SHIRE OF GINGIN

HISTORY | BEAUTY | PROSPERITY



# MINUTES

## Ordinary Council Meeting

19 September 2023

# CONFIRMATION OF MINUTES

These Minutes have been CONFIRMED by Council as the official record for the Shire of Gingin's Ordinary Council Meeting held on 19 September 2023.



**Councillor C W Fewster**
**PRESIDENT**

**Date of Confirmation: 17 October 2023**

# DISCLAIMER

Members of the public are advised that Council agendas, recommendations, minutes and resolutions are subject to confirmation by Council and therefore, prior to relying on them, one should refer to the subsequent meeting of Council with respect to their accuracy.

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Applicants and other interested parties should refrain from taking any action until such time as written advice is received confirming Council's decision with respect to any particular issue.

# ACKNOWLEDGEMENT OF COUNTRY

The Shire of Gingin would like to acknowledge the Yued people who are the traditional custodians of this land. The Shire would like to pay respect to the Elders past, present and emerging of the Yued Nation and extend this respect to all Aboriginal people. The Shire also recognises the living culture of the Yued people and the unique contribution they have made to the Gingin region.

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# ORDER OF BUSINESS

## 1 DECLARATION OF OPENING

The Shire President declared the meeting open at 3:04 pm and welcomed all in attendance.

## 2 RECORD OF ATTENDANCE, APOLOGIES AND LEAVE OF ABSENCE

### 2.1 ATTENDANCE

Councillors – C W Fewster (Shire President), A R Vis (Deputy Shire President), L Balcombe, F Johnson, R Kestel, F J Peczka and E Sorensen

Staff – A Cook (Chief Executive Officer), L Crichton (Executive Manager Corporate and Community Services), R Kelly (Executive Manager Regulatory and Development Services), V Crispe (Executive Manager Operations and Assets), N Jurmann (Statutory Planning Officer), L Burt (Coordinator Governance) and K Johnston (Governance Support Officer/Minute Officer)

Gallery – There were 11 members of the public present in the Gallery.

### 2.2 APOLOGIES

Nil

### 2.3 LEAVE OF ABSENCE

Councillor J K Rule

## 3 DISCLOSURES OF INTEREST

**Councillor Peczka**

**Item:** 12.2 Lancelin Community and Sporting Club Transfer of Funds Request
**Interest:** Impartiality
**Reason:** I am a financial member associated with membership of the Lancelin Community and Sporting Club.

**Item:** 12.5 Lancelin Bowling Club - 10 Rink Synthetic Green CSRFF Application
**Interest:** Impartiality
**Reason:** I am a playing and financial member of the Lancelin Bowling Club.

Councillor Kestel

**Item:** 12.4 Club Night Light Program Application - Gingin Community Recreation Group
**Interest:** Impartiality
**Reason:** I am a member of the Gingin Recreation Group Committee and President of the Gingin Football Club.

**Item:** 12.5 Lancelin Bowling Club - 10 Rink Synthetic Green CSRFF Application
**Interest:** Impartiality
**Reason:** I am a Director of the Bendigo Bank who sponsor the Lancelin Bowling Club.

Councillor Balcombe

**Item:** 12.5 Lancelin Bowling Club - 10 Rink Synthetic Green CSRFF Application
**Interest:** Impartiality
**Reason:** I am an employee of Bendigo Bank which has approved a grant for this project.

## 4 PUBLIC QUESTION TIME

### 4.1 RESPONSES TO PUBLIC QUESTIONS PREVIOUSLY TAKEN ON NOTICE

Ordinary Meeting 18 July 2023
Lindsie Leahy – Neergabby

*Q1. Can Council confirm that an independent feasibility study has been carried out, that environmental risks have been properly assessed by a competent party (ie independent environmental and planning assessment consultant), and mitigations have likewise been designed with appropriate expertise to achieve containment and treatment of contaminants and nutrients to a level befitting the value of the environment as risk?*

A1. The responsible authority report presented to the Regional Joint Development Assessment Panel (RJDAP) represents a competent assessment against the applicable planning framework, which considered environmental risks and measure proposed to mitigate those risks. It should be noted that the development proposal requires a separate assessment under the *Environmental Protection Act 1986* to be administered by the Department of Water and Environmental Regulation.

*Q2. Typically, when waste and management facilities are proposed that have a potential to contaminate local waterways and aquifers an assessment of risks and associated risks and mitigations must be completed. That the facility will be privately operated should make no difference. Can the decision for an independent feasibility study not to be provided or requested please be justified?*

A2. The responsible authority report presented to the Regional Joint Development Assessment Panel (RJDAP) represents an assessment against the applicable planning framework, which considered local waterways and aquifers, having regard to comments received from relevant state agencies. There is no requirement for any further investigation or studies to be undertaken as part of the planning process.

## 4.2 PUBLIC QUESTIONS

*The Shire President advised a period of 15 minutes has been allotted for Public Question Time. Precedence will be given to questions received in writing prior to the meeting. Each person will be allowed to ask a maximum of 3 questions before other members of the public are invited to ask questions. If there is sufficient time remaining once all members of the public have had an opportunity to ask questions and any further questions received in writing have been dealt with, then those with further questions may be invited to speak again. Questions that cannot be addressed during the allotted 15 minutes will be taken on notice only if they are submitted in writing before leaving Council Chambers. Forms are available on Gallery chairs and on the table inside the Council Chambers entrance for this purpose. A written response to any question taken on notice will be provided to the questioner, and both questions and responses will be included in the Agenda and Minutes for the next Ordinary Council meeting.*

### 4.2.1 Wendy from the tribe Shulze Lancelin
### Council Code of Conduct

*Q1. Why do the minutes of the last meeting not reflect what was said in the meeting and what can we do to correct this for the last meeting and future meetings?*

**Response by Shire President**

Council minutes are not a verbatim record of what takes place at a Council meeting. *The Local Government (Administration) Regulations 1996* (Reg. 11) set out what the content of minutes of a meeting of Council or a committee must include. Reg. 11(e) requires that minutes contain a summary of each question raised by members of the public at the meeting, and a summary of the response to the question. In this instance the minutes of the Council meeting held on 18 July 2023 are considered to be adequate.

*Q2. If the council members do not adhere to the council code of conduct – what retraining program will Councillor Vis and the CEO be attending so that they can learn how to respond respectfully to the public as a public servant?*

**Response by Shire President**

Members of the public when asking questions in Public Question Time need to be aware of the rules of Council and how the meeting is facilitated.

Should a member of the public not adhere to the rules of Council or Public Question Time there may be the requirement for the Presiding Member or the CEO to bring the meeting back into compliance and this may need to be facilitated by stopping a person from talking or continuing their point.

*Q3. What measures will the Gingin Shire put in place so that there is no bullying so that we can have an intelligent adult to adult public debate about issues that are raised?*

**Response by Shire President**

As per the response to question 2, Public Question Time is a limited forum for members of the public to ask a question. It is not a session for open discussion or dialogue nor is it a forum for making a speech. There are other avenues available to members of the public to address Council or staff on issues. All Elected Members and staff are required to uphold the Code of Conduct regarding how we deal with members of the public, however bullying and threatening behaviour by members of the public will not be tolerated.

### 4.2.2 David Wilkie – Red Gully
### Fire and Safety

*Q1. Why is it that firebreaks must go down to bare earth and not 50mm of grass cover as it has been in the past?*

**Response by Shire President**

The required standards for firebreaks within the Shire are in accordance with s33(1)(a) of the *Bushfires Act 1954*, which states they are to be maintained clear of flammable matter. Only properties that applied for and were approved a Fire Break Variation, in accordance with the requirements, are allowed to have grass covering of 50mm or less.

### 4.2.3 Ryan Kenworthy – Gingin
### Shire Depot in Gingin

*Q1. Why is the Gingin shire heavy vehicle, machinery and other equipment storage yard in the township?*

**Response by Shire President**

This particular land is zoned Public Use Shire Purposes and its use as a Works Depot is applicable with this zoning.

*Q2. Who approved the location and items for storage within the township?*

**Response by Shire President**

This land was dedicated by Council for this purpose by the Shire's Forefathers and was the location of the Works Depot prior to the Gingin Industrial Area being built.

*Q3. How is it that rate payers/tenants that reside in the township have to buy/rent in the purpose-built industrial area outside of the township to legally store similar equipment and the shire seems exempt from the same rules?*

**Response by Shire President**

Again, this land is zoned appropriately for this purpose and Council owns a block in the Gingin industrial area for a future relocation.

### 4.2.4 Lincoln Stewart - Red Gully Tourism and Planning Applications

*Q1. As the Shire currently own and operate the Guilderton and other caravan parks in the area, the Shire in its entirety has a direct conflict of interest when assessing or approving and denying these applications. I request the Shire explain how it manages these conflicts to determine planning applications for low impact tourist developments or naturalist campgrounds. I believe the Shire cannot assess these applications impartially and request they be forwarded to the tourism minister for approval. Does the Shire agree to this?*

**Response by Shire President**

Council does not agree that it has a conflict of interest in the matter of owning two caravan parks and, as has been advised previously, is assessing the inclusion of low impact tourist developments including campgrounds within the Local Planning Scheme Omnibus Review. The Minister for Tourism is not empowered to approve planning applications. Applicants can request that the State Administrative Tribunal review decisions made by a local government in relation to planning matters.

*Q2. How does the shire of Gingin expect low-income earners to submit applications if they can't afford the expensive fees imposed on them to have certain documents completed by industry experts, even if the person is capable of completing the documents themselves?*

**Response by Shire President**

Clause 63(1)(c) of the Deemed Provisions for Local Planning Schemes contained within the *Planning and Development (Local Planning Schemes) Regulations 2015* specifies that an application for development approval must be accompanied by *"a report on any specialist studies in respect of the development that the local government requires the applicant to undertake..."*

Reports and assessments relating to health, safety and engineering matters must be provided by a suitably qualified professional.

Outside of these requirements Shire staff may recommend that an applicant engage the services of a qualified professional to undertake all or part of the application process in order to give their application the best possibility of success, however the applicant is not obligated to do so.

If a person or applicant wishes to put in a planning application, staff are here to provide a level of support should the applicant have questions.

*Q3. What methods of assistance does the shire have in place for rate payers to submit planning applications, bush fire management plans or other applications if the rate payers can't afford the fees associated to the application?*

**Response by Shire President**

See response to Question 2.

**4.2.5 Katie Enright - Guilderton**
**12.1 Guilderton Country Club - Renewal of Lease and Lease of Guilderton Café and General Store**

*Q1 In respect to the Shire's approval to renew the Guilderton Country Club lease for a further ten years. Will the Shire continue to request the DRGL to impose the current licence restrictions of sale of packaged takeaway alcohol to club members only for the period of that lease? If not, will the lease be transferred from a peppercorn lease to a fully commercial lease to be fair on other liquor businesses in the area?*

**Response by Shire President**

That issue has been dealt with by the Department and I don't think it is relevant to the lease.

**Further Response by Executive Manager Corporate and Community Services**

That is correct. When the tavern licence was originally approved, Council requested the inclusion of a condition along those lines, but it wasn't included when the license was granted. The Shire submitted a second request for those conditions to be imposed, but the Department's response was that it was a not a requirement of issuing a liquor licence to impose conditions outside of their remit, and imposing conditions on a lease is not within their remit.

The intervention was requested by Council prior to the licence being issued. The intervention was then lifted and Council granted the approval with the request for the Director to put that condition within the licence.

*Q2. So, they are running on a fully operational tavern licence and they are running on a peppercorn lease agreement. Because they are on a peppercorn lease agreement, that is not fair to a commercial business as they are paying a very minimum lease and it's a Shire building. Could you please take that on board?*

**Response by Shire President.**

This matter is an item on the Agenda for consideration at today's meeting.

*Q3. On 30 May, there was the meeting obviously in place that kitchen equipment has been sold, hence there is a transfer of lease from Belgravia to the Young family. Has that now been finalised from Belgravia to the Young family and is the intention to sub lease the café part of it?*

**Response by Shire President**

My understanding is that sale of the goods and assignment of the lease has been completed. There hasn't been a request to sublease the kitchen operations. My understanding is they have another management arrangement in place, however there is certainly no sublease in place.

**COUNCIL RESOLUTION**

**MOVED: Councillor Vis SECONDED: Councillor Balcombe**

**That Council extend Public Question Time by a further five minutes.**

**CARRIED UNANIMOUSLY**
**7 / 0**

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

### 4.2.6 Edward Hartman - Neergabby
### Public Question Time

*Q1. I ask the Chair and the elected Councillors who initiated the process to restrict question time to the minimum time allowed under the act, was it the Chair, was it the Councillors or was it the Executive?*

**Response by Shire President**

I had discussions with the staff and I believe that it was starting to get out of control, we needed to try to get back to a manageable 15 minutes which I believe is sufficient.

Q2. *Since there was a precedent that had been set as an open forum, would that not require a majority vote by Council to approve that?*

**Response by Shire President**

I don't think so, it is at my discretion.

Q3. *Did the Council vote? If it didn't vote, can the Council vote to increase the bare minimum of 15 minutes to the bare minimum of 45 minutes to allow enough information to be gathered from the public so that the Councillors when they make future decisions are aware of the concerns?*

**Response by Shire President**

I made the call on the 15 minutes. If individual Councillors want to extend, they can move a recommendation at any time.

Q4. *Will the Council now vote to extend the question time from the bare minimum of 15 minutes to an established minimum of 45 minutes, if there is sufficient questions?*

**Response from Shire President**

It's not a question I can answer, we have extended today's Question Time by 5 minutes. It is up to the individual Councillors to move if they want to extend.

**COUNCIL RESOLUTION**

**MOVED: Councillor Balcombe SECONDED: Councillor Kestel**

**That Council extend Public Question Time by a further ten minutes.**

**CARRIED UNANIMOUSLY**
**7 / 0**

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

### 4.2.7 Lincoln Stewart – Red Gully
### Community Coastal Management Meeting

*Q1. We are holding a community meeting regarding the coastal management plan on Tuesday the 22 August at lunchtime to be held at the Ledge Point Country Club and would like to invite all the Councillors to come and have a conversation with the public about the Coastal Management Plan.*

**Response by Shire President**

This is not a question. By all means send an email around inviting Councillors and staff to the meeting.

### 4.2.8 David Wilkie – Red Gully
### Fire and Safety

*Q1. We have Rangers strictly sticking to the bare earth, most of the ground in the Shire is sand which causes bogging problems for fire trucks. A firebreak is never going to stop a fire and is there for access for vehicles, so if the ground has 50mm cover it provides stability, which means we can drive trucks over it.*

**Response by Shire President**

Taken as a statement. The Firebreak Order is considered by the Bush Fire Advisory Committee, which is made up of Fire Control Officers from across the Shire and representatives of each Brigade. The Council takes advice from the Bushfire Advisory Committee on bushfire matters, and they believe the Fire Break Order is appropriate. If you disagree, then you should be raising the matter with your fire brigade so that it can be brought to the Bush Fire Advisory Committee for consideration.

### 4.2.9 Ryan Soerja Djanegara – Developed Property Pty Ltd

*Q1. With the future Government reforms and the requirement for Local Government meetings to be recorded and made available, will future Council meetings be streamed and made available live online in real time?*

**Response by Shire President**

There is no requirement for us to live stream. Some councils do as they are in a different band and are larger councils. We are only required to record, we do not have to live stream.

*Q2. Will there be consideration for live streaming in the future?*

**Response by Shire President**

If someone is suggesting live streaming, we will take that suggestion on board however we would need to weigh up the cost of doing so.

*Q3. Will recorded video meetings allow for closed captions?*

**Response by Shire President**

It isn't something we have considered however if it gets to the stage where we are required to live stream it would be considered.

### 4.2.10 Ross Prunster - Lancelin Coastal Erosion

*Q1. With the coastal erosion, can markers be fitted permanently to measure the erosion per annum?*

**Response by Shire President**

I can't give you an answer but it is something we will take note of. Maybe it can be a suggestion as part of the submission. The purpose of the workshops in Lancelin and Seabird is to consult and get feedback.

*Q2. Can a model be made up, with all bans shown clearly on the model of the banned areas for 4WD and tractors?*

**Response by Shire President**

Council has not made any decisions on any areas or bans yet. That is the idea of the documents being in draft form and in receiving submissions. This is only one consultation phase and others have been held previously. Once the consultants consolidate a report after these workshops, there may be a need for further consultation and we may need to meet with various individual community groups in the future depending on the feedback from the public this time.

*Q3. In the future, if you have staff there, can we have them show identification to say that they are representing the Gingin Council?*

Response from the Shire President

I'm not sure whether they had badges on or not, however four Councillors attended the Lancelin Workshop along with two staff members and two members of the consulting team. Going forward I urge you to put any concerns you have regarding the document into submission. I reinforce the fact that no decisions have been made regarding closures or any other aspect of the document as yet.

Questions Provided in Writing and Taken on Notice

4.2.11 David Wilkie – Red Gully
Fire and Safety

*Q1. Are any Councillors members of a local brigade?*

4.2.12 Ryan Kenworthy – Gingin
Shire yard in Gingin

*Q1. With the location of the yard being above in terrain height and close to the Gingin brook I have concerns of spills ending up in the fragile Gingin brook and contaminating it, is it appropriate to store large quantities of fuel and oils at this location?*

4.2.13 Lincoln Stewart – Red Gully
Petition

*Q1. The shire has a very active compliance department that is quick to serve legal notice or infringements on its rate payers but does it have and advertise services to help the rate payers with their applications?*

*Q2. A petition was submitted by Miss Katie Enright that presented a motion of no confidence in the Shire's CEO Mr Aaron Cook. My understanding is that several signatures were removed from the petition by technicality as the signatures were determined to be invalid, and the signee was not on the electoral roll. Who assessed these signatures?*

*Q3. What criteria determined them invalid?*

*Q4. Who witnessed the authorisation to remove each signature?*

*Q5. Where can I obtain a copy of which signatures were removed?*

*Q6. Which copy of the electoral roll were the signatures cross referenced against?*

*Q7. Has the shire sent the petition back to the applicant so that she can assess the decision made by the shire to strike the signatures and have the signatures that were removed replaced, re-submitted and assessed by her own independent review board?*

*Q8. Can I please have a copy of all documents relating to this petition and the Council's assessment and response?*

### 4.2.14 Kate Lane – Neeragabby
### Management of Shire Finances

*Q1. Since 2018 Shire staffing levels have increased by 20 and the State Financial Health Indicator score shows poor performance, dropping to below 70. Is this excessive spending on staff, one of the reasons our roads constantly develop potholes, verges are thick with love grass and there is no effective maintenance planning?*

*Q2. In the last six months alone shockingly large, unbudgeted expenditure has been urgently requires on three capital assets (Old Granville Building, Guilderton Caravan Park septic system and the CWA Building) stemming entirely from neglect and a lack of forward planning. In addition, bad financial management has surfaced with regard to leases and contracts. Will Council explain why these situations have been allowed to occur?*

*Q3. Will Council indicate when they intend to take control and insist on the proper management of our Shire finances, as per the Information statement?*

### 4.2.15 Clifford Harris – Gingin
### Noise and Road Safety

*Q1. Excessive noise from roosters in town area and white cockies in cages (pets?) 100 to 140 decibels volume.*

*Q2. Small row of trees next to Gull garage blocking view of traffic coming into town. They need to be removed asap. Replace with ground cover?*

## 5 PETITIONS

Nil

## 6 APPLICATIONS FOR LEAVE OF ABSENCE

Nil

## 7 CONFIRMATION OF MINUTES

COUNCIL RESOLUTION/OFFICER RECOMMENDATION

MOVED: Councillor Johnson SECONDED: Councillor Balcombe

That Council confirm the Minutes of the Ordinary Council Meeting held on 18 July 2023 as a true and accurate record.

CARRIED UNANIMOUSLY
7 / 0

FOR: *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

AGAINST: *Nil*

## 8 ANNOUNCEMENTS BY THE PRESIDING MEMBER

Nil

## 9 UNRESOLVED BUSINESS FROM PREVIOUS MEETINGS

Nil

## 10 QUESTIONS BY MEMBERS OF WHICH DUE NOTICE HAS BEEN GIVEN

Nil

## 11 REPORTS - OFFICE OF THE CEO

### 11.1 AMENDMENT OF AUDIT COMMITTEE TERMS OF REFERENCE

| | |
|---|---|
| File | GOV/33 |
| Author | Lee-Anne Burt - Coordinator Governance |
| Reporting Officer | Aaron Cook - Chief Executive Officer |
| Refer | Nil |
| Appendices | 1. Current Audit Committee TOR [**11.1.1** - 3 pages]<br>2. Amended Audit Committee TOR [**11.1.2** - 3 pages] |

#### DISCLOSURES OF INTEREST

Nil

#### PURPOSE

To consider amending the Terms of Reference for Council's Audit Committee.

#### BACKGROUND

As part of a review of its existing committees and working groups undertaken at its meeting on 18 July 2023, Council resolved to:

1. Rename the Audit and Governance Committee as the Audit Committee;

2. Amend the membership of the Audit Committee from nine Councillors to four Councillors including the Shire President, effective from 21 October 2023; and

3. Remove coordination of the CEO performance review process from the functions of the Committee and adopt a revised Terms of Reference (TOR) reflecting these amendments.

Subsequent to the meeting it has become apparent that further amendments are required to the TOR with respect to membership and appointment of the Presiding Member and Deputy Presiding Member.

#### COMMENT

Currently the TOR specifies that the membership of the Audit Committee will consist of the Shire President and three other Councillor representatives.

Recent amendments to the *Local Government Act 1995* with respect to the introduction of optional preferential voting mean that this voting process must also be applied not only to the election by Council of the Shire President and the Deputy Shire President, but to the appointment of members to Council's Audit Committee and the subsequent election by the Committee of its Presiding Member and Deputy Presiding Member.

This means that Council cannot specify that a particular council member will be appointed to the Committee or hold the position of Presiding Member.

Therefore, the Audit Committee TOR need to be further amended as follows:

1. Amend Membership cl. 1 to read as follows:

   *The Committee shall consist of the following representation:*

   - *Four Councillor representatives*

2. Amend Operating Procedure cl. 1.a) to read as follows:

   *The members of the Committee are to elect a presiding member from amongst themselves at the first meeting of the Committee and at each subsequent first meeting following an ordinary local government election.*

3. Amend Operating Procedure cl. 1.c) to read as follows:

   *The members of the Committee are to elect a Deputy Presiding Member from amongst themselves at the first meeting of the Committee and at each subsequent first meeting following an ordinary local government election.*

The current TOR and a version amended in accordance with the above are provided for Council's information **(see appendices).**

## STATUTORY/LOCAL LAW IMPLICATIONS

*Local Government Act 1995*
Part 7 – Audit
Division 1A – Audit committee
Section 7.1A – Audit committee

## POLICY IMPLICATIONS

Nil

## BUDGET IMPLICATIONS

Nil

## STRATEGIC IMPLICATIONS

Shire of Gingin Strategic Community Plan 2022-2032

| | |
|---|---|
| **Aspiration** | 4. Excellence & Accountability - Deliver Quality Leadership and Business Expertise |
| **Strategic Objective** | 4.2 Effective Governance - Apply systems of compliance which assists Council to make informed decisions within a transparent, accountable and principled environment |

## VOTING REQUIREMENTS - ABSOLUTE MAJORITY

**COUNCIL RESOLUTION/OFFICER RECOMMENDATION**

**MOVED: Councillor Johnson SECONDED: Councillor Kestel**

**That Council adopt the amended Audit Committee Terms of Reference as shown at Appendix 11.1.2.**

**CARRIED BY ABSOLUTE MAJORITY**
**7 / 0**

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

SHIRE OF GINGIN
HISTORY | BEAUTY | PROSPERITY

# TERMS OF REFERENCE

## AUDIT COMMITTEE

**July 2023**

| | |
|---|---|
| Name: | Audit Committee |
| Role/Purpose: | To support Council in fulfilling its governance and oversight responsibilities in relation to financial reporting, internal control structure, risk management systems, internal and external audit functions and ethical accountability. |
| Aims & Functions: | 1. To guide and assist the local government in carrying out –<br><br>a. its functions under Part 6 (Financial Management) of the Act; and<br>b. its functions relating to other audits and other matters related to financial management.<br><br>2. To guide and assist the local government in carrying out the local government's functions in relation to audits conducted under Part 7 (Audit) of the Act.<br><br>3. To review a report in relation to risk management and/or internal control and/or legislative compliance given to it by the CEO under *Local Government (Audit) Regulations 1996* regulation 17(3) (the CEO's Report) and to:<br><br>a. report to the Council the results of that review; and<br>b. give a copy of the CEO's report to the Council.<br><br>4. To monitor and advise the CEO when the CEO is carrying out functions in relation to a review under:<br><br>a. the *Local Government (Audit) Regulations 1996* regulation 17(1) (a report in relation to risk management and/or internal control and/or legislative compliance); and<br>b. the *Local Government (Financial Management) Regulations 1996* regulation 5(2)(c) (a report in relation to the appropriateness and effectiveness of the financial management systems and procedures of the local government).<br><br>5. To review the annual Compliance Audit Return and report the results of the review to Council in accordance with Regulation 14(3A) of the *Local Government (Audit) Regulations 1996*.<br><br>6. To perform any other function conferred on it by the *Local Government (Audit) Regulations 1996* or another written law. |
| Membership: | 1. The Committee shall consist of the following representation:<br><br>• Shire President<br>• Three Councillor Representatives |

| | |
|---|---|
| | 2. The CEO and employees are not members of the Committee (s7.1.A(3) and (4) *Local Government Act 1995)*.<br><br>3. The CEO and Executive Manager Corporate and Community Services will attend all meetings to provide technical advice and guidance to the Committee.<br><br>4. Membership shall be for a period of up to two years terminating on the day of the next ordinary Council elections, with retiring members eligible to re-nominate.<br><br>5. Committee membership shall be appointed or removed by the Council.<br><br>6. Members must comply with the Shire's Code of Conduct for Council Members, Committee Members and Candidates.<br><br>7. The Committee has authority to second individuals from outside of the Committee, on a voluntary basis, for their expert advice. |
| Operating procedures: | 1. Presiding Member:<br><br>a) The Shire President will assume the role of Presiding Member.<br><br>b) The Presiding Member will preside at all meetings.<br><br>c) The Deputy Shire President will fill the role of Deputy Presiding Member.<br><br>d) In the absence of the Presiding Member, the Deputy Presiding Member will assume the chair, and in his/her absence, a person is to be elected by the Committee members present to assume the Chair.<br><br>e) The Presiding Member is responsible for the proper conduct of the Committee.<br><br>2. Meetings:<br><br>a) The Committee shall meet as required, but must hold a minimum of two meetings in any one calendar year.<br><br>b) Meetings can be scheduled by the Chief Executive Officer, by a written request of the Presiding Member to the Chief Executive Officer, or by a decision of the Council or the Committee.<br><br>c) A Notice of Meeting, including an agenda, will be circulated to the Committee members (including deputy members) at least 72 hours prior to each meeting where possible.<br><br>d) The Presiding Member shall ensure that detailed minutes of all meetings are kept and shall provide the Committee members (including deputy members) with a copy of such minutes within seven working days of the Committee meeting.<br><br>3. Quorum:<br><br>The quorum for a meeting shall be at least 50% of the number of endorsed members.<br><br>4. Reporting: |

| | |
|---|---|
| | a) The Minutes of every Committee meeting will be circulated for the information of all Councillors within seven working days of the Committee meeting.<br><br>b) Any Committee resolution requiring action on the part of the Council or requiring a Council commitment will be listed as a separate report on the Agenda for the next ordinary Council meeting. |
| Appointing legislation: | The Committee is established under section 7.1A of the *Local Government Act 1995*. |
| Delegated Authority: | The Committee has no delegated power and has no authority to implement its recommendations without approval of Council. |

| Version | Decision Reference | Synopsis |
|---|---|---|
| 1. | 06/09/2005 – Item 10.2.1 | Committee established and Terms of Reference adopted. |
| 2. | 22/10/2013 – Item 10.2 | Terms of Reference reviewed. |
| 3. | 18/08/2015 – Item 11.1.6 | Terms of Reference reviewed. |
| 4. | 19/09/2017 – Item 11.1.3 | Terms of Reference reviewed. Aims & Functions cl. 16 added. Operating procedures cl. 2c deleted. Membership cl. 1 amended to include one external person. |
| 5. | 17/04/2018 – Item 11.1.1 | Membership cl. 1 amended to delete external member. Committee name changed from Audit Committee to Audit and Governance Committee. |
| 6. | 22/01/2019 – Item 11.1.1 | TOR amended to align with amendments to the *Local Government (Audit) Regulations 1996.* Committee membership amended to include Shire President and a minimum of 4 other councillors. Additional function included with respect to coordination of CEO performance review process. |
| 7. | 15/10/2019 – Item 11.1.1 | Membership cl. 1 amended to include all Crs. Membership cl. 4 deleted. Operating Procedures cl. 1a) and 1b) amended. New Operating Procedures cl. 1c) inserted. Operating Procedures cl. 2b) amended. |
| 8. | 17/08/2021 – Item 11.1 | Amend Aims & Functions cl. 3 and cl. 4a). Delete Aims & Functions cl. 5 and 6. Amend Membership cl. 6. Amend Operating Procedures cl. 2d) and 4a). |
| 9. | 18/07/2023 – Item 11.1 | Audit & Governance Committee renamed as Audit Committee. Committee membership amended from all Councillors to 4 Councillors (inc. Shire President), effective from 21 October 2023. |

SHIRE OF GINGIN
HISTORY | BEAUTY | PROSPERITY

# TERMS OF REFERENCE

## AUDIT COMMITTEE

**August 2023**

| | |
|---|---|
| Name: | Audit Committee |
| Role/Purpose: | To support Council in fulfilling its governance and oversight responsibilities in relation to financial reporting, internal control structure, risk management systems, internal and external audit functions and ethical accountability. |
| Aims & Functions: | 1. To guide and assist the local government in carrying out –<br><br>a. its functions under Part 6 (Financial Management) of the Act; and<br>b. its functions relating to other audits and other matters related to financial management.<br><br>2. To guide and assist the local government in carrying out the local government's functions in relation to audits conducted under Part 7 (Audit) of the Act.<br><br>3. To review a report in relation to risk management and/or internal control and/or legislative compliance given to it by the CEO under *Local Government (Audit) Regulations 1996* regulation 17(3) (the CEO's Report) and to:<br><br>a. report to the Council the results of that review; and<br>b. give a copy of the CEO's report to the Council.<br><br>4. To monitor and advise the CEO when the CEO is carrying out functions in relation to a review under:<br><br>a. the *Local Government (Audit) Regulations 1996* regulation 17(1) (a report in relation to risk management and/or internal control and/or legislative compliance); and<br>b. the *Local Government (Financial Management) Regulations 1996* regulation 5(2)(c) (a report in relation to the appropriateness and effectiveness of the financial management systems and procedures of the local government).<br><br>5. To review the annual Compliance Audit Return and report the results of the review to Council in accordance with Regulation 14(3A) of the *Local Government (Audit) Regulations 1996*.<br><br>6. To perform any other function conferred on it by the *Local Government (Audit) Regulations 1996* or another written law. |
| Membership: | 1. The Committee shall consist of the following representation:<br><br>• Four Councillor Representatives |

| | |
|---|---|
| | 2. The CEO and employees are not members of the Committee (s7.1.A(3) and (4) *Local Government Act 1995)*.<br><br>3. The CEO and Executive Manager Corporate and Community Services will attend all meetings to provide technical advice and guidance to the Committee.<br><br>4. Membership shall be for a period of up to two years terminating on the day of the next ordinary Council elections, with retiring members eligible to re-nominate.<br><br>5. Committee membership shall be appointed or removed by the Council.<br><br>6. Members must comply with the Shire's Code of Conduct for Council Members, Committee Members and Candidates.<br><br>7. The Committee has authority to second individuals from outside of the Committee, on a voluntary basis, for their expert advice. |
| Operating procedures: | 1. Presiding Member:<br><br>a) The members of the Committee are to elect a presiding member from amongst themselves at the first meeting of the Committee and at each subsequent first meeting following an ordinary local government election.<br><br>b) The Presiding Member will preside at all meetings.<br><br>c) The members of the Committee will elect a Deputy Presiding Member from amongst themselves at the first meeting of the Committee and at each subsequent first meeting following an ordinary local government election.<br><br>d) In the absence of the Presiding Member, the Deputy Presiding Member will assume the chair, and in his/her absence, a person is to be elected by the Committee members present to assume the Chair.<br><br>e) The Presiding Member is responsible for the proper conduct of the Committee.<br><br>2. Meetings:<br><br>a) The Committee shall meet as required, but must hold a minimum of two meetings in any one calendar year.<br><br>b) Meetings can be scheduled by the Chief Executive Officer, by a written request of the Presiding Member to the Chief Executive Officer, or by a decision of the Council or the Committee.<br><br>c) A Notice of Meeting, including an agenda, will be circulated to the Committee members (including deputy members) at least 72 hours prior to each meeting where possible.<br><br>d) The Presiding Member shall ensure that detailed minutes of all meetings are kept and shall provide the Committee members (including deputy members) with a copy of such minutes within seven working days of the Committee meeting. |

| | |
|---|---|
| | 3. Quorum:<br><br>The quorum for a meeting shall be at least 50% of the number of endorsed members.<br><br>4. Reporting:<br><br>a) The Minutes of every Committee meeting will be circulated for the information of all Councillors within seven working days of the Committee meeting.<br><br>b) Any Committee resolution requiring action on the part of the Council or requiring a Council commitment will be listed as a separate report on the Agenda for the next ordinary Council meeting. |
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| 5. | 17/04/2018 – Item 11.1.1 | Membership cl. 1 amended to delete external member. Committee name changed from Audit Committee to Audit and Governance Committee. |
| 6. | 22/01/2019 – Item 11.1.1 | TOR amended to align with amendments to the *Local Government (Audit) Regulations 1996.* Committee membership amended to include Shire President and a minimum of 4 other councillors. Additional function included with respect to coordination of CEO performance review process. |
| 7. | 15/10/2019 – Item 11.1.1 | Membership cl. 1 amended to include all Crs. Membership cl. 4 deleted. Operating Procedures cl. 1a) and 1b) amended. New Operating Procedures cl. 1c) inserted. Operating Procedures cl. 2b) amended. |
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## 12 REPORTS - CORPORATE AND COMMUNITY SERVICES

### 12.1 GUILDERTON COUNTRY CLUB - RENEWAL OF LEASE

| | |
|---|---|
| File | A3704 |
| Author | Bethwyn Innes - Executive Assistant to EMCCS |
| Reporting Officer | Les Crichton - Executive Manager Corporate and Community Services |
| Refer | Nil |
| Appendices | Nil |

**DISCLOSURES OF INTEREST**

Nil

**PURPOSE**

To seek Council approval for the Guilderton Country Club Inc (GCC) to operate with an unrestricted Tavern licence under the current lease agreement for a term extension of 10 years.

**BACKGROUND**

The Guilderton Country Club Inc (GCC) occupies Reserve 27949 and Reserve 30197 (Lots 232, 423 and 3000) Wedge Street, Guilderton under a peppercorn lease agreement with the Shire of Gingin (SOG). The lease commenced on 1 July 2013 for a ten year term with an option for a further term of ten years. The Shire of Gingin holds a Management Order over the Reserves for the purposes of Recreation.

At its 16 August 2016 Ordinary Meeting, Council considered the GCC's application to the Department of Racing, Gaming and Liquor (DRGL) to change its existing Club Licence to a Tavern Licence. At the time the Shire was required to submit an intervention to the DRGL in order to provide additional time in which to investigate the matter.

The application was further presented to Council at its 18 October 2016 Ordinary Council meeting, where Council resolved to provide consent for the GCC's application, with a request that the DRGL impose a condition on the licence restricting the sale of packaged takeaway alcohol to Club Members only.

As part of the application process, the Shire was required to provide Section 39 and 40 approvals under the *Liquor Licensing Control Act 1998* that the premises complies with:

- all relevant requirements of the *Health Miscellaneous Provisions) Act 1911*, the *Food Act 2008*, any written law applying to the sewerage or drainage of the premises, the *Local Government Act 1995*, and the *Building Act 2011*. (Section 39) and

- the requirements of the written laws relating to planning laws (section 40)

Although the Reserve is not zoned for Tavern pursuits, Shire officers issued both permits based on the Council's decision.

On 30 June 2017, the DRGL issued the GCC with approval to amend its Club licence to a Tavern Licence. The condition requested by Council was not, however, stipulated as part of the licence agreement conditions.

In order to action Council's intent, officers have since made several attempts to incorporate the condition into the lease agreement, most recently in response to the GCC seeking to exercise its option to renew the lease for a further ten year term. Despite the exchange of several letters, all attempts at negotiation to have the lease amended have been unsuccessful.

COMMENT

The current lease between the SOG and the GCC expired on 30 June 2023 and the GCC is currently occupying the premises under the holding over clause of the lease agreement (Clause 20). The GCC is seeking to exercise its right to renew the lease for a further term (10 years) and without the GCC's consent, an amendment to the lease cannot be effected.

Given all avenues of negotiation to achieve Council's original intent through amendment of the lease have been exhausted, under the terms of the lease the Shire is to grant the lessee a lease for the further Term unless all consents and approvals required by the terms of the lease or at law have not been obtained, and there is no subsisting default in the payment of amounts due, or performance or observance of the Lessee's Covenants. There are no outstanding consents/approvals or defaults.

Subject to Council's approval, the renewal will be submitted to the Minister for Lands for endorsement, which is a standard requirement for all Crown Land under Management Orders. Should the Minister not consent to the renewal, it is envisaged that the lease will need to be terminated and renegotiated to satisfy the Minister's terms.

## STATUTORY/LOCAL LAW IMPLICATIONS

*Local Government Act 1995*
Part 3 – Functions of local governments
Division 3 – Executive functions of local governments
Section 3.58 – Disposing of property.

*Local Government (Functions and General) Regulations 1996*
Part 6 – Miscellaneous
Clause 30 – Dispositions of property excluded from Act s. 3.58

## POLICY IMPLICATIONS

Nil

## BUDGET IMPLICATIONS

Nil

## STRATEGIC IMPLICATIONS

Shire of Gingin Strategic Community Plan 2022-2032

| | |
|---|---|
| **Aspiration** | 3. Planning & Sustainability - Plan for Future Generations |
| **Strategic Objective** | 3.3 Planning & Land Use - Plan the use of the land to meet future requirements incorporating economic development objectives and community amenity |

## VOTING REQUIREMENTS - SIMPLE MAJORITY

**COUNCIL RESOLUTION/OFFICER RECOMMENDATION**

**MOVED: Councillor Vis SECONDED: Councillor Sorensen**

**That Council agree to enter into a further lease term with the Guilderton Country Club Inc. with respect to Reserve 27949 and Reserve 30197 (Lots 232, 423 and 3000) Wedge Street, Guilderton to 30 June 2033 as provided under Clause 17 of the lease agreement dated 19 November 2013.**

**CARRIED UNANIMOUSLY**
**7 / 0**

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

## 12.2 LANCELIN COMMUNITY AND SPORTING CLUB TRANSFER OF FUNDS REQUEST

| | |
|---|---|
| File | CVS/43 |
| Author | Bethwyn Innes - Executive Assistant to EMCCS |
| Reporting Officer | Les Crichton - Executive Manager Corporate and Community Services |
| Refer | 18 July 2023, Item 12.1 |
| Appendices | 1. Concept Enquiry General Storage [**12.2.1** - 3 pages]<br>2. lancelingolfclub [**12.2.2** - 12 pages] |

### DISCLOSURES OF INTEREST

*Councillor Peczka disclosed an impartiality interest in Item 12.2 as he is a financial member associated with membership of the Lancelin Community and Sporting Club.*

### PURPOSE

To consider a Concept Enquiry from the Lancelin Community and Sporting Club Inc. (LCSC) to expand existing golf cart storage, with funding to be transferred from the Tower Fund to cover the project costs.

At its Ordinary Council Meeting on 18 July 2023 Council resolved by procedural motion that:

*... consideration of this matter be deferred until the Ordinary Council Meeting on 15 August 2023 to allow for further information to be obtained.*

The Lancelin Community and Sporting Club Inc. was advised of the deferment and Council's concerns with the application. No further advice has been received from the LCSC.

### BACKGROUND

The Lancelin golf course is located within Reserve 28303. The reserve is vested in the care, control, and management of the Shire of Gingin and is leased to the Lancelin Community Sporting Club Inc. The reserve accommodates an 18 hole golf course, a clay target facility, an outdoor multipurpose court (netball/basketball/tennis), football ground and clubroom, playground, and the Lancelin Sporting Complex. The complex includes a club room, kitchen, cool room, multipurpose indoor court (basketball etc.), toilets and change rooms.

The permitted purpose of the lease is sporting and recreation for the members of the Lessee and Lessee's guests and uses reasonably ancillary thereto. The provision of bowling greens (and subsequent upgrades/renewals) aligns with this purpose.

As a facility located within Lancelin, development of the Lancelin Golf Club is also guided by the Upper Coastal Sporting Facilities Master Plan adopted by Council at its Ordinary Meeting held on 19 October 2021. The Master Plan has had several changes, the latest presented to Council on 21 February 2023, where Council resolved to:

1. *Endorse the following changes to the Upper Coastal Sporting Facilities Master Plan Stage 1 from*

| *Current Master Plan – Stage 1* |
|---|
| *Second multi-court (netball/basketball) – Lancelin* |
| *Plus, additional line marking to existing netball court* |
| *Sports lighting to outdoor courts (subject to power source)* |
| *Disabled access ramp (upper to mid-level)* |
| *Lighting to football oval – 3 No (subject to power source)* |
| *Resurfacing 3 existing courts (excludes fencing)* |
| *Lighting to 3 existing courts (subject to power source)* |

*to*

| *Revised Master Plan – Stage 1* |
|---|
| *Second multi-court (netball/basketball) – Lancelin* |
| *Inclusion of Lancelin Golf Club* |
| *Inclusion of Lancelin Bowling Club* |
| *Disabled access ramp (upper to mid-level) – Lancelin* |
| *Lighting to football oval – 3 No (subject to power source) - Lancelin* |
| *Synthetic Bowling Green – 10 Rink – Lancelin* |
| *Additional golf cart storage – Lancelin* |
| *Relocation of Pegasus Gun Club – Lancelin* |

2. *Review the timing of the installation of a path between Lancelin Townsite and the Lancelin Sporting Complex within its footpath program priorities.*

3. *Finalise the identification of available land (if any) as potential sites for the relocation of the Pegasus Shooting Club on or before 30 June 2023.*

4. *Include the Lancelin Sporting and Community Club in its consultation with the development of the Lancelin South as it relates to the provision of sporting facilities within and adjacent to the development area.*

## COMMENT

A Concept Enquiry (see **Appendix Concept Enquiry General Storage**) has been received from Mike Cardy, Secretary of the Lancelin Golf Club on behalf of Norm Skoglund, President of the Lancelin Community and Sporting Complex Inc. requesting that funding be released from the Lancelin Community Sport and Recreation Reserve (Tower Fund) to

upgrade the golf cart storage area to a stand-alone storage shed sufficiently large enough to accommodate up to 18 golf carts.
The proposed upgrade will allow for the concurrent charging of electric golf carts and will alleviate the high demand for safe, dry, and appropriate storage space for electric and petrol carts.

The Tower Fund was originally created to assist in providing financial support for upgrades to the Lancelin Community and Sporting Complex. Funds are derived from lease payments received from the telecommunications towers located on the reserve, and the fund has a current balance of $98,994.91. With lease funds from 2022/23 and associated interest now finalised, the balance as at 30 June 2023 is $127,541.64.

A costing of $40,460 for the proposed project, including demolition and disposal of the existing shed and power upgrades, has been provided by the LCSC (see **Appendix Lancelin Golf Club**), with a request for $31,460 to be funded by the Tower Fund.

A preliminary review of the proposal was discussed by Council at its Briefing Session held on 4 July 2023, at which time Council requested a copy of the minutes from the LCSC confirming that all member sporting groups support the proposal. A copy of the 17 April 2023 meeting minutes and a letter from the Lancelin Pirates (who were absent from the that meeting) was submitted and provided to Council as part of the Officer's report to the Ordinary Council Meeting on 18 July 2023.

While the proposal is referenced within the Upper Coastal Sporting Facilities Master Plan, a number of other projects were identified during the Plan's development as higher priority works. These include upgrade of the multipurpose courts, lights for the football grounds, and universal access from the upper to mid-level areas. This does not include the recent and further upgrade work to the precinct water supply and tanks.

Equally, the proposed building provides exclusive use to one group rather than benefiting the broader users of the sporting facility. It is therefore recommended that the proposal not be supported by Council.

## STATUTORY/LOCAL LAW IMPLICATIONS

Nil

## POLICY IMPLICATIONS

Policy 3.17 – Asset Management

Shire of Gingin Upper Coastal Sporting Facilities Master Plan

## BUDGET IMPLICATIONS

The Concept Enquiry proposes $31,460 of the total cost of $40,460 to undertake the proposed upgrade is to be funded by the Tower Fund.

There is no provision within the Shire's 2023/24 Budget or Long Term Financial Plan for a contribution towards the upgrade of the Lancelin Golf Club facilities. With implementation of the Upper Coastal Sporting Facilities Master Plan dependent on the success of attracting external funding, it was critical for the Master Plan to be developed in accordance with funding eligibility criteria, in particular the State Government's Community Sporting and Recreation Facilities Fund (CSRFF) guidelines. Priority consideration for CSRFF funding will be given to:

- New or upgraded facilities which will maintain or increase physical activity or result in a more rational use of facilities;
- Projects that lead to facility sharing and rationalisation; and
- Multi-purpose facilities that reduce the infrastructure required to meet similar needs and increase sustainability.

The proposal does not appear to demonstrate an ability to meet any of the above criteria.

## STRATEGIC IMPLICATIONS

Shire of Gingin Strategic Community Plan 2022-2032

| | |
|---|---|
| **Aspiration** | 2. Connections & Wellbeing - Grow and Nurture Community Connectedness and Wellbeing |
| **Strategic Objective** | 1.5 Infrastructure Investment - Lobby State and Federal Government to estabish infrastructure and development opportunities in our Shire |

## VOTING REQUIREMENTS - SIMPLE MAJORITY

**COUNCIL RESOLUTION/OFFICER RECOMMENDATION**

**MOVED: Councillor Kestel SECONDED: Councillor Vis**

**That Council refuse the request by the Lancelin Community Sporting Club Inc. for the release of $31,460 from the Lancelin Community Sport and Recreation Reserve (Tower Fund) for the purpose of upgrading the Lancelin Golf Club's golf cart storage area.**

**CARRIED UNANIMOUSLY**
**7 / 0**

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

# COMMUNITY PROJECTS FOR SHIRE LANDS & ASSETS

## CONCEPT ENQUIRY

### PRIOR TO COMPLETING THIS FORM

It is essential to have read the 'Frequently Asked Questions' for 'Community Projects for Shire Lands & Assets' prior to completing and submitting a 'Concept Enquiry'. In completing and submitting this form to the Shire of Gingin you are acknowledging that you have read and understood the purpose, process and associated information for a 'Concept Enquiry'. If further explanation is required please contact the Shire's Community Development Team via

**Email:** mail@gingin.wa.gov.au OR **Telephone:** (08) 9575 5100

| CONCEPT ENQUIRY | |
|---|---|
| **Project Title** | *Expansion of Golf Cart Storage Area* |

| CONTACT DETAILS | |
|---|---|
| **Contact Person (Applicant)** | Norman Skoglund |
| **Committee Role** *(if applicable)* Applicant must be Chair/President; Vice; Secretary or Treasurer | President |
| **Committee Organisation** *(if applicable)* | Lancelin Community Sporting Club Inc. |
| **Postal Address** | PO Box 188, Lancelin, WA 6044 |
| **Contact Number** | 0408954660 |
| **Email** | normskoglund@gmail.com |
| ***Note:** Please provide as much information as possible about the project as this will assist with the Shire's review of the 'Concept Enquiry'. The Shire may seek additional information from the contact person listed above if required.* | |

**1. What is the proposed project?**
*Provide specific detail.*

It is proposed to provide a stand-alone storage shed sufficiently large enough to accommodate up to 18 golf carts and will allow the concurrent charging of electric golf carts. This much needed improvement will alleviate the high demand for safe, dry, and appropriate storage space for electric and petrol carts.
The proposed stand-alone shed is 24m x 8.5m = 204sqm

# COMMUNITY PROJECTS FOR SHIRE LANDS & ASSETS

## CONCEPT ENQUIRY

### 2. (a) What is the current issue or need that has initiated this project/concept?

The existing storage area was never designed to store golf carts, it was initially used as an outside BBQ area which is now unsuitable for the purpose of storing and charging golf carts. It measures 9.6m x 9m = 86sqm and has four pillars supporting a less than adequate corrugated roof. Currently the maximum capacity is eight (8) carts, the power outlets are insufficient for concurrent charging and not to code.

### 2. (b) What difference will the project make?

*E.g. what would occur if the project didn't happen?*

The updating of the storage area will permit members to store their carts at the golf club for a fee payable to Lancelin Community Sporting Club Inc., instead of having to towing them to play. It will also mean that we will no longer have to turn away cart owners from storing their carts where they play. As our membership grows so does the demand for golf cart storage. If the project did not happen it would be a backward step for the golf club and the sports complex.

### 3. What are the expected costs for the proposed project?

*Provide quotes and project budget where possible.*

| | | |
|---|---|---|
| Expected costs: | | |
| Demolition & Disposal | | $4,500 |
| Plans | | $500 |
| Shed Installation | | $31,000 (discounted from $47,375.67) |
| Power upgrade: | | |
| 1 x 32A 3 phase sub circuit | | $1,860 |
| 12 x double power points | | $2,400 |
| Floor Hot mix 4.5cubicM | | $2,000 |
| | Total Cost | $40,460 |

### 4. (a) How do you/the community organisation foresee that the project will be funded?

*E.g. Who is contributing to the project? Funding partners, cash and in-kind contributions, etc.?*

| | | |
|---|---|---|
| Application to Bendigo Bank for | | $5,000 |
| Volunteers to demolish and dispose of old shed | | $4,500 (in kind) |
| Application to "Tower Fund" to offset remainder | | $31,460 |
| Total Cost | Total | $40,460 |



# COMMUNITY PROJECTS FOR SHIRE LANDS & ASSETS

## CONCEPT ENQUIRY

| 4. (b) How will the ongoing costs be funded?<br>*E.g. Maintenance, replacement, operation costs, etc.* |
|---|
| As the lease holders it will come under current lease agreement. |

| 5. Is there any other information that may be valuable to provide with regards to the proposed project?<br>*E.g. Photos, maps, diagrams, etc. Attach as applicable.* | |
|---|---|
| Attached: | |
| 1. This file | Concept_Enquiry_General_Storage.pdf |
| 2. Shed plans | Cart shed Layout for Shire.pdf |
| 3. Quote from Stratco | lancelingolfclub.pdf |

SEND THIS COMPLETED FORM TO:

**Post:**
Mr Aaron Cook – Chief Executive Officer
Shire of Gingin
PO Box 510
GINGIN WA 6503
*Ref: 'Concept Enquiry' for Project*

**Email:**
mail@gingin.wa.gov.au
*Subject Line: 'Concept Enquiry' for Project*



How To. STRATCO

SHEDS

**JOB DETAILS**

**DESIGN NUMBER:** SQ284765
**DATE:** 13/06/2023
**SALES PERSON:** Mr Priyo Wangkhem

**CUSTOMER DETAILS**

**CLIENT NAME:** Mr. Mike Cardi
**CONTACT NO:** 0406787070
**SITE ADDRESS:** Lancelin Road
Lancelin

**POSTCODE:** 6044
**EMAIL:** lanogolfsec@yahoo.com.au

**QUOTATION**

**QUOTE VALID FOR 30 DAYS**

Thank you for the opportunity to prepare a quotation for your next exciting home improvement project. Stratco has a proud history within the steel manufacturing industry, dating back over 70 years. Our commitment to supplying superior products and relentless innovation gives all of our customers the confidence that they are buying from a true industry leader who stand by their products.

Stratco customised sheds are of the highest quality using pre-punched galvanised C-section frames for ease of assembly as well as added strength. Our entire shed range has also been independently tested to meet all current Australian Building Standards giving you the peace of mind that a Stratco shed will stand the test of time.

From our recent consultation, we have prepared the following quotation and attached all relevant details for your design which we believe will suit your needs.

## STRATCO GABLE ROOF SHED

**LARGE SPAN TYPE 9**

| | |
|---|---|
| **Length (mm)** | 24,076 |
| **Width (mm)** | 8,500 |
| **Height (mm)** | 3,000 |
| **Wind Category** | Region B Cat 3 |
| **Roof Sheet** | CGI 0.42 BMT Single Sided |
| **Wall Sheet** | Superdek Premium Double Sided |
| **Footing Type** | Fixed (In Ground) |
| **Roller Doors** | 1 |
| **Single PA Doors** | 2 |

**ADDITIONAL ITEMS INCLUDED**
Engineering Certificate for Largespan (1)

**TOTAL QUOTE INCLUDING 10% GST** **$47,375.67**

This quotation is for supply of a Stratco Shed Kit.

Once again, thank you for this opportunity and please give me a call if you would like any additional information.

Kind Regards,

**Mr Priyo Wangkhem**

**Note: Steel Prices are rising globally and we expect to see prices continue to increase significantly over the coming months. Should agreement be made on this quote/contract, the subsequent purchase price may be subject to change should any notified or scheduled price increase occur.**



How To. STRATCO

SHEDS

*Stratco have developed a versatile range of garages to suit every situation. Stratco garages give you more space for storage, extra room for a workshop, provide the ideal space for a boat or caravan, and give you the opportunity to entertain all year round. Stratco has a proud history within the steel manufacturing industry, dating back over 70 years. Our commitment to supplying superior products and relentless innovation gives all of our customers the confidence that they are buying from a true industry leader who stand by their products.*

**PLEASE CHECK THAT ALL ORDER DETAILS ARE CORRECT.**
**YOUR ORDER IS NOW BEING PROCESSED BASED ON THE FOLLOWING DETAILS.**

## JOB DETAILS

**DESIGN NUMBER:** SQ284765
**SALES PERSON:** Mr Priyo Wangkhem

## CUSTOMER DETAILS

**CLIENT NAME:** Mr. Mike Cardi
**PHONE NUMBER:** 0406787070
**ACCOUNT CODE:** *PPCAN

## DELIVERY DETAILS

**DELIVERY INSTRUCTIONS:** Lancelin Road
Lancelin

6044

**ADDITIONAL INSTRUCTIONS:**
**TOTAL WEIGHT** 5753.180 KG

## Opening Details

**Roller Doors** 1
**Single PA Door Std** 2

## Site Details

**Wind Speed** Region B Cat 3

## Wall Details

**Bottom Sheet Extra 25mm** No
**Wall Sheet** Superdek Premium Double Sided

## Wall Girts

**End Wall Girt Section** GHS Purlin/Girt 1.9 100
**Side Wall Girt Section** GHS Purlin/Girt 1.9 100

## Portal Frames

**End Portal Column Reinforcing Section** N/A: Not Applicable
**End Portal Column Section** GHS Portal Column 1.9 250
**End Portal Rafter Section** GHS Rafter 1.9 200
**Mid Portal Column Reinforcing Section** N/A: Not Applicable
**Mid Portal Column Section** GHS Portal Column 2.4 300
**Mid Portal Rafter Section** GHS Rafter 2.4 250
**Side Wall Girt Section** C Section 150 X 2.4mm

## Colours

**Barge Cap** Gun Metal Grey
**Corner Flashing** Gun Metal Grey
**Downpipe** Gun Metal Grey
**Gutter** Gun Metal Grey
**PA Door** Off White
**Ridge Cap** Gun Metal Grey
**Roller Door** Off White
**Roller Door Flashings** Gun Metal Grey
**Roof Sheet** Gun Metal Grey
**Wall Sheet** Gun Metal Grey

## Dimensions (Outside Frames)

**Height** 3000mm
**Length** 24076mm
**Width** 8500mm

## Roof Details

**Roof Pitch** 10.0°
**Roof Sheet** CGI 0.42 BMT Single Sided

## Roof Purlins

**Eave Purlin Section** GHS Purlin/Girt 1.9 100
**Roof Purlin Section** GHS Purlin/Girt 1.9 100

## Gable End Columns

**Gable End Column Reinforcing Section** N/A: Not Applicable
**Gable End Column Section** GHS End Column 1.5 200

## Footing Details

**Concrete Slab** Yes
**End Column Embedment** 500mm
**Footing Type** Fixed (In Ground)
**Mid Column Embedment** 1000mm

## Drainage Details

**Box Gutter** None
**Downpipe Type** Downpipe 100x50
**Gutter Type** Smoothline Gutter 150

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**Please refer to the relevant installation guides or detailed drawings provided for site preparation, portal frame layout and slab dimensions.**

Please refer to current Stratco Gable Homeshed certification referenced 50098 by FYFE Pty Ltd for 15° Homeshed range or certification referenced 2011-628 by RSA for 10° Homeshed range. Certifications are applicable to standard shed designs only.

**CUSTOMER SIGNATURE:** **DATE: 14/06/2023**

HOW 10. STRATCO

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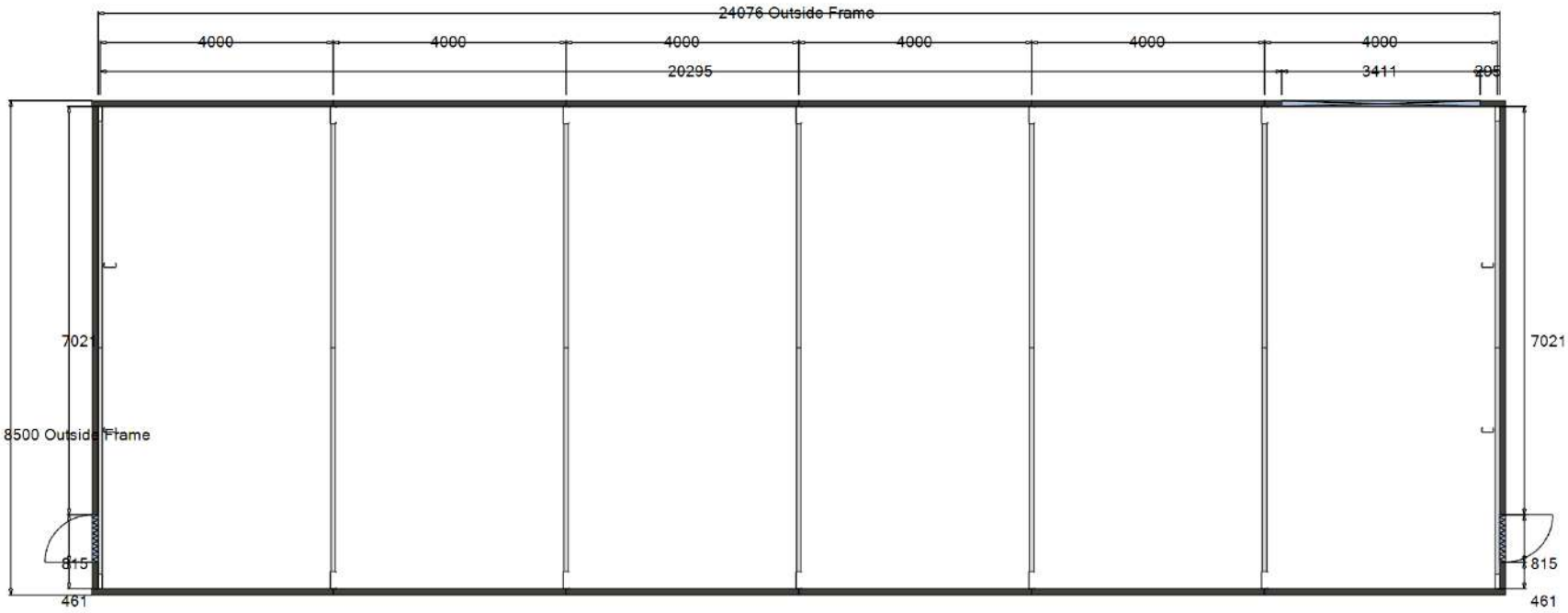
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or certification referenced 2011-628 by RSA for 10° Homeshed range. Certifications are applicable to standard shed designs only.

SHEDS

## Site Plan

| | | | | | | |
|---|---|---|---|---|---|---|
| Job Reference | | Site Address | Lancelin Road | Design Number | SQ284765 | Customer Signature |
| Sales Person | Mr Priyo Wangkhem | | Lancelin | Date | 13/06/2023 | |
| Client Name | Mr. Mike Cardi | | | | | |

**Front** **Rear**



HOW TO. STRATCO

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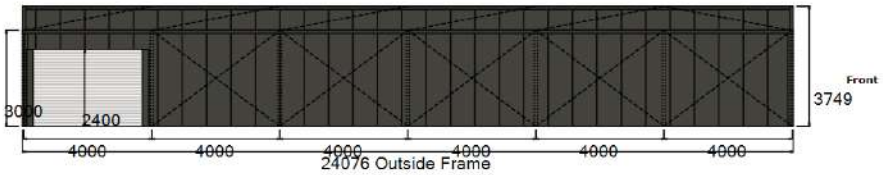
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SHEDS

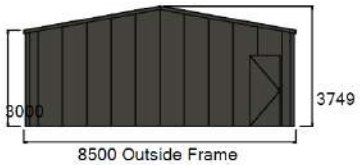
## Elevations

| | | | | | | |
|---|---|---|---|---|---|---|
| Job Reference | | Site Address | Lancelin Road | Design Number | SQ284765 | Customer Signature |
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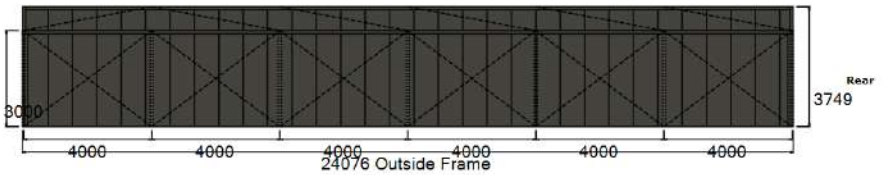
Left Elevation



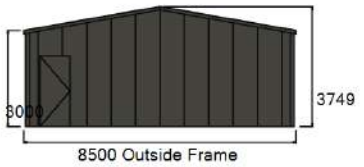

Front External Elevation




Right Elevation




Rear External Elevation



HOW TO. STRATCO

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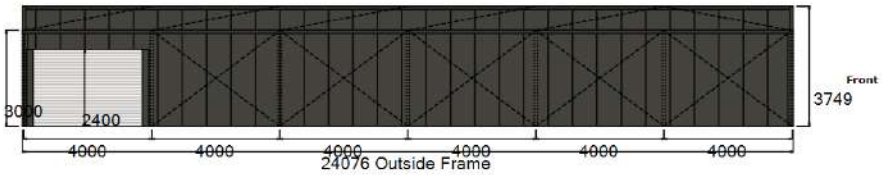
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SHEDS

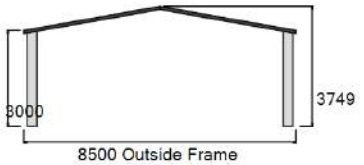
## Elevations

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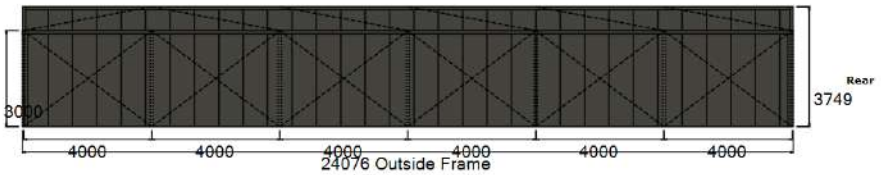
Left Elevation



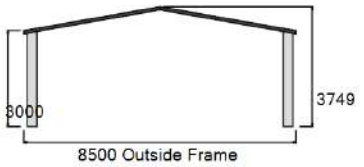

Front Internal Elevation - 1




Right Elevation




Rear Internal Elevation - 1



HOW TO. STRATCO

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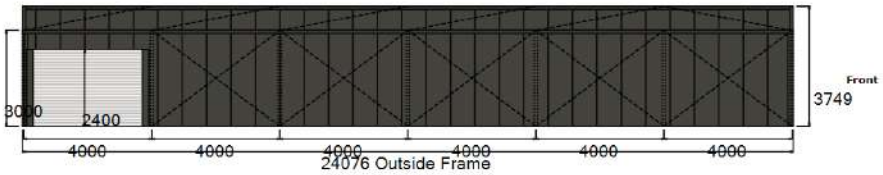
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SHEDS

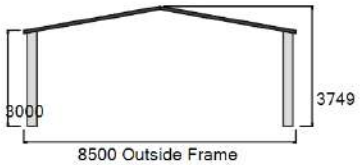
## Elevations

| | | | | | | |
|---|---|---|---|---|---|---|
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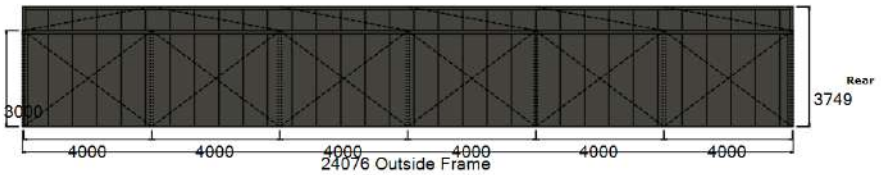
Left Elevation



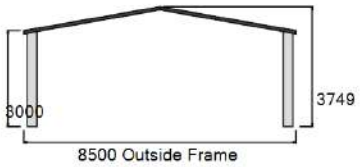

Front Internal Elevation - 2




Right Elevation




Rear Internal Elevation - 2



HOW TO. STRATCO

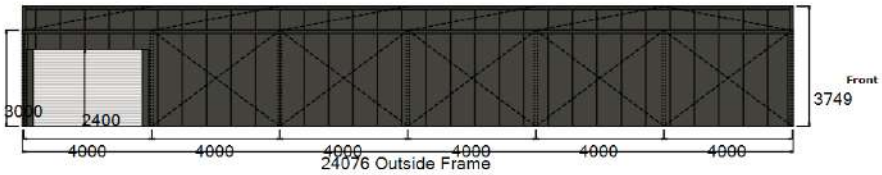
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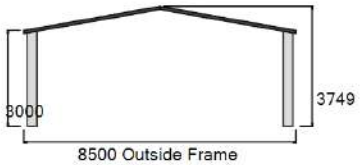
## Elevations

| | | | | | | |
|---|---|---|---|---|---|---|
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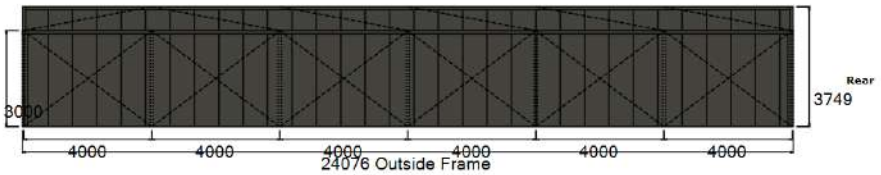
Left Elevation



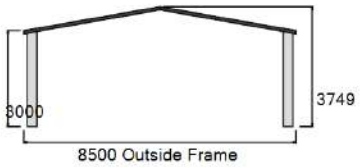

Front Internal Elevation - 3




Right Elevation




Rear Internal Elevation - 3



HOW TO. STRATCO

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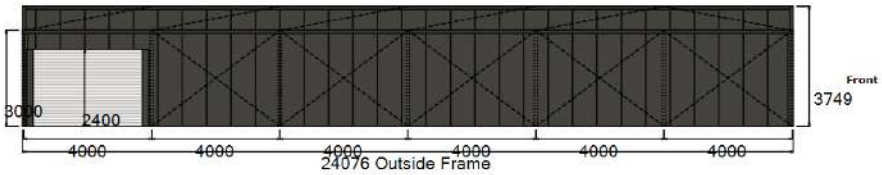
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SHEDS

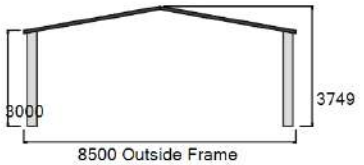
## Elevations

| | | | | | | |
|---|---|---|---|---|---|---|
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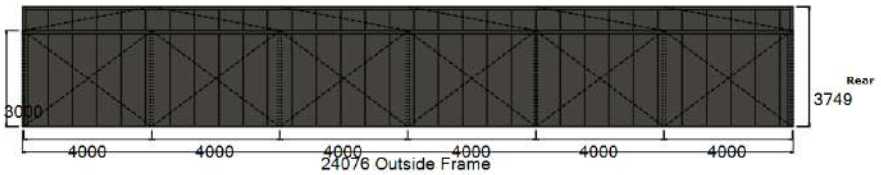
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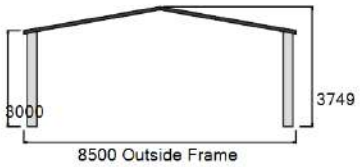

Front Internal Elevation - 4




Right Elevation




Rear Internal Elevation - 4



HOW TO. STRATCO

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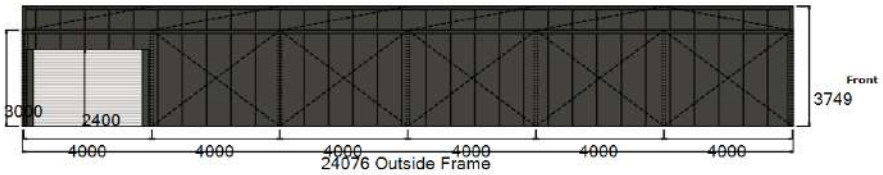
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SHEDS

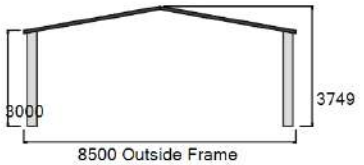
## Elevations

| | | | | | | |
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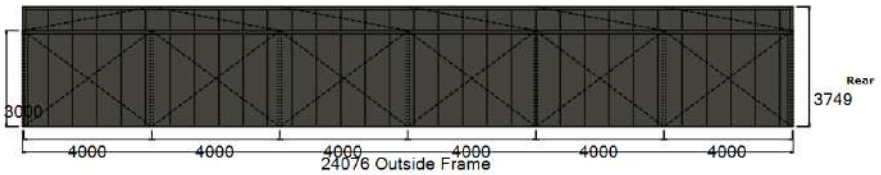
Left Elevation



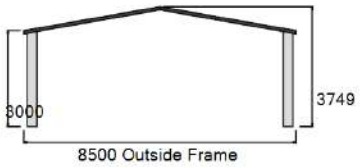

Front Internal Elevation - 5




Right Elevation




Rear Internal Elevation - 5



Civil and Structural
Consulting Engineers

Unit 6/9 Playle Street
Myaree WA 6154

t: 08 9317 3331
e: info@rsaeng.com.au
www.rsaeng.com.au

Mr Glenn Turner
Stratco (Australia) Pty Ltd
P O Box 307
ENFIELD PLAZA SA 5085

RSA-15-0649-02CL
1 June 2022

Dear Glenn

**CERTIFICATION**

| | |
|---|---|
| **BUILDING TYPE:** | STRATCO HOMESHED RANGE |
| **LOCATION:** | REGION A & REGION B |
| **SHIRE:** | ALL RELEVANT LOCAL AUTHORITIES |
| **STRUCTURAL DESIGN PARAMETERS:** | *WIND LOADS(AS/NZS1170.2-2021):*<br>REGION A, CATEGORY 2 & 3<br>REGION B, CATEGORY 2 & 3<br><br>*SUB-ALPINE SNOW LOADING*<br>MAX ALLOWABLE SNOW LOAD S=1.26 kPa<br><br>*SOIL PARAMETERS (AS2870-2011):*<br>COMPACT SAND, GRAVEL AND SAND<br>FINE SAND, GRANULAR SOIL, STIFF CLAY |
| **CERTIFICATION VALIDITY** | 01 JUNE 2023 |

**REFERENCE DOCUMENTS:**

| DOCUMENT NO. | DOCUMENT TITLE | REV |
|---|---|---|
| 2011-628-R03 | STRATCO HOME SHED DESIGN REGION A AND B – STRUCTURAL DESIGN REPORT | 4 |
| 2011-628-01S | FIXED BASE OPTION | 1 |
| 2011-628-02S | PINNED BASE OPTION | 1 |
| 2011-628-03S | GABLE SINGLE DOOR OPTION | 1 |
| 2011-628-04S | GABLE DOUBLE DOOR OPTION | 1 |
| 2011-628-05S | GABLE END COLUMNS | 1 |
| 2011-628-06S | GABLE END SLIDING DOORS | 0 |
| - | STRATCO LARGE SPAN GABLE HOMESHED INSTALLATION GUIDE MARCH 2016 | - |

We hereby authorise STRATCO (Aust) Pty Ltd and its immediate customers for their product based on this design, to make multiple building permit applications for the above sheds for the designated wind region and category.

