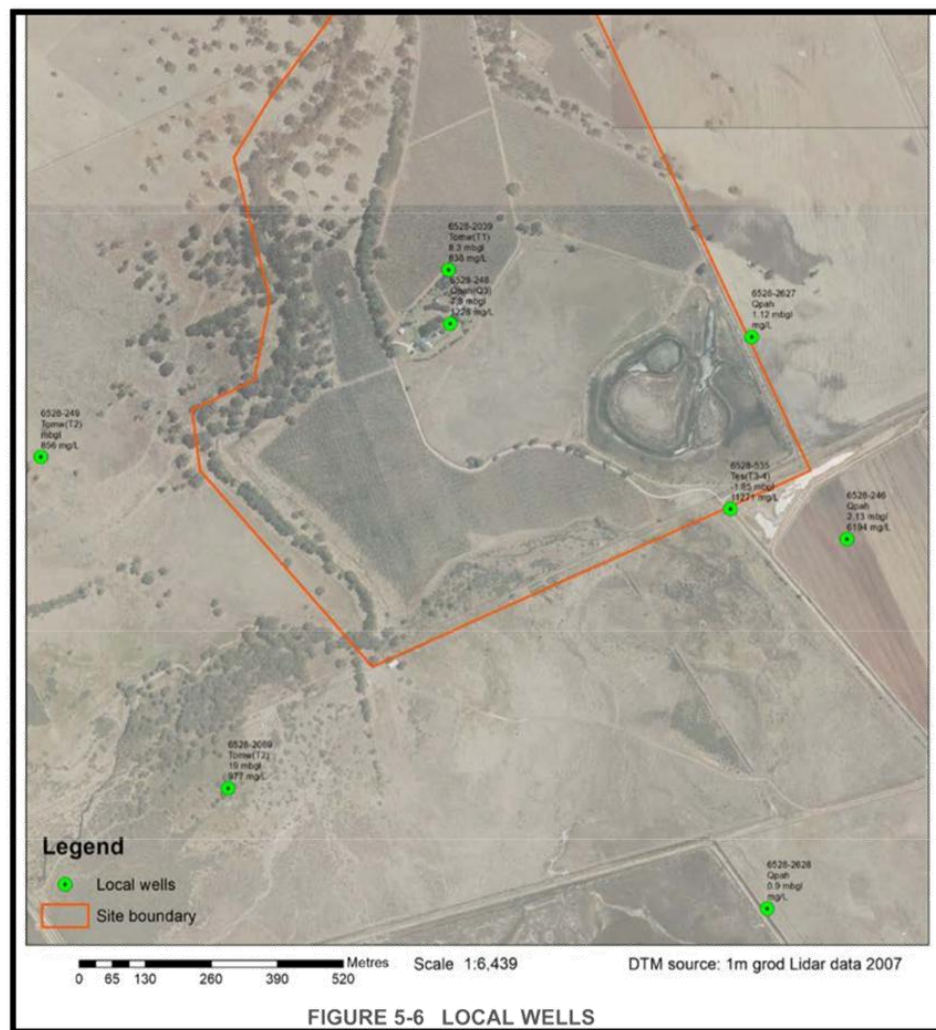


Figure 9 - Local Wells (reference: Water Technology Report)

Electrical

There is currently a single dwelling in the centre of Windamere Park that is serviced off a HV overhead line from the north (see Figure 10 below). FMG assumes that there is a small pole mount transformer at the end of this line which then provides LV power to the existing dwelling. There is currently no electrical demand on the subject site (proposed development) and the site is therefore not provided with an electrical connection.

FMG have contacted SAPN regional manager for further information on the existing network capacity and preferred connection point. The subject site could potentially be serviced by extension from the HV overhead that supplies the existing dwelling (though this would require SAPN infrastructure through private land), or alternatively the HV overhead in Carmelo Road. The latter option is likely to be more expensive but provides greater flexibility for the development of the remainder of the site (avoids additional infrastructure that could become redundant or require relocation as development proceeds).



Figure 10- Existing SAPN infrastructure (LocationSA Mapviewer) high voltage (HV) electrical infrastructure

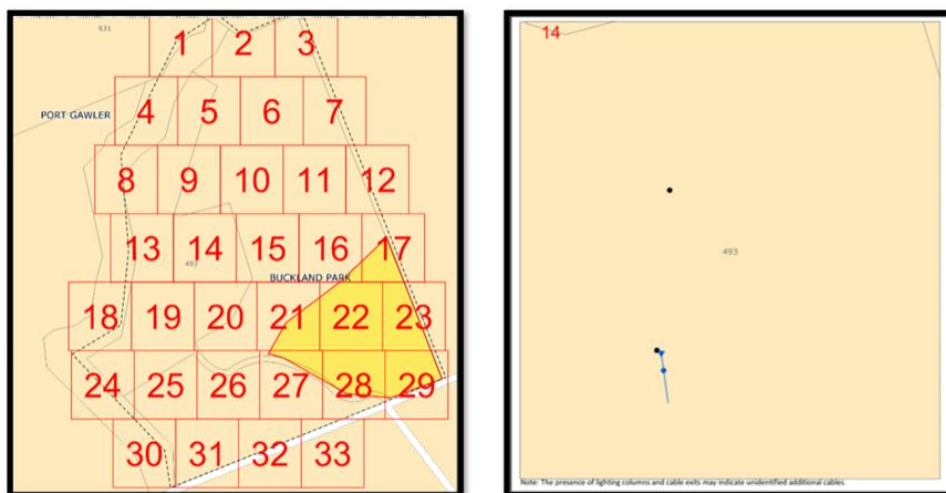


Figure 11- DBYD record of supply to the existing dwelling

SAPN have provided a sketch showing the existing infrastructure and potential connection points as shown in Figure 12. Following are the comments from SAPN officer on FMG’s query:

- Connection point from north would be the better option as its closer to subject site, but its single phase only. The augmentation and extension work further depends on the demand load and phase.

- If a single phase is desired, SAPN will have to extend their network from North by adding approximately 7-8 poles.
- If a 3-phase connection is desired, SAPN will have to upgrade the existing network to 3 phase and then extend to the subject site.
- Aside from lot sizes, several other factors will influence your demand load; Typically, for a standard single-story residential lot, SAPN assign a 6kVA (26Amp) single-phase connection. Given the dimensions of the proposed lots and the potential presence of NDIS-approved residents, there could be a requirement for installing medical equipment.
- Whether these appliances demand a 3-phase or single-phase connection, they also entail significant power consumption. SAPN advise consulting an electrical contractor to precisely assess the demand.
- SAPN network will be able to accommodate the proposed development’s load requirements, but currently, even for a single-phase 200Amp connection, a cost between \$300,000 to \$400,000 is estimated (ballpark figure) due to the considerable distance between SAPN network and subject site.

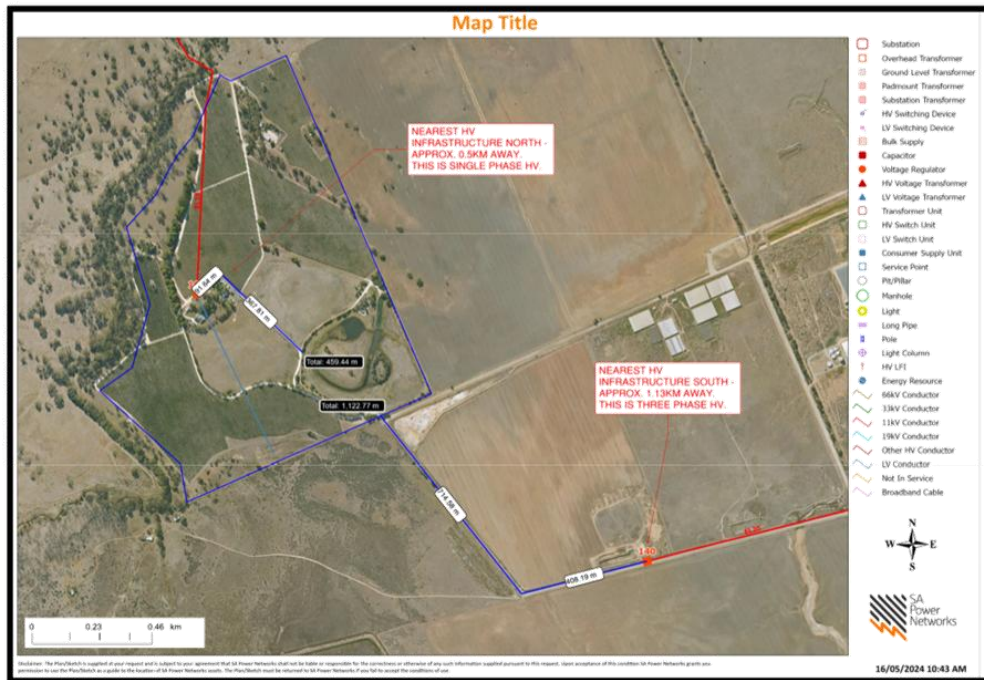


Figure 12 - SAPN existing network

Communications

A DBYD search return from Telstra indicates that there is a communications service adjacent the site for the existing dwelling (Refer Figure 13). This is likely to be a minor service with limited capacity, and high-speed internet is likely to require augmentation of the network (extent TBA).

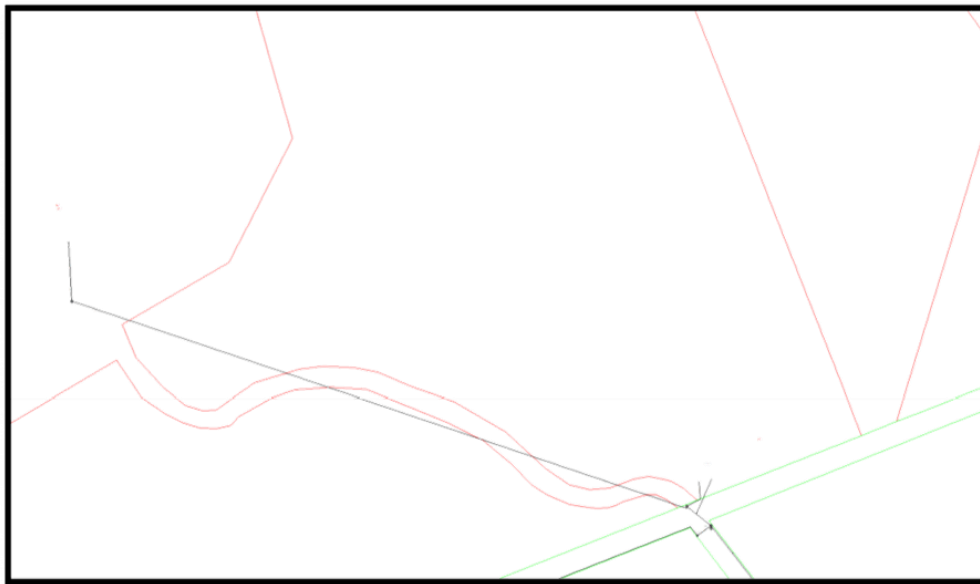
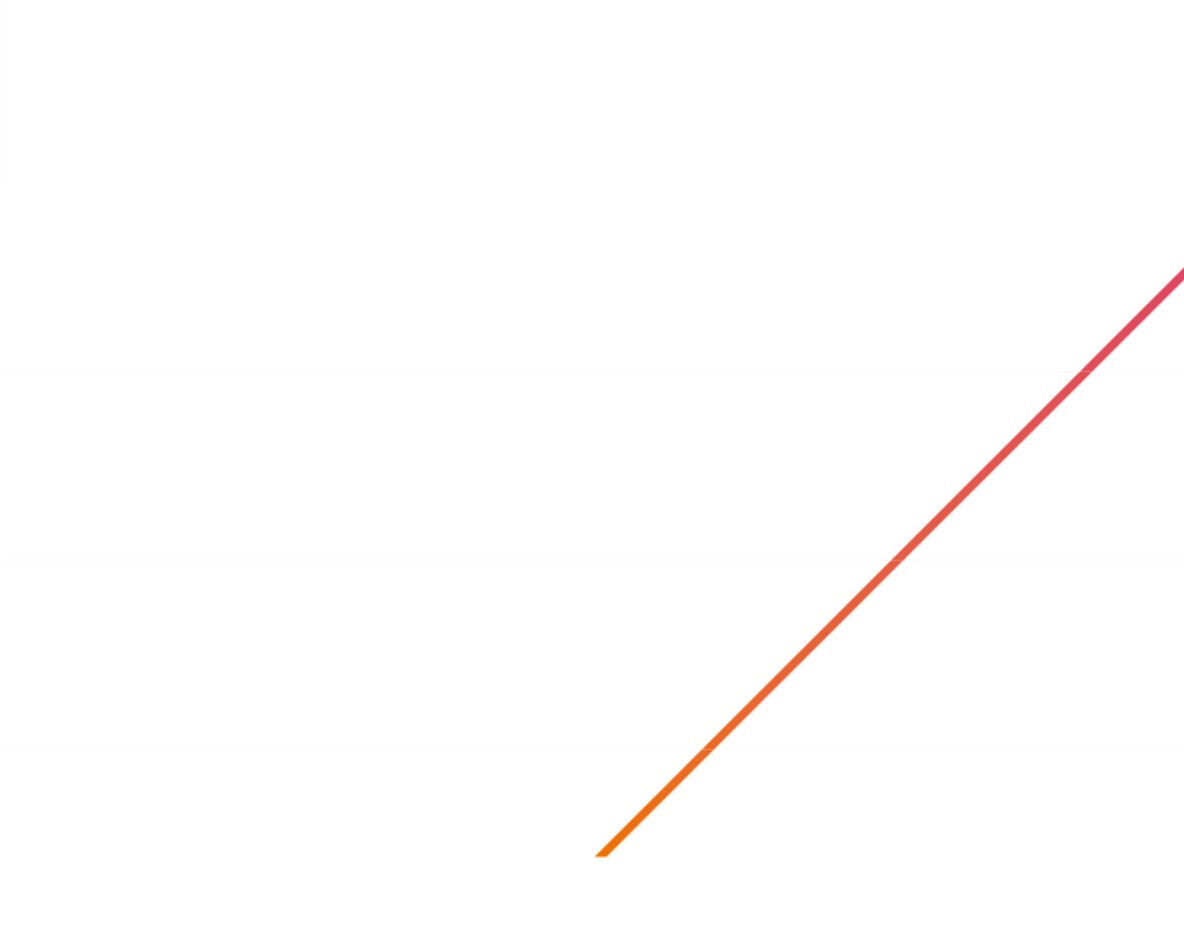


Figure 13- Telstra (shown in black line)



Appendix A

Windamere Park DPA Investigation (Dec 2019)





Report

Windamere Park DPA Investigation

Windamere Park

13 December 2019





Document Status

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Client	Windamere Park
Client Project Manager	Geoff Butler
Water Technology Project Manager	Dave Pennington
Water Technology Project Director	Geoff Fisher
Authors	Ben Taylor, Craig Flavel, Dave Pennington
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1/198 Greenhill Road
 Eastwood SA 5063
 Telephone (08) 8378 8000
 Fax (08) 8357 8988
 ACN 093 377 283
 ABN 60 093 377 283





EXECUTIVE SUMMARY

The Minister for Planning has now initiated investigations under the Development Act 1993 for the drafting of the Ministerial Windamere Park and Surrounding Areas Development Plan Amendment (DPA).

The proposed development for Windamere Park includes the Windamere Park Hub, and housing for disability services, and the development of approximately 20ha of low-density housing.

The Department of Planning, Transport and Infrastructure (DPTI) who is managing the DPA process has advised of several investigations required to inform the Windamere Park development, as follows:

- **Flood risks** – determine whether the site would be impacted by Gawler River flooding and development on neighbouring properties;
- **Groundwater** – understand if the supply is suitable for potable use and what risks to groundwater the development might pose;
- **Wastewater** – determine if domestic wastewater can be effectively managed on site and what are the implications on allotment sizing;
- **Stormwater** – demonstrate that internal drainage can be effectively managed regarding volume and quality; and
- **Water Infrastructure** – whether the site can feasibly access SA Water infrastructure, and what alternative water supply opportunities might be available?

Water Technology has been engaged by Windamere Park, to address each of the five key areas, and has through review of available data, identified and modelled the impacts and opportunities from the proposed development; the methods and results outlined in the following report, and summarised as follows.

Flooding Risk

- Flood model results for the 1% AEP event show that floodwaters may enter the site along the northern and eastern boundary, consistent with observations in the 2016 flood event, however since then a small levee along the northern boundary has been constructed that would prevent flood water ingress;
- Within the site, the impact of the development on the movement of floodwaters would be minimal and the major changes in landform would be outside of the expected flood envelope;
- Access restrictions to Windamere Park would occur along Legoe Road which may require raising the road crest elevation and the construction of new culverts to mitigate against increased ponding on upstream properties; and
- The future development of Buckland Park (by the Riverlea Development) will include the construction of drainage channels to manage overbank flows from Gawler River, and manage floodwaters approaching Windamere Park, and its access.

Stormwater Management

- The land is relatively flat with little fall across the areas proposed for urban development. Stormwater drainage would be predominately along road networks and a pit and pipe drainage system, with detention basins within the property to reduce peak flow rates prior to being discharged to Gawler River; and
- Stormwater quality improvement would be achieved through the inclusion of water sensitive urban design (WSUD) elements.



Groundwater

- The water quality results of sampling from the existing bore on the property indicate that the bore water is within Australian Drinking Water Guidelines (ADWG) and suitable for potable use;
- Flow testing of the existing bore on the property indicated that up to 15 L/s may be achievable from the T1 aquifer the bore draws from, and further investigation is recommended to determine the potential yield for water supply for the development; and
- Potential groundwater affecting activities relating to the development are manageable subject to further investigation during the design phase.

Wastewater

- A Land Capability Assessment (LCA) was undertaken to determine the impacts that the increased activity from development may have on the receiving environment;
- Soil sampling and testing across the property identified that managing domestic wastewater within the site could be achieved under current Public Health regulations and EPA guidelines;
- Water and nutrient balance modelling determined that for onsite domestic wastewater management an appropriate allotment yield would be between 900m² and 1500m².

Mains water

- There is an existing 250mm supply in Legoe Road at the junction of Legoe Rd and Port Wakefield Road, that was laid for the Riverlea Development; and
- The supply is available for use for the Windamere Park development, and where capacity in future may be required, SA Water would be able to extend its network to augment the supply as necessary.

Summary

Flooding, stormwater, groundwater, and potential wastewater issues have been investigated and, subject to appropriate design solutions, those issues can be appropriately addressed at the land division design stage.



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1 INTRODUCTION

1.1 Purpose of Report

The Minister for Planning has now initiated investigations under the Development Act 1993 for the drafting of the Ministerial Windamere Park and Surrounding Areas Development Plan Amendment (DPA), which covers the Windamere Park land and adjoining lands held by the State Government and Councils.

The Windamere Park component of the DPA has a focus of:

- Development of portion of the land for disability services including accommodation at the Windamere Park Farm Hub, and future development of the Hub for additional accommodation.
- Provision of Low-density housing of around 180 allotments of the remaining land to the west and southwest of the Hub.

The Department of Planning, Transport and Infrastructure (DPTI) is managing the overall DPA process and has advised of several investigations required for the Windamere Park component of the DPA.

This report provides details of the investigation to inform the DPA proposal. The following five key areas of investigation have been identified by DPTI to inform the DPA. They are:

- Flood risks – how is the site impacted by Gawler River flooding and works occurring on neighbouring properties?
- Groundwater – is this suitable for water supply and will it be impacted by site activities?
- Wastewater – Can this be effectively managed on site and what are the implications on allotment sizing?
- Stormwater – how can internal drainage be effectively managed regarding volume and quality?
- Water Infrastructure – Can the site feasibly access SA Water infrastructure and if not, what are the alternative water supply opportunities?

Water Technology has sought to address each of the five key areas through review of available data, identifying and modelling the impacts and opportunities from the proposed development, the methods and results of the investigation provided in following sections.

1.2 Location

The property covers 84.50 hectares of land to the north of Legoe Road at Buckland Park, within the Playford Council area. The property is located within the Primary Production Zone – Horticulture West Policy Area 4.

1.3 Proposed Development

1.3.1 Windamere Park

The proposed development would create an area approximately 20 hectares to accommodate existing and future Windamere Park facilities and activities.

New facilities could include associated support services (i.e. hydrotherapy pool/services and other medical support services/health professionals), vocational training facilities for clients and "train the trainer" services for people wanting to find employment in the disability sector.



A key focus will be on the establishment of an initial 30 dwelling units suitable for long-term accommodation for clients and their parents/carers. This is expected to occur in proximity to the Windamere Park "Hub", which will also house support services such as hydrotherapy pool/services and other medical support services/health professionals, and vocational training facilities for clients.

It is currently proposed that these dwelling units be provided in groups of 5 or 6, but this will, in part, be dependent on infrastructure provision/viability. Dependent on the demand and successful operation of this form of accommodation, its further expansion of an additional 30 dwelling units may be sought at a later date.

1.3.2 Non Windamere Park Land

Low-density housing is being considered for the remainder of the property. What form this takes will be influenced by development constraints (i.e. flooding both on-site and off, stormwater requirements, road upgrades required, wastewater management, etc). If this form of development is feasible, it is likely that initial development would occur in the south-western portion of the property, with further expansion on a staged basis over time.

A concept layout of the proposed development is provided in Figure 1-1 Windamere Park Development

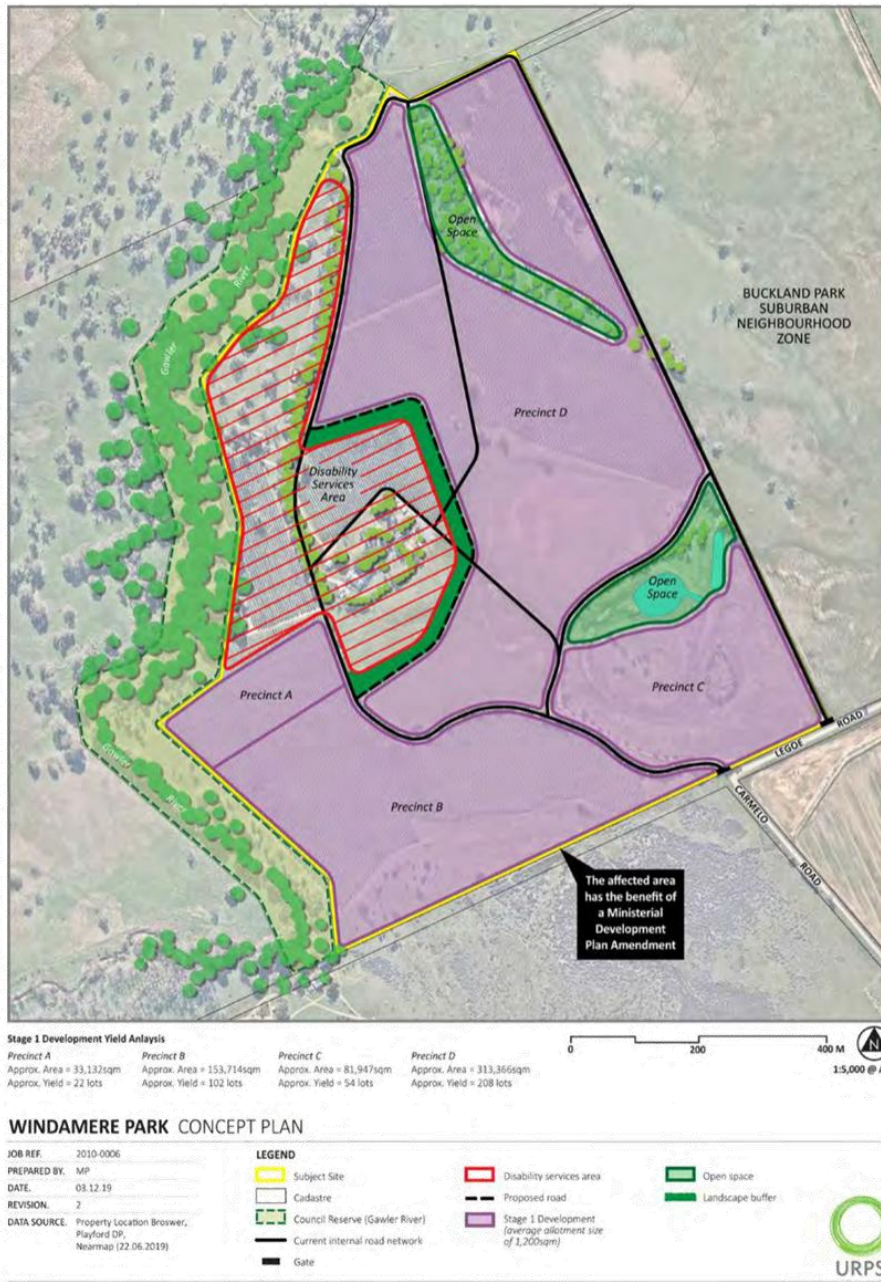


FIGURE 1-1 WINDAMERE PARK DEVELOPMENT



2 BACKGROUND

2.1 History

In 1991 Windamere Park was established on the property, providing a training and educational environment for people with an intellectual disability. Windamere Park is an accredited provider with Disability SA, now catering for over 400 client placements weekly and is on the preferred provider panel for the National Disability Insurance Scheme.

In addition, in 2001 the landowners established Kangaroo Paw Oil & Sundry on the property, with its 50,000 olive trees producing a range of extra virgin olive oil products and associated sundry products.

The property is located within the Primary Production Zone – Horticulture West Policy Area 4. Despite Windamere Park being located on the property for 28 years, the Policy Area does not currently support the services and facilities required for this segment of the disability sector.

2.2 Topography

The land is generally flat with elevations of between 4.5m AHD to 5.5m AHD. There is lower lying land along the southern boundary around 4.0m AHD, and two rises to 7.5m AHD centrally in the existing built area, and in the north along the eastern boundary. The shallow wetland in the south eastern corner of the property sits at around 3.5m AHD. Olive groves occupy the southwest quadrant, and areas north of the existing residence and buildings. The Gawler River channel runs along the western boundary of the property, flanked by large river redgums.

2.3 Climate

Historical monthly rainfall and evaporation data were sourced from BOM (Edinburgh RAAF- 023083) and provided in the following Table 2-1.

TABLE 2-1 CLIMATE DATA (1972-2019)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Days	31	28	31	30	31	30	31	31	30	31	30	31	365
Mean rainfall	21.2	17.7	24.6	29.5	45.2	53.1	53.2	50.1	47.4	36.8	24.3	25.5	431
90%ile rainfall	51.7	48.6	57	55.7	73.8	87.7	85.4	81	81.7	76.2	40.1	44.2	546.3
Days of rain >10mm	0.7	0.4	0.7	1	1.2	1.4	1.2	1.3	1.3	1	0.7	0.7	11.6
Evaporation	316	272	226	144	87	54	62	84	117	177	240	298	2080

The data indicates that annual evaporation rate exceeds annual rainfall by around 4 times. Rainfall exceeds evaporation rate in June and July only in a wet year. There are less than 2 days in any month where rainfall exceeds 10mm, which will assist in determining on site storage of wastewater, see section 7.4, Wastewater Balance.



3 FLOODPLAIN RISK ASSESSMENT

3.1 Current Floodplain Mapping

Floodwater may impact on Windamere Park from breakouts from Gawler River (see Figure 3-1). Anecdotal evidence suggests that surface water ponding from local rainfall events is rare and that any notable flows in and around the site only occur during significant flood events leading to breakouts from the Gawler River main channel.

Floodplain mapping of Windamere Park and surrounds is based on a digital elevation model (DEM) from aerial survey in 2007. To enable regional 2D modelling this survey is converted into a grid. The grid resolution around Windamere Park was 15 m x 15 m.

Flood model results for the 1% AEP event show that floodwaters may enter the site along the northern and eastern boundary. The northern flow path is clearly identifiable with a significant extent of ponding from the northern breakout to the eastern boundary. This is consistent with observations in the 2016 flood event.

The modelling also indicates moderate ponding in the southeast corner of the site near the current site access point from Legoe Road. While flood modelling shows ponding at this location, it does not indicate a significant flow path north into Windamere Park at that location. Observations from the 2016 flood event were that moderate volumes of floodwaters entered the site along the driveway and led to ponding in the depression immediately to the north and west of the constructed wetland. Conversely, flood modelling indicated that floodwaters may enter the constructed wetland through the eastern boundary in the 1% AEP event. There is a solid levee along the eastern boundary and inflows through this levee would be unlikely. This was not observed in the 2016 flood event. This difference between observation of flood behaviour and model outputs would be directly related to the model grid resolution being too coarse to pick up minor changes in terrain such as the driveway. Occasionally, for narrow features such as levees, gaps can remain in the model grid and water may flow through locations which would not occur in a real-world event. Observations from the 2016 event would be a more reliable indicator of the likely higher risk flood areas across the site.

A small levee has been constructed along the northern boundary subsequent to the 2016 flood. A central access track has also been constructed from the entrance, across the large depressed area north of the wetland and directly connects to Windamere Park. This has large culverts at the low points that would be substantially oversized relatively to the peak flow rates in that area.

The future development of Buckland Park will include the construction of a series of drainage channels that would manage overbank flows from Gawler River. The expected floodwaters approaching Windamere Park from the north and east would be effectively managed. It would also alleviate the extent of ponding around the entrance to the property at Legoe Road.