Soil classification noted above is as approved by the local building approval authority. In all cases the building owner must ensure subgrade and base is capable and where drainage is critical this is to be managed appropriately.

It is specifically noted the ductility of such structures will enable, without review, the acceptance of these structures in locations where the earthquake provisions of AS1170.4 are satisfied up to a KpZ of 0.2 (probability factor X acceleration coefficient Z) NB[1] and NB[2].

CERTIFIED

Robin Salter BE (Hons) FIEAust CPEng
Principal Engineer
Eng. Aust. No.: 171379
N.T. Reg. No. : 137880ES
QLD. Reg. No. : 01477
Victoria Reg. No. : EC39412
NER Reg. No. : 171379

* $NB_1$. Where the location exceeds this, the design shall be checked by Stratco Head Office.

* $NB_2$. Unless otherwise required by specific client needs, P may be taken as 1/250 rather than 1/500. Kp of 0.75 rather than 1. These are ductile steel structures.

# STRATCO STRENGTH

SHED QUARTERS

Stratco have developed a versatile range of Gable Roof Sheds to suit every situation. Stratco Gable Roof Sheds give you more space for storage, extra room for a workshop, provide the ideal space for a boat or caravan, and give you the opportunity to entertain all year round.

## WARRANTY

Stratco is proud to support its Gable Roof Shed range with a comprehensive 15 Year Structural, 10 Year Paint Finish, 10 Year Life Prior to Perforation Warranty. Our warranty gives you peace of mind that when purchasing a Stratco Gable Roof Shed you are buying a quality product supported by one of the largest Steel Manufacturing Companies in Australia.

## STRUCTURAL INTEGRITY

Our entire range of Gable Roof Sheds has been independently tested to meet all relevant Australian Building Standards and Building Code of Australia to give you the confidence that a Stratco Gable Roof Shed will stand the test of time.

- AS/NZS 1170.0 - Structural Design Actions - Part 0: General Principles
- AS/NZS 1170.1 - Structural Design Actions - Part 1: Permanent, imposed and other actions
- AS/NZS 1170.2 - Structural Design Actions - Part 2: Wind actions
- AS 4100:1998 - Steel structures
- AS/NZS 4600 - Cold-formed steel structures
- AS 3600 - Concrete structures
- AS 4055 - Wind Loads for Housing
- AS 1562.1 - Design and installation of sheet roof and wall cladding
- N.A.S.H. Standard - Residential and Low-rise Steel Framing - Part 1: Design Criteria

## COMPANY HISTORY

Stratco has a proud history within the steel manufacturing industry, dating back over 70 years. Our commitment to supplying superior products and relentless innovation gives all of our customers the confidence that they are buying from a true industry leader who stand by their products.

Why buy a Gable Roof Shed from Stratco - **STRATCO STRENGTH!!!**

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## 12.3 ADOPTION OF 2023/24 SHIRE OF GINGIN BUDGET

*This Item was withdrawn prior to the commencement of the meeting and will be considered at a Special Council Meeting to be held on 17 August 2023 at 4.30pm.*

## 12.4 CLUB NIGHT LIGHTS PROGRAM APPLICATION - GINGIN COMMUNITY RECREATION GROUP

*Note: Pages 1 and 2 from Appendix 12.4.1 as circulated with the Agenda contained incorrect information. The correct information was provided to Councillors at the Meeting and the appendix has been updated accordingly in the Minutes.*

*Appendix 12.4.3 as circulated with the Agenda has been amended as it was found to contain personal information. This information has been removed from the appendix.*

| | |
|---|---|
| File | GRA/8 |
| Author | Amy Gibbs - Coordinator Community Development & Services |
| Reporting Officer | Les Crichton - Executive Manager Corporate and Community Services |
| Refer | N/A |
| Appendices | 1. Project Assessment Sheet [**12.4.1** - 2 pages]<br>2. 2023-2024 CNLP July Small Grants Application Form V 3 signed [**12.4.2** - 11 pages]<br>3. Small Grants Application Supporting Documents [**12.4.3** - 27 pages] |

### DISCLOSURES OF INTEREST

*Councillor Kestel disclosed an impartiality interest in Item 12.4 as he a member of the Gingin Recreation Group Committee and President of the Gingin Football Club.*

### PURPOSE

For Council to assess the Club Night Lights Program Small Grants Application received from the Gingin Community Recreation Group to replace two floodlighting towers on the Gingin oval.

### BACKGROUND

The Club Night Lights Program (CNLP) is administered by the Department of Local Government, Sport, and Cultural Industries (DLGSC) and is a key component of the State Government's commitment to the development of sustainable floodlighting infrastructure for sport across the State.

The purpose of the program is to provide financial assistance to community groups and local governments to develop sports floodlighting infrastructure. The program aims to maintain or increase participation in sport and recreation, with an emphasis on physical activity through rational development of good quality, well-designed and well-utilised facilities.

There are two small grant rounds advertised annually (February and July) for projects with a cost up to $500,000. The maximum grant offered for small grant applications is 50% of the project cost, capped at $200,000.

In preparing their applications, applicants must discuss their projects with their nearest DLGSC regional office.

All CNLP applications are then required to be submitted to the relevant local government for assessment, ranking if more than one application is received, and endorsement prior to their lodgement with DLGSC by 31 August 2023. This is the only application received for the CNLP Small Grants July 2023 round.

## COMMENT

Applications to the CNLP are assessed by the Shire and DLGSC based on:

- Project justification;
- Planned approach;
- Community consultation;
- Management planning;
- Access and opportunity;
- Design;
- Financial viability;
- Coordination;
- Potential to increase physical activity; and
- Sustainability.

An important part of the funding process is to ensure that the Club and local government can bear the true cost of purchasing and maintaining the asset well into the future.

As required under the CNLP application process, Administration has completed the Project Assessment Sheet (**Appendices**) on the Gingin Community Recreation Group's application for Council's endorsement.

While ranked as priority 1 of the 1 application received, areas of concern in completing the assessment include -

- formal confirmation of proposal support from the Gingin Recreation Group
- confirmation of ongoing maintenance for the new lights
- confirmation the lighting is in accordance with Australian Standards
- clarification on in-kind support, if any (removal of existing poles).

## STATUTORY/LOCAL LAW IMPLICATIONS

Nil

## POLICY IMPLICATIONS

Nil

## BUDGET IMPLICATIONS

The application does not include a contribution from Council as the Gingin Community Recreation Group did not apply for the 2023/2024 Community Funding Program and no provision has been included in the 2023/24 Budget.

The Gingin Community Recreation Group has opted not to hold off their submission to DLGSC until the 2024/2025 round.

## STRATEGIC IMPLICATIONS

Shire of Gingin Strategic Community Plan 2022-2032

| | |
|---|---|
| **Aspiration** | 4. Excellence & Accountability - Deliver Quality Leadership and Business Expertise |
| **Strategic Objective** | 4.1 Management of Assets - Maintain civic buildings, sporting facilities, public places, plant and road and cycleway/pathways based on asset management plans and identified priorities |

## VOTING REQUIREMENTS - SIMPLE MAJORITY

**COUNCIL RESOLUTION/OFFICER RECOMMENDATION**

**MOVED: Councillor Balcombe SECONDED: Councillor Vis**

**That Council endorse the Project Assessment Sheet (Appendices) as amended in relation to Gingin Community Recreation Group's Club Night Lights Program Small Grant Application.**

**CARRIED UNANIMOUSLY**
**7 / 0**

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

## PROJECT ASSESSMENT SHEET

This page is for the use of the relevant Local Government Authority to be used for both community and LGA projects. Please **attach copies of council minutes** relevant to the project approval.

| |
|---|
| **Name of Local Government Authority**: Shire of Gingin |
| **Name of Applicant:** Gingin Community Recreation Group |

Note: The applicant's name cannot be changed once the application is lodged at DLGSC.

### Section A

The CNLP principles have been considered and the following assessment is provided:
(Please include below your assessment of how the applicant has addressed the following criteria)

**All applications**

| | Satisfactory | Unsatisfactory | Not relevant |
|---|---|---|---|
| Project justification | ☒ | ☐ | ☐ |
| Planned approach | ☒ | ☐ | ☐ |
| Community input | ☒ | ☐ | ☐ |
| Management planning | ☐ | ☒ | ☐ |
| Access and opportunity | ☒ | ☐ | ☐ |
| Design | ☒ | ☐ | ☐ |
| Financial viability | ☒ | ☐ | ☐ |
| Co-ordination | ☒ | ☐ | ☐ |
| Potential to increase Physical activity | ☒ | ☐ | ☐ |
| Sustainability | ☒ | ☐ | ☐ |

### Section B

| | |
|---|---|
| Priority ranking of no of applications received | 1 of 1 applications received |
| Is this project consistent with the | ☒ Local Plan ☐ Regional Plan |
| Have all planning and building approvals been given for this project? | ☐ Yes ☒ No |
| If no, what approvals are still outstanding? | A building application has not been made by the group and will be required. |

**Project Rating (Please tick the most appropriate box to describe the project)**

| | | |
|---|---|---|
| A | Well planned and needed by municipality | ☐ |
| B | Well planned and needed by applicant | ☒ |
| C | Needed by municipality, more planning required | ☐ |
| D | Needed by applicant, more planning required | ☐ |
| E | Idea has merit, more planning work needed | ☐ |
| F | Not recommended | ☐ |

***Please complete the questions attached. This assessment is an important part of the CNLP process and your answers to these questions assist the committee make their recommendations, even if you are the applicant. Please provide a summary of any attachments in your assessment, rather than referring to attachments or external documents such as Council Minutes.***

| |
|---|
| 1. **Please confirm your contribution to the project, whether it has been formally approved (including financial year for which it is approved) and any conditions on the funding. If no funding has been provided, why not?**<br><br>The Shire is not providing a funding contribution to the project as the application has been made outside of the 2023/24 Community Funding Program. Gingin Football Club have opted to go ahead with the application without a Shire contribution. |
| 2. **A) *If a community group application:* Do you believe the project is financially viable, including the applicant's ability to provide upfront contributions, ongoing payments and contributions to an asset replacement fund. Does council commit to underwriting any shortfalls as the ultimate asset owner?**<br><br>**B) *If a council application*: Is Council fully aware of the ongoing cost of operating and maintaining this facility and does your organisation have the capacity to service it into the future? How are the user groups contributing to the ongoing cost of operating the facility?**<br><br>The Gingin Football Club have demonstrated capacity to provide upfront contribution towards the lights and ongoing operating and maintenance costs, and with the Gingin Community Recreation Group, will be responsible for contributions to an asset replacement fund. The Shire has not been called on to underwrite any shortfalls on the project. |
| 3. **Please provide any additional comments regarding this applications merit against the assessment criteria to support your project rating and ranking.**<br><br>While the applicant has been requested to confirm the lighting meets Australian Standards AS4282-1997 (outdoor lighting obtrusive effects) and provide copy of minutes confirming financial support for ongoing maintenance and contributions for asset replacement, the replacement of the two northern light towers at the oval will complete the lighting plan for this facility with the southern lights replaced in 2020/21. The upgraded lights will provide ongoing, cost effective, safer and increased use of the facility by the various sporting groups and community at large. |

**Signed**  **Position** Executive Manager Corporate and Community Services **Date** 15/8/2023

Applications for CNLP funding must be submitted to the Department of Local Government, Sport and Cultural Industries by **4pm on 31 August 2023.** Late applications cannot be accepted in any circumstances.

**DLGSC OFFICES**

**PERTH OFFICE**
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GPO Box 8349
Perth Business Centre WA 6849
Tel: (08) 9492 9700
csrff@dlgsc.wa.gov.au

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Gascoyne@dlgsc.wa.gov.au

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**GREAT SOUTHERN**
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greatsouthern@dlgsc.wa.gov.au

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**SOUTH WEST**
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Bunbury WA 6230
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southwest@dlgsc.wa.gov.au

**WHEATBELT - Northam**
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PO Box 55
Northam WA 6401
Tel: (08) 9690 2400
wheatbelt@dlgsc.wa.gov.au

**WHEATBELT – Narrogin**
50 Clayton Road
Narrogin WA 6312
Telephone 9690 2400
wheatbelt@dlgsc.wa.gov.au

Department of
Local Government, Sport
and Cultural Industries
GOVERNMENT OF WESTERN AUSTRALIA

| Office Use Only |
|---|
| TRIM: _____ |
| Grant No: _____ |
| Project Coordinator._____ |

# CNLP Small Grants Application Form

## For projects up to $500,000 to be acquitted by 15 June 2024

| | | |
|---|---|---|
| **You MUST discuss your project with an officer from your nearest Department of Local Government, Sport and Cultural Industries office before completing and submitting your application. Failure to do so will render your project ineligible.** | | |
| **All applications MUST be submitted to your local government. Contact your local government to determine the cut-off date for the submission of applications.** | | |
| DLGSC Contact: Samantha Cornthwaite | Date: 27/07/2023 | Office: Northam |

**Applicant's Details:**

| | | | | | |
|---|---|---|---|---|---|
| Organisation Name: | Gingin Community Recreation Group | | | | |
| Postal Address: | PO Box 260 | | | | |
| Suburb: | Gingin | State: | WA | Postcode: | 6503 |
| Street Address: | New Street | | | | |
| Suburb: | Gingin | State: | WA | Postcode: | 6503 |

**Preferred Contact Person:**
*All application correspondence will be directed to this person*

| | | | |
|---|---|---|---|
| Name: | Brian Hills | Title: | Dr ☐ Mr ☒ Mrs ☐ Ms☐ |
| Position Held: | Vice President | | |
| Business Phone: | 0438938713 | Facsimile: | N/A |
| Mobile Phone: | 0438938713 | Email: | Brian.hills@fmgl.com.au |

**Organisation Business Details:**

| | | | |
|---|---|---|---|
| Does your organisation have an ABN? | Yes ☒ No ☐ | ABN: 89 310 087 934 | |
| Is your organisation registered for GST? | Yes ☐ No ☒ | * Note, in order to be eligible for funding you must attach a copy of the Incorporation Certificate. LGA's exempt | |
| Is your organisation not-for-profit? | Yes ☒ No ☐ | | |
| Is your organisation incorporated? | Yes ☒ No ☐ | Incorporation #: **A0822388M** | |
| Bank details: Bendigo | Bank: Bendigo Gingin | BSB: 633 000 | A/c: 118646959 |

**Local Government Authority Details:**

| | | | |
|---|---|---|---|
| LGA: | Gingin | | |
| Contact: | Amy Gibbs | Title: | Dr ☐Mr ☐Mrs☐ Ms ☒ |
| Position Held: | Coordinator Community Development and Services | | |
| Business Phone: | 9575 5162 | Facsimile: | |
| Mobile Phone: | | Email: | Amy.gibbs@gingin.wa.gov.au |

## PROJECT DETAILS

**Project Title (brief and specific): R**eplace Oval Lighting

**Project Description:**

Replace 2x Lights and Poles to comply with Australian standard, current lighting insufficient.

Structural report has been carried out and has deemed poles are at end of life.

**Current lux level:** N/A they don't meet Australian standard.

**Proposed lux level:** 100

**Lux level required according to the relevant Australian Standard:** 100

**How did you establish a need for your project?**

Structural report has been carried out and has deemed poles are at end of life.

**What alternatives were considered and why were they rejected (e.g cost, suitability, feasibility)?**

Repairs were considered but due to costs associated and condition of current infrastructure it was deemed new lights and poles are required.

**How will your project increase physical activity?**

Increased lighting will allow cricket and football teams to engage in night games and provide a safer environment for nighttime trainings

**Have the full lifecycle costs of the project been considered, and can you afford the ongoing costs of managing, maintaining, and replacing the lighting? Will a specific asset replacement fund be created?**

Yes

Will be a continuation of maintaining the existing lights.

| | | | |
|---|---|---|---|
| **Project location:** | Gingin Oval | | |
| **Land ownership:** | Who owns the land on which your facility will be located? Gingin Shire<br>Lease Expiry (if applicable): | | |
| **Planning approvals** | | If no, provide the date it will be applied for: | |
| **Where applicable, has planning permission been granted?** (LGA) | | Yes ☒ ☐ | ___/___/___ |
| **Aboriginal Heritage Act?** | | Yes ☒ No ☐ | ___/___/___ |
| **Department of Biodiversity, Conservation and Attractions?** (Environmental, Swan River) | | Yes ☒ No ☐ | ___/___/___ |
| **Native Vegetation Clearing Permit?** | | Yes ☒ No ☐ | ___/___/___ |
| **Please list any other approvals that are required?** | | Yes ☒ No ☐ | ___/___/___ |

**Do you share your facility with other groups?** Yes ☒ No ☐ If so, who: Gingin Reds Cricket Club

List the main sport and recreation activities (maximum of 3) which will benefit from your proposal. Please indicate the approximate % usage of the facility (or part of the facility relating to this proposal).

| Sport/community organisation | % use of the facility | Hours per week |
|---|---|---|
| Football | 70 | 20 |
| Cricket | 20 | 10 |
| Community | 10 | 10 |

Activity/sport membership numbers over the past three years relevant to your project. For example, if a bowls project, golf members not relevant; social membership numbers not applicable.

Note: if membership is not applicable, ie recreation facility or aquatic centre, enter the number of users of the facility.

| | | | | | |
|---|---|---|---|---|---|
| **2020/2021** | | **2021/2022** | | **2022/2023** | X |

State Sporting Associations are involved in the assessment of applications and may be able to provide valuable information when planning you project, particularly in relation to technical design issues. They should be consulted as part of the application process. A complete list of State Sporting Associations and their contact details are available on the department's website: https://www.dlgsc.wa.gov.au/sport-and-recreation/state-sporting-associations

| | |
|---|---|
| **What is the name of the State Sporting Association for your activity/sport?** | |
| Gingin Football Club | |
| **Have you discussed your project with your State Sporting Association?** Yes ☒ No ☐ | |
| Contact Name: **Callum Sly** | Date of contact: 4/08/2023 |

## PROJECT DELIVERY

**Please indicate key milestones of your project. The key milestones need to be realistic and demonstrate that the project can be delivered in the timeframe. Please consider extended delivery times due to the pandemic.**

| Task | Date |
|---|---|
| Attainment of Council approvals | 10/08/2023 |
| Preparation of tender/quotes for the major works contract | 26/07/2023 |
| Issuing of tender for major works | Dec 23 |
| Signing of major works contract | Early Jan 24 |
| Site works commence | Feb 24 |
| Construction of project starts | Feb 24 |
| Project 50% complete | Mar 24 |
| Project Completed | Mid-April 24 |
| Project hand over and acquittal | April 24 |

**Are there any operational constraints that would impact on the construction phase of your project?** (such as your sporting season, major annual event or inclement weather) – provide details. Projects that are delayed due to undeclared known constraints are not eligible for a deferral.
No

## GST

Grant payments are payable to the applicant/grantee only. This may have taxation implications for grantees. If grantees wish specific advice relating to their grant, this can be obtained from the Australian Taxation Office (ATO). Please note depending upon the value of the project and/or grant, the ATO may require an organisation be registered for GST. If the applicant is registered for GST, the grant is grossed up with the GST amount.

## PRIVACY STATEMENT AND STATEMENT OF DISCLOSURE

The Organisation acknowledges and agrees that this Application and information regarding it is subject to the *Freedom of Information Act 1992* and that the Grantor may publicly disclose information in relation to this Application, including its terms and the details of the Organisation.

Any information provided by you to DLGSC can be accessed by you during standard office hours and updated by writing to DLGSC or calling (08) 9492 9700. All information provided on this form and gathered throughout the assessment process will be stored on a database that will only be accessed by authorised departmental personnel and is subject to privacy restrictions.

DLGSC may wish to provide certain information to the media for promotional purposes. The information will only include the applicant's club name, sport, location, grant purpose and grant amount.

## APPLICANT'S CERTIFICATION

I certify that the information supplied is to the best of my knowledge, true and correct.

**Name:** Brian Hills

**Position Held:** Gingin Football Club Vice President

**Signature:**

**Date:** 31/07/2023

## LODGEMENT OF YOUR APPLICATION

- Applications including all attachments are to be received electronically and officially submitted to csrff@dlgsc.wa.gov.au by the cut off time and date. A hard copy can also be provided and should be clipped at the top left-hand corner, please do not bind.
- It is recommended that you **retain your completed application form**, including attachments for your own records and future audit purposes.
- All **attachments** and supporting documentation (see next section) should be **clearly named and identified** and submitted with the application form.
- **Applications must be submitted to your Local Government Authority** by the Local Government's advertised cut-off date to ensure inclusion at the relevant Council Meeting.

The following documentation must be included with your application. Applicants may wish to supply additional RELEVANT information.

| | |
|---|---|
| ☒ | **Application form.** |
| ☒ | **Incorporation Certificate.** |
| ☒ | **Confirmation of Public Liability Insurance cover to $10 million** |
| ☒ | **Two written quotes.** |
| ☒ | If your project involves the upgrade of an existing facility, include **photograph/s** of this facility. |
| ☒ | **Locality map and/or site map**, including where the proposed facility is located in relation to other sport and recreation infrastructure. |
| ☒ | **Income and expenditure statements** for the current and next financial years. (LGAs exempted). |
| ☒ | **Written confirmation of financial commitments** from other sources including copies of **council minutes**. (If a club is contributing financially then evidence of their cash at hand must be provided). |
| ☒ | **Itemised project cost for components** and identified on the relevant quote for each (including cost escalation). |
| ☒ | A **lighting plan** must be supplied showing lux, configuration and sufficient power supply |

**Your application will be considered not eligible if:**

- You have not discussed your project with the Department of Local Government, Sport and Cultural Industries and your State Sporting Association.
- You do not meet the eligibility criteria for the grant category to which you are applying.
- You have not included with your application all the relevant required supporting documentation. **There is no onus on Department staff to pursue missing documentation.**
- Applicants/projects that have received a CSRFF or CNLP grant in the past and have not satisfactorily acquitted that grant. In some cases this may apply to localities where other significant projects have not been progressed or have not completed a previous project in accordance with the conditions of the grant provided. An assessment will be made in April and if no physical progress has occurred, new applications may not be recommended.
- It is not on the correct application form.
- The project for which application is made is specifically excluded from receiving CNLP support.

## DEVELOPMENT BONUS APPLICANTS ONLY

If you applied for a CNLP grant for more than one third of the cost of the project, please provide evidence of meeting at least one of the following criteria**.**

**You MUST contact your local DLGSC office to determine eligibility before applying.**

| **Category** | | **Details** |
|---|---|---|
| Geographical location | ☐ Regional/remote location<br>☐ Growth local government | |
| Co-location | ☐ New<br>☐ Existing | |
| Sustainability initiative | ☐ Water saving<br>☐ Energy reduction<br>☐ Other | |
| Increased participation | ☐ New participants<br>☒ Existing participants – higher level<br>☐ Special interest<br>☐ Other | Being able to use the oval for night games as well as provide a safer environment for use of the oval at night WHEN MOST TRAININGS ARE HELD |

## PROJECT BUDGET

### ESTIMATED EXPENDITURE

Please itemise the components of your project in the table below, indicating their cost and which quote or part of quote was used to estimate this. Quantity Surveyor costs will be accepted however the responsibility lies with the applicant to ensure the validity of the information. A contingency allowance is considered an acceptable component. *PLEASE ITEMISE BY COMPONENT (e.g. floodlighting, power upgrade, additional lights to make it 100 lux) rather than materials (electrician, poles, lights, finishings).*

| **Project Description (detailed breakdown of project to be supplied** | **$ Cost ex GST** | **$ Cost inc GST** | **Quote Used (list company name and quote no)** |
|---|---|---|---|
| *Installation of two floodlighting poles and lights to 100 lux* | *152,900* | *168,190* | *Burke Electrical* |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| **Donated materials (Please provide cost breakdown)** | | | |
| **Volunteer labour (Please provide cost breakdown)** | | | |
| **Sub Total** | | | |
| **Cost escalation** | | | ***Please explain amount used*** |
| **a) Total project expenditure** | | | |

- At least **two written quotes or a quantity surveyors estimate** are required for each component.
- Please ensure that the power supply is sufficient and no upgrade will be required. If upgrade is required and not budgeted for, the grant will immediately be withdrawn. A **lighting plan** must be supplied showing lux and configuration.

- Projects that do not meet **Australian Standards** are ineligible for funding.

## PROJECT FUNDING

| Source of funding | $Amount ex GST | $ Amount inc GST | | Funding confirmed Y / N | Comments to support claim (please attach relevant support) |
|---|---|---|---|---|---|
| **Local government** | | | **LGA cash and in-kind** | | |
| **Applicant cash** | **76,450** | **84,095** | **Organisation's cash** | | |
| **Volunteer labour** | | | **Cannot exceed applicant cash and LGA contribution – max $50,000** | | |
| **Donated materials** | | | **Cannot exceed applicant cash and LGA contribution** | | |
| **Other State Government funding** | | | | | |
| **Federal Government funding** | | | | | |
| **Other funding – to be listed** | | | **Loans, sponsorship etc** | | |
| **CNLP request** | **76,450** | **84,095** | **Up to ½ project cost but capped at $200,000** | N | |
| **b) Total project funding** | **152,900** | **168,190** | ***This should equal project expenditure as listed on the previous page*** | | |

| **REQUIRED: If the funding approved is less than funding requested for this project, or the project is more expensive than indicated, where would the extra funds be sourced from? Is this funding confirmed? If the project scope would be reduced, which components would be revisited?** |
|---|
| GGFC |

## GST

Grant payments are payable to the applicant/grantee only. This may have taxation implications for grantees. If grantees wish specific advice relating to their grant, this can be obtained from the Australian Taxation Office (ATO). Please note depending upon the value of the project and/or grant, the ATO may require an organisation be registered for GST. If the applicant is registered for GST, the grant is grossed up with the GST amount.

## PROJECT ASSESSMENT SHEET

This page is for the use of the relevant Local Government Authority to be used for both community and LGA projects. Please **attach copies of council minutes** relevant to the project approval.

| |
|---|
| **Name of Local Government Authority**: |
| **Name of Applicant:** |

Note: The applicant's name cannot be changed once the application is lodged at DLGSC.

### Section A

The CNLP principles have been considered and the following assessment is provided:
(Please include below your assessment of how the applicant has addressed the following criteria)

**All applications**

| | Satisfactory | Unsatisfactory | Not relevant |
|---|---|---|---|
| Project justification | ☐ | ☐ | ☐ |
| Planned approach | ☐ | ☐ | ☐ |
| Community input | ☐ | ☐ | ☐ |
| Management planning | ☐ | ☐ | ☐ |
| Access and opportunity | ☐ | ☐ | ☐ |
| Design | ☐ | ☐ | ☐ |
| Financial viability | ☐ | ☐ | ☐ |
| Co-ordination | ☐ | ☐ | ☐ |
| Potential to increase Physical activity | ☐ | ☐ | ☐ |
| Sustainability | ☐ | ☐ | ☐ |

### Section B

| | |
|---|---|
| Priority ranking of no of applications received | of applications received |
| Is this project consistent with the | ☐ Local Plan ☐ Regional Plan |
| Have all planning and building approvals been given for this project? | ☐ Yes ☐ No |
| If no, what approvals are still outstanding? | |

**Project Rating (Please tick the most appropriate box to describe the project)**

| | | |
|---|---|---|
| A | Well planned and needed by municipality | ☐ |
| B | Well planned and needed by applicant | ☐ |
| C | Needed by municipality, more planning required | ☐ |
| D | Needed by applicant, more planning required | ☐ |
| E | Idea has merit, more planning work needed | ☐ |
| F | Not recommended | ☐ |

***Please complete the questions attached. This assessment is an important part of the CNLP process and your answers to these questions assist the committee make their recommendations, even if you are the applicant. Please provide a summary of any attachments in your assessment, rather than referring to attachments or external documents such as Council Minutes.***

| |
|---|
| 1. **Please confirm your contribution to the project, whether it has been formally approved (including financial year for which it is approved) and any conditions on the funding. If no funding has been provided, why not?** |
| 2. **A) *If a community group application:* Do you believe the project is financially viable, including the applicant's ability to provide upfront contributions, ongoing payments and contributions to an asset replacement fund. Does council commit to underwriting any shortfalls as the ultimate asset owner?**<br><br>**B) *If a council application*: Is Council fully aware of the ongoing cost of operating and maintaining this facility and does your organisation have the capacity to service it into the future? How are the user groups contributing to the ongoing cost of operating the facility?** |
| 3. **Please provide any additional comments regarding this applications merit against the assessment criteria to support your project rating and ranking.** |

**Signed** **Position** **Date**

Applications for CNLP funding must be submitted to the Department of Local Government, Sport and Cultural Industries by **4pm on 31 August 2023.** Late applications cannot be accepted in any circumstances.

## DLGSC OFFICES

**PERTH OFFICE**
246 Vincent Street
Leederville WA 6007
GPO Box 8349
Perth Business Centre WA 6849
Tel: (08) 9492 9700
csrff@dlgsc.wa.gov.au

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PO Box 140
Carnarvon WA 6701
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Gascoyne@dlgsc.wa.gov.au

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PO Box 1036
Kalgoorlie WA 6430
Tel: (08) 9022 5800
goldfields@dlgsc.wa.gov.au

**GREAT SOUTHERN**
22 Collie Street
Albany WA 6330
Tel: (08) 9892 0100
greatsouthern@dlgsc.wa.gov.au

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Level 1, 268-270
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Geraldton WA 6531
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midwest@dlgsc.wa.gov.au

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Unit 2, 23 Coghlan Street
PO Box 1476
Broome WA 6725
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Mobile 0438 916 185
kimberley@dlgsc.wa.gov.au

**KIMBERLEY – Kununurra**
Telephone 08 9195 5750
Mobile 0427 357 774
kimberley@dlgsc.wa.gov.au

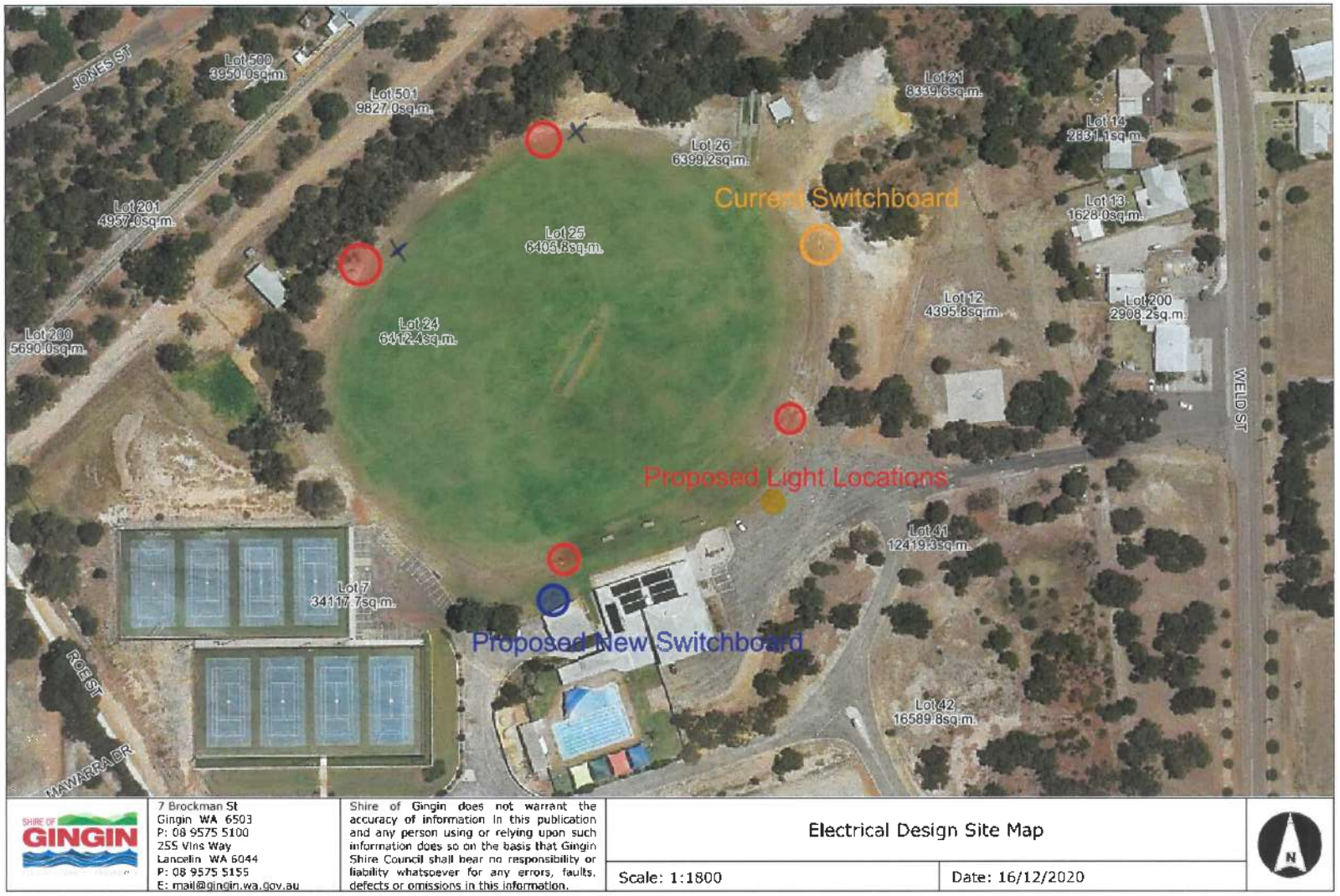
**PEEL**
Suite 94
16 Dolphin Drive
PO Box 1445
Mandurah WA 6210
Tel: (08) 9550 3100
peel@dlgsc.wa.gov.au

**PILBARA**
Karratha Leisure plex
Dampier Hwy, Karratha
PO Box 941
Karratha WA 6714
Tel: (08) 9182 2100
pilbara@dlgsc.wa.gov.au

**SOUTH WEST**
80A Blair Street
PO Box 2662
Bunbury WA 6230
Tel: (08) 9792 6900
southwest@dlgsc.wa.gov.au

**WHEATBELT - Northam**
298 Fitzgerald Street
PO Box 55
Northam WA 6401
Tel: (08) 9690 2400
wheatbelt@dlgsc.wa.gov.au

**WHEATBELT – Narrogin**
50 Clayton Road
Narrogin WA 6312
Telephone 9690 2400
wheatbelt@dlgsc.wa.gov.au


JONES ST
Lot 500
3950.0sq.m.
Lot 501
9827.0sq.m.
Lot 21
8339.6sq.m.
Lot 14
2831.1sq.m.
Lot 26
6399.2sq.m.
Current Switchboard
Lot 13
1628.0sq.m.
Lot 201
4957.0sq.m.
Lot 25
6405.8sq.m.
Lot 12
4395.8sq.m.
Lot 200
2908.2sq.m.
Lot 200
5690.0sq.m.
Lot 24
6412.4sq.m.
WELD ST
Proposed Light Locations
Lot 41
12419.3sq.m.
Lot 7
34117.7sq.m.
Proposed New Switchboard
ROE ST
Lot 42
16589.8sq.m.
MAWARRA BR
SHIRE OF GINGIN
7 Brockman St
Gingin WA 6503
P: 08 9575 5100
255 Vlns Way
Lancelin WA 6044
P: 08 9575 5155
E: mail@gingin.wa.gov.au
Shire of Gingin does not warrant the accuracy of information in this publication and any person using or relying upon such information does so on the basis that Gingin Shire Council shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in this information.
Electrical Design Site Map
Scale: 1:1800
Date: 16/12/2020
N

HAILAND ELECTRICAL
PO Box 21, Melville WA 6956 – Phone 0413 777 815
Email – hailandelectrical@iinet.net.au – www.hailandelectrical.com.au

## CUSTOMER QUOTATION NO. 3799

Gingin Football Club
PO BOX 187
GIN GIN WA 6503

**Site:** Gingin Football Oval
**Order No.:**
**Created Date:** 28/07/2023
**Valid For:** 30 Day(s)

Dear Gingin Football Club,

Thank you for the opportunity to quote on the required electrical work at Gingin Football Oval.

**Scope of Works:**

*- Supply and install of 2 new 30 meter poles to be installed on the Northern side of the oval, Including the transport of the poles and cages.*
*- Hire of all equipment to urger the holes and also cranes to install the light towers*
*- Trench in new conduit and cabling two the new towers to the existing switchboard*
*- Supply and install the LED 4 x 180Watt flood lights onto each pole.*
*- Crane the light towers onto position and fit off*

**Exclusions**
*- No allowance for Dewatering or liners, if need will be quoted up and proceed once quote has been approved*
*- No allowance to jack hammer through any rocks. If we come across any rocks, quotations wil be given to hire a rock breaker to carry out the works.*
*- Remove of excess dirt from site*

Kinds Regards

Vince Hailand

| Item | Quantity | Unit Price | Total |
|---|---|---|---|
| Parts and Labour | 1.00 | $195,860.00 | $195,860.00 |
| | | **Sub-Total ex GST** | $195,860.00 |

| | |
|---|---|
| **Sub-Total ex GST** | $195,860.00 |
| **GST** | $19,586.00 |
| **Total inc GST** | $215,446.00 |

ABN 43 051 252 822 – EC 8430
Page 1/1

July 27, 2023

BURKE
ELECTRICAL SERVICES
A.B.N 62 358 792 638
E.C. No 003169

Gingin Football Club
Po Box 187
GINGIN WA 6503

**Ref: Gingin Football Oval.**

Attention: Mr Brian Hills.

Hi Brian,

Please find below the quotation to carry out the scope of works as requested by Gingin Football Club for the works below.

Preliminaries to include:

- Mobilisation & Site establishment
- Location of existing services, by cable location prior to works commencing.
- OSH/Permits – SWMS approvals.
- Supervision & management

Civils scope of works

To mobilise to site with all the machinery required to facilitate the installation of the new 30m lighting towers.
To transport to site the 2 x ragbolt cages and auger drill them into the locations 900mm wide x 4500mm deep.
To supply and pour concrete to the 2 x locations and mechanically vibrate.
To trench and install new electrical cables and conduits to the 2 x northern poles.
The quotation includes the turf cutting of the grass and rolled for reinstatement after.
Install conduits, pitboxes and replace the turf and make good the area.
To return to site with the 2 x 30m fixed tapered light poles.
To assemble the poles and prepare ready for lights.
To supply and install 4 x 1800w (x2) light fittings onto the crossarm assembly and terminate.
Prepare to lift the 2 x 30m poles into the vertical position and secure on the ragbolt assemblies.
To excavate and install new electrical cables and conduits from the existing site switchboard to the 2 x pole locations. Backfill and make good the trenches.
To install new electrical subboards to the base of the pole.
To lock poles into position and connect cables and lights at the base of the pole.
To mount new driver assemblies for the lights and test.
Grout the bases of the 2 x poles and commission the new lighting.

QUOTATION AMOUNT $152900.00 + Gst

BURKE ELECTRICAL
SERVICES
P.O. BOX 199,
CLAREMONT, W.A. 6910
MOBILE: 0417 923 775
Info@burkeelectrical.com.au

Civil - Engineering - Electrical

Inclusions

- To mobilise to site with all machinery to carry out the works.
- Supply of 2 x 30m light poles and associated crossarms.
- To supply 2 x 10N24 ragbolt cages.
- To supply and install 8 x 1800watt light fittings.
- To supply and install approx. 6 cu/m 32mpa concrete.
- Freight of poles and cages to site.
- Hire of machinery.
- Insurance cover on all plant and machinery.
- Fuel.
- Accommodation

Exclusions

- No Dewatering of site.
- liners (Poor ground conditions).
- Security fencing.
- Digging in rock conditions.
- Auger drilling in rock conditions.
- Removal of spill from site.

We have the following licences to carry out these works;

Electrical Contractors Licence.
Electrical workers Licence.
MC truck licence.
C2 crane Licence.
Dogmans Licence.
Riggers Licence.
Excavator Licence.
Crane Borer Licence.
Skidsteer Licence.
Backhoe Licence.
Loader Licence.
Telehandler Licence.
EWP licence.
Blue/white card.

**Terms & Conditions**

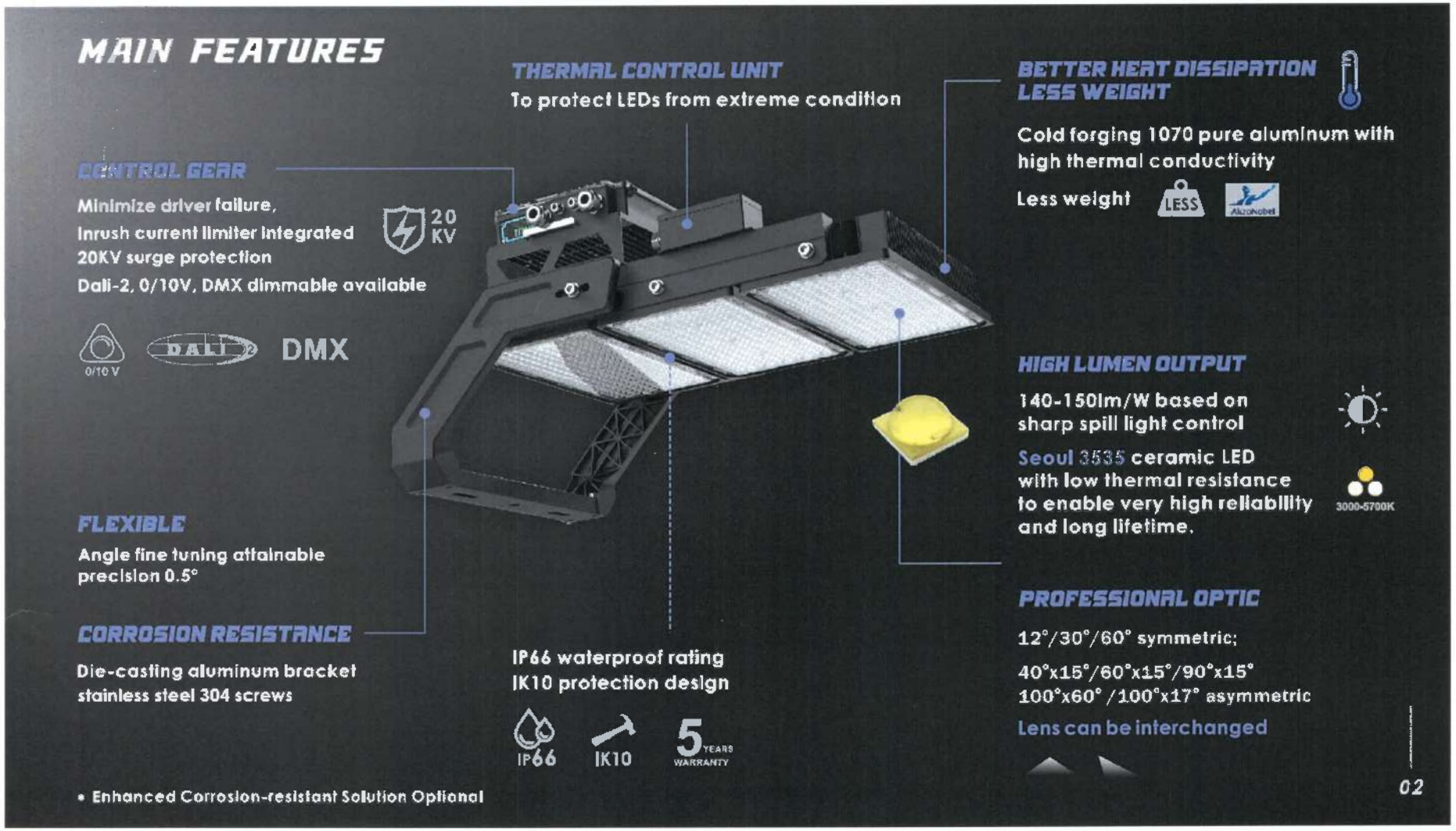
- A deposit of 30% will be required prior to commencement of works.
- No additional works will be carried out without authorisation in writing.
- Terms of payment -14 days from final invoice without retention.
- Progress payments due 30th of each month.
- This quotation is valid for 30 days only.
- If this quotation is successful, could you please provide a signed order, emailed back to this email address.
- Verbal approval will not be accepted and the works cannot commence until the confirmation is received in writing and the 30% deposit paid.
- Thank you for the opportunity of quoting this project.

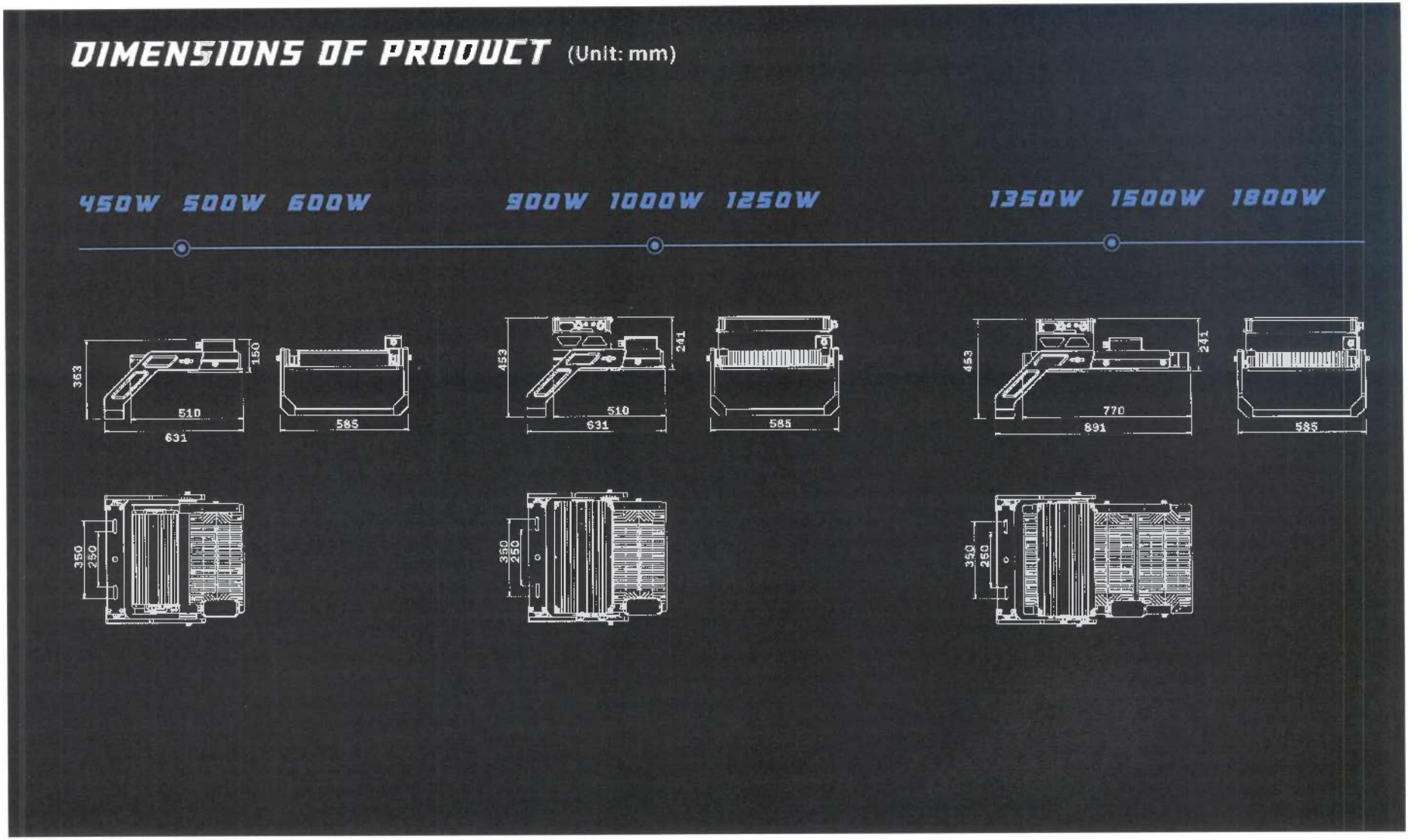
I trust I have covered everything. If you require any further information please contact me.

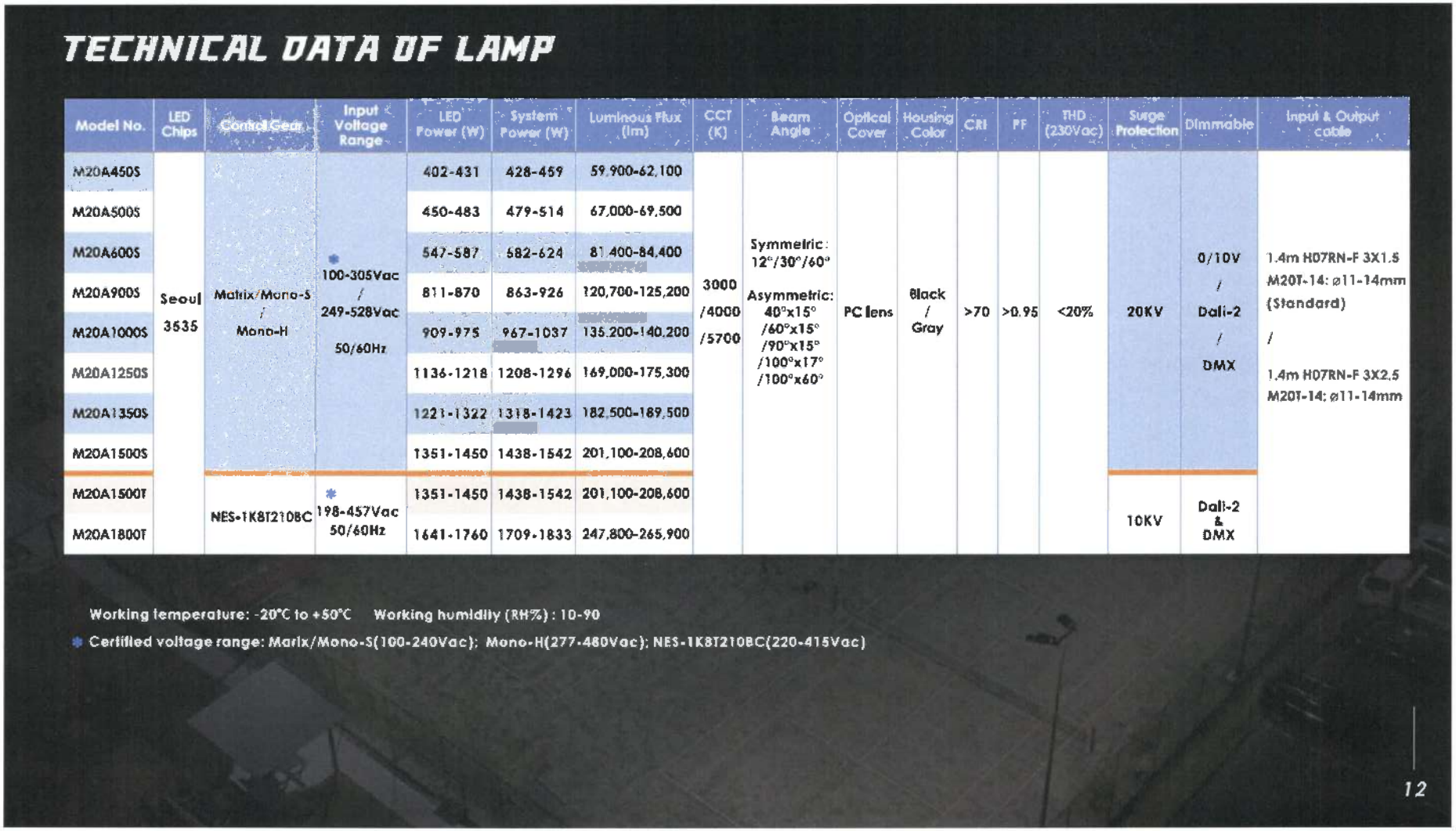
Kind regards,

Steve Burke


PREMIUM
M20
Sport Light
IDEAL SOLUTION FOR SPORTS LIGHTING


MAIN FEATURES
THERMAL CONTROL UNIT
To protect LEDs from extreme condition
BETTER HEAT DISSIPATION
LESS WEIGHT
Cold forging 1070 pure aluminum with high thermal conductivity
Less weight
LESS
AkzoNobel
CONTROL GEAR
Minimize driver failure,
Inrush current limiter integrated
20KV surge protection
Dali-2, 0/10V, DMX dimmable available
20 KV
0/10 V
DALI
DMX
HIGH LUMEN OUTPUT
140-150lm/W based on sharp spill light control
Seoul 3535 ceramic LED with low thermal resistance to enable very high reliability and long lifetime.
3000-5700K
FLEXIBLE
Angle fine tuning attainable precision 0.5°
CORROSION RESISTANCE
Die-casting aluminum bracket
stainless steel 304 screws
IP66 waterproof rating
IK10 protection design
IP66
IK10
5 YEARS WARRANTY
PROFESSIONAL OPTIC
12°/30°/60° symmetric;
40°x15°/60°x15°/90°x15°
100°x60°/100°x17° asymmetric
Lens can be interchanged
• Enhanced Corrosion-resistant Solution Optional
02

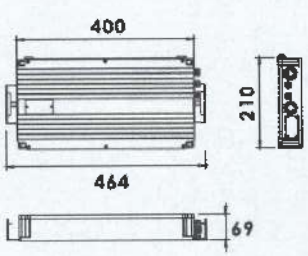

DIMENSIONS OF PRODUCT (Unit: mm)
450W 500W 600W
900W 1000W 1250W
1350W 1500W 1800W
363
150
510
631
585
453
241
510
631
585
453
241
770
891
585
350
250
350
250
350
250

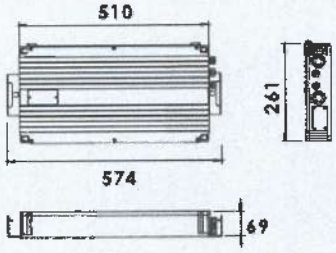

TECHNICAL DATA OF LAMP
Model No. | LED Chips | Control Gear | Input Voltage Range | LED Power (W) | System Power (W) | Luminous Flux (lm) | CCT (K) | Beam Angle | Optical Cover | Housing Color | CRI | PF | THD (230Vac) | Surge Protection | Dimmable | Input & Output cable
M20A450S | Seoul 3535 | Matrix/Mono-S / Mono-H | * 100-305Vac / 249-528Vac 50/60Hz | 402-431 | 428-459 | 59,900-62,100 | 3000 /4000 /5700 | Symmetric: 12°/30°/60° Asymmetric: 40°x15° /60°x15° /90°x15° /100°x17° /100°x60° | PC lens | Black / Gray | >70 | >0.95 | <20% | 20KV | 0/10V / Dali-2 / DMX | 1.4m H07RN-F 3X1.5 M20T-14: ø11-14mm (Standard) / 1.4m H07RN-F 3X2.5 M20T-14: ø11-14mm
M20A500S | | | | 450-483 | 479-514 | 67,000-69,500
M20A600S | | | | 547-587 | 582-624 | 81,400-84,400
M20A900S | | | | 811-870 | 863-926 | 120,700-125,200
M20A1000S | | | | 909-975 | 967-1037 | 135,200-140,200
M20A1250S | | | | 1136-1218 | 1208-1296 | 169,000-175,300
M20A1350S | | | | 1221-1322 | 1318-1423 | 182,500-189,500
M20A1500S | | | | 1351-1450 | 1438-1542 | 201,100-208,600
M20A1500T | | NES-1K8T210BC | * 198-457Vac 50/60Hz | 1351-1450 | 1438-1542 | 201,100-208,600 | | | | | | | 10KV | Dali-2 & DMX
M20A1800T | | | | 1641-1760 | 1709-1833 | 247,800-265,900
Working temperature: -20°C to +50°C Working humidity (RH%): 10-90
* Certified voltage range: Matrix/Mono-S(100-240Vac); Mono-H(277-480Vac); NES-1K8T210BC(220-415Vac)
12

# DIMENSIONS OF CONTROL GEAR (Unit: mm)

## MATRIX & MONO





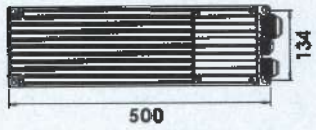



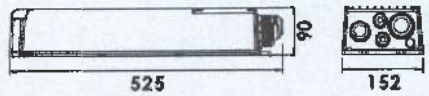

Matrix-340-450W
Matrix-340-500W Mono-S
Matrix-340-600W Mono-H

Matrix-340-900W
Matrix-340-1000W Matrix-340-1350W
Matrix-340-1250W Matrix-340-1500W

## NES-1K8T210BC






## NET WEIGHT: 0/10V

| Product Model No. | Luminaire | Control Gear (0/10V) | | | Control Gear (Dali) | | | Control Gear (DMX&Dali) |
|---|---|---|---|---|---|---|---|---|
| | | Matrix | Mono-S | Mono-H | Matrix | Mono-S | Mono-H | NES-1K8T210BC |
| M20A450S/500S | 10.2 Kg | 4.6 Kg | 5.7 Kg | 5.7 Kg | 5.1 Kg | 4.9 Kg | 5.2 Kg | |
| M20A600S | 10.2 Kg | 5.4 Kg | 6.1 Kg | 6.2 Kg | 6.2 Kg | 6.1 Kg | 6.1 Kg | |
| M20A900S | 15.8 Kg | 6.2 Kg | 6.5 Kg | 6.7 Kg | 7.2 Kg | | | |
| M20A1000S | 15.8 Kg | 6.2 Kg | 6.8 Kg | 7.4 Kg | 7.2 Kg | | | |
| M20A1250S | 15.8 Kg | 7.1 Kg | 6.8 Kg | 7.4 Kg | 8.3 Kg | | | |
| M20A1350S/1500S | 21.2 Kg | 7.9 Kg | | | 9.3 Kg | | | |
| M20A1500T/1800T | 21.2 Kg | | | | | | | 7.0 Kg |

Project 1

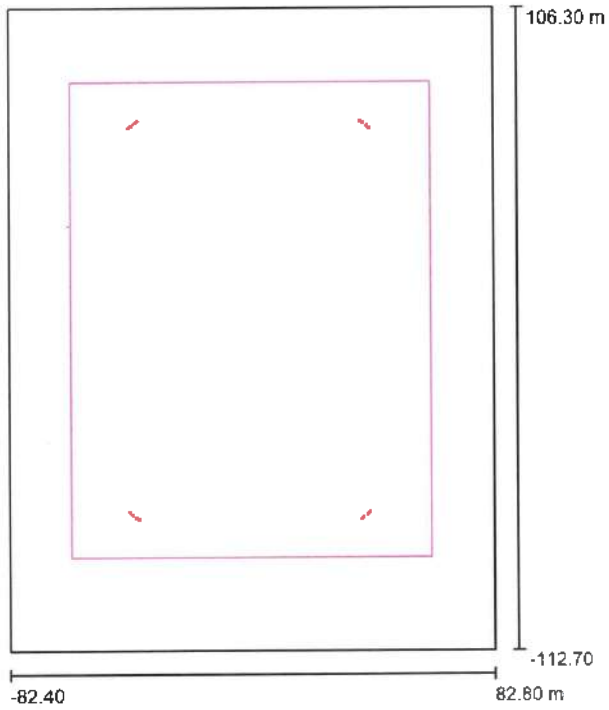
31.07.2023

Light Up Sports

lightupsports.com.au

Operator Dan Watts
Telephone 0402 761 463
Fax
e-Mail dan@lightupsports.com.au

## Gingin AFL / Planning data




Light loss factor: 0.88, ULR (Upward Light Ratio): 0.5%

Scale 1:2030

**Luminaire Parts List**

| No. | Pieces | Designation (Correction Factor) | Φ (Luminaire) [lm] | Φ (Lamps) [lm] | P [W] |
|---|---|---|---|---|---|
| 1 | 8 | M20A1200-100X17 | 168539 | 168000 | 1200.0 |
| 2 | 8 | M20A1800-100X17 | 253424 | 253424 | 1800.0 |
| | | | Total: 3375708 | Total: 3371393 | 24000.0 |

Project 1

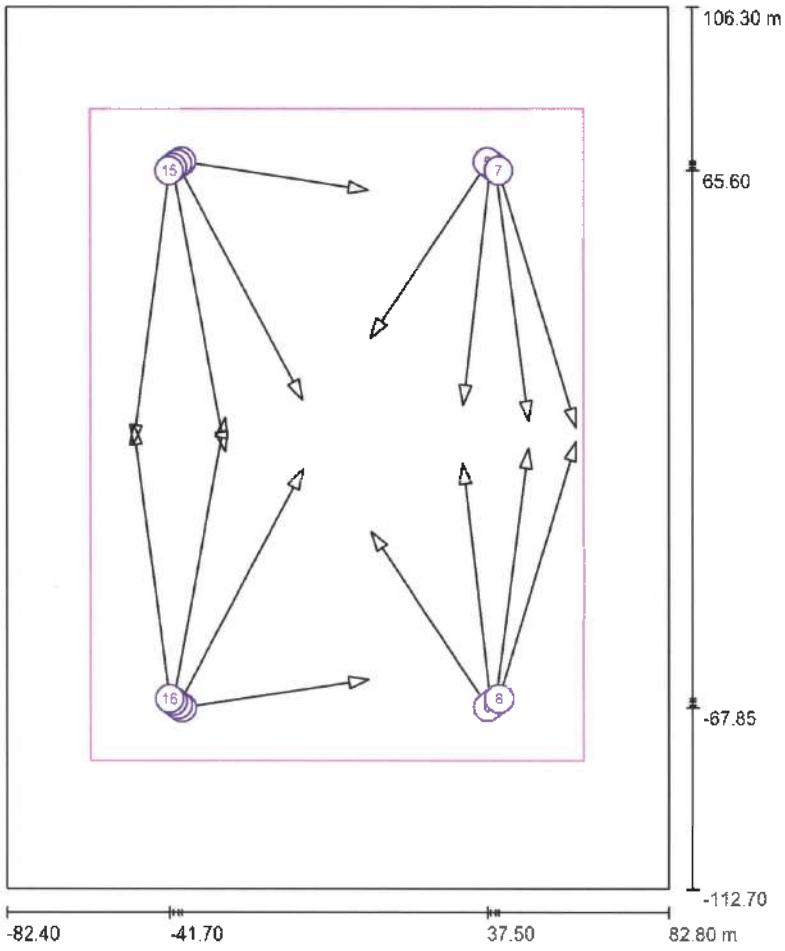
31.07.2023

Light Up Sports

lightupsports.com.au

Operator Dan Watts
Telephone 0402 761 463
Fax
e-Mail dan@lightupsports.com.au

## Gingin AFL / Sport Luminaires (Coordinates List)




Scale 1 : 1481

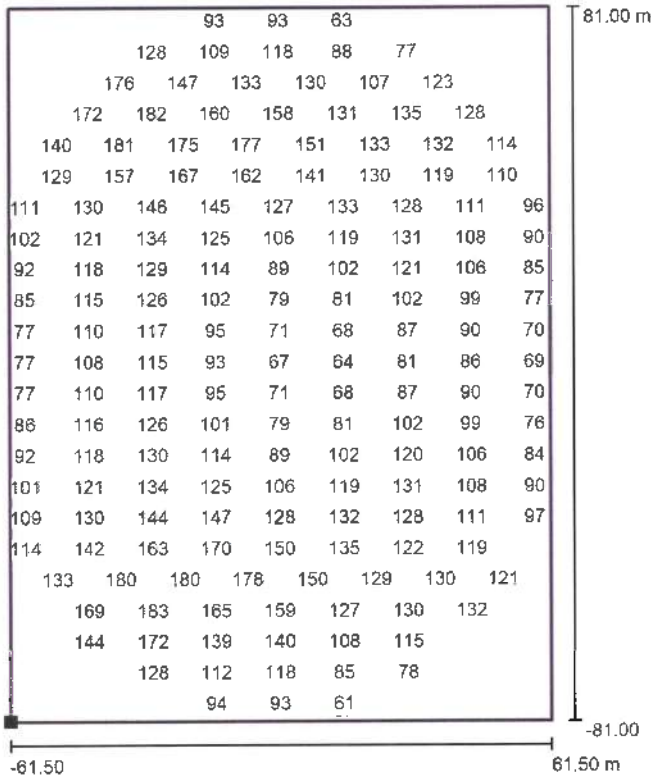
Project 1

31.07.2023

Light Up Sports
lightupsports.com.au

Operator Dan Watts
Telephone 0402 761 463
Fax
e-Mail dan@lightupsports.com.au

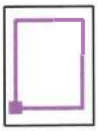
## Gingin AFL / AFL - PPA / Value Chart (E, Perpendicular)




Values in Lux, Scale 1 : 1352

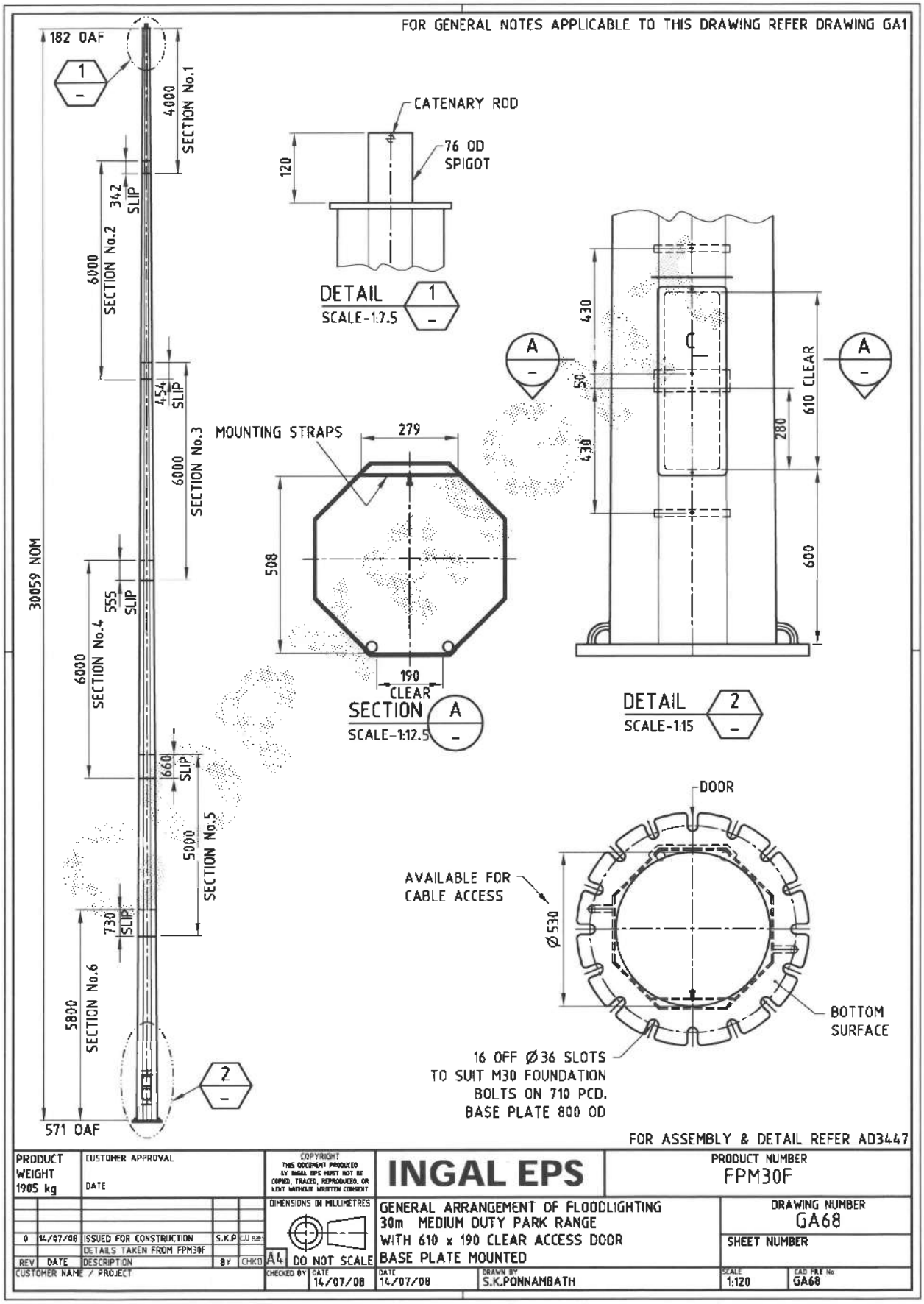
Not all calculated values could be displayed.

Position of surface in external scene:
Marked point: (-61.500 m, -81.000 m, 0.000 m)



Grid: 326 Points

| $E_{av}$ [lx] | $E_{min}$ [lx] | $E_{max}$ [lx] | u0 | $E_{min}$ / $E_{max}$ |
|---|---|---|---|---|
| 118 | 61 | 188 | 0.51 | 0.32 |


FOR GENERAL NOTES APPLICABLE TO THIS DRAWING REFER DRAWING GA1
182 OAF
4000 SECTION No.1
342 SLIP
6000 SECTION No.2
454 SLIP
6000 SECTION No.3
555 SLIP
6000 SECTION No.4
660 SLIP
5000 SECTION No.5
730 SLIP
5800 SECTION No.6
30059 NOM
571 OAF
CATENARY ROD
76 OD SPIGOT
120
DETAIL 1
SCALE-1:7.5
MOUNTING STRAPS
279
508
190 CLEAR
SECTION A
SCALE-1:12.5
430
50
430
280
610 CLEAR
600
DETAIL 2
SCALE-1:15
DOOR
AVAILABLE FOR CABLE ACCESS
Ø530
BOTTOM SURFACE
16 OFF Ø36 SLOTS TO SUIT M30 FOUNDATION BOLTS ON 710 PCD. BASE PLATE 800 OD
FOR ASSEMBLY & DETAIL REFER AD3447
PRODUCT WEIGHT 1905 kg
CUSTOMER APPROVAL
DATE
COPYRIGHT
INGAL EPS
PRODUCT NUMBER FPM30F
DIMENSIONS IN MILLIMETRES
A4 DO NOT SCALE
GENERAL ARRANGEMENT OF FLOODLIGHTING
30m MEDIUM DUTY PARK RANGE
WITH 610 x 190 CLEAR ACCESS DOOR
BASE PLATE MOUNTED
DRAWING NUMBER GA68
SHEET NUMBER
0 14/07/08 ISSUED FOR CONSTRUCTION S.K.P
DETAILS TAKEN FROM FPM30F
REV DATE DESCRIPTION BY CHKD
CUSTOMER NAME / PROJECT
CHECKED BY DATE 14/07/08
DATE 14/07/08
DRAWN BY S.K.PONNAMBATH
SCALE 1:120
CAD FILE No GA68

# Balance Sheet

## Gingin Eagles Football Club Inc.
## As at 30 September 2022

| | 30 SEP 2022 |
|---|---|
| **Assets** | |
| **Bank** | |
| Gingin Football Club | 2,876.88 |
| **Total Bank** | **2,876.88** |
| **Current Assets** | |
| Accounts Receivable | 10,930.00 |
| Bar Float | 500.00 |
| Kitchen Float | 600.00 |
| Term Deposit | 20,434.60 |
| **Total Current Assets** | 32,464.60 |
| **Total Assets** | **35,341.48** |
| **Liabilities** | |
| **Current Liabilities** | |
| GST | (2,686.56) |
| Historical Adjustment | 15,746.02 |
| Rounding | (0.01) |
| **Total Current Liabilities** | **13,059.45** |
| **Total Liabilities** | **13,059.45** |
| **Net Assets** | **22,282.03** |
| **Equity** | |
| Current Year Earnings | (8,360.35) |
| Retained Earnings | 30,642.38 |
| **Total Equity** | 22,282.03 |

# Profit and Loss

## Gingin Eagles Football Club Inc.
## For the year ended 30 September 2022
## Cash Basis

| | 2022 | 2021 |
|---|---|---|
| **Trading Income** | | |
| Bar Sales | 13,706.73 | 18,637.93 |
| Bull Sale Catering | 1,519.50 | 840.00 |
| Cattle Sales | - | 5,000.00 |
| Dinner Ticket sales | 0.19 | 5,687.50 |
| Fencing | 6,720.00 | 8,000.00 |
| Gate takings | 11,675.00 | 11,281.80 |
| Gingin 150th Bar sales | 4,885.08 | - |
| Hay Cart | 1,488.00 | - |
| Hay Sales | 4,480.00 | - |
| Kitchen Sales | 16,806.55 | - |
| License Plate Sales | - | 1,000.00 |
| Membership | 7,730.82 | 7,943.15 |
| Merchandise Sales | 4,379.30 | 2,615.00 |
| Other Revenue | 240.00 | 540.00 |
| Player Auction | 21,440.91 | 16,585.00 |
| Sheep Sales | - | 13,636.36 |
| Sponsorship | 27,643.60 | 18,700.00 |
| **Total Trading Income** | **122,715.68** | **110,466.74** |
| **Gross Profit** | **122,715.68** | **110,466.74** |
| **Other Income** | | |
| Government Grants | - | 1,000.00 |
| **Total Other Income** | - | **1,000.00** |
| **Operating Expenses** | | |
| Advertising | 12.00 | - |
| Bank Fees | 16.00 | 6.55 |
| Bar stock Purchases | 7,525.46 | 10,031.50 |
| Budgets | 3,009.70 | 2,486.60 |
| Bull Sale Catering Costs | - | 204.49 |
| Burgers & Sausages | 101.96 | - |
| Catering costs | 5,780.36 | - |
| Cleaning | - | 175.00 |
| Country Week | 500.00 | - |
| Cropping expenses | 1,501.82 | - |
| Dinner Tables and decorations | 536.18 | - |
| Donations | 580.31 | - |
| Eftpos Charges | 403.08 | 407.87 |
| Entertainment | 550.00 | - |
| Football Equipment | 1,526.00 | 2,584.25 |

Profit and Loss

| | 2022 | 2021 |
|---|---|---|
| Fundraising costs | 1,000.00 | 2,705.00 |
| General Expenses | 1,739.05 | 2,118.52 |
| Gingin Recreation Centre Facility Hire | 4,000.00 | 5,000.00 |
| Insurance | 4,167.50 | 912.50 |
| Interest Expense | - | 8.30 |
| Kitchen Stock Purchases | 6,683.41 | - |
| License Plate costs | - | 800.00 |
| Liquor License | 109.00 | - |
| Merchandise Purchases | 10,336.50 | 1,959.11 |
| Mortlock Dinner | 545.45 | - |
| Oval Marking | 429.04 | 385.00 |
| Player and Coach Payments | 47,480.00 | 35,510.00 |
| Player Auction dividend Payout | 16,260.00 | 10,582.00 |
| Player Awards | 1,940.00 | 3,055.00 |
| Po Box and Postage | 139.00 | 166.00 |
| Repairs and Maintenance | 9,000.00 | 2,750.00 |
| Sheep Purchases | - | 1,955.00 |
| Strapping & Medical Supplies | 1,660.41 | 1,419.76 |
| Trophies | 2,541.00 | 227.95 |
| Umpires | 4,620.00 | 4,620.00 |
| Xero Fees | 324.00 | 314.00 |
| **Total Operating Expenses** | **135,017.23** | **90,384.40** |
| **Net Profit** | **(12,301.55)** | **21,082.34** |

# Profit and Loss

## Gingin Eagles Football Club Inc.
## For the year ended 30 September 2023
## Cash Basis

| | 2023 |
|---|---|
| **Trading Income** | |
| Bar Sales | 19,685.01 |
| Bull Sale Catering | 1,309.00 |
| Dinner Ticket sales | 7,284.31 |
| Fundraising | 860.50 |
| Gate takings | 7,557.80 |
| Grain Sales | 14,835.55 |
| Hay Sales | 18,800.00 |
| Kitchen Sales | 14,197.56 |
| Membership | 8,770.00 |
| Merchandise Sales | 10,510.00 |
| Other Revenue | 740.00 |
| Player Auction | 15,766.36 |
| Sponsorship | 24,100.00 |
| **Total Trading Income** | **144,416.09** |
| **Gross Profit** | **144,416.09** |
| **Other Income** | |
| Rec Centre Grants | 19,950.00 |
| **Total Other Income** | **19,950.00** |
| **Operating Expenses** | |
| Auction Frames | 240.51 |
| Bank Fees | 22.65 |
| Bar stock Purchases | 11,446.00 |
| Budgets | 872.20 |
| Bull Sale Catering Costs | 134.18 |
| Burgers & Sausages | 169.91 |
| Catering costs | 6,000.00 |
| Cleaning | 247.50 |
| Cropping expenses | 7,536.90 |
| Dinner Tables and decorations | 399.34 |
| Eftpos Charges | 740.97 |
| Entertainment | 550.00 |
| Football Equipment | 4,954.87 |
| General Expenses | 2,681.04 |
| Gingin Recreation Centre Facility Hire | 4,000.00 |
| Hockey/Netball Kitchen Wages | 420.00 |
| Kitchen Stock Purchases | 10,068.33 |
| Liquor License | 290.50 |
| Merchandise Purchases | 19,582.10 |

Profit and Loss

| | 2023 |
|---|---|
| Mortlock Affiliation Fees | 1,575.00 |
| Mortlock Dinner | 545.75 |
| Player and Coach Payments | 31,400.00 |
| Player Auction dividend Payout | 8,520.00 |
| Player Awards | 1,821.20 |
| Repairs and Maintenance | 9,931.83 |
| Share Cropping Split | 3,290.00 |
| Strapping & Medical Supplies | 2,678.51 |
| Trophies | 165.50 |
| Umpires | 2,060.00 |
| Xero Fees | 290.00 |
| **Total Operating Expenses** | **132,634.79** |
| **Net Profit** | **31,731.30** |

# Balance Sheet

## Gingin Eagles Football Club Inc.
## As at 30 September 2022

| | 30 SEP 2022 |
|---|---|
| **Assets** | |
| **Bank** | |
| Gingin Football Club | 2,376.88 |
| **Total Bank** | **2,376.88** |
| **Current Assets** | |
| Accounts Receivable | 10,930.00 |
| Bar Float | 500.00 |
| Kitchen Float | 600.00 |
| Term Deposit | 20,434.60 |
| **Total Current Assets** | **32,464.60** |
| **Total Assets** | **34,841.48** |
| **Liabilities** | |
| **Current Liabilities** | |
| GST | (2,686.56) |
| Historical Adjustment | 15,746.02 |
| Rounding | (0.01) |
| **Total Current Liabilities** | **13,059.45** |
| **Total Liabilities** | **13,059.45** |
| **Net Assets** | **21,782.03** |
| **Equity** | |
| Current Year Earnings | (8,860.35) |
| Retained Earnings | 30,642.38 |
| **Total Equity** | **21,782.03** |

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Consumer Protection

# Western Australian Incorporated Association Extract

**Date/Time:** 31/7/2023 10:57:31

This document contains information extracted from the register of incorporated associations database pursuant to sections 161 and 162 of the *Associations Incorporation Act 2015*.

| | |
|---|---|
| **Name:** | GINGIN FOOTBALL CLUB |
| **Registration Number:** | A0822388M |
| **Status:** | Registered |
| **Date of Incorporation:** | 31/12/1986 |
| **Date of Cancellation:** | N/A |
| **Tier:*** | |
| **Date of last AGM:*** | |
| **Financial Year End:*** | 30 September 2019 |
| **Governing Documents:*** | Own Rules |
| **Current address for service of notice:*** | |

***Fields may be blank if information is not currently available**

***Disclaimer:***

*This is a true and correct extract of information from the register maintained in accordance with the Associations Incorporation Act 2015 (WA). The information reproduced here has been provided to the Commissioner for Consumer Protection by third parties and the Commissioner makes no representation that the information is correct or appropriate for the purpose for which it has been obtained.*

*This extract is provided in good faith and in the course of performing a function under the Associations Incorporation Act 2015 (WA).*

*Pursuant to section 159 of the Associations Incorporation Act 2015 (WA), neither any person, nor the State, shall be in any way liable for anything done in good faith in the performance or purported performance of a function under the Associations Incorporation Act 2015 (WA).*

*Please advise the Commissioner for Consumer Protection of any error or omission which you may identify.*

EXTRACT

## 12.5 LANCELIN BOWLING CLUB - 10 RINK SYNTHETIC GREEN CSRFF APPLICATION

| | |
|---|---|
| File | GRA/8 |
| Author | Amy Gibbs - Coordinator Community Development & Services |
| Reporting Officer | Les Crichton - Executive Manager Corporate and Community Services |
| Refer | 18 April 2023 – Item 12.2 |
| Appendices | 1. CSRFF Small Grants Application Form [**12.5.1** - 35 pages]<br>2. Project Assessment Sheet [**12.5.2** - 2 pages] |

### DISCLOSURES OF INTEREST

*Councillor Peczka disclosed an impartiality interest in Item 12.5 as he is a playing and financial member of the Lancelin Bowling Club.*

*Councillor Kestel disclosed an impartiality interest in Item 12.5 as he is a Director of the Bendigo Bank who sponsor the Lancelin Bowling Club.*

*Councillor Balcombe disclosed an impartiality interest in Item 12.5 as she is a paid employee of the Bendigo Bank which has approved a grant for this project.*

### PURPOSE

For Council to assess a Community Sporting and Recreation Facilities Fund (CSRFF) Small Grants Application received from the Lancelin Bowling Club Inc. to replace two 7 rink grass greens with a new 10 rink synthetic green.

### BACKGROUND

Council has received a grant application from the Lancelin Bowling Club Inc. for a CSRFF Small Grant to replace its existing two 7 rink grass greens with one new 10 rink synthetic green.

The Lancelin Bowling Club Inc. previously made a similar application as part of the February CSRFF Small Grants round. In considering the application at its 18 April 2023 meeting, Council resolved to:

1. *Endorse the CSRFF Small Grant Application submitted by the Lancelin Bowling Club Inc. as assessed within the appendices, and*

2. *Make a provision of $90,000 as Council's contribution for consideration within the 2023/24 Draft Budget.*

However, the Department of Local Government, Sport and Cultural Industries recently advised that the application was not successful due to unconfirmed funding from a third party.

This application is a resubmission of the project to the CSRFF Small Grants August 2023 round with the funding confirmed.

The purpose of the CSRFF program is to provide Western Australian Government financial assistance to community groups and local government authorities to develop basic infrastructure for sport and recreation. It is administered by the Department of Local Government, Sport, and Cultural Industries (DLGSC).

The program aims to increase participation in sport and recreation, with an emphasis on physical activity, through rational development of sustainable, good quality, well-designed and well-utilised facilities.

There are three rounds of CSRFF each year. Two small grant rounds (February and July), and one annual and forward planning round (June). The small grant program targets projects involving a basic level of planning where the total project cost must not exceed $300,000. The annual and forward planning grant targets projects involving a detailed level of planning for projects with a cost above $300,000.

Priority consideration for CSRFF funding will be given by DLGSC to:

- New or upgraded facilities which will maintain or increase physical activity, or result in a more rational use of facilities;
- Projects that lead to facility sharing and rationalisation; and
- Multi-purpose facilities that reduce the infrastructure required to meet similar needs and increase sustainability.

The funding program is not designed to provide facilities to meet a club's ambitions to compete in a higher grade, and infrastructure life cycle costs must be considered.

In preparing their applications, applicants must discuss their projects with their nearest DLGSC regional office.

All CSRFF applications are then required to be submitted to the relevant local government for assessment, ranking if more than one application is received, and endorsement prior to their lodgement with DLGSC. This is the only application received for the CSRFF Small Grants August 2023 round.

## COMMENT

As Council is aware, amendments to the Upper Coastal Sub-Region Sporting Facilities Master Plan were endorsed by Council at its 21 February 2023 meeting.

The amendments incorporated a review of the Stage 1 priorities which included, among other additions, provision of a synthetic 10 rink bowling green.

The Lancelin Community and Sporting Club Inc (LCSC) is the overarching body comprising membership of all sporting clubs domiciled at the grounds and holds the lease for the premises including the bowling greens, has supported the application.

In order to assess the application from the Lancelin Bowling Club, Council must respond to the requirements within the CSRFF application form.

As required under CSRFF Program process, Administration has completed the Project Assessment Sheet (Appendices) on the Lancelin Bowling Club's application for Council's endorsement. The application has been ranked as priority 1 of 1 application received.

## STATUTORY/LOCAL LAW IMPLICATIONS

Nil

## POLICY IMPLICATIONS

Policy 3.7 – Distribution of Funds to Community and Sporting Bodies through the Community Sporting and Recreation Facilities Fund.

## BUDGET IMPLICATIONS

As outlined with the CSRFF guidelines, the application seeks 1/3 funding from the Shire, with 1/3 funding by the applicant and the balance being funded by the CSRFF program.

Council's contribution of $90,000 is currently included in the proposed 2023/24 Budget being put forward for adoption at this meeting.

## STRATEGIC IMPLICATIONS

Shire of Gingin Strategic Community Plan 2022-2032

| | |
|---|---|
| **Aspiration** | 4. Excellence & Accountability - Deliver Quality Leadership and Business Expertise |
| **Strategic Objective** | 4.1 Management of Assets - Maintain civic buildings, sporting facilities, public places, plant and road and cycleway/pathways based on asset management plans and identified priorities |

VOTING REQUIREMENTS - SIMPLE MAJORITY

COUNCIL RESOLUTION/OFFICER RECOMMENDATION

MOVED: Councillor Vis SECONDED: Councillor Sorensen

That Council endorse the Project Assessment Sheet (Appendices) amended in relation to the Lancelin Bowling Club's CSRFF Small Grant Application.

CARRIED UNANIMOUSLY
7 / 0

FOR: *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

AGAINST: *Nil*

Department of Local Government, Sport and Cultural Industries
GOVERNMENT OF WESTERN AUSTRALIA

| Office Use Only |
|---|
| TRIM: _____ |
| Grant No: _____ |
| Project Coordinator._____ |

# CSRFF Small Grants Application Form

## For projects up to $500,000 to be acquitted by 15 June 2024

| | | |
|---|---|---|
| **You MUST discuss your project with an officer from your nearest Department of Local Government, Sport and Cultural Industries office before completing and submitting your application. Failure to do so will render your project ineligible.** | | |
| **All applications MUST be submitted to your local government. Contact your local government to determine the cut-off date for the submission of applications.** | | |
| DLGSC Contact: Brendan McNally, Samantha Cornthwaite | Date: 1.8.2023 | Office: Northam |

**Applicant's Details:**

| | | | | | |
|---|---|---|---|---|---|
| Organisation Name: | Lancelin Bowling Club | | | | |
| Postal Address: | P O Box 101 | | | | |
| Suburb: | Lancelin | State: | WA | Postcode: | 6044 |
| Street Address: | Lancelin Road | | | | |
| Suburb: | Lancelin | State: | WA | Postcode: | 6044 |

**Preferred Contact Person:**
*All application correspondence will be directed to this person*

| | | | |
|---|---|---|---|
| Name: | PAT WILLIAMS | Title: | Dr ☐Mr ☐Mrs X Ms☐ |
| Position Held: | Secretary | | |
| Business Phone: | | Facsimile: | |
| Mobile Phone: | 0417 096 876 | Email: | pjwilliams576@gmail.com |

**Organisation Business Details:**

| | | | |
|---|---|---|---|
| Does your organisation have an ABN? | Yes X No ☐ | ABN: 91 308 631 056 | |
| Is your organisation registered for GST? | Yes ☐ No X | * Note, in order to be eligible for funding you must attach a copy of the Incorporation Certificate. LGA's exempt | |
| Is your organisation not-for-profit? | Yes X No ☐ | | |
| Is your organisation incorporated? | Yes X No ☐ | Incorporation #: A1041945Z * | |
| Bank details: | Bank: BENDIGO | BSB: 633000 | A/c: 123563934 |

**Local Government Authority Details:**

| | | | |
|---|---|---|---|
| LGA: | GINGIN | | |
| Contact: | AMY GIBBS | Title: | Dr ☐Mr ☐Mrs☐ Ms☐ |
| Position Held: | Coordinator Community Development and Services | | |
| Business Phone: | 95755162 | Facsimile: | |
| Mobile Phone: | | Email: | Amy.Gibbs@gingin.wa.gov.au |

## PROJECT DETAILS

**Project Title (brief and specific):** Replace 2 x 7 rink green with a new 10 rink synthetic green.

**Project Description:**

Replacement of old 2 grass greens with a new synthetic surface. Remove existing turf and extend banks to cater for ten rinks. Reticulation to be installed.

**How did you establish a need for your project?**

Our current greens are over 40 years old and riddled with disease including fungus and are unplayable on some rinks. Our greenkeeper is very close to retirement with the likelihood of finding a replacement, remote.

Lancelin in the only club left in the Moore Districts Bowling League with a grass green and it is mostly not good enough for League events to be held.

A replacement synthetic green would allow us to conduct bowls twelve months of the year. We are getting more groups and tourists wanting to use our greens and synthetic would cater for that as no mowing or rolling would be needed.

Having a synthetic green would also allow our club to save the cost of a greenkeeper, fertiliser, machinery, water and all other costs associated with having grass greens to be saved each year and put aside for the day our synthetic needs replacement.

**What alternatives were considered and why were they rejected (e.g cost, suitability, feasibility)?**

In the club's opinion we have no other alternatives except to dig up and replace the existing grass greens. We need to upgrade our surface to synthetic with ability to play 12 months of the year. Digging up and replacing a single 7 rink green is not economically viable as this would not allow for 12 months use or cater for current interest.

It would not be feasible to redo the grass greens we have.

This alternative eliminates the need for a greenkeeper and other costs such as fertiliser, machinery, chemicals and water. Also, no requirement to remove shades during winter.

All savings will be placed into a future fund for the next replacement.

Changing to synthetic is more environmentally friendly.

**How will your project increase physical activity?**

By allowing bowlers and others to play twelve months of the year. Allowing the club to hold more events all year round. Community Bowls competitions can be improved on as currently we are restricted by the condition of greens and the weather.

Barefoot Bowls competitions are becoming more popular with visitors on long weekends and holidays. Can grow these events.

All age groups are involved. The social, mental and physical activity would be enhanced with more ongoing events. Act, Belong, Commit.

The club is keen to embrace Bowls Australia's participation programs such as Jack Attack and Rookie Rollers, however the current situation with greens means that preparation of the greens, as well as availability of the greens, is a significant barrier. A synthetic green will provide a far more pleasurable experience for those that are new to the sport and encourage them to continue in the sport.

Jack Attack is Bowls Australia's modern, exciting version of competitive social bowls. The newest format of our sport reflects the game as seen on television through the Bowls Premier League and caters perfectly for those with limited time, something more prevalent today. Jack Attack has been very successful in clubs throughout Western Australia, including both small and large country based clubs, and is based around the enjoyable aspects of our game, with less focus on the traditional format.

Rookie Rollers is Bowls Australia's schools based program, introducing the sport to the younger brigade in a fun and engaging way. Lightweight, safe rubber bowls that can initially be used within school grounds provides the introduction, with the opportunity to then host the students at the club for a more "real" experience. Having kids on grass greens can be a concern with regard to damage to the surface – this is far less of a concern with a synthetic surface, and makes it much easier for the club to get involved.

| | | | |
|---|---|---|---|
| The club is very excited, by way of these programs, to lift the profile of the club in the local community and increase those experiencing the great sport of bowls. | | | |
| **Have the full lifecycle costs of the project been considered and can you afford the ongoing costs of managing, maintaining and replacing the facility? Will a specific asset replacement fund be created?**<br>Yes, a replacement fund will be created. We will save $17404.00 from not paying a greenkeeper & greens maintenance. A further income from Pennant green fees will be $710.00. Over 10 years this will amount to $181,140.00. All costs are shown in our financial statements. | | | |
| **Project location:** | Lancelin Road, Lancelin | | |
| **Land ownership:** | Who owns the land on which your facility will be located? Gingin Shire<br>Lease Expiry (if applicable): LC&SC (Lancelin Community & Sporting Club) 31 July 2024 with further 2 year option. | | |
| **Planning approvals** | | If no, provide the date it will be applied for: N/A | |
| **Where applicable, has planning permission been granted?** (LGA) | | Yes ☐ No ☐ P | ___/___/___ |
| **Aboriginal Heritage Act?** | | Yes ☐ No ☐ P | ___/___/___ |
| **Department of Biodiversity, Conservation and Attractions?** (Environmental, Swan River) | | Yes ☐ No ☐ P | ___/___/___ |
| **Native Vegetation Clearing Permit?** | | Yes ☐ No ☐ P | ___/___/___ |
| **Please list any other approvals that are required?** | | Yes ☐ No ☐ P | ___/___/___ |
| **Do you share your facility with other groups?** Yes x No ☐ If so, who: Visiting Football Clubs, Golf Club, Swimming Clubs, Gingin Shire (seminars), Functions/catering for Community Groups. | | | |

List the main sport and recreation activities (maximum of 3) which will benefit from your proposal. Please indicate the approximate % usage of the facility (or part of the facility relating to this proposal).

| Sport/community organisation | % use of the facility | Hours per week |
|---|---|---|
| Lancelin Bowling Club | 90% | 12-20 |
| Community Bowls | 5% | 5 |
| Various Groups | 5% | 5 |

Activity/sport membership numbers over the past three years relevant to your project. For example, if a bowls project, golf members not relevant; social membership numbers not applicable.

Note: if membership is not applicable, ie recreation facility or aquatic centre, enter the number of users of the facility.

| | | | | | |
|---|---|---|---|---|---|
| **2020/21** | 32 | **2021/22** | 30 | **2022/23** | 34 |
| **Corporate Bowlers** | | | | | |
| **2020/21** | 480 | **2021/22** | 335 | **2022/23** | 417 |

State Sporting Associations are involved in the assessment of applications and may be able to provide valuable information when planning your project, particularly in relation to technical design issues. They should be consulted as part of the application process. A complete list of State Sporting Associations and their contact details are available on the department's website: https://www.dlgsc.wa.gov.au/sport-and-recreation/state-sporting-associations

| What is the name of the State Sporting Association for your activity/sport? |
|---|
| Bowls WA |

| | | | | | |
|---|---|---|---|---|---|
| **Have you discussed your project with your State Sporting Association?** | Yes | x | No | ☐ | |
| Contact Name: Ken Pride | Date of contact: 2/08/2023 | | | | |

## PROJECT DELIVERY

**Please indicate key milestones of your project. The key milestones need to be realistic and demonstrate that the project can be delivered in the timeframe.**

| Task | Date |
|---|---|
| Attainment of Council approvals | August 2023 |
| Preparation of tender/quotes for the major works contract | Quotes obtained |
| Issuing of tender for major works | N/A |
| Signing of major works contract | N/A |
| Site works commence | 1/12/2023 |
| Construction of project starts | 1/12/2023 |
| Project 50% complete | 1/2/2023 |
| Project Completed | 1/06/2023 |
| Project hand over and acquittal | 15/062023 |

**Are there any operational constraints that would impact on the construction phase of your project?** (such as your sporting season, major annual event or inclement weather) – provide details. Projects that are delayed due to undeclared known constraints are not eligible for a deferral.

No. Depending on the timing we will have to use other greens.

## GST

Grant payments are payable to the applicant/grantee only. This may have taxation implications for grantees. If grantees wish specific advice relating to their grant, this can be obtained from the Australian Taxation Office (ATO). Please note depending upon the value of the project and/or grant, the ATO may require an organisation be registered for GST. If the applicant is registered for GST, the grant is grossed up with the GST amount.

## PRIVACY STATEMENT AND STATEMENT OF DISCLOSURE

The Organisation acknowledges and agrees that this Application and information regarding it is subject to the *Freedom of Information Act 1992* and that the Grantor may publicly disclose information in relation to this Application, including its terms and the details of the Organisation.

Any information provided by you to DLGSC can be accessed by you during standard office hours and updated by writing to DLGSC or calling (08) 9492 9700. All information provided on this form and gathered throughout the assessment process will be stored on a database that will only be accessed by authorised departmental personnel and is subject to privacy restrictions.

DLGSC may wish to provide certain information to the media for promotional purposes. The information will only include the applicant's club name, sport, location, grant purpose and grant amount.

## APPLICANT'S CERTIFICATION

I certify that the information supplied is to the best of my knowledge, true and correct.

**Name:** Pat Williams

**Position Held:** **Secretary**

**Signature:** Pat Williams

**Date:** **2/08/2023**

## LODGEMENT OF YOUR APPLICATION

- Applications including all attachments are to be received electronically and officially submitted to csrff@dlgsc.wa.gov.au by the cut off date. A hard copy can also be provided and should be clipped at the top left-hand corner, please do not bind.
- It is recommended that you **retain your completed application form**, including attachments for your own records and future audit purposes.
- All **attachments** and supporting documentation (see next section) should be **clearly named and identified** and submitted with the application form.
- **Applications must be submitted to your Local Government Authority** by the Local Government's advertised cut-off date to ensure inclusion at the relevant Council meeting.

The following documentation must be included with your application. Applicants may wish to supply additional RELEVANT information.

| | |
|---|---|
| x | **Application form.** |
| x | **Incorporation Certificate.** |
| ☐ | **Confirmation of Public Liability Insurance cover to $10 million** |
| x | **Two written quotes.** |
| ☐ | If your project involves the upgrade of an existing facility, include **photograph/s** of this facility. |
| x | **Locality map, site map and building plans** (in relevant constructions projects), including where the proposed facility is located in relation to other sport and recreation infrastructure. |
| x | **Income and expenditure statements** for the current and next financial years. (LGAs exempted). |
| x | **Written confirmation of financial commitments** from other sources including copies of **council minutes**. (If a club is contributing financially then evidence of their cash at hand must be provided). |
| x | For resurfacing projects, a written guarantee from the supplier of the product that clearly identifies the product's life expectancy. |
| x | **Itemised project cost for components** and identified on the relevant quote for each (including cost escalation). |
| ☐ | For projects involving floodlighting, a **lighting plan** must be supplied showing lux, configuration and sufficient power supply |

**Your application will be considered not eligible if:**

- You have not discussed your project with the Department of Local Government, Sport and Cultural Industries and your State Sporting Association.
- You do not meet the eligibility criteria for the grant category to which you are applying.
- You have not included with your application all the relevant required supporting documentation. **There is no onus on Department staff to pursue missing documentation.**
- Applicants/projects that have received a CSRFF grant in the past and have not satisfactorily acquitted that grant. In some cases this may apply to localities where other significant projects have not been progressed or have not completed a previous project in accordance with the conditions of the grant provided. An assessment will be made in October and if no physical progress has occurred, new applications may not be recommended.
- It is not on the correct application form.
- The project for which application is made is specifically excluded from receiving CSRFF support.

## DEVELOPMENT BONUS APPLICANTS ONLY

If you applied for a CSRFF grant for more than one third of the cost of the project, please provide evidence of meeting at least one of the following criteria.

**You MUST contact your local DLGSC office to determine eligibility before applying.**

| **Category** | | **Details** |
|---|---|---|
| Geographical location | ☐ Regional/remote location<br>☐ Growth local government | |
| Co-location | ☐ New<br>☐ Existing | |
| Sustainability initiative | ☐ Water saving<br>☐ Energy reduction<br>☐ Other | |
| Increased participation | ☐ New participants<br>☐ Existing participants – higher level<br>☐ Special interest<br>☐ Other | |

## PROJECT BUDGET

### ESTIMATED EXPENDITURE

Please itemise the components of your project in the table below, indicating their cost and which quote or part of quote was used to estimate this. Quantity Surveyor costs will be accepted however the responsibility lies with the applicant to ensure the validity of the information. A contingency allowance is considered an acceptable component. *PLEASE ITEMISE BY COMPONENT (e.g changerooms, storage, kitchen) rather than materials (electrician, plumber, finishings).*

| **Project Description (detailed breakdown of project to be supplied** | **$ Cost ex GST** | **$ Cost inc GST** | **Quote Used (list company name and quote no)** |
|---|---|---|---|
| REPLACEMENT SURFACE. GRASSS TO SYNTHETIC | 265,625.45 | 292,188.00 | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| **Donated materials (Please provide cost breakdown)** | 1,200.00 | | Contribution of Machine & truck to dig out and remove off site bank material 5 hrs @ $200 per hour = $1200 |
| **Volunteer labour (Please provide cost breakdown)** | 3,000.00 | | Remove & storage of fence on West side of green – dig out concrete footings: Remove from site & repair ground. 8 volunteers for 6 hours = 48 hours @25 = $1200.00<br>Dismantle existing shades 6 volunteers for 8 hours = 48 hrs =$25 = $1200. Contractor to dig out concrete footings remove off site and repair ground 4 hrs @ $60=$240<br>Contractor to dig out & remove North and South Banks (80 metres) 6 hours @ $60 hour = $360 |
| **Sub Total** | 269,825.45 | 292,188.00 | |
| **Cost escalation** | | | ***Please explain amount used*** |

| | | | | |
|---|---|---|---|---|
| **a)** | **Total project expenditure** | 269,825.45 | 292188.00 | |

- At least **two written quotes or QS estimate** required for each component.
- If your project includes a floodlighting installation or upgrades, please ensure that the power supply is sufficient and no upgrade will be required. If upgrade is required and not budgeted for, the grant will immediately be withdrawn. A **lighting plan** must be supplied showing lux and configuration.
- Projects that do not meet **Australian Standards** are ineligible for funding.

## PROJECT FUNDING

| Source of funding | $Amount ex GST | $ Amount inc GST | | Funding confirmed Y / N | Comments to support claim (please attach relevant support) |
|---|---|---|---|---|---|
| **Local government** | 88541.82 | 97396.00 | **LGA cash and in-kind** | Y | 18/07/2023 Council Meeting |
| **Applicant cash** | 38541.81 | 42396.00 | **Organisation's cash** | Y | Financials attached |
| **Volunteer labour** | 3000.00 | | **Cannot exceed applicant cash and LGA contribution – max $50,000** | Y | Members will do |
| **Donated materials** | 1200.00 | | **Cannot exceed applicant cash and LGA contribution** | Y | |
| **Other State Government funding** | | | | | |
| **Federal Government funding** | | | | | |
| **Other funding – to be listed** | 50000.00 | 55000.00 | **Loans, sponsorship etc** | **Y** | Bendigo Bank (letter of approval inc) |
| **CSRFF request** | 88541.82 | 97396.00 | **Up to ½ project cost but capped at $200,000** | N | |
| **b) Total project funding** | 269,825.45 | 292,188.00 | ***This should equal project expenditure as listed on the previous page*** | | |

| **REQUIRED: If the funding approved is less than funding requested for this project, or the project is more expensive than indicated, where would the extra funds be sourced from? Is this funding confirmed? If the project scope would be reduced, which components would be revisited?** |
|---|
| If we are not successful we will find other sources of support. |

## GST

Grant payments are payable to the applicant/grantee only. This may have taxation implications for grantees. If grantees wish specific advice relating to their grant, this can be obtained from the Australian Taxation Office (ATO). Please note depending upon the value of the project and/or grant, the ATO may require an organisation be registered for GST. If the applicant is registered for GST, the grant is grossed up with the GST amount.

Gingin Districts Community Financial Services Limited

Bendigo Bank

19 July 2023

The Secretary
Mrs Pat Williams
Lancelin Bowling Club
PO Box 101
LANCELIN WA 6044

Dear Pat

**Community Grant Application – Project: Synthetic Green**

The Board of Gingin Districts Community Financial Services Ltd (GDCFS Ltd) is pleased to advise that your grant application has been approved subject to the following conditions:

- Funding approval from the other funding bodies of your application.
- An application through our new Community Hub portal to be completed a link will be sent when you have all other funding approved and approvals sent to myself.
- Continued support of the Bendigo Bank is encouraged with signage and acknowledgement of support to all members.
- Approved grant amount is $55,000 INC GST.
- A final project acquittal to be completed within 12 months of funding payment.
- Funding approval remains valid until 30th June 2024, term extension can be sort in need.

Upon acceptance of the above conditions please forward a copy of any funding approvals needed.

We wish you and your committee all the best in this venture, and we look forward to our future partnerships.

**"Remember bank with the Bendigo and YOUR Community will benefit".**

Yours sincerely

Linda Balcombe
**Board and Community Officer**

3 Constable Street, Gingin WA 6503 Phone 08 9575 1560 Fax 08 9575 1554 ACN 095 382 193
Franchisee of Bendigo and Adelaide Bank Limited ABN 11 068 049 178 AFSL 237879

C015LHb C015 (129053_v1) (1/03/2011)

Bendigo Bank
ABN 11 068 049 178. AFSL No. 237879.

# Transaction History

Customer Name: LANCELIN BOWLING CLUB

Date: 03/08/2023

Customer/Ledger Number: 0011390663/1601

From: 01/07/23

To: 03/08/23

| Date/Transaction | Refer. | Withdrawals | Deposits | Balance |
|---|---|---|---|---|
| 01/07/23 | | | | 6,660.72 |
| NET TRANSACTION FEES | MONTHLY TRANSACTION SUMMARY | | | |
| 01/07/23 | | 5.25 | | 6,660.72 |
| IN BRANCH WITHDRAWALS | IN BRANCH WDL (3 @ 1.75) | | | |
| 01/07/23 | | 5.25 | | 6,660.72 |
| NET TRANSACTION FEES | TOTAL TRANSACTION FEE | | | |
| 01/07/23 | | | 5.25 | 6,660.72 |
| TOTAL REBATES | ACCOUNT REBATE | | | |
| 01/07/23 | | | 5.25 | 6,660.72 |
| TOTAL REBATES | | | | |
| 01/07/23 | | | | 6,660.72 |
| TRANSACTION FEES CHARGED | TRANSACTION FEES CHARGED 06/23 | | | |
| 13/07/23 1681 | | 625.00 | | 6,035.72 |
| CHEQUE (CASHED) | 001681 | | | |
| 27/07/23 MR GLENN SKOGLUND | | | 100.00 | 6,135.72 |
| OSKO PAYMENT | Invoice 375 | | | |
| 28/07/23 1682 | | 625.00 | | 5,510.72 |
| CHEQUE (CASHED) | 1682 | | | |
| 31/07/23 Lancelin Trade & Rur | | 39.10 | | 5,471.62 |
| OSKO PAYMENT | Greens Maintenance | | | |
| 01/08/23 | | | | 5,471.62 |
| NET TRANSACTION FEES | MONTHLY TRANSACTION SUMMARY | | | |
| 01/08/23 | | 3.50 | | 5,471.62 |
| IN BRANCH WITHDRAWALS | IN BRANCH WDL (2 @ 1.75) | | | |
| 01/08/23 | | 3.50 | | 5,471.62 |
| NET TRANSACTION FEES | TOTAL TRANSACTION FEE | | | |
| 01/08/23 | | | 3.50 | 5,471.62 |
| TOTAL REBATES | ACCOUNT REBATE | | | |
| 01/08/23 | | | 3.50 | 5,471.62 |
| TOTAL REBATES | | | | |
| 01/08/23 | | | | 5,471.62 |
| TRANSACTION FEES CHARGED | TRANSACTION FEES CHARGED 07/23 | | | |
| 02/08/23 MALCOLM KEITH LOBB & | | | 100.00 | 5,571.62 |
| OSKO PAYMENT | inv373 Lobbster | | | |
| 02/08/23 | | | 112.00 | 5,683.62 |
| DEPOSIT - CASH | | | | |

Bendigo Bank

ABN 11 068 049 178. AFSL No. 237879.

# Transaction History

Customer Name: LANCELIN BOWLING CLUB

Date: 03/08/2023

Customer/Ledger Number: 0011390663/V503

From: 01/07/23

To: 03/08/23

| Date/Transaction | | Refer. | Withdrawals | Deposits | Balance |
|---|---|---|---|---|---|
| 01/07/23 | | | | 17.96 | 15,659.41 |
| INTEREST | | | | | |
| 24/07/23 | 10352629 | | | 28.80 | 15,688.21 |
| DIRECT CREDIT | | WA RETURN RECYCL | 0238490052 | | |
| 24/07/23 | 10352628 | | | 38.50 | 15,726.71 |
| DIRECT CREDIT | | WA RETURN RECYCL | 0238490053 | | |
| 31/07/23 | 10385078 | | | 49.60 | 15,776.31 |
| DIRECT CREDIT | | WA RETURN RECYCL | 0240189403 | | |
| 01/08/23 | | | | 19.31 | 15,795.62 |
| INTEREST | | | | | |
| 02/08/23 | B E & R C WATSON | | | 5,000.00 | 20,795.62 |
| OSKO PAYMENT | | New green (Watson) | | | |
| 02/08/23 | 10398989 | | | 43.70 | 20,839.32 |
| DIRECT CREDIT | | WA RETURN RECYCL | 0241240088 | | |

Bendigo Bank suggests you always carefully check all entries on your statements. Apparent errors or possible unauthorised transactions are to be promptly reported to the Bank.

If you have any enquiries concerning your account or wish to report an error in your statement please contact your local Bendigo Bank branch.

Operating Branch:
Community Bank Lancelin
Lot 442 Lancelin Plaza
Lancelin WA 6044
Phone: 0896552973
Fax: 0896552971

Bendigo Bank

ABN 11 068 049 178. AFSL No. 237879.

# Transaction History

Customer Name: LANCELIN BOWLING CLUB

Date: 03/08/2023

Customer/Ledger Number: 0011390663/2503

From: 01/07/23

To: 03/08/23

| Date/Transaction | Refer. | Withdrawals | Deposits | Balance |
|---|---|---|---|---|
| 04/07/23 INTEREST | | | 143.84 | 7,685.48 |

Bendigo Bank suggests you always carefully check all entries on your statements. Apparent errors or possible unauthorised transactions are to be promptly reported to the Bank.

If you have any enquiries concerning your account or wish to report an error in your statement please contact your local Bendigo Bank branch.

Operating Branch:
Community Bank Lancelin
Lot 442 Lancelin Plaza
Lancelin WA 6044
Phone: 0896552973
Fax: 0896552971

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Consumer Protection

**WESTERN AUSTRALIA**
*Associations Incorporation Act 2015*
(Section 10)

IARN: A1041945Z

# Certificate of Incorporation

This is to certify that

**LANCELIN BOWLING CLUB INC.**

is an association incorporated under the
*Associations Incorporation Act 2015*

The date of incorporation is the
twenty fifth day of November 2021

Gary Newcombe
Commissioner for Consumer Protection

CERTIFICATE

EverGreen
SYNTHETIC GRASS

Established 1996

www.evergreensyntheticgrass.com.au

Email: evergreenwa@bigpond.com

23 Langar Way,Landsdale 6065 WA PHONE (08) 93032130 FAX (08) 93032129

To:Lancelin Bowling Club 02/08/2023

Lancelin Road Lancelin WA 6044

## "A" GREEN-EXTEND - GOLD

We have pleasure in submitting our quotation for the supply and installation of a **GOLD** synthetic surface 37.4m x 45m (Plinth to Plinth) conforming to Bowls W.A for Pennant Play.

| | |
|---|---|
| Dig out 100mm existing bowling green grass & remove East & West ditch walls. Dig out apron area to extend. Stockpile on site | $8000 |
| Laser grade subbase level, water bind and compact. Vertical compact existing ditch wall areas | $2889 |
| Supply and install new limestone ditch walls with wood and rubber dyna bolted. | $6726 |
| Supply and install galvanised steel plinths to gutters, laser level and cement in | $11725 |
| Supply and install 100mm blue metal (special blended mix) cement stabilized base. A final levelling layer will be hand screeded to ensure accurate matching with the plinths and to obtain a final flatness tolerance of 1mm under a 3m straight edge. | $80896 |
| Supply &install a **Gold 12mm** synthetic bowls surfacing system using diagonal (45 degrees) installation methodology. | $153415 |
| Supply and install Apron grass 80cm wide includes ditch wall face. | $8270 |
| Supply and install long pile gutter grass. | $3272 |
| Accommodation, living away and food allowance. | $11325 |
| Mobilisation and demobilisation of machinery and personnel | $1850 |
| Cartage of limestone blocks, surface, and infill sand to site | $3820 |
| | **Total inc G.S.T $292,188.00** |

Kind regards

Mark Frazer 0417770010

**junglejane576@gmail.com**

| | |
|---|---|
| **From:** | Tony Crockett <tony@greenplanetgrass.com.au> |
| **Sent:** | Monday, 27 February 2023 14:07 |
| **To:** | junglejane576@gmail.com |
| **Subject:** | Lancelin Bowling Club |
| **Attachments:** | 6188 - DryMax Pro - Aug 2018.pdf; 6217 - Village Excel - Nov 2014.pdf; Pro Shot Specification.pdf; Bowling Green Project List.xlsx; APT SAMPLE Supergrasse Bowls Warranty - 7 Years.pdf |

HI Graeme,
Thanks for the invitation to quote on your replacement green, converting a natural grass green to sand filled synthetic.
We offer 3 grass options, specifications are attached as is the sample Warranty from the manufacturer.
I have also attached a list of recent installations we have done.
The Scope of Works is:

- Dig out the existing surface and dispose of adjacent to the green.
- Provision of sub base drainage, although in all likelihood this will not be needed.
- New block walls to allow for a green size of 45m x 37.4m
- New concrete plinths
- Install a new free draining base approximately 130-150mm thick using free draining material and bonded with a Polymer mix to resist cracking.
- Supply and install your choice of synthetic surface, laid on the diagonal and infilled with a fine silica sand to the Manufacturer's specifications.
- Tidy up and handover to the Club
- Provision of Warranty and Maintenance documents.

Exclusions:

- Limestone dig out in the sub base.
- Reticulation. I suggest you contact Western Irrigation on 0411 876 690 for a price.
- Asbestos removal

Price: $281,000 plus GST
Please let me know if you need any additional information.
Can you please confirm receipt of this email.
Regards

**Tony Crockett**
**General Manager**

Green Planet
GRASS

MOB +61 (0) 411 109 036 | AUS +61 (8) 9209 2669 |

Unit 2-42 Buckingham Drive, Wangara WA 6065
PO BOX 1772 | Malaga | WA 6944
www.greenplanetgrass.com.au

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete this email and any attachments. Thank you.

APT Asia Pacific Pty Ltd
will guarantee the surface of

XXXX

| | |
|---|---|
| Supplied to: | [Insert Agent Name] |
| Installed at: | [Insert Name/ Address] |
| No. of Courts and/or m2: | [Total Courts and/or m2 of project] |

For a pro-rata period of seven (7) years commencing as from [insert date of sale], being the date of sale, to be free from defects in materials.

- 100% of the full replacement cost before three (3) years.
- 50% of the full replacement cost after three (3) years but before five (5) years.
- 25% of the full replacement cost after five (5) years and before seven (7) years.

APT Asia Pacific Pty Ltd Warranty is restricted to materials supplied by APT Asia Pacific Pty Ltd only. This warranty expressively excludes all other obligations or liability in connection with any matter or thing, the condition or quality of the APT Asia Pacific playing surface and further, including without limitation, damages for personal injury or damages related to lost revenue, increased costs, down time costs and all other indirect or consequential damages.

APT Asia Pacific Pty Ltd specifically guarantees the surface against premature UV degradation and loss of colour not caused by failure of sub-base, improper design, vandalism and neglect from the date of installation as per the terms and Conditions of the yarn producer's warranty but not more than specifically retaining light fastness at 7 or greater (out of 8) on the blue wool scale.

The purchaser herewith waives any and all claims unless same are made in writing to APT Asia Pacific Pty Ltd, PO Box 4260, Dandenong South, Victoria, 3175 Australia and received within thirty (30) days after purchaser becomes aware of the damage giving rise to the claim.

This warranty will remain valid only if the following conditions are observed:

1. Sub-base must be of suitable standard and is not causing or contributing to material wear or abrasion.
2. The surface is cleaned and maintained in strict accordance with APT Asia Pacific Pty Ltd cleaning maintenance procedure.
3. The surface is used only and solely for the purpose for which it is designed and installed.
4. The surface is not willfully or maliciously damaged.
5. That the surface be subjected to normal wear and tear.
6. That only appropriate footwear and sports equipment is used.

To the extent permitted by law, APT Asia Pacific excludes all liability for any costs, claims or damages relating to personal injury, lost revenue, increased cost, down time costs or any other indirect or consequential damages.

If at any time during the Warranty period the client feels he/she has a valid warranty claim, and notifies APT Asia Pacific Pty Ltd in writing, APT Asia Pacific Pty Ltd will delegate a representative, within 15 days of the notification from the client, for a joint inspection. If the claim is agreed as valid, then APT Asia Pacific Pty Ltd will carry out the repairs within a period of 30 days.

Our technical and sales staff will be available at all times to advise on the care and maintenance of the surface should any need arise.

SUPERGRASS

Village Excel

[illegible]

## Finished Product Details

| | |
|---|---|
| Product Code | 6217 |
| Application | Bowls |
| Pile Height (mm) | 10 mm |
| Colours Available | Green |
| Total Product Weight g/m² | 2,578 g/m² |

## Supply

| | |
|---|---|
| Available Width | 3.71m |
| Standard Roll Length | As required |
| Approx. Shipping Weight | 10.0 kg/lm |
| Line Systems | N/A |

## Infill Materials

| | |
|---|---|
| Stabilising Infill | Washed and Dried 0.3mm to 1.0mm sand (7.0kg/m²) |
| Performance Infill | N/A |

## Shockpad

| | |
|---|---|
| Composition | N/A |
| Thickness (mm) | N/A |

## Product Warranty

| | |
|---|---|
| Warranty | Seven year limited warranty as per manufacturer's standard warranty terms |

## Configuration

| | |
|---|---|
| Machine Gauge | 4.76mm |
| Stitch Rate | 36 per 100mm |
| Yarn Weight | 1,738 g/m² |
| No. of Tufts (m²) | 75,591 |
| Perforated | Yes |

## Yarn Properties

| | |
|---|---|
| Yarn Construction | PE springlock |
| Linear Density | 890 Tex |
| Environment | APTA manufactures with heavy metal free yarns which may be usec anywhere without restr'ction |
| UV Stability | APTA yarns are protected against UV degradation and to the highest level as specified in the yarn manufacturer's warranty terms and conditions |

## Primary Backing

| | |
|---|---|
| Construction | Polypropylene/ Fleece |
| Primary Layers | Dual |

## Secondary Coating

| | |
|---|---|
| Compound Base | Hybrid Emulsion |
| Tuft Anchorage | 40 Newtons (minimum) |
| Antioxidising Agent | Present |

MANUFACTURERS WARRANTY
Warranty No.

APT ASIA PACIFIC PTY LTD

APT ASIA PACIFIC PTY LTD
will guarantee the surface of

Evergreen Ultra Plus

Evergreen Ultra Plus GOLD

Evergreen Dry Max Pro

**Supplied to:** Evergreen Synthetic Grass
23 Langar Way
Landsdale WA 6065

**Installed at:** **Lancelin Bowling Club**

**No. m2:** **1700 m2**

For a period of seven (7) years commencing as from DATE OF INSTALLATION, being the date of sale, to be free from defects in materials.

APT Asia Pacific Pty Ltd's Warranty is restricted to materials supplied by APT Asia Pacific Pty Ltd only. This warranty expressively excludes all other obligations or liability in connection with any matter or thing, the condition or quality of the APT Asia Pacific playing surface and further including without limitation, damages for personal injury or damages related to lost revenue, increased costs, down time costs and all other indirect or consequential damages.

APT Asia Pacific Pty Ltd specifically guarantees the surface against premature UV degradation and loss of colour not caused by failure of sub-base, improper design, vandalism and neglect for a period of five (5) years from the date of installation as per the terms and conditions of the yarn producer's warranty but not more than specifically retaining light fastness at 7 or greater (out of 8) on the blue wool scale.

The purchaser herewith waives any and all claims unless same are made in writing to APT Asia Pacific Pty Ltd, PO Box 4260, Dandenong South, Victoria, 3175 Australia and received within thirty (30) days after purchaser becomes aware of the damage giving rise to the claim.

This warranty will remain valid only if the following conditions are observed:

1.0 Sub-base must be of suitable standard and is not causing or contributing to material wear or abrasion.

2.0 Sand infill products must be of the correct grade and kept at the correct level at all times.

3.0 The surface is used only and solely for the purpose for which it is designed and installed.

4.0 The surface is not willfully or maliciously damaged.

5.0 That the surface be subjected to normal wear and tear.

6.0 That only appropriate footwear and sports equipment is used.

EXAMPLE

Member of Advanced Polymer Technology Group
Factory 3 Dunlopillo Drive | Dandenong South, Victoria 3175 Australia
PO Box 4260, Dandenong South, Victoria 3175 Australia

Tel: +61 3 8792 8000
Fax: +61 3 8792 8001
australasia@advpolytech.com
www.advpolytech.com

MANUFACTURERS WARRANTY
Warranty No: 2015118

APT ASIA PACIFIC PTY LTD

To the extent permitted by law, APT Asia Pacific excludes all liability for any costs, claims or damages relating to personal injury, lost revenue, increased cost, down time costs or any other indirect or consequential damages.

- 100% of the full replacement cost before three (3) years.
- 50% of the full replacement cost after four (4) years but before five (5) years.
- 25% of the full replacement cost after five (5) years and before seven (7) years.

If at any time during the Warranty period the client feels he/she has a valid warranty claim, and notifies APT Asia Pacific Pty Ltd in writing, APT Asia Pacific Pty Ltd will delegate a representative, within 15 days of the notification from the client, for a joint inspection. If the claim is agreed as valid, then APT Asia Pacific Pty Ltd will carry out the repairs within a period of 30 days.

Our technical and sales staff will be available at all times to advise on the care and maintenance of the surface should any need arise.

EXAMPLE

for and on behalf of:
**APT Asia Pacific Pty Limited**

Accredited Agent of:
**APT Asia Pacific Pty Limited**

Tel: +61 3 8792 8000

**pjwilliams576@gmail.com**

**From:** normskoglund@gmail.com
**Sent:** Friday, 24 March 2023 2:27 PM
**To:** 'Williams PJ'
**Subject:** FW: OCP152753 - RE: OCP152238 - RE: IAP235557 - Concept Enquiry Lancelin Synthetic Green

FYI

**From:** Cher Groves <Cher.Groves@gingin.wa.gov.au>
**Sent:** Friday, March 24, 2023 2:02 PM
**To:** Lancelin Community Sporting Club Inc <lancelinsports@yahoo.com>
**Cc:** normskoglund@gmail.com
**Subject:** OCP152753 - RE: OCP152238 - RE: IAP235557 - Concept Enquiry Lancelin Synthetic Green

Good afternoon Norm,

As per my verbal confirmation please note the following:

Our Executive Management Team reviewed your Concept Enquiry and has given in-principle support only for the synthetic rink upgrade at the Lancelin Sporting Complex.

Please note that any application for Shire funding to be subject to Community Grant funding process – ultimately determined in 2023/24 Budget.

Thank you.

Kind Regards,

**Cher Groves**
**Recovery and Leasing Officer**

**D:** (08) 9575 5138
**E:** Cher.Groves@gingin.wa.gov.au
**A:** PO Box 510, Gingin WA 6503
**W:** gingin.wa.gov.au

**Shire of Gingin Offices**
Gingin Administration Centre & Council Chambers
7 Brockman Street, Gingin WA 6503
T: (08) 9575 5100

Lancelin Office
255 Vins Way, Lancelin WA 6044
T: (08) 9575 5155

5:51 PM
28/03/23
Accrual Basis

# LANCELIN BOWLING CLUB
## Profit & Loss
### July 1, 2022 through March 28, 2023

| | Jul 1, '22 - Mar 28, 23 |
|---|---|
| Income | |
| Barefoot Bowls | |
| Entry Fees | 705.00 |
| Food Sales | 761.50 |
| Total Barefoot Bowls | 1,466.50 |
| Club Jackets | 15.00 |
| Community Bowls 2022-2023 | |
| Entry Fee | 240.00 |
| Entry Fees | 480.00 |
| Food Sales | 840.75 |
| Total Community Bowls 2022-2023 | 1,560.75 |
| Containers for Change | 1,378.90 |
| Contract Catering | |
| Buskers Festival | |
| Produce Sales | 81.70 |
| Sales | 733.90 |
| Total Buskers Festival | 815.60 |
| Coolbinia Football Club | 536.66 |
| Shire of Gingin | 1,120.00 |
| Total Contract Catering | 2,472.26 |
| Donations | 560.00 |
| Event Catering | |
| Produce Sales | 45.00 |
| Total Event Catering | 45.00 |
| Event Entry Fee | |
| Ladies 3's Championship | 60.00 |
| Ladies 4's Championships | 80.00 |
| Ladies Pairs Championship | 80.00 |
| Mens Championship Singles | 80.00 |
| Total Event Entry Fee | 300.00 |
| GPS Tower Fee | 3,000.00 |
| Green Fees | |
| Ladies Pennant | 350.00 |
| Members | 1,815.00 |
| Men's Pennants | 360.00 |
| Visitors | 1,160.00 |
| Total Green Fees | 3,685.00 |
| Interest received | 80.49 |
| Membership 2019-2020 | 40.00 |
| Membership 2020-2021 | 50.00 |
| Membership 2022-2023 | |
| Bowls WA Affiliation | -1,605.00 |
| Complex Fees | 613.70 |
| Levy | 350.30 |
| Membership | 1,910.00 |
| Membership 2022-2023 - Other | 1,761.00 |
| Total Membership 2022-2023 | 3,030.00 |
| Morning Tea Proceeds | 88.00 |
| Raffle Proceeds | |
| 100 Club | 1,000.00 |
| Men's Pennants | 600.00 |
| Total Raffle Proceeds | 1,600.00 |
| Social Membership | 55.00 |
| Sponsorship | |
| Coastal Courier | 500.00 |
| Total Sponsorship | 500.00 |
| Total Income | 19,926.90 |
| Gross Profit | 19,926.90 |

5:51 PM
28/03/23
Accrual Basis

# LANCELIN BOWLING CLUB
## Profit & Loss
### July 1, 2022 through March 28, 2023

| | Jul 1, '22 - Mar 28, 23 |
|---|---|
| Expense | |
| Barefoot Bowls March 2023 | |
| Catering | 105.16 |
| Total Barefoot Bowls March 2023 | 105.16 |
| Catering | |
| Workshops | 209.03 |
| Total Catering | 209.03 |
| Community Bowls March 2023 | |
| Catering | 137.40 |
| Total Community Bowls March 2023 | 137.40 |
| Container Bin Cage | 170.54 |
| Corporate Bowls 2023 | |
| Catering | 42.42 |
| Total Corporate Bowls 2023 | 42.42 |
| Event Expenses | |
| 2 Day Classic Ladies 2022 | 22.20 |
| Total Event Expenses | 22.20 |
| Float | 0.00 |
| Greenkeeper | 11,875.00 |
| Greens Maintenance | 718.34 |
| Inter League Round Robin | -3.80 |
| MDBL Affiliation Fees | 240.00 |
| Post Box Rental | 52.00 |
| Total Expense | 13,568.29 |
| Net Income | 6,358.61 |

3:49 PM
26/03/23
Cash Basis

# LANCELIN BOWLING CLUB
## Profit & Loss
### July 2021 through June 2022

| | Jul '21 - Jun 22 |
|---|---|
| Income | |
| Containers for Change | 1,820.30 |
| Contract Catering | |
| Buskers Festival | 961.40 |
| League Event | 144.00 |
| Shire of Gingin | 300.00 |
| Total Contract Catering | 1,405.40 |
| Corporate Bowls | |
| 2021-2022 Catering | 1,250.50 |
| Nov 2021 Entry Fee | 975.00 |
| Total Corporate Bowls | 2,225.50 |
| Donations | 1,800.00 |
| Event Entry Fee | |
| Ladies 2 Day Classic | 3,080.00 |
| Ladies 3's Championship | 120.00 |
| Ladies 4's Championships | 120.00 |
| Men's League Triples | 0.00 |
| Men's Pairs Championship | 80.00 |
| Men's Triples Championship | 120.00 |
| Mens Championship Singles | 60.00 |
| Total Event Entry Fee | 3,580.00 |
| GPS Tower Fee | 1,300.00 |
| Grants | |
| 2021 · Volunteer | 4,710.00 |
| Total Grants | 4,710.00 |
| Green Fees | 3,776.00 |
| Interest received | 11.63 |
| LCSC Membership | 0.00 |
| Levy 2021-2022 | 393.60 |
| Membership 2021-2022 | |
| Bowls WA Affiliation | 62.70 |
| Membership 2021-2022 - Other | 1,760.00 |
| Total Membership 2021-2022 | 1,822.70 |
| Morning Tea Proceeds | 37.00 |
| Pledge Payment | 5,000.00 |
| Raffle Proceeds | |
| 100 Club | 1,000.00 |
| Ladies 2 Day Classic | 835.00 |
| Men's Pennants | 710.00 |
| Total Raffle Proceeds | 2,545.00 |
| Social Membership | 385.00 |
| Sponsorship | |
| AG Lime Australia | 562.35 |
| Coastal Courier | 500.00 |
| Total Sponsorship | 1,062.35 |
| Total Income | 31,874.48 |
| Gross Profit | 31,874.48 |
| Expense | |
| Bank Fees | 7.55 |
| Contract Catering Expenses | 448.53 |
| Corporate Bowls 2020-2021 | |
| Catering | 312.28 |
| Total Corporate Bowls 2020-2021 | 312.28 |
| Corporate Bowls 2021-2022 | |
| Engraving | 19.95 |
| Total Corporate Bowls 2021-2022 | 19.95 |
| Event Expenses | |
| 2 Day Classic Ladies 2022 | 1,455.66 |
| Total Event Expenses | 1,455.66 |

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26/03/23
Cash Basis

## LANCELIN BOWLING CLUB
## Profit & Loss
### July 2021 through June 2022

| | Jul '21 - Jun 22 |
|---|---|
| Finances Verification | 53.95 |
| Float | 0.00 |
| Greenkeeper | 16,875.00 |
| Greens Maintenance | 529.09 |
| MDBL Affiliation Fees | 280.00 |
| Post Box Rental | 49.00 |
| Prize Money | |
| Ladies 2 Day Classic | 1,000.00 |
| Total Prize Money | 1,000.00 |
| Total Expense | 21,031.01 |
| Net Income | 10,843.47 |

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Cash Basis

# LANCELIN BOWLING CLUB
## Profit & Loss
### July 2020 through June 2021

| | Jul '20 - Jun 21 |
|---|---|
| Income | |
| Club Shirt | |
| Ladies | 67.50 |
| Total Club Shirt | 67.50 |
| Contract Catering | 280.00 |
| Corporate Bowls | |
| Catering 2020 | 1,105.47 |
| Catering Feb 2021 | 1,107.50 |
| Entry fee 2020 | 1,040.00 |
| Feb 2021 Entry Fee | 790.00 |
| Total Corporate Bowls | 4,042.97 |
| Donations | 40.00 |
| Event Entry Fee | |
| Ladies 2 Day Classic | 3,607.50 |
| Ladies 4's Championships | 80.00 |
| Ladies Pairs Championship | 80.00 |
| Mens Championship Singles | 80.00 |
| Total Event Entry Fee | 3,847.50 |
| GPS Tower Fee | 1,300.00 |
| Green Fees | 2,200.00 |
| Interest received | 56.83 |
| LCSC Membership | 0.00 |
| Membership 2020-2021 | 1,812.50 |
| Membership 2021-2022 | |
| Bowls WA Affiliation | 1,380.00 |
| Total Membership 2021-2022 | 1,380.00 |
| Morning Tea Proceeds | 130.00 |
| Raffle Proceeds | |
| 100 Club | 3,000.00 |
| Ladies 2 Day Classic | 786.00 |
| Men's Pennants | 100.00 |
| Total Raffle Proceeds | 3,886.00 |
| Sponsorship | |
| Coastal Courier | 300.00 |
| Endeavour Tavern | 1,000.00 |
| Shane Love MLA | 287.00 |
| Total Sponsorship | 1,587.00 |
| Total Income | 20,630.30 |
| Gross Profit | 20,630.30 |
| Expense | |
| Affiliation Bowls WA | 1,338.00 |
| Bank Fees | 5.95 |
| Corporate Bowls 2020 | |
| Prizes | 60.00 |
| Total Corporate Bowls 2020 | 60.00 |
| Corporate Bowls 2020-2021 | |
| Catering | 226.68 |
| Engraving | 34.95 |
| Prizes | 80.00 |
| Total Corporate Bowls 2020-2021 | 341.63 |
| Event Expenses | |
| 2 Day Classic Ladies 2021 | 1,279.54 |
| Total Event Expenses | 1,279.54 |
| Float | 0.00 |
| Greenkeeper | 16,250.00 |
| Greens Maintenance | 1,455.32 |
| MDBL Affiliation Fees | 280.00 |
| Post Box Rental | 41.00 |

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Cash Basis

## LANCELIN BOWLING CLUB
## Profit & Loss
### July 2020 through June 2021

| | Jul '20 - Jun 21 |
|---|---|
| Prize Money | |
| Ladies 2 Day Classic | 1,000.00 |
| Total Prize Money | 1,000.00 |
| Total Expense | 22,051.44 |
| Net Income | -1,421.14 |

LANGELIN BOWLING CLUB

PLEDGES TO DATE
$27,100—

PLEDGE PROMISED – LANGELIN IGA $2000 (PICK UP ON LONG WEEKEND)

FUEL RAFFLE PROCEEDS
$2500 ($2500 on PLEDGE)

TOTAL $31,600

Moore District Bowling League

PO Box 214

Bindoon WA 6502

27th March 2023

LETTER OF SUPPORT FOR LANCELIN BOWLING CLUB

To Whom It May Concern

I'm writing to you as the Moore District Bowling League (MDBL) president, petitioning you and your organisation to support Lancelin Bowling Club and their goal to upgrade their club facilities with the proposed new playing green area and synthetic surface. As a league which encompasses clubs from within the Shire of Gingin (Guilderton, Ledge Point, Gingin, Lancelin) and Shire of Chittering (Bindoon), we are fully supportive of this application to be allowed to apply for sporting grant monies and local community-funded support to assist with this proposed plan. The Lancelin Bowling Club has been an integral part of our league for many decades.