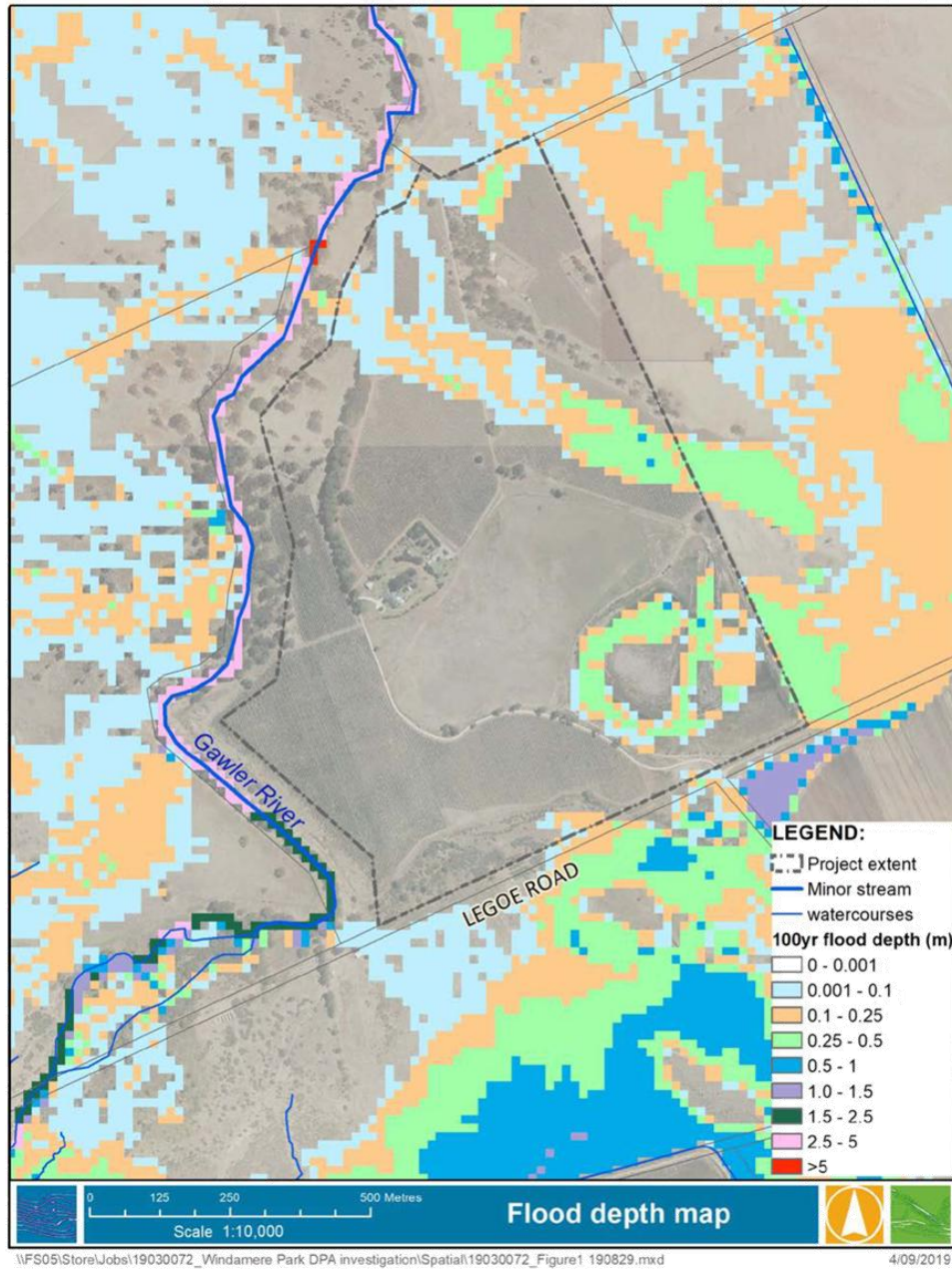
3.2 Flood Implications for Site Development

Under the current flood scenario (without the construction of Buckland Park) there would likely be multiple locations along Legoe Road and Park Road where the flood depth would exceed safe depths for standard vehicles (see Figure 3-2).

The isolation of site for extended periods during a major flood event is inconsistent with the increase in development density and would be a significant constraint that would need to be overcome. The development of Buckland Park would result in a higher standard of access/egress to the site via Legoe Road and facilitate the development of this site. Independently of the development of Buckland Park, it would be possible for road upgrade works to be undertaken along Legoe Road, or an alternative road, to improve the accessibility to the site in a major flood event. This would likely include raising the road crest elevation and the construction of new culverts to mitigate against increased ponding on upstream properties.

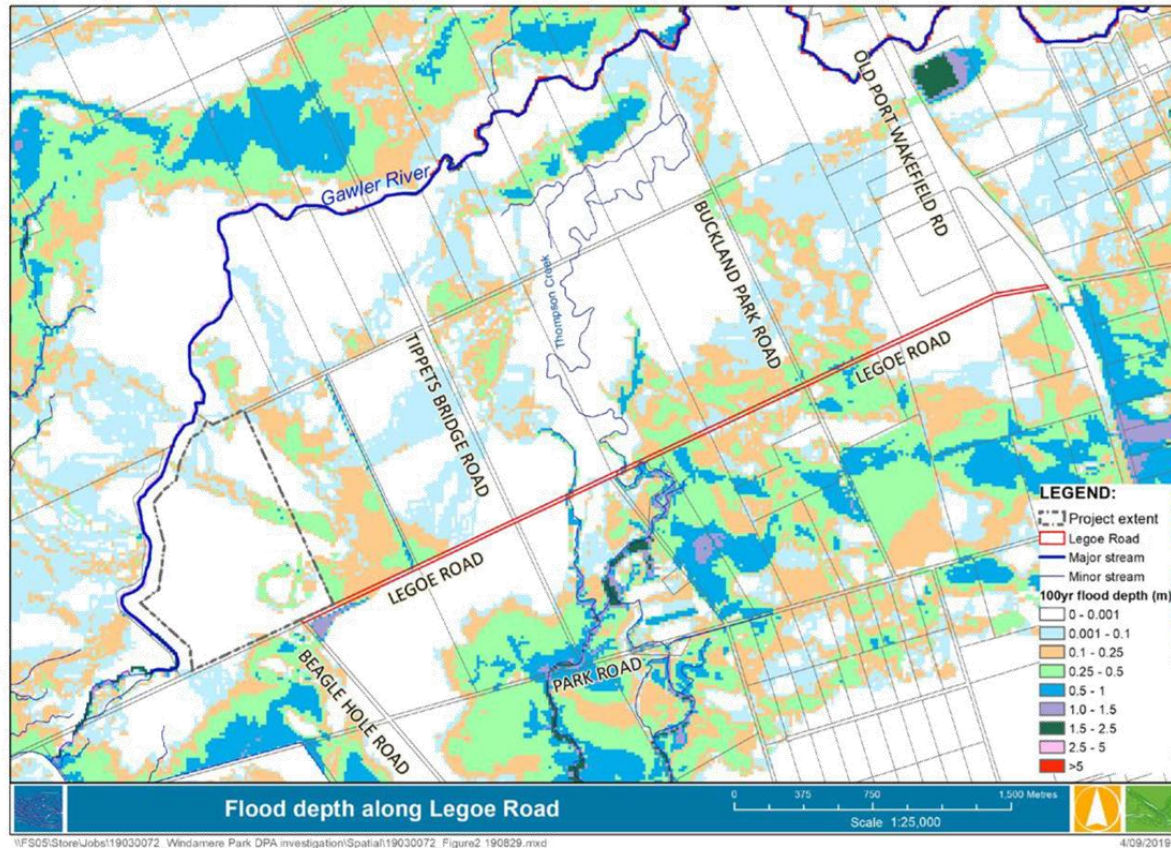


Within the site, the impact of the development on the movement of floodwaters would be minimal and the major changes in landform would be outside of the expected flood envelope. There already exists a flood levee along the eastern boundary which diverts floodwaters towards the south. Floodwaters from the north entered the site in the 2016 flood event but was also linked to the debris build up on the bridge crossing at this location. With the construction of the levee at that breakout point it is likely that floodwaters will not enter the site from that location in a future flood event.



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FIGURE 3-1 1% AEP FLOOD EXTENT AT WINDAMERE PARK



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FIGURE 3-2 FLOOD IMPACT ON KEY ACCESS ROUTES



4 STORMWATER MANAGEMENT

4.1 Existing Internal Drainage Management

A digital elevation model (DEM) from aerial survey in 2007 covers the subject with 0.2m interval contours (see Figure 4-1). The accuracy of this survey information would be sufficient to define the general terrain and natural drainage flow paths. This data is considered to be fit for the purposes of this pre-feasibility assessment.

Levels across the site range typically between 4.5-5.5 mAHD but there is a central high point around 7.0 mAHD and also up to 7.5mAHD at a couple of locations in the northern half of the site. There are a couple of more notable low points. One being in the northern half of the site that's oriented northwest to south east. This low point in the landscape is separated by the levee and access track on the eastern boundary. The largest depression is immediately north of the constructed wetland. At this location the existing ground levels are just below 3.5mAHD. Across the entire site there is approximately only a 4m difference between the highest and lowest ground surface level.

Outside the property boundary, the Gawler River main channel runs adjacent to the western boundary for the full length. However, the channel is perched (channel top of banks sits higher than the surrounding landscape) so surface flows do not naturally re-enter the main channel.

It is expected that very little runoff would occur from the unsealed surfaces within the property except during very high intensity rainfall events. The frequency of such events would likely be less than once in a 10-year period and the extent of surface ponding would be limited to some of the local low points in the landscape. Currently the proportion of sealed or heavily compacted surface areas is negligible. Road runoff is directed to the adjacent pervious areas and runoff from roof areas is connected to rainwater tanks with overflows allowed to discharge to the ground.

4.2 Impacts of Proposed Windamere Park Development

It is proposed to consolidate the Windamere Park facilities around the main existing structures on the site. This would also extend to the north and south to accommodate new housing for Windamere Park residents. The location of the Hub for Windamere Park is generally located on relatively high ground with levels typically being above 6mAHD. The exception to this would be the southern area identified for Windamere Park resident housing. This may slightly encroach into the fringes of the main depression area between the Hub and the constructed wetland. Management of stormwater runoff from the extension of Windamere Park activities could be effectively managed through the harvesting of stormwater in rainwater tanks to supply some non-potable demands. Excess stormwater runoff would be managed through a combination of subsurface and surface drainage elements to direct stormwater to the main depression area which is expected to be subject to extensive revegetation. The volume of runoff generated from the increase in sealed surfaces within the Hub is likely to be only moderate and could be effectively managed through infiltration. The large extent of flat area through the depression would permit runoff to be discharged and allowed to infiltration without causing any nuisance issues.

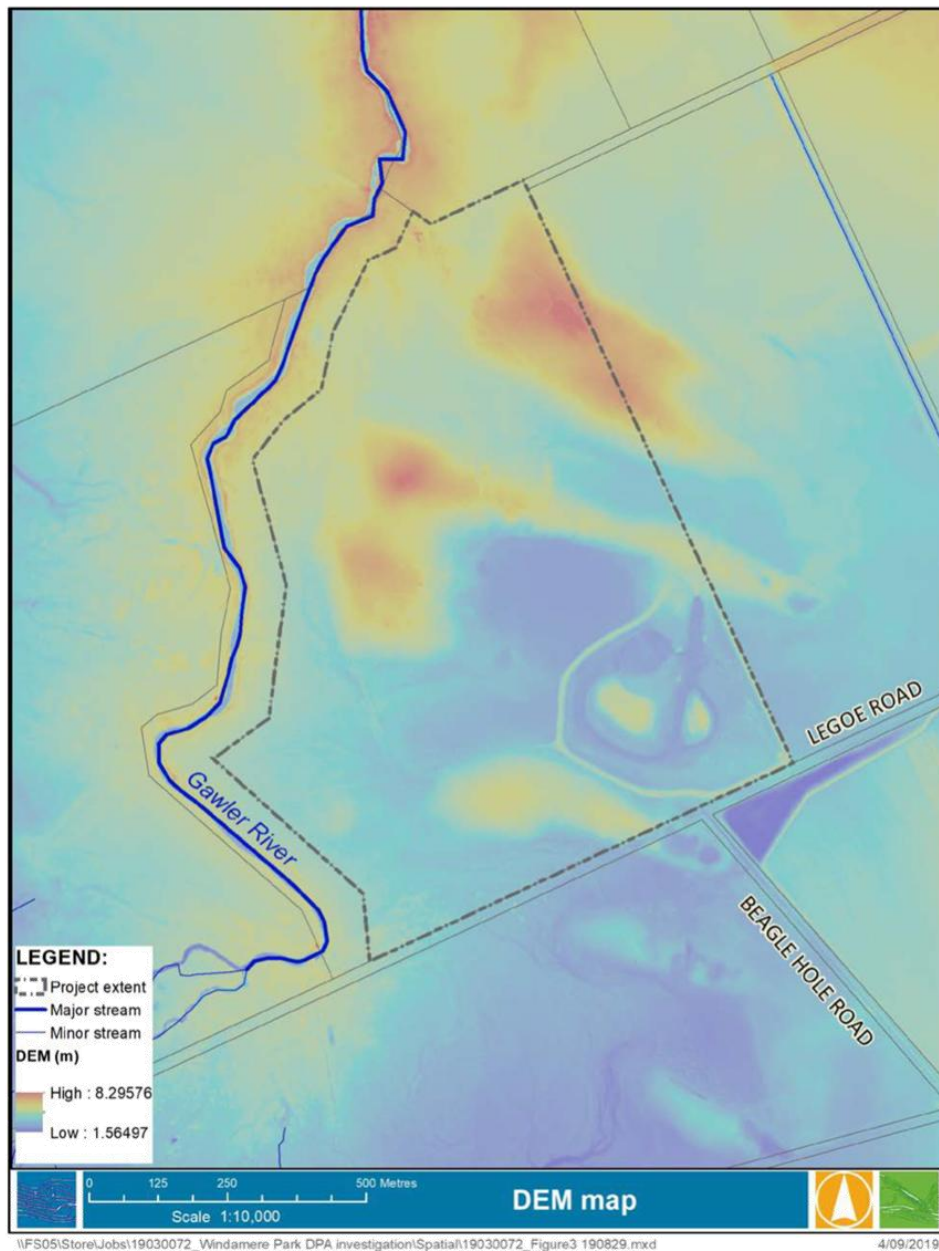


FIGURE 4-1 DIGITAL ELEVATION MODEL (DEM) OF WINDAMERE PARK



4.3 Impacts of Proposed Urban Development

The area identified for low-density housing is located adjacent to the southwestern, southern and north-western regions. This area typically extends as far north as the southern extent of the proposed disability services area. Low-density housing areas would remain outside of the low area between the disability services area and the existing wetland. This region is generally low (between 4-5.5m AHD) with minimal gradient.

Runoff from the area proposed for low-density housing would currently be negligible except in very infrequent rainfall events. Construction of residential properties, particularly the associated roads, in this area would increase the volume of runoff unless there were mechanisms to effectively harvest and reuse significant volumes of stormwater on site. The volumes of runoff are dependent on the density of land development which is in turn dependent on other land capability factors such as suitability for on-site wastewater management.

A lack of gradient will limit the capacity to convey surface water runoff along open channels and there is no clearly defined low point at the boundary. The Gawler River main channel is located a short distance to the west. There is only 1-2 m elevation drop between the internal drainage point to the channel invert. Multiple discharge points to the Gawler River may be required. All outlets would be required to have detailed design to demonstrate that these will address stormwater quality treatment requirements and not adversely impact on the channel bed and bank stability.

There is the potential for the construction of several small basins/wetlands along the western boundary with each of these having a piped outlet to the Gawler River. Alternatively, it may be possible to direct stormwater runoff to the existing constructed wetland although this would not be possible through a gravity-based system. This wetland was constructed for the purpose of cleaning Bolivar Reclaimed water prior to use on the property but the transmission losses through the system were too high and so it is rarely used. These increased freshwater flows to the wetland would be beneficial but would require large volumes of water to be pumped which may be cost prohibitive.

The potential configuration of the land development would be subject to further analysis at the concept design phase, but it would likely require significant areas of cut and fill to achieve suitable gradients for stormwater drainage and for buildings to achieve the required freeboard. Low-density housing is predominantly marked for areas that are currently used for olives or open space. An exception is in the south-eastern corner where the existing constructed wetland is located. Housing may result in the filling of some area of the wetland, but sufficient extents could be maintained to provide adequate water quality treatment and storage for water to be reused on-site to supplement irrigation supply for the remaining olives.

Stormwater quality management would also be a key factor prior to discharge from the site. Any internal drainage system would require the inclusion of water sensitive urban design elements or for water to be pumped to the existing constructed wetland to achieve sufficient stormwater quality improvement prior to discharge from the site.

4.4 Stormwater Management Strategy

4.4.1 Concept Drainage Strategy

For the purposes of assessing the likely impact of urban development in the areas identified, two development density scenarios were tested. The two scenarios were:

- Low density (700-1000 m² allotments); and
- High density (300-500 m² allotments).



The impervious fraction for these two development scenarios was obtained from the Department of Planning, Transport and Infrastructure (DPTI) road design document referred to as DD300. Peak flows from DRAINS modelling for a 1 ha typical catchment area are shown below, in Table 4-1.

TABLE 4-1 PEAK FLOWS

Scenario	Pre-Development	Low Density Scenario	High Density Scenario
10% AEP (m ³ /s)	0	0.073	0.128
1% AEP (m ³ /s)	0.061	0.137	0.239

Under the pre-development scenarios (no impervious areas) there would be no runoff from the site up to very infrequent to rare rainfall event. Development of the site and inclusion of impervious areas that are directly connected to a formal drainage scheme would result in runoff in all rainfall events greater than approximately 1 mm.

Appropriate stormwater management objectives for the land development may be:

- Reducing peak flow rate to ensure 1% AEP post-development flow does not exceed the 1% pre-development flow;
- Ensuring any new discharge points to the Gawler River main channel are adequately stabilised; and
- Providing adequate stormwater quality improvement prior to discharge.

There is very little fall across the area proposed for urban development. There are a few localised low areas and the trunk drainage system would need to generally follow the natural low points to minimise the extent of earthworks required. This may result in multiple discharge points to the Gawler River and potentially the formation of land-locked drainage points which may require pumping to another discharge point if water balance modelling indicates that there is insufficient capacity for infiltration. Stormwater drainage would be predominately along the road network to a pit and pipe drainage system. There would need to be detention basins within the property prior to reduce peak flow rates being discharged to Gawler River. Detention basins would require cut between 1-2 m below the natural surface so that the stormwater pipes could freely discharge. Based on the high-level modelling of the runoff impacts of development it is estimated that the volumes of detention would need to be approximately 50 m³/ha for the low-density scenario and 140 m³/ha for the high-density scenario. A conceptual drainage strategy for the site is shown in Figure 4-2.

Stormwater quality improvement would be achieved through the inclusion of the following water sensitive urban design (WSUD) elements:

- Rainwater tanks connected to residential property roofs;
- Passive street tree watering;
- Biofiltration systems; and
- Detention basins.

A key objective of stormwater quality management is to maximise the treatment of stormwater as close as possible to the source. Collection of runoff from roof areas in rainwater tanks is one example. Incorporating tree pits (infiltration structures to maximise losses to surrounding soils) along the road network would also be desirable. Biofiltration systems would be important to treat higher flow rates that exceed the capacity of the retention components of the system. Treated outflows from an appropriately designed biofiltration system would be of a suitable quality for discharge to the Gawler River. A flow chart showing an appropriate stormwater treatment train is included as Figure 4-3.

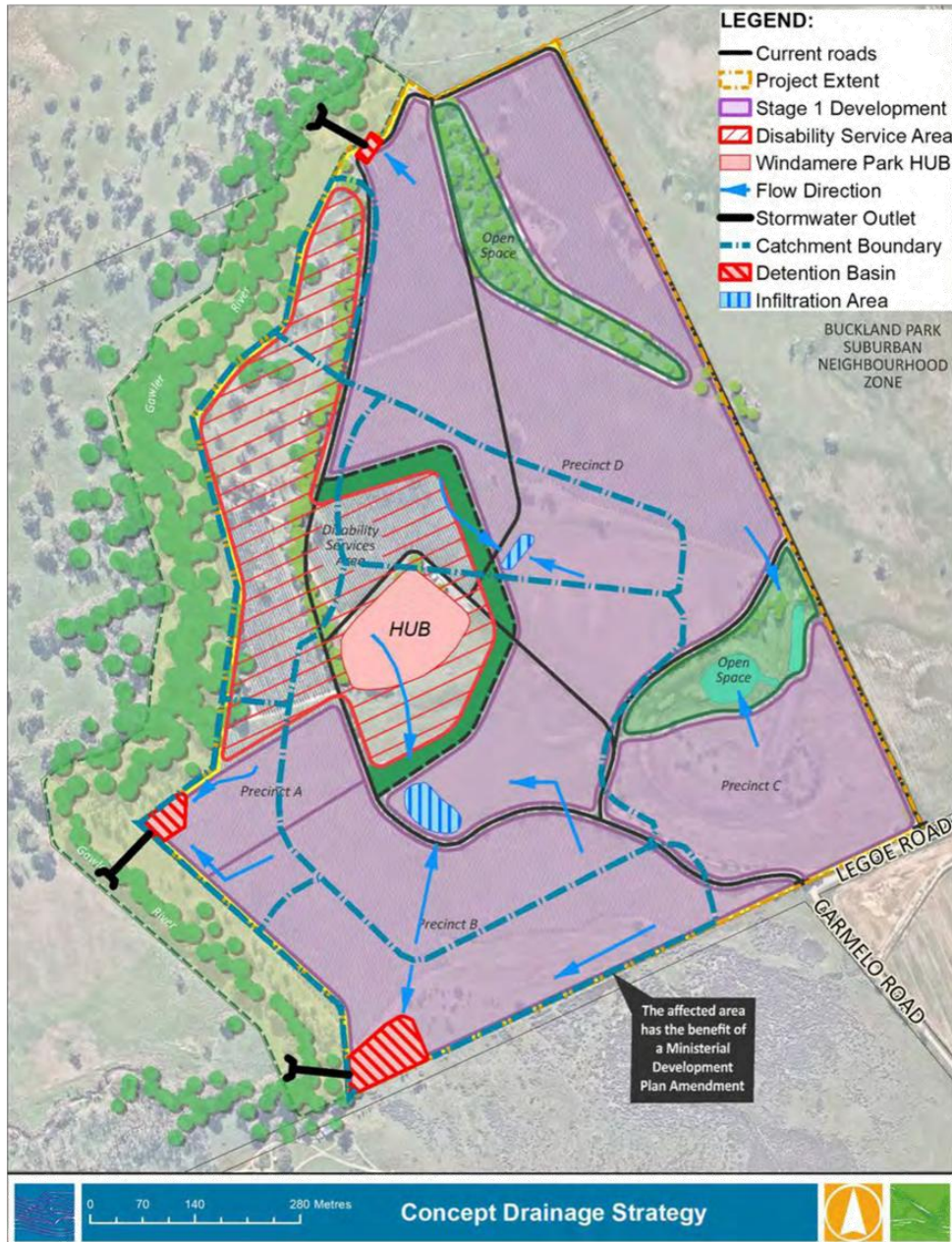


FIGURE 4-2 CONCEPT DESIGN STRATEGY

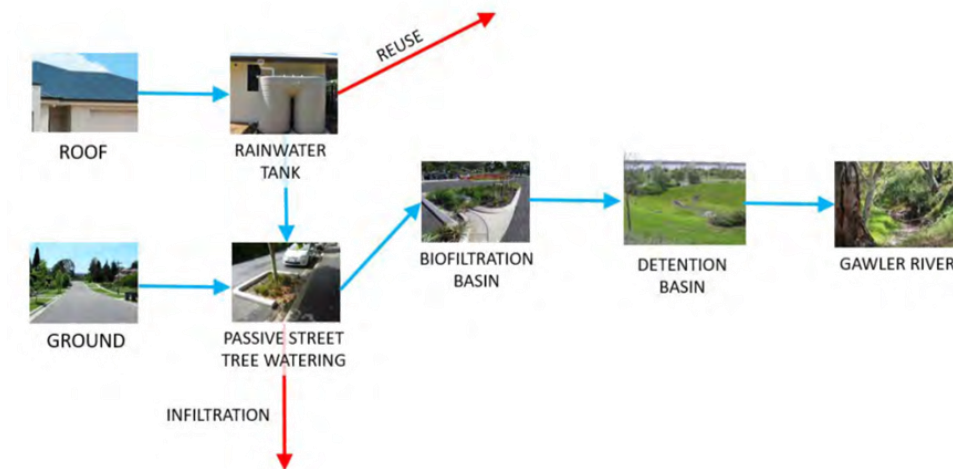


FIGURE 4-3 INDICATIVE STORMWATER TREATMENT TRAIN

As an indicative guide based on other water quality modelling in the Greater Adelaide region, the area of biofiltration system would need to be at least 0.25% of the contributing catchment area to achieve the desired water quality objectives prior to discharge.

It may also be possible for the existing wetland in the southeast corner of the site to be used more broadly to improve stormwater quality for potential reuse across the site.

4.5 Potential Stormwater Capture and Reuse

Harvesting stormwater runoff from roof areas may be an important component of the site water supply mix for residential allotments depending on the availability of reticulated water to the site or if augmentation costs become prohibitive.

4.5.1 Residential Allotments

Residential water demand was estimated based on the following assumptions:

- Internal demand: Single dwelling – 125 L/person/day for rainwater supply only (Department of Health and Ageing code);
 - Daily internal water use uniform throughout the year.
- External demand: assumed to be 30% of indoor use:
 - External use would be 30% of the annual use by volume but the irrigation season would be limited to 6 months (November-April inclusive).
 - The proportional split of irrigation demands over the 6 months was:
 - November – 10%
 - December – 20%



- January – 25%
- February – 25%
- March – 15%
- April – 5%

Four modelling scenarios were established. These included:

- Scenario 1 - Internal and external demands from RW tank with 3ppl/dwelling
- Scenario 2 - Internal and external demands from RW tank with 4 ppl/dwelling
- Scenario 3 - Internal demands only from RW tank with 3ppl/dwelling
- Scenario 4 - Internal demands only from RW tank with 4ppl/dwelling

Each scenario was run with three roof areas (150, 200, and 250 m²) and four potential rainwater tank sizes (1, 5, 10 and 22.5 kL). These reflect the anticipated range of potential roof areas and rainwater tank storage installed. The results for the 250 m² roof area are shown in Figure 4-4.

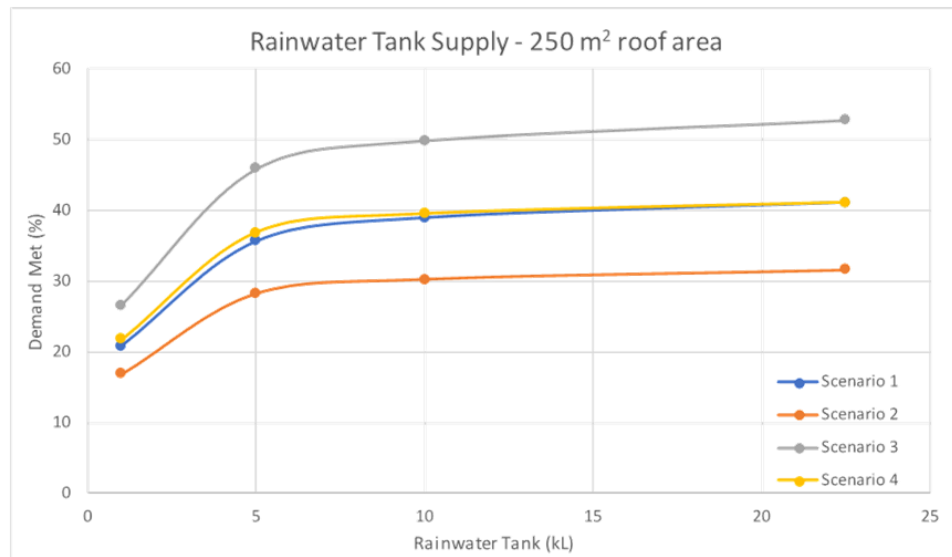


FIGURE 4-4 RAINWATER TANK SUPPLY RELIABILITY CURVE FOR 250² ROOF AREA

Scenario 2 had the highest annual demand and with the largest roof area (250 m²) and largest tank (22.5 kL) rainwater capture was only able to supply 31.6% of the average annual demand. Conversely, Scenario 3 had the lowest annual demand and with the largest roof area (250 m²) and largest tank (22.5 kL) rainwater capture was able to supply 52.8% of the average annual demand. Further details on the demand assessment and reliability of supply for a range of roof areas is shown in Appendix C. Based on this water balance modelling for residential water supply, rainwater capture and reuse would fall well short of the expected demand and an alternative water supply source would be required.



4.5.2 Alternative Water Supply

While there is a potential for extension of main water to supply the internal water, demands associated with this development it is important to consider what potential integrated water management strategies could be adopted to minimise the external requirements and minimise the potential impacts of the development.

Stormwater capture and reuse within the urban context could incorporate internal reuse from rainwater tanks. Runoff from road and other surfaces would be directed through a formal drainage system to detention basins or soakage/infiltration areas. Some of this runoff could be directly reused through passive irrigation of street tree. There would still be a large volume of runoff that would either be infiltrated or discharged to the Gawler River. The detention basins provide an opportunity to capture and retain water for reuse across the site. This may include watering of public open spaces. This would require water quality improvement to make this water fit for purpose. Treatment could be through pumping towards the existing wetlands on site. However, a more detailed water balance would be required to investigate the viability of this option due to the potentially high loss rate. Furthermore, there will be the requirement for onsite disposal of wastewater due to the absence of access to an existing sewer. Focus should be on maximising the potential reuse of wastewater prior to consideration being given to a stormwater capture and reuse scheme.

At this time, groundwater has not been considered as a potential water supply option.

4.6 Next Steps

A high-level assessment has been undertaken based on the proposed development configuration and taking into consideration the site opportunities and constraints associated with regional flooding and local stormwater drainage. This effectively established that there would be insufficient rainwater available to meet the anticipated internal water demands.

By the next stage, the configuration of the development would be clearer which would allow for the development of concept design strategies that can be supported through more detailed modelling.

At the land division concept stage, the next steps may include:

- A more detailed whole of site water balance adopting more clearly defined water demands such as for public open spaces and estimated volumes of water available from other sources i.e. wastewater.
- Preliminary earthworks design to facilitate an effective stormwater drainage system and the potential volumes of fill required.
- Preliminary stormwater quality modelling to confirm the size of the treatment infrastructure required to meet water quality requirements prior to discharging to the Gawler River.
- Estimate the volumes of mains water that would need to be required to supply the proposed development.



5 GROUNDWATER

An investigation of Groundwater conditions was undertaken including a review of available groundwater data, flow testing and sampling water for analysis from an existing bore on site currently used for potable use. The objectives of the investigation are to:

- Understand the suitability of groundwater for potable supply;
- Clarify the capacity of the existing bore adjacent to Windamere Park Hub using a review of historical data and infrastructure installed;
- Understand whether local groundwater would influence the proposed development, and limit building activities such as excavation depths, and
- Determine if development and associated activities (i.e. on-site wastewater disposal) would have an impact on groundwater.

5.1 Drinking Water

The existing well, unit 6528-2039 is completed in the T1 aquifer and is currently used for potable supply. Windamere Park is considering the potential to expand the use of this water supply.

5.2 Water Quality

The highest published standard of water quality is drinking water. In South Australia, this standard is prescribed by SA Health with reference to the Australian Drinking Water Guidelines (ADWG). Salinity, as measured by total dissolved solids (TDS) does not attract a specific health guideline in the ADWG, however, the ADWG recommends the following levels of palatability:

TDS (mg/L)	Palatability
0 – 600	good
600 – 900	fair
900 – 1200	poor
> 1200	unacceptable (unpalatable)

The TDS recorded in 6528-2039 was 838 mg/L in 1996 i.e. of fair palatability.

The ADWG was updated in 2018 to include additional analyses, not all of which are relevant to South Australia (V. Tsymbal pers. comm. 22/7/19). In some locations close to rubbish dumps or where fire-fighting equipment has been tested, testing for PFOS (perfluorooctane sulfonic acid) and PFOA (perfluorooctanoic acid) is also required. Isolation of common materials such as boot finishes and overalls are required while sampling for PFOS and PFOA.

To meet the current SA Health standard for bore water, the required analyses also include metals, anions, volatile organic compounds (VOCs) and chlorinated hydrocarbons (V. Tsymbal pers. comm. 22/7/19 as shown in Appendix A). After purging three wellbore volumes on 26/7/19, the results are tabulated in Table 5-1 with the full results in Appendix A.

The results indicate that the majority of analytes measured are below the Limit of Recording (LOR), and all are below ADWG limits.