The proposed upgrade of their bowling facilities will reduce water requirement, fertiliser and mowing needs thus reducing the load on club members and volunteers in upkeep of their two grass greens. The synthetic greens with good drainage will increase the user-time that games can be played throughout the year. Admittedly the synthetic material available do have a certain user-life but is much longer than carpet greens. It would also possibly increase night-time participation as well.

Our league's role is to encourage and support participation of men and ladies from both shires in association with Bowls WA to participate in Lawn Bowls. Pennant games, league championships and interleague Round Robin games total around 35 games for men and ladies of each of our five clubs in our season, generally, October to April. Through these games and Bowls WA any gifted players can be identified and will have access to state and possibly national competitions.

Both state and federal governments continue to encourage the Australian population to continue participating in sports, staying active to prevent many age-related issues. The continued support of sporting amenities by the Gingin Shire has been seen in recent times with the renovations of the Gingin Bowling Club.

I petition you to consider the above points when viewing Lancelin Bowling Clubs application for a synthetic green as sporting complexes in the past appear to centre on younger members of the community such as football, soccer, rugby, cricket, netball, basketball and hockey facilities. Our aging section of the community seems to fall away often for sports activities. An expanding population of "sea-changers" moving to coastal towns and those seeking a "tree-change" as the Tonkin Highway expands further into the Gingin and Chittering Shires will see a long-term required need of up-to-date sporting facilities, particularly in Lancelin.

Yours sincerely

David Brisbane (MDBL President)

# Bindoon Bowling Club

Bindoon & Districts Bowling Cub Inc

PO Box 214

Bindoon WA 6502

Pres: Michael Whitely

Treas: Debra Whitely

Ph. 0428017777

Email: madwhitely@bigpond.com

28th March 2023

To Whom It May Concern

The Bindoon & Districts Bowling Club are fully supportive of the Lancelin Bowling Club and their endeavours to install a synthetic grass green. Our stance is encompassed with the views of the Moore District Bowling League that Lancelin is an integral part of our league and should be entitled to have playing greens which suit their needs to be a successful club and to ensure their presence in our league to make it sustainable in the long-run.

The drain on club volunteers and resources to maintain grass greens is the main reason why a great percentage of clubs in metropolitan and country areas are installing synthetic greens now. In fact, in rural WA grass greens are few and far between. Financial assistance and support from outside a sporting club is the only way small country clubs can have a vision come to fruition and the Bindoon Bowling Club members look forward to playing on Lancelin's new synthetic greens in the not-too-distant future with your valuable support.

Yours respectfully

Michael Whitely (Pres.)

Debra Whitely (Treas.)

# Guilderton Bowling Club

P O Box 1102 Guilderton 6041

25th March 2023.

To Secretary

Lancelin Bowling Club.

Dear Pat,

From Guilderton Bowling Club.

The Guilderton Bowling Club, give their full support to the Lancelin Bowling Club in their effort to obtain grants / loan for their new bowling green, (or greens).

The improvement to the facilities will be such a benefit to the Club, the Community and the Moore Districts League.

Yours faithfully

Dot Branch (Secretary)

LEDGE POINT BOWLING CLUB

JONES ST, LEDGE POINT, W.A. 6043

President: Donald Woodfield

0448905702

Acting Secretary: Helen Schell

0417 170 698

retra2@bigpond.com

2oth March 2023

Gingin Shire,

Brockman St

Gingin.

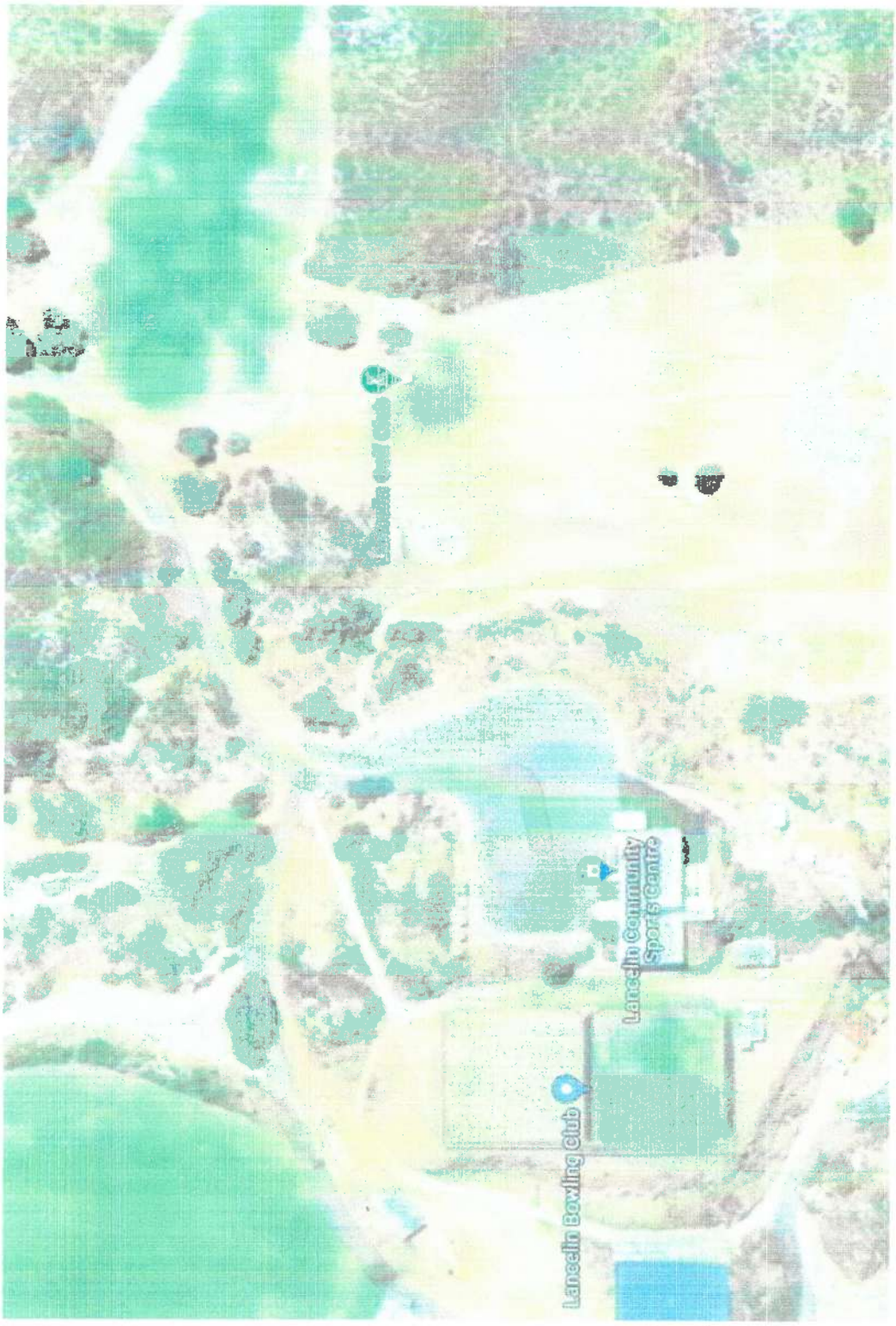
Dear Sir/Madam,

We the Ledge Point Bowling Club are happy with the decisions made so far by the Upper Coastal Committee.

We will support the decisions made by the Gingin Shire with regards to the request from the Lancelin Bowling Club re a new synthetic Bowling Green.

Yours sincerely Committee Ledge Point Bowling Club.


Lancelin Rd
Lancelin Golf Club
Old Lodge Point Rd
Lancelin Rd
Kingfisher Dr
Old Lodge Point Rd
Old Lodge Point Rd


Lancelin Community Sports Centre
Lancelin Bowling Club

## PROJECT ASSESSMENT SHEET

This page is for the use of the relevant Local Government Authority to be used for both community and LGA projects. Please **attach copies of council minutes** relevant to the project approval.

| |
|---|
| **Name of Local Government Authority**: Shire of Gingin |
| **Name of Applicant:** Lancelin Bowling Club |

Note: The applicant's name cannot be changed once the application is lodged at DLGSC.

### Section A

The CNLP principles have been considered and the following assessment is provided:
(Please include below your assessment of how the applicant has addressed the following criteria)

**All applications**

| | Satisfactory | Unsatisfactory | Not relevant |
|---|---|---|---|
| Project justification | ☒ | ☐ | ☐ |
| Planned approach | ☒ | ☐ | ☐ |
| Community input | ☒ | ☐ | ☐ |
| Management planning | ☒ | ☐ | ☐ |
| Access and opportunity | ☒ | ☐ | ☐ |
| Design | ☒ | ☐ | ☐ |
| Financial viability | ☒ | ☐ | ☐ |
| Co-ordination | ☒ | ☐ | ☐ |
| Potential to increase Physical activity | ☒ | ☐ | ☐ |
| Sustainability | ☒ | ☐ | ☐ |

### Section B

| | |
|---|---|
| Priority ranking of no of applications received | 1 of 1 applications received |
| Is this project consistent with the | ☒ Local Plan ☐ Regional Plan |
| Have all planning and building approvals been given for this project? | ☐ Yes ☐ No N/A |
| If no, what approvals are still outstanding? | |

**Project Rating (Please tick the most appropriate box to describe the project)**

| | | |
|---|---|---|
| A | Well planned and needed by municipality | ☐ |
| B | Well planned and needed by applicant | ☒ |
| C | Needed by municipality, more planning required | ☐ |
| D | Needed by applicant, more planning required | ☐ |
| E | Idea has merit, more planning work needed | ☐ |
| F | Not recommended | ☐ |

***Please complete the questions attached. This assessment is an important part of the CNLP process and your answers to these questions assist the committee make their recommendations, even if you are the applicant. Please provide a summary of any attachments in your assessment, rather than referring to attachments or external documents such as Council Minutes.***

1. **Please confirm your contribution to the project, whether it has been formally approved (including financial year for which it is approved) and any conditions on the funding. If no funding has been provided, why not?**

Provision of $90,000 to be included for Council consideration in 2023/24 Draft Budget, estimated for adoption by end of August 2023.

2. **A) *If a community group application:* Do you believe the project is financially viable, including the applicant's ability to provide upfront contributions, ongoing payments and contributions to an asset replacement fund. Does council commit to underwriting any shortfalls as the ultimate asset owner?**

   **B) *If a council application*: Is Council fully aware of the ongoing cost of operating and maintaining this facility and does your organisation have the capacity to service it into the future? How are the user groups contributing to the ongoing cost of operating the facility?**

Financial viability of the project is stronger now that Bendigo Funding has been successfully secured. Council is not willing to underwrite any shortfalls for the replacement green if DLGSC funding is unsuccessful or Lancelin Bowling Club pledges combined with the Clubs current funds is not enough to cover the Clubs contribution to the project.

3. **Please provide any additional comments regarding this applications merit against the assessment criteria to support your project rating and ranking.**

The updated upper Coastal Sub Region Sporting Facilities Master Plan, endorsed by Council at its 21 February 2023 meeting, incorporated a review of Stage 1 priorities which included, among other additions, provision of synthetic 10 rink bowling greens upgrade in Lancelin.

**Signed**  **Position** Coordinator Community Development & Services **Date** 15/8/2023

Applications for CSRFF funding must be submitted to the Department of Local Government, Sport and Cultural Industries by **4pm on 31 August 2023.** Late applications cannot be accepted in any circumstances.

## DLGSC OFFICES

**PERTH OFFICE**
246 Vincent Street
Leederville WA 6007
GPO Box 8349
Perth Business Centre WA 6849
Tel: (08) 9492 9700
csrff@dlgsc.wa.gov.au

**GASCOYNE**
4 Francis Street
PO Box 140
Carnarvon WA 6701
Tel: (08) 9941 0900
Gascoyne@dlgsc.wa.gov.au

**GOLDFIELDS**
106 Hannan Street
PO Box 1036
Kalgoorlie WA 6430
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goldfields@dlgsc.wa.gov.au

**GREAT SOUTHERN**
22 Collie Street
Albany WA 6330
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greatsouthern@dlgsc.wa.gov.au

**MID-WEST**
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PO Box 135
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**KIMBERLEY – Kununurra**
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**PEEL**
Suite 94
16 Dolphin Drive
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**PILBARA**
Karratha Leisure plex
Dampier Hwy, Karratha
PO Box 941
Karratha WA 6714
Tel: (08) 9182 2100
pilbara@dlgsc.wa.gov.au

**SOUTH WEST**
80A Blair Street
PO Box 2662
Bunbury WA 6230
Tel: (08) 9792 6900
southwest@dlgsc.wa.gov.au

**WHEATBELT - Northam**
298 Fitzgerald Street
PO Box 55
Northam WA 6401
Tel: (08) 9690 2400
wheatbelt@dlgsc.wa.gov.au

**WHEATBELT – Narrogin**
50 Clayton Road
Narrogin WA 6312
Telephone 9690 2400
wheatbelt@dlgsc.wa.gov.au

## 12.6 LIST OF PAID ACCOUNTS JULY 2023

| | |
|---|---|
| File | FIN/25 |
| Author | Tania Ladner – Accounts Payable / Administration Support Officer |
| Reporting Officer | Les Crichton - Executive Manager Corporate and Community Services |
| Refer | Nil |
| Appendices | 1. List of Payments - July 2023 [**12.6.1** - 4 pages] |

### DISCLOSURES OF INTEREST

Nil

### PURPOSE

For Council to note the payments made in July 2023.

### BACKGROUND

Council has delegated authority to the Chief Executive Officer (CEO) to exercise the power to make payments from the Municipal Fund (Delegation 1.1.13 Payments from the Municipal or Trust Funds). The CEO is required to present a list to Council of those payments made since the last list was submitted.

### COMMENT

Accounts totalling $1,715,613.07 were paid during the month of July 2023.

A payment schedule is included as an appendix to this report. The schedule covers:

| | |
|---|---|
| • Municipal Fund electronic funds transfers (EFT) | $1,173,527.79 |
| • Municipal Fund cheques | $0.00 |
| • Municipal Fund direct debits | $542,085.28 |
| **Total Municipal Expenditure** | **$1,715,613.07** |
| **TOTAL EXPENDITURE** | **$1,715,613.07** |

All invoices have been verified, and all payments have been duly authorised in accordance with Council's procedures.

## STATUTORY/LOCAL LAW IMPLICATIONS

*Local Government Act 1995*
s.6.4 – Financial Report

*Local Government (Financial Management) Regulations 1996*
Reg. 13 – Payments from municipal fund or trust by CEO

Shire of Gingin Delegation Register – Delegation 1.1.13 Payments from the Municipal or Trust Funds

## POLICY IMPLICATIONS

Nil

## BUDGET IMPLICATIONS

Resource requirements are in accordance with existing budgetary allocations.

## STRATEGIC IMPLICATIONS

Shire of Gingin Strategic Community Plan 2022-2032

| | |
|---|---|
| **Aspiration** | 4. Excellence & Accountability - Deliver Quality Leadership and Business Expertise |
| **Strategic Objective** | 4.4 Strategic & Sustainable Financial Planning - Undertake long-term resource planning and allocation in accordance with the Integrated Planning and Reporting Framework |

## VOTING REQUIREMENTS - SIMPLE MAJORITY

**COUNCIL RESOLUTION/OFFICER RECOMMENDATION**

**MOVED: Councillor Johnson SECONDED: Councillor Balcombe**

**That Council note all payments made by the Chief Executive Officer under Delegation 1.1.13 for July 2023 totaling $1,715,613.07 as detailed in the schedule appendiced to this report, comprising:**

- **Municipal Fund electronic funds transfers (EFT) $1,173,527.79**
- **Municipal Fund cheques {resolution}.00**
- **Municipal Fund direct debits $542,085.28**

**CARRIED UNANIMOUSLY**
**7 / 0**

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

**Payments made under Delegated Authority *2.1 Payment of Creditors* for the period 1 July 2023 to 31 July 2023**

**Payment Category**
**L - Local, R - Reimbursement, F - Funded, S - Staff, PF - Partially Funded, C - Councillor**

| TYPE CHQ/EFT | DATE PAID | NAME | DETAILS | AMOUNT | |
|---|---|---|---|---|---|
| EFT-39223 | 06/07/2023 | BROWN AUTOMOTIVE GINGIN | GG070 - 1 X FLAG BASE. GG017 - SERVICE | 340.00 | L |
| EFT-39224 | 06/07/2023 | BRUCE MCKAY | RATES REFUND | 610.00 | R |
| EFT-39225 | 06/07/2023 | BULLSBROOK WINDSCREENS AND WINDOW TINTING | GG061 - DAMAGED WINDSCREEN | 420.00 | |
| EFT-39226 | 06/07/2023 | EAGLEYE TECHNICAL SERVICES | GUILDERTON CARAVAN PARK - TESTING & TAGGING. GINGIN RECREATION CENTRE - MOVE RETIC CONTROLLER. | 2,827.00 | L |
| EFT-39227 | 06/07/2023 | FRANK PECZKA | SHIRE COUNCILLOR QUARTERLY TRAVEL EXPENSES 01/01/2023 - 31/03/2023. SHIRE COUNCILLOR QUARTERLY TRAVEL EXPENSES 01/04/2023 - 30/06/2023. | 1,579.18 | C |
| EFT-39228 | 06/07/2023 | GERRARD HYDRAULICS | GG6016 - PNEUMATIC PUMP | 1,022.82 | |
| EFT-39229 | 06/07/2023 | GINGIN DISTRICT COMMUNITY RESOURCE CENTRE INC (CRC) | GINGIN CRC SYNERGY ACCOUNT -REIMBURSEMENT - 50% MEDICAL CENTRE USAGE 11 MARCH 2023 - 12 MAY 2023 | 686.33 | L |
| EFT-39230 | 06/07/2023 | GINGIN FABRICATION & STEEL | GINGIN ADMINISTRATION CENTRE - FABRICATE / INSTALL CUSTOM MADE HANDRAILS TO STEPS | 2,103.20 | L |
| EFT-39231 | 06/07/2023 | GINGIN FLORIST | CONDOLENCE FLOWERS | 100.00 | L |
| EFT-39232 | 06/07/2023 | GINGIN TECHNICAL SERVICES | GRANVILLE PARK DAM BARRIER - GINGIN WEIR PROJECT - REPLACE UPSTANDS WITH NEW 100UC GALVANISED UNIVERSAL COLUMNS, BRACING TO FRONT EDGE OF WALK DECK, NEW BOARDS BETWEEN | 9,680.00 | L |
| EFT-39233 | 06/07/2023 | GINGIN TREE SERVICES | TREE WORK REQUESTS REQUIRED BY WESTERN POWER THROUGHOUT SHIRE. TREE MULCHING. | 24,271.50 | L |
| EFT-39234 | 06/07/2023 | GUILDERTON & DISTRICTS VOLUNTEER BUSH FIRE BRIGADE | REIMBURSEMENT FOR ST JOHNS FIRST AID COURSE, DUST CAPS, BUG CONTROL EQUIPMENT & VEHICLE INTERIOR CLEANER | 1,549.73 | L |
| EFT-39235 | 06/07/2023 | INDIAN OCEAN PEST CONTROL | ANIMAL CARE CENTRE (POUND) LOCATED AT THE GINGIN TIP BE SPRAYED INSIDE AND OUTSIDE OF THE BUILDING FOR PESTS | 165.00 | L |
| EFT-39236 | 06/07/2023 | KRISTINA PERRIN | REIMBURSEMENT FOR SUPPLIES FOR WELLNESS WEEK 26/06/2023 - 30/06/2023 | 145.25 | S |
| EFT-39237 | 06/07/2023 | LEDGE'S KANGA SERVICE AND SKIP BIN HIRE | LANCELIN JETTY BIN REMOVALS APRIL 2023 - JUNE 2023 | 6,600.00 | L |
| EFT-39238 | 06/07/2023 | LIONS CLUB OF GINGIN-CHITTERING INC. | REIMBURSEMENT FOR POOL PARTY FUNDRAISER 22/04/2023 | 320.00 | L |
| EFT-39239 | 06/07/2023 | LOCAL GOVERNMENT PROFESSIONALS WA - LGPA | EMPLOYMENT ADVERTISEMENT - COORDINATOR FINANCIAL PLANNING & REPORTING ON LG PRO WEBSITE | 165.00 | |
| EFT-39240 | 06/07/2023 | LOUISE WOOLLARD | DOG REGISTRATION REFUND | 125.00 | R |
| EFT-39241 | 06/07/2023 | LUKE FERRE (LRF PAINTING) | OLD GRANVILLE BUILDING - CONTRACTOR CLEAN / REPAINT BACK WALL AT CU@PARK POST PATCHING. | 1,089.00 | |
| EFT-39242 | 06/07/2023 | MICHAEL LIDDELOW (GINGIN NURSERY) | PURCHASE PLANTS FOR TREASURE TROVE GARDEN BED. SUPPLY OF TREES FOR GINGIN MEDICAL CENTRE. | 270.00 | L |
| EFT-39243 | 06/07/2023 | MOORE AUSTRALIA (WA) PTY LTD | FINANCIAL MANAGEMENT REVIEW 2023 | 15,722.26 | |
| EFT-39244 | 06/07/2023 | NEBRU NOMINEES PTY LTD | RATES REFUND | 1,872.59 | R |
| EFT-39245 | 06/07/2023 | OCEAN FARM VOLUNTEER BUSH FIRE BRIGADE | REIMBURSEMENT FOR TELSTRA CHARGES 01/05/2023 - 31/05/2023 | 58.00 | L |
| EFT-39246 | 06/07/2023 | OSBORNE AUTOS PTY LTD T/A OSBORNE PARK ISUZU UTE | GG013 - PURCHASE ONE (1) NEW ISUZU UTE D-MAX 22MY SX SPACE C/C HI-RIDE 4 X 4 3.0L T/D ALLOY TRAY (MODEL TOR2008) | 71,424.30 | |
| EFT-39247 | 06/07/2023 | PERRY ARMSTRONG | DOG REGISTRATION REFUND | 150.00 | R |
| EFT-39248 | 06/07/2023 | SEAVIEW FABRICATION & MAINTENANCE | LANCELIN WANGAREE PARK - 50% DEPOSIT FOR SUPPLY & INSTALLATION OF RAILING TO LANCELIN SKATE PARK | 2,295.13 | L |
| EFT-39249 | 06/07/2023 | TANIA LADNER | REIMBURSEMENT FOR THE PURCHASE OF 1X TP-LINK TAPO SECURITY CAMERA $95.00 AND 2 X SANDISK SD MEMORY | 261.00 | S |
| EFT-39250 | 06/07/2023 | TERESA HELM | CATERING FOR COUNCIL TRAINING 05/05/2023. CATERING FOR CHRMAP & COUNCIL MEETING 16/05/2023. CATERING FOR COUNCIL TRAINING 13/06/2023. | 1,062.00 | L |
| EFT-39251 | 06/07/2023 | WANT PLUMBING SERVICES PTY LTD | GINGIN RECREATION CENTRE - REPLACE LADIES TOILET CISTERN DUE TO LARGE CRACK IN RESERVOIR, REPAIR MALE URINAL LEAK | 1,391.50 | L |
| EFT-39253 | 07/07/2023 | AUSTRALIAN TAXATION OFFICE (PAYG) | PAYROLL DEDUCTION | 42,822.00 | |
| EFT-39254 | 07/07/2023 | LGRCEU (WA DIVISION) | PAYROLL DEDUCTION | 44.00 | |
| EFT-39255 | 07/07/2023 | RSPCA WA (INC.) | PAYROLL DEDUCTION | 10.00 | |
| EFT-39256 | 12/07/2023 | AURORA DELTA PTY LTD | MEDICAL SUBSIDY PAYMENT FOR MAY 2023. MEDICAL SUBSIDY PAYMENT FOR JUNE 2023. | 14,666.68 | |
| EFT-39257 | 12/07/2023 | BULLSBROOK WINDSCREENS AND WINDOW TINTING | GG09 - WINDSCREEN REPLACEMENT. | 420.00 | |
| EFT-39258 | 12/07/2023 | CITY ELECTRIC SUPPLY | GINGIN MEDICAL CENTRE - PURCHASE SOLAR LIGHT FOR STEPS TO INCREASE VISIBILITY | 935.00 | |
| EFT-39259 | 12/07/2023 | DATA#3 | 10 X OFFICE365 F3 LICENSES FOR JUNE 2023. | 52.58 | |
| EFT-39260 | 12/07/2023 | DEPARTMENT OF MINES, INDUSTRY REGULATION AND SAFETY - BOND ADMINISTRATOR DMIR | BSL PAYMENTS FOR JUNE 2023. | 4,161.44 | |
| EFT-39261 | 12/07/2023 | EMMA EDWARDS | REIMBURSEMENT FOR MEALS WHILE AT DEPARTMENT OF TRANSPORT TRAINING 26/06/2023 - 30/06/2023. | 144.22 | S |
| EFT-39262 | 12/07/2023 | ERIK SORENSEN | SHIRE COUNCILLOR QUARTERLY TRAVEL EXPENSES 01/04/2023 - 30/06/2023 | 792.03 | C |
| EFT-39263 | 12/07/2023 | FULL FLOW PLUMBING AND GAS | GINGIN BOWLING CLUB - INSTALL NEW HOT WATER SYSTEM TO TOILETS / BATHROOMS, PLUMB SHORT SYSTEM INTO BAR FOR INSTANT HOT WATER AS PER LATEST REGULATIONS / SHIRE HEALTH OFFICER DIRECTION. GUILDERTON COUNTRY CLUB - REPLACE KITCHEN MIXER TAP | 4,662.48 | L |
| EFT-39264 | 12/07/2023 | GINGIN IGA EXPRESS | JUNE 2023 MONTHLY SUPPLIES | 564.05 | L |
| EFT-39265 | 12/07/2023 | GINGIN TRADING | JUNE 2023 HARDWARE & MAINTENANCE SUPPLIES | 3,350.95 | L |
| EFT-39266 | 12/07/2023 | BINDOON HILL GRAVEL SUPPLY | GUILDERTON COUNTRY CLUB - 6 X LOADS GRAVEL. GUILDERTON CARAVAN PARK - 6 X LOADS GRAVEL . | 4,199.55 | |
| EFT-39267 | 12/07/2023 | HOT WORKS YANCHEP | GG068 - FIT UNDERTRAY TOOLBOX, INCLUDES MOVING CAMERA AND MODIFICATION TO UNDERSIDE OF VEHICLE. | 1,430.00 | |
| EFT-39268 | 12/07/2023 | INDIAN OCEAN PEST CONTROL | MITIGATION WORKS - LEDGE POINT, WEED SPRAY. | 2,750.00 | L |
| EFT-39269 | 12/07/2023 | JB HI-FI | STANDARD SCREENS FOR NEW WORKSTATIONS AND A LARGER SCREEN | 1,739.00 | |
| EFT-39270 | 12/07/2023 | LANCELIN GULL ROADHOUSE | DIESEL CHARGES FOR THE PERIOD 01/06/2023 - 30/06/2023 | 1,335.77 | L |
| EFT-39271 | 12/07/2023 | LANCELIN TRADE AND RURAL SUPPLIES | JUNE 2023 HARDWARE & MAINTENANCE SUPPLIES | 1,241.03 | L |
| EFT-39272 | 12/07/2023 | LEDGE POINT VOLUNTEER BUSH FIRE BRIGADE | REIMBURSEMENT FOR STARLINK STARTUP & MONTHLY SUBSCRIPTION | 1,066.00 | L |
| EFT-39273 | 12/07/2023 | LOCAL GOVERNMENT PROFESSIONALS WA - LGPA | TRAINING - INDUCTION TO LOCAL GOVERNMENT 19/07/2023 | 495.00 | |
| EFT-39274 | 12/07/2023 | MOORE RIVER ELECTRICAL SERVICES | LANCELIN HAROLD PARK - DISCONNECT AND ISOLATE FAULTY BBQ, NO PARTS AVAILABLE. SEABIRD HALL - FLOODLIGHT DISCONNECTION & REPLACEMENT. LEDGE POINT OVAL - NEW POWER SUPPLY TO LEDGE POINT OVAL SHED. SEABIRD HALL - EMERGENCY & EXIT LIGHT TESTING. OCEAN FARM COMMUNITY HALL - EMERGENCY & EXIT LIGHT TESTING. SEAVIEW PARK COMMUNITY HALL - EMERGENCY & EXIT LIGHT TESTING. LANCELIN SPORTS COMPLEX - EMERGENCY & EXIT LIGHT TESTING. LANCELIN SHIRE OFFICE - EMERGENCY & EXIT LIGHT TESTING. LANCELIN HALL - EMERGENCY & EXIT LIGHT TESTING. WANGAREE COMMUNITY CENTRE - EMERGENCY & EXIT LIGHT TESTING. REDFIELD PARK COMMUNITY HALL - MOORE CLOTHES, REPLACE 2 X FLURO LIGHT FITTINGS WITH LEDS, TIDY UP REDUNDANT POWER CABLES. | 2,992.00 | L |
| EFT-39275 | 12/07/2023 | RED GULLY BUSH FIRE BRIGADE | REIMBURSEMENT FOR RECOVERY EQUIPMENT FOR FIRE FIGHTING APPLIANCES GG08 & GG069 (2 X SETS OF TREDPRO RECOVERY PADS) | 590.00 | L |
| EFT-39276 | 12/07/2023 | ROBERT KELLY | REIMBURSEMENT FOR TELEPHONE ALLOWANCE 13/05/2023 - 11/06/2023. | 47.00 | S |
| EFT-39277 | 12/07/2023 | SD HYDRAULIC HOSE AND FITTINGS PTY LTD | GG066 - HYDRAULIC HOSE | 244.48 | |
| EFT-39278 | 12/07/2023 | THOMAS KUSTERS | LANCELIN SPORTING COMPLEX - REPAIRS TO PUMP & PIPES | 1,490.00 | L |
| EFT-39279 | 12/07/2023 | TIFFANYS CATERING | CATERING - VOLUNTEER FIRE FIGHTING SKILLS TRAINING COURSE 08/07/2023 - 09/07/2023 AT GESC. | 560.00 | L |
| EFT-39280 | 14/07/2023 | ADAM SHIELDS REALTY | RUBBISH CHARGE REFUND | 61.30 | R |
| EFT-39281 | 14/07/2023 | ALTUS PLANNING PTY LTD | PLANNING SERVICES | 6,492.75 | |
| EFT-39282 | 14/07/2023 | AMPAC DEBT RECOVERY WA PTY LTD | DEBT RECOVERY COSTS FOR THE PERIOD 01/06/2023 | 5,500.00 | |
| EFT-39283 | 14/07/2023 | ANN LAWRIE | GUILDERTON HOLIDAY PARK REFUND | 50.00 | R |
| EFT-39284 | 14/07/2023 | AVON WASTE | SHIRE OF GINGIN KERBSIDE COLLECTIONS FOR THE PERIOD 05/06/2023 - 16/06/2023 | 22,022.16 | |
| EFT-39285 | 14/07/2023 | BDG BUILDING SERVICES | GUILDERTON FIRE SHED - SUPPLY DRAWINGS | 1,364.00 | L |
| EFT-39286 | 14/07/2023 | BELGRAVIA PRO PTY LTD | GUILDERTON HOLIDAY PARK - MANAGEMENT FEE FOR JUNE 2023. GUILDERTON HOLIDAY PARK - JUNE 2023 PAYMENTS FOR 85% OF PURE GLAMPING REVENUE. GUILDERTON HOLIDAY PARK - RMS LICENSE FEE FOR JUNE 2023. | 38,957.50 | |
| EFT-39287 | 14/07/2023 | BROWN AUTOMOTIVE GINGIN | GG007 - COMMUNITY BUS - REPAIRS FOR INSPECTION | 1,055.00 | L |
| EFT-39288 | 14/07/2023 | BULLSBROOK WATER CARRIERS | LANCELIN SPORTING COMPLEX - SUPPLY 1 X 14LK POTABLE WATER TO TANK | 400.00 | |
| EFT-39289 | 14/07/2023 | BULLSBROOK WINDSCREENS AND WINDOW TINTING | 3GG - WINDSCREEN REPLACEMENT. | 420.00 | |
| EFT-39290 | 14/07/2023 | CARABAN LIMESTONE & SAND SUPPLIES | SAPPERS ROAD - LIMESTONE SUPPLY - 75MM DELIVERED 12/06/2023. LIMESTONE SUPPLY FOR ROAD MAINTENANCE - 75MM DELIVERED 23/06/2023. | 5,471.66 | |
| EFT-39291 | 14/07/2023 | CHARMAINE KENNEDY | RATES REFUND | 1,040.00 | R |
| EFT-39292 | 14/07/2023 | DIELECTRIC SECURITY SYSTEMS | GINGIN ADMINISTRATION OFFICE - ALARM MONITORING FEES FOR THE PERIOD 01/08/2023 - 31/10/2023. LANCELIN SHIRE OFFICE - ALARM MONITORING FEES FOR THE PERIOD 01/08/2023 - 31/10/2023.GINGIN MEDICAL CENTRE - ALARM MONITORING FEES FOR THE PERIOD 01/08/2023 - 31/10/2023. GUILDERTON CARAVAN PARK - ALARM MONITORING FEES FOR THE PERIOD 01/08/2023 - 31/10/2023. | 560.56 | |
| EFT-39293 | 14/07/2023 | GINGIN FUEL & TYRES | DIESEL - SUPPLY & DELIVER 23,000 LITRES TO SHIRE DEPOT ON 06/07/2023. | 38,226.00 | L |
| EFT-39294 | 14/07/2023 | INDIAN OCEAN PEST CONTROL | PEST CONTROL MANAGEMENT - CASTOR OIL PLANTS - LANCELIN TIP & GINGIN TIP JUNE 2023 | 770.00 | L |
| EFT-39295 | 14/07/2023 | IRON MOUNTAIN AUSTRALIA GROUP SERVICES PTY LTD | RECORDS MANAGEMENT - STORAGE BUSINESS CARTONS (JUNE 2023) | 317.53 | L |
| EFT-39296 | 14/07/2023 | JLT RISK SOLUTIONS PTY LTD | REGIONAL RISK CO-ORDINATOR FEE JANUARY 2023 - JUNE 2023. JLT NON SCHEME COVER - 2023/24 MARINE HULL COMMERCIAL RENEWAL. | 9,114.94 | |
| EFT-39297 | 14/07/2023 | KRISTAN DUCKETT | RATES REFUND | 321.18 | R |
| EFT-39298 | 14/07/2023 | LEDGE POINT LIMESANDS PTY LTD ATF LIME UNIT TRUST | RATES REFUND | 528.90 | R |
| EFT-39299 | 14/07/2023 | OFFICEWORKS | STATIONERY ORDER | 505.24 | |
| EFT-39300 | 14/07/2023 | PEDDERS CANNINGTON | GG070 - GUN126 HILUX SUSPENSION UPGRADE NEW RANGER VEHICLE | 5,817.21 | |
| EFT-39301 | 14/07/2023 | PLUMB IT RIGHT PTY LTD | GUILDERTON CARAVAN PARK - REPAIRS TO BURST PIPE BETWEEN SITES 66 & 67, - REPAIRS TO LEAK IN FEMALE ABLUTIONS. GUILDERTON CARAVAN PARK - UNBLOCK TWO SEPTICS BEHIND CHALETS 3 - 6. | 2,155.00 | L |
| EFT-39302 | 14/07/2023 | PRICE CONSULTING GROUP PTY LTD | 2023 CEO PERFORMANCE REVIEW | 5,133.35 | |
| EFT-39303 | 14/07/2023 | PUBLIC TRANSPORT AUTHORITY (PTA) - TRANSWA | PAYMENT OF TRANSWA TICKET SALES FOR FEBRUARY 2023 TO JUNE 2023. | 62.79 | |
| EFT-39304 | 14/07/2023 | SD HYDRAULIC HOSE AND FITTINGS PTY LTD | PGG095 - GUILDERTON LAWN MOWER HYDRAULIC PIPES | 295.26 | |
| EFT-39305 | 14/07/2023 | SELINA PENG | GUILDERTON HOLIDAY PARK REFUND | 50.00 | R |
| EFT-39306 | 14/07/2023 | SHERRIL RICHARDSON | GUILDERTON HOLIDAY PARK REFUND | 666.00 | R |
| EFT-39307 | 14/07/2023 | SUNNY SIGNS COMPANY PTY LTD | TRAFFIC SIGNS/EQUIPMENT (SAFETY) - BUS PARKING SIGN (WOODRIDGE HALL BUS PARKING LANE) MARKERS, POSTS, BRACKETS AND SPEED SIGN. GG070 - 5 X RANGER VEHICLE STICKERS. ACROD SYMBOL - PARKING PERMIT FOR REC CENTRE AND GRANVILLE TO REPLACE FADED OR DAMAGED SIGNS. DECAL - SHIRE OF GINGIN FOR VEHICLES X 20. | 3,017.85 | |
| EFT-39308 | 14/07/2023 | TERESA HELM | CATERING - SAT ORDER MEDIATION 30/06/2023 | 180.00 | L |
| EFT-39309 | 14/07/2023 | TONI JURINOVICH | RATES REFUND | 123.61 | R |
| EFT-39310 | 14/07/2023 | TONY PISCONERI | MANAGEMENT/SUPERVISION LANCELIN WASTE FACILITY FOR THE PERIOD 01/06/2023 - 30/06/2023. MANAGEMENT/SUPERVISION SEABIRD WASTE FACILITY FOR THE PERIOD 01/06/2023 - 30/06/2023. | 16,044.00 | |
| EFT-39311 | 14/07/2023 | WEST COAST TECHNICAL SERVICES PTY LTD | GUILDERTON SHIRE DEPOT - ISOLATED SOCKETS | 165.00 | |
| EFT-39312 | 20/07/2023 | ADROIT INFORMATION MANAGEMENT | RECORDS MANAGEMENT - SITE VISIT FOR FILE RESTRUCTURE | 1,100.00 | |
| EFT-39313 | 20/07/2023 | ADVANCED TRAFFIC MANAGEMENT (WA) PTY LTD | TRAFFIC MANAGEMENT 01/06/2023 - 30/06/2023 (LEDGE POINT RD, COCKRAM RD, OCEAN FARM DR, SEAVIEW DR, GINGIN BROOK RD, DEWAR RD, KW RD, SILVER CREEK RD, ROCK WAY, BARRETT-LENNARD DVE). TRAFFIC MANAGEMENT 15/06/2023 - 30/06/2023 (DE BURGH ST, LEDGE POINT RD, MOOLIABEENEE RD, MCCORMICK ST, ROE ST, MANN WAY, AMMON AVE, HARPER DVE). | 49,955.50 | |
| EFT-39314 | 20/07/2023 | BOC PTY LTD | GAS & OXYGEN SUPPLIES FOR THE WORKSHOP & GINGIN MEDICAL CENTRE FOR THE PERIOD 01/06/2023 - 30/06/2023. | 102.63 | |
| EFT-39315 | 20/07/2023 | BULLSBROOK AND DISTRICTS GLASS AND ALUMINIUM | SENIORS UNITS GINGIN - REPLACEMENTGLASS SLIDING DOOR | 385.00 | |
| EFT-39316 | 20/07/2023 | BUNNINGS BUILDINGS SUPPLIES PTY LTD | PLUMBING SUPPLIES LANCELIN SPORT COMPLEX. UPGRADE MATERIALS FOR GUILDERTON FIRE SHED. TOOLS FOR GG052. LANCELIN SPORTING COMPLEX - CHLORINE MATERIALS. | 3,642.73 | |
| EFT-39317 | 20/07/2023 | CELLARBRATIONS GINGIN | REFRESHMENTS FOR COUNCIL MEETING 16/08/2022 & BAR RESTOCK | 110.00 | L |
| EFT-39318 | 20/07/2023 | COMPLETE OFFICE SUPPLIES PTY LTD | SUSTENANCE - COUNCIL MEETINGS - SNACKS -NUTS | 110.00 | |
| EFT-39319 | 20/07/2023 | CONSTRUCTION TRAINING FUND | CTF PAYMENTS FOR JUNE 2023 | 2,251.30 | F |
| EFT-39320 | 20/07/2023 | EAGLEYE TECHNICAL SERVICES | GINGIN RECREATION CENTRE - REPLACE ELECTRICAL SOCKETS | 447.70 | L |
| EFT-39321 | 20/07/2023 | ECOWATER SERVICES | LANCELIN WANGAREE PARK - RETICULATION UPGRADE. GRANVILLE CIVIC CENTRE - REPLACEMENT OF STROBE LIGHT AND HIGH WATER ALARM AT GRANVILLE PARK. | 6,031.80 | |
| EFT-39322 | 20/07/2023 | ENVIRONMENTAL AND AIR QUALITY CONSULTING PTY LTD | APPRAISAL - ODOUR EMISSION FROM PROPOSED MUSHROOM SUBSTRATE COMPOSTING FACILITY | 9,020.00 | |
| EFT-39323 | 20/07/2023 | FIRE AND SAFETY WA | PPE/PPC STOWAGE BAGS | 1,491.82 | |
| EFT-39324 | 20/07/2023 | GINGIN BOWLING CLUB | YOUTH WEEK - BAREFOOT BOWLS CATERING 21/04/2023 | 875.00 | L |
| EFT-39325 | 20/07/2023 | GINGIN FUEL & TYRES | GG060 - TRAILER ADAPTOR. GG017 - TYRES X 4. DIESEL CHARGES FOR FIRE APPLIANCE GG072 FOR THE MONTH OF JUNE 2023. | 1,372.83 | L |
| EFT-39326 | 20/07/2023 | JLT RISK SOLUTIONS PTY LTD | JLT NON SCHEME COVER - 2023/24 MARINE CARGO RENEWAL. | 597.72 | |
| EFT-39327 | 20/07/2023 | JOONDALUP MARQUEES | HIRE OF MARQUEE - NAIDOC EVENT AT GUILDERTON FORESHORE 05/07/2023 | 1,075.00 | |

**Payments made under Delegated Authority *2.1 Payment of Creditors* for the period 1 July 2023 to 31 July 2023**

**Payment Category**
**L - Local, R - Reimbursement, F - Funded, S - Staff, PF - Partially Funded, C - Councillor**

| TYPE CHQ/EFT | DATE PAID | NAME | DETAILS | AMOUNT | |
|---|---|---|---|---|---|
| EFT-39328 | 20/07/2023 | LANDGATE | RURAL UV'S CHARGEABLE SCHEDULE: R2023/04 DATE: 01/04/2023 TO 26/05/2023. SCHEDULE R2023/05 DATE: 27/05/2023 - 09/06/20233. MINING TENEMENTS CHARGEABLE SCHEDULE NO. M2023/06 DATED 12/05/2023 - 08/06/2023. GROSS RENTAL VALUATIONS CHARGEABLE SCHEDULE NO: G2023/06 DATED 13/05/2023 - 09/06/2023. COPY OF TRANSFER OF LAND ACT DOCUMENTS X 3 FOR 19/06/2023 - 21/06/2023 | 525.96 | |
| EFT-39329 | 20/07/2023 | LEIGH SOLOMON | GUILDERTON CARAVAN PARK - INSTALLATION OF 4 BBQS AND LIDS. GUILDERTON CARAVAN PARK - SUPPLY AND INSTALL NEW STAINLESS STEEL BOLLARD AT CAMP KITCHEN. | 4,308.50 | L |
| EFT-39330 | 20/07/2023 | MOORE RIVER NEWS INC | ADVERTISEMENTS X 3 IN APRIL 2023 ISSUE OF MOORE RIVER NEWS (LANCELIN ARTS FESTIVAL, BAREFOOT BOWLS, YOUTH FUN DAY) | 330.00 | L |
| EFT-39331 | 20/07/2023 | NORTHERN VALLEY NEWS | ADVERTISEMENTS X 2 FOR FLAVOURS OF GINGIN - GENERAL INFO AND EOI IN NVN, JULY EDITION | 450.00 | |
| EFT-39332 | 20/07/2023 | SHERRIN RENTALS PTY LTD | HIRE OF 16,0000 LITRE WATER TRUCK 01/06/2023 - 06/06/2023. | 1,709.95 | |
| EFT-39333 | 20/07/2023 | THE JUICY BOX | REFRESHMENTS FOR NAIDOC EVENT AT GUILDERTON FORESHORE 05/07/2023 | 22.00 | L |
| EFT-39334 | 20/07/2023 | THINKPROJECT AUSTRALIA PTY LTD | RAMM TRANSPORT ASSET ANNUAL SUPPORT MAINTENANCE FEE 01/07/2023 - 30/06/2024. PARK ASSETS - PHOTO UPLOAD - PHOTOS OF RESERVES, PARKS FOR RAMMS. | 10,270.50 | |
| EFT-39335 | 20/07/2023 | TLCWA PTY LTD T/AS SAFEROADS WA | EMULSION JET PATCHING ON VARIOUS ROADS WITHIN SHIRE 09/06/2023 - 30/06/2023 (GINGIN, GUILDERTON, LEDGE POINT) | 142,622.46 | |
| EFT-39336 | 20/07/2023 | TONER PLUS | COLOUR PRINTER TONER CARTRIDGE SUPPLIES | 1,297.35 | |
| EFT-39337 | 20/07/2023 | TRUCK CENTRE WA PTY LTD | GG002, GG045 - VOLVO SERVICE KITS | 1,517.41 | |
| EFT-39338 | 20/07/2023 | WA LIBRARY SUPPLIES | PROCESSING MATERIALS FOR LANCELIN LIBRARY RESOURCES. | 75.50 | |
| EFT-39339 | 20/07/2023 | WANT PLUMBING SERVICES PTY LTD | ABLUTION BLOCK GUILDERTON FORESHORE - REPAIRS TO WATER SUPPLY. ABLUTION BLOCK GUILDERTON FOREHORE - EMERGENCY PLUMBING REPAIRS ON 14/06/2023 TO LEAK/BURST PIPE UNDER CONCRETE FOOTPATH. SEABIRD FIRE STATION STANDPIPE - ANNUAL BACKFLOW TESTING | 3,063.50 | L |
| EFT-39340 | 20/07/2023 | WEX AUSTRALIA PTY LTD | DIESEL & ULP CHARGES FOR THE PERIOD 01/06/2023 - 30/06/2023 | 2,899.69 | |
| EFT-39341 | 26/07/2023 | AUSTRALIAN TAXATION OFFICE (PAYG) | PAYROLL DEDUCTION | 43,114.00 | |
| EFT-39342 | 26/07/2023 | DFES - DEPARTMENT OF FIRE AND EMERGENCY SERVICES | DFES PAYMENT FOR ESL RECEIVED FOR SEPTEMBER 2022 - UNDERPAYMENT. DFES PAYMENT FOR ESL RECEIVED FOR JUNE 2023. DFES PAYMENT FOR ESL RECEIVED FOR 2022/23 FINAL PAYMENT INCLUDING DEFERRED & OVERDUE DUE TO MOVING TO QUARTERLY ESL PAYMENTS. | 39,380.65 | |
| EFT-39343 | 26/07/2023 | LGRCEU (WA DIVISION) | PAYROLL DEDUCTION | 44.00 | |
| EFT-39344 | 26/07/2023 | MIDWEST BUILDING WA PTY LTD | GINGIN COLOCATION FIRE FACILITY - RELEASE OF 50% RETENTION MONIES - LEVEL 3 INCIDENT CONTROL CENTRE & COLOCATION FIRE FACILITY | 49,993.44 | L |
| EFT-39345 | 26/07/2023 | RSPCA WA (INC.) | PAYROLL DEDUCTION | 10.00 | |
| EFT-39346 | 27/07/2023 | ALARM ASSETS GROUP & AUSTECH SURVEILLANCE | GINGIN COLOCATION FIRE FACILITY - MONITORED SECURITY 01/03/2023 - 30/06/2023. GINGIN COLOCATION FIRE FACILITY - MONITORED SECURITY 01/07/2023 - 30/09/2023. | 292.00 | |
| EFT-39347 | 27/07/2023 | ALLWEST PLANT HIRE | HIRE BOMAG ROLLER HIRE 01/06/2023 - 20/06/2023. | 4,540.25 | |
| EFT-39348 | 27/07/2023 | AMPAC DEBT RECOVERY WA PTY LTD | DEBT RECOVERY COSTS FOR THE PERIOD 19/06/2023 - 23/06/2023 | 1,255.00 | |
| EFT-39349 | 27/07/2023 | AUSTRALIA POST | ADDITIONAL POSTAGE CHARGES FOR THE PERIOD 01/06/2023 - 30/06/2023 | 1,108.64 | |
| EFT-39350 | 27/07/2023 | AVON WASTE | SHIRE OF GINGIN KERBSIDE COLLECTIONS FOR THE PERIOD 19/06/2023 - 30/06/2023. WASTE RECYCLING CALENDAR 2023/24 PRODUCTION AND PRINTING COSTS. | 25,880.60 | |
| EFT-39351 | 27/07/2023 | BROWN AUTOMOTIVE GINGIN | GG09 - HEADLIGHT REPAIR. GG082 - FIRE FIGHTING PUMP REPAIRS. GG070 - 1,000KM SERVICE. GG09 - ROUTINE SERVICE. | 845.00 | L |
| EFT-39352 | 27/07/2023 | CAT HAVEN | CAT ADOPTION REPORT FROM CAT HAVEN - JUNE 2023 | 11.00 | |
| EFT-39353 | 27/07/2023 | CELLARBRATIONS GINGIN | REFRESHMENTS & RECEPTIONS - 2 X BAGS ICE | 4.00 | L |
| EFT-39354 | 27/07/2023 | COASTAL COURIER | ADVERTISEMENT - PUBLIC COMMENT ON COASTAL MANAGEMENT DOCUMENTS & INFO SESSIONS IN COASTAL COURIER, AUGUST 2023 EDITION. ADVERTISEMENTS X 2 - FLAVOURS OF GINGIN: GENERAL INFO & EOI FOR 4 MONTHS (AUGUST 2023 - NOVEMBER 2023). ADVERTISEMENT - CITIZENSHIP OF THE YEAR AWARDS NOMINATIONS OPEN X 3 MONTHS (AUGUST 2023 - OCTOBER 2023) IN COASTAL COURIER. | 480.00 | L |
| EFT-39355 | 27/07/2023 | CORSIGN | COMMUNITY OP SHOP DIRECTIONAL SIGNAGE. NO PARKING SIGNS FOR GINGIN RECREATION CENTRE. | 485.10 | |
| EFT-39356 | 27/07/2023 | COUNTRY COPIERS | GINGIN PRINTER COSTS 05/06/2023 - 05/07/2023. LANCELIN PRINTER COSTS 05/06/2023 - 05/07/2023. | 1,938.13 | |
| EFT-39357 | 27/07/2023 | DEPARTMENT OF TRANSPORT | DISCLOSURE OF INFORMATION FEES FOR APPLICATIONS FOR THE PERIOD 01/06/2023 - 30/06/2023. | 16.40 | |
| EFT-39358 | 27/07/2023 | DIGITALREZ AUSTRALIA | GUILDERTON CARAVAN PARK - WINDCAVE ONLINE BOOKING / ACCESS FEE 01/05/2023 - 31/05/2023. | 202.58 | |
| EFT-39359 | 27/07/2023 | DUNCAN SOLUTIONS | GUILDERTON PARKING METERS - CREDIT CARD TRANSACTIONS AND MONTHLY SUPPORT FEE FOR JUNE 2023. GUILDERTON PARKING METERS - CONFIGURE CHANGES TO PARKING METERS FOR FREE PARKING AT GUILDERTON 01/07/2023 - 31/08/2023 | 678.02 | |
| EFT-39360 | 27/07/2023 | FRONTLINE FIRE AND RESCUE EQUIPMENT | FIREFIGHTER PPE/PPC | 1,144.06 | |
| EFT-39361 | 27/07/2023 | GINGIN DISTRICT COMMUNITY RESOURCE CENTRE INC (CRC) | ADVERTISEMENT - PUBLIC COMMENT ON COASTAL MANAGEMENT DOCUMENTS & INFOSESSIONS IN GINGIN BUZZ, AUGUST 2023 EDITION. PROVISION OF LIBRARY SERVICES 1 JULY 2023 - 30 SEPTEMBER 2023. | 7,337.91 | L |
| EFT-39362 | 27/07/2023 | GINGIN PHARMACY | FIRST AID & VACCINATION SUPPLIES | 312.65 | L |
| EFT-39363 | 27/07/2023 | GINGIN TREE SERVICES | GINGIN RECREATION GROUND - REMOVE LARGE TREE STUMP THAT HAS PUSHED FENCE OVER AT DRAINAGE SUMP.GINGIN FIRE SHED - CLEAR TREES AWAY FROM POWER LINES. REMOVE / DISPOSE OF SHRUBS AT SIDE OF BUILDING. | 880.00 | L |
| EFT-39364 | 27/07/2023 | GULL GINGIN PTY LTD | CATERING FOR BFAC MEETING 28/09/2022 | 195.00 | L |
| EFT-39365 | 27/07/2023 | GUTTER CLEAN PERTH | GUTTER CLEANING ON SHIRE OWNED BUILDINGS IN LANCELIN, NILGEN AND LEDGE POINT. | 3,354.67 | L |
| EFT-39366 | 27/07/2023 | JOANNE TONNA GRAPHIC DESIGN | RATES MAILOUT 2023 INSERT, TIP & FORESHORE PARKING PASS - DESIGN AND SUPPLY OF PRINT-READY ARTWORK | 60.00 | |
| EFT-39367 | 27/07/2023 | K B RILEY & SONS PTY LTD T/A LANCELIN SANDS | EDWARD ISLAND POINT SAND NOURISHMENT - SUPPLY & DELIVER 915 TONNES OF LIMESTONE | 21,992.03 | L |
| EFT-39368 | 27/07/2023 | OMNICOM MEDIA GROUP AUSTRALIA PTY LTD (MARKETFORCE) | ADVERTISEMENT - AQUATIC CENTRE POSITIONS X 2 IN WEST AUSTRALIAN NEWSPAPER, SATURDAY17/06/2023 EDITION | 1,182.13 | |
| EFT-39369 | 27/07/2023 | MCLEODS BARRISTERS AND SOLICITORS | SAT DR-230/2021 SHEEPCO PTY LTD V SHIRE OF GINGIN - PROPOSED EXTRACTIVE INDUSTRY ON LOT M1332 CARABAN ROAD, CARABAN | 1,272.20 | |
| EFT-39370 | 27/07/2023 | MICRO PRODUCTS AUSTRALIA | 3 X RT100 RECHARGEABLE BLUETOOTH MICROCHIP READERS | 975.30 | |
| EFT-39371 | 27/07/2023 | MOORE RIVER NEWS INC | ADVERTISEMENT - PUBLIC COMMENT ON COASTAL MANAGEMENT DOCUMENTS & INFOSESSIONS IN AUGUST 2023 EDITION MOORE RIVER NEWS. ADVERTISEMENTS X 2 - FLAVOURS OF GINGIN: GENERAL INFO & EOI X 4 MONTHS (AUGUST 2023 - NOVEMBER 2023) IN MOORE RIVER NEWS. ADVERTISEMENT - CITIZENSHIP OF THE YEAR AWARDS NOMINATIONS OPEN X 3 MONTHS (AUGUST 2023 - OCTOBER 2023) IN MOORE RIVER NEWS. | 1,320.00 | L |
| EFT-39372 | 27/07/2023 | NORTHERN VALLEY NEWS | ADVERTISING - COUNCIL TO COMMUNITY IN NORTHERN VALLEY NEWS, JULY 2023. | 800.00 | |
| EFT-39373 | 27/07/2023 | OSBORNE AUTOS PTY LTD T/A OSBORNE PARK ISUZU UTE | GG040 - WINDOW GUARD | 350.90 | |
| EFT-39374 | 27/07/2023 | PRESIDENTIAL BUILDING SERVICES PTY LTD | BLOWERS FOR FLOODED RATES ROOM. | 385.00 | |
| EFT-39375 | 27/07/2023 | SEABIRD PROGRESS AND SPORTS ASSOCIATION INC | HALL HIRE - COASTAL PLANNING DROP IN WORKSHOP - 19 AUGUST 2023 | 78.75 | L |
| EFT-39376 | 27/07/2023 | STEPHEN NOLAN | PURCHASE OF KERBING TURF CUTTER, LARGE TURF CUTTER AND VERTIMOWER. | 8,500.00 | S |
| EFT-39377 | 27/07/2023 | STEWART & HEATON CLOTHING CO PTY LTD | FIREFIGHTER PPC | 2,539.83 | |
| EFT-39378 | 27/07/2023 | WEST COAST TECHNICAL SERVICES PTY LTD | GINGIN DEPOT - REPOSITION / MOVE AIR CONDITIONER OUTDOOR UNIT. | 840.00 | |
| EFT-39379 | 27/07/2023 | WREN OIL - ROMINE HOLDINGS PTY LTD | ADMIN & COMPLIANCE FEES - GINGIN LANDFILL FACILITY 24/06/2023 | 16.50 | |
| EFT-39380 | 27/07/2023 | ZIPFORM | ZIPFORM REQUIREMENT FOR RESIDENT PERCEPTION SURVEY 2023 | 4,244.44 | |
| EFT-39381 | 27/07/2023 | ZONE 50 ENGINEERING SURVEYS PTY LTD | GINGIN CEMETARY - PEGGING NEW PLOTS. MOOLIABEENEE ROAD - REDESIGN, ALIGN, PEGGING, REPORT FOR MOOLIABEENEE ROAD | 6,949.69 | |
| EFT-39383 | 28/07/2023 | ACS SWAN EXPRESS PRINT | 20 X PARKING INFRINGEMENT BOOKS. 20 X RANGER DAILY ACTIVITY BOOKS. | 1,364.00 | |
| EFT-39384 | 28/07/2023 | ALLTRACK EARTHMOVING | D8T BULLDOZER MOBILISATION TO WANNAMAL W PIT NIL MOBE/DEMOBE MOGUMBER 12/06/2023 - 29/06/2023 | 36,960.00 | |
| EFT-39385 | 28/07/2023 | AMPAC DEBT RECOVERY WA PTY LTD | DEBT RECOVERY COSTS FOR THE PERIOD 26/06/2023 - 30/06/2023 | 4,982.72 | |
| EFT-39386 | 28/07/2023 | BENARA NURSERIES | VARIETY OF PLANTS TO REPLACE DEAD TREES, EMPTY SPACES. (SEABIRD TULLY VIEW PARK, CEO RESIDENCE). | 1,206.83 | |
| EFT-39387 | 28/07/2023 | BROOKS HIRE SERVICE | SKIDS STEER HIRE 01/06/2023 - 30/06/203 | 9,399.06 | |
| EFT-39388 | 28/07/2023 | BROWN AUTOMOTIVE GINGIN | 8GG - VEHICLE SERVICE | 307.50 | L |
| EFT-39389 | 28/07/2023 | BULLSBROOK WINDSCREENS AND WINDOW TINTING | 5GG - WINDSCREEN REPAIR | 100.00 | |
| EFT-39390 | 28/07/2023 | COOEE COURIERS & TRANSPORT | FREIGHT CHARGES FOR THE PERIOD 01/06/2023 - 30/06/2023 - SUNNY SIGNS, CORSIGN | 686.40 | |
| EFT-39391 | 28/07/2023 | D.A. CHRISTIE PTY LTD (ALL PARK PRODUCTS) | GUILDERTON CARAVAN PARK - LIDS FOR NEW BBQS | 1,807.30 | |
| EFT-39392 | 28/07/2023 | DARRYL DAWSON | NAIDOC WEEK EVENT WEDNESDAY 5 JULY 2023, GUILDERTON FORESHORE - WELCOME TO COUNTRY AND DIDGERIDOO PRESENTATION | 1,289.68 | |
| EFT-39393 | 28/07/2023 | GAME VAULT PERTH | YOUTH EVENT 19 APRIL 2023 - 19 APRIL - GAME VAULT TRAILER, 50% BALANCE. | 810.00 | |
| EFT-39394 | 28/07/2023 | GINGIN DISTRICT COMMUNITY RESOURCE CENTRE INC (CRC) | PRINTING OF THANK YOU CERTIFICATES OF SPONSORS OF 2022/2023 SUMMER SUITE OF EVENTS & YOUTH WEEK. ADVERTISEMENTS X 2 - FLAVOURS OF GINGIN: GENERAL INFO & EOI FOR 4 MONTHS (AUGUST 2023 - NOVEMBER 2023) IN THE GINGIN BUZZ. ADVERTISEMENT - CITIZENSHIP OF THE YEAR AWARDS NOMINATIONS OPEN X 3 MONTHS (AUGUST 2023 - OCTOBER 2023) IN GINGIN BUZZ | 1,077.29 | L |
| EFT-39395 | 28/07/2023 | GREENWAY SOLUTIONS PTY LTD T/AS GREENWAY TURF SOLUTIONS | PURCHASE MOISTURE SENSOR FOR MONITORING SOIL MOISTURE CONTENT TO MINIMISE OVER WATERING ON ALL SHIRE TURF AREAS. | 3,245.00 | |
| EFT-39396 | 28/07/2023 | GUILDERTON COUNTRY CLUB INC. | ELECTRICITY & SUPPLY CHARGE REIMBURSEMENT FOR GUILDERTON HALL FOR 31 DAYS FOR THE PERIOD 09/06/2023 - 09/07/2023. | 132.20 | L |
| EFT-39397 | 28/07/2023 | HANSON CONSTRUCTION MATERIALS PTY LTD | 5MM AGGREGATE FOR STOCK FOR USE FOR POT HOLE REPAIRS ON A NUMBER OF SEALED ROADS. 5MM SINGLE GRANITE FOR SHIRE ROADS. SUPPLY 5MM UNWASHED GRANITE FOR SHIRE ROADS PATCHING 20/06/2023 - 21/06/2023. SUPPLY 5MM UNWASHED GRANITE FOR SHIRE ROADS PATCHING 29/06/2023. | 24,577.52 | |
| EFT-39398 | 28/07/2023 | HAULMORE TRAILER RENTALS PTY LTD | HIRE TRAILER - TRI SIDE TIPPER 01/06/2023 - 30/06/2023. | 5,621.00 | |
| EFT-39399 | 28/07/2023 | HEMPFIELD SMALL MOTORS | SUBARU MIXER FUEL CARBURETOR & GASKETS | 165.40 | |
| EFT-39400 | 28/07/2023 | HENRY MORRIS | SHIRE OF GINGIN WASTE FACILITIES X 3 (GINGIN, LANCELIN, SEABIRD) CELL MANAGEMENT & PUSH UP SERVICES FOR THE PERIOD 01/06/2023 - 30/06/2023. | 10,220.00 | L |
| EFT-39401 | 28/07/2023 | K B RILEY & SONS PTY LTD T/A LANCELIN SANDS | GUILDERTON CARAVAN PARK - SEPTIC PUMP OUT | 1,800.00 | L |
| EFT-39402 | 28/07/2023 | KENNEDYS (AUSTRALASIA) PARTNERSHIP | EMPLOYMENT CONTRACT REVIEW | 299.20 | |
| EFT-39403 | 28/07/2023 | LANCELIN COMMUNITY & SPORTING CLUB INC | LANCELIN COMMUNITY SPORTING CLUB - CONTRIBUTION FOR LOUNGE AREA BLINDS (SUPPLY & FITTING COMPRISING OF 4 X DUAL BLINDS, 5 X SCREEN BLINDS & 1 X BLOCKOUT FOR SOUTHERN DOOR). | 5,351.50 | L |
| EFT-39404 | 28/07/2023 | LANDGATE | LANDGATE: 1 X SLIP SUBSCRIPTION SERVICES - SMALL - 17 MARCH 2023 TO 16 MARCH 2024. | 2,453.00 | |
| EFT-39405 | 28/07/2023 | LD TOTAL | TURF MAINTENANCE CONTRACT JUNE 2023 | 23,308.44 | |
| EFT-39406 | 28/07/2023 | MCLEODS BARRISTERS AND SOLICITORS | LEGAL ADVICE | 4,242.64 | |
| EFT-39407 | 28/07/2023 | MINUTEMAN PRESS BALCATTA | NAME BADGES FOR NEW STAFF, DESK PLAQUE INSERTS, AND BUSINESS CARDS. | 446.60 | |
| EFT-39408 | 28/07/2023 | MOORE RIVER ELECTRICAL SERVICES | LANCELIN/LEDGE POINT DEPOT - REPLACE TOILET EXHAUST FAN. LEDGE POINT OVAL - RELOCATE POLE FLOODLIGHT SWITCH. SENIORS UNITS LANCELIN - REPLACE LIGHT IN KITCHEN WITH LED, UNIT 1. GUILDERTON CARAVAN PARK - CARRY OUT FAULT FINDING AND REPLACE FAULTY FLUROS WITH LED IN FEMALE ABLUTIONS. | 1,936.00 | L |
| EFT-39409 | 28/07/2023 | NUT SOLUTIONS PTY LTD | PULL BEHIND NATIVE HARVESTER MACHINE TO PICK UP HONKEY / GUM NUTS. | 2,656.50 | |
| EFT-39410 | 28/07/2023 | PHASE3 LANDSCAPE CONSTRUCTION PTY LTD | LANCELIN SKATE PARK - STAGE 2 - PROGRESS BILLING CLAIM 4. | 30,325.88 | |
| EFT-39411 | 28/07/2023 | PLUMB IT RIGHT PTY LTD | GUILDERTON CARAVAN PARK - CAMP KITCHEN REPAIRS, EMERGENCY WORKS. GUILDERTON CARAVAN PARK OFFICE/RESIDENCE (MANAGER'S HOUSE) - CARRY OUT REPAIRS TO BURST PVC PIPE, EMERGENCY WORKS. | 850.00 | L |
| EFT-39412 | 28/07/2023 | ROSMECH SALES & SERVICE PTY LTD | GG063 - SET OF BRUSHES FOR ROAD SWEEPER. | 689.70 | |
| EFT-39413 | 28/07/2023 | ROYAL LIFE SAVING WESTERN AUSTRALIA | GINGIN AQUATIC CENTRE - BRONZE MEDALLION AWARDS. GINGIN AQUATIC CENTRE - BRONZE MEDALLION CLASS. | 455.40 | |
| EFT-39414 | 28/07/2023 | STEWART & HEATON CLOTHING CO PTY LTD | FIREFIGHTER PPE/PPC | 1,083.04 | |
| EFT-39415 | 28/07/2023 | TALIS CONSULTANTS ATF TALIS UNIT TRUST | ROAD ASSETS RE-VALUE (IPR) & SEALED CONDITION ASSESSMENT | 21,791.00 | |
| EFT-39416 | 28/07/2023 | URBIS PTY LTD | FINALISATION OF OMNIBUS SCHEME AMENDMENT LPS9 | 2,633.13 | |
| EFT-39417 | 28/07/2023 | WOODRIDGE COMMUNITY ASSOCIATION | NAIDOC WEEK EVENT WEDNESDAY 5 JULY, GUILDERTON FORESHORE - COMMUNITY DONATION FOR PROVISION OF BBQ SERVICE | 300.00 | L |
| EFT-39418 | 31/07/2023 | ASSET INFRASTRUCTURE MANAGEMENT | VALUATION REPORT AND INPUTS FOR RAMM | 660.00 | |
| EFT-39419 | 31/07/2023 | BULLSBROOK WATER CARRIERS | LANCELIN SPORTING COMPLEX - SUPPLY 1 X 14LK POTABLE WATER TO TANK | 400.00 | |
| EFT-39420 | 31/07/2023 | BULLSBROOK WINDSCREENS AND WINDOW TINTING | GG043 - WINDSCREEN. OLD ROAD BOARD/PLAYGROUP - INSTALL SAFETY FILM AS PER AUSTRALIAN STANDARDS / REGULATIONS TO WINDOWS | 3,160.00 | |
| EFT-39421 | 31/07/2023 | CELLARBRATIONS GINGIN | REFRESHMENTS - COUNCIL BAR RESTOCK 21/07/2023 | 72.00 | L |
| EFT-39422 | 31/07/2023 | COASTLINE CLEANING SERVICES | CLEANING SERVICES JUNE 2023 - LANCELIN & LEDGE POINT ABLUTION BLOCKS, LANCELIN HALL. | 4,828.00 | L |
| EFT-39423 | 31/07/2023 | CONPLANT PTY LTD | HIRE - ROLLER 01/03/2023 - 07/03/2023. KIT FILTERS FOR HIRE ROLLER. | 2,298.37 | |
| EFT-39424 | 31/07/2023 | GINGIN FUEL & TYRES | GG028 - FIT AND REPAIR TRUCK TYRE. GG095 - HYDRAULIC FLUID. | 256.20 | L |
| EFT-39425 | 31/07/2023 | INDIAN OCEAN PEST CONTROL | CARRY OUT ANNUAL TERMITE / PEST CONTROL TREATMENTS / INSPECTIONS ON LOWER COASTAL SHIRE OWNED BUILDINGS / PREMISES. CARRY OUT ANNUAL TERMITE / PEST CONTROL TREATMENTS / INSPECTIONS ON UPPER COASTAL SHIRE OWNED BUILDINGS / PREMISES. TERMITE TREATMENT FOR VARIOUS BUILDINGS IN SHIRE. | 43,840.50 | L |
| EFT-39426 | 31/07/2023 | INSTANT PRODUCTS HIRE | LANCELIN SPORTING COMPLEX: SUPPLY 2 X PORTABLE SHOWERS FOR LANCELIN 08/06/2023 - 14/06/2023. | 489.06 | |