TABLE 5-1 POTABLE WATER QUALITY

Analyte	ADWG (2018) limit mg/L unless stated	Test Result mg/L unless stated
PFOA	0.56 µg/L	<0.01 µg/l
PFOS	0.07 µg/L	<0.01 µg/l
VOC – toluene	0.8	<0.001
VOC – 1 2 3-trichlorobenzene	0.03 (as TCB)	<0.001
VOC - benzene	0.001	<0.001
VOC – xylene (total)	0.6	<0.003
Antimony	0.003	<0.005
Arsenic	0.01	0.004
Barium	2	0.02
Beryllium	0.06	<0.001
Boron	4	0.29
Cadmium	0.002	<0.0002
Chromium	0.05	0.001
Copper	2	<0.001
Fluoride	1.5	0.7
Lead	0.01	<0.001
Manganese	0.5	0.011
Mercury	0.001	<0.0001
Molybdenum	0.05	<0.005
Nickel	0.02	<0.001
Nitrate	50	<0.02
Selenium	0.01	<0.001
Silver	0.1	<0.005
Sulfate	500	82
Uranium	0.017	<0.005
E.coli	0 counts/100 mL	0 counts/100 mL

The Land Capability Assessment investigations did not detect any potentially hazardous chemicals in the soil profile.

5.3 Capability of Existing Bore

The T1 aquifer well 6528-2039 was drilled through the four Quaternary aquifers from 0-65 m in the Hindmarsh clay, before intersecting the higher productivity T1 aquifer in sand and limestone below 65 m. Inspection of the driller's log for 6528-2039 indicates that a fine sand and gravel layer exists from 39-42 m, 3 m deeper than the disused windmill well 6528-248 which was completed in a sandy clay. This deeper Quaternary aquifer is likely to have better productivity; however, the water quality is likely to be similar (tested at 1228 mg/L TDS in 1986) which is unpalatable without costly desalination.

The standing water level (SWL) in 26/7/1996 was 11m below natural surface (BNS), while on 26/7/19 we measured it at 8.3 mBNS, indicating that the water level has risen 2.7 m over the past 23 years. From the Northern Adelaide Plains Water Allocation Plan (NAP WAP) the T1 water level (Figure 5-1) was approximately 8m AHD in 1999 (0 mBNS), which is lower than expected. The current SWL is around 80 m above the top of the T1, indicating the head available for pumping.

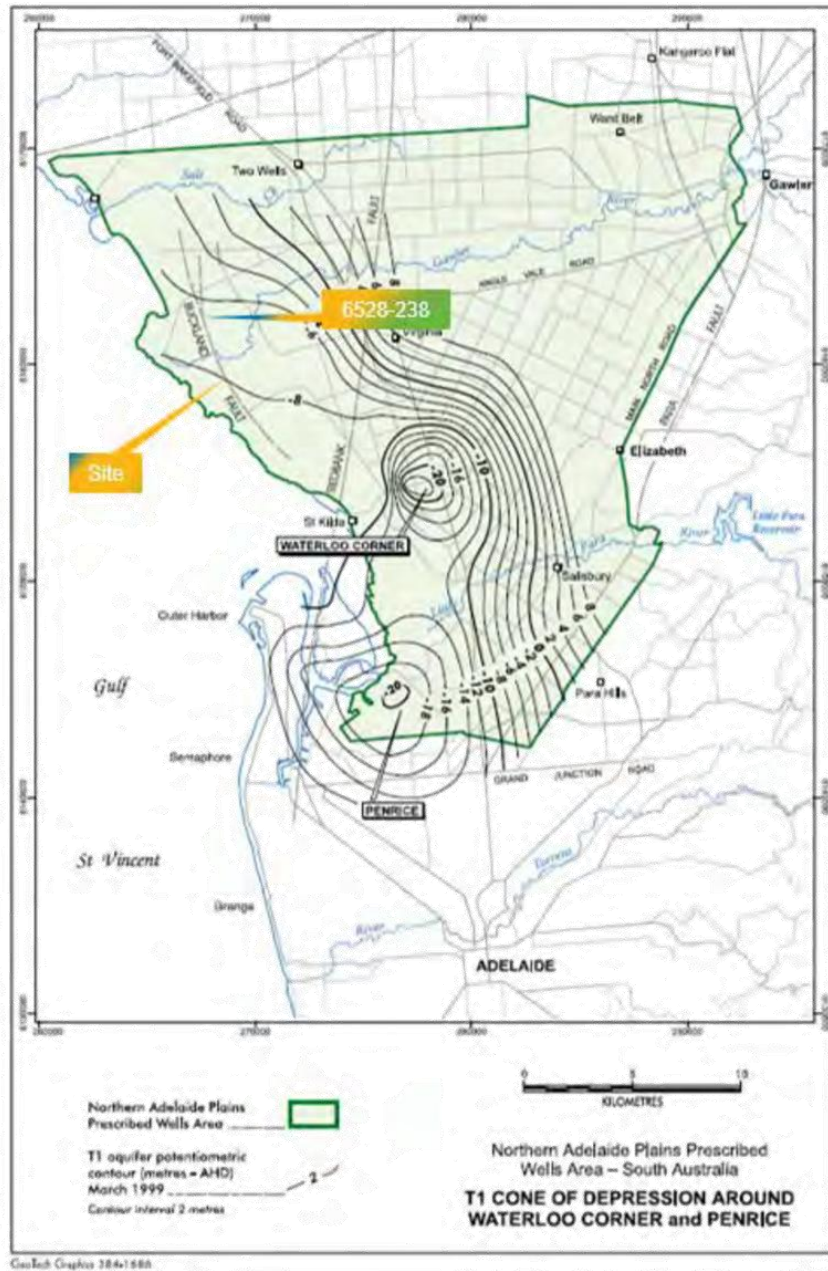


FIGURE 5-1 AREAS OF DRAWDOWN IN T1 AQUIFER (SOURCE: NAP WAP)

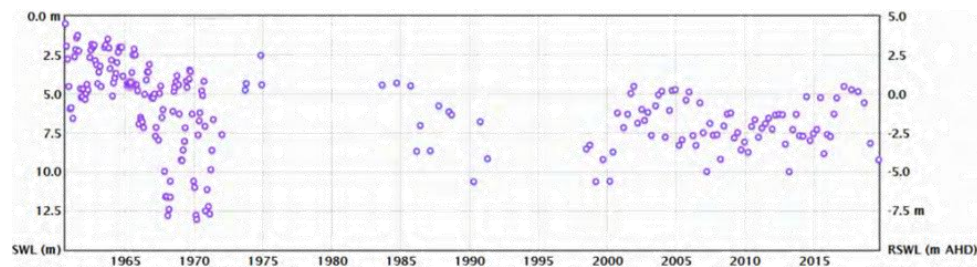


FIGURE 5-2 T1 AQUIFER LEVEL IN 6528-238 (SHOWN IN FIGURE 5-1) ARE RELATIVELY STABLE UNTIL 2019



FIGURE 5-3 UNUSED 37 M DEEP WINDMILL WELL 6528-248 ACCESSING THE QUATERNARY AQUIFER AND THE 96 M DEEP T1 WELL 6528-2039 (TESTED)

While gathering a representative water quality sample, 6528-2039 Water Technology pumped the T1 aquifer for 23 minutes, discharging 3,500 litres into a 8 m diameter tank for an average pumping rate of 2.5 L/s. A flow meter was not available to measure flow, thus a constant pumping rate of 2.5 L/s was assumed for the yield estimation. Yield estimation from pumping data is important because the driller reported an airlift rate of 5 L/s and the pump may be limiting the yield of the bore.

6528-2039 is cased to 90 m and pressure cemented around 125 mm PVC inside 200 mm hole, which provides good well integrity thus avoiding inter-aquifer contamination from the overlying Quaternary aquifer. The 90-96 m zone is <125 mm diameter and intersects 'grey corals'. The driller's description indicates the presence of calcareous material within the aquifer which may respond well to acid treatment.



5.3.1 High Level Constant Rate Pumping Test

Water Technology conducted a brief constant rate pumping test. By analysing the data (Figure 5-4) the following conclusions can be made:

- Drawdown began to stabilise (after 3 minutes) and the maximum drawdown was 7.83 m after 23.25 minutes indicating fair aquifer transmissivity; and
- Well storage effects stabilise after 1 minute as anticipated, indicating a valid test.

The raw data is shown in Table 5-2.

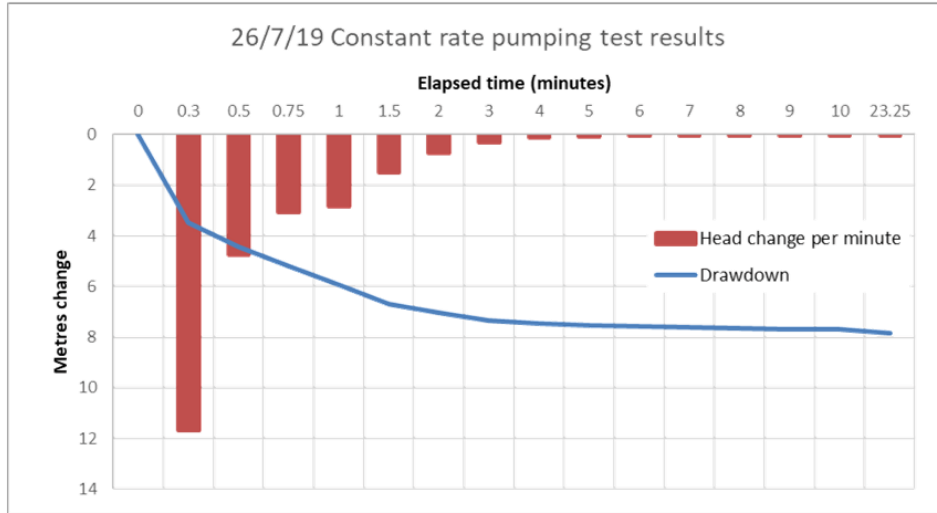


FIGURE 5-4 CONSTANT RATE PUMPING TEST RESULTS



TABLE 5-2 PUMPING TEST DATA

AQUIFER DISCHARGE TEST DATA									
Type of test: CRDT									
Location: Windamere Park									
Pumped well			Observation well:			Date of test			
Well Permit Number: 6528			Well Permit Number:			Test operator:			
Well Unit Number:			Well Unit Number:			Measuring equipment:			
Distance from Pumping well:			Distance from Pumping well:			Distance from Pumping well:			
Time Data				Water Level Data				Discharge Data	
Pump on Date	Time	/h	Initial static water level	8.3	m	Initial static water level		How Q measured	Task dip
Pump off Date	Time	/h	Measuring point			Measuring point		Depth of pump/line	40
			Elevation of measuring point	5.7	m	Elevation of measuring point		Previous pumping?	Yes/No
Pumping	Duration of aquifer test	mins	Recovery	hrs					
26/7/19 Constant rate pumping test results									
Elapsed time (minutes)									
Meters change									
Head change per minute									
Drawdown									
Date	Clock time	Elapsed time /h	Recovery time /h	Measured Water level (m)	Water level (m)	Water level change (m)			
26/07/19		0		8.3	0	8.3			
		0:35		11.6	3.5	3.5	11.667		
		0:55		12.75	4.45	0.95	4.750		
		0:75		13.52	5.22	0.77	3.080		
		1		14.23	5.93	0.71	2.840		
		1:5		14.98	6.68	0.75	1.500		
		2		15.35	7.05	0.37	0.740		
		3		15.66	7.36	0.31	0.310		
		4		15.77	7.47	0.11	0.110		
		5		15.84	7.54	0.07	0.070		
		6		15.88	7.58	0.04	0.040		
		7		15.93	7.63	0.05	0.050		
		8		15.97	7.67	0.04	0.040		
		9		15.99	7.69	0.02	0.020		
		10		16	7.7	0.01	0.010		
		23:25		16.13	7.83	0.13	0.010		

Using the Mace (1997) equation for karstic aquifers results in an indicative transmissivity of 28 m²/d from the partially penetrated T1 aquifer.

Equation 1: Mace (1997) equation for transmissivity in karstic aquifers

$$T = 0.76 \left(\frac{Q}{h_0 - h} \right)^{1.03}$$

Where: T is aquifer transmissivity (m²/d)
Q is pumping rate (m³/d)
h₀ - h is drawdown (m)

The approximations for drawdowns at various pumping rates can be calculated (Table 5-3). All of these rates are less than the available head, indicating flexibility in the desired pumping rate.

TABLE 5-3 POSSIBLE DRAWDOWN AT VARIOUS PUMPING RATES

Q (L/s)	Drawdown (m)
1	3
2.5	7
5	15
10	30
15	45

Table 5-3 indicates that a pump rate of 15 L/s (leading to a pumping water level of 53 m below ground level) may be possible, however, this high level analysis should be confirmed using a step rate test to understand near well bore pressure losses at various pumping rates. In addition, a 48-hour constant rate pumping test with pressure data loggers installed in T1 aquifer observation wells before using this value for planning or investment purposes.

Due to the 5" (125 mm) diameter of the PVC casing, the pumping rate in the existing well is limited by the size of pump and motor that can be installed. The existing Lowara 8GS22 2.2 kW pump installed in 2016 appears not to be operating on the curve Figure 5-5, as a rate >3 L/s is expected with a 7 m drawdown (lifting 15 m of



static head). The cause for this would require the pump and riser to be inspected for blockages. The 8GS22 could be upgraded with a 10 HP motor to increase the pumping rate to 5 L/s (15 m drawdown). A new well with a 6" or 8" pump installed would be required to achieve the 15 L/s flow rate.

**8GS SERIES
OPERATING CHARACTERISTICS AT 50 Hz**

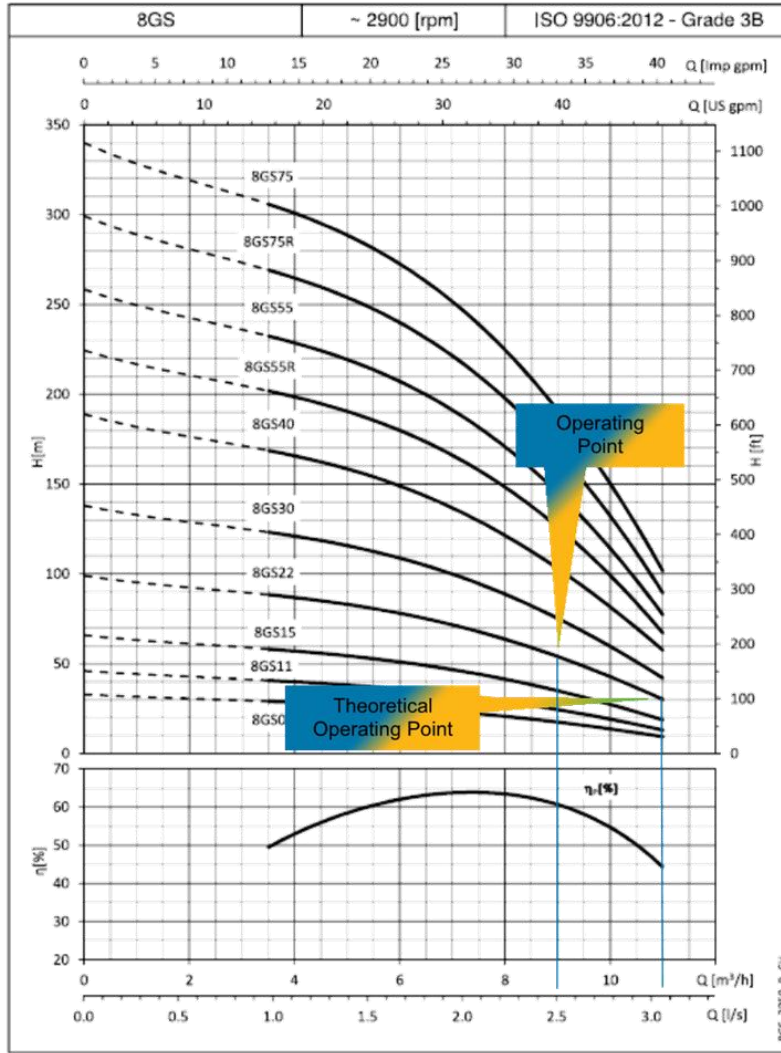


FIGURE 5-5 8GS22 PUMP CURVE. BLUE LINES SHOW ACTUAL RATE OF 2.5 L/S AND THEORETICAL RATE OF >3 L/S



5.4 Limitation of Building Activities

Current land use is farming land and olive groves which are irrigated with treated effluent rather than relying on shallow groundwater (M. Allester-Briggs, pers. comm. 26/7/19).

The proposed development includes:

- Approximately say 180 residential housing allotments in the west and south of the property ("residential development), potentially including swimming pools. Note that commercial and fire-fighting land uses would need a specific risk assessment to progress; and
- Lower density residential and recreational facilities around the existing Windamere homestead (accommodation and recreational).

At the project inception meeting, each of the activities is associated with impacts shown in Table 5-4 (M. Allester-Briggs, pers. comm. 26/7/19).

TABLE 5-4 POTENTIALLY GROUNDWATER AFFECTING ACTIVITIES

Item	Relevance to groundwater	Action
Removing olive grove to the west and replanting with vegetation of similar quantity and root depth	i.e. no change to groundwater transpiration	None
The majority of roof run-off in the residential development would be captured	No significant change to Quaternary aquifer recharge	None
Residential development may include pools	If the Quaternary aquifer is within 3 m of the constructed ground surface, then buoyancy forces may damage poorly constructed pools.	Check seasonal groundwater level in Quaternary aquifer
No hazardous chemicals listed	The storage and use of hazardous chemicals must be considered by a risk management plan	Conduct risk assessment once details are available
Modifications to wetland	Likely communication with shallow groundwater (Quaternary aquifers)	Conduct risk assessment once details are available
Wastewater treatment – centralised or individual septic tanks	Receptors (groundwater users or surface water where groundwater intersects surface water) may be impacted	Consider conceptual development and receptors. If residents drill Quaternary aquifer wells, they should be aware of wastewater disposal activities.

We assume that residential swimming pools will not extend below 3 m below natural surface (BNS) and plot where it is possible that shallow groundwater may occur using sparse available data in Figure 5-6. Figure 5-7



presents a map of depth to groundwater across the site, which is indicative only, as there is a perched aquifer ~500 m north east of the site, and perched aquifers (where shallow groundwater may be found locally) may exist in the study area. Perched aquifers can only be identified by an intensive drilling program such as the soil contamination study.



FIGURE 5-6 LOCAL WELLS

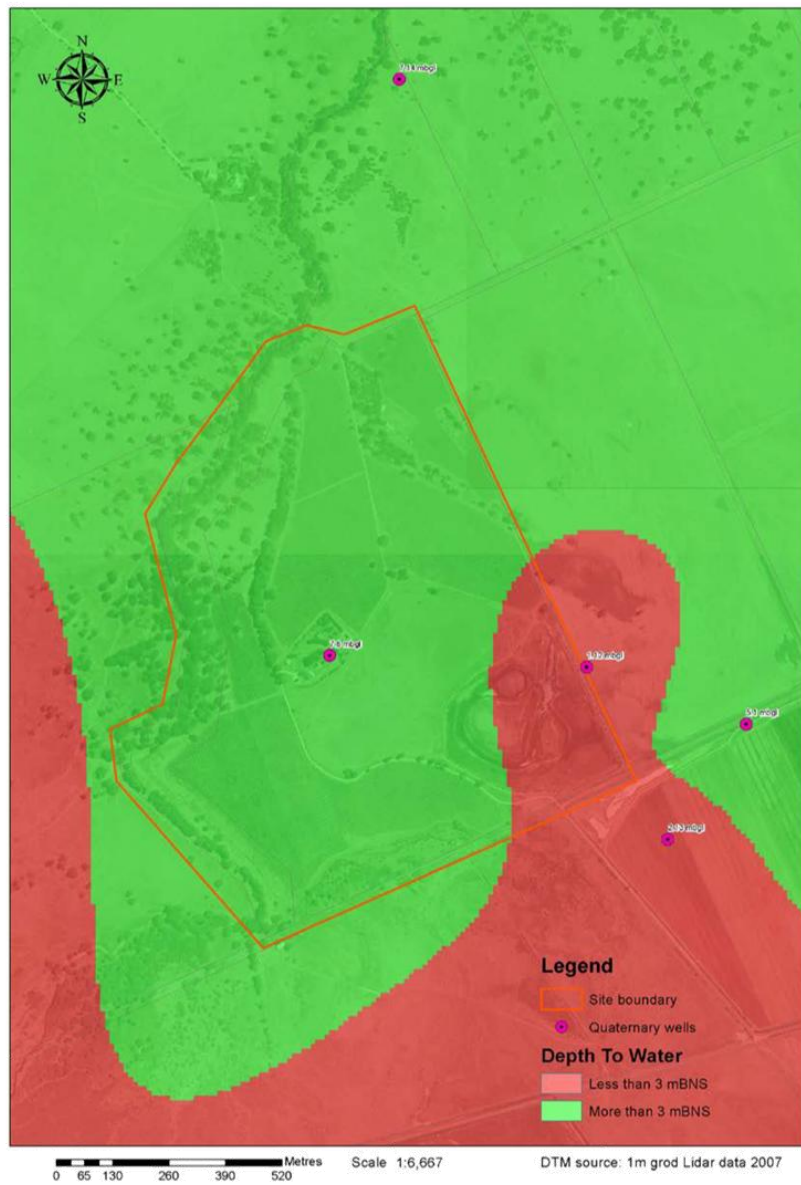


FIGURE 5-7 DEPTH TO WATER SHOWING STANDING WATER LEVELS IN MBGL

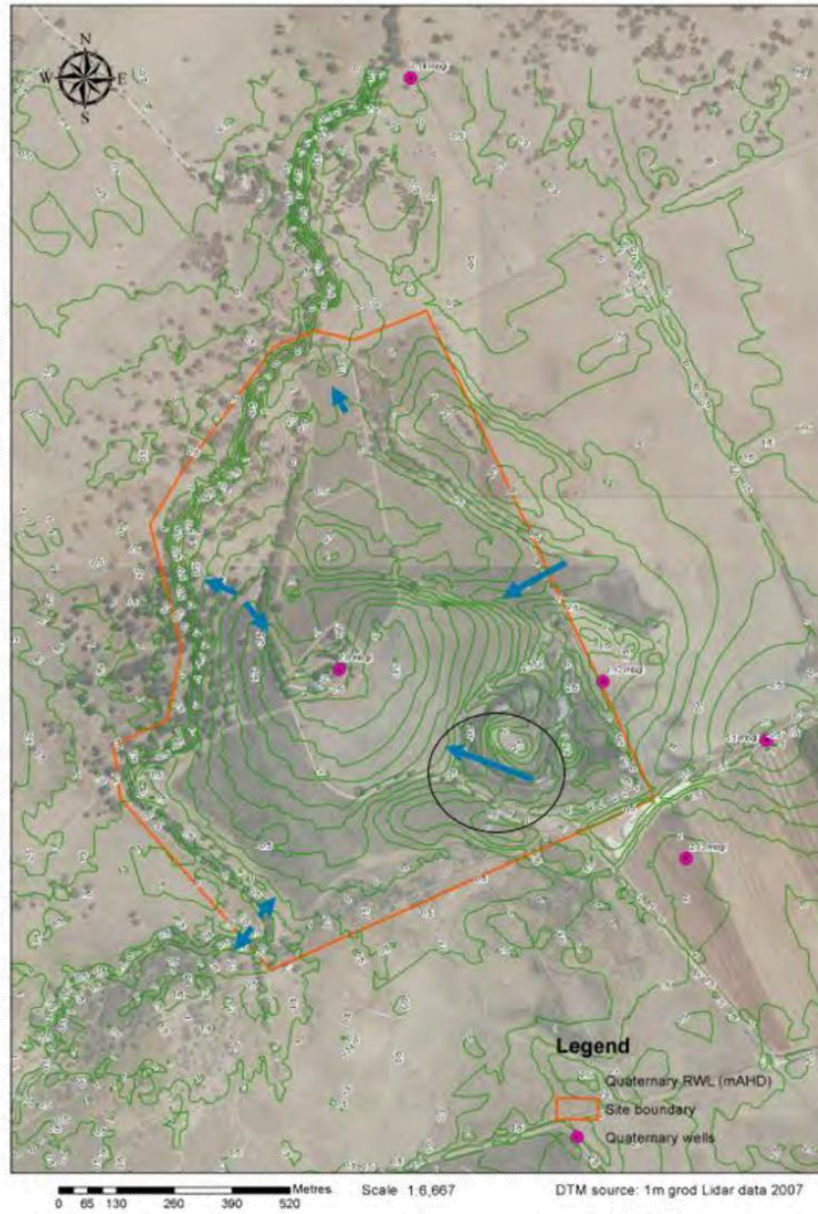


FIGURE 5-8 QUATERNARY POTENTIOMETRIC SURFACE SHOWING HYDRAULIC GRADIENT, INFERRED GROUNDWATER FLOW DIRECTIONS AND CIRCLING POSSIBLE FLOW FROM THE TREATED EFFLUENT WETLAND IN BLACK



FIGURE 5-9 TREATED EFFLUENT WETLAND, INCLUDING ~2.5 mBNS DEEP SUMP

5.5 Groundwater Impacts

As discussed in Chapter 5.4, the installation of wastewater equipment is the only activity that is likely to affect shallow groundwater quality or quantity (Figure 5-7). indicates that excavations (for swimming pools for example) are unlikely to encounter the water table, although deepening the sump in the constructed wetland to the east of the property may encounter groundwater. Evapo-concentration of the treated effluent may increase the salinity of the aquifer and the influx of treated effluent to the wetland may be contributing to the inferred hydraulic flux from the wetland towards the Windamere homestead, however, these are existing not proposed activities and thus outside the scope of this report.

Figure 5-10 shows the potential receptors to groundwater affecting activities. The deeper T1 aquifer wells may be affected by any increased pumping at 6528-2039 while shallow dewatering, wastewater disposal or changes to the wetland may impact groundwater dependent ecosystems (GDEs) that have potential to exist in the area. Aquatic GDEs can be identified by the surface expression of groundwater while terrestrial GDEs may include species such as deep-rooted vegetation (significant trees). Figure 5-11 shows a ~5 m deep incision by the Gawler River which may provide habitat for aquatic species that are supported by groundwater.



FIGURE 5-10 POTENTIAL RECEPTORS



FIGURE 5-11 GAWLER RIVER DEPTH

5.6 Water Allocation Plan

Under the NAP WAP, the levels and salinity of the shallow Quaternary aquifer should be maintained (between 400 – 3000 mg/L TDS). The NAP WAP lists river red gums and other terrestrial fauna as being dependent on groundwater around the Gawler River.

Groundwater entitlements and allocations are allowed to be transferred under the NAP WAP. This is easiest done from an existing T1 aquifer user where salinity is less than or equal to 800 mg/L TDS. The locations of all groundwater entitlements nearby are shown in Figure 5-12. The T1 metered groundwater extraction was 3,429 ML/year in 2015-16 and may be traded somewhere around \$1.20-\$1.80 per kL. Further work would be required to determine a price and availability of an entitlement.

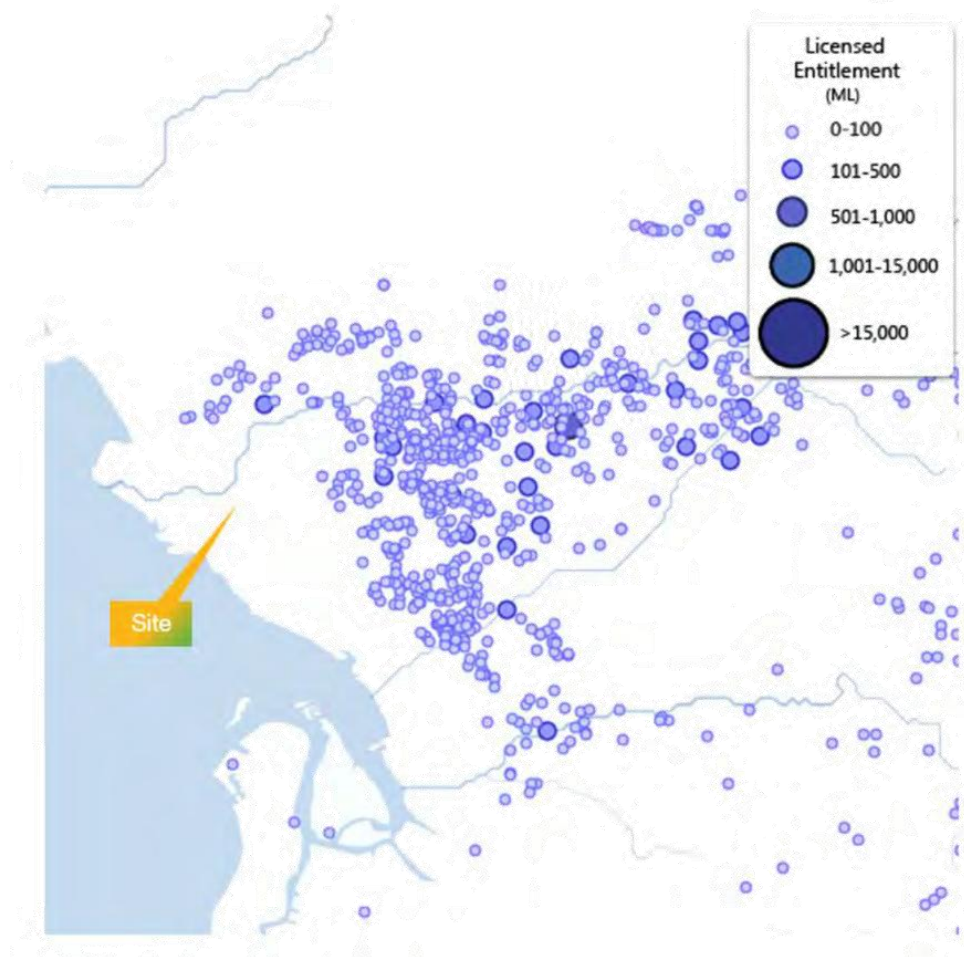


FIGURE 5-12 CURRENT LICENSED ANNUAL ENTITLEMENTS OF ALL AQUIFERS IN THE NAP (SOURCE: BOM)

5.7 Conclusion

While the existing wetland may be interfering with shallow groundwater, only modifications to the wetland or the potential disposal of wastewater from the proposed development may have significant impact on receptors. Presently, the shallow groundwater level appears suitable, however, long term changes are possible due to changing land use or climatic conditions.

An overview of the T1 aquifer groundwater quality indicates that it is suitable for potable use with only minor treatment. Water Technology can assess the optimum treatment once the desired yield is established.



While the current pump appears undersized to optimise the well yield, we recommend obtaining access to one of other the T1 wells shown in for observations and conducting a step rate and constant rate aquifer pumping tests (~\$30,000 ex. GST) to determine that more than four times the current pumping rate could be sustainable and recommend the optimum pump size. Using the anticipated pumping rate, a risk assessment of receptors would assist in the application to buy or transfer a groundwater entitlement.

5.8 Next Steps

With respect to groundwater, at the land division concept stage, we would propose the following next steps:

- Determine which activities may interfere with shallow groundwater, conduct a risk assessment and undertake a flora and fauna survey of significant species if required;
- Determine the optimum groundwater treatment method; and
- Conduct conclusive aquifer pumping tests and consider acid treating the aquifer if increased productivity is required.



6 LAND CAPABILITY ASSESSMENT

The Land Capability assessment identifies environmental constraints for the development due to increased activity proposed on the land. Existing conditions which contribute to site contamination such as agriculture, and accommodation use are considered in the nutrient balance of the overall land. To determine the capacity of the land to assimilate resulting land uses, an investigation of soil capacity has been undertaken based on current and proposed impacts.

6.1 Soil Maps

Existing soil map for the site is provided in Figure 6-3, group and subgroup soil classes are described in the reference book, The Soils of Southern South Australia (Hall et al. 2009), and the relevant groups are summarised in Table 6-1, below.

TABLE 6-1 COMMON SOIL GROUPS

Soil subgroup	Description
G1	Sand over sandy clay loam
M1	Deep sandy loam;
M2	Deep friable gradational clay loam

M2 soils are typical for the Gawler River floodplain, with other common soil types indicated within defined polygons. While soil maps provide a general description of soil types as a guide, sampling and analysis is required to provide detail on soil characteristics and capacity.

6.2 Soil Sampling and Analysis

Soil sampling was undertaken on 27/08/2019 in 15 locations on the property. The locations were selected to:

- Provide a coverage over the key areas proposed for development;
- Identify depth to groundwater especially in lower lying areas;
- Identify soil types generally and variations across the site; and
- Determine physiochemical characteristics of the surface soils.

Core samples were obtained using driven push tube by high pressure hydraulic hammer and placed in trays and logged. A portion of topsoil was removed from the tray and sent to APAL laboratories for further testing of chemical constituency. Laboratory results and bore logs and are provided in Appendices A and B, respectively, and the soil sampling locations are in Figure 6-3. Bores were drilled to 3.0 metres and depth to water table was measured in each bore, the results provided in the following Table 6-2.

TABLE 6-2 DEPTH TO GROUNDWATER

Bore	BH1	BH2	BH3	BH4	BH5	BH6	BH7	BH8	BH9	BH10	BH11 to BH15
Depth (mbNG)	1.6	-	2.2	-	-	1.7	1.5	2.3	1.9	1.9	-
Ground level (mAHD)	4.0	-	4.0	-	-	3.6	3.9	4.2	3.6	5.5	-
Depth to groundwater (mAHD)	2.4	-	1.8	-	-	1.9	2.5	1.9	1.7	3.6	-



Field measurements indicate groundwater interception at approximately 1.9mAHD. Elevation data has been estimated from contour data with some inaccuracy that may explain variation in depths. Depth to groundwater was not encountered in BH2, BH4, BH5, and BH11-BH15. The results corroborate mapping provided in Figure 5-7.

6.3 Soil Physical Characteristics

Based on the Borelogs, a summary of physical characteristics is described in the following Table 6-3. Indicative saturated conductivity (Ksat) provides an indication of the rate of infiltration through saturated soils, allowing appropriate rates of irrigation and land application of wastewater to be determined. Clay content and type provide an indication of the potential for the soil to hold moisture and nutrients for plant uptake and adsorb Phosphorus, as detailed in section 6.4. Clay content has been derived from the soil classification for soil texture types, as indicated in Figure 6-1.

TABLE 6-3 SOIL PHYSICAL CHARACTERISTICS

Borehole BH1 to BH8	Borehole BH9 to BH15	Description	Indicative permeability (Ksat)	Clay content (by weight)
0 - 0.4m		Sandy clay/sandy loam	0.8 m/day	15-25%
0.7 - 0.9m	0 - 0.4m	Clayey sand/ loam	1.2 m/day	10-25%
0.9 – 3.0m	0.4 – 2.5m	Silty Sandy clay/ sandy clay loam	0.5 m/day	25-30%
	2.5 – 3.0m	Silty clayey sand/ sandy loam	1.5 m/day	10-20%

Interpreting the result in relation to land application of wastewater would indicate that a target depth for distribution would be into more permeable soils at shallow depth for areas in the southern half of the property (BH1-BH18) would allow some attenuation in the underlying sandy profile; and possibly irrigation in the northern areas (BH9-BH15) where underlying soils have less infiltration capacity.

The hydraulic loading rate based on permeability rates is provided in section 7.

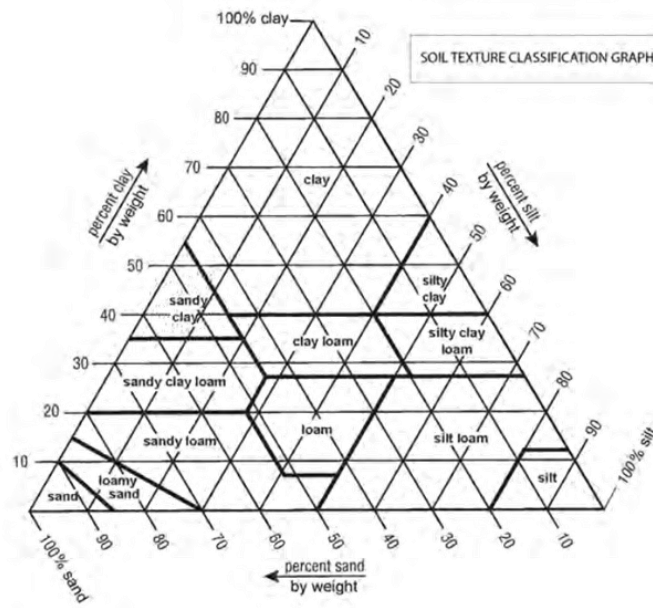


FIGURE 6-1 SOIL TEXTURE 'TRIANGLE'

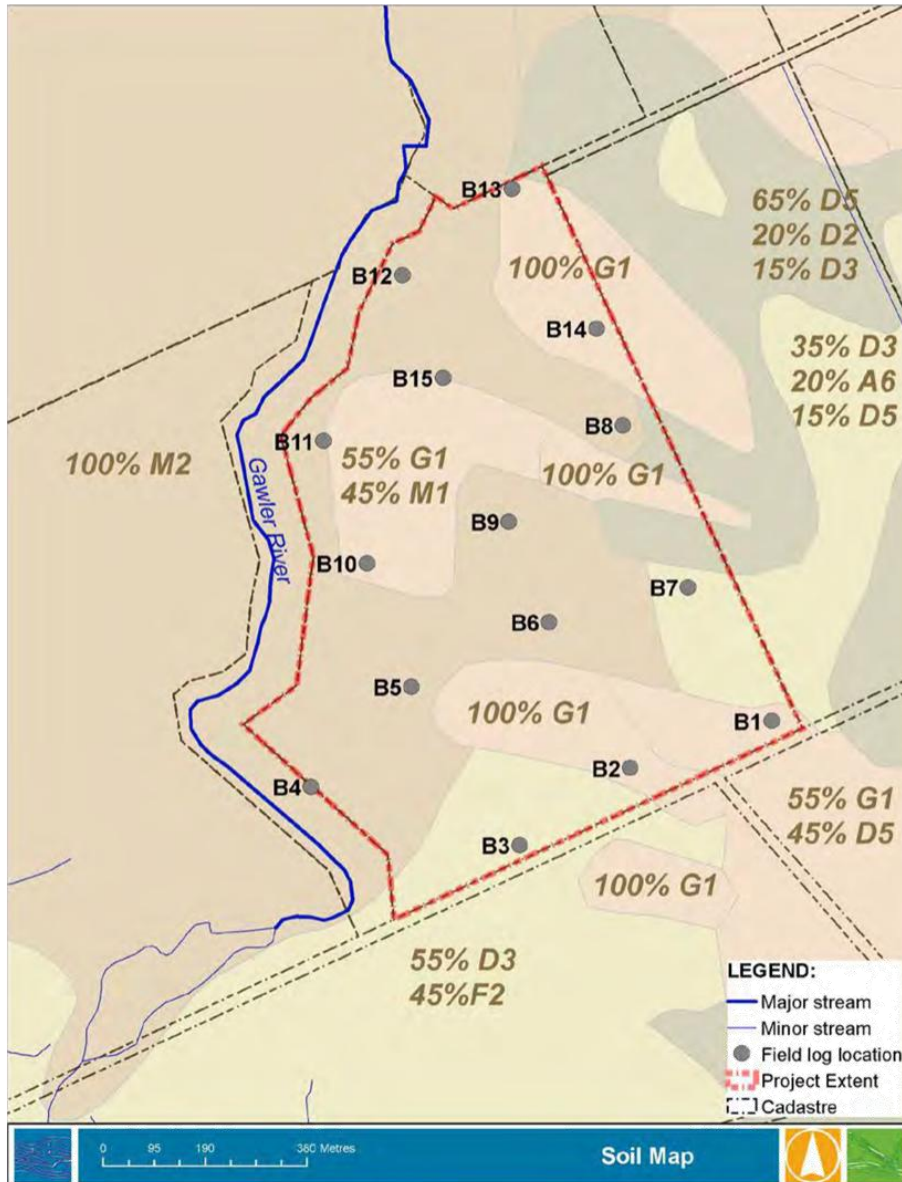


FIGURE 6-2 ASRIS SOIL MAP

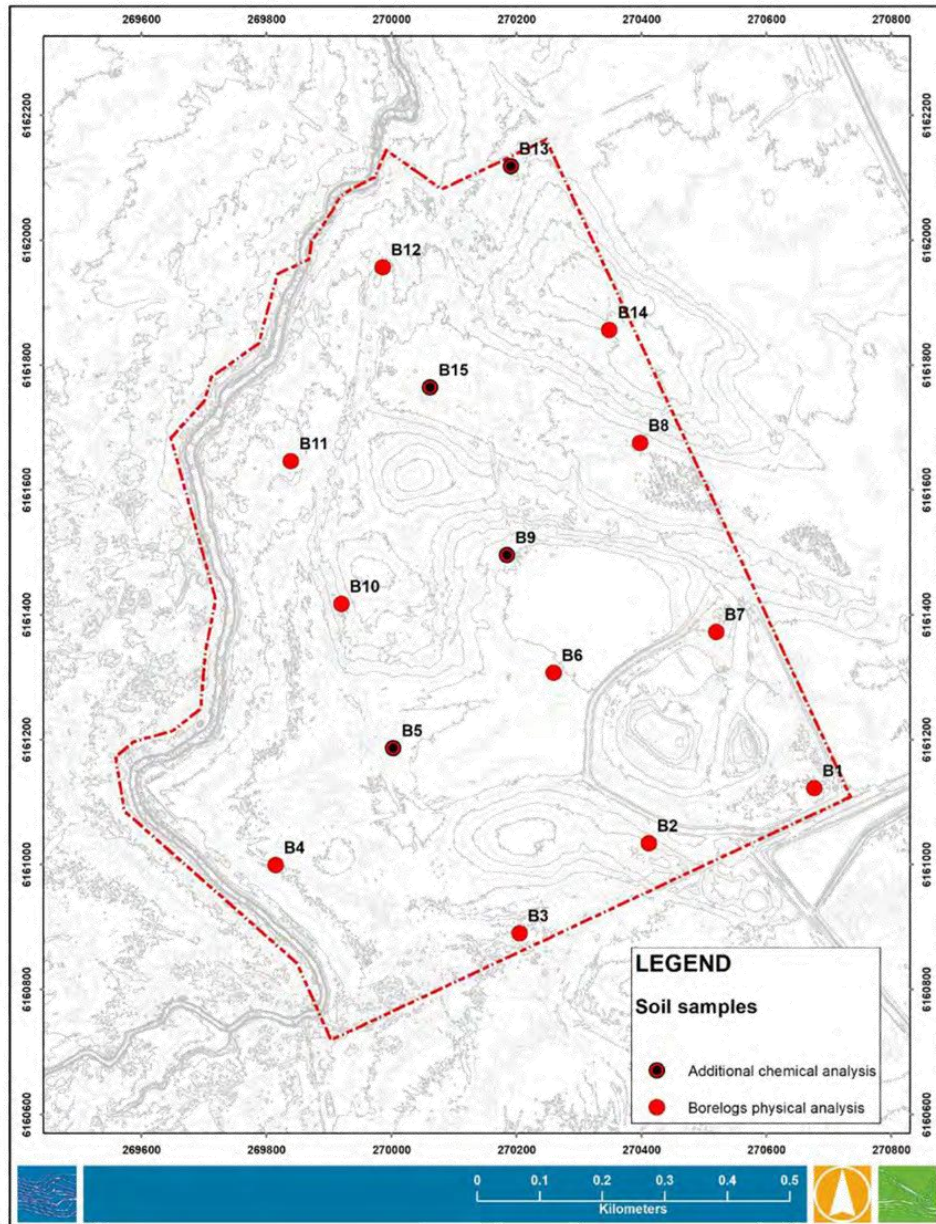


FIGURE 6-3 SOIL SAMPLING LOCATIONS



6.4 Soil Chemistry

Soil samples to 250mm depth were retrieved from B5, B9, B13, and B15 for analysis by APAL Laboratory, results of testing provided in Table 6-4.

TABLE 6-4 APAL LABORATORY TEST RESULTS

Sample	Units	BH5	BH9	BH13	BH15
pH 1:5 water	pH units	8.18	8.13	7.29	7.86
pH CaCl ₂ (following 4A1)	pH units	7.95	7.87	6.8	7.58
Organic Carbon (W&B)	%	1.83	1.43	3.56	1.67
MIR - Aus Soil Texture		Silty loam	Loam	Silty clay loam	Silty loam
Nitrate - N (2M KCl)	mg/kg	<1	<1	1.1	1.1
Ammonium - N (2M KCl)	mg/kg	1.8	1.7	1.4	<1
Colwell Phosphorus	mg/kg	27	11	90	130
PBI + Col P		91	116	99	89
KCl Sulfur (S)	mg/kg	940	140	73	430
Calcium (Ca) - AmmAc	mg/kg	3870	3870	4260	3620
Magnesium (Mg) - AmmAc	mg/kg	845	1090	983	560
Potassium (K) - AmmAc	mg/kg	369	588	582	376
Sodium (Na) - AmmAc	mg/kg	2580	1060	322	991
Calcium (Ca) - AmmAc	cmol/kg	19.3	19.3	21.3	18
Magnesium (Mg) - AmmAc	cmol/kg	6.95	8.97	8.09	4.6
Potassium (K) - AmmAc	cmol/kg	0.944	1.5	1.49	0.96
Sodium (Na) - AmmAc	cmol/kg	11.2	4.6	1.4	4.31
Ca:Mg Ratio		2.8	2.2	2.6	3.9
K:Mg Ratio		0.14	0.17	0.18	0.21
GTRI		0.04	0.05	0.05	0.04
ECR		32	18	9	19
Exchangeable acidity	cmol/kg	<0.02	<0.02	<0.02	<0.02
Exchangeable aluminium	cmol/kg	<0.02	<0.02	<0.02	<0.02



Sample	Units	BH5	BH9	BH13	BH15
Exchangeable hydrogen	cmol/kg	<0.02	<0.02	<0.02	<0.02
ECEC	cmol/kg	38.5	34.4	32.2	27.9
Calcium	%	50.2	56.2	65.9	64.6
Magnesium	%	18.1	26.1	25.1	16.5
Potassium	%	2.5	4.4	4.6	3.4
Sodium	%	29.2	13.4	4.3	15.4
Aluminium	%	0	0	0	0
Hydrogen	%	0	0	0	0
Salinity EC 1:5	dS/m	2.81	1.72	0.311	1.35
Ece	dS/m	27	16	2.7	13
Boron	mg/kg	13	7.8	2.7	3.5
Iron (Fe)	mg/kg	24	35	47	20
Manganese (Mn)	mg/kg	5.9	5.9	12	3.6
Copper (Cu)	mg/kg	1.5	2	1.7	5.4
Zinc (Zn)	mg/kg	1.5	1.4	1.2	4.1

The analytes tested were compared against typical requirements for Dryland Pasture, indicating assessed by APAL laboratory. An interpretation of the results as applies to irrigation, and application of treated wastewater is as follows:

- Moderately alkaline to slightly alkaline in the olive grove areas;
- Phosphorus Buffering Index (PBI) is categorised as low (71-140);
- Ece (estimated electrical conductivity Ec x soil factor) indicates high soil salinity in BH5, and BH9, restricting suitable plant growth to highly salt tolerant vegetation;
- Potential for dispersive, sodic soils with potential for structural deterioration with application of wastewater.

6.5 Phosphorus Adsorption

Soil sorption capacity of soils is an indicator of capacity to bind phosphorus transport. The P sorption in sandy clay loam and clay sands would be a limiting factor in calculating the area required for effluent and waste application.

Assume a Phosphorus P concentration of 0.5mg/person/day typical for domestic wastewater¹, and P load would be based on proposed number of people generating wastewater. Occupancy rates for a typical household would generate 2kgP/year. The P load would be as follows:

¹ Based on 2 kg P/yr for average 4-person household (Environment Canterbury, 2012 – recent NZ data)/ R. Patterson



The following Table 6-5 summarises the typical area required for effluent application for sustainable application of phosphorus. The assumption is application over a 50-year period is conservative, and effective depth of adsorption occurs in the top one metre of soil.

TABLE 6-5 PHOSPHORUS (P) SORPTION AREA

#	Item	Value	Note
A	P application rate	2 kg P/a	P/d x 365
B	Plant uptake	30 kg/ha	typical
C	Soil bulk density	1400 kg/m ³	estimated
D	Soil P sorption capacity	100 mg/kg	Low PBI / soil structure
E	Soil P sorption	1400 kg/ha	(C x D)
F	Plant uptake (50 years)	1500 kg/ha	(B x 50)
G	Total P capacity (50 years)	2900 kg/ha	(E + F)
H	P application (50 years)	100 kg	(A x 50)
	Application area required	0.0345 ha	(H / G)

An area of 345m² per dwelling would be required per dwelling for domestic effluent disposal based on P sorption capacity. This is a conservative estimate, however as the receiving soils indicate some structural degradation may occur with the application of wastewater, the area required would be appropriate for this level of investigation.

6.6 Nitrogen Budget

Nitrogen has multiple oxidation states depending on soil and ambient conditions. A very brief summary of nitrogen contribution to the nutrient balance is provided as follows:

The assumptions for calculating Total Nitrogen are:

- Average N concentration in domestic effluent – 80mg N/L (Patterson R. 2003);
- Daily design flow based on 6EP (750L/d) for individual dwelling;
- Estimated crop/ turf uptake of 300kg N/ha/yr; and
- N mineralisation/ volatilisation conversion rate of 60%.

As a result, the contribution of wastewater would be 86 kg N/year, and based on plant uptake and N conversion, an area of approximately 292m² would be required for individual dwellings

While the values are general and subject to considerable variation depending on soil conditions and vegetation, the nutrient balance (both N and P) indicates that P sorption capacity of the soil may be the limiting factor. The increase in nutrient load through human activity proposed by the development should be manageable on site with selection of suitable allotment sizes.



7 WASTEWATER MANAGEMENT

The site currently has no access to SA Water sewerage, and wastewater would need to be managed on-site. Suitability of the site for wastewater disposal (i.e. soil classification and depth to groundwater) will inform the wastewater management strategy for the development. The approach is to determine minimum allotment sizes for the residential development based on the constraints identified in the LCA and applying the appropriate application rate for the whole development. Treatment options including primary (septic) and secondary will be considered, in the following sections.

7.1 Hydraulic Load

Water use that generates wastewater is based on the following assumptions. Proposed activities include daytime visitors using facilities, derived from DHA Onsite Wastewater code, 2013. The residential development assumes low-use design rates for community scale development.

TABLE 7-1 POTABLE WATER USE

Precinct	Demand profile	Demand per household	Description
Windamere Park Hub housing	125L/person/day	750L/day	4 person dwelling capacity/ cluster housing
Windamere Park Activities	40L/person/day	4000L/day	400 visitors/attendees
Windamere Park Residential subdivision	140L/person/day	490L/day	3.5 pers/allotment for community WWTP
Windamere Park Residential subdivision	125L/person/day	750L/day	Onsite disposal on allotment

7.2 Subsurface Land Application

Based on a lower permeability of 0.5m/day, from Table 6.2, a hydraulic loading rate of 8mm/day has been selected (per AS1547:2012, Table L1) for subsurface distribution of wastewater. As a result, the area required for wastewater application in each precinct would be:

Windamere Park Hub housing – 94m² per dwelling

Windamere Park Activities – 500m²; and

Windamere Park Residential subdivision - If the residential subdivision consists of common collection network and distribution in common areas, and say 180 allotments are connected, then a total area of 1,12ha would be required for disposal into the soil profile. Otherwise 94m² per dwelling would apply.

7.3 Surface Irrigation

An appropriate irrigation rate based on AS1547:2012, Table M for assessed soils would be an application rate of 3.5mm/day. The irrigation rate depends on soil category and the rate of evapotranspiration by the vegetation being irrigated. The rates provided in AS1547:2012 represent a conservative approach for sizing irrigation areas. As a result, the area required for wastewater application in each precinct would be:

Windamere Park Hub housing – 215m² per dwelling

Windamere Park Activities – 1145m²; and

Windamere Park Residential subdivision – 14,150 m².



7.4 Wastewater Balance

Wastewater generated from the residential area may be collected and treated in a centralised wastewater treatment plant to secondary treatment quality for irrigation of open space. Assuming a population density of 3.5 people per dwelling, a design flow for a development having say 180 allotments, would be around 90kL/day. A water balance has been prepared to determine the area required for irrigation and storage, see Table 7-2.

The following assumptions are made:

- Soil seepage/ application rate of 8mm/day;
- 90 percentile rainfall year;
- Runoff coefficient of 0.5 (level ground)
- Crop factor of 0.7 (warm season turf); and
- Irrigated area of 11,500m²

TABLE 7-2 WASTEWATER BALANCE

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Days	31	28.25	31	30	31	30	31	31	30	31	30	31
Inflow (kL/month)	2790	2542.5	2790	2700	2790	2700	2790	2790	2700	2790	2700	2790
Irrigation area available (ha)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Inflow (mm/month)	243	221	243	235	243	235	243	243	235	243	235	243
Rainfall (mm/Month)-90%ile	52	49	57	56	74	88	85	81	82	76	40	44
Effective Rainfall (mm/Month)	26	24	29	28	37	44	43	41	41	38	20	22
Evaporation potential (Eto)	316	272	226	144	87	54	62	84	117	177	240	298
Evapotranspiration (Etc)	221	190	158	101	61	38	43	59	82	124	168	208
Seepage (mm/Month)	248	226	248	240	248	240	248	248	240	248	240	248
Monthly balance (mm)	-201	-171	-135	-78	-29	1	-6	-23	-46	-91	-153	-192

The water balance demonstrates that over an irrigated area of 11,000m², no additional storage would be required. In an average rainfall year, the balance indicates around 10,500m² of irrigation would be required. Irrigation used in landscaped areas with vegetation having a greater evapotranspiration capacity would reduce the area required for irrigation.

If the area for disposal was reduced to 5000m² for example then based on the water balance, approximately 1.5ML of storage would be necessary.

The rainfall data taken over the last 47 years indicates that under 2 days (1.4 days) of rainfall in any month exceeds 10mm/day. The risk of runoff would be considered low, and storage on site for wastewater is not considered necessary.

7.5 Residential Allotment Size

The following table includes additional regulation setback distances to building and boundaries for wastewater disposal on residential allotments.


TABLE 7-3 DESIGN DISPOSAL FOOTPRINT FOR SMALL RESIDENTIAL ALLOTMENTS

	Disposal area	Disposal footprint (including setback distances)
Subsurface disposal	94 m ²	280 m ²
Irrigation	215 m ²	322 m ²

The results of nutrient requirements indicate that an area of around 345m² would be required for a typical allotment. This is irrespective of whether primary or secondary treatment options are considered as there is little reduction in nutrient load using secondary treatment. As this area is larger than areas indicated in Table 7-3, it should be used for sizing residential allotments.

Assuming a typical residential building allotment utilises the following areas:

- Building footprint including pavement - 200 m²
- Recreation space – 150 m²
- Driveway/shed/hardstand - 200 m²; and
- Wastewater disposal - 345 m², and
- For dwellings having standard plumbing fixtures, and 3 bedrooms (6 EP- equivalent population)

A minimum area of 895m² would be developed. In this scenario an allotment size of 900m² would be the minimum size to allow for onsite wastewater systems.

For larger dwellings, additional disposal area would be required which would either reduce area available for recreation, etc. or require the allotment area to be larger. For example, an 8EP (4 bedroom) dwelling would increase the disposal area by approximately one third, and a 10EP (5 bedroom) home by 1.25 times. Allotment sizes of 1200m² and 1500m² would be required in these cases.

7.6 Next Steps

At the land division concept stage and based on the land capability assessment and water balance for the proposed development, wastewater should be manageable on-site. However, as the mix of facilities within the proposed development will dictate the size and complexity of waste treatment methods chosen, the design of wastewater treatment systems will therefore need to consider the following:

- Quantification of water volumes and nutrient loads for proposed activities and areas, and the timing of maximum wastewater 'loading' through the year, to inform design of the wastewater collection and treatment systems;
- Concept design including identifying appropriate areas for wastewater and applying input data to help identify whether only one treatment system is required, or whether multiple treatment systems are more efficient/cost-effective. Wetlands for example can be considered on-site as part of the treatment option(s); and
- Determining treatment levels of wastewater to allow water recycling for various fit for purpose uses, including irrigation and flushing, third pipe systems, and integration into the surface water system for storage and further use.



8 MAINS WATER SUPPLY

SA Water have been consulted about the availability and viability of potable water supply for the proposed development at Windamere Park.

SA Water were informed of the following requirements for Windamere Park.

- The development proposes to reuse water on site where possible, and portable mains may be used to supplement alternative sources, or be supplemented by alternative sources;
- The development would include mixed use areas and accommodation on approx. 20ha, and a low-density residential development;
- Peak supply would be around 150kL per day for the development, based on an initial assumption of around 180 titled allotments; and
- The existing Boliver reclaimed water supply to the property is currently used for irrigation of olive groves, and while the area of olives would be reduced by the development, would be retained for irrigation and other re-use.

Correspondence with Debbie Snoswell, Accounts Manager at SA Water, provided the following information.

- There is an existing 250mm capped main in Legoe Road at the junction of Legoe Rd and Port Wakefield Road.
- A 250mm main supply has been extended along Angle Vale Road to Port Wakefield Road for the future Buckland Park Development funded by Walker Corporation.
- Currently there are no connections off this 250mm water main, and it was designed to supply water to the equivalent to approximately 1000 residential dwellings.
- The supply is available for use for the Windamere Park development, and where capacity in future may be required, SA Water would be able to extend its network to augment supply.
- Any extension of this water main would need to be in a currently gazetted roadway, and it is understood that Walker Corporation may be altering the road configuration as part of their proposed Riverlea Development (Buckland Park).

The extension along Legoe Rd to Windamere Park would be approximately 4km, however this may be subject to design in collaboration with the Walker Corporation (Riverlea Development) to determine its alignment, and cost of construction.

At this stage SA Water have indicated that a supply could be achieved, subject to their further network analysis.



WATER TECHNOLOGY
WATER, COASTAL & ENVIRONMENTAL CONSULTANTS

APPENDIX A LABORATORY REPORTS





Volatiles Organic Compounds
1 1 1 2-tetrachloroethane
1 1 1-trichloroethane
1 1 2 2-tetrachloroethane
1 1 2-trichloroethane
1 1-dichloropropene
1 2 3-trichlorobenzene
1 2 3-trichloropropane
1 2 4-trichlorobenzene
1 2 4-trimethylbenzene
1 2-dibromo-3-chloropropane
1 2-dibromoethane
1 2-dichlorobenzene
1 2-dichloroethane
1 2-dichloropropane
1 3 5-trimethylbenzene
1 3-dichlorobenzene
1 3-dichloropropane
1 4-dichlorobenzene
1,1-dichloroethene
2-chlorotoluene
4-chlorotoluene
4-isopropyltoluene
Benzene
Bromobenzene
Bromodichloromethane
Bromoform
Carbon tetrachloride
Chlorobenzene
Chloroform
Cis-1 3-dichloropropene
cis-1,2-dichloroethene
Dibromochloromethane
Dibromomethane
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene
m+p-xylenes - Total
Naphthalene
N-butylbenzene
N-propylbenzene
o-xylene
Sec-butylbenzene
Styrene

Volatiles Organic Compounds
Tert-butylbenzene
Tetrachloroethene
Toluene
Trans-1 3-dichloropropene
trans-1,2-dichloroethene
Trichloroethene
Vinyl Chloride

Concentration of Volatile Organic Compounds should be less than the values in the latest version of the ADWG:

<http://www.nhmrc.gov.au/guidelines/publications/eh52>

Health-related chemical parameters should be less than the ADWG values (below).