**Payments made under Delegated Authority *2.1 Payment of Creditors* for the period 1 July 2023 to 31 July 2023**

**Payment Category**
**L - Local, R - Reimbursement, F - Funded, S - Staff, PF - Partially Funded, C - Councillor**

| TYPE CHQ/EFT | DATE PAID | NAME | DETAILS | AMOUNT | |
|---|---|---|---|---|---|
| EFT-39427 | 31/07/2023 | KAREN GRANT | CLEANING SERVICES FOR JUNE 2023 GINGIN ADMINISTRATION OFFICES, GINGIN DEPOT OFFICE AND LUNCHROOM, GRANVILLE CIVIC CENTER, GRANVILLE ACTIVITY SPACE AND ABLUTIONS | 2,673.00 | L |
| EFT-39428 | 31/07/2023 | KEVIN VINE | CLEANING SERVICES JUNE 2023 LOWER COASTAL PUBLIC ABLUTIONS - GUILDERTON FORESHORE - PUBLIC ABLUTIONS, SHELTERS & BARBEQUES, GUILDERTON SKATE PARK/ACTIVITY SPACE, GABBADAH PARK, SILVER CREEK, WOODRIDGE & SEABIRD. | 9,652.10 | |
| EFT-39429 | 31/07/2023 | LOCAL GOVERNMENT PROFESSIONALS WA - LGPA | EMPLOYMENT ADVERTISEMENT - TECHNICAL OFFICER PROCUREMENT ON LG PRO WEBSITE | 165.00 | |
| EFT-39430 | 31/07/2023 | LOCAL GOVERNMENT WORKS ASSOCIATION | REGISTRATION TO THE 26TH ANNUAL LGWA WORKS & PARKS CONFERENCE TO BE HELD AT JOONDALUP RESORT 08/08/2023 - 10/08/2023 | 6,325.00 | |
| EFT-39431 | 31/07/2023 | PEDDERS SUSPENSION - JOONDALUP | GG020 - WHEEL ALIGNMENT | 105.00 | |
| EFT-39432 | 31/07/2023 | SEAVIEW FABRICATION & MAINTENANCE | LANCELIN WANGAREE PARK - 50% BALANCE FOR SUPPLY & INSTALLATION OF RAILING TO LANCELIN SKATE PARK | 2,295.12 | L |
| EFT-39433 | 31/07/2023 | SOVEREIGN HILL COMMUNITY ASSOCIATION INC. | LAWN MOWING APRIL 2023 TO JUNE 2023 | 720.00 | L |
| EFT-39434 | 31/07/2023 | TEAM GLOBAL EXPRESS PTY LTD | FREIGHT CHARGES FOR THE PERIOD 14/06/2023 - 28/06/2023 - ROSMECH, STATE LIBRARY, STEWART & HEATON | 342.95 | |
| **EFT TOTAL** | | | | **1,173,527.79** | |
| **CHEQUES** | | | | | |
| **CHEQUES TOTAL** | | | | **0.00** | |
| **DIRECT DEBIT** | | | | | |
| DE-3559 | 01/07/2023 | BENDIGO BANK | BANK FEE | 62.50 | |
| DE-3560 | 01/07/2023 | BENDIGO BANK | BANK FEE | 447.04 | |
| DE-3561 | 02/07/2023 | BENDIGO BANK | BANK FEE | 50.36 | |
| DE-3562 | 02/07/2023 | BENDIGO BANK | BANK FEE | 30.97 | |
| DE-3564 | 03/07/2023 | BENDIGO BANK | BANK FEE | 39.99 | |
| DE-3567 | 03/07/2023 | BENDIGO BANK | BANK FEE | 773.80 | |
| DE-3571 | 03/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 29.06.2023 | 23,814.15 | |
| DE-3525 | 03/07/2023 | SYNERGY | ELECTRICITY 07/04/2023 - 09/06/2023 - SOVEREIGN HILL PLAYGROUND | 159.36 | |
| DE-3555 | 03/07/2023 | GO GO MEDIA | MONTHLY ON HOLD MESSAGES SERVICE JULY 2023 | 75.90 | |
| DE-3565 | 03/07/2023 | BENDIGO BANK | BANK FEE | 99.94 | |
| DE-3523 | 03/07/2023 | SYNERGY | ELECTRICITY 07/04/2023 - 09/06/2023 - SOVEREIGN HOUSE & ABLUTION BLOCK | 194.69 | |
| DE-3570 | 03/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 22.06.2023 | 6,869.20 | |
| DE-3563 | 03/07/2023 | BENDIGO BANK | BANK FEE | 8.12 | |
| DE-3566 | 03/07/2023 | BENDIGO BANK | BANK FEE | 164.50 | |
| DE-3568 | 03/07/2023 | BENDIGO BANK | BANK FEE | 712.15 | |
| DE-3524 | 03/07/2023 | SYNERGY | ELECTRICITY 12/04/2023 - 12/06/2023 - REDFIELD PARK FIRE STATION | 559.09 | |
| DE-3526 | 04/07/2023 | SYNERGY | ELECTRICITY 10/05/2023 - 13/06/2023 - GINGIN AQUATIC CENTRE | 1,024.76 | |
| DE-3533 | 04/07/2023 | SYNERGY | ELECTRICITY 12/04/2023 - 12/06/2023 - SEABIRD DOUGLAS PARK | 941.71 | |
| DE-3572 | 04/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 30.06.2023 | 9,077.75 | |
| DE-3531 | 04/07/2023 | SYNERGY | ELECTRICITY 21/03/2023 - 22/05/2023 - LANCELIN HALL | 11.72 | |
| DE-3528 | 04/07/2023 | SYNERGY | ELECTRICITY 12/04/2023 - 12/06/2023 - SEABIRD HALL | 276.76 | |
| DE-3527 | 04/07/2023 | SYNERGY | ELECTRICITY 10/05/2023 - 13/06/2023 - GRANVILLE CIVIC CENTRE | 1,687.58 | |
| DE-3529 | 04/07/2023 | SYNERGY | ELECTRICITY 10/05/2023 - 13/06/2023 - GUILDERTON CARAVAN PARK | 2,058.28 | |
| DE-3530 | 04/07/2023 | SYNERGY | ELECTRICITY 12/04/2023 - 12/06/2023 - SEABIRD FIRE SHED | 155.84 | |
| DE-3532 | 04/07/2023 | SYNERGY | ELECTRICITY 10/05/2023 - 13/06/2023 - GINGIN ADMINISTRATION OFFICE & COUNCIL CHAMBERS | 1,615.91 | |
| DE-3539 | 05/07/2023 | WATER CORPORATION | WATER 13/04/2023 - 13/06/2023 - LGA STANDPIPE OCEAN FARMS | 13.99 | |
| DE-3537 | 05/07/2023 | SYNERGY | ELECTRICITY 13/04/2023 - 13/06/2023 - ABLUTION BLOCK GUILDERTON FORESHORE | 309.10 | |
| DE-3535 | 05/07/2023 | SYNERGY | ELECTRICITY 13/04/2023 - 13/06/2023 - FORESHORE GUILDERTON | 164.49 | |
| DE-3534 | 05/07/2023 | SYNERGY | ELECTRICITY 13/04/2023 - 13/06/2023 - GUILDERTON CARAVAN PARK RESIDENCE | 607.63 | |
| DE-3538 | 05/07/2023 | WATER CORPORATION | WATER 13/04/2023 - 13/06/2023 - OCEAN FARM FIRE SHED | 125.87 | |
| DE-3573 | 05/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 03.07.2023 | 4,890.55 | |
| DE-3536 | 05/07/2023 | SYNERGY | ELECTRICITY 18/05/2023 - 14/06/2023 - LEDGE POINT GOLF CLUB | 295.35 | |
| DE-3544 | 06/07/2023 | TELSTRA | TELSTRA TELEPHONE CHARGES UP TO 13/06/2023 GUILDERTON HOLIDAY PARK | 234.99 | |
| DE-3574 | 06/07/2023 | BENDIGO BANK | BANK FEE | 20.25 | |
| DE-3543 | 06/07/2023 | SYNERGY | ELECTRICITY 13/04/2023 - 14/06/2023 - GABBADAH PARK | 215.51 | |
| DE-3541 | 06/07/2023 | SYNERGY | ELECTRICITY 18/05/2023 - 14/06/2023 - GINGIN COLOCATION FIRE FACILITY | 609.71 | |
| DE-3540 | 06/07/2023 | SYNERGY | ELECTRICITY 14/04/2023 - 15/06/2023 - GUILDERTON FIRE SHED | 258.93 | |
| DE-3575 | 06/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 04.07.2023 | 1,007.20 | |
| DE-3558 | 06/07/2023 | PRECISION ADMINISTRATION SERVICES PTY LTD | PAYROLL DEDUCTION | 31,918.39 | |
| PAYJ-83 | 06/07/2023 | SHIRE OF GINGIN | NET PAYS | 148,679.70 | |
| DE-3542 | 06/07/2023 | SYNERGY | ELECTRICITY 14/04/2023 - 15/06/2023 - GUILDERTON MINI GOLF (NEAR SKATE PARK) | 193.25 | |
| DE-3576 | 07/07/2023 | BENDIGO BANK | BANK FEE | 0.45 | |
| DE-3577 | 07/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 05.07.2023 | 1,647.20 | |
| DE-3545 | 10/07/2023 | SYNERGY | ELECTRICITY 15/04/2023 - 16/06/2023 - WOODRIDGE FIRE SHED | 687.06 | |
| DE-3546 | 10/07/2023 | TELSTRA | TELSTRA TELEPHONE CHARGES UP TO 13/06/2023 | 1,241.99 | |
| DE-3604 | 10/07/2023 | DEPARTMENT OF JUSTICE | LODGEMENT FEE FOR REGISTERING INFRINGEMENT | 162.00 | |
| DE-3578 | 10/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 06.07.2023 | 821.10 | |
| DE-3579 | 11/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 07.07.2023 | 1,854.50 | |
| DE-3547 | 11/07/2023 | SYNERGY | ELECTRICITY 18/04/2023 - 20/06/2023 - RADIO MAST OCEAN FARMS | 1,428.78 | |
| DE-3549 | 11/07/2023 | TELSTRA | TELSTRA MOBILE CHARGES UP TO 21/06/2023 | 1,492.07 | |
| DE-3548 | 11/07/2023 | TELSTRA | TELSTRA INTEGRATED MESSAGING 22/06/2023 - 21/07/2023 | 58.00 | |
| DE-3587 | 12/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 10.07.2023 | 2,066.95 | |
| DE-3550 | 12/07/2023 | SYNERGY | ELECTRICITY 20/04/2023 - 19/06/2023 - NEERGABBY RECREATION GROUND | 271.66 | |
| DE-3605 | 12/07/2023 | SYNERGY | ELECTRICITY 20/04/2023 - 21/06/2023 - OCEAN FARM COMMUNITY HALL | 145.00 | |
| DE-3588 | 13/07/2023 | BENDIGO BANK | BANK FEE | 3.60 | |
| DE-3589 | 13/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 11.07.2023 | 2,025.60 | |
| DE-3552 | 13/07/2023 | SYNERGY | ELECTRICITY 22/04/2023 - 21/06/2023 - SEAVIEW PARK COMMUNITY HALL | 371.15 | |
| DE-3590 | 14/07/2023 | BENDIGO BANK | BANK FEE | 4.80 | |
| DE-3591 | 14/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 12.07.2023 | 1,666.55 | |
| DE-3580 | 14/07/2023 | HELEN SAMPSON | SUPERVISION/MANAGEMENT GINGIN WASTE FACILITY FOR THE PERIOD 02/07/2023 - 15/07/2023 | 2,538.46 | L |
| DE-3584 | 14/07/2023 | CREDIT CARD - EMCCS | CREDIT CARD EMCCS - JUNE 2023 CREDIT CARD EXPENSES | 1,022.87 | |
| DE-3585 | 14/07/2023 | CREDIT CARD - CEO | CREDIT CARD CEO - JUNE 2023 CREDIT CARD EXPENSES | 4,345.08 | |
| DE-3586 | 14/07/2023 | CREDIT CARD -EMRDS | CREDIT CARD EMRDS - JUNE 2023 CREDIT CARD EXPENSES | 2,663.51 | |
| DE-3606 | 14/07/2023 | CREDIT CARD - CESM | CREDIT CARD CESM - JUNE 2023 CREDIT CARD EXPENSES | 459.64 | |
| DE-3608 | 14/07/2023 | CREDIT CARD - EMO | CREDIT CARD EMO - JUNE 2023 CREDIT CARD EXPENSES | 1,612.57 | |
| DE-3553 | 17/07/2023 | SYNERGY | ELECTRICITY 29/04/2023 - 23/06/2023 - RED GULLY FIRE SHED | 162.82 | |
| DE-3581 | 17/07/2023 | BUSINESS SERVICE BROKERS T/A TELECHOICE | MOBILE CHARGES FOR THE PERIOD 01/07/2023 - 01/08/2023 | 258.00 | |
| DE-3592 | 17/07/2023 | BENDIGO BANK | BANK FEE | 52.89 | |
| DE-3593 | 17/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 13.07.2023 | 4,921.00 | |
| DE-3594 | 18/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 14.07.2023 | 2,015.05 | |
| DE-3595 | 19/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 17.07.2023 | 3,597.30 | |
| DE-3601 | 20/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 18.07.2023 | 1,988.90 | |
| DE-3600 | 20/07/2023 | BENDIGO BANK | BANK FEE | 15.90 | |
| DE-3599 | 20/07/2023 | PRECISION ADMINISTRATION SERVICES PTY LTD | PAYROLL DEDUCTION | 31,530.52 | |
| PAYJ-84 | 20/07/2023 | SHIRE OF GINGIN | NET PAYS | 150,028.68 | |
| DE-3556 | 21/07/2023 | TELSTRA | MOBILE CHARGES 02/07/2023 - 01/08/2023 - REDFIELD PARK FIRE STATION | 85.00 | |
| DE-3603 | 21/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 19.07.2023 | 1,027.40 | |
| DE-3602 | 21/07/2023 | BENDIGO BANK | BANK FEE | 4.35 | |
| DE-3582 | 22/07/2023 | VOCUS COMMUNICATIONS | GINGIN ADMINISTRATION OFFICE & GINGIN COLOCATION FIRE FACILITY - FIBRE INTERNET & IP ALLOCATION 01/07/2023 - 31/07/2023 | 1,769.90 | |
| DE-3557 | 24/07/2023 | AUSTRALIA POST | POSTAGE CHARGES UP TO 30/06/2023 | 497.10 | |
| DE-3607 | 24/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 20.07.2023 | 2,099.70 | |
| DE-3609 | 24/07/2023 | WESTERN AUSTRALIAN TREASURY CORPORATION (WATC) | WATC ANNUITY LENDING GUARANTEE FEE AUDIT REPORT 01.06.2023 - 30.06.2023 | 5,984.90 | |
| DE-3596 | 24/07/2023 | SYNERGY | ELECTRICITY 25/05/2023 - 24/06/2023 - STREET LIGHTING | 12,577.13 | |
| DE-3653 | 25/07/2023 | QPC GROUP | WX-102 WASTE TONER FOR INEO 958 PHOTOCOPIER | 30.80 | |
| DE-3597 | 25/07/2023 | SYNERGY | ELECTRICITY 03/06/2023 - 04/07/2023 - GINGIN GRANVILLE PARK (PUMP) | 137.93 | |
| DE-3598 | 25/07/2023 | WATER CORPORATION | WATER SERVICE CHARGE 01/07/2023 - 31/08/2023 - LANCELIN PIONEER PARK | 119.01 | |
| DE-3554 | 25/07/2023 | WESTNET INTERNET SERVICES | INTERNET 27/07/2023 - 26/08/2023 - CEO RESIDENCE | 74.99 | |
| DE-3654 | 25/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 21.07.2023 | 2,134.40 | |
| DE-3667 | 26/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 24.07.2023 | 4,805.45 | |
| DE-3666 | 26/07/2023 | BENDIGO BANK | BANK FEE | 0.75 | |
| DE-3674 | 27/07/2023 | WESTERN AUSTRALIAN TREASURY CORPORATION (WATC) | SEABIRD SEAWALL EXTENSION REPAYMENT | 12,159.77 | |
| DE-3672 | 27/07/2023 | BENDIGO BANK | BANK FEE | 5.40 | |
| DE-3673 | 27/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 25.07.2023 | 2,955.30 | |
| DE-3656 | 28/07/2023 | HELEN SAMPSON | SUPERVISION/MANAGEMENT GINGIN WASTE FACILITY FOR THE PERIOD 16/07/2023 - 29/07/2023 | 2,538.46 | L |
| DE-3668 | 28/07/2023 | QPC GROUP | INEO 958 PRINTER - CLICK CHARGES FOR JULY 2023 | 169.26 | |
| DE-3676 | 28/07/2023 | DEPARTMENT OF JUSTICE | LODGEMENT FEE FOR 1 REGISTERING INFRINGEMENT | 81.00 | |
| DE-3677 | 28/07/2023 | DEPARTMENT OF JUSTICE | LODGEMENT FEE FOR 6 REGISTERING INFRINGEMENT- FER12866672 | 486.00 | |
| DE-3675 | 28/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 26.07.2023 | 3,126.30 | |
| DE-3583 | 28/07/2023 | TELSTRA | TELEPHONE CHARGES FOR SEABIRD FIRE SHED 05/06/2023 - 04/07/2023 | 95.00 | |
| DE-3682 | 30/07/2023 | WESTERN AUSTRALIAN TREASURY CORPORATION (WATC) | GINGIN MEDICAL CENTRE REPAYMENT | 18,921.76 | |
| DE-3685 | 31/07/2023 | QPC GROUP | ALLOCATION OF LEASE PAYMENT FOR JULY 2023 - PHOTOCOPIER DEVELOP INEO 958 | 705.40 | |
| DE-3680 | 31/07/2023 | BENDIGO BANK | BANK FEE | 7.80 | |
| DE-3683 | 31/07/2023 | LJ HUGHES | ALLOCATION OF LEASE PAYMENTS FOR JULY 2023 - LANCELIN OFFICE LEASE | 669.50 | |
| DE-3684 | 31/07/2023 | DELL FINANCIAL SERVICES PTY LTD | ALLOCATION OF LEASE PAYMENT FOR JULY 2023 - IT SERVER REFRESH | 1,651.29 | |
| DE-3681 | 31/07/2023 | DEPARTMENT OF TRANSPORT | POLICE LICENSING DOT 27.07.2023 | 3,545.60 | |
| **DIRECT DEBIT TOTAL** | | | | **542,085.28** | |
| **TOTAL MUNICIPAL** | | | | **1,715,613.07** | |

**Payments made under Delegated Authority *2.1 Payment of Creditors* for the period 1 July 2023 to 31 July 2023**

**Payment Category**
**L - Local, R - Reimbursement, F - Funded, S - Staff, PF - Partially Funded, C - Councillor**

| TYPE CHQ/EFT TOTAL EXPENDITURE | DATE PAID | NAME | DETAILS | AMOUNT |
|---|---|---|---|---|
| | | | | **1,715,613.07** |
| **CREDIT CARD BREAK-UP** | | | | |
| JUNE | CEO | TRAINING COURSES/CONFERENCES | TRYBOOKING - FREEDOM OF INFORMATION IN WA CONFERENCE 2023. WALGA - 2023 WALGA COVENTION 17/09/2023 - 19/09/2023, CEO AARON COOK & COUNCILLOR FRANK JOHNSON. | 2,791.00 |
| | | SUBSCRIPTIONS/ADVERTISING | MAILCHIMP - MONTHLY SUBSCRIPTION JUNE 2023. | 307.09 |
| | | OTHER | MENTAL HEALTH FIRST AID AUSTRALIA - MENTAL HEALTH FIRST AID MERCHANDISE. YARN MARKETPLACE - CULTURAL AWARENESS MERCHANDISE. | 1,242.99 |
| | | BANK CHARGES | CREDIT CARD FEE | 4.00 |
| | | | | **4,345.08** |
| | EMCCS | TRAINING COURSES/CONFERENCES | QUEST INNALOO - ACCOMMODATION FOR DOT TRAINING 25/06/2023 - 30/06/2023. | 1,018.87 |
| | | BANK CHARGES | CREDIT CARD FEE | 4.00 |
| | | | | **1,022.87** |
| | EMRDS | SUBSCRIPTIONS/ADVERTISING | DEPARTMENT OF WATER AND ENVIRONMENTAL REGULATION - LANCELIN WASTE FACILITY ANNUAL LICENCE FEE. SPOT ME - JUNE 2023 | 1,061.46 |
| | | VEHICLE | PPD PERFORMANCE - BLACK DUCK FRONT SEAT COVERS - GG070, GG073, GG074 | 1,408.95 |
| | | OTHER | DEPARTMENT OF JUSTICE - FILING FEE - PROSECUTION NOTICE - COURT HEARING NOTICE LODGMEN. STATUTORY DECLARATION - GULL GINGIN - ACCIDENTAL PURCHASE IN USING WRONG CREDIT CARD, TO BE REIMBURSED BY EMRDS. | 189.10 |
| | | BANK CHARGES | CREDIT CARD FEE | 4.00 |
| | | | | **2,663.51** |
| | EMO | OPERATIONS | KENNARDS - HIRE A PORTABLE TOILET LEDGE POINT ABLUTION BLOCK. GALVINS PLUMBING - PVC PIPE FOR GUILDERTON FORESHORE 2 X NEW PUBLIC RESCUE DEVICE CONTAINERS | 544.32 |
| | | VEHICLE | TOOLMART - GULL WING TOOLBOX FOR ISUZU CREW CAB GG040. COV PARTS - BATTERY & TOWBALL 5GG. AUTOPRO - HYDRAULIC OIL AND BATTERY 5GG. COLES EXPRESS - ULP - 20.48 LITRES @ $1.739 LITRE = $35.61. COLES EXPRESS - DIESEL - 49.16 LITRES @ $1.759 LITRE = $86.47 | 909.07 |
| | | OTHER | STATUTORY DECLARATION - TREASURE & PETS, ALDI - ACCIDENTAL PURCHASES IN USING CREDIT CARD, TO BE REIMBURSED BY EMO | 155.18 |
| | | BANK CHARGES | CREDIT CARD FEE | 4.00 |
| | | | | **1,612.57** |
| | CESM | REFRESHMENTS/RECEPTIONS | CELLARBRATIONS GINGIN - REFRESHMENTS FOR BFAC MEETING 14/06/2023. GINGIN IGA - REFRESHMENTS BFAC MEETING 14/06/2023. | 255.69 |
| | | SUBSCRIPTIONS/ADVERTISING | TREND MICRO: BFB ANTIVIRUS SUBSCRIPTION | 199.95 |
| | | BANK CHARGES | CREDIT CARD FEE | 4.00 |
| | | | | **459.64** |
| | | | | **10,103.67** |

## 13 REPORTS - REGULATORY AND DEVELOPMENT SERVICES

### 13.1 CONSIDERATION OF LOCAL DEVELOPMENT PLAN - LOT 601 BROCKMAN STREET, GINGIN

| | |
|---|---|
| File | LND/195 |
| Applicant | Dynamic Planning and Development |
| Location | Lot 601 Brockman Street, Gingin |
| Owner | Gingin Developments Pty Ltd |
| Zoning | Parks and Recreation<br>Residential<br>Town Centre |
| WAPC No | 162831 |
| Author | James Bayliss – Coordinator Statutory Planning |
| Reporting Officer | Bob Kelly - Executive Manager Regulatory and Development Services |
| Refer | 3 May 2003 - Item 10.3.1<br>19 April 2005 – Item 10.3.4<br>3 May 2005 – Item 10.3.1<br>17 May 2005 – Item 10.3.2<br>20 September 2005 - Item 10.3.4<br>07 February 2006 - Item 11.3.2<br>16 May 2006 – Item 11.1.6<br>17 October 2006 - Item 14.1<br>21 November 2006 - Item 11.1.3<br>20 February 2007 - Item 11.1.1<br>04 December 2007 - Item 11.1.2<br>06 May 2008 - Item 11.3.1<br>18 March 2014 - Item 11.1.9<br>21 April 2015 – Item 15.1<br>20 September 2022 – Item 18.2<br>6 December 2022 – Item 18.1<br>6 December 2022 – Item 13.1 |
| Appendices | 1. Local Development Plan Submission [**13.1.1** - 15 pages]<br>2. Lot 601 Brockman Street, Gingin Local Development Plan [**13.1.2** - 1 page]<br>3. Urban Water Management Plan [**13.1.3** - 150 pages]<br>4. Site and Soil Evaluation Report [**13.1.4** - 142 pages]<br>5. Schedule of Submissions and Recommended Responses [**13.1.5** - 10 pages] |

## DISCLOSURES OF INTEREST

Nil

## PURPOSE

To consider a Local Development Plan for Lot 601 Brockman Street, Gingin.

## BACKGROUND

In January 1996, Lot 601 Brockman Street, Gingin was rezoned from "Rural" to "Urban Development". Since that time, various zoning amendments have occurred reflective of market trends at the time, with the land currently being zoned R5, R10, R10/30, Town Centre and Parks and Recreation.

The Western Australian Planning Commission (WAPC) granted conditional approval for subdivision of the land on 21 April 2023 to create 99 residential lots, 3 town centre lots and a public open space reserve.

Condition 19 of the subdivision approval states:

*19. A Local Development Plan being prepared and approved to address the following:*

*a. Building envelopes and/or setbacks;*
*b. Designated land application areas (as required by the UWMP/site and soil evaluation);*
*c. Fencing; and*
*d. Vehicle access points (crossovers).*

The proposed Local Development Plan (LDP) **(see appendices)** seeks to satisfy the above condition.

An Urban Water Management Plan (UWMP) and Site and Soil Evaluation (SSE) are provided **(see appendices)** which informed the subdivision approval and preparation of the proposed LDP.

## COMMENT

Stakeholder Consultation

The application was advertised in accordance with Part 6, clause 50 of the *Planning and Development (Local Planning Scheme) Regulations 2015*. This included advertising to surrounding landowners, a development sign placed on the verge of the property and a notification on the Shire's website, all for a period of 28 days.

The Shire received three written submissions.

The officer notes that various submissions raised general concerns related to progression of development on the property and the subdivision design. While the comments are noted, they are not relevant to considering the suitability of the LDP in the context of clearing a subdivision condition. The subdivision design has been approved by the WAPC.

It should also be noted that the land has been zoned for this purpose since the late 1990s. It should come as no surprise that the land would be utilised at some point for its intended purpose, with market conditions seemingly ripe for the landowner to progress development that corresponds with that longstanding zone.

A copy of the schedule of submissions is provided **(see appendices)**.

## PLANNING FRAMEWORK

Planning Assessment

The subdivision condition requires the LDP to address:

- building envelopes and/or setbacks;
- designated land application areas (as required by the UWMP/site and soil evaluation);
- fencing; and
- crossovers.

Building Envelopes and/or Setbacks

The LDP identifies a building envelope for future dwellings. The building envelopes reflect a 6 metre front setback, 3 metre secondary street setback and a minimum rear setback of 7.5 metres from Weld Street (where applicable). All other setbacks will be in accordance with State Planning Policy 7.3 - Residential Design Codes (Volume 1).

The built form as a result of the building envelopes and setbacks reflects a density of between R15 – 25, notwithstanding the lot sizes generally reflect an R10 density.

The purpose of the reductions is in response to the need to provide a relatively large land application area (LAA) to dispose of effluent, which essentially limits the area of land that would ordinarily be set aside for a dwelling.

Land Application Area

The proposed LDP outlines a LAA of 225m$^2$ for each site which is consistent with the UWMP and SSE. This area was determined based on a 5 bedroom, 6 person residence in the context of the soil categories.

An LAA is the area where the treated sewage from a treatment system (in this case secondary treatment with additional nutrient removal) is applied into or onto the ground.

It is anticipated that the precise location of each LAA will respond to the design of future dwellings, which is not known at present. However there is a preference to locate the LAA at the rear of the lot as depicted on the LDP plan.

Whilst there is overlap between the building envelope and LAA areas, these areas are only nominal to demonstrate that the lots are capable of fulfilling their intended purpose. The on-ground reality will depend on the design, orientation and scale of future dwellings.

Fencing

The proposed LDP includes provisions limiting the height of front fences to 1.2m high and requiring them to be of a rural design. The developer seeks to retain an open streetscape and view corridors along the subdivisional roads.

To ensure fencing provisions are clear for prospective purchasers, the applicant intends to insert the below wording into the LDP and also include a concept diagram for an illustration reference:

*Fencing for the rear boundary of Weld Street (residential) lots:*

- *Fencing shall be no higher than 1.2m.*
- *Fencing shall consist of vertical treated pine posts of 150mm diameter and shall be generally 2.4m apart from each other.*
- *Fencing shall consist of horizontal treated pine top, rail of 125mm diameter.*
- *At lot corner boundaries, double posts either side of survey pegs shall apply.*
- *Fencing shall consist of ringlock stock fencing wire infills with a specification of 11/90/15 (i.e. 11 horizontal wires across a 900mm high height of mesh, with 150 mm horizontal spacings, vertical spacings are approx. 81 mm).*
- *No gates shall be permitted on the Weld Street boundary.*

*Fencing forward of the dwelling façade/line*

- *Forward of the dwelling façade/building line, an owner can choose to have side fences (not compulsory). If side fencing is elected, it must match the above specification for the Weld Street fencing standard.*
- *An owner can choose to erect a front fence (not compulsory), and if so, that fence must match the abovementioned Weld Street standard.*
- *Any gate in front fence environment must be a standard rural galvanised gate of approximately 3 metres wide, 1 metre in height, and shall be of standard stock gate character.*

In view of the above, a revised LDP will need to be provided to the Shire for approval.

Crossovers

The proposed LDP has designated crossover locations for all lots with sole frontage to Brockman Street. This is due to vegetation being identified for retention, with the proposed crossovers strategically positioned to limit the removal of vegetation, particularly mature trees. This ensures that future landowners do not design dwellings and driveways to intersect with vegetation on the subject site or road reserve that is intended to be preserved.

Crossover locations relating to properties with frontage to internal access roads will be addressed at development approval stage, with the final locations being dependent upon the ultimate location and orientation of the future dwelling. On that basis, they do not form part of the proposed LDP.

*Planning and Development (Local Planning Scheme) Regulations 2015* (the Regulations)

Schedule 2, Part 6 of the Regulations applies to LDPs. In this instance, the following section is considered relevant:

*57. Duration of approval*

*(1) The approval of a local development plan has effect for a period of 10 years commencing on the day on which the local government approves the plan, or another period determined by the local government, unless the local government earlier revokes its approval.*

Summary

The officer is of the view that the proposed LDP, once the fencing provisions have been inserted, sufficiently addresses the relevant matters outlined under condition 19 of the subdivision approval and on that basis should be supported.

## STATUTORY/LOCAL LAW IMPLICATIONS

*Planning and Development (Local Planning Scheme) Regulations 2015*

Local Planning Scheme No.9.

## POLICY IMPLICATIONS

Local Planning Policy 5.2 Gingin Town Centre

## BUDGET IMPLICATIONS

Nil

## STRATEGIC IMPLICATIONS

Shire of Gingin Strategic Community Plan 2022-2032

| | |
|---|---|
| **Aspiration** | 3. Planning & Sustainability - Plan for Future Generations |
| **Strategic Objective** | 3.3 Planning & Land Use - Plan the use of the land to meet future requirements incorporating economic development objectives and community amenity |

## VOTING REQUIREMENTS - SIMPLE MAJORITY

**COUNCIL RESOLUTION/OFFICER RECOMMENDATION**

**MOVED: Councillor Johnson SECONDED: Councillor Vis**

**That Council, in accordance with Schedule 2, Part 6, Clause 52 of the *Planning and Development (Local Planning Scheme) Regulations 2015*, approve the Local Development Plan prepared by Dynamic Planning and Developments in relation to Lot 601 Brockman Street, Gingin, subject to fencing provisions being inserted to the satisfaction of the Chief Executive Officer.**

**CARRIED UNANIMOUSLY**
**7 / 0**

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

DYNAMIC PLANNING AND DEVELOPMENTS

# PROPOSED LOCAL DEVELOPMENT PLAN



## LOT 601 BROCKMAN STREET, GINGIN
## PROPOSED LOCAL DEVELOPMENT PLAN

*OUR REF: 1508*

Our Ref: 1508

29 June 2023

The Chief Executive Officer
Shire of Gingin
PO Box 510
Gingin WA 6503

Dear Sir/Madam

**LOT 601 BROCKMAN STREET, GINGIN**
**PROPOSED LOCAL DEVELOPMENT PLAN**

Dynamic Planning and Developments Pty Ltd (DPD) act on behalf of the registered proprietor of Lots 601 Brockman Street, Gingin (herein referred to as the 'subject site').

DPD has prepared the following submission in support of a Local Development Plan (LDP) which forms part of Condition No. 19 of the subdivision approval granted by the Western Australian Planning Commission (WAPC) for application no. 162831 dated 21 April 2023.

## 1.0 Background

The WAPC granted conditional approval for the freehold (green title) subdivision of the subject site on 21 April 2023 (WAPC Application No. 162831 – refer **Attachment 1**). The submission of the LDP relates specifically to Condition No. 19 of the granted approval which states the following:

19. *A Local Development Plan being prepared and approved to address the following:*

    a) *Building envelopes and/or setbacks; and*
    b) *Designated land application areas (as required by the UWMP/site and soil evaluation); and*
    c) *Fencing; and*
    d) *Vehicle access points (crossovers).*

## 2.0 Proposed Local Development Plan

The development provisions contained in the LDP propose to apply those of State Planning Policy 7.3 Residential Design Codes Volume 1 (R-Codes). Should the LDP be adopted, application of its development provisions and any variations allowed under its framework are considered to be acceptable and in line with the orderly and proper planning for the locality.

The LDP also seeks to circumvent the need for consultation where individual proposals satisfy the R-Codes or the provisions of the LDP. This is a common provision of LDP's and as such, is considered to be appropriate in this instance as well.

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*Building envelope and/or setbacks:*

The proposed LDP specifies a nominal building envelope area for future residents to locate their house within. This building envelope area was governed by the nominated setbacks noted in the LDP of:

- 6m front setback.
- 3m secondary street setback.
- Setbacks to Weld Street will be a minimum of 7.5m.
- All other setbacks to be in accordance with the R-Codes.

The intent behind the nominated setbacks and prescribed building envelopes is to mirror the requirements of the R-Codes with the exception of:

1. The front setback – the nominated 6m front setback requirement is more akin to an R15-R25 type development. The intent here is to enable or encourage a streetscape that is more 'urban' in nature given the lots proximity to the town centre.
2. The secondary street setback for the R5 lots – the nominated secondary street setback is consistent with the R10 density coding under the R-Codes but including this within the LDP ensures it will apply to the R5 lots as well, which will promote more consistent design outcomes. In reality this only impacts Lot 83 and 85.
3. Setback to Weld Street – a larger setback of 7.5m has been proposed in order to protect the streetscape amenity along Weld Street and provide additional separation to the future buildings.

Ultimately, we feel the nominated setbacks and building envelopes propose an appropriate balance between affording future residents flexibility in dwelling design whilst also ensuring consistent design outcomes throughout.

*Land application areas:*

The proposed LDP requires residents to accommodate a land application area (LAA) on site of 225sqm which is consistent with the approved UWMP and site and soil evaluation. It doesn't specify an exact location for the LAA as we expect the location to be dependent on or respond to the design of the future dwellings which is not known at present, it does however suggest a preference to locate the LAA toward the rear of the lot as depicted on the LDP plan.

Whilst there is overlap between the building envelope and LAA areas depicted on the LDP, these areas are only nominal on the plan and this is not how it will occur in reality as at the building permit stage, dwelling designs will be located within the building envelope area and the 225sqm LAA area will be accommodated around the proposed dwelling design.

*Fencing:*

The proposed LDP includes provisions pertaining to fencing that limit the height of front fences to 1.2m high and of a rural design. The LDP also requires that front fences are not forward of the nominated building envelope. The intent of this provision is to encourage a landscaped front verge that almost looks a part of the road reserve

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which will act to improve the appearance of the streetscape and provide quite attractive and open view corridors along the subdivisional roads.

*Vehicle access points:*

The proposed LDP has nominated a number of designated crossover locations for most of the lots fronting Brockman Street. The intent for nominating crossover locations for these lots is that we have identified the ability to retain existing trees within the verge area along Brockman Street and the nominated crossover locations avoid the need to remove significant vegetation in the verge to enable access.

In considering the appropriate crossover locations for Lot 80 and Lot 8, the prior traffic engineering advice received was considered and the recommended crossover location was adopted in order to ensure safe access and egress to these lots.

In addition to nominating crossover locations, the proposed LDP also illustrates the access limitations for the residential lots abutting Weld Street, which is consistent with the intent of Condition 10 on the subdivision approval.

## 3.0 Conclusion

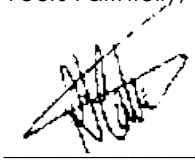
The proposed LDP prescribes provisions that appropriately addresses Condition No. 19 of WAPC subdivision approval no. 162831. In light of the above, the LDP is considered to warrant favourable consideration and endorsement by the Shire on the basis that:

- The LDP is consistent in land use terms with the local zoning and approved subdivision design.
- The LDP is consistent with the intended development outcome allowed under the R-Codes with the site specific variations considered under the LDP being appropriate in the local context.

We trust the above satisfies the requirements of the Shire of Gingin to enable a favourable determination of the LDP.

Should you have any queries or require any clarification in regard to the matters raised, please do not hesitate to contact the undersigned on 9275 4433.

Yours Faithfully,



**Reegan Cake**

**Planning Coordinator**

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**ATTACHMENT 1** – WAPC Approval

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Western Australian Planning Commission

Your Ref : 1508

Dynamic Planning And Developments Pty Ltd
P O Box 688
INGLEWOOD WA 6932

**Approval Subject To Condition(s)**
**Freehold (Green Title) Subdivision**

**Application No** : 162831

***Planning and Development Act 2005***

| | | |
|---|---|---|
| Applicant | : | Dynamic Planning And Developments Pty Ltd<br>P O Box 688 INGLEWOOD WA 6932 |
| Owner | : | George Alexander Gifford<br>P O Box 233 GINGIN WA 6503 |
| Application Receipt | : | 23 September 2022 |

| | | |
|---|---|---|
| Lot Number | : | 601 |
| Diagram / Plan | : | Deposited Plan 38679 |
| Location | : | - |
| C/T Volume/Folio | : | 2565/945 |
| Street Address | : | Lot 601 Brockman Street, Gingin |
| Local Government | : | Shire of Gingin |

The Western Australian Planning Commission has considered the application referred to and is prepared to endorse a deposited plan in accordance with the plan date-stamped **23 September 2022** once the condition(s) set out have been fulfilled.

This decision is valid for **four years** from the date of this advice, which includes the lodgement of the deposited plan within this period.

The deposited plan for this approval and all required written advice confirming that the requirement(s) outlined in the condition(s) have been fulfilled must be submitted by **21 April 2027** or this approval no longer will remain valid.

140 William Street, Perth, Western Australia 6000, Locked Bag 2506 Perth, 6001
Tel: (08) 6551 8002; Fax: (08) 6551 9001; Infoline: 1800 626 477
e-mail: info@dplh.wa.gov.au; web address http://www. dplh.wa.gov.au
ABN 35 482 341 493

**Reconsideration - 28 days**

Under section 151(1) of the *Planning and Development Act 2005*, the applicant/owner may, within 28 days from the date of this decision, make a written request to the WAPC to reconsider any condition(s) imposed in its decision. One of the matters to which the WAPC will have regard in reconsideration of its decision is whether there is compelling evidence by way of additional information or justification from the applicant/owner to warrant a reconsideration of the decision. A request for reconsideration is to be submitted to the WAPC on a Form 3A with appropriate fees. An application for reconsideration may be submitted to the WAPC prior to submission of an application for review. Form 3A and a schedule of fees are available on the WAPC website: http://www.dplh.wa.gov.au

**Right to apply for a review - 28 days**

Should the applicant/owner be aggrieved by this decision, there is a right to apply for a review under Part 14 section 251 of the *Planning and Development Act 2005*. The application for review must be submitted in accordance with part 2 of the *State Administrative Tribunal Rules 2004* and should be lodged within 28 days of the date of this decision to: the State Administrative Tribunal, Level 6, State Administrative Tribunal Building, 565 Hay Street, PERTH, WA 6000. It is recommended that you contact the tribunal for further details: telephone 9219 3111 or go to its website: http://www.sat.justice.wa.gov.au

**Deposited plan**

The deposited plan is to be submitted to the Western Australian Land Information Authority (Landgate) for certification. Once certified, Landgate will forward it to the WAPC. In addition, the applicant/owner is responsible for submission of a Form 1C with appropriate fees to the WAPC requesting endorsement of the deposited plan. A copy of the deposited plan with confirmation of submission to Landgate is to be submitted with all required written advice confirming compliance with any condition(s) from the nominated agency/authority or local government. Form 1C and a schedule of fees are available on the WAPC website: http://www.dplh.wa.gov.au

**Condition(s)**

The WAPC is prepared to endorse a deposited plan in accordance with the plan submitted once the condition(s) set out have been fulfilled.

The condition(s) of this approval are to be fulfilled to the satisfaction of the WAPC.

The condition(s) must be fulfilled before submission of a copy of the deposited plan for endorsement.

The agency/authority or local government noted in brackets at the end of the condition(s) identify the body responsible for providing written advice confirming that the WAPC's requirement(s) outlined in the condition(s) have been fulfilled. The written advice of the agency/authority or local government is to be obtained by the applicant/owner. When the

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written advice of each identified agency/authority or local government has been obtained, it should be submitted to the WAPC with a Form 1C and appropriate fees and a copy of the deposited plan.

If there is no agency/authority or local government noted in brackets at the end of the condition(s), a written request for confirmation that the requirement(s) outlined in the condition(s) have been fulfilled should be submitted to the WAPC, prior to lodgement of the deposited plan for endorsement.

Prior to the commencement of any subdivision works or the implementation of any condition(s) in any other way, the applicant/owner is to liaise with the nominated agency/authority or local government on the requirement(s) it considers necessary to fulfil the condition(s).

The applicant/owner is to make reasonable enquiry to the nominated agency/authority or local government to obtain confirmation that the requirement(s) of the condition(s) have been fulfilled. This may include the provision of supplementary information. In the event that the nominated agency/authority or local government will not provide its written confirmation following reasonable enquiry, the applicant/owner then may approach the WAPC for confirmation that the condition(s) have been fulfilled.

In approaching the WAPC, the applicant/owner is to provide all necessary information, including proof of reasonable enquiry to the nominated agency/authority or local government.

The condition(s) of this approval, with accompanying advice, are:

CONDITIONS

**Site works and drainage**

1. Engineering drawings and specifications are to be submitted, approved, and works undertaken in accordance with the approved engineering drawings, specifications and approved plan of subdivision, for grading and/or stabilisation of the site to ensure that:

   (a) lots can accommodate their intended use; and

   (b) finished ground levels at the boundaries of the lots the subject of this approval match or otherwise coordinate with the existing and/or proposed finished ground levels of the land abutting.

   (Local Government)

2. Prior to the commencement of subdivisional works, an urban water management plan is to be prepared and approved, in consultation with the Department of Water and Environmental Regulation. (Local Government)

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3. Engineering drawings and specifications are to be submitted and approved, and works undertaken in accordance with the approved engineering drawings and specifications and approved plan of subdivision, for the filling and/or draining of the land, including ensuring that stormwater is contained on-site, or appropriately treated and connected to the local drainage system. Engineering drawings and specifications are to be in accordance with an approved Urban Water Management Plan (UWMP) to the satisfaction of the Western Australian Planning Commission. (Local Government)

4. Prior to the commencement of subdivisional works, the landowner/applicant is to provide a pre-works geotechnical report certifying that the land is physically capable of development or advising how the land is to be remediated and compacted to ensure it is capable of development; and

   In the event that remediation works are required, the landowner/applicant is to provide a post geotechnical report certifying that all subdivisional works have been carried out in accordance with the pre-works geotechnical report.

   (Local Government)

5. Drainage easements and reserves as may be required by the local government for drainage infrastructure being shown on the diagram or plan of survey (deposited plan) as such, granted free of cost, and vested in that local government under Sections 152 and 167 of the *Planning and Development Act 2005*. (Local Government)

**Movement network and access**

6. Engineering drawings and specifications are to be submitted, approved, and subdivisional works undertaken in accordance with the approved plan of subdivision, engineering drawings and specifications, to ensure that those lots not fronting an existing road are provided with frontage to a constructed road(s) connected by a constructed road(s) to the local road system and such road(s) are constructed and drained at the landowner/applicant's cost.

   As an alternative, and subject to the agreement of the Local Government the Western Australian Planning Commission (WAPC) is prepared to accept the landowner/applicant paying to the local government the cost of such road works as estimated by the local government and the local government providing formal assurance to the WAPC confirming that the works will be completed within a reasonable period as agreed by the WAPC.

   (Local Government)

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Western Australian Planning Commission

7. Engineering drawings and specifications are to be submitted and approved, and subdivisional works undertaken for construction of roads in accordance with the approved plan of subdivision, engineering drawings and specifications to ensure that:

   (a) street lighting in accordance with dark sky principles is installed on all new subdivisional roads to the standards of the relevant licensed service provider; and

   (b) roads that have been designed to connect with existing or proposed roads abutting the subject land are coordinated so the road reserve location and width connect seamlessly; and

   (c) temporary turning areas are provided to those subdivisional roads that are subject to future extension.

   (Local Government)

8. Satisfactory arrangements being made with the local government for the full cost of upgrading and/or construction of the intersections with the new subdivision roads in the locations as shown on the subdivision plan receipted 23 September 2022 (attached). (Local Government)

9. Engineering drawings and specifications are to be submitted, approved, and subdivisional works undertaken in accordance with the approved plan of subdivision, engineering drawings and specifications, for the provision of shared paths through and connecting to the application area in accordance with the subdivision plan receipted 23 September 2022 (attached). The approved shared paths are to be constructed by the landowner/applicant. (Local Government)

10. Pursuant to Section 150 of the *Planning and Development Act 2005* and Division 3 of the *Planning and Development Regulations 2009* a covenant preventing vehicular access onto Weld Street being lodged on the certificates of title of the proposed lots at the full expense of the landowner/applicant. The covenant is to prevent access, to the benefit of the Shire of Gingin, in accordance with the subdivision plan receipted 23 September 2022 (attached) and the covenant is to specify:

    "No vehicular access is permitted to and from Weld Street."

    (Local Government)

**Public open space**

11. The proposed reserve shown on the approved plan of subdivision being shown on the diagram or plan of survey (deposited plan) as a reserve for public open space and vested in the Crown under Section 152 of the *Planning and Development Act 2005*, such land to be ceded free of cost and without any payment of compensation by the Crown. (Local Government)

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12. Arrangements being made for the proposed public open space to be developed by the landowner/applicant to a minimum standard and maintained for two summers through the implementation of an approved landscape plan providing for the development and maintenance of the proposed public open space in accordance with the requirements of Liveable Neighbourhoods and dark sky principles and to the specifications of the local government. (Local Government)

**Services**

13. Arrangements being made with a licensed water provider for the provision of a suitable water supply service to each lot shown on the approved plan of subdivision. (Water Corporation)

14. Arrangements being made with a licensed electricity network operator for the provision of an underground electricity distribution system that can supply electricity to each lot shown on the approved plan of subdivision. (Western Power)

15. The transfer of land as a Crown reserve free of cost to Western Power for the provision of electricity supply infrastructure. (Western Power)

16. A notification, pursuant to Section 70A of the *Transfer of Land Act 1893* is to be placed on the certificate(s) of title of the proposed lot(s). Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows:

    *"A reticulated sewerage service is not available to the lots. As such, an on-site secondary treatment and disposal system for sewage (which includes nutrient removal) may be required. Therefore, the developable area of the lot is reduced. There are ongoing landowner obligations to ensure that the treatment and disposal system is regularly maintained in accordance with relevant health regulations. Contact the local government for further information."*

    (Local Government)

**Miscellaneous**

17. Protection measures are to be implemented to ensure the vegetation identified for retention on the subdivision plan receipted 23 September 2022 (attached) is not impacted by subdivisional works. (Local Government)

18. Uniform fencing being constructed along the boundaries of lots abutting Weld Street. (Local Government)

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19. A Local development plan being prepared and approved to address the following:

    (a) Building envelopes and/or setbacks; and

    (b) Designated land application areas (as required by the UMWP/site and soil evaluation); and

    (c) Fencing; and

    (d) Vehicle access points (crossovers).

    (Local Government)

20. The landowner/applicant shall make arrangements to ensure that prospective purchasers of lots subject of a Local Development Plan are advised in writing that Local Development Plan provisions apply. (Local Government)

ADVICE:

1. The landowner/applicant and the local government are advised to refer to the Institute of Public Works Engineering Australasia Local Government Guidelines for Subdivisional Development (current edition). The guidelines set out the minimum best practice requirements recommended for subdivision construction and granting clearance of engineering conditions imposed.

2. In regard to Conditions 5, 6 and 8, the landowner/applicant is advised that the road reserves, including the constructed carriageways, truncations, and footpaths are to be generally consistent with the approved plan of subdivision.

3. In regard to Condition 7, the landowner/applicant is advised that to achieve the dark sky principles, new street lighting is to comply with a correlated colour temperature of 3,000 kelvins or less, shielded luminaires and in accordance with *AS/NZS 4282:2019 – Control of the obtrusive effects of outdoor lighting*.

4. In regard to Conditions 8, 9, 11, and 12, the upgrade/construction of new roads, intersections and public open space is subject to development staging as broadly indicated on the staging plan dated 15 September 2022 (Attached).

5. With regard to Condition 12, the landscaping plan is to be prepared in accordance with the approved urban water management plan. Development of the public open space is to include full earthworks, reticulation, grassing of key areas, and pathways that form part of the overall pedestrian and/or cycle network.

   Any lighting within the public open space shall comply with the dark sky principles and *AS/NZS 4282:2019 – Control of the obtrusive effects of outdoor lightin*g. Smart lighting should also be installed to ensure that lighting infrastructure is capable of remote operation and/or timing.

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6. In regard to Condition 13, the landowner/applicant shall make arrangements with the Water Corporation for the provision of the necessary services. On receipt of a request from the landowner/ applicant, a Land Development Agreement under Section 83 of the *Water Services Act 2012* will be prepared by the Water Corporation to document the specific requirements for the proposed subdivision.

7. With regard to condition 14, Western Power provides only one point of electricity supply per freehold (green title) lot.

8. The size and location of sewage disposal areas are to be consistent with Government Sewerage Policy. Best practice is provided in *AS/NZS 1547:2012 – On-site domestic wastewater management*.

Ms Sam Fagan
Secretary
Western Australian Planning Commission
21 April 2023

Enquiries : Timothy Leishman (Ph 6551 9069)

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DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 23-Sep-2022 FILE 162831

Condition 10
No vehicular access is permitted to and from Weld Street.

Road Reserves: 2.57ha
Town Centre: 3.18ha
(Including POS)

Total No. of Lots: 99
Minimum Lot Size: 980m²
Maximum Lot Size: 2463m²
Average Lot Size: 1205m²

Legend:

- Landgate Contours
- Existing Trees (Feature Survey) - To be retained
- Existing Trees (Feature Survey) - To be removed
- Existing Fence (Feature Survey)
- Index Contours (Feature Survey)
- Proposed Commercial Lots

# SUBDIVISION FREEHOLD SUBDIVISION

LOT 601 BROCKMAN STREET
GINGIN

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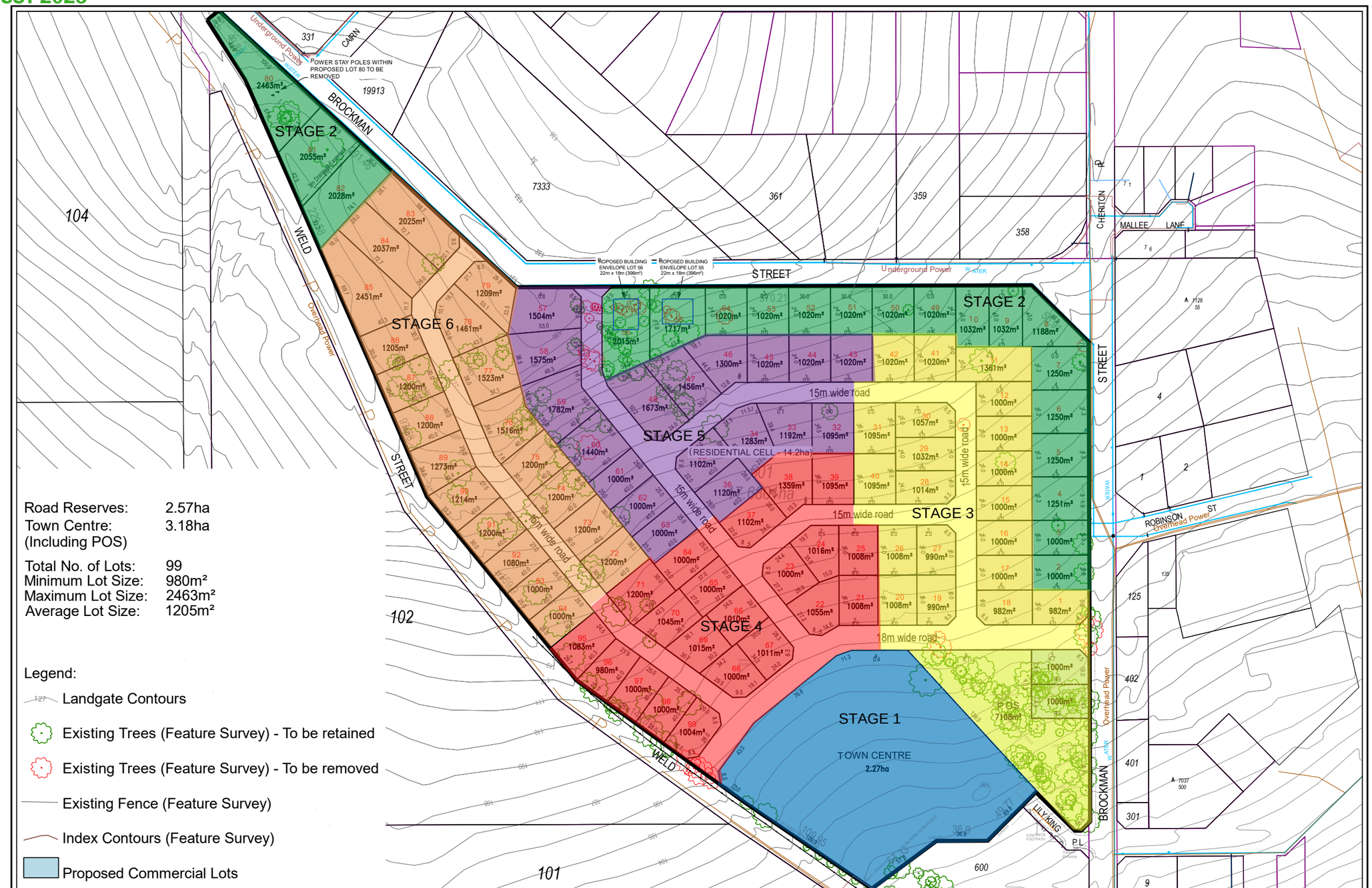
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# SUBDIVISION CONCEPT

LOT 601 BROCKMAN STREET
GINGIN

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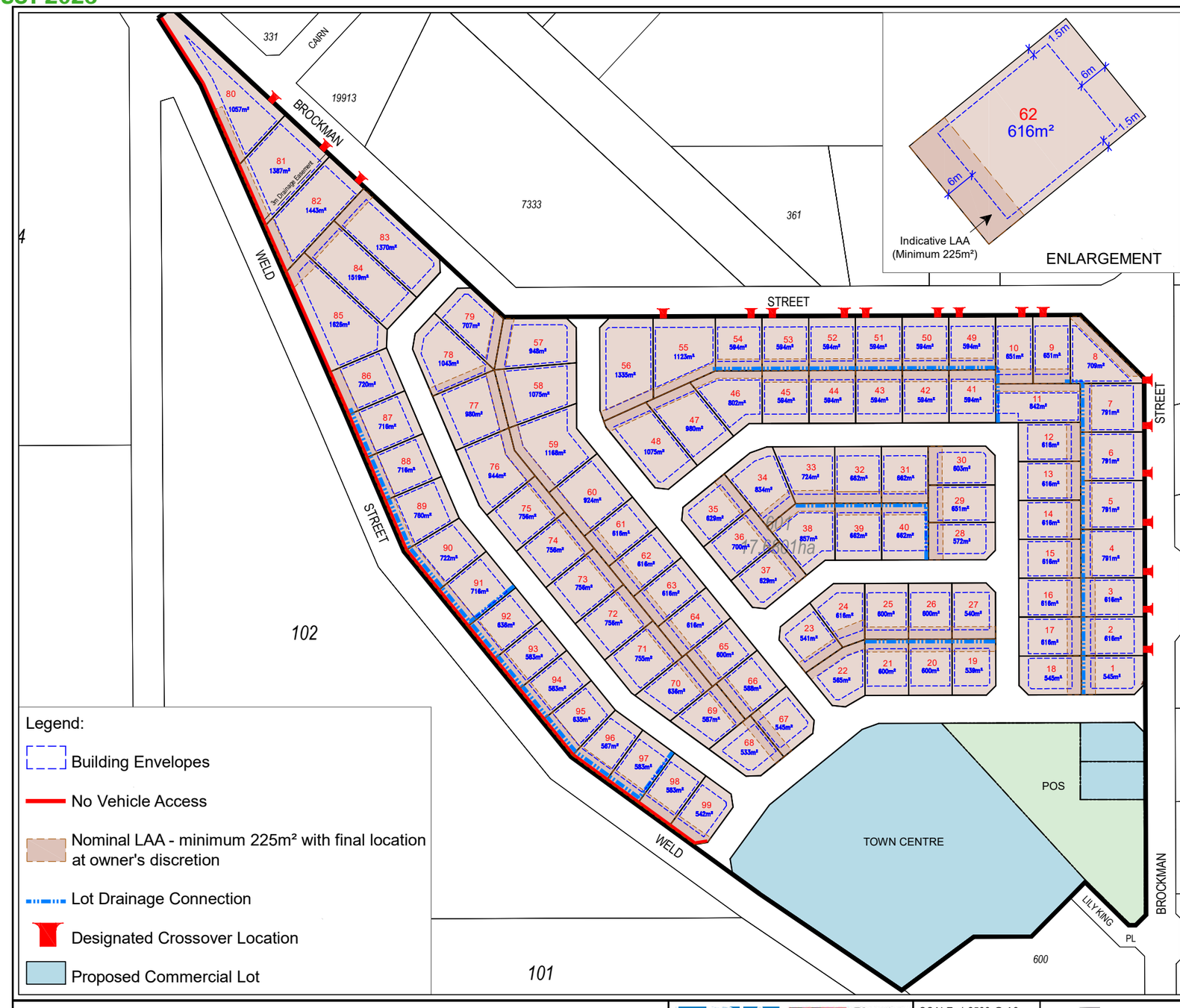
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**LOCAL DEVELOPMENT PLAN**
**LOT 601 BROCKMAN STREET, GINGIN**

This Local Development Plan has been prepared pursuant to Clause 52 (1)(a) of the Planning and Development (Local Planning Schemes) Regulations 2015 - Schedule 2 - Deemed Provisions and the Residential Design Codes (R-Codes), and in place of a planning approval for a Single House where it meets:

i. The Deemed-to-comply provisions of the R-Codes, and any other provisions listed in this Local Development Plan

General

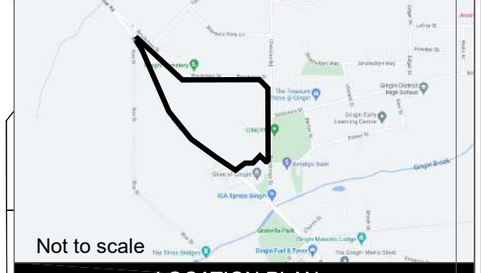
1. No vehicular access to Weld Street for residential lots.

Fencing

2. Any front fence shall not be forward of the building envelope and shall be constructed of a rural design with a maximum height of 1.2m.

Setbacks (Minimum)

- 6m Front Setback
- 3m Secondary Street Setback
- Setbacks to Weld Street will be a minimum of 7.5m
- All other setbacks to be in accordance with the R-Codes




LOCATION PLAN

The provisions of this Local Development Plan are enforced through the following legislation:
Clause 56 of the *Planning and Development (Local Planning Schemes) Regulations 2015 - Schedule 2 - Deemed Provisions.*
Section 214 of the *Planning and Development Act 2005* - Directions by responsible authority regarding unauthorised development.