Chemical	ADWG value (mg/L)
Antimony	0.003
Arsenic	0.01
Barium	2
Beryllium	0.06
Boron	4
Cadmium	0.002
Chromium	0.05
Copper	2
Fluoride	1.5
Lead	0.01
Manganese	0.5
Mercury	0.001
Molybdenum	0.05
Nickel	0.02
Nitrate	50
Selenium	0.01
Silver	0.1
Sulfate	500
Uranium	0.017

For the latest version of the ADWG go to:

<http://www.nhmrc.gov.au/guidelines/publications/eh52>



APPENDIX B SOIL BORELOGS





SURFACE BORE LOG	DATE: 26/8/2019	CR2 1 OF 1
	JOB NO: 19030072	
DATE DRILLED: 15/8/2019	TO BE READ IN CONJUNCTION WITH CR2-1 & CR2-2	
CLIENT: WATERTech		
LOCATION: WINDAMERE PARK, DPA INVESTIGATION		

DEPTH IN METRES				VISUAL ASSESSMENT OF PROPERTIES							
1	2	3	4	COLOUR	CONSISTENCY, TEXTURE & STRUCTURE	SOIL DESCRIPTION	U.S.C.	M.C.	BEARING	EST Ips (AVE)	
0.00-0.40		0.00-0.30	0.00-0.50	Grey Brown	Friable, Firm, Granular	Silty Sandy CLAY	LMP	CL/ML	B/N	M	0.015
	0.00-1.00	0.30-0.70	0.50-1.20	Brown	Loose, Friable, Granular	Clayey SAND	VLP	SC	B	M	0.005
0.40-0.80	1.00-1.60	0.70-1.25	1.20-1.70	Red Brown	Hard, Granular	Sandy CLAY	HP	CH	B	M	0.030
0.80-1.70	1.60-2.00	1.25-1.80	1.70-2.00	Cream Red Brown	Friable, Firm, Granular	Sandy CLAY, Calcareous	MP	CL/GC	B/N	M*	0.020
	2.00-2.60	1.80-2.00		Orange Brown	Firm, Granular	Sandy CLAY	MP	CL	N	M	0.020
1.70-2.20		2.00-2.60	2.00-2.50	Grey Brown	Friable, Granular	Sandy CLAY, Calcareous	LMP	CL/GC	W/A	M	0.015
2.20-3.00	2.60-3.00	2.60-3.00	2.50-3.00	Orange Grey Brown	Firm, Granular	Silty Sandy CLAY	MHP	CL/CH	A	M	0.025

REMARKS:	CLASSIFICATION:	TYPE: TR	CLASSIFIER:
<p>1. **The classification nominated on this borelog relates to the site soil profile at the time of testing. It does not allow for future earthworks and does not incorporate any possible effects from trees, either existing or future.</p> <p>2. *The calcareous clay soils present within the soil profile may lose strength upon wetting and adequate site drainage is essential.</p>		<p>REFERENCES USED:</p> <p>SOIL MAPS:</p> <p>NEARBY BORELOGS:</p> <p>SAMPLE METHOD: Driven push tube using high pressure hydraulic hammer.</p>	
Logged By: LAB SA		Checked By: WF	
		Page 1 of 1	



SURFACE BORE LOG	DATE: 26/8/2019	CR2 1 OF 1
	JOB NO: 19030072	
DATE DRILLED: 15/8/2019	TO BE READ IN CONJUNCTION WITH CR2-1 & CR2-2	
CLIENT: WATERTech		
LOCATION: WINDAMERE PARK, DPA INVESTIGATION		

DEPTH IN METRES				VISUAL ASSESSMENT OF PROPERTIES							
5	6	7	8	COLOUR	CONSISTENCY, TEXTURE & STRUCTURE	SOIL DESCRIPTION	U.S.C.	M.C.	BEARING	EST Ips (AVE)	
0.00-0.20						NO SAMPLE					
0.20-0.50	0.00-0.50		0.00-0.40	Dark Brown	Friable, Firm, Granular	Silty Sandy CLAY	LMP	CL/ML	B/N	L/M	0.015
0.50-0.70	0.50-0.80	0.00-0.20	0.40-0.70	Brown	Loose, Granular	Clayey SAND	VLP	SC	B/N	L/M	0.005
0.70-1.40	0.80-1.60	0.20-0.50	0.70-0.90	Red Brown	Firm, Granular	Sandy CLAY	MHP	CL/CH	B/N	M	0.025
1.40-1.70	1.60-1.90	0.50-1.40	0.90-1.40	Cream Brown	Firm, Granular	Sandy CLAY, Calcareous	MP	CL/GC	B	M*	0.020
1.70-2.40		1.40-1.70	1.40-1.95	Grey Brown	Hard, Granular	Sandy CLAY	MHP	CL/CH	B/N	M	0.025
	1.90-2.30	1.70-2.10	1.95-2.40	Brown	Firm, Granular	Silty Sandy CLAY, Calcareous	LMP	CL	W/A	M	0.015
2.40-3.00	2.30-3.00	2.10-3.00	2.40-3.00	Orange Brown	Hard, Stiff, Granular	Silty Sandy CLAY	HP	CH	N/A	M	0.030
REMARKS:		CLASSIFICATION:				TYPE: TR				CLASSIFIER:	
1. **The classification nominated on this borelog relates to the site soil profile at the time of testing. It does not allow for future earthworks and does not incorporate any possible effects from trees, either existing or future. 2. *The calcareous clay soils present within the soil profile may lose strength upon wetting and adequate site drainage is essential.						REFERENCES USED: SOIL MAPS: NEARBY BORELOGS: SAMPLE METHOD: Driven push tube using high pressure hydraulic hammer.					
Logged By: LAB SA				Checked By: WF				Page 1 of 1			



SURFACE BORE LOG	DATE: 26/8/2019	CR2 1 OF 1
	JOB NO: 19030072	
DATE DRILLED: 15/8/2019	TO BE READ IN CONJUNCTION WITH CR2-1 & CR2-2	
CLIENT: WATERTech		
LOCATION: WINDAMERE PARK, DPA INVESTIGATION		

		DEPTH IN METRES		VISUAL ASSESSMENT OF PROPERTIES							
			9	COLOUR	CONSISTENCY, TEXTURE & STRUCTURE	SOIL DESCRIPTION	U.S.C.	M.C.	BEARING	EST Ips (AVE)	
			0.00-0.20			NO SAMPLE					
			0.20-0.45	Brown	Loose, Granular	Clayey SAND	VLP	SC	B/N	L	0.002
			0.45-0.90	Orange Red Brown	Hard, Granular	Sandy CLAY	HP	CH	B	L/M	0.030
			0.90-1.30	Cream Red Brown	Friable, Firm, Granular	Sandy CLAY, Calcareous	MP	CL/GC	B/N	M*	0.020
			1.30-1.70	Orange Brown	Friable, Granular	Sandy CLAY, Calcareous	MP	CL	B/N	M	0.020
			1.70-2.00	Orange Brown	Hard, Granular	Sandy CLAY, With Calcareous Gravel	MHP	GC/CL	B	M*	0.025
			2.00-2.70	Orange Grey Brown	Hard, Granular	Silty Sandy CLAY	MHP	CL/CH	W/A	M	0.025
			2.70-3.00	Orange Brown	Firm, Granular	Silty Sandy CLAY	LMP	CL/ML	W/A	M	0.015
REMARKS:		CLASSIFICATION:				TYPE: TR				CLASSIFIER:	
<ol style="list-style-type: none"> **The classification nominated on this borelog relates to the site soil profile at the time of testing. It does not allow for future earthworks and does not incorporate any possible effects from trees, either existing or future. *The calcareous clay soils present within the soil profile may lose strength upon wetting and adequate site drainage is essential. 						REFERENCES USED: SOIL MAPS: NEARBY BORELOGS: SAMPLE METHOD: Driven push tube using high pressure hydraulic hammer.					
Logged By: LAB SA				Checked By: WF				Page 1 of 1			



SURFACE BORE LOG	DATE: 26/8/2019	CR2 1 OF 1
	JOB NO: 19030072	
DATE DRILLED: 15/8/2019	TO BE READ IN CONJUNCTION WITH CR2-1 & CR2-2	
CLIENT: WATERTech		
LOCATION: WINDAMERE PARK, DPA INVESTIGATION		

		DEPTH IN METRES		VISUAL ASSESSMENT OF PROPERTIES							
		11	12	COLOUR	CONSISTENCY, TEXTURE & STRUCTURE	SOIL DESCRIPTION	U.S.C.	M.C.	BEARING	EST Ips (AVE)	
		0.00-0.30	0.00-0.40	Brown	Friable, Granular	Clayey SAND	VLP	SC	B	L	0.005
		0.30-0.80	0.40-0.90	Light Brown	Loose, Granular	Silty Sandy CLAY	LP	CL/ML	B	L/M	0.010
		0.80-1.40	0.90-1.60	Black Grey	Firm, Granular	Sandy CLAY	HP	CG	B	M	0.045
		1.40-2.20	1.60-2.00	Cream Red Brown	Firm, Granular	Sandy CLAY, Calcareous	MP	CL/GC	B	M*	0.020
			2.00-2.70	Grey Brown	Hard, Granular	Sandy CLAY	HP	CH	B	M	0.030
		2.20-3.00	2.70-3.00	Cream Orange Brown	Friable, Firm, Granular	Sandy CLAY, Calcareous	MP	CL	B/N	M	0.020

REMARKS:	CLASSIFICATION:	TYPE: TR	CLASSIFIER:
1. **The classification nominated on this borelog relates to the site soil profile at the time of testing. It does not allow for future earthworks and does not incorporate any possible effects from trees, either existing or future. 2. *The calcareous clay soils present within the soil profile may lose strength upon wetting and adequate site drainage is essential.		REFERENCES USED: SOIL MAPS: NEARBY BORELOGS: SAMPLE METHOD: Driven push tube using high pressure hydraulic hammer.	
Logged By: LAB SA	Checked By: WF	Page 1 of 1	



APPENDIX C RESIDENTIAL TANK WATER BALANCE



Appendix C - Residential Tank Water Balance Inputs

Demands	Water Use (L/pers/day)	
	RW	Mains
Internal	125	150
External	37.5	45

Number of people **4**

Total External RW 41.09 kL/yr 3ppl/dwelling
 Total External RW 54.79 kL/yr 4ppl/dwelling

Irrigation

External water use would be seasonal (irrigation) - assume 6 months (Nov - Apr (inclusive))

- Scenario 1 - Internal and external demands from RW tank with 3ppl/dwelling
- Scenario 2 - Internal and external demands from RW tank with 4 ppl/dwelling
- Scenario 3 - Internal demands only from RW tank with 3ppl/dwelling
- Scenario 4 - Internal demands only from RW tank with 4ppl/dwelling

Scenario 1 ****assume 3 ppl/dwelling**

		Internal	External	Total use (L/day)	Total use (l/Proportion)		
31	Jan	375	331	706	21.9	0.12	12.3
28.25	Feb	375	364	739	20.9	0.12	11.7
31	Mar	375	199	574	17.8	0.10	10.0
30	Apr	375	68	443	13.3	0.07	7.5
31	May	375	0	375	11.6	0.07	6.5
30	Jun	375	0	375	11.3	0.06	6.3
31	Jul	375	0	375	11.6	0.07	6.5
31	Aug	375	0	375	11.6	0.07	6.5
30	Sep	375	0	375	11.3	0.06	6.3
31	Oct	375	0	375	11.6	0.07	6.5
30	Nov	375	137	512	15.4	0.09	8.6
31	Dec	375	274	649	20.1	0.11	11.3

External Water Use (kL/day)

	Proportion split	3ppl	RW
Nov	0.1	0.14	
Dec	0.2	0.27	
Jan	0.25	0.33	
Feb	0.25	0.36	
Mar	0.15	0.20	
Apr	0.05	0.07	

Total 178.3

Scenario 2 ****assume 4 ppl/dwelling**

		Internal	External	Total use (L/day)	Total use (l/Proportion)		
31	Jan	500	0	500	15.5	0.08	8.5
28.25	Feb	500	0	500	14.1	0.08	7.7
31	Mar	500	0	500	15.5	0.08	8.5
30	Apr	500	0	500	15.0	0.08	8.2
31	May	500	0	500	15.5	0.08	8.5
30	Jun	500	0	500	15.0	0.08	8.2
31	Jul	500	0	500	15.5	0.08	8.5
31	Aug	500	0	500	15.5	0.08	8.5
30	Sep	500	0	500	15.0	0.08	8.2
31	Oct	500	0	500	15.5	0.08	8.5
30	Nov	500	0	500	15.0	0.08	8.2
31	Dec	500	0	500	15.5	0.08	8.5

External Water Use (kL/day)

	Proportion split	4ppl	RW
Nov	0.1	0.18	
Dec	0.2	0.35	
Jan	0.25	0.44	
Feb	0.25	0.48	
Mar	0.15	0.27	
Apr	0.05	0.09	

Total 182.7

Scenario 3 ****assume 3 ppl/dwelling**

		Internal	External	Total use (L/day)	Total use (l/Proportion)		
31	Jan	375	0	375	11.6	0.08	8.5
28.25	Feb	375	0	375	10.6	0.08	7.7
31	Mar	375	0	375	11.6	0.08	8.5
30	Apr	375	0	375	11.3	0.08	8.2
31	May	375	0	375	11.6	0.08	8.5
30	Jun	375	0	375	11.3	0.08	8.2
31	Jul	375	0	375	11.6	0.08	8.5
31	Aug	375	0	375	11.6	0.08	8.5
30	Sep	375	0	375	11.3	0.08	8.2
31	Oct	375	0	375	11.6	0.08	8.5
30	Nov	375	0	375	11.3	0.08	8.2
31	Dec	375	0	375	11.6	0.08	8.5

Total 137.0

Scenario 2 ****assume 4 ppl/dwelling**

		Internal	External	Total use (L/day)	Total use (l/Proportion)		
31	Jan	500	0	500	15.5	0.08	8.5
28.25	Feb	500	0	500	14.1	0.08	7.7
31	Mar	500	0	500	15.5	0.08	8.5
30	Apr	500	0	500	15.0	0.08	8.2
31	May	500	0	500	15.5	0.08	8.5
30	Jun	500	0	500	15.0	0.08	8.2
31	Jul	500	0	500	15.5	0.08	8.5
31	Aug	500	0	500	15.5	0.08	8.5
30	Sep	500	0	500	15.0	0.08	8.2
31	Oct	500	0	500	15.5	0.08	8.5
30	Nov	500	0	500	15.0	0.08	8.2
31	Dec	500	0	500	15.5	0.08	8.5

Total 182.6

Appendix C - Residential Tank Water Balance Results

Scenario 1

Roof Area	Tank Size			
	1	5	10	22.5
150	17.6	24.4	25.3	25.3
200	19.4	30.6	32.7	33.7
250	20.9	35.7	39	41.2

Scenario 2

Roof Area	Tank Size			
	1	5	10	22.5
150	13.9	18.8	19	19
200	15.6	23.9	25.2	25.4
250	16.9	28.3	30.3	31.6

Scenario 3

Roof Area	Tank Size			
	1	5	10	22.5
150	22.5	31.8	32.9	33
200	24.9	39.7	42.2	43.5
250	26.6	45.9	49.9	52.8

Scenario 4

Roof Area	Tank Size			
	1	5	10	22.5
150	18	24.6	25	25
200	20.2	31.2	33	33.3
250	21.8	36.9	39.5	41.1

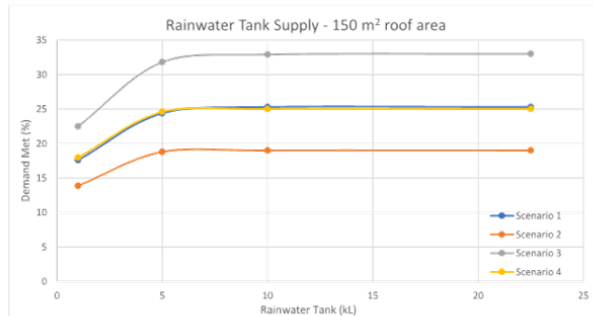
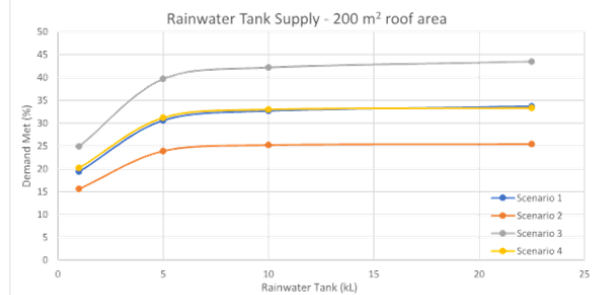
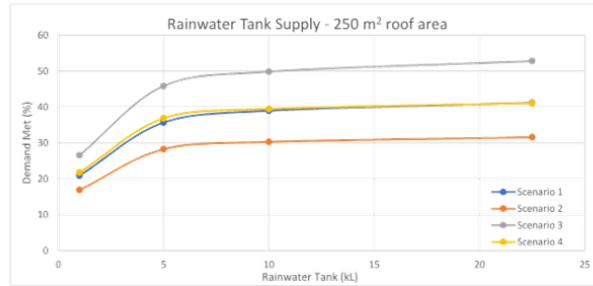
250sqm

Scenario	1	5	10	22.5
Scenario 1	20.9	35.7	39	41.2
Scenario 2	16.9	28.3	30.3	31.6
Scenario 3	26.6	45.9	49.9	52.8
Scenario 4	21.8	36.9	39.5	41.1

200sqm

Scenario	1	5	10	22.5
Scenario 1	19.4	30.6	32.7	33.7
Scenario 2	15.6	23.9	25.2	25.4
Scenario 3	24.9	39.7	42.2	43.5
Scenario 4	20.2	31.2	33	33.3

Scenario	1	5	10	22.5
Scenario 1	17.6	24.4	25.3	25.3
Scenario 2	13.9	18.8	19	19
Scenario 3	22.5	31.8	32.9	33
Scenario 4	18	24.6	25	25





Melbourne

15 Business Park Drive
Notting Hill VIC 3168
Telephone (03) 8526 0800
Fax (03) 9558 9365

Adelaide

1/198 Greenhill Road
Eastwood SA 5063
Telephone (08) 8378 8000
Fax (08) 8357 8988

Geelong

PO Box 436
Geelong VIC 3220
Telephone 0458 015 664

Wangaratta

First Floor, 40 Rowan Street
Wangaratta VIC 3677
Telephone (03) 5721 2650

Brisbane

Level 3, 43 Peel Street
South Brisbane QLD 4101
Telephone (07) 3105 1460
Fax (07) 3846 5144

Perth

Ground Floor
430 Roberts Road
Subiaco WA 6008
Telephone 08 6555 0105

Gippsland

154 Macleod Street
Bairnsdale VIC 3875
Telephone (03) 5152 5833

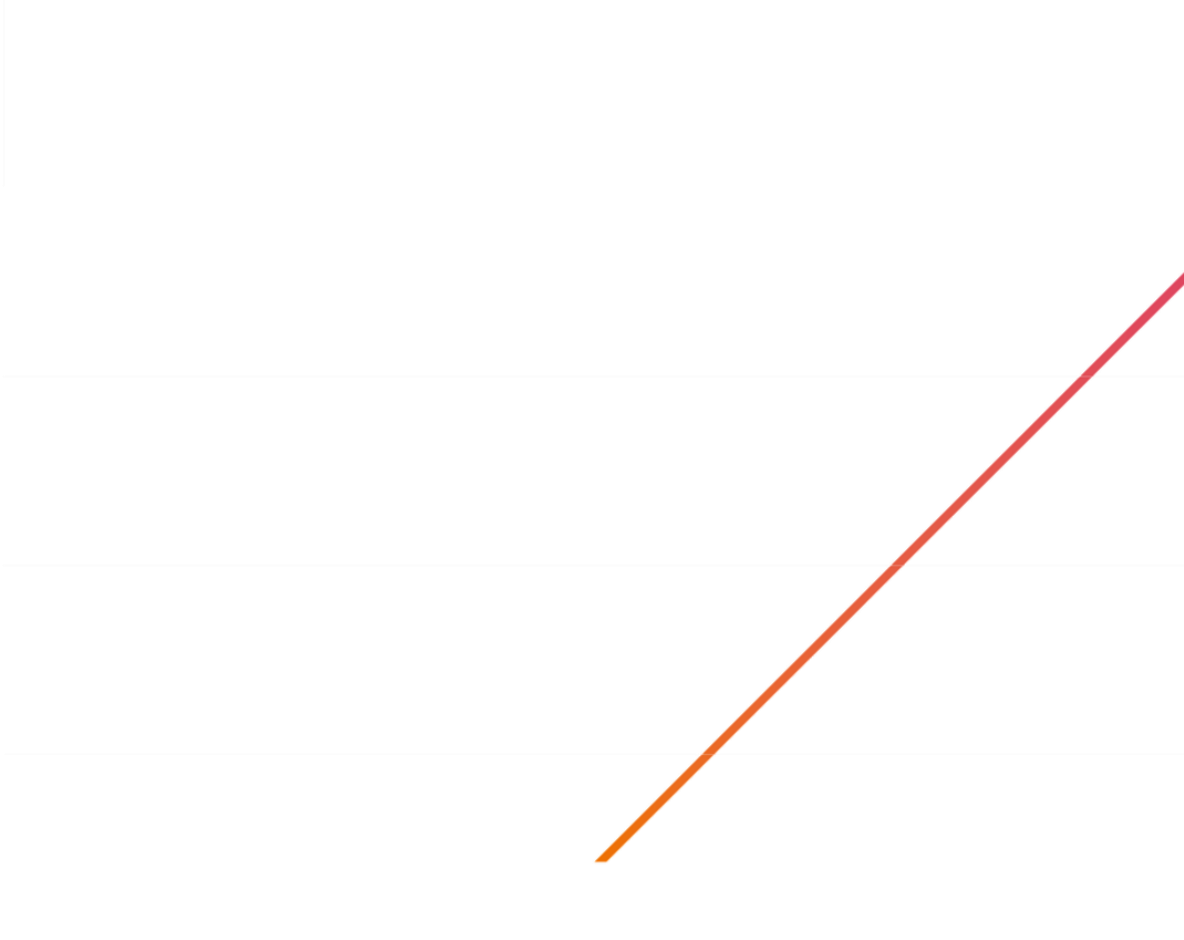
Wimmera

PO Box 584
Stawell VIC 3380
Telephone 0438 510 240

www.watertech.com.au

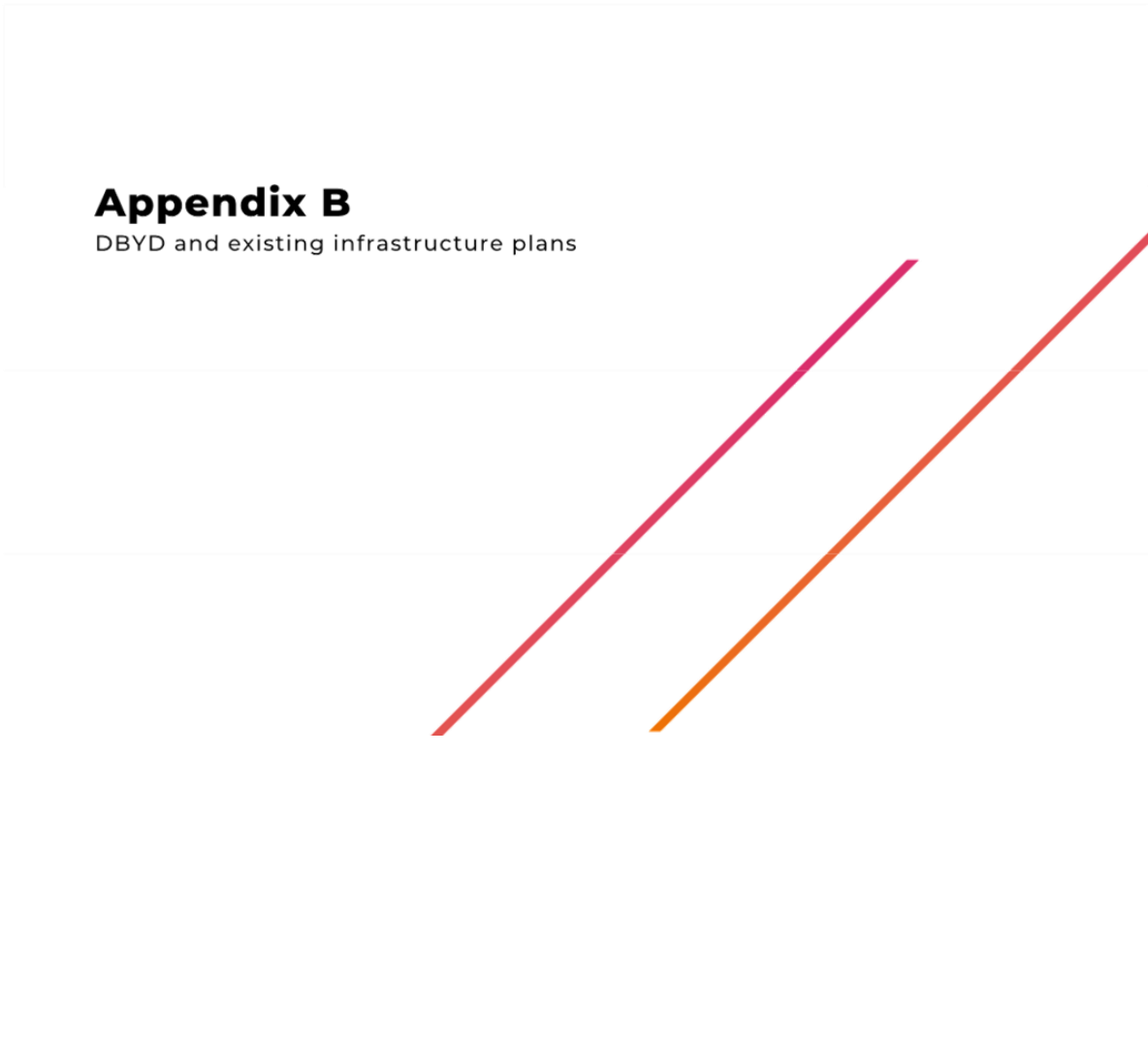
info@watertech.com.au





Appendix B

DBYD and existing infrastructure plans



Job ID 36600153

SA Power Networks

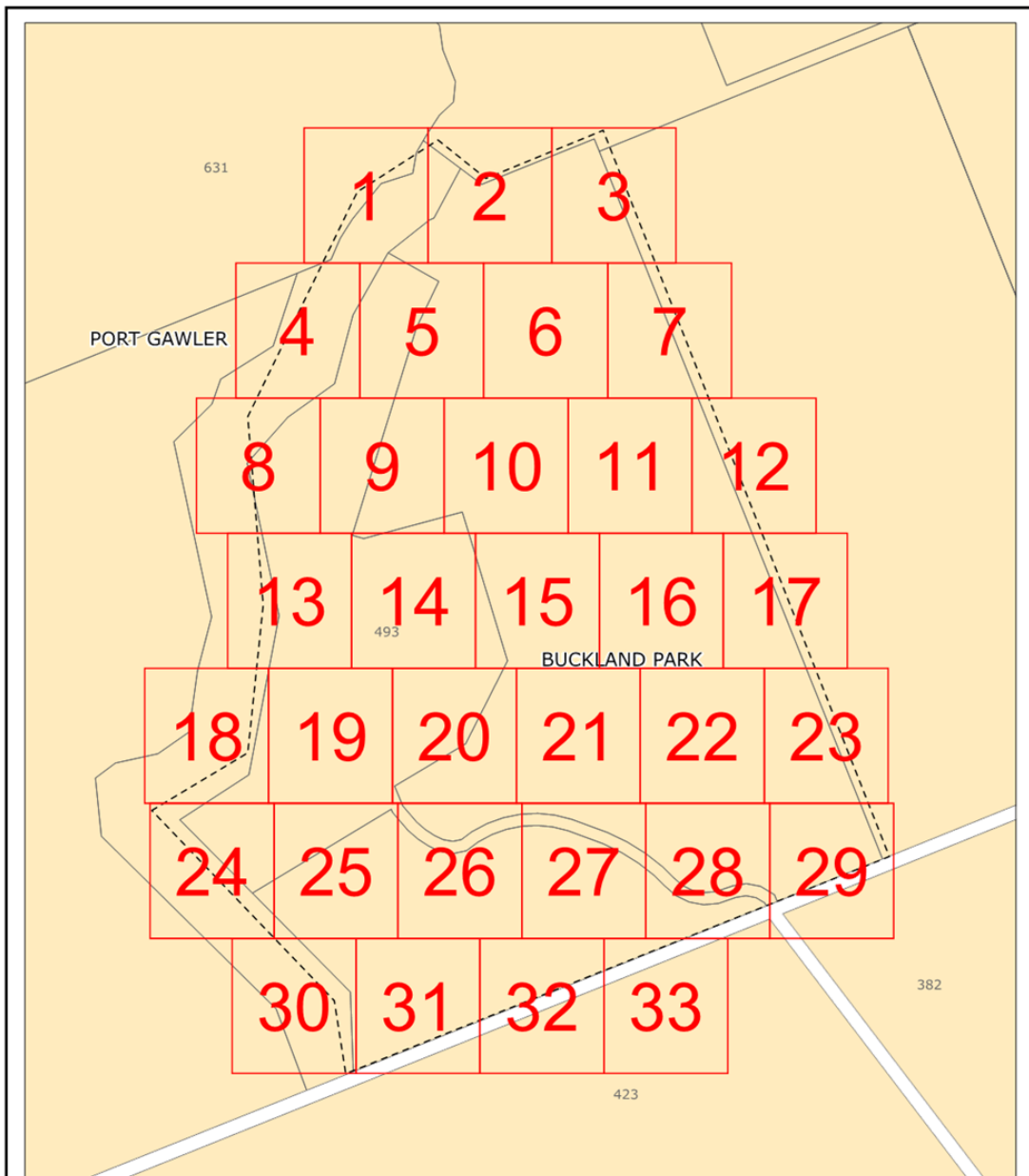
Referral 238743348	Member Phone (08) 8292 0218
Responses from this member	
Response received Fri 3 May 2024 10.21am	
File name	Page
Response Body	16
238743348.pdf	17



Overview Map

Sequence No: 238743348

Lot 202 Legoe Road Buckland Park



Disclaimer: The Plan/Sketch is supplied at your request and is subject to your agreement that SA Power Networks shall not be liable or responsible for the correctness or otherwise of any such information supplied pursuant to this request. Upon acceptance of this condition SA Power Networks grants you permission to use the Plan/Sketch as a guide to the location of SA Power Networks assets. The Plan/Sketch must be returned to SA Power Networks if you fail to accept the conditions of use.



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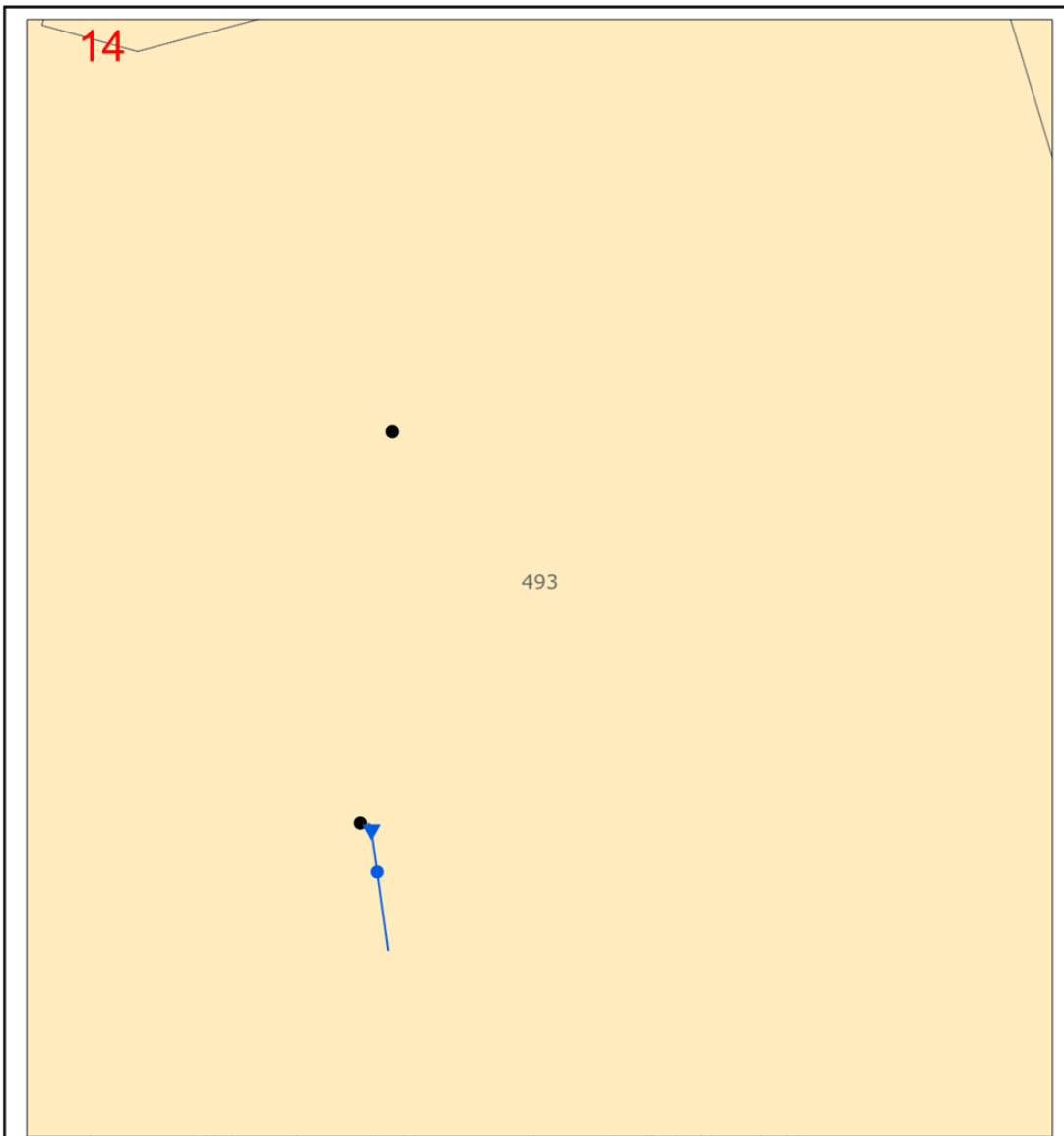
- 1** Detail Map
- BYD Requested Area



Map 14

Sequence No: 238743348

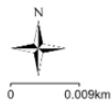
Lot 202 Legoe Road Buckland Park

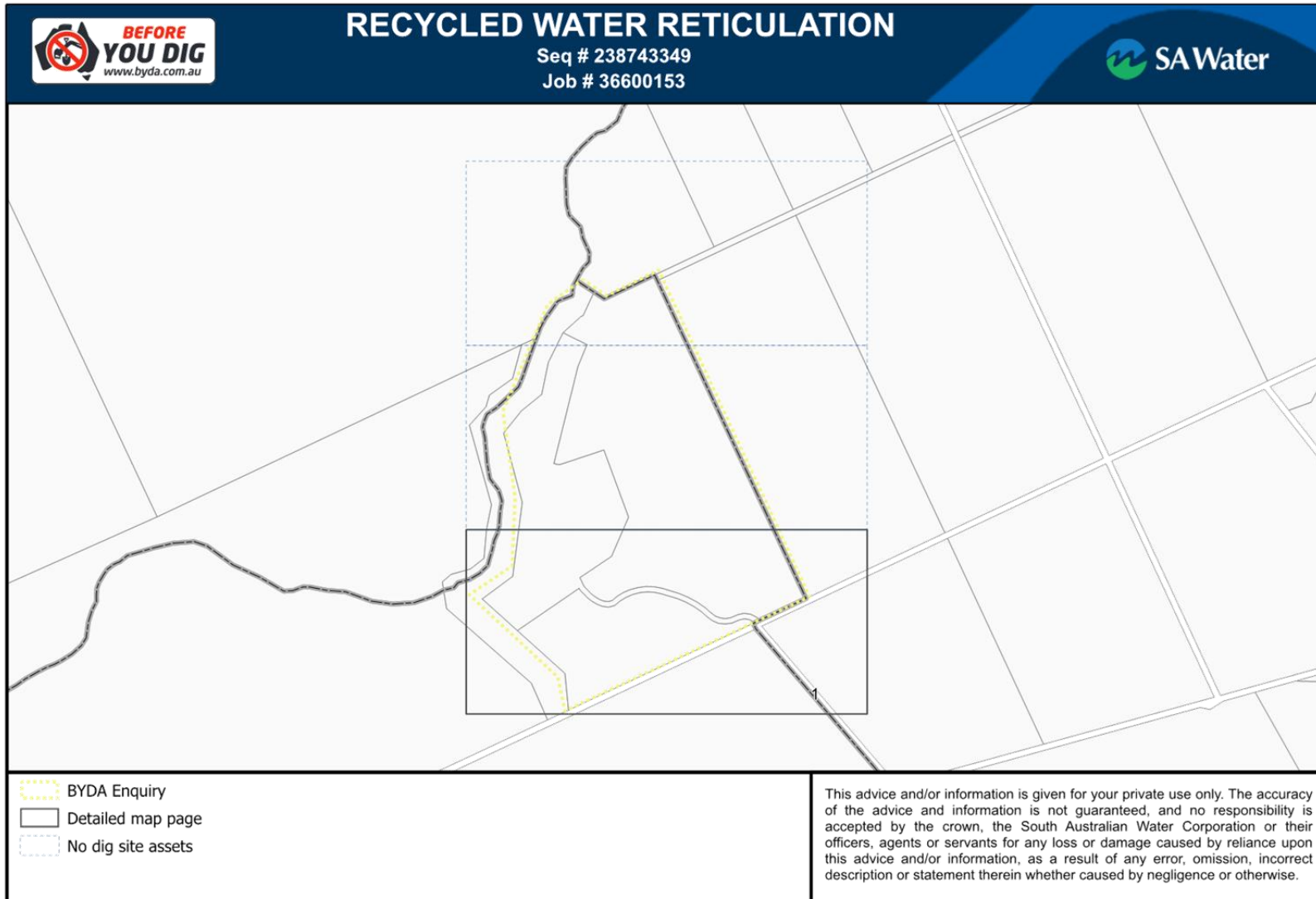


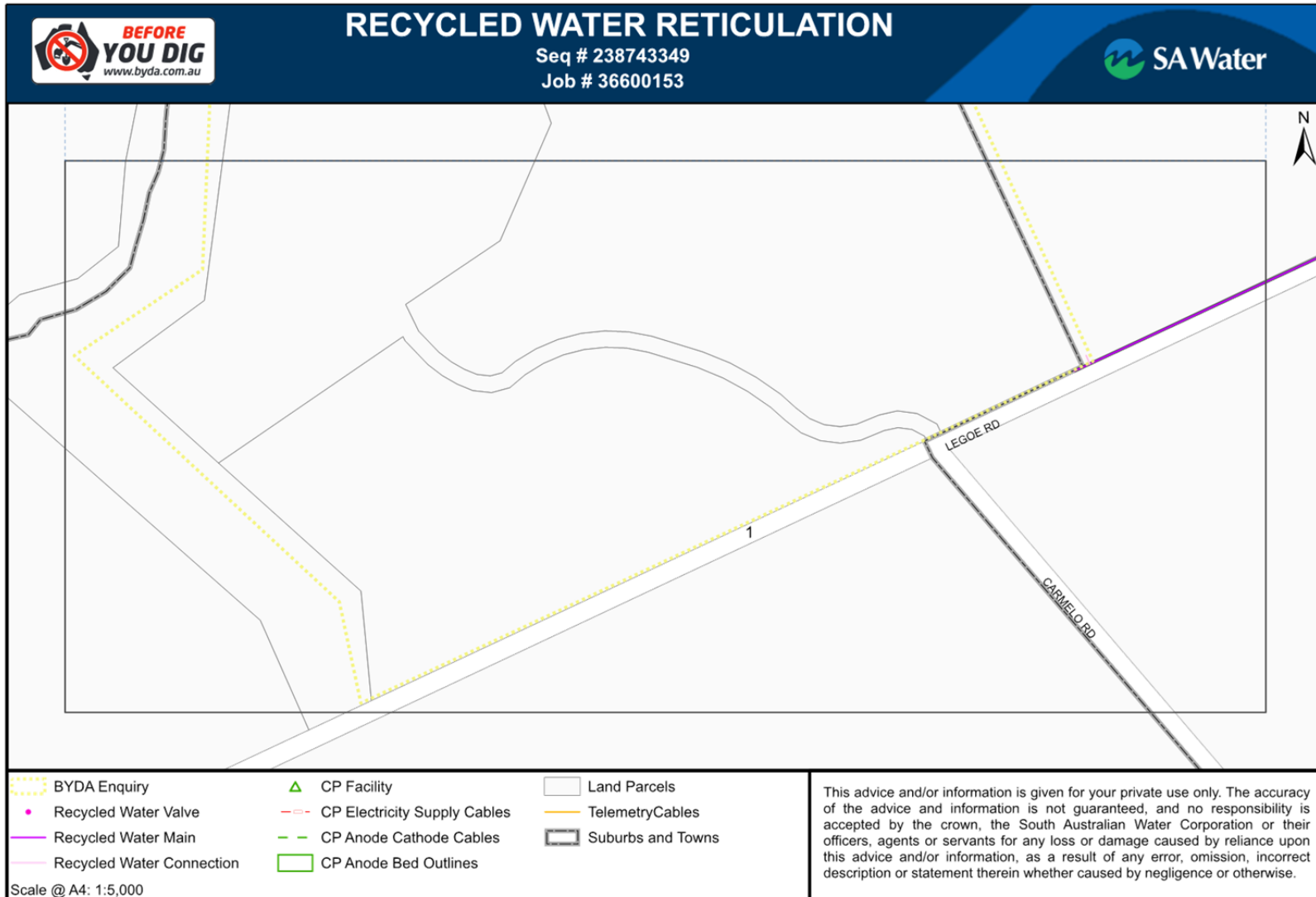
Note: The presence of lighting columns and cable exits may indicate unidentified additional cables.

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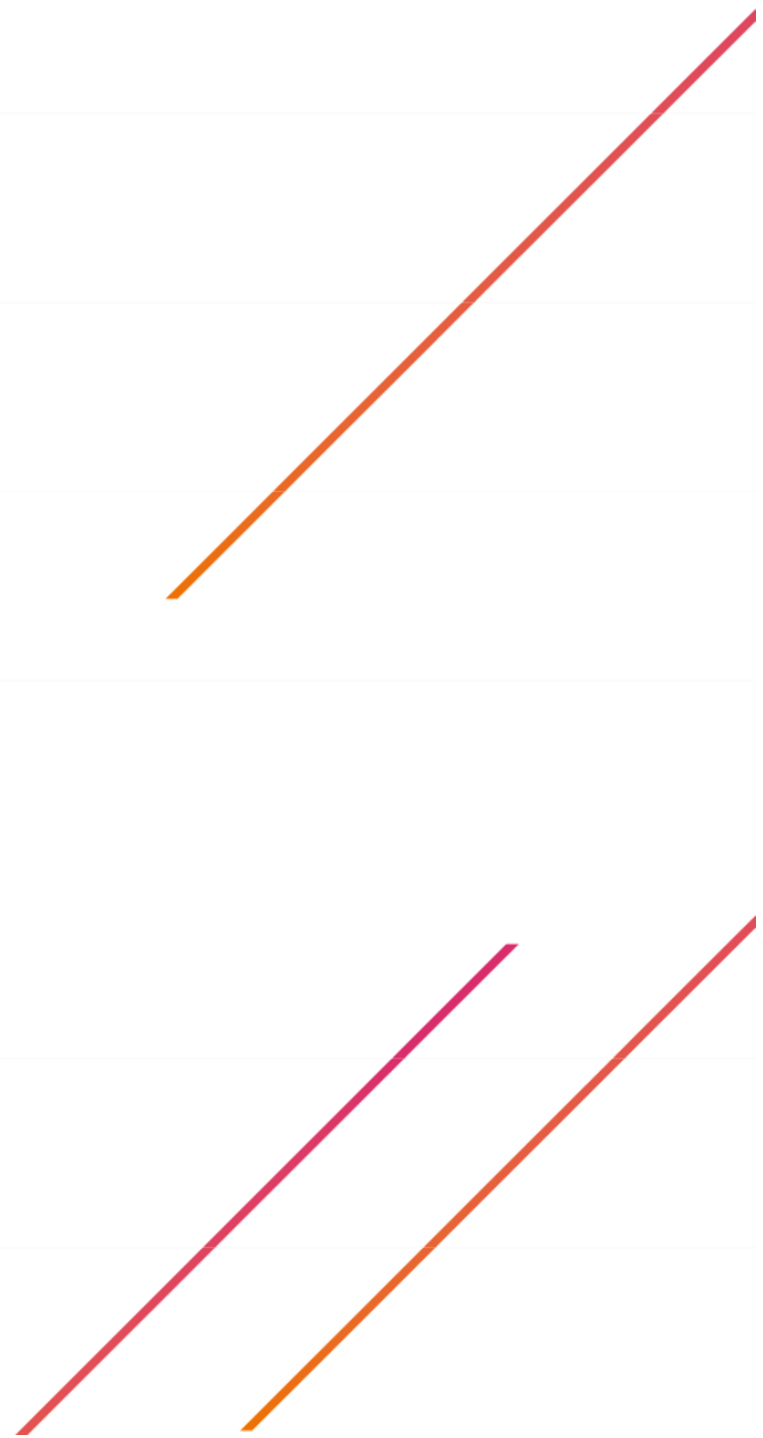
Cable Exits		Cables		BYD Requested Area	
	66kV/132kV		66kV/132kV		BYD Requested Area
	33kV		33kV		HV Switch Unit
	19kV		19kV		Transformer Unit
	11kV		11kV		HV Joint Bay
	Other HV		Other HV		LV Switching Cubicle/Pit
	Not In Service		Not In Service		Pit
	Low Voltage		Low Voltage		Electrical Earthing Area
					Fibre Cable/Duct
					Fibre Pit
					Pilot Cable
					Pilot Manhole/Pit
					Substation
					Electricity Pole
					Light Column

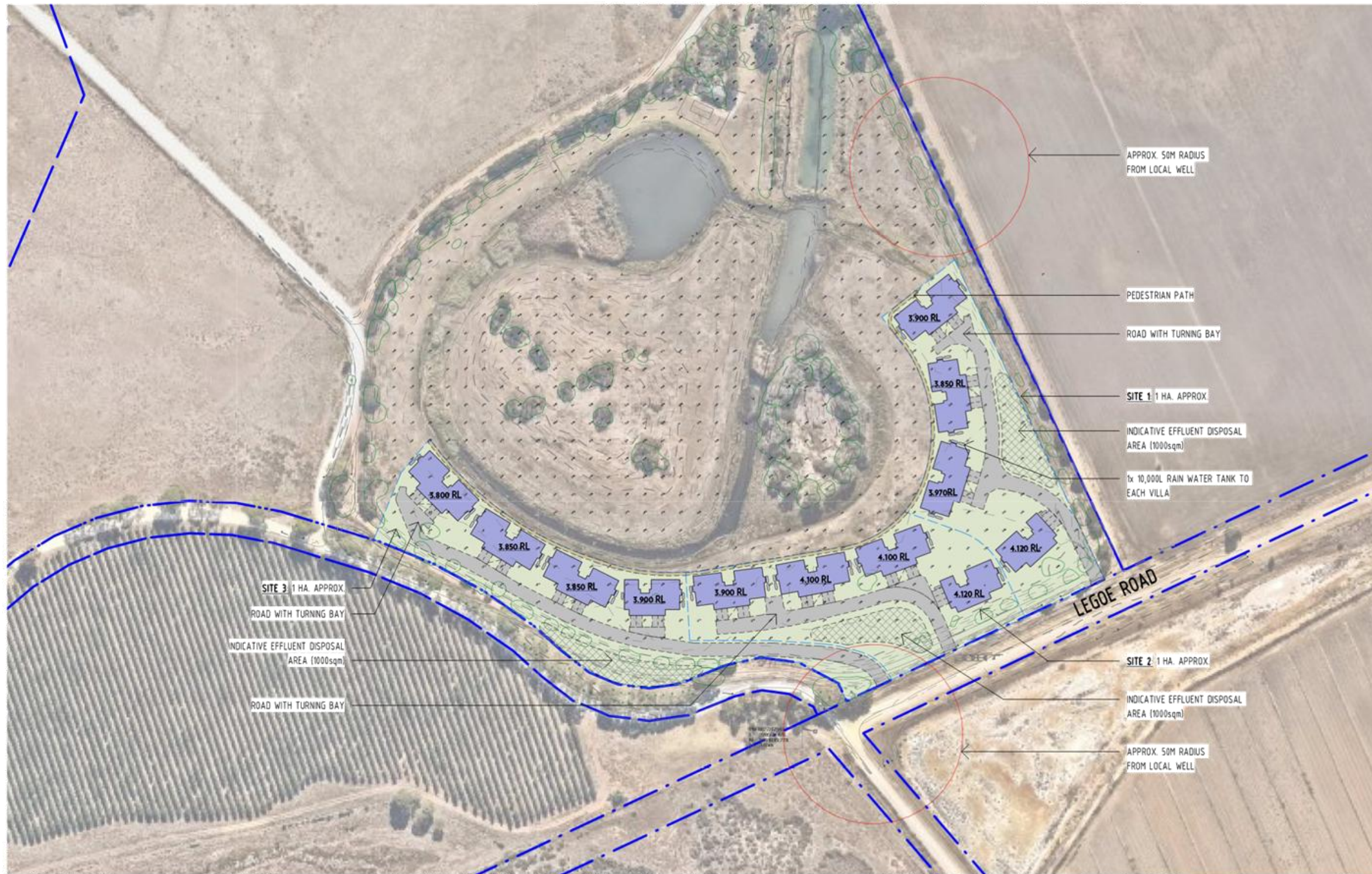






Appendix C
Concept Layout



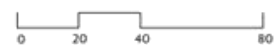


DRAWING: Aerial SITE PLAN: 15/11/2024: Client: Windamere Park SDA, Lot 202, Legoe Road, Buckland Park

REASON FOR ISSUE	REV	DATE
Concept Design	F	02/09/2024
Concept Design	G	15/11/2024

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

SITE PLAN	DRAWING
15/11/2024	SK01
1:2000 @A3	REVISION — G
	PROJECT — 24-0848

DRAWING: Windamere Park SDA - Lot 202 - Legoe Road - Buckland Park - SA - 5109 - 24-0848



ROOF PLAN - MODULE A
1 : 200

REASON FOR ISSUE	REV	DATE
Concept Design	A	15/08/2024

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

ROOF TYPE SCHEDULE	
CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

TYPICAL SELF CONTAINED VILLA MODULE A - ROOF DRAWING — SK06
 PLAN
 15/08/2024 REVISION — A
 1 : 200 @A3 PROJECT — 24-0848



TYPICAL SELF CONTAINED VILLA MODULE B

1 : 200

REFER TO SHEET SK-05 FOR TYPICAL VILLA FLOOR PLAN

• LEVEL TRANSITION INTO VILLA - TYPICAL
 • CONTINUOUS STEP-FREE PATHWAYS TO ENTRANCES, MAXIMUM 1:20 GRADE SLIP RESISTANCE P4 OR R11

• HIGH IMPACT WALL LININGS.
 • LIGHTS AND GPO SWITCHES TO BE ROCKER ACTION WITH A MINIMUM WIDTH OF 35MM.
 • LIGHT SWITCHES POSITIONED BETWEEN 900MM - 1100MM ABOVE FFL.
 • ALL HINGED DOOR TO BE SOLID CORE - MINIMUM 900MM WIDE.
 • DOOR HANDLES TO BE FIXED AT BETWEEN 900MM AND 1100MM ABOVE FFL.
 • ALL WINDOWS TO BE LOCKABLE.
 • ALL GLAZING TO BE LAMINATED GLASS OR POLYCARBONATE RESIN THERMOPLASTIC MATERIAL.

REASON FOR ISSUE	REV	DATE
Sketch Design	B	19/04/2024
Concept Design	C	15/08/2024

PRELIMINARY

WALTER BROOKE ARCHITECTURE
 INTERIOR DESIGN
 LANDSCAPE ARCHITECTURE
 MASTER PLANNING



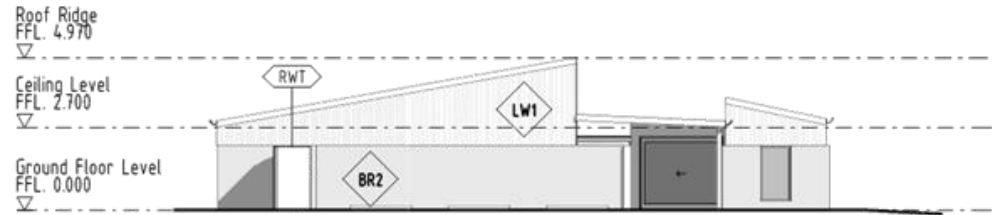
Windamere Park SDA
 LOT 202 LEGOE ROAD
 BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE B - FLOOR PLAN	DRAWING	SK10
15/08/2024	REVISION	C
1 : 200 @A3	PROJECT	24-0848

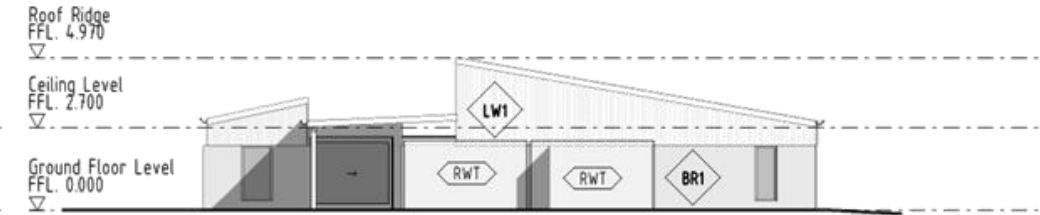
DRAWING AUTHOR: RICHARD MURPHY; DESIGNER: RICHARD MURPHY; ARCHITECT: WALTER BROOKE ARCHITECTURE; PROJECT: WINDAMERE PARK SDA; SHEET: SK10



MODULE B_ELEVATION 01
1 : 200



MODULE B_ELEVATION 02
1 : 200



MODULE B_ELEVATION 03
1 : 200



MODULE B_ELEVATION 04
1 : 200

ROOF TYPE SCHEDULE	
CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer

WALL TYPE SCHEDULE	
CODE	WALL DESCRIPTION
BR1	110mm wide brickwork / 40mm air gap / Thermal Insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Vllaboard to wet areas) /
BR2	110mm wide brickwork / 40mm air gap / 110mm wide brickwork /
LW1	25mm Metal Cladding / 35mm sub-framing / Thermal Insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Vllaboard to wet areas) /

REASON FOR ISSUE	REV	DATE
Concept Design	A	15/08/2024

PRELIMINARY

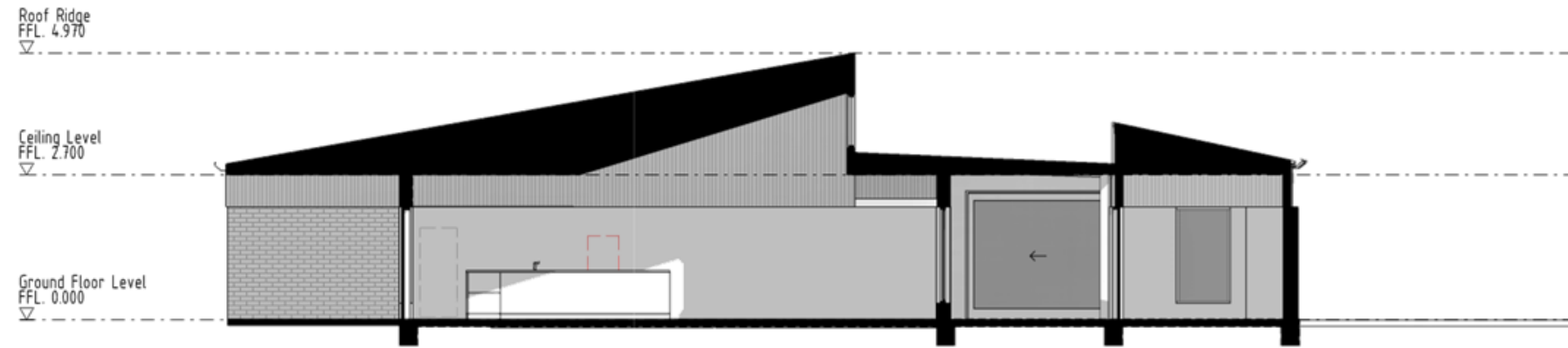
WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING



Windamere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

TYPICAL SELF CONTAINED VILLA MODULE B - ELEVATIONS 15/08/2024	DRAWING — SK12 REVISION — A
1 : 200 @A3	PROJECT — 24-0848

DRAWING: 15/08/2024 15:08:24 15/08/2024 15:08:24 15/08/2024 15:08:24 15/08/2024 15:08:24



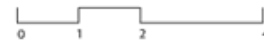
INDICATIVE TYPICAL SECTION
1 : 100

DRAWING AUTHOR: RICHARD HAYES ARCHITECTS; CLIENT: LEGOE ROAD SDA; PROJECT: BUCKLAND PARK

REASON FOR ISSUE	REV	DATE
Concept Design	A	15/08/2024

PRELIMINARY

WALTER BROOKE ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE
MASTER PLANNING

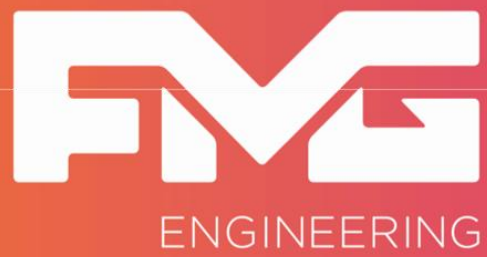


Windamere Park SDA
LOT 202 LEGOE ROAD
BUCKLAND PARK

ROOF TYPE SCHEDULE	
CODE	DESCRIPTION
RF1	21mm Prefinished Roof Sheeting / 120mm insulation spacer
RF2	43mm Prefinished Roof Sheeting / 120mm Insulation Spacer

WALL TYPE SCHEDULE	
CODE	WALL DESCRIPTION
BR1	110mm wide brickwork / 40mm air gap / Thermal Insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Vellaboard to wet areas) /
BR2	110mm wide brickwork / 40mm air gap / 110mm wide brickwork /
LW1	25mm Metal Cladding / 35mm sub-framing / Thermal Insulation / 92mm wide steel stud framing / 13mm flush plasterboard (9mm Vellaboard to wet areas) /

TYPICAL SECTION	DRAWING — SK13
15/08/2024	REVISION — A
1 : 100 @A3	PROJECT — 24-0848



ADELAIDE
67 Greenhill Road
Wayville SA 5034
Ph: 08 8132 6600

MELBOURNE
2 Domville Ave
Hawthorn VIC 3122
Ph: 03 9815 7600

SYDNEY
Suite 28, 38 Ricketty St
Mascot NSW 2020
Ph: 1300 975 878

ABN: 58 083 071 185

Details of Representations

Application Summary

Application ID	25000116
Proposal	Conventional land division creating four (4) allotments from one (1) fragmented allotment together with the construction of 12 residential flat buildings comprising 45 dwellings for the purposes of supported accommodation with associated earthworks and tree-damaging activity
Location	LOT 202 LEGOE RD BUCKLAND PARK SA 5120

Representations

Representor 1 - Jessica Matthews

Name	Jessica Matthews
Address	1 Solaprobe Close CRAIGMORE SA, 5114 Australia
Submission Date	12/05/2025 05:12 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development

Reasons

I fully support the proposal to develop supported accommodation housing for adults with disabilities. This type of housing is essential for promoting independence, dignity, and inclusion within our community. Everyone deserves a safe, stable, and supportive place to call home—especially those who may need extra help to live their lives to the fullest. Investing in supported accommodation not only improves quality of life for individuals with disabilities, but also strengthens our entire community by fostering compassion, equality, and social responsibility.

Attached Documents

Representations

Representor 2 - Gordana Miletic

Name	Gordana Miletic
Address	13 Tilshead rd ELIZABETH NORTH SA, 5113 Australia
Submission Date	19/05/2025 04:23 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development

Reasons

I'm absolutely thrilled about the upcoming development of the additional accommodation services at Windamere Park. I fully support this plan, as it represents a significant and positive step forward for our community and the people we support. The creation of 45 independent accommodation units will be truly life-changing for residents living with a disability—offering them greater independence, safety, and an enhanced quality of life. This initiative perfectly aligns with Windamere Park's values and commitment to providing high-quality, person-centered care. In addition, this expansion will create more employment opportunities for disability support workers, strengthening our workforce and reinforcing the long-term sustainability of our services. It's inspiring to see such a meaningful investment in both our residents and staff, and I'm proud to be part of this important journey.

Attached Documents

Representations

Representor 3 - Russel Lindsay

Name	Russel Lindsay
Address	PO BOX 3034 PORT ADELAIDE SA, 5015 Australia
Submission Date	01/05/2025 02:14 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development

Reasons

Windamere is a unique location with a unique service. I don't know of any other services where participants can live on a property situated along the Gawler River, on a working farm, and yet still connected to the services of a capital city. For participants that benefit from extra space and a quieter location surrounded by nature.

Attached Documents

Representations**Representor 4** - Rebecca Wood

Name	Rebecca Wood
Address	PO BOX 1533 Virginia, SA 5120 VIRGINIA SA, 5120 Australia
Submission Date	02/05/2025 02:37 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development
Reasons	

Attached Documents

3c3ea905-b853-462f-b429-b492c416007a-1495975.jpg
3ed4c209-0082-4f7f-a278-44b4748de8c7-1495976.jpg
0562fa13-56af-45a0-8e79-02ae8b63a030-1495977.jpg
b5d8d84c-c2f7-4e25-bc86-ea3f4840c8d5-1495978.jpg
fe016aef-1e59-414a-9696-200f30d9cf38-1495979.jpg











Representations**Representor 5** - Daniel Shadbolt

Name	Daniel Shadbolt
Address	11 Robinson Road WILLASTON SA, 5118 Australia
Submission Date	02/05/2025 02:42 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development

Reasons

This would greatly help those living with disabilities to have adequate support while living in a quiet area that has more than enough facilities and equipment to benefit their wants/needs. Being a farm environment also give the opportunity to go for a walk and interact and care for animals if they wish.

Attached Documents

Representations

Representor 6 - SHARON MOLIER

Name	SHARON MOLIER
Address	11 Slate Road GOLDEN GROVE SA, 5125 Australia
Submission Date	04/05/2025 07:20 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development

Reasons

I believe this would be a fantastic to assist more families in the northern suburbs as Windamere Park have assisted us over the many years. My brother whom has a severe intellectual disability started going to Windamere Park in the early 1990's for day options/activities. My brother is now 62 years was too much for my elderly parents in their 80's to look after him. The staff at Windamere Park was seeing the struggles that was placed on my parents and asked if they would like lan to be permanently housed on the Farm. lan has lived there for a number of years now and totally loves the farm life. My dad has since passed away and i currently have my mum whom has dementia living with me. If it wasn't for Windamere Park i'm really not sure what our situation might be. lan is living a good life and how wonderful would it be if they could expand the property to house more people with disabilities in similar situations as ours. The farm setting is great for people with disabilities and especially with the expansion in the Playford area in would be a great asset for the northern suburbs.

Attached Documents

Representations

Representor 7 - Betty Brownlow

Name	Betty Brownlow
Address	32 Edward John Parade EYRE SA, 5121 Australia
Submission Date	04/05/2025 08:36 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	Yes
My position is	I support the development

Reasons

There is already a rental crisis for full able people, imagine trying to navigate that are someone with a disability! Not to mention that many houses out there simply aren't suited to many people with intellectual disabilities. Windamere has already provided support to so many people with disabilities for several decades. I have personally been part of Windamere for 7 years as a support worker, and my eyes have been opened to the difficulties people with disabilities face. There are also many people with severe challenging behaviours who experience negative reactions from their neighbours. These participants would benefit from having safe spaces at Windamere where their neighbours aren't close like a standard street in a suburb. It would also be safer for the residents in standard suburbs. I highly support SDA at Windamere!