**APPROVAL**
Pursuant to Clause 52(1)(a) of the *Planning and Development (Local Planning Schemes) Regulations 2015* - Schedule 1 - Deemed Provisions this Local Development Plan is hereby approved.

---
Chief Executive Officer

---
Date

# LOCAL DEVELOPMENT PLAN
LOT 601 BROCKMAN STREET
GINGIN

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hyd2o HYDROLOGY

**Lot 601 Brockman St, Gingin**

Urban Water Management Plan

December 2022



**Client: Acumen Development Solutions**

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**Disclaimer**

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Hyd2o recognise site conditions change and contain varying degrees of non-uniformity that cannot be fully defined by field investigation. Measurements and values obtained from sampling and testing in this document are indicative within a limited timeframe, and unless otherwise specified, should not be accepted as conditions on site beyond that timeframe.

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## Executive Summary

Hyd2o was commissioned by Acumen Development Solutions to prepare this Urban Water Management Plan (UWMP) to support the development of Lot 601 Brockman St, Gingin.

The subdivision development area (herein referred to as the site) is located approximately 67 km north of Perth City Centre within the Shire of Gingin. The site has a total area of 17.6 ha and is predominantly cleared pasture with the exception of sparse trees and remnant gathering of trees in the south-east corner.

The proposed development will comprise of a rural residential subdivision, extension of the Town Centre, and an associated Public Open Space (POS) area. The proposed subdivision has considered the existing predevelopment environment, and used this information to inform and guide water management planning.

This UWMP provides a total water cycle management approach for development of the site and has been prepared in accordance with the principles and objectives of Better Urban Water Management (Western Australian Planning Commission, 2008) and the Shire of Gingin Policy Guidelines (Shire of Gingin, 2022).

It is important to note that the proposed development of the site is compliant with the Government Sewerage Policy (Government of WA, 2019). Although the site is located within a Sewage Sensitive Area the policy specifically permits land already zoned for urban use with a residential density coding of R2 to R10 under a local planning scheme or structure plan endorsed by the Western Australian Planning Commission (WAPC), to be subdivided in accordance with the existing density coding.

This document has been prepared prior to a WAPC conditional subdivision approval with agency review of this document understood to be part of the subdivision application process. As such detailed engineering design has not been included with this UWMP with subsequent drawings to remain consistent with the UWMP once approved. Should any changes be made at a later stage of design addendums may be prepared as required.

A summary of key elements of the UWMP are detailed in the following table.

**Urban Water Management Plan Summary**

| Strategy Elements | UWMP Method & Approach |
|---|---|
| **Water Use Sustainability** | |
| Water Efficiency | • Promotion of use of waterwise practices including water efficient fixtures and fittings (taps, showerheads, toilets and appliances).<br>• Encourage waterwise landscaping at lot scale and streetscapes.<br>• Minor POS landscaping with tree retention. |
| Water Supply | • Water Corporation Gingin Townsite supply system for lots, plus rainwater tanks encouraged.<br>• POS irrigation as required via groundwater licence. |
| Wastewater | • ATU's in accordance with Department of Health requirements and compliance with Government Sewerage Policy (Government of WA, 2019). |
| **Stormwater** | |
| Ecological Protection (15 mm Event) | • Lots to retain/detain 15 mm rainfall event on site.<br>• Road reserve 15 mm event runoff managed within the site via biofiltration area/road swales.<br>• Storage of 266 $m^3$ required in drainage POS area.<br>• Total storage of 20.6 $m^3$ required for road swales in minor road catchments. |
| Serviceability (20% Annual Exceedance Probability Event) | • Piped road drainage system sized to convey up to 20% Annual Exceedence Probability (AEP) event.<br>• Attenuated discharge to Shire's surrounding road drainage system. |
| Flood Protection (1% Annual Exceedance Probability Event) | • Flow paths within road reserves in the site provide for overland flows which exceed the capacity of piped drainage.<br>• Discharge from site to be conveyed via Shire road drainage flow paths to Gingin Brook.<br>• Lot levels to be established at a minimum 0.5m above the 1% AEP flood level. |
| **Groundwater** | |
| Fill & Subsoil Drainage | • Additional fill not be required to provide separation to groundwater with areas of perching managed with site's natural surface.<br>• No subsoil drainage is required for lots.<br>• Subsoil implemented as required in design of Town Centre. |
| ASS & Contamination | • There is no risk of acid sulphate soils within the site. |

# 1 Introduction

This Urban Water Management Plan (UWMP) has been prepared by Hyd2o on behalf of Acumen Development Solutions to support the development of Lot 601 Brockman St, Gingin.

The subdivision development area (herein referred to as the site) is located approximately 67 km north of Perth City Centre within the Shire of Gingin. The site has a total area of 17.6 ha and is predominantly cleared pasture with the exception of sparse trees and remnant gathering of trees in the south-east corner. The site is bound by Brockman St to the north and east and Weld St to the west. The southern boundary adjoins Shire of Gingin offices and centres. Gingin Brook runs west approximately 250m south of the site (Figure 1).

The proposed development will comprise of a residential subdivision, extension of the Town Centre, and an associated Public Open Space (POS) area. The subdivision concept is shown in Figure 2. The proposed subdivision has considered the existing predevelopment environment, and used this information to inform and guide water management planning.

This UWMP provides a total water cycle management approach to development of the site and has been prepared consistent with the Shire of Gingin's Policy Guidelines (2022) and Better Urban Water Management (Western Australian Planning Commission, 2008).

This document provides the outcomes of site specific assessment related to groundwater and surface water and provides a clear vision in terms of adopting best management practises to achieve water sensitive design.

WAPC (2008) UWMP checklists to assist in the review of this document are contained as Appendix A.

## 1.1 Planning Background

The site is zoned as predominantly as 'Residential' under the Shire of Gingin's latest Local Planning Scheme (LPS) (No.9) with the southern portion classified a combination of 'Town Centre' and 'Parks and Recreation'. The proposed subdivision concept in Figure 2 is generally consistent with the LPS.

Although the site is located within a Sewage Sensitive Area the policy specifically permits land already zoned for urban use with a residential density coding of R2 to R10 under a local planning scheme or structure plan endorsed by the WAPC to be subdivided in accordance with the existing density coding.

## 1.2 Key Documents and Previous Studies

There is currently no overarching Local Water Management Strategy for the proposed development with this UWMP using the following key documents to define its principles, criteria, and objectives:

- Shire of Gingin Policy Manual (Shire of Gingin, 2022)
- Gingin Groundwater Allocation Plan (Department of Water, 2015)
- Gingin Water Reserve Water Source Protection Plan (Water and Rivers Commission, 1997)

- Gingin Water Reserve Drinking Water Source Protection Review (Department of Water, 2013)
- Stormwater Management Manual for WA (Department of Water, 2007)
- Decision Process for Stormwater Management in WA (Department of Water and Environmental Regulation, 2017)
- Better Urban Water Management (WAPC, 2008)

# 2 Design Objectives

Key design criteria for the site are shown in Table 1 and have been established consistent with criteria specified in the key reference documents previously detailed in Section 1.2.

These design criteria are used in Sections 5, 6 and 7 together with the identified constraints and opportunities of the predevelopment environment (Section 3) to establish the water management strategy for the site.

**Table 1: Key Urban Water Management Design Objectives**

| Design Objectives | Reference/Source |
|---|---|
| Water Conservation and Supply | |
| Water consumption target of 100 kL/person | WAPC (2008) |
| Encourage use of local species, and water wise landscaping in streetscapes and verges. | Shire of Gingin (2022) |
| Water Quality Management | |
| Retain stormwater runoff from constructed impervious surfaces (lots and roads) generated by the first 15 mm of rainfall at-source as much as practical. | DWER (2017) |
| Maintain surface and groundwater quality relative to predevelopment conditions based on application of water quality treatment measures detailed in the Stormwater Management Manual for WA | WAPC (2008) |
| Design in accordance with the protection of the Gingin Water Reserve | DoW (2013) |
| Flood Management | |
| Maintain the 1% annual exceedance probability (AEP) pre-development flood regime (flood level, peak flow rates and storage volumes). | DWER (2017)<br>Shire of Gingin (2022) |
| Minimum habitable floor levels shall be a minimum of 0.5 m above the 1% AEP storm event in stormwater storage areas. | DWER (2017)<br>Shire of Gingin (2022) |

# 3 Pre-Development Environment

## 3.1 Site Conditions

The site is bound by Brockman St to the north and east and Weld St to the west with the southern boundary adjoining Shire of Gingin offices and centres. Residential and commercial areas extend in further north, east and south directions. Gingin Brook runs west approximately 250m south of the site.

The site has a total area of 17.6 ha and is predominantly cleared pasture with the exception of sparse trees and remnant gathering of trees in the south-east corner. Historically it has remained fenced grazing pasture since town establishment.

Figure 3 shows Department of Primary Industries and Regional Development (DPIRD) 2m topography available from Landgate overlaying the site. The gradient is relatively uniform across the site running down in a general north to south direction. The maximum elevation is located in the northwest corner at approximately 130 mAHD with the minimum elevation of 98 mAHD located in the south eastern corner. This topography is generally consistent with the feature survey overlaying the subdivision concept in Figure 2.

## 3.2 Geotechnical

According to the Gingin (2035 II) 1:50,000 Environmental Geology mapping dataset published by the Department of Mines, Industry Regulation and Safety (2022) the site is mapped as predominantly colluvium soil and undifferentiated sand.

Structerre Consulting undertook a geotechnical investigation over the site in May 2022 that comprised of 13 Sample Retrieval Probes (SRP) to a depth of up to 2m over the site for material assessment and soil profiling. Test pit locations are shown in Figure 4. Structerre (2022) provided the following general description of the subsurface profile based on the testing performed:

- TOPSOIL: 0.1m – 0.2m (average depth: 0.1m).
- GRAVELLY SAND WITH CLAY: 0.2m - 1.5m (average depth: 0.6m)
- SAND WITH CLAY, WITH GRAVEL: 0.5m – 2.0m (average depth: 1.2m)
- CLAY TRACE SAND, TRACE GRAVEL: 1.3m (average depth 1.3m)

The soils encountered were reported to be generally consistent with regional environmental geology mapping.

No groundwater was encountered across the test pits during the investigation however the possibility of perching in wetter months was noted given the existence of cohesive materials in the subsurface profile. This was confirmed during a further investigation by Structerre (2022b) carried out in August 2022 to determine the suitability of the site for onsite sewage management. Following four weeks of heavy rainfall (254.4mm) perched water was found at 5 drilling locations at depths up to 0.3m below surface. These locations have also been included on Figure 4. Notably no perching was found at the remaining 21 drilling locations spread over the remainder of the site up to a depth of 2.5m, even with several refusals encountered on stiff clay. Both Structerre reports are included in Appendix B.

Based on the Structerre's investigations it is apparent perching generally occurs in a small southern area of the site and is temporary in nature.

### 3.2.1 Hydraulic Conductivity Testing

Structerre Consulting (2022) reported percolation tests at twelve locations across the site conducted at depths between 0.0 and 2.0m.

Permeability across the boreholes ranged from 0.1m/day to 2.6 m/day indicating parts of the site as generally unsuitable for infiltration type drainage systems.

Test results are shown in Table 2 and on Figure 4.

**Table 2: Hydraulic Conductivity Field Testing Results**

| Permeability Test Site | Tested By | Test Depth Below Surface | Soil Type | $K_s$ m/day |
|---|---|---|---|---|
| BH1 | Structerre | 0.0 – 2.0m | Sand to clay trace sand trace ravel | 0.1/day |
| BH2 | Structerre | 0.0 – 0.8m | Sand | 1.7m/day |
| BH3 | Structerre | 0.0 – 1.5m | Gravelly sand with clay to sandy clay with gravel | 0.7m/day |
| BH4 | Structerre | 0.0 – 1.0m | Gravelly sand with clay to sandy clay with gravel | 0.5m/day |
| BH5 | Structerre | 0.0 – 1.2m | Gravelly sand with clay to sandy clay with gravel | 0.3m/day |
| BH6 | Structerre | 0.0 – 0.7m | Gravelly sand with clay to sandy clay with gravel | 0.5m/day |
| BH7 | Structerre | 0.0 – 1.5m | Gravelly sand with clay to sandy clay with gravel | 0.9m/day |
| BH8 | Structerre | 0.0 – 1.9m | Gravelly sand with clay to sandy clay with gravel | 0.6m/day |
| BH9 | Structerre | 0.0 – 2.0m | Gravelly sand with clay to sandy clay with gravel | 0.8m/day |
| BH10 | Structerre | 0.0 – 1.5m | Sand | 2.6m/day |
| BH11 | Structerre | 0.0 – 1.9m | Sand to gravelly sand with clay | 1.4m/day |
| Bh12 | Structerre | 0.0 – 2.0m | Sand to gravelly sand with clay | 0.9m/day |

### 3.2.2 Acid Sulphate Soils

According to the Department of Water and Environment Regulation (DWER) Acid Sulphate Soils risk mapping (2022) there is no risk of acid sulphate soils within this site.

## 3.3 Contaminated Sites

According to DWER's Contaminated Sites database mapping (2022) there no known contaminated areas within or in proximity to the site.

## 3.4 Aboriginal Heritage Sites

A search of the Aboriginal Heritage Inquiry System (2022) indicates no Registered Aboriginal Heritage Sites are located within the site.

## 3.5 Wetlands

According to Department of Biodiversity Conservation and Attractions (DBCA's) Geomorphic Wetlands of the Swan Coastal Plain dataset (2022), there are no wetlands located within the site. This is consistent with Department of Water (2015) mapping for potential groundwater dependent ecosystems in the Shire of Gingin.

The banks of Gingin brook are classified as conservation category by DBCA and border the extent of town. The nearest extent of the mapped wetland boundary is approximately 120m southeast of site as shown on Figure 5.

Based on its proximity to Gingin Brook (within 1 km of significant wetland) the site is mapped as being a Sewerage Sensitive Area.

## 3.6 Surface Water

Hyd2o conducted a site investigation on 29 June 2022 to determine existing surface water flow behaviour in relation to the site. Existing site catchments and flow paths based on field observations and desktop assessment are shown on Figure 6.

Given the topography, the majority of the site flows south overland towards the southern boundary. A cut-off drain within the site and a shallow open drain following the fence line have been constructed directing flow to the east and west respectively and around the Shire buildings. The eastern portion of the site contributes to the pit and pipe system within Brockman St while the western portion contributes to the open cut drain system on Weld St.

Two minor catchments exist at the top of the site. One is in the northwest corner and drains an external catchment through the site to culverts under Weld St, then flowing south-east through the downstream property toward Roe St. The other small catchment in the north eastern corner is located in the Robinson St drainage system catchment.

Notably formal drainage (open drain, pipes and pits) exist on Brockman St to the north of the site acting as a cut-off so that runoff from rural lots to the north do not contribute flow into the site.

All flows are conveyed to Gingin Brook, currently without any visible or known water sensitive urban design measures to manage water quality.

It was noted that although Weld St was recently upgraded, its stormwater management system does not appear to have a formal constructed system to manage runoff. Based on Council anecdotal information (and field observations), overland flow onto and across the road surface currently appears to occur during storm events.

Predevelopment flows for the site for the 10% AEP and 1% AEP event were estimated using XP-Storm. Runoff rates used in modelling were estimated using Hyd2o's CURRV runoff calculator (Appendix C), and considered on-site investigation findings (including flood debris levels), the Structerre (2022) geotechnical investigation report, Shire of Gingin flooding anecdotal information, and the Australian Rainfall & Runoff (Ball, et al, 2016) Regional Flood Frequency Estimation (RFFE) Model. Resulting flows and applicable pro-rata site discharge rates are shown in Table 3.

Flow estimates correspond to pro rata flow rates per unit area of approximately 16 L/s/ha and 39 L/s/ha for the 10% AEP and 1% AEP event respectively.

**Table 3: Site Predevelopment Flow Estimation**

| Catchment | Existing Site |
|---|---|
| Pasture (ha) | 17.6 |
| 10% AEP EIA @ 37% RO | 6.54 |
| 1% AEP EIA @ 47% RO | 8.31 |
| **10 % AEP Event** | |
| Peak Flow (L/s) and Critical Duration (hrs) | 279 (3 hours) |
| Peak Flow per Hectare (L/s/ha) | 16 |
| **1% AEP Event** | |
| Peak Flow (L/s) | 690 (3 hours) |
| Peak Flow per Hectare (L/s/ha) | 39 |

## 3.7 Groundwater

A general groundwater map at small scale was constructed by Department of Environment (DoE) (2005) in analysis of depth to groundwater across the hydrogeology of the Northern Perth Basin. Mapped 20m interval contours across the Gingin region were imposed as shown on Figure 7 and infer that a 90 mAHD contour would run through the site.

A DWER bore slotted into the superficial aquifer exists approximately 500m south of site on the other side of Gingin Brook as shown in Figure 7. The bore is approximately 150m away from the defined streamline. Water levels were continuously monitored via data logger from 2010 to 2020 as shown in the hydrograph extracted online from DWER's Water Information Reporting website (2022) and contained in Appendix D. Groundwater levels are shown to be in general decline across the 10 years with the maximum winter peak reading of approximately 80.7 mAHD recorded in 2010 and the minimum winter peak reading of approximately 79.6 mAHD recorded in 2020. Given proximity to the Gingin Brook it is expected that water level behaviour at the bore would be a reflection of the level of streamflow and therefore upstream catchment contribution. The depth to groundwater level from natural surface for the final recorded peak in 2020 was in excess of 15m.

Based on groundwater information available it would be expected that separation to the regional groundwater table would be in exceedance of at least 5m across the site, consistent with DWER requirements to progress development without monitoring.

### 3.7.1 Gingin Water Reserve

The Gingin Water Reserve was proclaimed in 1999 and is currently defined by a 300m Wellhead Protection Zone (WHPZ) around two active Water Corporation production bores that source drinking water for the town. The two bores, 1/08 and 1/00, are located in a wellfield just off Edgar St as shown in Figure 7 (DoW, 2013). The bores draw water from the Leederville Formation which is comprised of both confined and unconfined aquifers in the Gingin region.

A Priority 3 (P3) classification has been assigned to the majority of the reserve under the protection of public drinking water source areas (PDWSAs), with a Priority 1 (P1) classification assigned to the extent of the production bore compound. The WHPZ and protection classifications are similarly displayed on the Western Australian Government's online PDWSA mapping tool (2022).

The site is located over 200m away from the Gingin Water Reserve and no restrictions for developing in a PDWSA would be applicable. Notably the site is also located downstream based on groundwater flow direction.

# 4 Water Use Sustainability Initiatives

## 4.1 Water Efficiency Measures

The reduction of scheme water within the site will be consistent with Water Corporation's Waterwise land development criteria. Conservation measures will include:

- Promotion of use of waterwise practices including water efficient fixtures and fittings.
- Consumption target for water of 100 kL/person/year.
- Encourage waterwise landscaping at estate and lot scale.
- Tree retention in POS area to minimise landscaping needs.

The development density within the site will also act to reduce garden (ex-house) use of water and minimise nutrient input, in compared to existing landuse.

## 4.2 Fit for Purpose Water Supply

### 4.2.1 Potable Water Supply

Extension of the Water Corporation's supply system for the Town of Gingin will provide the potable water supply to lots and the Town Centre. As discussed in Section 3.7.1 groundwater is sourced from two productions bores with treatment facilities located within the same wellfield compound which process the water prior to reticulation throughout the town (DoW, 2013). The Water Corporation are licensed to extract 210,000 kL/yr until 2025 for this operation as reported on DWER's online Water Register (2022).

While current town use of the licence allocation is unknown, the Shire of Gingin's Groundwater Allocation Plan indicates the Gingin Townsite has room for growth with water available in granted allocations within both the superficial and surficial aquifers of 920 ML/yr and 5000 ML/yr respectively (DoW, 2015).

Use of rainwater tanks to supplement potable water will be encouraged by the developer. Individual builders will manage the incorporation of rainwater tanks for those landowners who wish to use this method to supplement scheme water supply.

### 4.2.2 POS Irrigation

Any irrigation needs for the public open space (POS) area is expected to be sourced via groundwater. According to DWER's online Water Register (2022) the site is located over two groundwater resource areas which are currently not fully allocated. These being the Perth-Surficial aquifer in the Gingin Townsite subarea and the Perth-Yarragadee North aquifer in the Chandala Confined subarea.

Notably a groundwater licence exists on the land just south of the site allocated to the Shire of Gingin, adjacent to the designated POS area on the subdivision plan (Figure 2). The allocation is within the Perth-Leederville-Parmelia aquifer of the Cowalla Confined subarea for 22,950 kL/yr until 2031. The license is shown on an extract from DWER's Water Register website (2022) in Appendix E. This resource is fully allocated however the amount currently being utilised under the licence is unknown. Given the location of the POS area, there may be the opportunity to incorporate an irrigation schedule under the same licence should there be supply available to simplify management for the Shire.

## 4.3 Wastewater Management

Wastewater management will be via Department of Health approved Aerobic Treatment Units (ATU's) with configurations detailed in the Structerre Consulting (2022b) Site and Soil Evaluation Report (Appendix B). The report states that the proposed on-site sewage system for lots and the Town Centre have been designed consistent site and soil conditions to be in accordance with Australian Standard 1547 and the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.

This approach is compliant with the Government Sewerage Policy (Government of WA, 2019), which permits land already zoned for urban use with a residential density coding of R2 to R10 under a local planning scheme or structure plan endorsed by WAPC to be subdivided in accordance with the existing density coding.

# 5 Stormwater Management

Stormwater management has been designed consistent with DWER water sensitive design practices. The system will consist of planned management of the first 15mm event, pit and pipe drainage system, and sized bioretention and flood storage areas within drainage allocated POS.

The key elements of the stormwater management strategy are as follows, consistent with the Shire of Gingin's (2022) drainage policy guidelines, direct advice from the Shire and DWER's Stormwater Management Manual (DoW, 2007):

- Detention/retention of the first 15mm of rainfall on lots
- Treatment of first 15mm road runoff in biofiltration areas or swales
- Piped road drainage network sized to ensure roads are passable during the 20% AEP event
- Road reserves capable of conveying stormwater up to and inclusive of the 1% AEP event
- Flood storage areas sized to detain up to the 1% AEP event on-site
- Permissible discharge for the 10% and 1% AEP event to be consistent with predevelopment flows
- Minimum habitable floor levels to be set 0.5 m above the 1% AEP event flood level

Based on discussions with project engineers TABEC, the natural surface of the site will be retained as much as possible. Site catchments have been set consistent with existing levels and proposed layout so that while the majority of the site will be able to drain towards the allocated POS area in the southeast corner of the site, the remainder of the site will discharge directly into the Shire's road drainage network in greater than 15mm events via various minor catchments. Post development catchments are shown in Figure 8.

## 5.1 Stormwater Modelling

Stormwater modelling was carried out to size flood storage infrastructure in the drainage POS area consistent with the stormwater management strategy detailed above.

Stormwater modelling was done using XP-Storm. XP-Storm is an industry standard program that performs detailed hydraulic and hydrological calculations to simulate the performance of stormwater systems for a range of design storm events. The design storms modelled by XP-Storms were based on methodology in Australian Rainfall & Runoff (Ball, et al, 2016) and the Bureau of Meteorology Computerised Design Intensity Frequency Duration (IFD) Rainfall System. Storms modelled for the 1% AEP event ranged from the 10 minutes to 12 hours duration.

Post-development runoff rates for various landuses were again estimated using Hyd2o's CURRV runoff calculator (Appendix C) with consideration of increased impervious areas on existing site conditions. Permissible discharge for the 1% AEP event was restricted to 39 L/s/ha consistent with predevelopment flows detailed in Section 3.6.

Modelling results for the main POS drainage catchment are shown in Table 4. 1199 $m^3$ of storage was estimated to be required to attenuate flows back to a permissible discharge of 416 L/s based on the catchment size for the 1% AEP 1 hr critical duration event. Figure 2 shows an inundation area of 2243 $m^2$ for the 1% AEP event based on the storage configuration of 1:6 side slopes and 1.2m maximum storage depth. This area should be treated as indicative only with the final storage design to suit to the natural surface as much as possible in providing the volume requirement for the purpose of tree retention.

A 10% AEP permissible discharge rate of 169 L/s will also need to be met for the storage with an appropriate outlet configuration sized during detailed design stage.

The drainage pit across the road from the POS on Brockman St with a 375mm diameter piped outlet (noted during site investigation) is considered the most viable option for an outlet connection from the site to the existing Shire road drainage network, and its capacity will need to be verified during detailed design. External to the site, the pit only services a minor catchment as shown in Figure 8.

XP-Storm extracts for predevelopment and post development modelling are contained in Appendix F.

Detailed modelling was not considered necessary for the remaining catchments as it estimated that lots (average size ~1200 $m^2$) would generate similar runoff for the 1% AEP event post-development with management of the first 15mm event on site expected to account for the introduction of impervious areas. Minor portions of road within the Brockman St and Weld St catchments require approximately 12 $m^3$ and 8 $m^3$ of biofiltration swale storage respectively to treat the first 15mm of road runoff. Any additional storage in these areas will be provided where possible for management of greater events.

Note the Town Centre extension is expected to manage its own runoff with a peak allowable discharge of 89 L/s for the 1% AEP event based on the amount of allocated area.

In relation to Weld St, the development of the site as proposed will effectively reduce the area of the site which drains to Weld St from 3.2 ha to 2.1 ha. This reduction is considered likely to improve the current stormwater performance of this area.

Detailed engineering design is to be consistent with storage volumes and discharge rates detailed in this section. Appendix G details DWER's biofiltration guidelines for implementation.

Site discharge ultimately that flows to Gingin Brook is expected to improve in surface water quality from predevelopment to post development as a result of landuse change and introduced stormwater treatment systems.

**Table 4: Drainage POS Stormwater Management Area**

| Catchment | Main POS/Stormwater Area |
|---|---|
| Large Lots (ha) @ 47% RO | 7.37 |
| Road Reserve (ha) @ 92% RO | 2.40 |
| POS (ha) @ 32% RO | 0.61 |
| Commercial @ 65% RO | 0.30 |
| Equiv Imp Area EIA (1% AEP) (ha) | 6.06 |
| **15mm Event Biofiltration Area** | |
| Volume Required ($m^3$) @ 74% Road RO | 266 |
| Side Slopes (v:h) | 1:6 |
| Flood Depth (m) | 0.35 |
| TWL Area ($m^2$) | 912 |
| **Flood Storage Parameters** | |
| Approx Storage Invert (mAHD) | 98.00 |
| Side Slopes (v:h) | 1:6 |
| Nominal Low Level Outlet Modelled (mm) | 390 |
| **1% AEP Event** | |
| Modelled Flood Depth (m) | 1.08 |
| TWL Area ($m^2$) | 2243 |
| Volume ($m^3$) | 1199 |
| Peak Discharge (L/s) | 416 |
| Critical Duration (hr) | 1 |

## 5.2 Nutrient Modelling

Nutrient modelling was carried out using DWER's Urban Nutrient Decisions Outcome (UNDO) tool to provide an indication of potential change to the sites nutrient balance and export based on transition from rural paddock to a predominantly rural residential estate.

To determine export load via overland flow and groundwater key parameters input to the model are landuse, type of on-site drainage, depth to groundwater and gradient and soil type.

Predevelopment landuse was set as unrestricted rural with site adjacent open channel drains taking overland flow away from site. A nominal depth to groundwater of 5m was used based on information discussed is Section 3.7 with a gradient consistent with DoE (2005) mapping. Based on general geotechnical findings of trace clay transitioning to clay on site a soil type with approximately 19 PRI was used. The resulting model output was a load export of nitrogen and phosphorus of 74.0 kg/yr and 3.1 kg/yr respectively.

The post development model was input with a landuse distribution consistent with that shown in Figure 8. Lots being the most predominant landuse were assigned as rural living with no livestock but with clearing permitted. The model was divided into two catchments to account for the two main drainage functions on site. These being piped drainage to a biofiltration and flood attenuation area and the other being direct discharge from site to pre-existing open channel drains. Storage areas were input consistent with dimensions detailed in Section 5.1. One ATU per lot (99) and an ATU for the Town Centre was input consistent with the proposed effluent system plan as shown in Structerre (2022b). The result was a net load export of nitrogen and phosphorus of 58.1 kg/yr and 1.4 kg/yr respectively, showing a reduction in excess of 20% for both parameters. Storage areas present in the proposed stormwater management system removed 11.4 kg/yr of nitrogen and 0.4 kg/yr of phosphorous prior to the final export.

UNDO result reports for predevelopment and post development are included in Appendix H.

Based on results its observable that given site specific parameters the effect of land use change and stormwater treatment provides greater reduction in nutrients compared to the estimated contribution from the installation of ATU's onsite. It should be noted that the nutrient export post development should be considered a conservative estimate with the UNDO modelling tool designed to work with conservative ATU effluent concentrations of 62.5 mg/L for TN and 8 mg/L for TP. Stucterre (2022b) proposes treatment systems with a minimum effluent concentration of <10 mg/L for nitrogen and <1 mg/L for phosphorous.

# 6 Groundwater Management Strategy

Based on discussions with project engineers TABEC, final design levels will work to retain the existing natural surface as much as possible. Therefore, any cut or fill is expected to be minimal and limited to housing envelopes. Structerre (2022) have provided earthwork recommendations to ensure suitability for housing structures based on soil conditions found on site.

Based on the separation to the regional water table on site no fill will be required. Perched systems appear to be localised to certain regions of the site. Based on investigations detailed in Section 3.2 perching is expected to occur across a series of 7 lots that adjoin Weld St. Subsoil drainage is not considered necessary as open cut drains along lot boundaries to ensure management of stormwater should similarly provide relief for any perched systems.

As shown on Figure 4 perching predominantly occurs over the area proposed for the extended Town Centre. A suitable groundwater management system will need to be addressed in engineering design with integration to the stormwater management system.

Given depth to regional groundwater, location of the site in reference to the Gingin Water Reserve and nutrient outcomes discussed in Section 5.2, no additional measures in regards to groundwater quality are considered necessary.

# 7 Management of Subdivision Works

## 7.1 Dewatering and Acid Sulphate Soil

As discussed in Section 3.2.2, no ASS management plan will be required for the site.

Similarly given the depth to groundwater and seasonal nature of perching, no dewatering is expected to be required at the site for installation of any services.

## 7.2 Dust, Sediment and Erosion Control

The construction contractor will be responsible for preparing and implementing appropriate best management practices for the construction of the subdivision. Construction management will be undertaken consistent with the Local Government Guidelines for Subdivision Development (Institute of Public Works Engineering Australia, 2011).

As noted in Section 4.2, groundwater is an available resource in the area with a temporary abstraction licence for construction purposes to be sought through DWER. Should any additional water be required during construction, this will be the responsibility of the site contractor, and will likely be undertaken via water cartage.

Earthworks at the site will be carried out in accordance with AS 3798-2007 Earthworks for Residential and Commercial Developments. Temporary measures such as sedimentation basins and/or fences to locally control sediment and erosion during the construction phases of the project may require implementation.

# 8 Monitoring Program

## 8.1 Pre Development Monitoring

There is no requirement for predevelopment monitoring due to the nature of groundwater at the site and the site containing no surface water features.

## 8.2 Post Development Monitoring

The system will be assessed in terms of its performance in relation to design detailed in this report over the defects liability and maintenance period.

No further post development monitoring is proposed.

# 9 Implementation Framework

Roles and responsibilities for implementation are detailed in Table 5 below.

Long term maintenance of stormwater infrastructure will be the responsibility of the Shire of Gingin. Maintenance will include but not be limited to street sweeping to reduce particulate build up, removal of sediment and rubbish in manholes and biofiltration area, removal of debris to prevent stormwater blockages, checks on drainage function, and replacement of water quality treatment vegetation.

**Table 5: Actions and Responsibilities**

| Action | Developer | Shire of Gingin |
|---|---|---|
| Preparation of UWMP (this document) | ✓ | |
| Review and assessment of UWMP | | ✓ |
| Construction of stormwater system | ✓ | |
| Operation and maintenance of stormwater system for defects liability and maintenance period commencing from practical completion of infrastructure assets | ✓ | |
| Long-term stormwater system operation and maintenance | | ✓ |

# 10 References

Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retallick M, Testoni I, (Editors), 2016, Australian Rainfall and Runoff: A Guide to Flood Estimation, Commonwealth of Australia

Department of Biodiversity Conservation and Attractions (2022), Geomorphic Wetlands on the Swan Coastal Plain, accessed December 2022

Department of Environment (2005). The Hydrogeology of Groundwater Dependant Ecosystems in the Northern Perth Basin, June 2005.

Department of Mines, Industry Regulation and Safety (2022). 1:50,000 Geological Series Map – Gingin (2035 II) dataset.

Department of Planning, Lands and Heritage (2022). Aboriginal Heritage Inquiry System, accessed December 2022.

Department of Water and Environmental Regulation (2017), Decision Process for Stormwater Management in WA

Department of Water and Environmental Regulation (2022), Acid Sulphate Soils Risk Mapping database, accessed online December 2022.

Department of Water and Environmental Regulation (2022), Contaminated Sites Database, accessed online December 2022.

Department of Water and Environmental Regulation (2022), Water Information Reporting, accessed online December 2022.

Department of Water and Environmental Regulation (2022), Water Register, accessed online December 2022.

Department of Water (2015). Gingin Groundwater Allocation Plan, March 2015.

Department of Water (2013). Gingin Water Reserve Drinking Water Source Protection Review, July 2013.

Department of Water (2012), Water Monitoring Guidelines for Better Urban Water Management Strategies/Plans.

Department of Water (2008). Urban Water Management Plan: Guidelines for Preparing Plans and for Complying with Subdivision Conditions. Government of Western Australia.

Department of Water (2007), Stormwater Management Manual for Western Australia.

Government of Western Australia (2022). Public drinking water source area mapping tool, accessed online December 2022.

Government of Western Australia (2019). Government Sewage Policy, September 2019.

Institute of Public Works Engineering Australia (2011). Local Government Guidelines for Subdivision Development. Edition 2.1

Shire of Gingin (2022). Shire of Gingin Policy Manual, September 2022.

Structerre (2022). Geotechnical Investigation: Proposed Residential Subdivision – Lot 601 Brockman St, Gingin WA, May 2022.

Strucuterre (2022b). Site and Soil Evaluation for Onsite Sewage Management – Lot 601 Brockman Street, Gingin, September 2022.

Water and Rivers Commission (1997). Gin Water Reserve Water Protection Plan.

Western Australian Planning Commission (2008), Better Urban Water Management, October

FIGURES

Date: 13/12/2022 Job No. H22107




Site

hyd2o

Lot 601 Brockman St Gingin UWMP

Location Plan

Figure 1

Date : 13/12/2022 Job No: H22107




Source: Dynamic Planning (2022)

hyd2o

Lot 601 Brockman St Gingin UWMP

**Subdivision Concept Plan**

**Figure 2**

Date: 13/12/2022 Job No. H22107




Site

Landgate 2m Topo Contours

hyd2o

Lot 601 Brockman St Gingin UWMP

Site Conditions Plan

Figure 3

Date: 13/12/2022 Job No. H22107




Site

Geotech Test Pits (Structerre, 2022) Field Perrmeability (m/d)

Perched Groundwater within 0.3m of Surface
16th and 17th Aug 2022 (Structerre, 2022b)

hyd2o

Lot 601 Brockman St Gingin UWMP

Geotechnical Plan

Figure 4

Date: 13/12/2022 Job No. H22107




Site

**DBCA Wetlands**

Conservation

Multiple Use

hyd2o

Lot 601 Brockman St Gingin UWMP

Wetland Plan

Figure 5



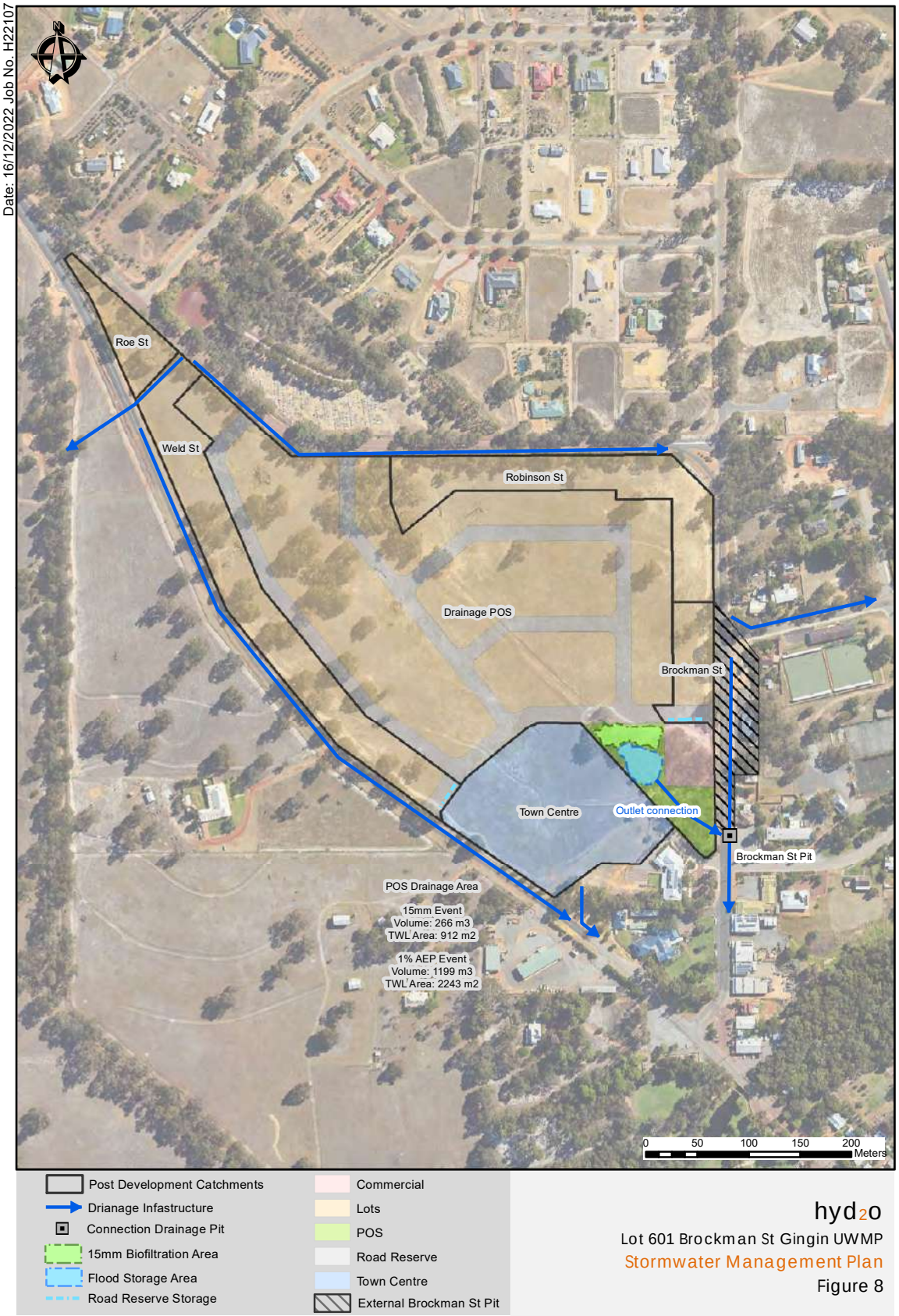

Site
Existing Site Catchments
Surface Flow
Existing Drainage Infastructure

hyd2o
Lot 601 Brockman St Gingin UWMP
Surface Water Plan
Figure 6




hyd2o

Lot 601 Brockman St Gingin UWMP
Groundwater Plan
Figure 7




hyd2o

Lot 601 Brockman St Gingin UWMP
Stormwater Management Plan
Figure 8

**APPENDIX A**
**UWMP Checklist**

**Checklist for integrated water cycle management assessment of application for subdivision or urban water management plan**

1. Tick the status column for items for which information is provided.
2. Enter N/A in the status column if the item is not appropriate and enter the reason in the comments column.
3. Provide brief comments on any relevant issues.
4. Provide brief description of any proposed best management practices, eg. multi-use corridors, community based-social marketing, water re-use proposals.

| UWMP Item | Deliverable | ☑ | Comments |
|---|---|---|---|
| **Executive summary** | | | |
| Development design elements and compliance with design objectives | Table 1: Design elements and compliance | ☑ | Executive Summary Section 2 |
| Key design requirements for detailed design – critical control points and elements | Table 2: Design requirements for critical control points | | Section 2 |
| **Introduction and planning approval** | | | |
| Location plan, adjoining lots, key landscape features and roads.<br>Local Water Management Strategy.<br>Structure plan, zoning and land use.<br>Subdivision plan and/or approval | Location plan<br>Site context plan<br>Subdivision layout plan<br>Or combination of above | ☑ | Section 1 Introduction<br>Figs. 1, 2 |
| **Design objectives** | | | |
| Agreed design objectives and demonstration of compliance | | ☑ | Executive Summary Section 2 |
| **Site characteristics** | | | |
| Existing information and more detailed assessments (monitoring). How do the site characteristics affect the design? | | ☑ | Section 3 Predev Env |
| Site Conditions - existing topography/contours, aerial photo underlay, major physical features | Site condition plan | ☑ | Section 3.1 Site Conditions, Fig. 3 |
| Geotechnical - topography, test pit locations, soil zones and descriptions, site classification zones, proposed earthworks and approximate finished contour levels | Geotechnical plan | ☑ | Section 3.2 Geotechnical, Fig. 4 |
| Environmental - sensitive or significant vegetation areas, wetlands and buffers, waterways and buffers, contaminated sites | | ☑ | Section 3.5 Wetland Fig.5 |
| Surface Water – topography, 100 year floodways and flood fringe areas, 100 year proposed flow paths, water quality of flows entering and leaving (if applicable) | | ☑ | Section 3.6 Surface Water Fig 6 |
| Groundwater – topography, test bore locations, groundwater pre development, groundwater post development, water quality details, groundwater variation hydrograph | Groundwater Plan | ☑ | Section 3.7<br>Groundwater, Fig.7 |
| Landscape - proposed public open space areas, water source, bore(s), lake details (if applicable), approx watering requirements and water balance, indicative irrigation schedule. Demonstrate compliance with DoW Constructed Lakes Position Statement if applicable | | ☑ | Section 4.2.2 |
| **Water use sustainability initiatives** | | | |
| Water supply and efficiency measures | | ☑ | Section 4.1 Water Conservation Strategy |
| Fit-for-purpose strategy and agreed actions. If non-potable supply, support with water balance | | ☑ | Section 4.2 Fit-For-Purpose Water Strategy |
| Wastewater management | | ☑ | Section 4.3 Wastewater |

| UWMP Item | Deliverable | ☑ | Comments |
|---|---|---|---|
| **Stormwater and groundwater management design** | | | Section 5 and Section 6 |
| Flood protection - peak flow rates, top water levels at control points,100 year flow paths - floodways and flood fringe zones and/or along roads and reserves, 100 year inundation areas and volumes | % AEP Event Plan | ☑<br>☑ | Section 5 Stormwater Management<br>Figure 8 |
| Stormwater management system - storage areas, flows and hydraulic grade lines for both major and minor events including controlling inverts (critical control points). Locations and arrangements for agreed structural and non-structural best management practices and treatment trains supported by sizing criteria, areas of inundation, flow paths and cross sections. Show integration with landscaping | Section 5 | ☑<br>☑<br>☑ | Section 5 Stormwater Management<br>Figure 8 |
| Post development groundwater levels and fill requirements (including existing and final surface levels), outlet controls, and any subsoils (showing drawdown/impacts near sensitive environments). Describe modelling assumptions. | | ☑<br>☑ | Section 6 Groundwater Management |
| Actions to address acid sulfate soils or contamination | | ☑ | Section 7 Subdivision Works Management |
| Protection of waterways, wetlands (and their buffers), remnant vegetation and ecological linkages | | ☑ | Section 3.5, Section 5 |
| Management of disease vector and nuisance insects | | ☑ | Section 5 |
| **Management of subdivisional works** | | | |
| Management of construction activities including dewatering, acid sulfate soils, constructed best management practices, and dust, sediment and erosion control – timing and possible staging | | ☑ | Section 7 Subdivisional Works Management |
| **Monitoring program** | | | |
| Sampling and assessment plan including duration and arrangements for ongoing actions | | ☑ | Section 8 Monitoring Program |
| **Implementation plan** | | | |
| Roles, responsibilities, funding for implementation | | ☑ | Section 9 Implementation, Table 5 |
| Maintenance arrangements as agreed | | ☑ | Section 9 Implementation |
| Assessment and review | | ☑ | Section 9 Implementation |

**APPENDIX B**
**Geotechnical Reports**

Doc GE2.1.2

# GEOTECHNICAL INVESTIGATION

**For:** Tabec Pty Ltd

**Project Address:** Proposed Residential Subdivision –
Lot 601 Brockman Street, Gingin WA

**Project Number:** D294537

**Job Number:** J409671

**Revision Number:** 0

**Date:** 31/5/2022

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# 1. PROJECT DETAILS

## 1.1. Introduction

At the request of Tabec Pty Ltd, Structerre Consulting (Structerre) have conducted a Geotechnical Investigation at Proposed Residential Subdivision – Lot 601 Brockman Street, Gingin. The purpose of the investigation was to provide the following for residential subdivision purposes:

- An assessment of subsurface soil profile and groundwater conditions across the proposed area of development;
- Site classification in accordance with AS 2870-2011 Residential Slabs and Footings;
- Wind Classification in accordance with AS 4055-2012 Wind Loads for Housing;
- Recommendations for stormwater drainage design;
- Recommendations on earthworks and site preparation; and
- Provision of a footing detail considering anticipated surface movement and sand pad thickness.

Terms of reference for this investigation were presented in a Structerre Consulting proposal reference Q95958 (dated 5 May 2022), which was submitted to and accepted by Tabec Pty Ltd.

## 1.2. Site Description

The site is located at Lot 601 Brockman Street, Gingin, Shire of Gingin. Brockman Street lies to the north of the site, Weld Street to the west, Cheriton Road to the east and Shire of Gingin and Gingin Community Resource & Visitor Centre to the south.

The site slopes up towards the northern boundary. At the time of the field investigation, the site was vacant and covered in vegetation with small to medium sized trees.

## 1.3. Field Investigation – Scope of Works

The field investigation was carried out on 12 May 2022 and comprised:

- 13 x Sample Retrieval Probes (SRP) to a depth of 2.0m (refusal) over the site for material assessment and soil profiling;
- 12 x In-situ percolation tests to determine the permeability of the materials within the upper 2.0m; and
- 8 x Dynamic Cone Penetrometer (DCP) tests in accordance with AS 1289.6.3.2 (1997) to a depth of 1.0m for evaluation of relative densities of the upper layers.

The borehole test locations are shown on the attached site plan in Appendix 1.

Suitably qualified geotechnical personnel from Structerre supervised the fieldwork and all fieldwork, interpretation and terminology used in this report are in accordance with the guidelines presented in AS1726-2017 Geotechnical Site Investigations.

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## 2. DESK STUDY

### 2.1. Geological Setting

The Perth sheet 1: 50,000 Environmental Geology Series (Part Sheets 2034 III and 2134 III, 1986) prepared by the Geological Survey of Western Australia indicates that the following geological layers underlie the site:

- Colluvium – Colluvium soil and undifferentiated sand (Qpo)

### 2.2. Ground Surface and Groundwater Level

The Landgate website indicates the ground surface level at this site was approximately 120.0m – 135.0m Australian Height Datum (AHD).

No published groundwater information available for the site.

### 2.3. Earthquake Coefficient

In accordance with AS 1170.4-2007 Structural Design Actions the site is located within an area with an earthquake acceleration coefficient of 0.10.

### 2.4. Wind Classification

In accordance with AS 4055-2012 Wind Loads for Housing, wind classification of this site falls within the non-cyclonic "N2" –"N3" category.

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## 3. RESULTS OF THE INVESTIGATION

### 3.1. Subsurface Soil Profile

The subsurface soil profile presented below was determined from the ground conditions encountered within the boreholes:

**Table 1 – Subsurface Soil Profile**

| Borehole | Topsoil | Gravelly SAND with clay | SAND with clay, with gravel | Sandy CLAY trace gravel | CLAY trace sand, trace gravel |
|---|---|---|---|---|---|
| | Depth to Base of Strata (m) | | | | |
| BH1 | 0.1 | - | 0.7 | 2.0 | 1.3 |
| BH2 | 0.1 | - | 0.8 | - | - |
| BH3 | 0.1 | 0.4 | - | 1.5 | - |
| BH4 | 0.1 | 0.3 | - | 1.0 | - |
| BH5 | 0.1 | 0.3 | - | 1.2 | - |
| BH6 | 0.1 | 0.2 | - | 0.7 | - |
| BH7 | 0.1 | 0.3 | - | 1.5 | - |
| BH8 | 0.1 | 0.2 | - | 0.7 | - |
| BH9 | 0.1 | 0.2 | - | 0.7 | - |
| BH10 | 0.1 | 1.5 | 1.1 | - | - |
| BH11 | 0.1 | 1.1 | 0.9 | 1.9 | - |
| BH12 | 0.1 | 1.0 | 0.7 | 1.2 | - |
| BH13 | 0.2 | - | 0.5 | - | - |
| **Average** | **0.1** | **0.6** | **0.8** | **1.2** | **1.3** |

The soils encountered are consistent with the expected site conditions as predicted from the Environmental Geology Map. It is important to note that there may be pockets of fill on site that are deeper than that encountered by the investigation boreholes. The subsurface soil conditions encountered are presented in the bore logs, within Appendix 3.

### 3.2. Groundwater

Groundwater was not encountered in any of the boreholes during or immediately after drilling. However, the groundwater is expected to be encountered approximately 0.2m below the existing ground level above the more cohesive materials.

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### 3.3. Percolation Testing

Percolation testing of the in-situ soils was undertaken in twelve locations. Results of the testing are summarised below:

**Table 2 – In Situ Percolation Test Results**

| Test Location | Testing Depth | Soil Type | Permeability |
|---|---|---|---|
| BH1 | 0.0 - 2.0m | SAND to CLAY trace sand trace gravel | 0.1/day |
| BH2 | 0.0 – 0.8m | SAND | 1.7m/day |
| BH3 | 0.0 - 1.5m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.7m/day |
| BH4 | 0.0 - 1.0m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.5m/day |
| BH5 | 0.0 - 1.2m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.3m/day |
| BH6 | 0.0 – 0.7m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.5m/day |
| BH7 | 0.0 - 1.5m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.9m/day |
| BH8 | 0.0 – 0.8m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.6m/day |
| BH9 | 0.0 – 0.7m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.8m/day |
| BH10 | 0.0 - 1.5m | SAND | 2.6/day |
| BH11 | 0.0 - 1.9m | SAND to Gravelly SAND with clay | 1.4m/day |
| BH12 | 0.0 - 2.0m | SAND to Gravelly SAND with clay | 0.9m/day |

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## 3.4. Laboratory Test Results

Selected soil samples were tested for Atterberg Limits.

### 3.4.1. Atterberg Limits

Atterberg Limits were tested by Structerre's in-house NATA accredited laboratory. Results of the testing are summarised below:

**Table 3 – Atterberg Limit Test Results**

| Sample | Test Hole | Depth (m) | Soil Description | Liquid Limit % AS1289 3.1.2 | Plastic Limit % AS1289 3.2.1 | Plasticity Index % AS1289 3.3.1 | Linear Shrinkage % AS1289 3.4.1 |
|---|---|---|---|---|---|---|---|
| 1 | BH1 | 1.0-1.6 | CLAY trace gravel, trace sand | 70 | 28 | 42 | 14.5 |
| 2 | BH1 | 1.3-1.9 | Sandy CLAY trace gravel | 55 | 21 | 34 | 13 |

Test results indicate that the natural CLAY has moderate to high shrink swell capacity or degree of expansion. A copy of the results are presented in Appendix 4.

### 3.4.2. California Bearing Ratio (CBR)

Representative samples were tested by Structerre's in-house NATA accredited laboratory in accordance with AS1289.5.2.1 (2003). The test certificates are presented in Appendix 4 and are summarised in Table 4.

**Table 4 – Soaked CBR Test Results**

| Test Hole | Depth (m) | Soil Description | Optimum Moisture Content % | Maximum Dry Density t/m3 | Swell (%) | CBR @ Penetration (%) |
|---|---|---|---|---|---|---|
| BH13 | 0.2 – 0.5 | SAND | 10 | 1.83 | 0 | 12 @5.0mm |
| BH14 | 0.2 – 0.5 | SAND | 10 | 1.99 | 0 | 40 @5.0mm |

Note: CBR samples were remoulded to 95% Modified maximum dry density in accordance with AS1289 5.2.1 prior to soaking for four (4) days. Based on the above results a conservative soaked CBR of 10% would be recommended for pavement design. Copies of the laboratory results are included in Appendix 4 of this report.

Where the placement of 0.5m or greater of sand fill placed and compacted to 95% of (Modified) MDD above the existing clay soils, an improved subgrade CBR of 12% can be used in pavement design.

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## 4. GEOTECHNICAL CONSTRUCTION CONSIDERATIONS

### 4.1. Site Classification

AS 2870-2011 Residential Slabs and Footings provides guidance on site classification for residential slabs and footing design based on the expected ground surface movement and depth of expected moisture changes.

**Table 5 – Classification Based on Site Reactivity**

| AS 2870-2011 Residential Slabs and Footings - Clause 2.1.2 Table 2.1 | |
|---|---|
| **Class** | **Foundation** |
| A | Most sand and rock sites with little or no ground movement from moisture changes |
| S | Slightly reactive clay sites, which may experience only slight ground movement from moisture changes (0<ys≤20mm) |
| M | Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes (20<ys≤40mm) |
| H1 | Highly reactive clay sites, which may experience high ground movement from moisture changes (40<ys≤60mm) |
| H2 | Highly reactive clay sites, which may experience very high ground movement from moisture changes (60<ys≤75mm) |
| E | Extremely reactive sites, which may experience extreme ground movement from moisture changes (ys>75mm) |
| **Clause 2.1.3 Classification of other Sites** | |
| P | Sites which include soft or unstable foundations such as soft clay or silt or loose sands, landslip, mine subsidence, collapsing soils and soils subject to erosion, reactive sites subject to abnormal moisture conditions and site that cannot be classified in accordance to Table 2.1 |

The site in its current condition is classified as Class “M” to “H”. Based on results of this investigation the site can be upgraded to a Class “S” in accordance with AS 2870-2011 provided that all unsuitable materials are removed and replaced with engineer-controlled sand fill materials in accordance with the earthwork recommendations outlined in Section 4.3 of this report.

Footings suitable for this site should be adopted to accommodate expected ground surface movements of approximately $y_s$ = 20mm associated with the presence of moderately to highly reactive CLAY deposits within the building site.

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### 4.2. Drainage

The existing ground conditions are not suitable for on-site disposal of stormwater runoff through the use of soakwells.

The design of the drainage system is unknown at this time, but may include:

- Rainwater Tanks;
- Dams / Compensation basin;
- Overland flow paths; and
- Soakwells, if permeable cover and / or stormwater designs are appropriate.

Sub soil drainage may be required to control groundwater perching in the upper soil layers within the building footprint.

### 4.3. Earthworks

All earthworks shall be undertaken in accordance with AS 3798-2007 Guidelines on earthworks for commercial and residential developments and are to include the following:

- All unsuitable materials to be stripped and removed from the site. Unsuitable materials include topsoil, deleterious and organic materials.
- It is considered that the near surface sand material requires improvement. Therefore, it is proposed to excavate and stockpile the materials for reuse, provided it is free from clay/silt (i.e. <5%), deleterious and organic materials. The depth of excavation may vary depending on conditions encountered and is subject to inspection.
- Excavation should not be greater than 2.0m and/or undermine any surrounding structures. A 1V: 1.5H slope should be maintained for temporary excavations. If excavation is required closer than the 1V: 1.5H slope would allow or deeper, it is recommended that this office be contacted for retaining system design.
- Proof compact the exposed base. The compaction requirements are set out in the table below, as per AS 3798-2007:

**Table 6 – Compaction Requirements**

| Item | Application | Minimum relative compaction, % | |
|---|---|---|---|
| | | Minimum density ratio (Standard Compaction Effort) (Cohesive soils) | Minimum density index (Cohesionless soils) |
| 1 | Residential - lot, fill, house, sites | 95 | 70 |

- After excavation and proof compaction, the excavated base is to be inspected and approved by a representative from this office prior to backfilling. At this stage it can be assessed whether any further materials need to be removed or whether further compaction of the base is required.

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- A minimum of 1.0m sand cover is to be placed or maintained above the reactive (clay) material in order to achieve a Class "S" site with $y_s$ = 20mm.
- The ground level for residential construction should be built up to design levels with the stockpiled sand FILL and imported fill, if required. The imported fill should consist of free draining sand with not more than 5% passing a 75µm sieve and be free of organic matter and other deleterious materials. The fill materials should be placed in layers not exceeding 300mm loose thickness and compacted to achieve a minimum 8 PSP blows over the interval
  150 – 450mm, 9 PSP blows over the interval 450 – 750mm and 11 PSP blows over the interval 750 -1050mm.
- After remedial earthworks have been completed, the earthworks should be inspected and approved by a representative from this office.

## 5. CONCLUSIONS

A site investigation has been carried out at the site of the proposed residential development to assess the geotechnical conditions. Parameter and design recommendations are incorporated in the body of the report. The following conclusions have been drawn from the site investigation:

- The average subsurface soil profile encountered comprised topsoil to 0.1m, gravelly sand with clay to 0.6m, sand with clay, with gravel to 0.8m, sandy clay trace gravel to 1.2m and underlain by clay trace sand, trace gravel to the investigated depth of 2.0m.
- Groundwater or perched water was not encountered across the site to the depth of 2.0m.
- It is considered that the site is not suitable for on-site drainage.
- The site can be classified as Class "S" in accordance with AS 2870-2011 due to presence of moderately to highly reactive CLAY deposits within the building site, provided that the recommended earthworks are undertaken.
- The full scope of the recommended earthworks is presented in Section 4.3, but generally comprises:
  - Stripping of topsoil and unsuitable materials
  - Proof compaction of the base
  - Placement of sand fill to required level
  - Compaction to final level

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## 6. LIMITATION OF FIELD INVESTIGATIONS

This report has been prepared in accordance with generally accepted consulting practice for Tabec Pty Ltd using information supplied at the time and for the project specific requirements as understood by Structerre. To the best of our knowledge the information contained in this report is accurate at the date of issue, however it should be emphasised that any changes to ground conditions and/or the proposed structures may invalidate the recommendations given herein.

The conclusions and recommendations in this report are based on the site conditions revealed through selective point sampling, representing the conditions of the site in total, although the area investigated represents only a small portion of the site. The actual characteristics may vary significantly between successive test locations and sample intervals other than where observations, explorations and investigations have been made.

The materials and their geotechnical properties presented in this report may not represent the full range of materials and strengths that actually exist on site and the recommendations should be regarded as preliminary in nature. Allowances should be made for variability in ground conditions and any consequent impact on the development. Structerre accepts no responsibility and shall not be liable for any consequence of variations in ground conditions.

If ground conditions encountered during construction are different to that described in this report, this office should be notified immediately.