Attached Documents

Representations**Representor 8** - Wazili Hakizimana

Name	Wazili Hakizimana
Address	3 carissa avenue riverlea park RIVERLEA PARK SA, 5120 Australia
Submission Date	05/05/2025 10:28 AM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development
Reasons	

Attached Documents

Representations**Representor 9** - Marshal Koorappillil Mathai

Name	Marshal Koorappillil Mathai
Address	10 Buchanan drive WOODFORDE SA, 5072 Australia
Submission Date	05/05/2025 10:35 AM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	Yes
My position is	I support the development
Reasons	

Attached Documents

Representations**Representor 10** - Alen Baby

Name	Alen Baby
Address	14A Melrose Avenue CLEARVIEW SA, 5085 Australia
Submission Date	05/05/2025 01:53 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development
Reasons	

Attached Documents

Representations**Representor 11** - Martin Hart

Name	Martin Hart
Address	Po.box 73 TWO WELLS SA, 5501 Australia
Submission Date	05/05/2025 06:48 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development
Reasons	
I think the participants will do much better with some freedom & take pride in their own place	

Attached Documents

Representations**Representor 12** - KESAVARAJ GOVINDASAMY

Name	KESAVARAJ GOVINDASAMY
Address	75 Hookings tce WOODVILLE GARDENS SA, 5012 Australia
Submission Date	06/05/2025 11:56 AM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	Yes
My position is	I support the development
Reasons	

Attached Documents

Representations**Representor 13** - Aneesh Joy

Name	Aneesh Joy
Address	30 North Avenue NORTHFIELD SA, 5085 Australia
Submission Date	07/05/2025 07:40 AM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development
Reasons	
It will be great support for disabled people,.	

Attached Documents

Representations**Representor 14** - Subin Sunny

Name	Subin Sunny
Address	2/8 Emlyn Avenue SALISBURY SA, 5108 Australia
Submission Date	07/05/2025 01:27 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development

Reasons

I'm truly excited and in full support of our workplace's vision to start new homes in the near future. This place already offers one of the best services and ambience for our clients, and expanding our reach means more individuals will benefit from the exceptional care we provide. The unique farm environment and the engaging activities here are not just therapeutic but also deeply refreshing for the clients. It's inspiring to be part of a team that creates such a nurturing and uplifting space, and I look forward to seeing this beautiful vision grow.

Attached Documents

Representations**Representor 15** - Niamh Shannon

Name	Niamh Shannon
Address	493 Carmelo Rd BUCKLAND PARK SA, 5120 Australia
Submission Date	07/05/2025 01:50 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development
Reasons	

Attached Documents

Representations**Representor 16** - Jeff coley

Name	Jeff coley
Address	8 Orana Street, GEPPS CROSS SA, 5094 Australia
Submission Date	07/05/2025 04:02 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development

Reasons

Much needed accommodation for special need adults with support. Only wish it was available when needed by our special needs son.

Attached Documents

Representations**Representor 17** - Sukhvir Singh

Name	Sukhvir Singh
Address	15 natasha avenue ANGLE VALE SA, 5117 Australia
Submission Date	10/05/2025 03:12 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development
Reasons	

Attached Documents

Representations

Representor 18 - Tanya Roylance

Name	Tanya Roylance
Address	25 Biarritz Street MUNNO PARA WEST SA, 5115 Australia
Submission Date	12/05/2025 12:02 PM
Submission Source	Online
Late Submission	No
Would you like to talk to your representation at the decision-making hearing for this development?	No
My position is	I support the development

Reasons

The accommodation proposed is needed in the disability sector. Many SIL houses are on very small blocks of land. The development at Windemere is providing large allotments which will allow people the benefit of space around their home for sensory items such as swings, sensory gardens which will benefit people's physical and mental well-being. Independent units provides people with dignity and privacy with the benefits of being part of a bigger community when they choose.

Attached Documents

Riverlea



20 May 2025

Matt Dineen

Senior Manager, Development Services
City of Playford
12 Bishopstone Road
Email: mdineen@playford.sa.gov.au

Notice of Application ID 25000116
Lot 202 Legoe Road, Buckland Park

Dear Matt,

I refer to the Council's correspondence concerning the above application and express concern regarding many elements of the proposal being at odds with the outcomes sought by the Planning and Design Code (the Code).

1. The Code identifies the land as within the Limited Land Division Overlay area that seeks a minimum area of 10 hectares. As the application information suggests, the division of land is to create three additional titles to facilitate shared investment and financial security of separate titles jointly or wholly. It consciously splits land into smaller parcels, which is at odds with the outcomes intended by the Code.

The division of land does nothing to maintain a rural setting. It will not assist with maintaining larger land parcels for primary production or horticultural pursuits, and it is not required to undertake farming activities associated with disability services. The division of land is nothing more than a means to raise capital.

2. There is also concern that insufficient infrastructure exists to service the proposed development, including access to potable water and a wastewater disposal scheme to deal with wastewater generated by the site adequately.

Concerning the SA Water potable water, the accompanying summary reports assume that the potential to access the supply from Riverlea (Legoe Road extension) would require design collaboration with Walker Corporation (Riverlea Development) to determine its alignment and construction cost. The costs to augment and extend the SA Water main from Port Wakefield Highway to the proposed development site must be substantiated and confirmed by SA Water and/or Walker Corporation.

The application acknowledges that there could be constraints with wastewater disposal given the absence of SA Water infrastructure or a CWMS being available. Further, on-site disposal from the development may also significantly impact the receptors (wetlands, bores, etc). Accordingly, the Council must be satisfied that minimum offsets of wastewater disposal areas from stormwater runoff, water courses, bores, wells, etc., can be achieved, and that the development would not impact shallow groundwater.

3. The cost of augmentation and extension of the existing SAPN electrical infrastructure is also substantial, with costs increasing significantly depending on the demand loads and phase required. The Council (and

Riverlea



the applicant) need certainty concerning these costs and whether the proponent can fund these augmentation/extension works.

4. The RLs nominated on the plans do not state whether they satisfy the projections for the long-term sea level rise. The Council should ensure forecasts for the long-term sea level rise can be satisfied.
5. Of particular concern is that there is no mention of the Hazards (Bushfire - General Risk) Overlay or documentation of how the proponents intend to satisfy relevant provisions. The lack of addressing this issue is particularly alarming, given the vulnerable nature that the accommodation services seek to target and support.

Such matters include the siting and design of buildings that mitigate the threat and impact of bushfires on life and property and reduce the potential for trapping burning debris against buildings and structures. Ensuring buildings are situated away from vegetated and other landscaped areas that pose an unacceptable bushfire risk and emergency access requirements.

Providing dedicated and available areas capable of accommodating a bushfire protection system comprising firefighting equipment and water supply, following *Ministerial Building Standard MBS 008 - Designated bushfire prone areas - additional requirements*.

Given the widely known recent experience concerning Aboriginal Cultural Heritage throughout the Riverlea Park and Buckland Park areas, you would think that this issue would have been given some thought in the preliminary planning investigations concerning the development.

The above matters are at odds with the outcomes the Planning and Design Code require. They have been brought to the attention of the Council to ensure the development assessment process considers their combined significance and the shortcomings of the proposal.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Patrick Mitchell'.

Patrick Mitchell

Principal Planner
Walker Corporation
Riverlea Sales and Discovery Centre
9 Bonnín Crescent, Riverlea Park, SA 5120

Ref: 22ADL-0484

29 May 2026

Mahmoud Hasaneen
Principal Planner – Major Projects
12 Bishopstone Road
Davoren Park SA 5113

Sent via email to MHasaneen@playford.sa.gov.au

Dear Mooda

DA25000116 – Lot 202 Legoe Road, Buckland Park

URPS continues to act on behalf of Mr de Lyster (the Applicant).

This letter responds to your email dated 8 May 2026 requesting further justification against flood hazard planning policies. Specifically, your concerns relate to the potential flood risk to the road network external of the site in the event of a 1% AEP event.

Our letter is accompanied by a Flood Emergency Access and Evacuation Management Plan prepared by Southfront, see **Annexure A**.

Requested Information

In your email, you have requested further information and a response to the following provisions of the Hazards (Flooding) Overlay:

- PO 2.2** *Buildings housing vulnerable people, community services facilities, key infrastructure and emergency services are sited away from flood prone areas to enable uninterrupted operation of services and reduce likelihood of entrapment.*
- DPF 2.2** *Child care facilities, educational facilities, retirement and supported accommodation, emergency services facilities, hospitals and prisons are not located within the Overlay area.*
- PO 6.1** *Development does not occur on land:*
 - (a) from which evacuation to areas not vulnerable to flood risk is not possible during a 1% AEP flood event*
 - (b) which cannot be accessed by emergency services vehicles or essential utility service vehicles during a 1% AEP flood event.*
- PO 6.2** *Access driveways and tracks to significant development (i.e. dwellings, places of work, etc.) consist of a safe, all-weather trafficable surface that is accessible during a 1% AEP flood event.*

We acknowledge the Kaurna people as the Traditional Custodians of the land on which we work and pay respect to Elders past, present and emerging.

https://urpsau.sharepoint.com/sites/SynergyProjects/Shared Documents/SA Synergy Projects/22ADU/22ADL-0484 - Windamere Park Code Amendment/2024 Land Division and Development/20260527_C1_V1_Response to Council_Flooding.docx



Adelaide
27 Halifax Street
Adelaide SA 5000
08 8333 7999

urps.com.au

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We acknowledge your request and have provided a response to the above provisions below. However, we note that these provisions are only relevant to the portion of the site which is subject to the overlay. This is directed by Part 1 – Rules of Interpretation of the Code.

Part 1 – Rules of Interpretation of the Code provides the following:

Application of Spatially Based Policies and Rules

Where a zone, subzone, overlay or technical and numeric variation (TNV) does not spatially apply to the whole of a site that is the subject of the development application, the spatially based rules of the zone (including assessment pathway exclusions), subzone, overlay or TNV are only applicable to the portion of the site to which the zone, subzone, overlay or TNV spatially covers.

Reference to the South Australian Property and Planning Atlas of the SA planning database will be made to determine whether a zone, subzone, overlay or TNV is relevant to the site of the proposed development application.

(Underlining added)

The Hazards (Flooding) and Hazards (Flooding – General) Overlays only apply to minor portions of the development site. The applicable portions are shown in **Annexure B** and **Annexure C** for clarity.

This shows that the none of the supported accommodation residential flat buildings are sited within the Hazards (Flooding) Overlay.

One building is within the Hazards (Flooding – General) Overlay. An appropriate finished floor level (FFL) has been proposed for this building to satisfy the relevant provisions of that overlay.

Summary of Response

A detailed response to your request follows. It confirms the flood risk to occupants is not unreasonable. This is because:

- All of the supported accommodation buildings have been sited outside the spatial area of the Hazards (Flooding) Overlay and provide FFLs confirmed by independent flood reporting.
- There is a 12-20 hour alert timeframe prior to a flood event. This provides sufficient time for safe site evacuation which has been demonstrated within Southfront's Flood Emergency Access and Evacuation Management Plan.
- Internal driveways are sealed, 6 metres wide, outside the flood overlay, and remain accessible during a 1% AEP event.

The above quoted provisions are satisfied.



Background

The application seeks consent to construct 12 residential flat buildings to be used for supported accommodation. These buildings are identified as “villas” on the development plans prepared by Walter Brooke Architects.

The villas will be occupied by a total of 45 individuals and their relevant carers. The development provides accommodation for adults with intellectual disabilities and neurodevelopment disorders. They will not be occupied by individuals with mobility issues or physical disabilities.

Each of the occupants live with family members nearby and travel to Windamere Park each day to access the on-site support programs. These programs operate between 8.30am and 3pm daily. They occasionally access the on-site emergency respite care which is provided on a 24-hour basis.

This means the proposal will not introduce new individuals to the broader site. It simply extends their occupation of the site to include permanent accommodation.

There is a severe undersupply of supported accommodation. This development will provide essential independent living options for known individuals. The buildings have been designed to meet occupants’ needs while also supporting the practical and operational requirements for carers. Accommodation is provided close to existing daytime programs.

Supported accommodation is referred to as Supported Independent Living (SIL) and Specialist Disability Accommodation (SDA) under the National Disability Insurance Scheme (NDIS).

To function as supported accommodation by its definition, the development will be managed by NDIS registered providers.

Importantly, NDIS providers must comply with the NDIS Practice Standards to become and remain registered. A critical component of these standards is a requirement to maintain an Emergency and Disaster Management Plan.

These detailed plans require providers to:

- Identify risks (including natural disasters such as flooding).
- Prepare and document response actions.
- Ensure continuity of support during an emergency or disaster response.
- Consider evacuation and shelter-in-place scenarios.
- Provide evacuation planning at an organisations level and participant level, including personalised evacuation plans for participants.



Within this plan, the provider is required to establish emergency contacts and evacuation locations for each occupant. In most cases, these evacuation locations will be with family members of the occupants. These are places that occupants are familiar with and can be safely accommodated during an emergency or disaster response.

An NDIS provider cannot be registered without having an Emergency and Disaster Management Plan in place. This is an important consideration when considering the developments preparedness for potential flood risks.

Our Response

Our response to your email has been summarised under the following headings:

- Building Siting.
- Emergency and Evacuation Management.
- Internal Access.

Building Siting

The following provision considers the siting of buildings in the Overlay area:

PO 2.2 *Buildings housing vulnerable people, community services facilities, key infrastructure and emergency services are sited away from flood prone areas to enable uninterrupted operation of services and reduce likelihood of entrapment.*

DPF 2.2 *Child care facilities, educational facilities, retirement and supported accommodation, emergency services facilities, hospitals and prisons are not located within the Overlay area.*

(Underlining added)

The application involves the construction of 12 residential flat buildings to be used as supported accommodation. Each of the 12 buildings have been sited outside of the Hazards (Flooding) and Hazards (Flooding – General) Overlay areas, as shown in **Annexure C**.

Further, an appropriate FFL for the supported accommodation dwellings has been informed by reports submitted with the application. This includes flood mapping analysis undertaken by Water Technology for the Applicant in 2019 and more recent reporting by FMG Engineers. This ensures that the use of the buildings can remain uninterrupted during flood events, including 1% AEP events.

The buildings accommodate carers who will always be on site. Each building is self-sufficient, providing services and amenity which allows occupants to reside in the buildings on a long-term basis. This means the buildings are equipped to be occupied for long periods. They do not rely on services outside of the site and shelter-in-place action plans would be sufficient in many cases.



Flood mapping also shows that the development site would not be isolated by flooding. It is connected to other land, including land of Windamere Park which is not flood prone.

For these reasons, the proposal satisfies PO and DPF 2.2 of the Hazards (Flooding) Overlay.

Emergency and Evacuation Management

The following provision considers access to and from development in the Overlay:

PO 6.1 Development does not occur on land:

- (a) from which evacuation to areas not vulnerable to flood risk is not possible during a 1% AEP flood event**
- (b) which cannot be accessed by emergency services vehicles or essential utility service vehicles during a 1% AEP flood event.**

Importantly, this provision considers the 1% AEP (Annual Exceedance Probability) event. This is a uniform flood risk reference point which considers serious but plausible flood events. In simple terms, it considers flood events which have a 1% chance of occurring in any given year.

An appropriate response to the 1% AEP flood event is the benchmark for determining whether development achieves an acceptable level of flood risk

PO 6.1 is made up of two parts.

- The first part, PO 6.1(a), seeks that during a 1% AEP flood event evacuation can be made to land not vulnerable to flood risk.

It seeks an exit strategy when development occurs on flood prone land to land that is not vulnerable to flood risk.

The proposed development site is not vulnerable to flood risk. This means occupants do not need to evacuate to alternative land during a 1% AEP flood event.

The proposal satisfies PO 6.1(a).

- The second part, PO 6.2 (b), seeks that development remain accessible by emergency services during a 1% AEP flood event.

This has led you to consider the 1% AEP flood event risk beyond the site. Flood mapping identifies several locations along Carmelo Road and Tippetts Bridge Road where the road may be impassable for a period during a 1% AEP flood event.

You have identified that this risk is present approximately 1.8 kilometres from the site along the external road network. This road network provides access to the site from the higher-order Port Wakefield Road.



As above, the supported accommodation villas are:

- Not sited on flood prone land.
- Have dedicated carers on-site all the time.
- Are not occupied by persons with mobility issues or physical disabilities.
- Are self-sufficient and provide amenities for long-term occupation.

This means in higher probability but lower impact flood events, occupants will remain safe and unaffected.

In a 1% AEP flood event we accept there is potential that emergency service vehicles may not be able to access the site via these portions of the road.

Flood modelling suggests that a 1% AEP flood event occurs between 20 to 30 hours after significant rainfall upstream in the Gawler River catchment.

This provides sufficient lead time for the NDIS provider, and its on-site carers, to safely evacuate the site.

In response to PO 6.2 (b) the Applicant has engaged Southfront to prepare a Flood Emergency Access and Evacuation Management Plan, see **Annexure A**.

This demonstrates the pre-emptive actions which will occur to appropriately respond to an anticipated 1% AEP flood event. Notably, the plan confirms that alert of the flood risk will occur 12-20 hours before the flood peak, providing sufficient time for the NDIS provider to enact the evacuation plans.

Southfront's plan does not negate the need for NDIS providers to maintain an Emergency and Disaster Management Plan in accordance with NDIS Practice Standards and registration requirements.

Internal Access

The following provision considers access driveways:

PO 6.2 ***Access driveways and tracks to significant development (i.e. dwellings, places of work, etc.) consist of a safe, all-weather trafficable surface that is accessible during a 1% AEP flood event.***
(Underlining added)

Each of the 12 buildings are accessible via internal access driveways. These driveways have a minimum width of 6 metres and are constructed of a sealed bitumen surface. This provides a safe, all-weather surface.

The access driveways have been designed to respond to provisions of the Hazards (bushfire – General Risk) Overlay. This means they provide a safe, trafficable and all-weather solution within the site.



Like the buildings, the internal access driveways are not within flood prone areas. This means the driveways will be accessible during a 1% AEP flood event and satisfy PO 6.2.

Conclusion

We trust that this response will allow you to progress your assessment of the development application.

We confirm that we will be available to attend the CAP meeting in June in support of the application. We will be joined by members of the expert consultant team. Please confirm the meeting date at your earliest convenience.

Please contact me on 8333 7999 or 0421 231 499 if you have any questions.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Matilda Asser'.

Matilda Asser
Senior Consultant

Annexure A





Southfront

URPS

Flood Emergency Access and Evacuation Management Plan

Lot 202 Legoe Road, Buckland Park SA

80 Grote Street
Adelaide SA 5000

For more information
enquiry@southfront.com.au

southfront.com.au



URPS

Flood Emergency Access and Evacuation Management Plan

Lot 202 Legoe Road, Buckland Park SA

Southfront[®]

Phone
08 8172 1088

80 Grote Street
Adelaide SA 5000

For more information
enquiry@southfront.com.au

southfront.com.au

Reference: 26051-1

Document Status

Revision	Date	Author	Approved by	Details
A	25 May 2026	TR	DJ	Draft
B	29 May 2026	TR	DJ	Final



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Windamere Park Emergency Access and Evacuation Plan

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1 Introduction

1.1 Background and Purpose

This Flood Emergency Access and Evacuation Management Plan (FEAEMP) has been prepared by Southfront Pty Ltd on behalf of the applicant, in response to concerns raised by the City of Playford (Council) regarding a Development Application for proposed supported accommodation at Lot 202 Legoe Road, Buckland Park (the Site).

The Development Application is assessed against the Hazards (Flooding) Overlay of the South Australian Planning and Design Code (the Code). The City of Playford has identified that the access roads to the Site – Legoe Road and Carmelo Road – are subject to inundation during a 1% Annual Exceedance Probability (AEP) flood event arising from Gawler River breakout flows. In particular, Council has raised concerns that:

- The proposed development will accommodate people with intellectual disabilities who are classified as vulnerable occupants;
- Flood depths on the access roads exceed safe depths for standard vehicles during a 1% AEP event, potentially preventing emergency service access;
- The development may not satisfy Performance Outcome PO 2.2 (no entrapment of vulnerable people) and Performance Outcomes PO 6.1 and PO 6.2 of the Code's Hazards (Flooding) Overlay.

This Plan demonstrates that these concerns can be addressed through an operational flood response framework centred on pre-emptive evacuation. The Gawler River flood regime is characterised by long flood durations, with a 1% AEP flood event peaking some 20 to 30 hours after the commencement of significant rainfall. This lead time is sufficient to monitor flood conditions, issue internal warnings, and safely evacuate all occupants well before any inundation of the access road network. Accordingly, the likelihood of occupant entrapment is substantially reduced.

1.2 Scope and Limitations

This Plan is a high-level operational framework prepared for planning assessment purposes. It is not intended to:

- Replace or substitute for the NDIS-registered operator's site-specific emergency management plan (as required under the NDIS Practice Standards' Emergency and Disaster Management module);
- Constitute detailed emergency management procedures for staff;
- Address staffing adequacy, emergency services operational coordination, or traffic/evacuation modelling;
- Provide site-specific or quantitative assessment of flood hazard (this has been addressed by specialist flood assessments referenced herein).

This Plan has been prepared on the basis of information provided by the Applicant and long term operator of Windamere Park, background flood investigations, and publicly available information.

It is noted that any NDIS-registered provider operating at this Site is independently required, as a condition of NDIS registration, to prepare and maintain a site-specific emergency management plan in accordance with the NDIS Practice Standards. This obligation rests with the service provider, not the landowner. This Plan is intended to inform that provider's emergency management plan, which will be developed and maintained as a separate, operator-specific document.

1.3 Key Reference Documents

The following documents have been relied upon in preparing this Plan:

- Australian Water Environments (AWE) / Water Technology (2008). Floodplain Mapping for the Gawler River – Technical Report. Prepared for the Gawler River Floodplain Management Authority, February 2008. (The AWE/Water Technology Report);
- Water Technology (2019). Windamere Park DPA Flood Assessment Report. Report No. 19030072, Version 2.2, December 2019. (the Water Technology Report);

- WGA / Wallbridge & Gilbert Associates (2022). Riverlea Park: 2009 Technical Paper Update – Flood Assessment. Report WGA080163-RP-CV-0013_A, Revision A, 6 December 2022. Prepared for Walker Corporation;
- Water Technology (2022). Modelling of Riverlea development in the broader Gawler River floodplain model. Memorandum from Alison Miller to Brent Eddy, 31 October 2022. Prepared for Walker Corporation (included in Buckland Park – Riverlea Township AEIS, Part 2, Appendix B);
- WGA / Wallbridge & Gilbert Associates (2023). Riverlea Park: Stormwater Management – Water, Wastewater and Recycled Water. Report WGA080163-RP-CV-0004_G, Revision G, April 2023. Prepared for Walker Corporation (included in Buckland Park – Riverlea Township AEIS, Part 2, Appendix A);
- Bureau of Meteorology (BOM). Gawler River Flood Information — South Australia. Available at: bom.gov.au/sa/flood/gawler.shtml. Includes real-time gauge data for Gawler River at Angle Vale (Heaslip Rd, Station 023111) and associated Flood Watch/Warning products for the Gawler River catchment; and
- Operational information provided by Windamere Park (Ted de Lyster and Michael Allester-Briggs, May 2026);
- Windamere Park, Continuity, Emergency and Disaster Management Policy (2023, reviewed 2025);
- Windamere Park, Continuity of Supports Policy (reviewed 2025);
- Windamere Park, Emergency and Disaster Management Communication Plan (July 2022, reviewed 2025);
- Windamere Park, Evacuation and Fire Procedures (2022, reviewed 2025);
- Windamere Park, Evacuation Procedure – Area (2022, reviewed 2026); and
- Windamere Park, After Hours Communication Policy (2022, revised 2025).

2 Site Description and Proposed Development

2.1 Site Location and Configuration

The Site is located at Lot 202 Legoe Road, Buckland Park, approximately 35 kilometres north of the Adelaide CBD. Access to the Site is gained from Legoe Road, which connects to Carmelo Road, which in turn connects to the broader road network.

Portions of the Sites are subject to flooding from Gawler River breakout flows during significant flood events. The Site topography generally ranges between 4.5 m AHD and 5.5 m AHD across the main development area, with the Windamere Park hub situated on higher ground at approximately 6.0 m AHD to 7.5 m AHD. A low-lying on-site detention basin in the north-eastern corner of the Site falls to approximately 3.5 m AHD. A small levee has been constructed along the northern boundary of the Site following the 2016 flood, preventing floodwater ingress to the developed portions of the Site.

The broader property currently operates as Windamere Park, an established supported accommodation and disability services facility. The proposed development comprises three (3) allotments each with supported accommodation dwellings. The allotments will be managed by NDIS providers with occupants continuing to access the programs offered by Windamere Park.

2.2 Proposed Development

The proposed development involves the construction of supported accommodation dwellings across three allotments, accommodating a total of 45 occupants with intellectual disabilities.

Key characteristics of the proposed development relevant to this Plan include:

- **Occupant profile:** Residents are adults with intellectual disabilities. Residents do not have mobility impairments and are capable of moving independently with staff guidance. The physical process of boarding evacuation vehicles does not require mobility aids, hoisting equipment, or specialist transfer procedures.
- **Occupant numbers:** 45 occupants across the three allotments;
- **Staffing:** 24-hour, 7-day-a-week staffing. Provision of carers at a rate of 1 to 1, plus a manager for each allotment. All staff are required to maintain mobile phone accessibility at all times;
- **Transport:** Two (2) Toyota Hiace passenger vans per allotment (6 vans total), each with a capacity of approximately 11 occupants and 2 staff;
- **Total evacuation transport capacity:** Approximately 66 occupants across the 6 vans;
- **Evacuation destination:** Occupants would be evacuated to family members or identified emergency contacts. Evacuations are anticipated to be of no more than 24 hours duration before return to site is possible;
- **Existing emergency planning:** Windamere Park holds an existing Disaster and Emergency Evacuation Plan (DEEP) with four identified exit routes from the Site. The existing plan has been rehearsed, with a best-case full evacuation time of approximately 12 minutes for 70-80 occupants + 30-40 staff.

2.3 Operational Assumptions

For the purposes of this Plan, the following operational assumptions have been adopted based on information provided by the site operator:

- the facility will maintain 24-hour staff supervision at all times;
- onsite staff will monitor weather and flood warnings during significant weather events;
- all 6 evacuation vans will be maintained in a roadworthy condition, fuelled, and equipped as required by the operator's vehicle policy;
- residents can be relocated prior to forecast loss of safe access, consistent with the rehearsed evacuation time of approximately 12 minutes;
- evacuation destinations will be identified and confirmed with families or emergency contacts prior to occupancy and maintained in the operator's DEEP; and
- staff contact procedures will be maintained by the operator, including an accessible after-hours emergency contact.

The site operator remains responsible for maintaining adequate operational staffing, current emergency management procedures, and the operator's DEEP in accordance with NDIS Practice Standards.

3 Flood Hazard Context

3.1 Gawler River Flood Regime

The Site is located within the Gawler River floodplain. Flooding at the Site arises from overbank breakout flows from the Gawler River during significant rainfall events in the Gawler River catchment. This is a distinct flood mechanism from local stormwater flooding, and is governed by catchment-scale hydrological processes.

The Gawler River catchment covers a large area extending into the Mount Lofty Ranges. As a result of the catchment size and configuration, flood events in the Gawler River are characterised by long duration and gradual onset. Rainfall in the upper catchment takes a significant period of time to translate into peak flows at the lower river reaches and breakout into the floodplain.

The WGA report (2023), citing the DTEI Hydrological Study of the Gawler River Catchment (2007), states: *"a flood event that would produce a breakout in the Gawler River is a long duration storm event, peaking after some 20 to 30 hours."*

This characteristic is of central importance to this Plan. A 20-to-30 hour period between the commencement of significant catchment rainfall and the peak of the flood event provides substantial lead time for monitoring, warning, and evacuation.

WGA (2022) concludes, drawing on the DTEI (2007) Hydrological Study of the Gawler River Catchment, that the available lead time for flood events on the Gawler River is approximately 20 hours. This lead time is measured from the point at which a significant flood event is identifiable in the upper catchment to the time at which floodwaters reach the lower Gawler River floodplain, including the Buckland Park area.

3.2 Design Flood Event

The design flood event for planning purposes is the 1% AEP (1-in-100-year) flood event, representing the probability benchmark applied by the Hazards (Flooding) Overlay of the Planning and Design Code.

Water Technology (2022) confirms that under 1% AEP conditions, the Site itself is not subject to inundation. The principal flood risk for the proposed development therefore does not relate to inundation of the development parcels, but to temporary inundation of the surrounding access road network, as described in Sections 3.3 to 3.5 below.

3.3 Primary Evacuation Route

The primary evacuation route from Windamere Park to the designated receiving facility is via the local road network connecting to Port Wakefield Road (A1 Highway), as follows:

Legoe Road → Beagle Hole Road → Park Road / Carmelo Road → Port Wakefield Road

Legoe Road provides direct frontage to and egress from the Site. Beagle Hole Road is an unsealed rural road running south from the Legoe Road intersection. Park Road and Carmelo Road continue east toward Port Wakefield Road, with sections of those roads also unsealed. Port Wakefield Road is a sealed arterial highway providing the principal route for onward travel to the designated receiving facility.

The unsealed sections of the route are generally trafficable under normal conditions. Their condition during or following significant rainfall events is not formally assessed in this Plan, and staff should exercise judgement about route trafficability when activating the evacuation procedure. Provided evacuation is commenced sufficiently in advance (before floodwaters reach the road network) all segments of the route are expected to be passable.

3.4 Route Vulnerability

The Water Technology Report (2022) assessed flood depths along the access road network under 1% AEP conditions. The key findings relevant to this Plan are summarised in the following table. These findings are based on hydraulic modelling of existing conditions (prior to construction of the Riverlea development drainage channels).

Table 3.1 – Access Road Flood Locations

Location	1% AEP flood depth (m)	Notes
Legoe Road / Beagle Hole Road	0.5 – 1.0 m	Exceeds safe vehicle depth
Carmelo Road / Tippets Bridge Road intersection	0.5 – 1.5 m	Exceeds safe vehicle depth
Carmelo Road (general sections)	0.25 - 1.5 m	Variable; multiple sections impassable

These depths confirm that standard vehicles, including passenger vans and emergency service vehicles, cannot safely traverse the access road network during a 1% AEP flood event. For the purposes of this Plan, it is acknowledged that the 1% AEP flood event will result in the access roads becoming impassable for a period. Based on the available investigations and historical understanding of the catchment, a Gawler River flood event capable of inundating the access road network is not expected to arise without substantial warning.

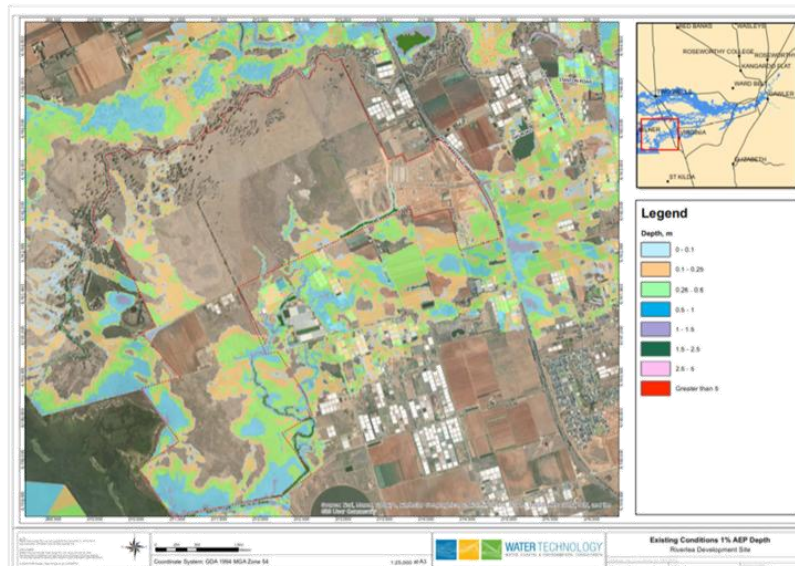


Figure 3.1 – Existing 1% AEP Flood Depth (Water Tech 2022)

3.5 Access Constraints

The key flood-related risk for the development is temporary isolation resulting from inundation of the surrounding road network. During a 1% AEP flood event, potential consequences include:

- temporary loss of vehicular access to and from the Site;
- reduced emergency service accessibility;
- road closures enforced by SAPOL or the City of Playford; and
- temporary isolation until floodwaters recede.

Pre-emptive evacuation (completed before access roads become impassable) is the primary operational response to this risk. A temporary isolation contingency is identified in Section 5.4 as a secondary measure, providing resilience in the event that evacuation cannot be completed in time.

3.6 Future Flood Conditions (Riverlea Development)

The Riverlea development (Walker Corporation) is a large residential development to the north and west of the Site. The flood management strategy for Riverlea involves the construction of major drainage channels designed to capture and convey 1% AEP Gawler River breakout flows through the development site, rather than relying on levee protection.

The Water Technology Report (2022) notes that the future Riverlea drainage channels are expected to alleviate flood depths on the access roads serving the Site. Construction of Riverlea Precincts 1 and 2 is currently underway. The operational flood response framework in this Plan is therefore conservatively based on existing (pre-Riverlea) flood conditions.

4 Flood Monitoring and Response

4.1 Flood Monitoring

The Bureau of Meteorology (BOM) operates a flood warning and forecasting system for the Gawler River, issuing Flood Watches and Flood Warnings based on catchment rainfall, river gauge readings, and hydrological modelling. These products are publicly accessible and are issued progressively as a flood event develops.

During periods of forecast severe weather or elevated flood risk, the site operator should monitor:

- Bureau of Meteorology weather warnings and flood watches for the Gawler River catchment;
- flood warnings for the Gawler River, including forecast peak levels and timing at key gauge stations;
- river levels at the Gawler River at Angle Vale (Heaslip Road, Station 023111) gauge, which is the most proximate upstream indicator of flood conditions approaching the Buckland Park area;
- local road closure information issued by the SES, City of Playford or SAPOL; and
- advice from emergency management agencies including the SES.

Monitoring should increase in frequency when significant rainfall is forecast for the upper Gawler River catchment, or when a Flood Watch is in effect. BOM flood warning products for the Gawler River are available at bom.gov.au/sa/flood/gawler.shtml.

4.2 Flood Response Triggers

The following flood response trigger levels apply to Windamere Park. Trigger conditions are based on BOM flood warning products and gauge readings at Gawler River at Angle Vale (Station 023111). The Site Manager has authority to escalate to the next trigger level at any time based on forecast conditions or operational judgment.

Table 4.1 – Flood Response Trigger Levels

Trigger Level	Condition	Indicative Lead Time	Recommended Response
Monitoring	BOM issues Flood Watch for the Gawler River; or sustained heavy rainfall forecast for upper catchment; or Angle Vale gauge rising	>20 hours	Monitor BOM forecasts and gauge levels continuously. Notify Site Manager. Confirm staff availability and vehicle serviceability.
Alert	BOM issues Minor Flood Warning for the Gawler River; or Angle Vale gauge reaches Minor flood level (5.80 m)	~12–20 hours	Prepare staff, transport, and evacuation arrangements. Notify emergency contacts for all residents. Confirm evacuation destinations. Site Manager reviews readiness.
Standby	BOM issues Moderate Flood Warning; or Angle Vale gauge reaches Moderate flood level (7.00 m); or forecast flooding likely to impact access roads within the available lead time	~6–12 hours	Confirm evacuation readiness and resident arrangements. Secure medications. Prepare Evacuation Grab Folders. Advise families of imminent evacuation.
Evacuation	BOM issues Major Flood Warning; or Angle Vale gauge forecast to reach Major flood level (8.50 m); or Site Manager determines evacuation is necessary to preserve safe access	Before road inundation	Relocate all residents prior to road inundation. Complete head count before departure. Depart via Legoe Road → Beagle Hole Road → Park Road / Carmelo Road → Port Wakefield Road. Notify SES and City of Playford. Secure Site.
Isolation	Access routes closed due to flooding - either following completed evacuation, or in the event evacuation could not be completed	N/A	Maintain onsite management arrangements until access is restored. If residents remain onsite, implement the Temporary Isolation Contingency (Section 5.4). Maintain contact with BOM, SES, and City of Playford.

The above trigger levels should be applied conservatively. Given the nature of the supported accommodation use and the vulnerability of residents, early action is always preferred. The Site Manager should not delay escalation in anticipation of further confirmation; if conditions are deteriorating, the next trigger level should be activated.

4.3 Evacuation Timing

The available lead time of approximately 20 hours (established in Section 3.1 on the basis of WGA (2022) and the DTEI (2007) hydrological study) is substantially greater than the time required to physically complete an evacuation. Based on rehearsed evacuation time and vehicle/resident numbers, the physical process of relocating all residents is expected to take well under one hour, leaving a substantial buffer within the available lead time.

The Evacuation trigger level in Table 4.1 is deliberately set to activate before road inundation occurs, ensuring that the evacuation route remains trafficable at the time of departure. Early evacuation is particularly recommended where:

- forecast flood levels continue to rise after the Alert or Standby trigger has been reached;
- the timing of road closure is uncertain;
- weather conditions are deteriorating and may affect road conditions or vehicle safety; or
- operational constraints (including staff availability or vehicle readiness) may delay departure.

A Gawler River flood event capable of inundating the access road network cannot arise without warning. The combination of the large catchment area, the long flood travel time, and the BOM monitoring network means that any such event will be preceded by progressive BOM flood warnings and rising river levels over many hours. This is not a flash flooding scenario, and the risk of sudden, unwarned access loss is not applicable at this Site.

5 Operational Response Arrangements

5.1 Roles and Responsibilities

The site operator is responsible for:

- monitoring flood warnings and forecast conditions;
- initiating operational flood response procedures in accordance with this Plan;
- maintaining staff and resident communication arrangements;
- coordinating resident relocation where required; and
- maintaining current emergency contact information for all residents.

Onsite staff and carers are responsible for:

- assisting residents during evacuation activities;
- supporting resident transport and relocation;
- implementing operator emergency procedures; and
- communicating operational issues to site management.

Emergency response coordination remains the responsibility of the relevant emergency management agencies. This Plan does not substitute for or alter those responsibilities.

5.2 Resident Evacuation Arrangements

Where evacuation is initiated, residents are to be relocated prior to forecast loss of access. The operator has advised that the following arrangements will be in place:

- Two (2) Toyota Hiace commuter vans per allotment (6 vans total across the three allotments), each with a capacity of approximately 11 residents and 2 staff. With 15 residents per allotment, both vans are required per allotment, with spare capacity available across the fleet;
- All residents are capable of boarding vehicles independently with staff guidance. No mobility aids, hoisting equipment, or specialist transfer procedures are required, which significantly reduces the time and complexity of the evacuation process;
- Residents travel off-site by van on a daily basis to attend programs and activities at the Windamere Park hub and in the wider community. Boarding the vans and departing the site is therefore a routine, familiar activity for all residents - not an unfamiliar emergency procedure. This materially reduces the practical complexity and time required to execute an evacuation;
- Carer vehicles are present on site in addition to the vans, providing supplementary transport capacity if required;
- Staff assist all residents onto designated vans. A head count of all residents and staff is undertaken before departure from the Site;
- Medications are secured for transport as part of the Standby phase;
- The daily evacuation group list (printed each day from the participant management system) and the monthly-printed client contacts report are maintained in each area's Evacuation Grab Folder and are the primary references during evacuation;

- All pastoral gates along evacuation pathways are maintained unlocked whenever residents are on the property, in accordance with Windamere Park's Evacuation and Fire Procedures;
- Vans depart via Legoe Road → Beagle Hole Road → Park Road / Carmelo Road → Port Wakefield Road, then to individual evacuation destinations; and
- Evacuation destinations (being the private homes of family members or pre-arranged alternative accommodation) are confirmed with each resident's family in advance and documented in the operator's emergency management records.

5.3 Communication and Emergency Services

Windamere Park operates with 24/7 onsite staffing. The operator will maintain a documented escalation structure for emergency events in the same manner as Windamere Park:

- Carers (onsite): First point of contact for monitoring observations and immediate resident management. Responsible for notifying the House Manager;
- House Manager (one per dwelling): First escalation point above carers. Responsible for assessing conditions and notifying the CEO; and
- CEO (Michael Allester-Briggs): Ultimate decision-making authority for trigger-level escalation, evacuation decisions, and liaison with emergency services and the City of Playford.

As a condition of employment, all staff are required to maintain a working mobile phone and be contactable at all times. The escalation structure is designed to ensure that no single individual is solely responsible for flood monitoring or evacuation decisions.

In the event of a flood emergency, the operator will liaise with relevant emergency services as required, including the SES, City of Playford, and emergency services (000). The Windamere Park Emergency and Disaster Management Communication Plan (July 2022, reviewed 2025) documents communication responsibilities for notifying residents, families, guardians, and external parties.

5.4 Temporary Isolation Contingency

While this Plan is based on pre-emptive evacuation prior to forecast loss of access, temporary isolation of the Site cannot be entirely excluded. Isolation may occur if evacuation is delayed, if forecast timing proves inaccurate, or in exceptional circumstances beyond normal flood behaviour. This contingency is a secondary measure only and does not replace pre-emptive evacuation as the primary response.

The operator should maintain contingency arrangements capable of supporting temporary onsite management of residents if isolation occurs, including:

- onsite food and potable water supplies sufficient for at least 72 hours;
- essential medications, medical information, and medical equipment for all residents;
- backup communication capability (e.g. satellite phone or radio) in the event of mobile network disruption;
- the ability to receive and respond to welfare checks from emergency services and families;
- backup power arrangements (e.g. generator) for essential medical and support equipment where appropriate; and
- staffing capability during temporary isolation events, including provisions for staff welfare.

The specific contingency arrangements and stock levels maintained on Site should be documented in the operator's emergency management records and reviewed annually.

6 Residual Risk

Flood-related risks associated with the development primarily relate to temporary access limitations during major flood events. Based on the available flood investigations and warning lead time information, the flood risk is considered capable of being managed through:

- ongoing flood monitoring using BOM forecast warning systems;
- conservative evacuation trigger levels and early evacuation prior to forecast road inundation;
- implementation of operational procedures by the site operator in accordance with this Plan; and
- temporary isolation contingency arrangements as a secondary measure.

Residual risks remain associated with:

- uncertainty in flood forecasting, including the possibility that forecast timing proves less accurate than available lead time estimates suggest;
- severe weather variability and the potential for events to behave differently from historical patterns;
- temporary loss of access during flood events and associated constraints on emergency service access; and
- reliance on operational implementation by the site operator.

The following specific residual risk scenarios are noted:

Staff fail to monitor BOM products or fail to act on warnings.

Addressed through the escalation protocol (Section 5.3), the requirement for 24/7 staffing, and the requirement that all staff maintain mobile phone accessibility at all times. The monitoring protocol is designed to avoid reliance on any single individual.

Flood event develops faster than historical precedent.

WGA (2022) identifies the available lead time for Gawler River breakout flood events as approximately 20 hours, representing the lower bound of the 20-to-30-hour range established by the DTEI (2007) hydrological study. While individual events may vary, a flood event of sufficient magnitude to inundate the access roads that develops in less than 20 hours has no historical precedent for the Gawler River catchment. The Temporary Isolation Contingency (Section 5.4) provides a further layer of resilience in the event that available lead time proves shorter than anticipated.

Occupant requires emergency medical attention during flood inundation.

The pre-emptive evacuation strategy means the Site will be unoccupied during any period of road inundation. If temporary isolation occurs notwithstanding the primary response, the operator maintains onsite access to essential medications, medical equipment, and emergency communication capability as part of the isolation contingency. Staff retain the ability to request emergency assistance and to coordinate a welfare response with SES.

7 Conclusions

This Flood Emergency Access and Evacuation Management Plan has been prepared to support the proposed supported accommodation development at Lot 202 Legoe Road, Buckland Park (Windamere Park), in response to concerns raised by the City of Playford regarding flood access and the potential entrapment of vulnerable occupants during a 1% AEP Gawler River flood event.

The available flood investigations confirm that while portions of the surrounding road network are subject to inundation during a 1% AEP event, the Gawler River flood regime is characterised by a long duration and gradual onset, providing approximately 20 hours of warning lead time prior to forecast loss of safe vehicle access. This lead time is a physical characteristic of the catchment — not a management assumption — and it is the foundation on which the operational approach in this Plan is built.

The primary flood-related risk associated with the development is temporary access limitation affecting the surrounding road network. This Plan demonstrates that risk is capable of being managed through:

- proactive monitoring of BOM flood warning products;
- conservative trigger-based evacuation procedures that initiate resident relocation well before access is lost; and
- temporary isolation contingency arrangements as a secondary measure.

The operational approach does not ask staff to respond to a sudden or unforeseeable event. It asks them to act on a well-established, progressively developing warning system — one that provides substantially more lead time than is required to safely evacuate all residents. The operator's emergency management framework, maintained under NDIS regulatory obligations, provides the compliance and oversight structure within which this Plan operates.

Subject to implementation of the measures outlined in this Plan, the flood-related access and evacuation risks associated with the proposed development are considered capable of being managed to an acceptable level. It is also noted that the ongoing adequacy of emergency planning at this Site is subject to independent regulatory oversight through the NDIS framework. Any registered provider operating the development is required by law to maintain and rehearse a current emergency management plan as a condition of NDIS registration. This provides a compliance mechanism that operates continuously and independently of any planning condition. Acceptance of this conclusion is ultimately a planning judgment to be made by the relevant authority.

Annexure B



Annexure C



FLOODING OVERLAY MAP
WINDAMERE PARK CODE AMENDMENT

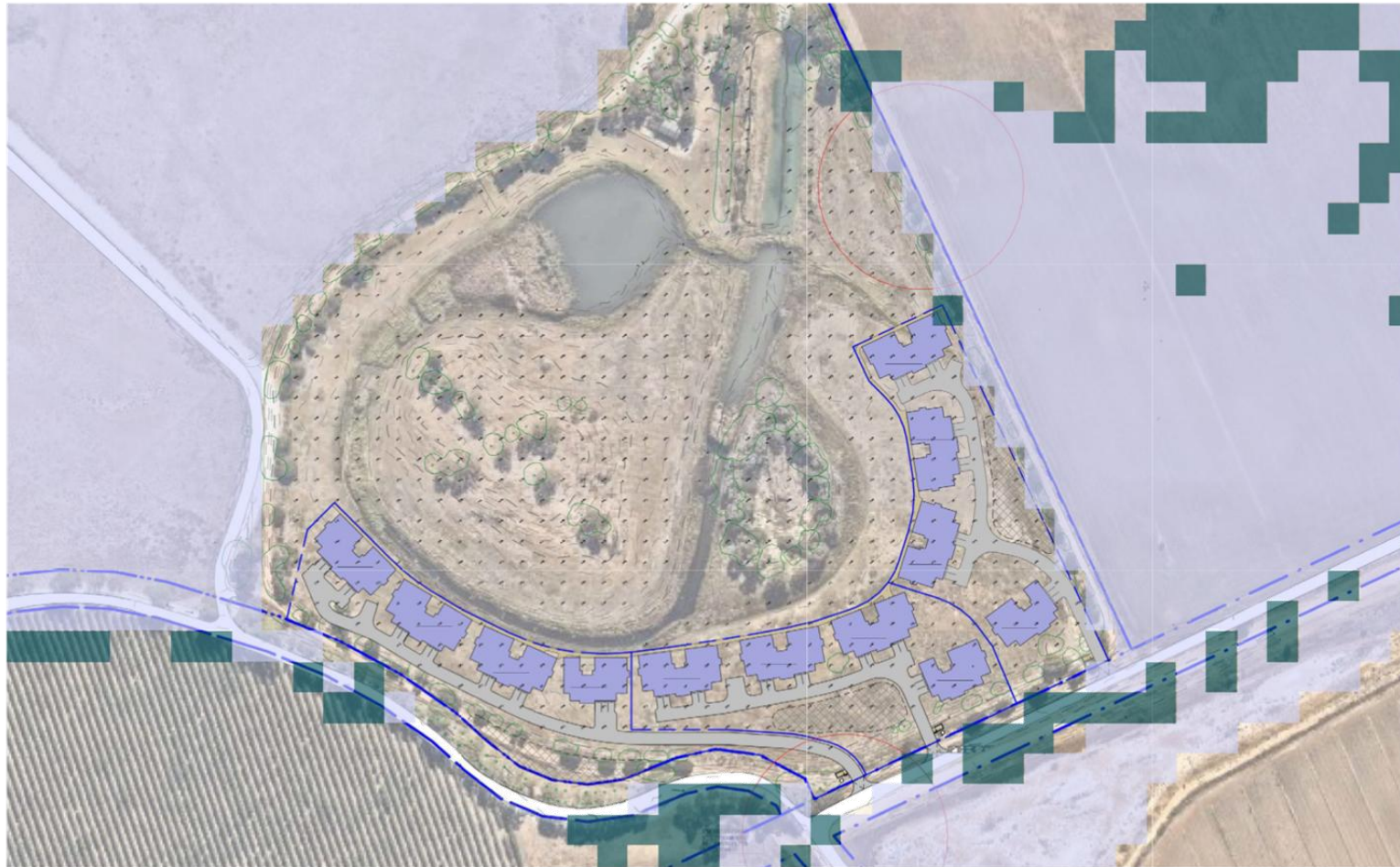
- HAZARDS (FLOODING-GENERAL)
- HAZARDS (FLOODING)



FLOODING OVERLAY
28/05/2026
NTS @ A4

DWG. REF.
REVISION
URPS REF.

— DA01
— A
— 22ADL-0484



FLOODING OVERLAY MAP
WINDAMERE PARK CODE AMENDMENT

■ HAZARDS (FLOODING-GENERAL)
■ HAZARDS (FLOODING)

① FLOODING OVERLAY
28/05/2026
NTS @ A4

DWG. REF.	—	DA01
REVISION	—	A
URPS REF.	—	22ADL-0484

STAFF REPORTS

MATTERS TO BE CONSIDERED BY THE COMMITTEE ONLY

***Matters delegated to the
Committee***

9.1.1 REVIEW OF DELEGATIONS BY THE COUNCIL ASSESSMENT PANEL

Responsible Executive Manager : Leif Burdon

Report Author : Skye Burbidge

Delegated Authority : Matters delegated to the Committee

Attachments : 1↓. Instrument C - Instrument of Delegation Under the Planning, Development and Infrastructure Act 2016, Regulations, Planning and Design Code and Practice Directions of Powers of an Assessment Panel - Updates

PURPOSE

To provide the Council Assessment Panel with an opportunity to review new and changed delegations to ensure they align with legislative amendments and requirements under relevant Acts and regulations.

STAFF RECOMMENDATION

1. In exercise of the power contained in Section 100 of the *Planning, Development and Infrastructure Act 2016*, the powers and functions of the *Planning, Development and Infrastructure Act 2016* and statutory instruments made thereunder contained in the proposed Instrument of Delegation (Attachment 1) to the report dated 18 June 2026 and entitled 'Instrument C - Instrument of Delegation Under the *Planning, Development and Infrastructure Act 2016*, Regulations, Planning and Design Code and Practice Directions of Powers of an Assessment Panel – Updates' are hereby delegated on 18 June 2026 to the City of Playford Assessment Manager, subject to the conditions and/or limitations specified herein or within Attachment 1.
2. Such powers and functions may be further delegated by the City of Playford Assessment Manager in accordance with Section 100(2)(c) of the *Planning, Development and Infrastructure Act 2016* as the Assessment Manager sees fit, unless otherwise specified herein or within Attachment 1.

EXECUTIVE SUMMARY

Amendments to delegations provided in for the relevant Acts applicable to Local Government are released through the Local Government Association (LGA).

Where there have been changes to relevant legislation, including the *Planning, Development and Infrastructure Act 2016* (the Act), a review of Instrument C delegations are required to be undertaken by the Council Assessment Panel (CAP).

Existing delegations have been in place as part of delegations provided to the Assessment Manager as of 18 January 2021, under Instrument C - Instrument of Delegation under the Act, Regulations, and Planning and Design Code and Practice Directions of Powers of an Assessment Panel being the powers delegated under the Act to an Assessment Panel.

In review of the quarterly amendments, it is considered appropriate that a review is undertaken as to the operations of the existing delegations made.

1. BACKGROUND

The Act was passed by the South Australian Parliament in 2016 as part of the new planning and development system to build upon the recommendations made by the Expert Panel on Planning Reform in 2014.

The scheme established under the Act has replaced the scheme under the *Development Act 1993*. The Act also provides for infrastructure planning, implementation and funding.

The Act encompasses the planning and development system, inclusive of zone naming, planning policy content and interpretation, public notification, assessment timeframes, appeal rights and business processes. Included within such changes are a number of statutory functions of Council Assessment Panels.

Council Assessment Panels have been assigned as a relevant authority in their own right bringing about further responsibilities that were previously the responsibility of Council. In the exercise of its duties, CAP considered delegations to Council staff to undertake specific duties or exercise powers on its behalf as of January 2021. Delegations enhance the decision-making process and allow nominated matters to be resolved efficiently and effectively without the need for CAP's consideration. During the consideration of such delegations, Council staff committed to providing for a review of such delegations following a period of implementation.

Amendments to the delegations provided for in the relevant Acts applicable to Local Government are released through the LGA, and such amendments are now presented to CAP for consideration.

2. RELEVANCE TO STRATEGIC PLAN

Decision-making filter: We will ensure we meet our legislative requirements and legal obligations.

The review and amendment of Council's Delegations Register will ensure the effective management of delegations and authorisations ensuring legislative compliance.

3. PUBLIC CONSULTATION

There is no requirement to consult the public on this matter.

4. DISCUSSION

There is only one (1) new provision that has been added to the Planning and Design Code:

- 53. Procedural Referrals – 53.11 The power to and in accordance with the Planning and Design Code to form the opinion that the development would not substantially impact the shipwreck (or associated relics) and would not warrant a referral when considering the purpose of the referral.

4.1 There are two (2) changed provisions in this review:

- S102(1) – This provision remains the same, with only the Delegation Source changing from the *Design (General) Regulations 2017* to the Planning and Design Code.
- State Planning Commission Practice Direction 19 Minor Variations 2024 – This provision has changed from Minor Variation to Planning Consent to cl7(3.)

4.2 Using the Instrument of Delegation document provided by the LGA, CAP is advised of new powers and functions under the Act. These powers and functions can be

delegated by CAP under Section 100 of the Act to any person or body, or person occupying a particular office or position. It is recommended that the powers and functions for Section 203 of the Act are retained by CAP and are delegated to the City of Playford Assessment Manager, who can then sub delegate to staff as they see fit.

- 4.3 Delegating to the City of Playford Assessment Manager allows delegations to be appropriately sub-delegated to relevant Council staff to ensure that they can be undertaken to meet operational needs. This also removes the need for all decisions and exercise of delegations to be undertaken by CAP.
- 4.4 From review of the additional delegation contained within Instrument C, it is considered that where functions are delegated from CAP to the Assessment Manager they are appropriately done so. The delegation allows for streamlining assessment functions through council administration and are not expected to result in substantial change to the range or scope of applications which come before CAP.
- 4.5 It is considered that the functions to be delegated to the Assessment Manager would provide for efficient and effective determination of applications which do not warrant consideration from CAP.

5. OPTIONS

Recommendation

1. In exercise of the power contained in Section 100 of the *Planning, Development and Infrastructure Act 2016*, the powers and functions of *the Planning, Development and Infrastructure Act 2016* and statutory instruments made thereunder contained in the proposed Instrument of Delegation (Attachment 1) to the report dated 18 June 2026 and entitled 'Instrument C - Instrument of Delegation Under the *Planning, Development and Infrastructure Act 2016*, Regulations, Planning and Design Code and Practice Directions of Powers of an Assessment Panel – Updates' are hereby delegated on 19 June 2026 to the City of Playford Assessment Manager, subject to the conditions and/or limitations specified herein or within Attachment 1.
2. Such powers and functions may be further delegated by the City of Playford Assessment Manager in accordance with Section 100(2)(c) of the *Planning, Development and Infrastructure Act 2016* as the Assessment Manager sees fit, unless otherwise specified herein or within Attachment 1.

Option 2

1. In exercise of the power contained in Section 100 of the *Planning, Development and Infrastructure Act 2016*, the powers and functions under the *Planning, Development and Infrastructure Act 2016* and statutory instruments are made thereunder contained in the proposed Instrument of Delegation (Attachment 1) to the report dated 18 June 2026 and entitled 'Instrument C - Instrument of Delegation Under the *Planning, Development and Infrastructure Act 2016*, Regulations, Planning and Design Code and Practice Directions of Powers of an Assessment Panel – Updates' are hereby delegated on 18 June 2026 to the City of Playford Assessment Manager, subject to the conditions and/or limitations specified herein or within Attachment 1.
2. Such powers and functions may be further delegated by the City of Playford Assessment Manager in accordance with Section 100(2)(c) of the *Planning, Development and Infrastructure Act 2016* as the Assessment Manager sees fit unless otherwise indicated herein or in Attachment 1, with the following amendments:
 - Instrument C - Instrument C - Instrument of Delegation Under the Planning,

Development and Infrastructure Act 2016, Regulations, Planning and Design Code and Practice Directions of Powers of an Assessment Panel – Updates, Item (X)

Delegated _____

6. ANALYSIS OF OPTIONS

6.1 Recommendation Analysis

6.1.1 Analysis & Implications of the Recommendation

The recommendation allows CAP to delegate powers and functions under the Act in accordance with legislative requirements. This ensures that Council's delegations will be current and provide the City of Playford Assessment Manager the appropriate delegations to further sub-delegate to staff, ensuring Council's staff have the appropriate powers to undertake their duties in accordance with the new updated legislation and deliver services to the community as of the designated day.

Risk Appetite

Regulatory Compliance

Council has a zero tolerance for non-compliance with applicable legislation including but not limited to: Local Government Act (LGA) 1999; Independent Commissioner Against Corruption (ICAC) Act 2012; Work Health & Safety (WHS) Act 2012; Environment Protection Act (EPA) 1993; Development Act 1993; Equal Employment Opportunity legislation; and Public Consultation legislation.

This decision will enable risk mitigation through effective management of delegations, authorisation processes, and ensuring staff are aware of their responsibilities. This report also addresses the risk of having ineffective or invalid delegations, as the delegations being considered have been recommended by Norman Waterhouse Lawyers who have ensured they are correctly set out with the appropriate terminology. It is imperative that delegations are valid as the consequences of ineffective or invalid delegations include:

- The exercise of power may fail - that is, the decision made may be liable to being overturned by the Courts
- The cost of a successful challenge to a decision made without lawful delegation will likely be borne by Council
- Where the unlawful exercise of the power has caused loss or damage, Council may be liable for such loss or damage.

6.1.2 Financial Implications

There are no financial or resource implications.

6.2 Option 2 Analysis

6.2.1 Analysis & Implications of Option 2

This option provides CAP the ability to make amendments to the proposed Instrument of Delegation as deemed appropriate. Consideration of legislative requirements must be given to any amendments to specific provisions under the Act.

6.2.2 Financial Implications

It is unlikely that there will be financial or resource implications with a varied resolution.

RELIANSYS® DELEGATIONS - EXPORT OF UPDATES BY REGISTER - NEW & CHANGED

INSTRUMENT C – INSTRUMENT OF DELEGATION UNDER THE PLANNING, DEVELOPMENT AND INFRASTRUCTURE ACT 2016, REGULATIONS, PLANNING AND DESIGN CODE AND PRACTICE DIRECTIONS OF POWERS OF AN ASSESSMENT PANEL

Note - Exported provisions are separated into NEW and CHANGED groupings, sorted by Delegation Source and Section.

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NEW Provisions

#	Delegation Source	Provision	Item Delegated	Delegate	Conditions & Limitations
822027	Planning and Design Code	PD Code	53.Procedural Referrals 53.11The power to and in accordance with the PD.Code to form the opinion that the development would not substantially impact the shipwreck (or associated relics) and would not warrant a referral when considering the purpose of the referral.	Assessment Manager	

CHANGED Provisions

#	Delegation Source	Provision	Item Delegated	Delegate	Conditions & Limitations
803802	State Planning Commission Practice Direction 19 Minor Variations 2024	cl7(3)	70. Minor Variation to Planning Consent 70.3 The power pursuant to clause 7(3) of PD19 in the case of multiple variations to a planning consent for different elements or aspect, whether occurring concurrently or via a series of variations over time (and either previously under Section 128(2)(b) of the PDI Act or as minor variations) to be satisfied that the cumulative effect of all variations when considered together is minor in nature in comparison to the original planning consent (prior to any variations).	Assessment Manager	
313548	Instrument of Delegation under the Planning, Development and Infrastructure Act 2016, Regulations, Planning and Design Code and Practice Directions of Powers of an Assessment Panel (Instrument C)	s102(1)	5. Matters Against Which Development Must Be Assessed 5.1 The power pursuant to Section 102(1) of the PDI Act to assess a development against, and grant or refuse a consent in respect of, each of the following matters (insofar as they are relevant to the particular development): 5.1.1- 5.1.1.1 the relevant provisions of the Planning Rules; and	Assessment Manager	The delegation of the power to grant or refuse planning consent pursuant to Section 102(1)(a) of the Act is limited to applications in relation to which one or more of the following apply: 1. No valid representations are

#	Delegation Source	Provision	Item Delegated	Delegate	Conditions & Limitations
			5.1.1.2to the extent provided by Part 7 Division 2 of the PDI Act – the impacts of the development, and; 5.1.1.3if relevant, requirements applying under Part 15 Division 2 (other than under Section 198), (planning consent);		received; 2.All valid representations are withdrawn; 3.No representor who has lodged a valid representation wishes to be heard; 4.A deemed consent notice has been served on the Panel under Section 125(2) of the Act; 5.The applicant has not agreed to extend the statutory timeframe within which the Panel must determine the development application pursuant to Regulation 53 of the Regulations, and that timeframe will expire before the next meeting of the Panel is scheduled to occur.