For and behalf of

STRUCTERRE CONSULTING

Margie Mortera
Geotechnical Assistant

Checked By: David Harding
Employee Title: Geotechnical Supervisor

Authorised By: Mel Castle
Employee Title: Division Manager - Geotechnical

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Disclaimer
This report is at the request of the addressee and no liability is accepted by Structerre Consulting to any third person reading or relying upon the report, not withstanding any rule of law and/or equity to the contrary and that this report is strictly confidential and intended to be read and relied upon only be the addressee.

| Job # | Revision | Authored | Checked | Authorised |
|---|---|---|---|---|
| J409671 | 0 | MM | DH | MC |
| | | | | |

## 7. REFERENCES

Department of Water – Perth Groundwater Atlas

Landgate Map Viewer

Geological Survey of Western Australia 1:50,000 Environmental Geology Series

AS 1170.4-2007 Structural design actions – Earthquake actions in Australia

AS 1289.3.1.2-2009 Methods of testing soils for engineering purposes – Soil classification tests – Determination of the liquid limit of a soil

AS 1289.3.2.1-2009 Methods of testing soils for engineering purposes – Soil classification tests – Determination of the plastic limit of a soil

AS 1289.3.3.1-2009 Methods of testing soils for engineering purposes – Soil classification tests – Calculation of the plasticity index of a soil

AS 1289.3.4.1-2009 Methods of testing soils for engineering purposes – Soil classification tests – Determination of the linear shrinkage of a soil

AS 1289.3.6.1-2009 Methods of testing soils for engineering purposes – Soil classification tests – Determination of the particle size distribution of a soil – Standard method of analysis by sieving

AS 1289.5.2.1-2009 Soil compaction and density tests – Soil classification tests – Determination of the dry density/moisture content relation of a soil using modified compactive effort

AS 1289.6.1.1-2009 Soil strength and consolidation tests – Soil classification tests – Determination of the California Bearing Ratio of a soil

AS 1289.6.3.2-1997 Methods of testing soils for engineering purposes – Soil strength and consolidation tests – Determination of the penetration resistance of a soil – 9kg dynamic cone penetrometer test

AS 1726-2017 Geotechnical site investigation

AS 2870-2011 Residential slabs and footings

AS 3798-2007 Guidelines on earthworks for commercial and residential developments

AS 4055-2012 Wind loads for housing

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**APPENDIX 1 – SITE LOCATION MAP**




Note: Showing approximate test locations only

Google Map 2022

**LEGEND**

BH Borehole

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| PROJECT #: | D294537 |
| CLIENT: | Tabec Pty Ltd |
| JOB #: | J409671 |
| SCALE: | NTS |
| TITLE: | Geotechnical Investigation Site Plan |
| DATE: | 12 May '22 |
| DRAWN BY: | MM |
| CHECKED BY: | DH |

DOC: GE:3.001

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Note: Showing approximate test locations only

Google Map 2022

**LEGEND**

BH Borehole

Depths of Non-reactive Material

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|---|---|
| PROJECT: | Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin |
| PROJECT #: | D294537 |
| JOB #: | J409671 |
| CLIENT: | Tabec Pty Ltd |
| SCALE: | NTS |
| TITLE: | Geotechnical Investigation Site Plan |
| DATE: | 12 May '22 |
| DRAWN BY: | MM |
| CHECKED BY: | DH |

DOC: GE:3.001

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**APPENDIX 2 – SITE PHOTOS**



PHOTO 1



PHOTO 2

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|---|---|
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| PROJECT #: | D294537 |
| JOB #: | J409671 |
| CLIENT: | **Tabec Pty Ltd** |
| SCALE: | NTS |
| TITLE: | Site Photographs |
| DATE: | 12 May '22 |
| DRAWN BY: | MM |
| CHECKED BY: | DH |

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PHOTO 3 - Sample taken at BH2




PHOTO 4 - Sample taken at BH8

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|---|---|
| PROJECT: | Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin |
| PROJECT #: | D294537 |
| JOB #: | J409671 |
| CLIENT: | **Tabec Pty Ltd** |
| SCALE: | NTS |
| TITLE: | Site Photographs |
| DATE: | 12 May '22 |
| DRAWN BY: | MM |
| CHECKED BY: | DH |

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**APPENDIX 3 – BORELOGS**

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH01**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395281 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531989 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, with clay, grey/brown (Colluvium) | D - VD | | | | W | |
| 1 | | CH: CLAY: fine to medium grained, high plasticity, trace sand, trace gravel, red/grey | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel | | | | | D to M | |
| 2 | | Terminated at 2.00 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH02**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395349 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531845 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: medium to coarse grained, non-plastic to low plasticity, with gravel, trace clay, brown (Colluvium) | D - VD | | | | W | |
| | | | | | | | M | |
| | | Terminated at 0.80 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH03**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395403 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531729 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | L - MD | | | | W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F | | | | D to M | |
| 1 | | | | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH04**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395498 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531633 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | VL - L | | | | W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | St - VSt | | | | D to M | |
| 1 | | Terminated at 1.00 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH05**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395611 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531549 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | VL - L | | | | W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | St - VSt | | | | D to M | |
| 1 | | | | | | | | |
| | | Terminated at 1.20 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH06**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395493 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531866 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | W | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown | | | | | D to M | |
| | | Terminated at 0.70 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH07**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 3955974 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531716 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| 0 | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | L | | | | W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | S - F | | | | D to M | |
| | | | F - St | | | | | |
| 1 | | | VSt | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH08**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395714 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531616 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | W | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown | | | | | D to M | |
| | | Terminated at 0.70 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH09**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395594 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531896 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | W | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | | | | | D to M | |
| | | Terminated at 0.70 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH10**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395765 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531884 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| 0 | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | VL - L | | | | W | |
| 1 | | | | | | | M | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown | | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH11**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395755 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531783 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | | | | | W | |
| | | | | | | | M | |
| 1 | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/grey | | | | | D to M | |
| | | Terminated at 1.90 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH12**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395760 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531671 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | VL - L | | | | W | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown | D - VD | | | | M | |
| 1 | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/grey | | | | | D to M | |
| | | Terminated at 1.20 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH13**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395778 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531790 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | W | |
| | | SP: SAND: fine to medium grained, non-plastic, yellow/ brown (Colluvium) | | | | | M | |
| | | Terminated at 0.50 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

DRAFT

**APPENDIX 4 – LABORATORY TEST RESULTS**

| | | | |
|---|---|---|---|
| **Sample No.** | **36527** | **Client** | Geotechnical |
| **Job No.** | J409671 | **Project** | Lot 601 BROCKMAN ST, GINGIN |

Laboratory testing carried out at Malaga Laboratory 44 Crocker Dr Malaga WA 6090

**SAMPLE DETAILS**

| | | | |
|---|---|---|---|
| BH No. / Depth | BH1 1.0-1.6 | Sampling Method | Client |
| Sample History | 50°C Oven Dried | Sample Preparation | AS 1289 1.1 |

**ATTERBERG LIMITS**

| Description | Method | Result (%) |
|---|---|---|
| Liquid Limit | AS 1289.3.1.2 | 70 |
| Plastic Limit | AS 1289.3.2.1 | 28 |
| Plasticity Index | AS 1289.3.3.1 | 42 |
| Linear Shrinkage | AS 1289.3.4.1 | 14.5 |
| Nature of Shrinkage | | Flat |

**PARTICLE SIZE DISTRIBUTION**

**Method:** AS 1289.3.6.1
**Description:** Particle size distribution by sieve analysis

| Sieve Size (mm) | % Passing |
|---|---|
| 19.0 | 100 |
| 2.36 | 98 |
| 0.425 | 96 |
| 0.075 | 90 |

**AS 1726:2017 Clause 6.1**
**Material Description:** CLAY trace gravel, trace sand
**AS Group Symbol:** CH or OH

Accredited for compliance with ISO/IEC 17025
NATA
WORLD RECOGNISED ACCREDITATION
STRUCTERRE CONSULTING ENGINEERS BALCATTA LABORATORY ACCREDITATION NUMBER 16742

Jacob Pritchard
Senior Laboratory Technician

**Date:** 27-May-22

Soils Analysis Workbook V 3.43 05-May-21

AS 1289.3.6.1 Report Feb 18

| | | | |
|---|---|---|---|
| **Sample No.** | **36528** | **Client** | Geotechnical |
| **Job No.** | J409671 | **Project** | Lot 601 Brockman st, gingin |

Laboratory testing carried out at Malaga Laboratory 44 Crocker Dr Malaga WA 6090

**SAMPLE DETAILS**

| | | | |
|---|---|---|---|
| BH No. / Depth | BH1 1.3-1.9 | Sampling Method | Client |
| Sample History | 50°C Oven Dried | Sample Preparation | AS 1289 1.1 |

**ATTERBERG LIMITS**

| Description | Method | Result (%) |
|---|---|---|
| Liquid Limit | AS 1289.3.1.2 | 55 |
| Plastic Limit | AS 1289.3.2.1 | 21 |
| Plasticity Index | AS 1289.3.3.1 | 34 |
| Linear Shrinkage | AS 1289.3.4.1 | 13 |
| Nature of Shrinkage | | Flat |

**PARTICLE SIZE DISTRIBUTION**

**Method:** AS 1289.3.6.1
**Description:** Particle size distribution by sieve analysis

| Sieve Size (mm) | % Passing |
|---|---|
| 19.0 | 100 |
| 2.36 | 98 |
| 0.425 | 80 |
| 0.075 | 56 |

**AS 1726:2017 Clause 6.1**
**Material Description:** Sandy CLAY trace gravel
**AS Group Symbol:** CH or OH

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WORLD RECOGNISED ACCREDITATION
STRUCTERRE CONSULTING ENGINEERS BALCATTA LABORATORY ACCREDITATION NUMBER 16742

Jacob Pritchard
Senior Laboratory Technician

**Date:** 27-May-22

Soils Analysis Workbook V 3.43 05-May-21

AS 1289.3.6.1 Report Feb 18

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Email: wageotechlab@structerre.com.au
Website: www.structerre.com.au
ABN: 71 349 772 837 / ACN: 008 966 283

# California Bearing Ratio Test Report

**Report Number: CBR:22S-03682**
**Date of Issue01/06/2022**
**Issue Number: 1**

| | |
|---|---|
| **Client:** | Tabec Pty Ltd |
| **Client Address:** | Level 2, 54-58 Havelock St West Perth WA 6005 |
| **Project:** | Proposed Residential Subdivision - Lot 601 Brockman St, Gingin |
| **Project No:** | D294537 |

Accreditation Number 18742

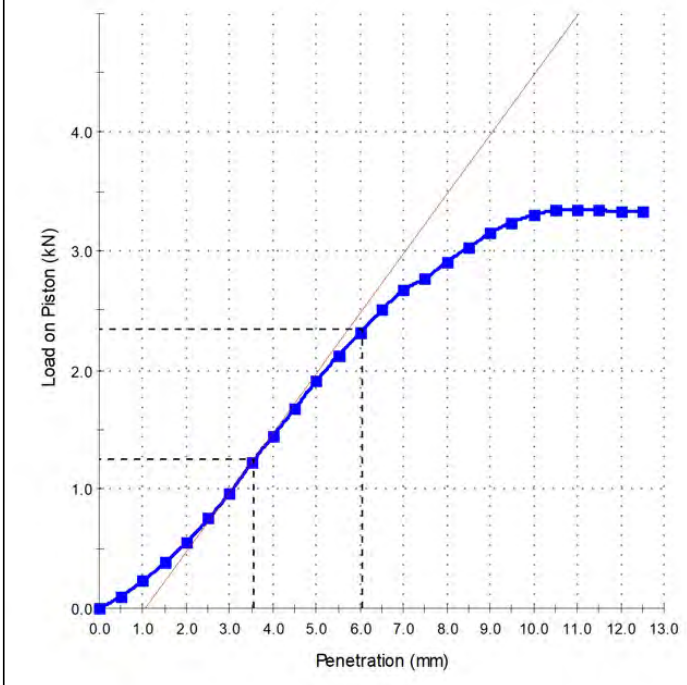
Approved Signatory: Aaron Nicholas

Accredited for compliance with ISO/IEC 17025

## Sample Details

| | | | |
|---|---|---|---|
| **Sample ID:** | Proposed Subdivision | **Field Sample ID:** | BH13 |
| **Date Tested:** | 27/05/2022 | **Date Sampled:** | 24/05/2022 |
| **Soil Description:** | Sand | **Proposed Use:** | Fill |
| **Depth of Test:** | 200-500mm | **Depth of Layer:** | 300 |
| **Sampling Method:** | Sampled by Client | **TRN:** | - |
| **Work Order ID:** | W22-01312 | | |

## Load vs Penetration




## Test Results

AS 1289.6.1.1

| | |
|---|---|
| **CBR at 5.0mm (%):** | **12** |
| Dry Density before Soaking (t/m³): | 1.73 |
| Density Ratio before Soaking (%): | 95.0 |
| Moisture Content before Soaking (%): | 9.9 |
| Moisture Ratio before Soaking (%): | 101.5 |
| Dry Density after Soaking (t/m³): | 1.74 |
| Density Ratio after Soaking (%): | 95.0 |
| Swell (%): | 0.0 |
| Moisture Content of Top 30mm (%): | 14.4 |
| Moisture Content of Remaining Depth (%): | 14.3 |
| Compaction Hammer Used: | Modified AS 1289.5.2.1 |
| Surcharge Mass (kg): | 4.50 |
| Period of Soaking (Days): | 4 |
| Retained on 19 mm Sieve (%): | 0 |
| CBR Moisture Content Method: | AS 1289.2.1.1 |
| Sample Curing Time (h): | 24 |

## Comments


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# Maximum Dry Density Report

**Report Number: MDD:22S-03682**
**Date of Issue01/06/2022**
**Issue Number: 1**

| | |
|---|---|
| **Client:** | Tabec Pty Ltd |
| **Client Address:** | Level 2, 54-58 Havelock St West Perth WA 6005 |
| **Project:** | Proposed Residential Subdivision - Lot 601 Brockman St, Gingin |
| **Project No:** | D294537 |

Accreditation Number 18742

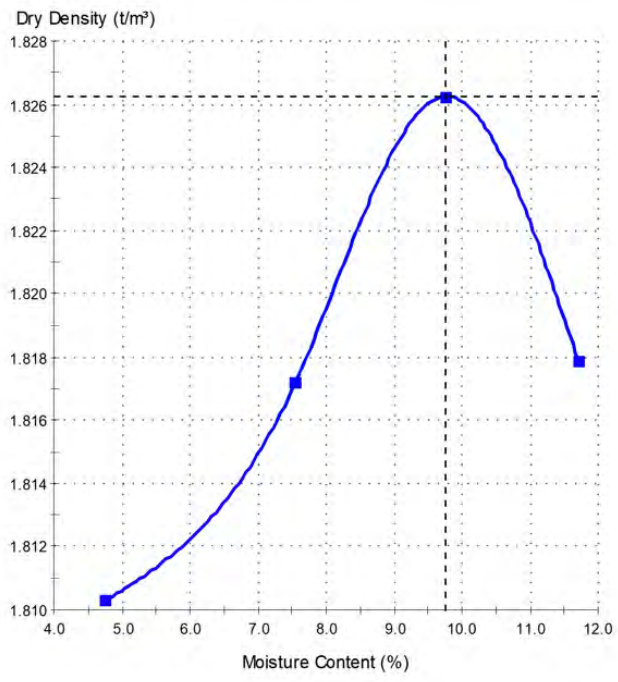
Approved Signatory: Aaron Nicholas

Accredited for compliance with ISO/IEC 17025

## Sample Details

| | | | |
|---|---|---|---|
| **Sample ID:** | Proposed Subdivision | **Field Sample ID:** | BH13 |
| **Date Tested:** | 24/05/2022 | **Date Sampled:** | 24/05/2022 |
| **Soil Description:** | Sand | **Proposed Use:** | Fill |
| **Depth of Test:** | 200-500mm | **Depth of Layer:** | 300 |
| **Sampling Method:** | Sampled by Client | **TRN:** | - |
| **Work Order ID:** | W22-01312 | | |

## Dry Density - Moisture Content Relationship




## Test Results

AS 1289.5.2.1

| | |
|---|---|
| **Modified MDD (t/m³):** | **1.83** |
| **Modified OMC (%):** | **10.0** |
| Retained Sieve (mm): | 19.0 |
| Oversize Material (%): | 0 |
| Curing Time (h): | 2 |
| LL Method: | Visual / Tactile |

## Comments


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# California Bearing Ratio Test Report

**Report Number: CBR:22S-03683**
**Date of Issue01/06/2022**
**Issue Number: 1**

| | |
|---|---|
| **Client:** | Tabec Pty Ltd |
| **Client Address:** | Level 2, 54-58 Havelock St West Perth WA 6005 |
| **Project:** | Proposed Residential Subdivision - Lot 601 Brockman St, Gingin |
| **Project No:** | D294537 |

Accreditation Number 18742

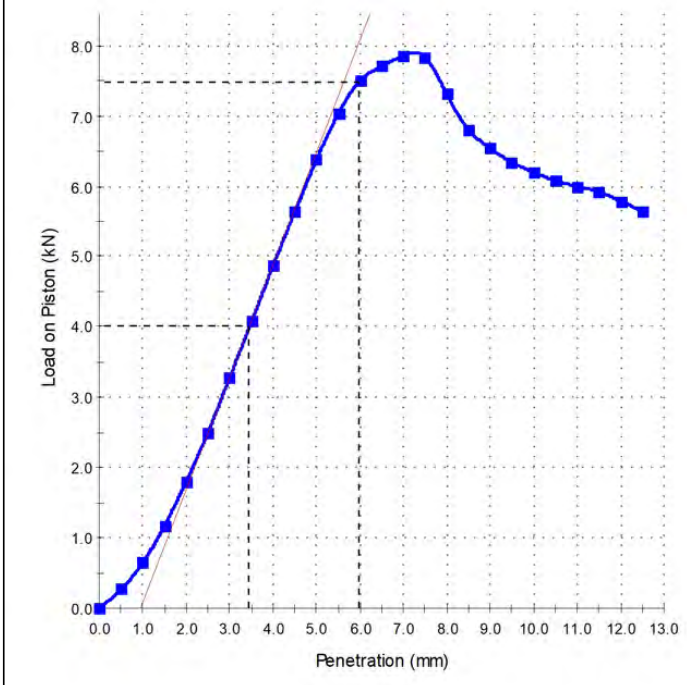
Approved Signatory: Aaron Nicholas

Accredited for compliance with ISO/IEC 17025

## Sample Details

| | | | |
|---|---|---|---|
| **Sample ID:** | Proposed Subdivision | **Field Sample ID:** | BH14 |
| **Date Tested:** | 27/05/2022 | **Date Sampled:** | 24/05/2022 |
| **Soil Description:** | Sand | **Proposed Use:** | Fill |
| **Depth of Test:** | 200-500mm | **Depth of Layer:** | 300 |
| **Sampling Method:** | Sampled by Client | **TRN:** | - |
| **Work Order ID:** | W22-01312 | | |

## Load vs Penetration




## Test Results

AS 1289.6.1.1

| | |
|---|---|
| **CBR at 5.0mm (%):** | **40** |
| Dry Density before Soaking (t/m³): | 1.89 |
| Density Ratio before Soaking (%): | 95.0 |
| Moisture Content before Soaking (%): | 10.0 |
| Moisture Ratio before Soaking (%): | 101.5 |
| Dry Density after Soaking (t/m³): | 1.89 |
| Density Ratio after Soaking (%): | 95.0 |
| Swell (%): | 0.0 |
| Moisture Content of Top 30mm (%): | 11.2 |
| Moisture Content of Remaining Depth (%): | 10.8 |
| Compaction Hammer Used: | Modified AS 1289.5.2.1 |
| Surcharge Mass (kg): | 4.50 |
| Period of Soaking (Days): | 4 |
| Retained on 19 mm Sieve (%): | 1 |
| CBR Moisture Content Method: | AS 1289.2.1.1 |
| Sample Curing Time (h): | 24 |

## Comments


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# Maximum Dry Density Report

**Report Number: MDD:22S-03683**
**Date of Issue01/06/2022**
**Issue Number: 1**

| | |
|---|---|
| **Client:** | Tabec Pty Ltd |
| **Client Address:** | Level 2, 54-58 Havelock St West Perth WA 6005 |
| **Project:** | Proposed Residential Subdivision - Lot 601 Brockman St, Gingin |
| **Project No:** | D294537 |

Accreditation Number 18742

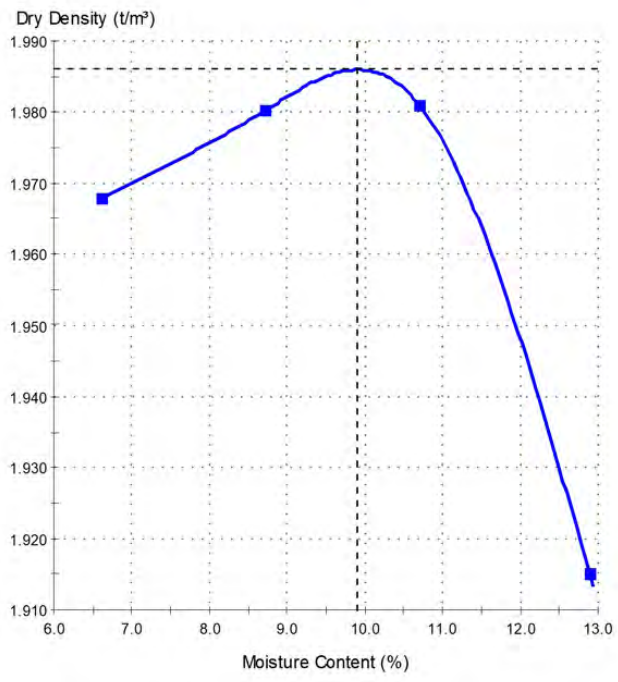
Approved Signatory: Aaron Nicholas

Accredited for compliance with ISO/IEC 17025

## Sample Details

| | | | |
|---|---|---|---|
| **Sample ID:** | Proposed Subdivision | **Field Sample ID:** | BH14 |
| **Date Tested:** | 24/05/2022 | **Date Sampled:** | 24/05/2022 |
| **Soil Description:** | Sand | **Proposed Use:** | Fill |
| **Depth of Test:** | 200-500mm | **Depth of Layer:** | 300 |
| **Sampling Method:** | Sampled by Client | **TRN:** | - |
| **Work Order ID:** | W22-01312 | | |

## Dry Density - Moisture Content Relationship




## Test Results

AS 1289.5.2.1

| | |
|---|---|
| **Modified MDD (t/m³):** | **1.99** |
| **Modified OMC (%):** | **10.0** |
| Retained Sieve (mm): | 19.0 |
| Oversize Material (%): | 1 |
| Curing Time (h): | 2 |
| LL Method: | Visual / Tactile |

## Comments


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DRAFT

## APPENDIX 5 – BORELOG TERMINOLOGY

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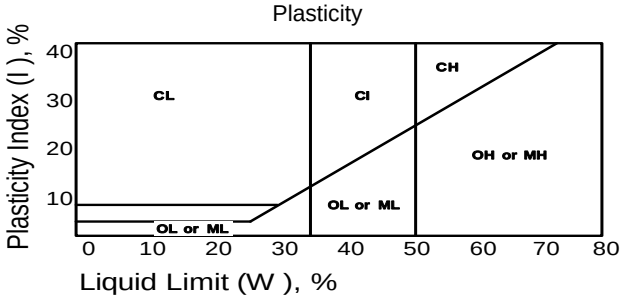
Residential Geotechnical Commercial & Infrastructure
Inspect & Investigate Energy Assessment Environmental

# BOREHOLE TERMINOLOGY

## Particle Size Distribution

| Major Division | Subdivision | Size |
|---|---|---|
| Boulders | | >200mm |
| Cobbles | | 200 - 63mm |
| Gravel | Coarse | 63 - 20mm |
| | Medium | 20- 6mm |
| | Fine | 6 - 2.36mm |
| Sand | Coarse | 2.36 - 0.6mm |
| | Medium | 0.6 - 0.2mm |
| | Fine | 0.2 - 0.075mm |

## Plasticity




## Consistency of Cohesive Soils

| Term | Undrained Strength Su (kPa) | Field Guide |
|---|---|---|
| Very Soft | < 12 | Exudes between the fingers when squeezed in hand |
| Soft | 12 - 25 | Can be moulded by light finger pressure |
| Firm | 25 - 50 | Can be moulded by strong finger pressure |
| Stiff | 50 - 100 | Cannot be moulded by Fingers. Can be indented by thumb. |
| Very Stiff | 100 - 200 | Can be indented by thumb nail |
| Hard | > 200 | Can be indented with difficulty by thumb nail. |
| Friable | - | Crumbles or powders when scraped by thumbnail |

## Consistency/Density of Non-Cohesive Soils

| Term | Density Index (%) | SPT "N" Value Comparison |
|---|---|---|
| Very Loose | < 15 | 0 - 4 |
| Loose | 15 - 35 | 4 - 10 |
| Medium Dense | 35 - 65 | 10 - 30 |
| Dense | 65 - 85 | 30 - 50 |
| Very Dense | > 85 | > 50 |

## Moisture Content

| | |
|---|---|
| D | Dry |
| M | Moist |
| W | Wet |
| S | Saturated |

## Minor Components

| Term | Assessment Guide | Proportion of Minor Component In: |
|---|---|---|
| Trace | Presence just detectable by feel or eye, but soil properties little or no different to general properties of primary component | Coarse grained soils: < 5 %<br>Fine grained soils: <15% |
| With | Presence easily detected by feel or eye, soil properties little different to general properties of primary component | Coarse grained soils: 5 - 12 %<br>Fine grained soils: 15 - 30% |

## Soil Legend

| | | | |
|---|---|---|---|
| FILL | CLAY | GRAVEL | CONCRETE |
| TOPSOIL | SILT | LIMESTONE | COMBINATIONS |
| PEAT | SAND | BEDROCK | eg: Clay, Silty, Sandy |

## USCS

| | | | | | |
|---|---|---|---|---|---|
| GW | Well graded gravel | SC | Clayey sand | OL | Organic low plasticity silt | CL | Low plasticity clay |
| GP | Poorly graded gravel | SM | Silty sand | ML | Low plasticity silt | CI | Intermediate plasticity clay |
| SW | Well graded sand | | | MH | High plasticity silt | CH | High plasticity clay |
| SP | Poorly graded sand | | | OH | Organic high plasticity silt | PT | Peat |

DOC:GE:3.003

WA | QLD | NSW | VIC

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ABN 71 349 772 837 Zemla Pty Ltd ACN 008 966 283 as trustee for the Young Purich and Higham Unit Trust trading as Structerre Consulting Engineers

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

# Site & Soil Evaluation Report

**Site and Soil Evaluation for Onsite Sewage Management**

**Lot 601 Brockman Street, Gingin**

Prepared for: Acumen Development Solutions
Prepared by: Structerre Consulting
Telephone: (08) 92054500
Email: wageotecheng@structerre.com.au
Ref No: D294537/J409706-Rev3

**Date: 14.09.2022**

**Document History**

| Issue No (version) | Original prepared by | Issued to (description /section revised) | Date | Reviewed by | Field Assessment Date | Approved by | Approval Date |
|---|---|---|---|---|---|---|---|
| Rev2 | FS | Approval | 30.08.2022 | MC | 30.08.2022 | MC | |
| Rev3 | FS | Approval | 12.09.2022 | MC | 12.09.2022 | MC | |
| Rev4 | FS | Approval | 14.09.2022 | MC | 14.09.2022 | MC | |

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# 1. Introduction

## 1.1 The Consultant

The field investigation and report have been undertaken and overseen by the following suitably experienced staff.

**Geotechnical Technician – Tony Broadway**

8 years' field experience at Structerre Consulting working across a wide range of site and soil conditions.

**Civil Engineer – Farhad Silwanagh**

Civil and Geotechnical Engineer

8 years' experience in civil and geotechnical engineering at Structerre Consulting. Experience includes the design consultation for various sized waste water treatment applications to include; single residence, mixed use commercial developments.

**Geotech Division Manager – Mel Castle**

Mel Castle has been involved in civil construction inspection and testing for in excess of 35 years. Experienced in earthworks construction monitoring – residential & commercial, site supervision – earthworks, field and laboratory testing & inspection in construction materials including soils, aggregates, concrete, brick and block, rocks and pavements.

## 1.2 Report Summary

Structerre Consulting (Structerre) has been engaged to undertake a Site-and-Soil Evaluation (SSE) for a subdivision of an approximately 176,801m² at Lot 601 Brockman Street Gingin, WA to demonstrate the development meets the requirements outlined in Government Sewage Policy 2019 (GSP).

This report details an onsite sewage management system and is to accompany an application to install an Onsite Sewage System and submitted to the Shire of Gingin. This document provides information about the site and soil conditions. It also provides a detailed SSE for a 176,801 square metres comprising 99 lot subdivision plus a 22,700 square metres Town Centre area and includes a conceptual design for a suitable onsite sewage management system for the residential lots only, including recommendations for monitoring and management requirements. As sufficient land area is available for effluent disposal, the recommendations of these findings are:

- To the proposed new sub-divided (Lots 1-99) provide secondary level treatment with nutrient removal capabilities that discharges treated sewage with phosphorus and nitrogen concentrations of less than 1mg/L and 10mg/L respetively by a suitable Department of Health (DOH) approved treatment system and the effluent applied to Land Application Area (LAA) via secondary treated irrigation disposal system.
- To the proposed new Town Centre area (Options A and B), provide secondary level treatment with nutrient removal capabilities that discharges treated sewage with phosphorus and nitrogen concentrations of less than 1mg/L and 10mg/L respetively by a suitable Department of Health (DOH) approved treatment system and the effluent applied to Land Application Area (LAA) via secondary treated irrigation disposal system.
- All manufactured products selected as part of future detailed design shall be listed on the Department of Health approved products.

# 2. Site and Development Description

At the time of the field investigation, the site was vacant and covered in vegetation with small to medium sized trees. Table 1 provides a summary of the proposed development.

**Table 1: Description of development**

| Development Characteristic | Description |
|---|---|
| Site Address | Lot 601 Brockman Street, Gingin WA 6503 |
| Owner/Developer | Tabec Pty Ltd |
| Postal Address | Level 2, 54-58 Havelock St, West Perth 6005 |
| Contact/Mob | Chris Bitmead / 0419 939 622 |
| Local Government | Shire of Gingin |
| Zoning | R5 and R10/30 & Town centre |
| Proposal & Lot sizes | 99 lot sub-division – (1,000m² - 2,000m²) and a Town centre area (22,700m²) |
| Water Supply | Water Corporation Water Mains from Brockman Street (extension required) |
| Anticipated Wastewater Load for residential lots only<br>Proposed Town Centre daily hydraulic loading is not known at this stage and does not form part of this report. | Proposed Lots 1-99 consists of 5 bedrooms with a daily hydraulic load of 900L/day (150L/Person/Day to AS1547)<br>Town Centre Options A & B: (20x Staff & 200x Staff @ 35L/day respectively) |
| Availability of Sewer | The area is currently unsewered and unlikely to be serviced by reticulated sewerage within the next 10-20 years due to low development density in the area and high cost associated with any extension. |

# 3. Site and Soil Assessment

## 3.1 Site Assessment

Structerre Consulting have previously undertaken site investigation on 12th May 2022 and re visited the site on on 16th & 17th August 2022 to undertake further site assessment of the groundwater levels.

The assessment of the suitability of this site to retain on-site sewage and the recommendations in this report are based on on-site investigations, laboratory testing and desktop study of available geological and topographic published sources relevant to the lot.

On-site investigation of the site including visual inspection, borehole sampling, percolation testing and soil identification. The desktop study involved the review of publically available

publications from various government agencies relating to the geological setting, water table monitoring, climate and topography of the site.

The Gingin Weather station (Number 9018) indicates the following significant rainfall data recorded prior to site investigations and permeability testing:

- 34.0mm of rainfall recorded in the 2 days prior to initial site investigation carried out on 12th May 2022
- 254.4mm of rainfall recorded over the 4 week period of 17.07.2022 to 17.08.2022 prior to investigations caried out on 16th and 17th August 2022 (Refer to Notes)

Note:

1. The rainfall data recorded for the perioid between 17.07.2022 to 17.08.2022 is approximately double the volume recorded for the same period in 2021.
2. 254.4mm equating to approximately 64% of the Mean winter rainfall of 399mm between months of June and August recorded for Gingin (9018) from 1889 to present.
3. Representing 78% of annual recorded rainfall of 325.2mm for 12mth period to July 2022.

Based on the results of the site and soil assessment, the overall land capability of the site for onsite wastewater disposal is constrained, however the proposed sewage system is able to be designed and installed to satifactory meet the requirements of AS 1547 and the Health Regulations 1974 (treatment of Sewage and Disposal of Effluent and Liquid Waste).

**SITE KEY FEATURES**

Table 2 summarises the key features of the site in relation to effluent management proposed for the site.

**NOTE:**

- The site is in a sewage sensitive area as per PlanWA online mapping.
- There are no Private bores within property.
- No water courses are located within 100m of the Lot.
- The site is not inside a public drinking water source area as per Public drinking water source areas (PDWSA) online mapping.
- The site is not located in Floodplains as per online mapping.
- The risk of effluent transport offsite is low.

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

**Figure 1: Locality Plan**



**Table 2: Site characteristics and mitigation measures**

| Feature | Description | Level of Constraint | Mitigation Measures |
|---|---|---|---|
| Climate | Station (Gingin) No. 9018<br>Annual rainfall to December 2021 – 795.0 mm.<br>Annual rainfall to July 2022 – 327.3 mm<br>Rainfall over 2 days prior to testing on 12th of May 2022 - 34mm<br>Rainfall on 16/17 of August 2022 - 39.6mm<br>Average annual pan evaporation is 2,000 mm (derived from BOM Annual Average PAN Evaporation Map). | Low | NN |
| Exposure | Isolated trees are located throughout the lot, the site is considered to have high exposure to sun and wind. | Low | NN |
| Vegetation | Open grassland, no hydrophillic vegetation in the proposed effluent management area or surrounds. | Low | NN |
| Landform & Drainage | No visible signs of water ponding at time of assessment. | Low | NN |
| Slope | The lot slopes from North to South Site is largely flat and level, (<10% slope). | Low | NN |
| Fill | No signs of imported fill material observed at time of assessment. | Low | NN |
| Surface Gravel and Rock Outcrops | No surface gravel or rock outcrops observed. | Low | NN |
| Erosion Potential | No evidence of sheet or rill erosion; No evidence of landslip and landslip potential is low due to the small slope of site. | Low | NN |
| Vertical Separation From Groundwater | Following a significant above average rainfall period, perched water was encountered in BH's 6, 7, 8, 12 & 13 during drilling at depths between 0-0.3m below surface level.<br>The Perth Groundwater Atlas (Waters & Rivers Commission) has no available information for the groundwater levels for this site.<br>The Landgate website indicates the ground surface level at this site was approximately 120-135m Australian Height Datum (AHD) falling from North to South. | High | Ensure minimum 1.5m separation between maximum groundwater level and discharge point of sewage system with use of fill material for the LAA. |

| | | | |
|---|---|---|---|
| Public Drinking Water Source Areas & Sewage Sensitive Areas | The site is located in a sewage sensitive area as per the GSP due to its location ~~o~~ being <1km away from a significant wetland.<br>The site is not located in a public drinking water source area as per public drinking source areas (PDWSA) online mapping. | Moderate | Provide a secondary treatment system with nutrient removal capabilities as per the Government Sewage Policy 2019. |
| Surface Waters and Separation From Water Resources | No water courses located in close proximity (within 100m) of the Lot. | Low | Installation of secondary treatment system with irrigation disposal type effluent disposal system located minimum 100m from outer edge pf riparian. |
| Rainfall Run-on and Seepage | No evidence of stormwater run-on to the proposed LAA observed. | Low | NN |
| Flood Potential | The lot is not located within the floodplains. | Low | NN |
| Horizontal Setback Distances | All relevant setback distances to the LAA are achievable for proposed lots with the exception of 100m clearance from the natural water course. | Low | NN |
| Available Land Application Area (LAA) | Considering all the constraints and buffers, the site has ample suitable land for a LAA for secondary treated effluent disposal. The proposed effluent management area is as nominated in Figure 3. | Low | NN |

*NN: not needed
**LAA: Land Application Area

## 3.2 Soil Assessment

A geotechincal site investigation was conducted across 13 location on 12th May 2022 and an additional 26 locations within the original lot as shown in Figures 2 & 3 on 16th & 17th August 2022. A soil retrieval probe was used to sample the soil by bore holes up to 2.0m in depth or refusal due to Stiff Clay or Dense Gravel. Falling head permability testing was carried out at each bore hole location as per AS 1289. Lab testing revealed the sub surface material to be Gravelly sand with Clay as per AS 1289. This was sufficient to adequately characterise the soils expected throughout the area of interest. Soil profile descriptions for each bore hole are provided in the appendix. The site geotechnical assessment and percolation test results are consistent with Soil Permeability Category 4 Clay loams- Weakly structured as per AS 1547. Table 3 below provides an assessment of the characteristics of borehole to the proposed LAA. All supporting logs and documentation can be found in the appendix of this report.

**Table 3: Soil Assessment**

| Feature | Assessment | Level of Constraint | Mitigation Measures |
|---|---|---|---|
| Profile Depths | 0-100 mm Topsoil.<br>200-700 mm: Sand (fine to medium) grained, non-plastic, grey (Bassendean Sand)<br>700-2000 mm: CLAY/SANDY CLAY (fine to medium) high plasticity, trace sand, trace gravel | Moderate | Provide secondary treatment to systems with large daily hydraulic loads. |
| Depth to Water Table | Perched water was encountered in BH's 6, 7, 8, 12 & 13 during drilling at depths between 0-0.3m below surface level.<br>The Perth Groundwater Atlas (Waters & Rivers Commission) has no available information for the groundwater levels for this site.<br>The Landgate website indicates the ground surface level at this site was approximately 120-135m Australian Height Datum (AHD) falling from North to South. | High | Ensure minimum 1.5m separation between maximum groundwater level and discharge point of sewage system with use of fill material for the LAA. |
| Particle Size distribution | 100% passing the 19 mm sieve | Low | NN |
| Soil Colour | Brown, grey/brown and red/brown soil. | Low | NN |
| Soil Permeability & Design Loading Rates | Soil Permeability Category 4: Clay loams–Weakly structured to AS1546-2012.<br>Permeability 0.15 m/day using the Falling head method as required due to sandy conditions. | Moderate | Installation of secondary treatment system with irrigation disposal type effluent disposal system. |

**OVERALL LAND CAPABILITY OF THE SITE**

Based on the results of the site and soil assessment tabled above and provided in the appendices, the overall land capability of the proposed onsite sewage system is constrained. However, the proposed onsite sewage system is able to be designed and installed to satifactory meet the requirements of AS 1547 and the Health (treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974. The proposed development can comply with the requirements outlined in Government Sewage Policy 2019 (GSP).

- R30 zoning is applicable provided retiuclated sewer system is availbale.
- R10 zoning is applicable provided onsite sewage system utlised.

# 4. Wastewater Management System

Refer to the DOH website for the list of approved manufacturers of septic tanks and leach drains: http://ww2.health.wa.gov.au/. The property owner has the responsibility for the final selection of the treatment system and will include the details in the application to install an onsite sewage system for local government approval.

## 4.1 Treatment System

Provide a secondary treated effluent with nutrient removal and irrigation disposal, with a minimum required effluent quality of:

- Biochemical Oxygen Demand (BOD) ≤ 20 mg/L
- Total Suspended Solids (TSS) ≤ 30 mg/L
- Escherichia (E) coli ≤ 10 cfu/100 mL
- Phosphorus concentration ≤ 1mg/L
- Nitrogen concentration ≤ 10mg/L
- 90% of the samples shall have a $BOD_5$ less than or equal to 20 $g/m^3$ with no sample greater than 30 $g/m^3$
- 90% of the samples shall have TSS less than or equal to 30 $g/m^3$ with no sample greater than 45 $g/m^3$.

## 4.2 Land Application System

A range of land application systems have been considered and assessed based on their suitability to the site and soil conditions. We recommend the installation of a covered surface drip irrigation type effluent disposal system for proposed Lots 1-99.

***Sizing of Land Application Area – Lots 1-99***

Sized, according for disposal of the calculated daily hydraulic load, the soil classification and quality of effluent being disposed.

Data to be used in the sizing of irrigation disposal area:

- Estimated Daily Hydraulic Load (5-bedroom residence);
  - Maximum 6 Residents = 900L
  - Totalling 900L/day Hydraulic Load (from Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste)1974)
- Soil Classification – Category 4 Clay loams – Weakly structured to AS1547-2012

Area of Irrigation System as per Government Sewage Policy 2019
Secondary treatment for Soil category 4 – Clay loams = 257 $m^2$

***Sizing of Land Application Area – Town centre – Option A***
Sized, according for disposal of the calculated daily hydraulic load, the soil classification and quality of effluent being disposed.

Data to be used in the sizing of leach drain disposal area:

- Estimated Daily Hydraulic Load
  - 20 x Staff @ 35L/day =700 L/day
  - Totalling 700 L/day Hydraulic Load to AS1547-2012
- Soil Classification – Category 4 Clay loams – Weakly structured to AS1547-2012
- Provide for 'DS Water Management' similar and/or equal approved flatbed type leach drains.
- Area of Irrigation System as per Government Sewage Policy 2019
- Conversion factor for land application area: = 0.286
- LAA area for Secondary treatment for Soil category 4 – Clay loams = 700 x 0.286 200.2m$^2$

***Sizing of Land Application Area – Town centre – Option B***
Sized, according for disposal of the calculated daily hydraulic load, the soil classification and quality of effluent being disposed.

Data to be used in the sizing of leach drain disposal area:

- Estimated Daily Hydraulic Load
  - 200 x Patrons @ 35L/day = 7,000L/day
  - Totalling 7,000 L/day Hydraulic Load to AS1547-2012
- Soil Classification – Category 4 Clay loams – Weakly structured to AS1547-2012
- Provide for 'DS Water Management' similar and/or equal approved flatbed type leach drains.
- Area of Irrigation System as per Government Sewage Policy 2019
- Conversion factor for land application area: = 0.286
- LAA area for Secondary treatment for Soil category 4 – Clay loams = 7,000 x 0.286 2,002m$^2$

Note: Application for the new effluent system is to be sized in accordance with current governing regulations.

The property owner/developer has the responsibility for the final selection of the secondary treatment system and will include the details of it in the Onsite sewage system Approval to Install application form for local government approval.

***Siting and configuration of the proposed disposal system***

The irrigation system shall be located in a designated area to enhance evapotranspiration and its amenity and shall:

- Not be used for purposes that compromise the effectiveness of the system or access for future maintenance purposes.
- Be used only for effluent application.

- Have boundaries clearly delineated by appropriate vegetation or other type of border.
- Have no run-off or seepage of effluent beyond the designated area.

***Buffer distances***

Setback buffer distances from effluent land application areas and treatment systems are required to help prevent human contact, maintain public amenity and protect sensitive environments. The relevant buffer distances for this site are:

- The surface gradient of the disposal area should be less than 10%.
- The disposal system should maintain a minimum distance of:
    - 100m from high water mark of a reservoir or any bore used for public drinking, reservoir, waterways, significant wetlands and not within a waterway foreshore area or wetland buffer (the separation distance is to be measured from of riparian or wetland vegetation),
    - 30m from creek, streams and underground water courses, per Health Regulations 1974 may be considered for secondary treatment systems with nutrient removal. (Reduced setback from reservoirs or bores used for public drinking water not supported)
    - 30m from potable private bore intended for consumption
    - 1.8m downslope from property boundaries (may be more dependent on local authority guidelines)
    - 1.2m from driveways and paved surfaces
    - 6.0m from private sub-soil /drainage
    - 1.8m from building footings
- The distance between the base of the disposal system (i.e. trench bottom, bed base) and the groundwater table should not be less than 1.5m (for secondary treatment systems).
- On completion of the proposed disposal area, appropriate landscaping should be undertaken (i.e. planting of shallow rooted grasses / shrubs).
- The distance to the nearest waterway from proposed LAA locations is 227m (greater than minimum 100m separation required as per GSP),

The site plan in Figure 3 shows the location of the proposed Land Application Area for secondary treated drip irrigation disposal system.

***Installation of the drip irrigation disposal system***

Installation of the drip irrigation disposal system must be carried out by a suitably qualified and licensed plumber or drainer experienced with onsite sewage disposal systems. Figure 3 shows the preliminary siting of the proposed wastewater disposal system in line with the required setbacks. This plan may differ based on the final number of occupants per building, dwelling location and any other intended developments on site.

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

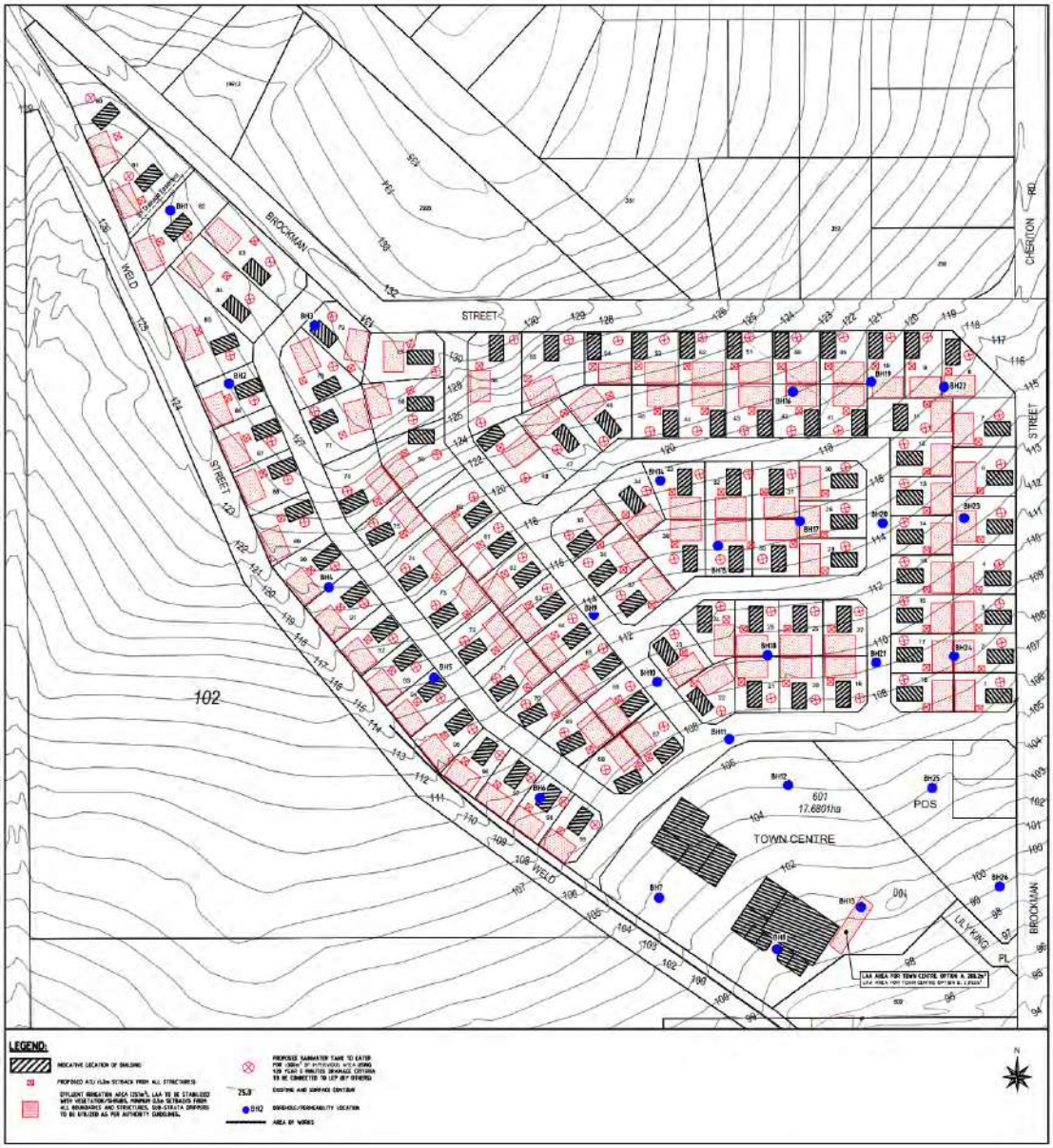
**Figure 2: Locality Site Plan**



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JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

**Figure 3: Site Plan A – Proposed Effluent Disposal & Stormwater Management**



# 5. Stormwater Management

Stormwater run-on is not expected to be a concern for the proposed effluent disposal area, as it is expected that run-off from the developed site will be managed and maintained within the proposed lots. Existing conditions will be amended as part of the proposed subdivisional civil works and will be designed and constructed to ensure all ground runoff is maintained within each individual lot. Impervious areas will be drained to appropriately sized retention systems and/or drained to existing pipe and/or road drainage systems.

All site civil and stormwater works to be designed to the Shire of Gingin requirements and approvals, with proposed criteria of 1 in 20-year ARI 5 minute duration event (subject to council approval) for proposed Lots 1 to 99 and Town Centre (Options A and B).

| | |
|---|---|
| Lot sizes | 1,000m² - 2,000m² |
| Approximate Impervious Area | 300m$^2$ |
| Required Retention | 3.75m$^3$ Volume |

Stormwater collected from roofs and other impervious surfaces must not be disposed of into the wastewater treatment system or onto the land application system.

# 6. Monitoring, Operation and Maintenance

Maintenance is to be carried out in accordance with the manufacturers instructions and to AS/NZS 1547-2012 Section 6, Appendix T & U. The treatment system will only function adequately if appropriately and regularly maintained.

<u>To ensure the treatment system functions adequately, residents must:</u>

- Scrape dishes and remove fats and solids before washing.
- Not dispose solids, sanitary napkins and other hygine products in the system.
- Not use a food waste disposal unit.
- Use household cleaning products that are suitable for septic tanks.
- Keep as much fat and oil out of the system as possible.
- Conserve water (AAA rated fixtures and appliances are recommended).

<u>To maintain adequate performance of the system, residents must ensure:</u>

- Septic tanks and biosolids settling vessels undergo regular pump-out by licensed waste contractors to remove accumulated sediment.
- No structures and/or paths are constructed over the LAA, vehicles avoid access to the LAA to prevent damage.

- ATUs to undergo maintenance servicing by a provider approved by the Department of Health at minimum three-monthly intervals.

# 7. Conclusions

As a result of our investigations we conclude that a sustainable onsite sewage management system can be installed to meet the needs of the proposed development at Lot 601 Brockman Street, Gingin. Specifically, we recommend the following:

- The site is in a sewage sensitive area as per PlanWA online mapping.
- To the proposed development) provide secondary level treatment with nutrient removal capabilities as per Government Sewage Policy 2019 (GSP) requirements.
- Installation of Secondary treated effluent system, by a suitable DOH-approved treatment system of volume required for final calculated daily hydraulic load for Lots 1-99 and Town Centre (Options A & B).
- LAA level for Lots 1-97 can be set at existing ground level whilst maintaining minimum 1.5m clearance from maximum recorded ground water.
- LAA level for Lots 98 and 99 shall be set to ensure minimum 1.5m clearance from maximum recorded ground water.
- LAA level for Town Centre (Options A and B) to be set to ensure minimum 1.5m clearance from maximum recorded ground water.
- The Soil Category for this lot is classified as “Category 4: Clay loams–Weakly structured as per AS 1547-2012” with the LAA for secondary treatment (excluding setbacks) to be minimum 257m² for lots 1-99, 200.2m² for Town Centre Option A and 2,002m² for Town Centre Option B.
- Operation and management of the treatment and disposal system in accordance with the manufacturers instructions and to AS/NZS 1547, the DOH Approval and the recommendations made in this report.

# 8. References

*Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*

Government of Western Australia (2019). *Government Sewerage Policy.*

Standards Australia/Standards New Zealand (2012). AS/NZS 1547:2012 *On-site domestic-wastewater management*.

Standards Australia/Standards New Zealand (2014). AS/NZS 1289:2014 *Methods of testing soils for engineering purposes Definitions and general requirements*.

Government of Western Australia, Department of Planning, Lands and Heritage. *PlanWA* https://espatial.dplh.wa.gov.au/PlanWA/Index.html?viewer=PlanWA

Government of Western Australia, Department of Water and Environmental Regulation. *Western Australia floodplain mapping* https://dow.maps.arcgis.com/apps/webappviewer/index.html?id=9817b8d31c224846abb68a75478e9cf0

Government of Western Australia, Department of Water and Environmental Regulation. *Water Information Reporting* http://wir.water.wa.gov.au/Pages/Water-Information-Reporting.aspx

Government of Western Australia, Department of Water and Environmental Regulation. *Public drinking water source area mapping tool* https://www.water.wa.gov.au/maps-and-data/maps/public-drinking-water-source-area-mapping-tool

Government of Western Australia, Department of Water and Environmental Regulation. *Perth groundwater map* https://www.water.wa.gov.au/maps-and-data/maps/perth-groundwater-atlas

Water Corporation WA. *ESInet* https://esinet.watercorporation.com.au/

Government of Western Australia, Department of Industry and Resources. *Geology and landforms of the Perth region.*

Government of Western Australia, Department of Mines, Industry Reglation and Safety. *GeoVIEW.WA* https://geoview.dmp.wa.gov.au/geoview/?Viewer=GeoView

Government of Western Australia, Department of Water. *Lower Serpentine Hydrological Studies – Conceptual Model Report* https://www.water.wa.gov.au/__data/assets/pdf_file/0020/3656/101835.pdf

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

# 9. Appendix

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH01**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395280 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531982 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, grey (Colluvium) | L - MD | | | | M to W | |
| | | CH: CLAY: fine to medium grained, high plasticity, with sand, trace gravel, red/brown | | | | | | |
| 1 | | | F - St | | | | W | |
| | | Terminated at 1.90 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH02

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395373 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531912 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5, 10, 15, 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, brown (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, red/brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH03**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395375 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531913 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | | | | | M | |
| 1 | | SP: SAND: fine to medium grained, non-plastic, with clay, with gravel, red/brown | L - MD | | | | W | |
| 2 | | Terminated at 2.50 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH04**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395228 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531810 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, brown (Colluvium) | L - MD | | | | M to W | |
| 1 | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown | F - St | | | | W | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH05

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395394 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531714 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, brown (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.20 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH06**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395502 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531621 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown (Colluvium) | S | | | | W | ▼ |
| 1 | | | F - St | | | | S | |
| 2 | | Terminated at 2.50 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH07

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395567 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531570 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown (Colluvium) | S | | | | | |
| 1 | | | F - St | | | | S | |
| | | Terminated at 1.40 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH08

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395659 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531532 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, brown (Colluvium) | S | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown | F - St | | | | S | |
| 1 | | | | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH09

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395468 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531849 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, trace clay, brown (Colluvium) | L - MD | | | | M to W | |
| 1 | | | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 2 | | | | | | | | |
| | | Terminated at 2.50 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH10

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395582 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531749 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, trace clay, brown (Colluvium) | L - MD | | | | M to W | |
| 1 | | | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, brown | F - St | | | | W | |
| 2 | | | | | | | | |
| | | Terminated at 2.50 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH11**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395626 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531700 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown (Colluvium) | F - St | | | | M to W | |
| 1 | | | | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH12

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395700 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531639 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown (Colluvium) | F - St | | | | S | |
| 1 | | | | | | | | |
| | | Terminated at 1.90 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH13

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395697 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531576 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| 0 | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown (Colluvium) | F - St | | | | S | |
| 1 | | | | | | | | |
| | | Terminated at 1.40 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH14

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395539 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531858 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.80 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH15**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395586 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531770 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH16**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395586 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531872 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5, 10, 15, 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH17**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395679 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531770 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.60 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH18**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395723 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531688 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH19

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395720 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531888 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, trace gravel, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH20

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395732 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531791 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH21

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395747 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531672 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, grey (Colluvium) | S - F | | | | | |
| | | *red/brown* | F - St | | | | S | |
| 1 | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH22

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395774 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531870 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown (Colluvium) | F | | | | M to W | |
| 1 | | GP: Gravelly SAND: coarse grained, non-plastic, with clay, brown | MD - D | | | | W | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH23

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395777 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531774 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | SP: Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | L - MD | | | | M to W | |
| 1 | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH24**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395780 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531678 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | SP: Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH25**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395766 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531627 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm 5 10 15 20 | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: fine to medium grained, non-plastic, with clay, brown (Colluvium) | VD | | | | S | |
| | | Terminated at 0.80 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH26**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395802 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531587 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: fine to medium grained, non-plastic, with clay, brown (Colluvium) | VD | | | | S | |
| | | Terminated at 0.80 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

## Appendix B: Boreholes site photos

**Borehole 1**




**Borehole 2**



STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

**Borehole 3**




**Borehole 5**




**Borehole 6**



STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

**Borehole 7**




**Borehole 8**




**Borehole 9**



**Borehole 10**



STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev4
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

photos







**APPENDIX C**
**CURRV Runoff Rate Calculations**

# CURRV

**Calculator for Urban Runoff Rates & Volumes**
16-12-22

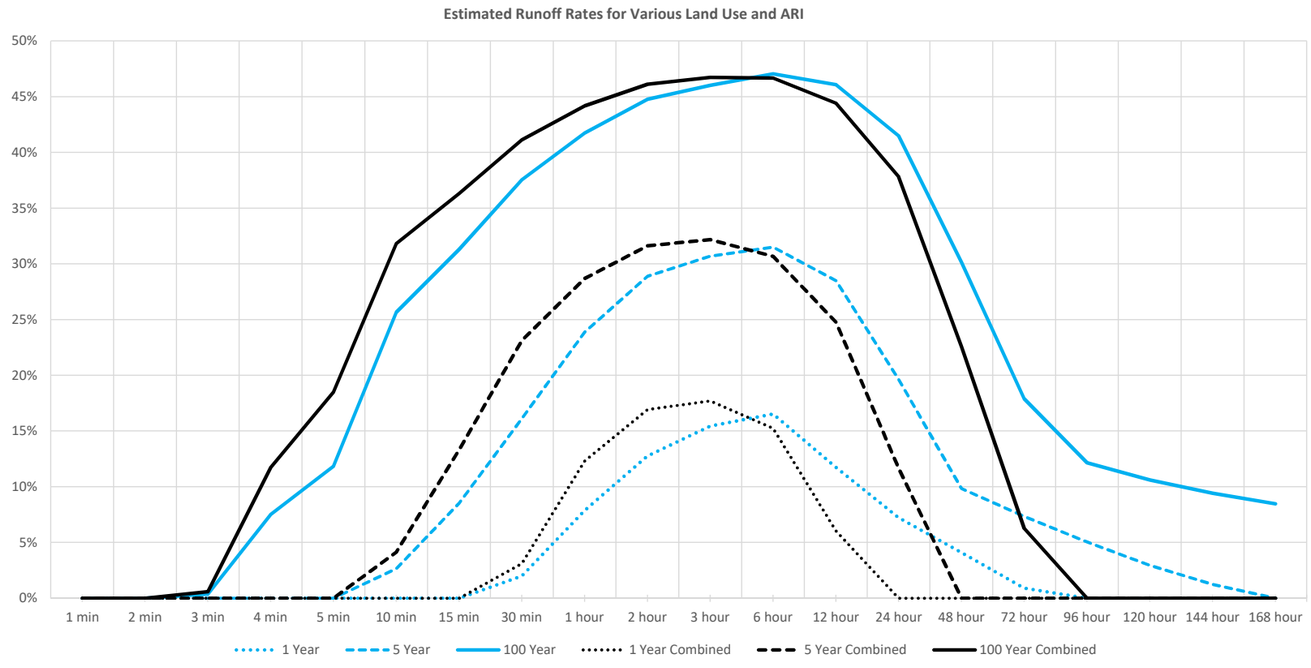
| | Land Use Description | Area (ha) | Use in Calc | Imperv Initial Loss mm | Perv Initial Loss mm | Perv Continue Loss mm/hr | On Site Soak (mm) | Empty (days) | AR&R EIA/TIA System Connect Ratio | Roof % | Ext Imp % | Ext Perv % | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PredevPaddock | 1.00 | Yes | 1.5 | 10.0 | 2.0 | 0.0 | 1.00 | 60% | 0 | 0 | 100 | |
| 2 | LargeLots | 0.00 | Yes | 1.5 | 10.0 | 2.0 | 15.0 | 1.00 | 60% | 27 | 9 | 64 | |
| 3 | Road Res | 0.00 | Yes | 1.5 | 10.0 | 2.0 | 0.0 | 1.00 | 100% | 0 | 70 | 30 | |
| 4 | POS | 0.00 | Yes | 1.5 | 10.0 | 2.0 | 0.0 | 1.00 | 40% | 0 | 5 | 95 | |
| 5 | TownCentre/Commercial | 0.00 | Yes | 1.5 | 10.0 | 2.0 | 15.0 | 1.00 | 80% | 60 | 35 | 5 | |
| 6 | | 0.00 | Yes | 1.5 | 20.0 | 4.0 | 0.0 | 1.00 | | | | | |
| 7 | | 0.00 | Yes | 1.5 | 20.0 | 4.0 | 0.0 | 1.00 | | | | | |
| 8 | | 0.00 | Yes | 1.5 | 20.0 | 4.0 | 0.0 | 1.00 | | | | | |
| 9 | | 0.00 | Yes | 1.5 | 20.0 | 4.0 | 0.0 | 1.00 | | | | | |
| 10 | | 0.00 | Yes | 0.0 | 20.0 | 4.0 | 0.0 | 1.00 | | | | | |

EIA : Effective Impervious Area, TIA : Total Impervious Area

Land Use Graph Selector **2**

**(11 - combined total)**

**LargeLots**




Project **Gingin**

**Rainfall IFD Data**
Annual Exceedence Probability

| | Duration | 63.2% 1.00 | 50% 1.44 | 20% 4.48 | 10% 10 | 5% 20 | 2% 50 | 1% 100 |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 min | 1.5 | 1.7 | 2.3 | 2.8 | 3.3 | 4.0 | 4.5 |
| 2 | 2 min | 2.6 | 2.9 | 3.9 | 4.6 | 5.4 | 6.5 | 7.4 |
| 3 | 3 min | 3.5 | 3.9 | 5.3 | 6.3 | 7.3 | 8.9 | 10.2 |
| 4 | 4 min | 4.2 | 4.7 | 6.5 | 7.7 | 9.1 | 11.0 | 12.6 |
| 5 | 5 min | 4.9 | 5.5 | 7.5 | 9.0 | 10.5 | 12.8 | 14.7 |
| 6 | 10 min | 7.2 | 8.1 | 11.1 | 13.4 | 15.8 | 19.2 | 22.0 |
| 7 | 15 min | 8.7 | 9.8 | 13.5 | 16.3 | 19.2 | 23.2 | 26.6 |
| 8 | 30 min | 11.6 | 13.0 | 17.9 | 21.5 | 25.2 | 30.6 | 35.0 |
| 9 | 1 hour | 15.1 | 16.9 | 23.0 | 27.6 | 32.5 | 39.6 | 45.5 |
| 10 | 2 hour | 19.5 | 21.8 | 29.6 | 35.7 | 42.2 | 52.0 | 60.5 |
| 11 | 3 hour | 22.7 | 25.3 | 34.5 | 41.7 | 49.7 | 61.8 | 72.4 |
| 12 | 6 hour | 29.5 | 32.8 | 45.0 | 54.9 | 66.2 | 83.5 | 99.1 |
| 13 | 12 hour | 37.8 | 42.1 | 57.9 | 71.2 | 86.3 | 110.0 | 131.0 |
| 14 | 24 hour | 47.3 | 52.6 | 72.0 | 87.9 | 106.0 | 133.0 | 157.0 |
| 15 | 48 hour | 57.4 | 63.7 | 85.4 | 102.0 | 121.0 | 147.0 | 170.0 |
| 16 | 72 hour | 64.2 | 70.8 | 93.2 | 110.0 | 127.0 | 152.0 | 172.0 |
| 17 | 96 hour | 69.8 | 76.8 | 99.8 | 116.0 | 133.0 | 156.0 | 175.0 |
| 18 | 120 hour | 75.2 | 82.6 | 106.0 | 123.0 | 139.0 | 162.0 | 180.0 |
| 19 | 144 hour | 80.6 | 88.4 | 113.0 | 130.0 | 147.0 | 170.0 | 189.0 |
| 20 | 168 hour | 86.3 | 94.5 | 120.0 | 138.0 | 156.0 | 181.0 | 200.0 |

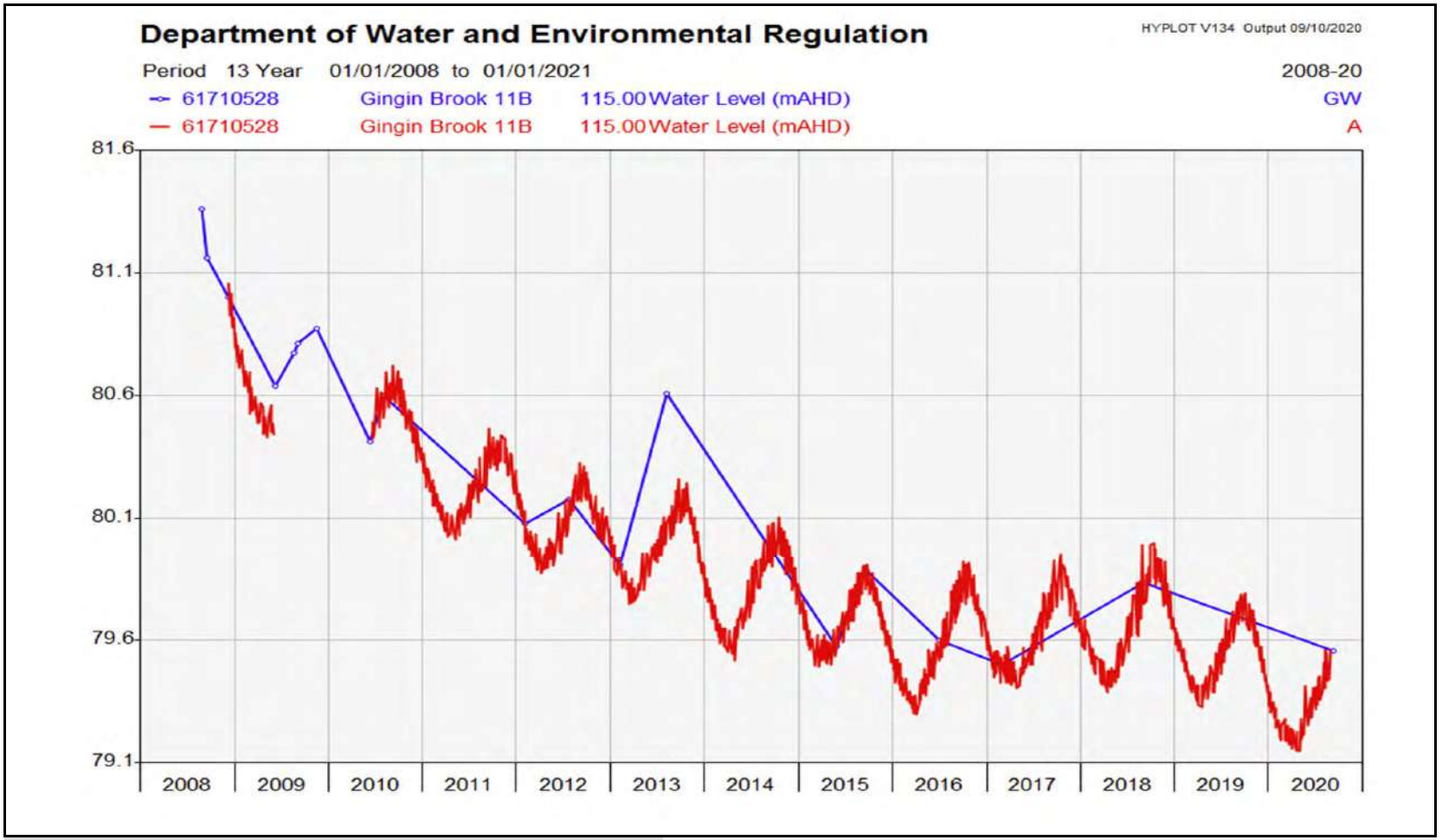
**Estimated Runoff Rates**
Annual Exceedence Probability

| | 63.2% 1.00 | 50% 1.44 | 20% 4.48 | 10% 10 | 5% 20 | 2% 50 | 1% 100 |
|---|---|---|---|---|---|---|---|
| **Maximum of All Events** | 1.00 | 1.44 | 4.48 | 10 | 20 | 50 | 100 |
| PredevPaddock | **18%** | 22% | **32%** | **37%** | 41% | 44% | **47%** |
| LargeLots | **17%** | 21% | **32%** | **37%** | 41% | 45% | **47%** |
| Road Res | **74%** | 77% | **83%** | **86%** | 88% | 91% | **92%** |
| POS | **13%** | 16% | **22%** | **25%** | 28% | 30% | **32%** |
| TownCentre/Commercial | **28%** | 33% | **46%** | **52%** | 57% | 62% | **65%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| **combined total** | **18%** | 22% | **32%** | **37%** | 41% | 44% | **47%** |

| **Event Selector** | **16** | **72 hour** | | | | | |
|---|---|---|---|---|---|---|---|
| PredevPaddock | **0%** | 0% | **0%** | **0%** | 0% | 0% | **6%** |
| LargeLots | **1%** | 3% | **7%** | **10%** | 11% | 13% | **18%** |
| Road Res | **68%** | 69% | **69%** | **69%** | 69% | 69% | **73%** |
| POS | **2%** | 2% | **2%** | **2%** | 2% | 2% | **6%** |
| TownCentre/Commercial | **3%** | 10% | **26%** | **34%** | 39% | 45% | **49%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| 0 | **0%** | 0% | **0%** | **0%** | 0% | 0% | **0%** |
| **combined total** | **0%** | 0% | **0%** | **0%** | 0% | 0% | **6%** |

**APPENDIX D**
**DWER Bore Hydrograph**

Date : 16/12/2022 Job No: H22107




hyd$_2$o

Lot 601 Brockman St Gingin UWMP

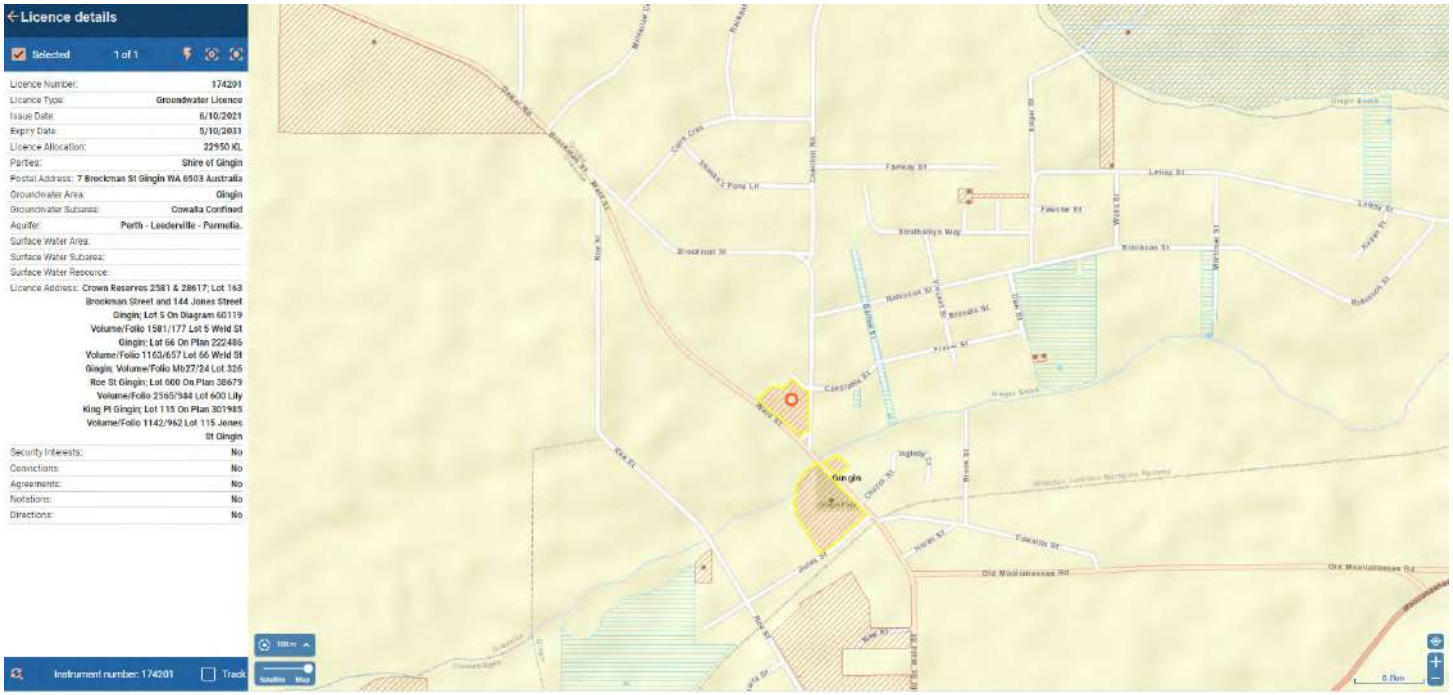
**DWER Bore Hydrograph: Gingin Brook 11B**

**Appendix D**

**APPENDIX E**
**DWER Water Register Extract**

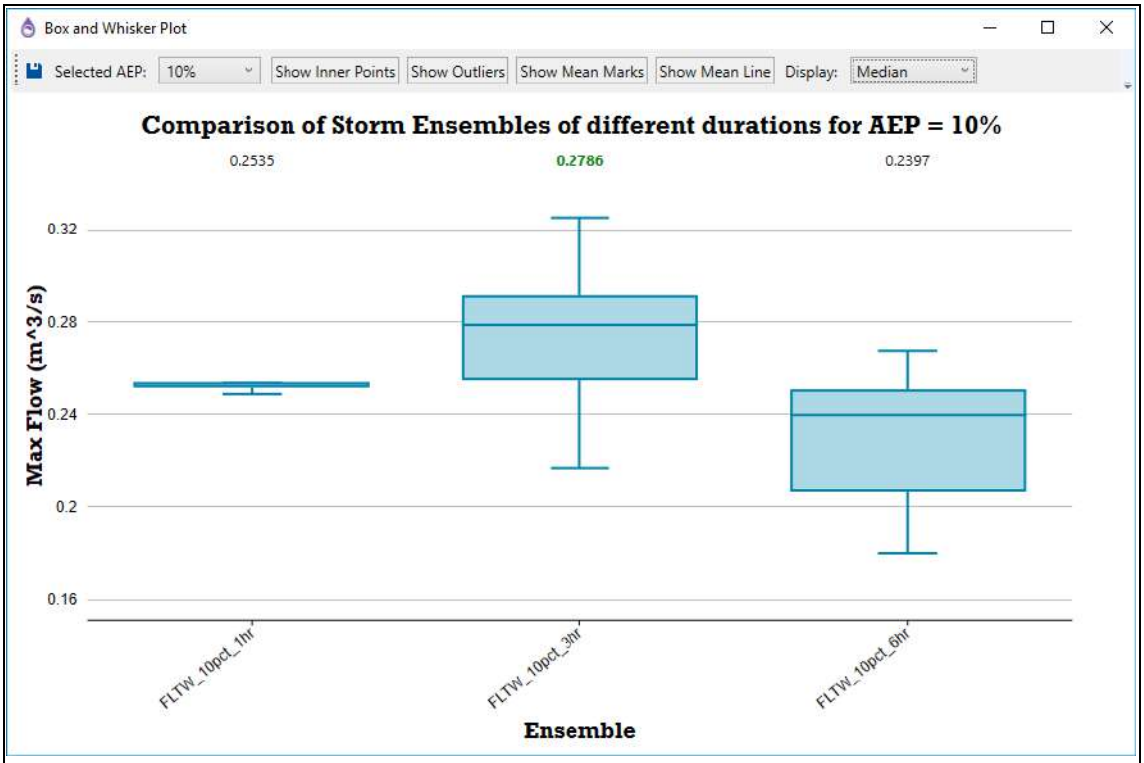
**APPENDIX E**

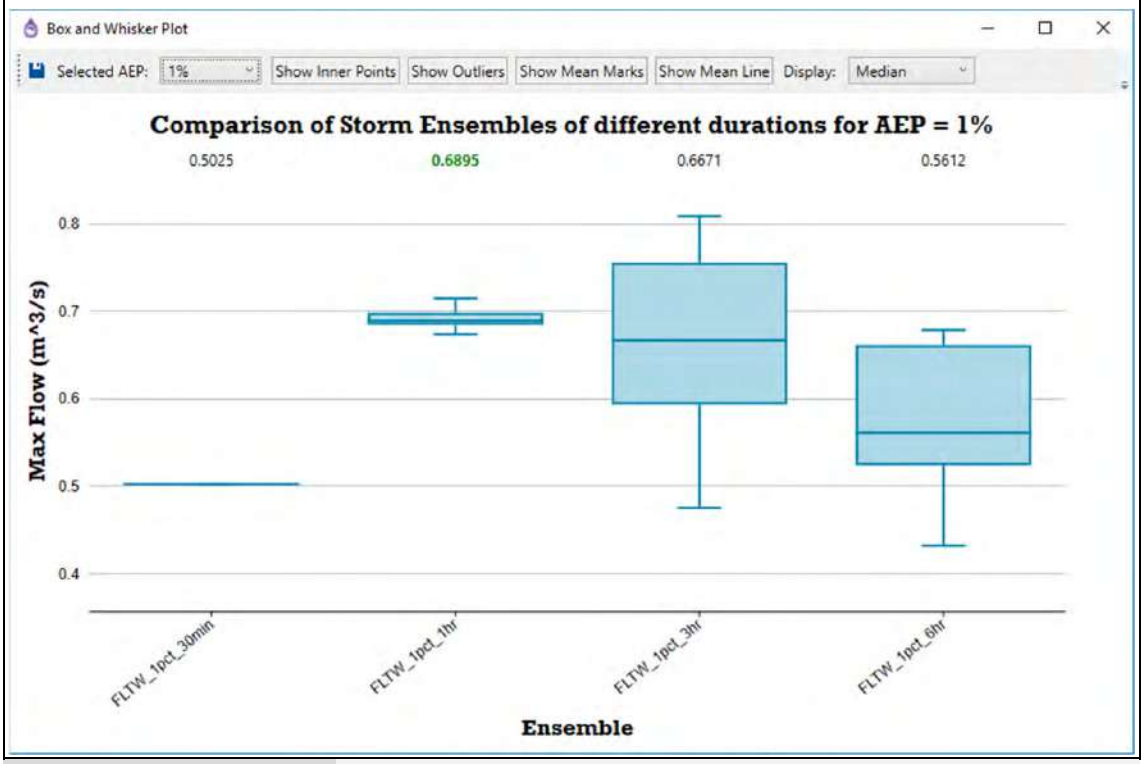
Accessed online at Water Register (DWER, 2022)



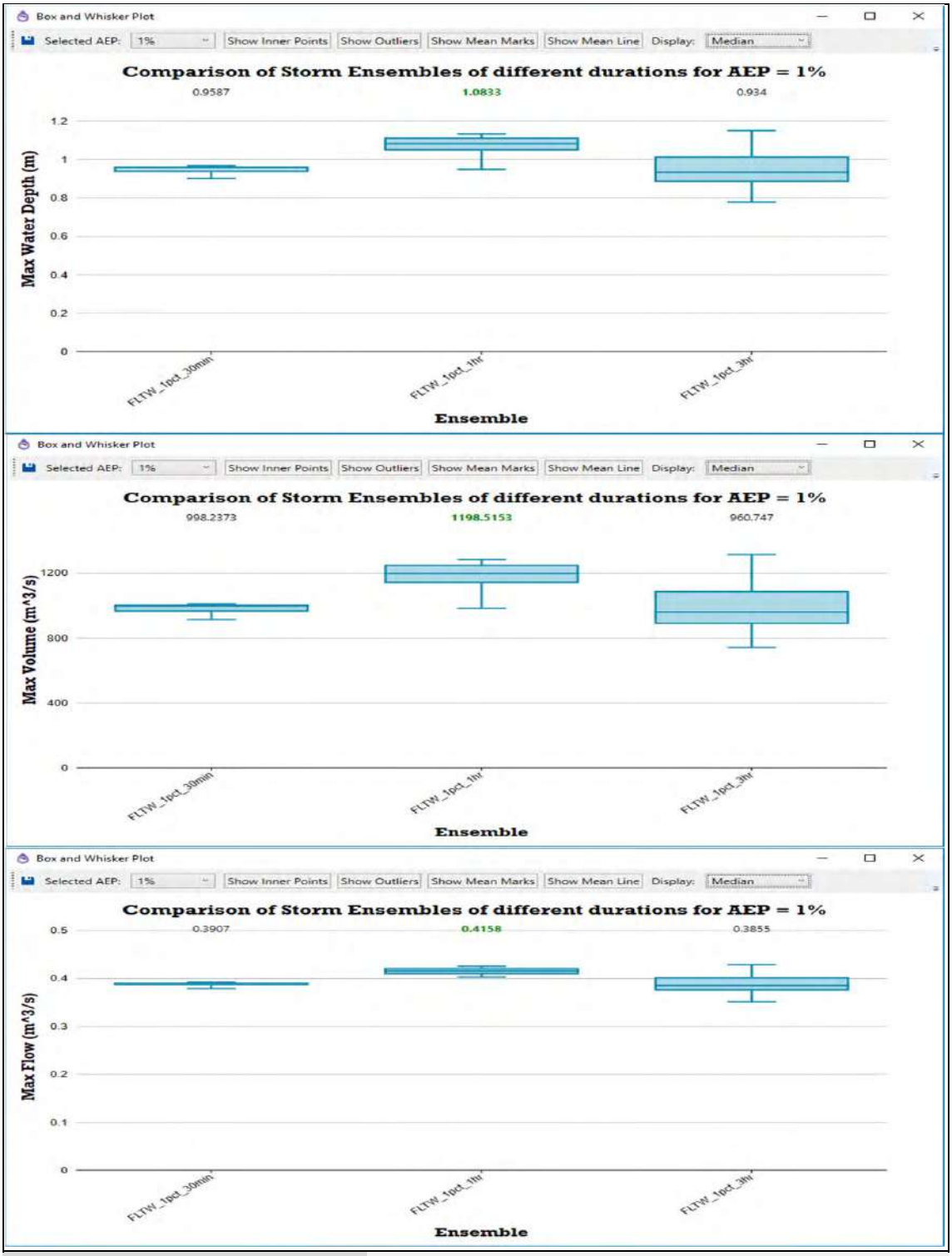
**APPENDIX F**
**XP-Storm Modelling Outputs**

Date: 16/12/2022 Job No. H22107



Date: 16/12/2022 Job No. H22107




hyd$_2$o

Lot 601 Brockman St Gingin UWMP

**XP-Storm Modelling Outputs - Drainage POS**

**Appendix F2**

**APPENDIX G**
**Biofilter Design Guideline**

Government of Western Australia
Department of Water

*Looking after all our water needs*

# Water sensitive urban design

## Biofilter

### Summary

**Biofilters (also known as biofiltration systems, bioretention systems and rain gardens) are excavated basins or trenches that are filled with porous filter media and planted with vegetation to remove pollutants from stormwater runoff. They use natural and physical processes to treat stormwater.**

**This brochure is part of a series that explain various aspects of water sensitive urban design. Please see *Water sensitive urban design in Western Australia* for background information on water sensitive urban design.**

### Main benefits

- They will work in a variety of climate, soil and groundwater conditions.
- Their flexible design (linear, basins, tree pits, planter boxes) allows them to fit into many different locations.
- Soil and sand filters provide good removal of sediment and heavy metals.
- Specially selected soil filter media and appropriate vegetation selection improves nutrient removal rates.
- They require less space than other infiltration systems due to their higher infiltration rate.

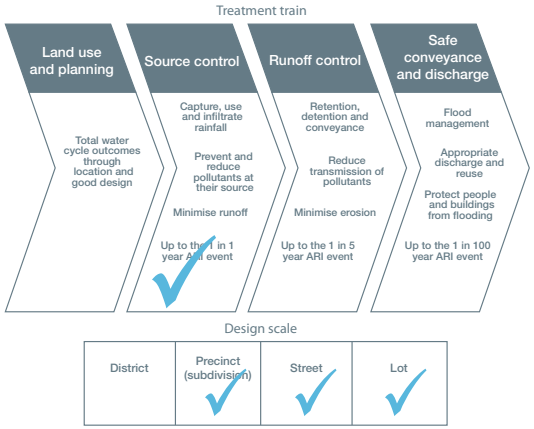
### Design factors

- Ensure they are integrated into landscape design.
- Consider location as part of planning and design of roads and lots.
- Design to infiltrate or connect to the larger stormwater system where appropriate.
- Make the surface area at least 2% of the constructed, directly connected impervious catchment for water quality treatment.
- Size the storage volume to suit system hydraulics – ideally a 1-year critical average recurrence interval event.
- Use vegetation appropriate to the climate and desired pollutant removal.
- Incorporate a submerged zone and carbon source to promote vegetation health and resilience during dry periods and aid nitrogen removal.
- Consider the impact of potential acid sulfate soils on filter media and/or structures where relevant.

### Target pollutants

- coarse sediment
- suspended solids
- phosphorus
- nitrogen
- heavy metals

### *Where they can be used in the water sensitive urban design process*






*Public open space biofilter, Meadow Springs, Mandurah*



*Roadside biofilter retrofit, Busselton CBD*



*On-lot biofilter, Evermore Heights, Baldivis*

*Looking after all our water needs*

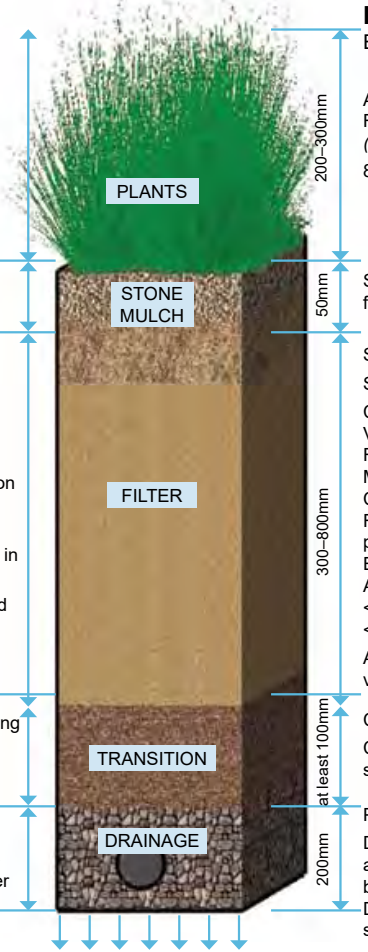
# Water sensitive urban design

## Biofilter

### Design function

Note: Transition and drainage layers may not be required if direct infiltratio of treated stormwater to surrounding soils is possible. See FAWB guidelines for diagrams demonstrating submerged zones, outlets, etc.

Biofilte elements




| Design function | Design guidelines |
|---|---|
| Aid aesthetics, assist in pollutant removal and maintain hydraulic conductivity of filte media<br>Sedimentation of primary sediments and metals | Extended detention depth<br>At least 50% of the plants to be effective at nutrient removal. Remainder to be local, native, ephemeral plants e.g. *Ficinia nodosa (*formerly *Isolepis nodosa)*<br>8–12 plants per $m^2$, depending on species |
| Suppress weeds and retain moisture in underlying filte media | Stone 100% 4–13mm in size. No fines Note that wood mulch will floa under floode conditions |
| Soil filter fin sediments and colloidal particles<br>Soil layer for plants to grow in<br>Sorption of metals and nutrients by filte particles<br>Side liner required if in clay sites to prevent contamination of filte , and in coarse sandy sites if the native soil has a higher hydraulic conductivity than the filte media<br>Include a carbon source to improve chemical processes in soil and promote vegetation health<br>Nutrient sorption and pollutant decomposition by soil and bacteria | Sandy loam<br>Saturated hydraulic conductivity in range 100–300mm/hr<br>Clay and silt <3% (<0.05mm)<br>Very fin sand 5–30% (0.05–0.15mm)<br>Fine sand 10–30% (0.15–0.25mm)<br>Medium to coarse sand 40–60% (0.25–1.0mm)<br>Coarse sand 7–10% (1.0–2.0mm)<br>Fine gravel <3% (2.0–3.4mm)<br>pH 5.5–7.5<br>Electrical conductivity <1.2dS/m<br>At least 3% low nutrient-content organic matter<br><80mg/kg orthophosphate<br><1000mg/kg total nitrogen content<br>Amend soil with 5% mulch and 5% hardwood chips (6mm) by volume |
| Separates filte layer from drainage layer to avoid clogging and stop transition of the filte media into the drainage layer | Clean, well-graded sand <2% fine<br>Clean, fin gravel or crushed rock 2–5mm and carbon source, if submerged |
| Free draining layer containing pipe (if required)<br>Subsoil pipe can aid in watertable control and is also re-quired in impervious systems to collect and convey water | Perforated PVC subsoil pipe (if required)<br>Drainage layer (if there are no subsoil pipes) - should be at least as deep as the extended detention depth, however this should be based on individual site characteristics<br>Drainage layer (if subsoil pipes are used) - completely surround the subsoil pipe and at least 50mm over pipe |
| Infiltratio from base if applicable | |

(Adapted from: Thompson McRobert Edgeloe Group 2008)

### Required reading

*Adoption guidelines for stormwater biofiltration systems,* 2009, Facility for Advancing Water Biofiltration, Monash University, available at <www.monash.edu.au/fawb/products/index.html> for the most recent advice.

*Australian runoff quality: a guide to water sensitive urban design,* 2006, Engineers Australia, available at <www.arq.org.au>.

*Construction and establishment guidelines: swales, bioretention systems and wetlands,* 2009, Water by Design, South East Queensland Healthy Waterways Partnership, Brisbane, available at <www.waterbydesign.com.au/ceguide>.

*Guideline specifications for soil media in bioretention systems,* 2008, Monash University Facility for Advancing Water Biofiltration.

*In situ monitoring of hydraulic conductivity,* 2009, Monash University Facility for Advancing Water Biofiltration.

*Stormwater management manual for Western Australia,* 2004–07, Department of Water, available at <www.water.wa.gov.au>. See Section 4.2 of Chapter 9 – Structural controls. Suitable plant species for use in biofilters in Western Australia are being researched. Section 4.2 will be updated to reflect the findings from this research and the Monash University FAWB research.

*The department acknowledges the past project contributions of the Leschenault Catchment Council.*

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June 2011 21592_100_06/11

**APPENDIX H**
**UNDO Modelling Reports**

Government of Western Australia
Department of Water and Environmental Regulation

Project: Gingin Brockman UWMP Predev

Date: 15-Dec-22

Version: Version 1.2.0.19289

**Subregion name: Site Area**

| Landuse | Percent (%) | Area (ha) | Input load Nitrogen (kg) | Input load Phosphorus (kg) |
|---|---|---|---|---|
| Residential | 0 | 0.00 | 0.00 | 0.00 |
| Industrial, commercial & schools | 0 | 0.00 | 0.00 | 0.00 |
| Rural living | 100 | 17.60 | 1233.76 | 232.32 |
| Public open space | 0 | 0.00 | 0.00 | 0.00 |
| Road reserve | 0 | 0.00 | 0.00 | 0.00 |

| Total area (ha) | Total percent (%) |
|---|---|
| 17.60 | 100 |

| Nitrogen input (kg/yr) | Phosphorus input (kg/yr) |
|---|---|
| 1325.81 | 234.96 |

| Nitrogen export (kg/yr) | Phosphorus (kg/yr) |
|---|---|
| 73.99 | 3.14 |

**Rural living**

| Landuse | Percent (%) | Area (ha) |
|---|---|---|
| Unrestricted | 100 | 17.60 |
| No livestock | 0 | 0.00 |
| No clearing apart from the housing pad | 0 | 0.00 |

| Total area (ha) | Total percent (%) |
|---|---|
| 17.60 | 100 |

| Nitrogen input (kg) | Phosphorus input (kg) |
|---|---|
| 1233.76 | 232.32 |

**Note: Commercial horticultre is not permitted in the rural living zone, due to spray drift buffers.**

## Soil and drainage information

| | | | |
|---|---|---|---|
| Type of drainage | Open channel drains | Does it contain imported fill? | No |
| Soil type | Pinjarra | Does subregion contain onsite sewage diposal system? | N |
| Depth to groundwater (m) | 5 | | |
| Groundwater slope (%) | 1.08 | | |
| Soil PRI | 19.3 | | |

**Note: Please attach the results of soil tests to this report when submitting.**

## Summary: Nutrient stripping devices

| Treatment | Name | Size (m²) | Treated area (ha) | Treating | N removed (kg/yr) | P removed (kg/yr) |
|---|---|---|---|---|---|---|
| **Load removed** | | | | | **0.00** | **0.00** |
| **Net export** | | | | | **73.99** | **3.14** |

## Summary: Nutrient load exports

| Region | Area (ha) | P export (kg/yr) | N export (kg/yr) |
|---|---|---|---|
| Site Area | 17.60 | 3.14 | 73.99 |

| PRE-TREATMENT LOAD (kg/yr) | | LOAD REMOVED (kg/yr) | | NET LOAD EXPORT (kg/yr) | |
|---|---|---|---|---|---|
| NITROGEN | PHOSPHORUS | NITROGEN | PHOSPHORUS | NITROGEN | PHOSPHORUS |
| 73.99 | 3.14 | 0.00 | 0.00 | 73.99 | 3.14 |

Government of Western Australia
Department of Water and Environmental Regulation

Project: Gingin Brockman UWMP Postdev

Date: 19-Dec-22

Version: Version 1.2.0.19289

**Subregion name: Drianage POS**

| Landuse | Percent (%) | Area (ha) | Input load Nitrogen (kg) | Input load Phosphorus (kg) |
|---|---|---|---|---|
| Residential | 0 | 0.00 | 0.00 | 0.00 |
| Industrial, commercial & schools | 3 | 0.32 | 4.53 | 0.92 |
| Rural living | 69 | 7.29 | 358.49 | 24.77 |
| Public open space | 6 | 0.63 | 8.36 | 0.23 |
| Road reserve | 22 | 2.32 | 6.50 | 0.21 |

| Total area (ha) | Total percent (%) |
|---|---|
| 10.56 | 60 |

| Nitrogen input (kg/yr) | Phosphorus input (kg/yr) |
|---|---|
| 433.12 | 27.71 |

| Nitrogen export (kg/yr) | Phosphorus (kg/yr) |
|---|---|
| 35.37 | 1.30 |

**Commercial, Industry and Schools**

| Landuse | Percent (%) | Area (ha) |
|---|---|---|
| Light industrial | 100 | 0.32 |
| Heavy industrial | 0 | 0.00 |
| Commercial / Offices | 0 | 0.00 |
| Schools | 0 | 0.00 |
| Public buildings | 0 | 0.00 |

| Total area (ha) | Total percent (%) |
|---|---|
| 0.32 | 3 |

| Nitrogen input (kg) | Phosphorus input (kg) |
|---|---|
| 4.53 | 0.92 |

## Rural living

| Landuse | Percent (%) | Area (ha) |
|---|---|---|
| Unrestricted | 0 | 0.00 |
| No livestock | 100 | 7.29 |
| No clearing apart from the housing pad | 0 | 0.00 |

| Total area (ha) | Total percent (%) |
|---|---|
| 7.29 | 69 |

| Nitrogen input (kg) | Phosphorus input (kg) |
|---|---|
| 358.49 | 24.77 |

**Note: Commercial horticultre is not permitted in the rural living zone, due to spray drift buffers.**

## Public Open Space (POS)

| Landuse | Percent (%) | Area (ha) |
|---|---|---|
| Native gardens | 40 | 0.25 |
| Non-native gardens | 0 | 0.00 |
| Not fertilised | 0 | 0.00 |
| Nature | 50 | 0.32 |
| Sport | 0 | 0.00 |
| Recreation | 0 | 0.00 |
| Golf course | 0 | 0.00 |
| Bowling green | 0 | 0.00 |
| Impervious | 10 | 0.06 |
| Water body | 0 | 0.00 |

| Total area (ha) | Total percent (%) |
|---|---|
| 0.63 | 6 |

| Nitrogen input (kg) | Phosphorus input (kg) |
|---|---|
| 8.36 | 0.23 |

## Road reserve

| Landuse | Percent (%) | Area (ha) |
|---|---|---|
| Roads | 70 | 1.63 |
| Road reserve - impervious | 10 | 0.23 |
| Road reserve - native garden | 10 | 0.23 |
| Road reserve - non-native garden | 0 | 0.00 |
| Road reserve - turf | 0 | 0.00 |
| Road reserve - not fertilised | 10 | 0.23 |

| Total area (ha) | Total percent (%) |
|---|---|
| 2.3232 | 22 |

| Nitrogen input (kg) | Phosphorus input (kg) |
|---|---|
| 6.50 | 6.50 |

## Soil and drainage information

| | | | |
|---|---|---|---|
| Type of drainage | **Piped drainage** | **Does it contain imported fill?** | **No** |
| Soil type | **Pinjarra** | **Does subregion contain onsite sewage diposal system?** | **Yes** |
| Depth to groundwater (m) | **5** | Type of system installed | **Alternative treatment units (ATUs)** |
| Groundwater slope (%) | **1.08** | No. of units installed | **61** |
| Soil PRI | **19.3** | | |

**Note: Please attach the results of soil tests to this report when submitting.**

Subregion name: **Off-site Catchment**

| Landuse | Percent (%) | Area (ha) | Input load Nitrogen (kg) | Input load Phosphorus (kg) |
|---|---|---|---|---|
| Residential | 0 | 0.00 | 0.00 | 0.00 |
| Industrial, commercial & schools | 32 | 2.25 | 59.47 | 14.42 |
| Rural living | 64 | 4.51 | 221.68 | 15.32 |
| Public open space | 0 | 0.00 | 0.00 | 0.00 |
| Road reserve | 4 | 0.28 | 0.79 | 0.03 |

| Total area (ha) | Total percent (%) |
|---|---|
| 7.04 | 40 |

| Nitrogen input (kg/yr) | Phosphorus input (kg/yr) |
|---|---|
| 318.76 | 30.82 |

| Nitrogen export (kg/yr) | Phosphorus (kg/yr) |
|---|---|
| 34.14 | 0.41 |

## Commercial, Industry and Schools

| Landuse | Percent (%) | Area (ha) |
|---|---|---|
| Light industrial | 0 | 0.00 |
| Heavy industrial | 0 | 0.00 |
| Commercial / Offices | 75 | 1.69 |
| Schools | 0 | 0.00 |
| Public buildings | 25 | 0.56 |

| Total area (ha) | Total percent (%) |
|---|---|
| 2.25 | 32 |

| Nitrogen input (kg) | Phosphorus input (kg) |
|---|---|
| 59.47 | 14.42 |

## Rural living

| Landuse | Percent (%) | Area (ha) |
|---|---|---|
| Unrestricted | 0 | 0.00 |
| No livestock | 100 | 4.51 |
| No clearing apart from the housing pad | 0 | 0.00 |

| Total area (ha) | Total percent (%) |
|---|---|
| 4.51 | 64 |

| Nitrogen input (kg) | Phosphorus input (kg) |
|---|---|
| 221.68 | 15.32 |

**Note: Commercial horticultre is not permitted in the rural living zone, due to spray drift buffers.**

## Road reserve

| Landuse | Percent (%) | Area (ha) |
|---|---|---|
| Roads | 70 | 0.20 |
| Road reserve - impervious | 10 | 0.03 |
| Road reserve - native garden | 10 | 0.03 |
| Road reserve - non-native garden | 0 | 0.00 |
| Road reserve - turf | 0 | 0.00 |
| Road reserve - not fertilised | 10 | 0.03 |

| Total area (ha) | Total percent (%) |
|---|---|
| 0.2816 | 4 |

| Nitrogen input (kg) | Phosphorus input (kg) |
|---|---|
| 0.79 | 0.79 |

## Soil and drainage information

| | | | |
|---|---|---|---|
| Type of drainage | **Open channel drains** | **Does it contain imported fill?** | **No** |
| Soil type | **Pinjarra** | **Does subregion contain onsite sewage diposal system?** | **Y** |
| Depth to groundwater (m) | **5** | Type of system installed | **Alternative treatment units (ATUs)** |
| Groundwater slope (%) | **1.08** | No. of units installed | **39** |
| Soil PRI | **19.3** | | |

**Note: Please attach the results of soil tests to this report when submitting.**

## Summary: Nutrient stripping devices

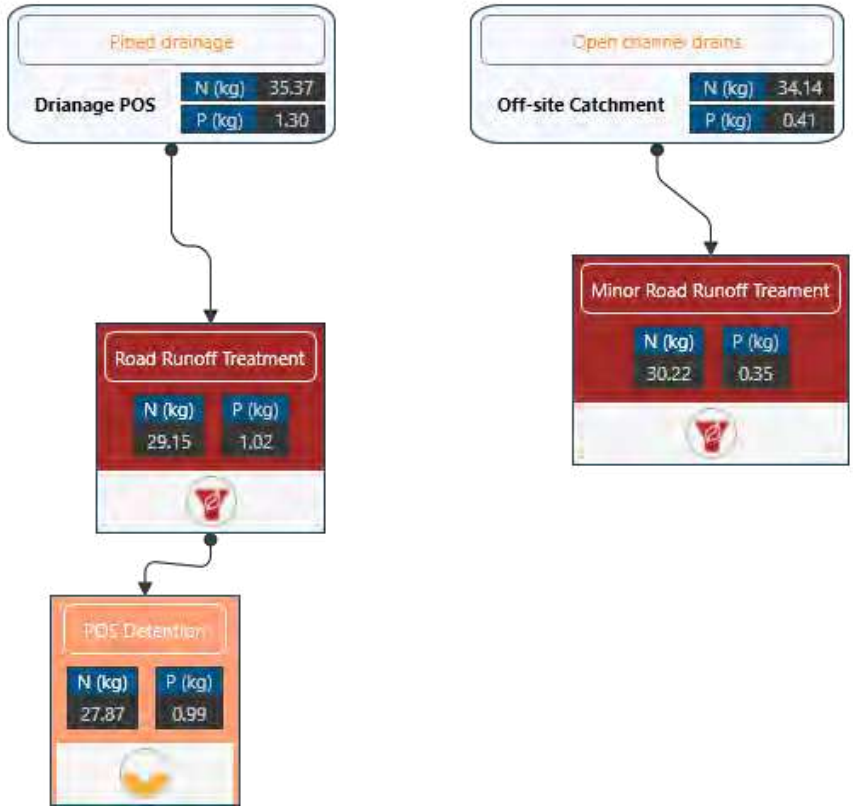
| Treatment | Name | Size (m²) | Treated area (ha) | Treating | N removed (kg/yr) | P removed (kg/yr) |
|---|---|---|---|---|---|---|
| **Biofilter** | Road Runoff Treatment | 911.00 | 10.56 | Sandy soils – Runoff only (infiltration on lots) | 6.21 | 0.28 |
| **Detention / infiltration basin** | POS Detention | 1331.00 | 10.56 | Sandy soils – Runoff only (full lot connection) | 1.29 | 0.02 |
| **Biofilter** | Minor Road Runoff Treament | 119.00 | 7.04 | Sandy soils – Runoff only (infiltration on lots) | 3.92 | 0.06 |
| **Load removed** | | | | | **11.42** | **0.36** |
| **Net export** | | | | | **58.09** | **1.35** |

## Summary: Nutrient load exports

| Region | Area (ha) | P export (kg/yr) | N export (kg/yr) |
|---|---|---|---|
| Drianage POS | 10.56 | 1.30 | 35.37 |
| Off-site Catchment | 7.04 | 0.41 | 34.14 |

| PRE-TREATMENT LOAD (kg/yr) | | LOAD REMOVED (kg/yr) | | NET LOAD EXPORT (kg/yr) | |
|---|---|---|---|---|---|
| NITROGEN | PHOSPHORUS | NITROGEN | PHOSPHORUS | NITROGEN | PHOSPHORUS |
| **69.51** | **1.71** | **11.42** | **0.36** | **58.09** | **1.35** |

**Treatment diagram**



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PENTIUM WATER

# SITE AND SOIL EVALUATION

## Lot 601 Brockman Street, Gingin

ACUGING_01
10/02/2023



# Document Status

| Version | Purpose of document | Authored by | Reviewed by | Review Date |
|---|---|---|---|---|
| Draft A | Draft for Review | S. Hewitt | | |
| Rev 0 | Final for Issue | S. Hewitt | S. McSweeney | 10/02/23 |
| | | | | |
| | | | | |
| | | | | |

# Approval for Issue

| Name | Signature | Date |
|---|---|---|
| Shane McSweeney |  | 10/02/23 |

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Version: Rev 0

Date: 10/02/2023

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Contact: Nick Perrignon

# Executive Summary

Acumen Development Solutions (herein referred to as "Acumen") proposes to develop and use Lot 601 Brockman Street, Gingin (herein referred to as "the site"), for residential lots, the extension of the Town Centre and associated Public Open Space (POS) with a total development area of approximately 17.6 hectares (ha). Individual lot sizes will range between approximately 980 and 2,600 m² with the Town Centre expansion area and associated POS comprising an area of approximately 22,700 m².

This SSE report has been prepared to expand on the work previously completed by Structerre (2022) that more thoroughly addresses the human health and environmental risks raised in accordance with the Government Sewerage Policy 2019 (GSP) and AS/NZS 1547:2012 *On-site domestic wastewater management* (AS 1547) (Standards Australia and New Zealand, 2012) to support an updated Western Australian Planning Commission (WAPC) submission for the development.

The site is zoned predominantly as "Residential" under the Shire of Gingin' Local Planning Scheme (LSP) No. 9 with the southern portion of the site be classified as a combination of "Town Centre" and "Parks and Recreation". The site is bounded by Brockman Street to north and east and Weld Street to the west. The southern boundary of the site adjoins the Shire of Gingin offices and town centre. Existing residential areas of the townsite are present adjacent to the north and the east of the site with the Gingin Brook located approximately 250 m to the south. The site is located approximately 66 km north-northeast of Perth central business district (CBD) within the Shire of Gingin (SoG)

The site is in a Sewerage Sensitive Area (SSA) as it is located within 1 km of significant wetland. The GSP (2019) requires that the subdivided lots within SSAs have a minimum lot size of 1 hectare. It has been noted that the site has previously been provided with lot zoning within a regional structure plan and therefore possible these minimum lot sizes are not required provided that the minimum Land Application Area (LAA) can be achieved, and environmental impacts are considered acceptable. As the site is not anticipated to impact on any wetlands in proximity to the site (due to the nature of surface and groundwater flow), and the minimum LAA can be achieved, the development design with 980 – 2,600 m² lots is not considered to pose an environmental or human health risk.

Results of the site and soil assessment indicate the soils have high infiltration capacity to accommodate the infiltration of stormwater and Treated Wastewater (TWW), however achieving the required clearance to groundwater 1.5m across was not achieved in a number of areas across the site. This will be managed through stormwater management, implementation of appropriate TWW systems and disposal design and adequate LAA design and construction. Site soils are anticipated to have a very high P retention due to the clayey nature of the underlying geology.

It is recommended that if appropriate in-situ fill is unavailable, fill be imported to the site to establish the LAA and an appropriate level above the natural ground surface to achieve the required groundwater clearances across the site. Sands with a PRI of 10 are the recommended fill option and would provide additional phosphorus retention benefits. Significant phosphorus retention is expected on site regardless of fill choice.

This SSE demonstrates the site can accommodate a suitable wastewater management system through having sufficient area to accommodate the LAA and through being able to achieve the required groundwater clearance through importation of fill during the construction of individual LAA's.

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# 1. Introduction

## 1.1. Background

Acumen Development Solutions (herein referred to as "Acumen") proposes to develop and use Lot 601 Brockman Street, Gingin (herein referred to as "the site"), for residential lots, the extension of the Town Centre and associated Public Open Space (POS) with a total development area of approximately 17.6 hectares (ha). Individual lot sizes will range between approximately 980 and 2,600 m² with the Town Centre expansion area and associated POS comprising an area of approximately 31,808 m². The site is bounded by Brockman Street to north and east and Weld Street to the west. The southern boundary of the site adjoins the Shire of Gingin offices and town centre. Existing residential areas of the townsite are present adjacent to the north and the east of the site with the Gingin Brook located approximately 250 m to the south. The site is located approximately 66 km north-northeast of Perth central business district (CBD) within the Shire of Gingin (SoG). The location of the site is shown in Figure 1.


Brockman St
Weld St
Brockman St
Brockman St
Brockman

## 1.3. Proposed development

The development consists of R5 and R10/R30 lots (a total of 99 lots) comprising an area of 17.6 ha and a extension of the town centre in the southern portion of Lot 601 with an are of approximately 2.47 ha.

### 1.3.1. Lot zoning

Plate 1 below, which has been taken from the Shire of Gingin Council Minutes 6th December 2022 (available here: https://www.gingin.wa.gov.au/council-meetings/past/2022), details the recognition by the SoG that the site was previously zoned as R5 and R10/R20 density. In addition, it was acknowledged that deep sewer is cost prohibitive, and that onsite secondary treatment of wastewater is required.

Plate 2 demonstrates compliance of the subdivision proposed lots with the previously zoned lot densities.

The Government Sewerage Policy states:

*Land in a sewerage sensitive area that is already zoned for urban use with a residential density coding of R2 to R10 under a local planning scheme or structure plan endorsed by the Western Australian Planning Commission, may be subdivided in accordance with the existing density coding. Where R10 subdivision is proposed, it should be demonstrated that the density coding was assigned with the understanding that reticulated sewerage would not be provided.*

The land has been earmarked for these purposes for some considerable time, prior to the Government Sewage Policy being introduced. Various investigations into the viability of deep sewer provision have proved it to be cost prohibitive. Given the circumstances, the officer is of the view that a secondary treatment unit servicing each lot is appropriate and the documentation provided in support of the subdivision adequately demonstrates the ability of the land to dispose of effluent.

The suggested conditions require a notification to be placed on the land titles to alert prospective purchasers that deep sewer is not available and that a secondary level treatment system is required.

The officer notes that the Department of Health with provide the WAPC with separate comments in this regard, as will the Department of Water and Environmental Regulation (DWER) in relation to water management.

**Plate 1: Extract from Shire of Gingin minutes 6th December 2022**

Design

The table below provides an overview of the proposed residential lot sizes:

| | Required | Proposed |
|---|---|---|
| R5<br>minimum lot size | 2000m² | 2,025m² - compliant |
| R10<br>minimum lot size<br>Average lot size | 875m²<br>1,000m² | 980m² - compliant<br>1,123m² - compliant |

**Plate 2: demonstration of proposed lots compliance with previously assigned residential density coding.**

## 1.4. Purpose of this report

This SSE report has been prepared to expand on the work previously completed by Structerre that more thoroughly addresses the human health and environmental risks raised in accordance with the Government Sewerage Policy 2019 (GSP) and AS/NZS 1547:2012 *On-site domestic wastewater management* (AS 1547) (Standards Australia and New Zealand, 2012) to support an updated Western Australian Planning Commission (WAPC) submission for the development. The site investigations and a General Site and Soil Evaluation report prepared by Structerre is provided in Appendix A.

## 1.5. Previous site reports and investigations

Reports that have previously been prepared for the site and utilised to inform the development of the SSE are discussed below.

- Urban Water Management Plan – Lot 601 Brockman Street, Gingin (Hyd2o, 2022): An Urban Water Management Plan (UWMP) was prepared by Hyd2o hydrology in 2022 as required for subdivision submission and approval. The document covers the entire development and details the drainage management plan for the subdivision of the subject site.
- Site and Soil Evaluation (Structerre 2022): A Site and Soil Evaluation (SSE) was prepared by Structerre in November 2022. This SSE details the field investigations and preliminary outcomes of the assessment of the site's ability to accommodate treated waste water (TWW) disposal.

# 2. Existing environment

## 2.1. Climate

The nearest Bureau of Meteorology (BoM) weather station to the site is Gingin (Station Number 9018), located approximately 0.5 km to the southwest of the site. Based on the rainfall data collected from 1891 to 2022 at this station, the local area experiences an average of 737.7 mm rainfall annually.

Other climate data has been taken from Gingin Aero (station number 9178) with evaporation data from Perth Airport (Station Number 9021) located approximately 65 km to the south of the site as this is the closest BoM recording weather station with this data. Based on climate data collected from 1968 to 2022, the local area experiences a mean maximum temperature of 33.2° C and a mean minimum temperature of 6.5℃ (BoM 2022). The monthly mean climatic data for rainfall and temperature is summarised in Table 1 below, with monthly rainfall data for the previous few years presented in Figure 2.

**Table 1: BoM Weather Stations No. 9018 (rainfall 1891-2022), 9178 (temperature) and 9021 (Perth Airport) evaporation (1986 to 2022)**

| Statistic | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mean rainfall** | 10.2 | 13.6 | 17.9 | 33.3 | 97.3 | 140.2 | 145.6 | 113.3 | 69.2 | 46.4 | 20.0 | 10.8 | 737.7 |
| **Mean max temp** | 33.2 | 33.1 | 30.8 | 26.8 | 22.7 | 19.7 | 18.4 | 19.1 | 20.9 | 24.3 | 28.0 | 31.0 | 25.7 |
| **Mean min temp** | 16.4 | 17.1 | 15.4 | 12.0 | 8.9 | 7.2 | 6.5 | 6.6 | 7.4 | 9.1 | 11.9 | 14.5 | 11.1 |
| **Mean evaporation (mm)** | 316.2 | 268.8 | 238.7 | 150 | 93 | 66 | 65.1 | 80.6 | 111 | 167.4 | 228 | 282.1 | 2080.5 |

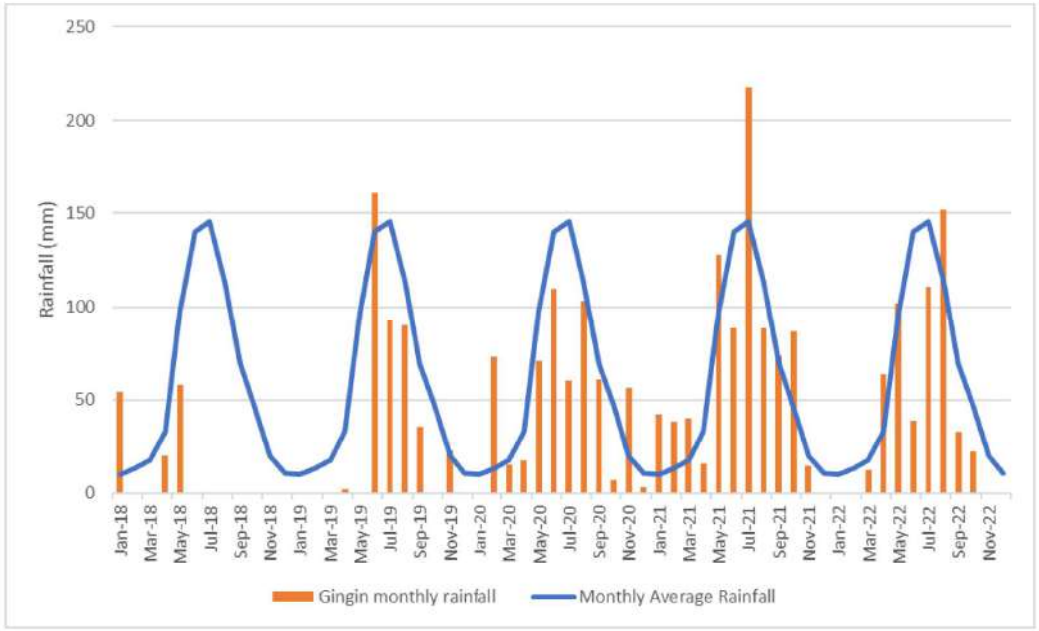



**Figure 2: Monthly rainfall data - Gingin Station (BoM site 9018)**

As shown in Figure 1, rainfall recorded for August of 2022 exceeded the average monthly rainfall for this site. Further analysis indicates 254.4 mm of rainfall was recorded in the four weeks between 17th July 2022 and 17th August 2022 64% of the mean winter rainfall between 1st June – 31st August.

Evaporation data estimated from The Department of Agriculture and Food (1987) data indicates that evaporation generally exceeds rainfall annually at the site. On average there are four months of the year (May to August) where the rainfall exceeds the evaporation at the site.

## 2.2. Topography

The regional topographic contours show that the site slopes in a south / south-easterly direction with elevations across the site ranging from approximately 130 m Australian Height Datum (m AHD) in the northern portion of the site to 98 m AHD in the south. The surface gradient of the site varies between 5 and 10% with an average slope of approximately 7%. Regional topographic contours are presented in Figure 3.




**Figure 3: Site topography**

## 2.3. Regional landforms and soils

The Gingin sheet of the 1:50,000 scale Environmental Geology series map indicates that the area is underlain by predominantly colluvium soil and undifferentiated sand.

Structerre's site geotechnical investigations conducted during May 2022 (13 bore holes) and August 2022 (30 boreholes) provided additional detail to the site geological conditions. The reported soil conditions broadly align with regional conditions. Three main soil profiles were identified across the site which are summarized below:

- **Profile 1:**
  - Topsoil – grey, fine to medium grained - 0.1 – 0.2 m
  - Silty sand – fine to medium – 0.2 – 1.2 m
  - Sand – grey, fine to medium grained, with clay and gravel inclusions – 1.2 – 2.5m
- **Profile 2:**
  - Topsoil – grey, fine to medium grained - 0.1 – 0.2 m
  - Silty sand – fine to medium – 0.2 – 0.65 m
  - Clay / sandy clay – high plasticity, trace sands and gravels – 0.65 – 2.5m
- **Profile 3:**
  - Topsoil – grey, fine to medium grained - 0 – 0.1 m
  - Clay / sandy clay, medium to fine grained, high plasticity with trace sands and gravels 0.1 – 2.5 m

The location of the bore holes conducted as part of the geotechnical investigations is presented in Figure 4.

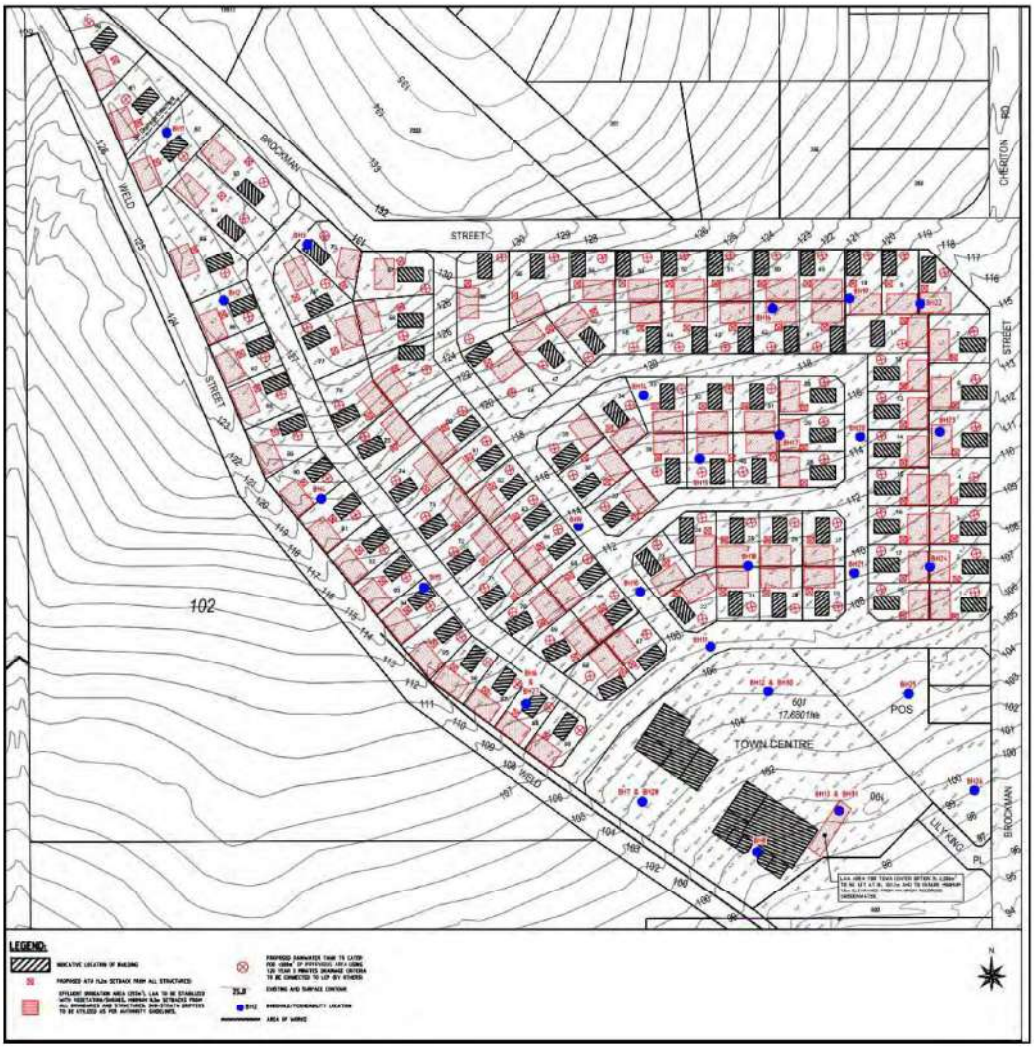



**Figure 4: Investigation borehole locations (blue)**

## 2.4. Acid sulfate soils

The (then) Department of Environmental Regulation (DER, now Department of Water and Environmental Regulation, DWER) mapped the site not having and acid sulphate soil risk within the site (refer Figure 5).

## 2.5. Public drinking water source areas

The site is not located within a public drinking water source area (PDWSA) and is located approximately 250 m southwest (down hydraulic gradient) of P2 public drinking water source area associated with the Gingin Water Reserve Area.




**Figure 5: Acid sulfate soil mapping and PDWSA.**

## 2.6. Groundwater

The site is located within the Gingin Townsite subarea of the Gingin Groundwater Management Area.

Department of Water and Environmental Regulation (DWER) groundwater contours are not available for the site, however according to the Perth Groundwater Map (DWER, 2022), contours starting approximately 3.5 km to the south of the site and indicate regional groundwater flows generally east to west. It is acknowledged that localised groundwater flow directions may generally align with topography. As such groundwater may potentially flow in a southerly direction within the site towards the Gingin Brook before trending west in line with regional groundwater flow.

Depth to groundwater information is not available from DWER's Perth Groundwater Atlas and the Water Information Reporting online database only provides groundwater data for a single site approximately 500m to the south of the site. Data from this bore (WIN bore 61710528) indicates a maximum groundwater elevation of approximately 81.4 m Australian

Height Data (mAHD) in 2008. Groundwater elevations have declined since at this location by approximately 1.5 m since 2008.

Information on the regional groundwater resources obtained from the DWER's online databases indicates that the site is underlain by a dual-layered aquifer system comprised of the following resources:

- Perth – Superficial Swan
- Perth – Leederville (confined)

Groundwater levels were measured across the site during geotechnical investigations conducted on the 16th and 17th August 2022 via a series of 26 bore holes across the site (Figure 4). The site investigations are described in detail in Section 3.0. During the August 2022 site investigations, groundwater was only encountered within five of the 26 bore holes (BH6, BH 7, BH8, BH 12 and BH 13) which are all located in the southern area of the site and predominantly the Town Centre expansion area. At these locations, groundwater was encountered at 0.6 metres below ground level (mbgl) at BH6 and at the ground surface at all other locations where groundwater was encountered.

It is noted that 13 bore holes where groundwater was not encountered did not extend past 1.5 mbgl. As such, these locations will be addressed on a site by site basis to ensure adequate groundwater clearance is achieved; this is further detailed in *Section 4.3.3.*

It should be noted that the rainfall recorded for August of 2022 exceeded the average monthly rainfall for this site. Further analysis indicates 254.4 mm of rainfall was recorded in the four weeks between 17th July 2022 and 17th August 2022 64% of the mean winter rainfall between 1st June – 31st August.

### 2.6.1. Groundwater and surface water licences

A review of DWER's online Groundwater Register (DWER 2023) indicate that there are a number groundwater and surface water licences within 500m of the site. A summary of the nearby water allocation licences is provided in Table 2 below.

Majority of the licences are located up- or cross-hydraulic gradient of the site, with those located down-hydraulic gradient or significantly close to the site discussed further below.

The majority of the groundwater licences in close proximity to the site are within the confined Leederville aquifer. The only superficial groundwater licence is located up-hydraulic gradient of the site.

It is noted that a number of surface water drawpoints are identified on the Groundwater Register (DWER 2023), however at the time of writing no associated licence details were not available – this does not preclude the existence of surface water licences being present in close proximity to the site.

Given the above, and proposed wastewater treatment systems (refer Section 5.2). It is therefore unlikely that site development and related wastewater management will pose any risk to these licences.

There are no groundwater licences associated with the site. However there are a number of groundwater and surface water licences within a 500 m radius of the site. These are summarised in Table 2 below.

**Table 2: Surrounding groundwater licence holders (within 500 m of the site)**

| Licence number | Type | Owner | Resource | Volume (kL/yr) | Comment |
|---|---|---|---|---|---|
| 157187 | Groundwater | Slater, Geoffrey, Alan, Slater Annette Frances | Perth – Superficial Swan | 154,000 | Located 200 m north-west of site (up hydraulic gradient) |
| 174201 | Groundwater | Shire of Gingin | Perth – Leederville - Parmelia | 22,950 | Two sites – adjacent to the south of the site. Likely POS irrigation water. |
| 65089 | Groundwater | Water Corporation | Perth – Leederville - Parmelia | 210,000 kL | Two sites – 500 m to the east of the site. Likely abstraction bores associated with the Gingin PDWSA |
| 179971 | Surface Water | Shire of Gingin | Gingin Brook 3 | 2,250 kL | Unknown use. 150 m east of the site |
| 151889 | Surface water | Greville, Maxine Carole | Gingin Brook 3 | 1,500 kL | Unknown use, 500 m south-west |

## 2.7. Drainage

### 2.7.1. Pre-development

Surface water flows are anticipated to flow south overland towards the southern boundary of the site. A cut-off drain within the site and a shallow open drain following the fence-line have been constructed to direct flows to the east and west respectively and around the shire buildings to the south.

There are two minor catchments in the north of the site. One catchment in the northwest portion of the site drains to an external catchment through the site to culverts under Weld St, then flowing south-east through the downstream property to Roe St. the other small catchment in the north-eastern corner of the site is located in the Robinson St drainage system catchment.

All flows generated from the site that enter the drainage system are then conveyed to the Gingin Brook located approximately 250 m to the south of the site (Figure 6).




**Figure 6: Surface water catchments and drainage**

### 2.7.2. Post-development

Post-development drainage for the site will include the retention and infiltration of the first 15 mm of rainfall within individual lots. Larger events and direct rainfall on the internal roads of the development will be conveyed via a piped road drainage network.

Individual lot owners will be responsible for ensuring that all land application areas (LAA) are protected from surface flows generated within individual lots i.e. via spoon drains connected to soak wells etc. to prevent the flow of surface water impacting the LAA.

## 2.8. Vegetation and exposure

The site has been extensively cleared for rural use purposes and consists of pasture with the exception of spares trees and a remnant gathering of trees in the south-east corner. The site is predominantly comprised of open paddocks.

It is anticipated that any remnant trees retrained post-development will not impact LAA's.

## 2.9. Wetlands

A review of the Geomorphic Wetlands, Swan Coastal Plain (DBCA 2020) dataset indicates that are no geomorphic wetlands present within the site

There are also a number of mapped wetlands in close vicinity of the site, as shown in Figure 7. The wetlands are located cross and down-hydraulic gradient of the site and include:

- UFI 15107 – Palusplain – Conservation Category Wetland (CCW) located approximately 300m south of the site associated with the Gingin Brook.
- UFI 11122 – Palusplain – Multiple use (MU) located approximately 320m south of the site associated with the Gingin Brook.
- UFI 13450 – Palusplain – Multiple use (MU) located approximately 600m south-west of the site associated with the Gingin Brook.
- UFI 11130 – Palusplain – Multiple use (MU) located approximately 950m south-west of the site associated with the Gingin Brook.
- UFI 11221 – Palusplain – Conservation Category Wetland (CCW) located approximately 1.5 km west of the site.
- UFI 11121 – Palusplain – Multiple use (MU) located approximately 950m north-east of the site associated with the Gingin Brook.




**Figure 7: Geomorphic wetlands**

## 2.10. Sewage sensitive areas

Sewage sensitive areas (SSAs) are proclaimed under the *Government Sewerage Policy* (GSP) (DPLH 2019) to protect groundwater and surface water systems. A review of the GSP online data set (National Map 2022) maps the site as being within a SSA as it is located within the Estuary catchments on the Swan Coastal Plain and within 1 km of significant wetlands (refer Figure 7).

The GSP (2019) requires that the subdivided lots within SSAs have a minimum lot size of 1 hectare. It has been noted that the site has previously been provided with lot zoning within a regional structure plan and therefore possible these minimum lot sizes are not required provided that the minimum LAA can be achieved, and environmental impacts are considered acceptable.

Although the lot sizes range from 980 – 2,600 m², they are large enough to adequately achieve the minimum LAA sizing requirements (as discussed in Section 4.4) and given the treatment requirements (ATU with nutrient striping) is not considered to pose an environmental or human health risk.

## 2.11. Bush Forever

There are no Bush Forever areas mapped within or in close proximity to the site.

## 2.12. Existing and historic land use

The site has been historically used for rural purposes, with historical aerial photographs indicating that in 1960 the site had been extensively cleared.

## 2.13. Surrounding land use

Immediately to the north, east and south of the site lies the township of Gingin, comprising mainly of residential dwellings and a town centre. Further to the south (approx. 320m) lies the Gingin Brook and beyond that the remainder of the Gingin townsite. The west of the site lies pastoral properties including remnant vegetation, with the Brand highway located approximately 2 km to the west of the site.

# 3. Site and Soil Assessment

## 3.1. Site assessment

To assess the site's ability to accommodate the disposal of treated wastewater site investigations were Structerre on the 16th and 17th August and again on the 7th of December which comprised of:

- a site walkover including inspection of the site features relevant to AS1547-2012.
- drilling of boreholes at 26 locations, extending to depths of up to 2.5m unless refusal encountered prior.
- 8 x dynamic cone penetrometer (DCP) tests in accordance with AS 1289.6.3.2 (1997) to a depth of 1m for the evaluation of relative densities in the upper lithological profile.
- constant head infiltration testing at 26 locations; and
- collection of representative soil samples for laboratory testing.

Sampling locations are presented in Figure 4.

A geotechnical engineer from Structerre conducted the walkover survey, selected and located the test positions, drilling the push core boreholes, logged the materials encountered in the boreholes, conducted the constant head infiltration testing, and collected representative samples for laboratory testing.

The test locations were positioned using a handheld GPS typically accurate to within ± 5 m in the horizontal plane. The approximate test locations are shown on Figure 1, Site and Location Plan..

Details of the tests and individual site results are presented in Structerre (2022) in appendix A.

Perched water at the natural ground surface was observed on site, however, was only briefly noted in the report, with the specific whereabouts not mentioned.

The following sections discuss the results obtained.

### 3.1.1. Boreholes

Boreholes were drilled using a sample retrieval probes.. Borehole reports, including a photograph of the spoil are presented in Appendix C, Borehole and Test Pit Reports (Structerre, 2022).

### 3.1.2. Dynamic Cone Penetrator Tests

Dynamic cone penetrometer (DCP) tests were carried out adjacent to each test pit. Results of the DCP testing are presented in Appendix D, Dynamic Cone Penetrometer Test Results (Structerre, 2022). The tests were carried out in accordance with AS 1289.6.3.2.

#### 3.1.2.1. Soil lithology

The soil profiles encountered onsite for all bore holes typically comprised clay, sandy clay and silty clays with the presence of gravels towards the surface with an overlying layer of topsoil. Many boreholes reported refusal due to still clays and hard gravels at depths typically around the 1.3 mbgl where encountered. The lithology closely corresponds with the regional landform descriptions outlined in Section 2.3.

#### 3.1.2.2. Particle size analysis

Particle size analysis was undertaken at two sites, with results presented in Appendix E.

Analyses have been reviewed against Table 5.1 of the *AS/NZS 1547 On-site domestic wastewater management* (Standards Australia and Standards New Zealand, 2012). Based on visual-tactile assessment undertaken during the site walkover, laboratory and infiltration testing, the site soils have been determined to be soil Category 2 and Category 3 soils (AS 1547) with a hydraulic capacity of ranging from 2.6 – 8.1 m/day.

### 3.1.3. Design loading rates

Based on Table 5.2 of AS 1547, the following design loading rates (DLRs) are considered applicable for treated effluent in trenches and beds as shown in Table 3, to provide a conservative approach, the DLR for Category 3 soils has been adopted.

**Table 3: Design loading rates (mm/day)**

| Trenches and Beds | | | |
|---|---|---|---|
| Secondary Treated Effluent (Conservative Rate) | Secondary Treated Effluent (Maximum Rate) | Secondary Treated Effluent (ETA/ETS beds and trenches) | Secondary Treated Effluent (Spray or LPED irrigation) |
| 30 | 50 | Not recommended | 3.5 |

Notes:

1. The irrigation system has a depth of 100 – 150 mm in good quality topsoil. or 250 mm for LPED irrigation

2. A suitably qualified and experienced design of effluent disposal systems should confirm the above design loading rates and suitable land application systems

### 3.1.4. Soil components analysis

Laboratory testing was carried out by Western Geotechnical and Laboratory Services in their NATA accredited laboratory and comprised the determination of:

- particle size distribution on 11 samples.
- Atterberg limits and linear shrinkage on 11 samples.
- dry density-moisture content relationship using modified compactive effort on 3 samples; and
- California bearing ratio (CBR) on 3 samples.

Laboratory results along with the test methods followed are presented in Appendix F, Laboratory Test Results – Geotechnical (Galt, 2022) and are summarised in Table 4.

**Table 4: Summary of geotechnical laboratory test results**

| Test Location | Sample Depth (m) | Sieve analysis – % passing sieve size (mm) | | | | LL (%) | PI (%) | LS (%) | MMDD (t/m$^3$) | OMC (%) | CBR (%) | CBR Swell (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.075 | 0.425 | 2.39 | 19 | | | | | | | |
| BH01 | 1.0–1.6 | 90 | 96 | 98 | 100 | 70 | 42 | 14.5 | 1.83 | 10 | 12 | 0 |
| BH02 | 1.3–1.9 | 56 | 80 | 98 | 100 | 55 | 34 | 13 | 1.83 | 10 | 40 | 0 |

Note:

LL – Liquid Limit

PI – Plasticity Index

LS – Linear Shrinkage

MMDD – Maximum Modified Dry Density

OMC – Optimum Moisture Content

CBR – California Bearing Ratio (sample compacted to 95% MMDD, saturated, 4.5 kg surcharge)

#### 3.1.4.1. Observed groundwater levels

Groundwater level observations were conducted during the fieldwork conducted over the 16th and 17th of August 2022. Groundwater water was not encountered at 21 of the 26 bore holes drilled on the site. Groundwater was however, encountered at a depth of 0.6 m at BH06 which is located in the south west corner of the residential area (Lot 98) and at ground level at BH07, BH08, BH12 and BH 13 which are all located in the Town Centre expansion area.

It is also noted that a number of the boreholes did not reach the target depths of 1.5 mbgl or greater due to refusal on hard clays or hard gravels. As such, a 1.5 m clearance to groundwater could not been confirmed. In these instances, the total drilled depth has been

adopted as the maximum groundwater level for the purposes of determining the LAA deign datums.

Table 5 below presents the bore hole depths, observed groundwater levels and adopted groundwater levels for the site from August 2022 site investigations. Where clearance to groundwater was not confirmed to be 1.5 m or greater, clearance requirements will be managed through the importation of fill to ensure LAA compliance with GSP (2019). Further details on the LAA design are provided in *Section 5.5*.

**Table 5: Observed groundwater levels**

| Test ID | Associated lot | Bore hole depth (mbgl) | Groundwater depth (mbgl) | Minimum Groundwater Clearance (mbgl) | Additional fill requirement (m)[2] |
|---|---|---|---|---|---|
| BH 1 | 82 | 1.9 | GNE | 1.9 | 0 |
| BH 2 | 86 | 1.3 | GNE | 1.3 | 0.2 |
| BH 3 | 79 | 2.5 | GNE | 2.5 | 0 |
| BH 4 | 90/91 | 1.3 | GNE | 1.3 | 0.2 |
| BH 5 | 95 | 1.2 | GNE | 1.2 | 0.2 |
| BH 6 / 27 | 98 | 2.5 | 0.6 | 0.6 | 0.9 |
| BH 7 / 28 | TC | 1.4 | 0 (at ground level) | 0 | 1.5 |
| BH 8 / 29 | TC | 1.5 | 0 (at ground level) | 0 | 1.5 |
| BH 9 | 64 | 2.5 | GNE | 2.5 | 0 |
| BH 10 | 23/68 | 2.5 | GNE | 2.5 | 0 |
| BH 11 | 22 / road | 1.5 | GNE | 1.5 | 0 |
| BH 12 / 30 | TC | 1.9 | 0 (at ground level) | 0 | 1.5 |
| BH 13 / 31 | TC | 1.4 | 0 (at ground level) | 0 | 1.5 |
| BH 14 | 33 | 1.8 | GNE | 1.8 | 0 |
| BH 15 | 39 | 1.3 | GNE | 1.3 | 0.2 |
| BH 16 | 42 | 1.1 | GNE | 1.1 | 0.4 |
| BH 17 | 29 | 1.6 | GNE | 1.6 | 0 |
| BH 18 | 21/25 | 1.1 | GNE | 1.1 | 0.5 |
| BH 19 | 10 | 1.3 | GNE | 1.3 | 0.2 |
| BH 20 | 14 | 1.1 | GNE | 1.1 | 0.4 |
| BH 21 | 19 | 1.1 | GNE | 1.1 | 0.4 |
| BH 22 | 8 | 1.5 | GNE | 1.5 | 0 |
| BH 23 | 5 | 1.3 | GNE | 1.3 | 0.2 |
| BH 24 | 2 | 1.3 | GNE | 1.3 | 0.2 |
| BH 25 | TC POS | 0.8 | GNE | 0.8 | 0.7 |
| BH 26 | TC POS | 0.8 | GNE | 0.8 | 0.7 |

Notes: 1. GNE – Groundwater Not Encountered

2. additional fill required to achieve the LAA base level with 1.5 m groundwater separation. Does not include fill requirements for the installation of leach drains

### 3.1.5. Infiltration testing

Constant head infiltration tests were conducted using a constant head permeameter. The tests were generally conducted in accordance with Appendix G of AS 1547 (2012) "On-site domestic wastewater management". The results of the testing as provided in Structerre (2022) are summarised in Table 6.

**Table 6: Constant head infiltration test results**

| Test | Test Location (Lot) | Test Depth (m) | Soil Type | K[1] (m/day) | Soil Category[2] |
|---|---|---|---|---|---|
| BH 1 | 82 | 0 – 1.9 | Sand to clay – trace gravel | 7.2 | 2 |
| BH 2 | 86 | 0 – 1.3 | Sand to sandy clay – trace gravel | 5.7 | 2 |
| BH 3 | 79 | 0 – 1.2 | Silty sand to sand – trace gravel | 5.6 | 2 |
| BH 4 | 90/91 | 0 – 1.3 | Sand to sandy clay – trace gravel | 5.4 | 2 |
| BH 5 | 95 | 0 – 1.2 | Sand to sandy clay – trace gravel | 7.7 | 2 |
| BH 6 / 27 | 98 | 0 – 2.5 | Sand to sandy clay – trace gravel | 5.4 | 2 |
| BH 7 / 28 | TC | 0 – 1.4 | Sand to sandy clay – trace gravel | 5.0 | 2 |
| BH 8 / 29 | TC | 0 – 1.5 | Sand to sandy clay – trace gravel | 3.3 | 2 |
| BH 9 | 64 | 0 – 2.5 | Silty sand to sandy clay – trace gravel | 6.2 | 2 |
| BH 10 | 23/68 | 0 – 2.5 | Sand to sandy clay – trace gravel | 6.5 | 2 |
| BH 11 | 22 / road | 0 – 1.5 | Sandy clary with gravel | 4.7 | 2 |
| BH 12 / 30 | TC | 0 – 1.9 | Sand to sandy clay – trace gravel | 3.2 | 3 |
| BH 13 / 31 | TC | 0 – 1.4 | Sand to sandy clay – trace gravel | 2.6 | 3 |
| BH 14 | 33 | 0 – 1.8 | Silty sand to sandy clay – trace gravel | 4.6 | 2 |
| BH 15 | 39 | 0 – 1.3 | Silty sand to sandy clay – trace gravel | 5.0 | 2 |
| BH 16 | 42 | 0 – 1.1 | Silty sand to sandy clay – trace gravel | 3.1 | 3 |
| BH 17 | 29 | 0 – 1.6 | Silty sand to sandy clay – trace gravel | 4.9 | 2 |
| BH 18 | 21/25 | 0 – 1.1 | Silty sand to sandy clay – trace gravel | 4.6 | 2 |
| BH 19 | 10 | 0 – 1.3 | Silty sand to sandy clay – trace gravel | 3.4 | 3 |
| BH 20 | 14 | 0 – 1.1 | Silty sand to sandy clay – trace gravel | 3.4 | 3 |
| BH 21 | 19 | 0 – 1.1 | Sandy clay with gravel | 3.6 | 3 |
| BH 22 | 8 | 0 – 1.5 | Silty sand to sandy clay – trace gravel | 5.1 | 2 |
| BH 23 | 5 | 0 – 1.3 | Sand to sandy clay – trace gravel | 6.0 | 2 |
| BH 24 | 2 | 0 – 1.3 | Sand to sandy clay – trace gravel | 8.1 | 2 |
| BH 25 | TC POS | 0 – 0.8 | Gravelly sand with clay | 5.3 | 2 |
| BH 26 | TC POS | 0 – 0.8 | Gravelly sand with clay | 6.6 | 2 |

Notes:

1. K-saturated hydraulic conductivity

2. Soil category in accordance with Table 5.1 and L1 of AS1547-2012.

### 3.1.6. Site soils summary

The soil profiles encountered closely correspond with the regional landform descriptions outlined in Section 2.3. Based on the soil descriptions across the site, the soil has been determined to be predominantly be soil Category 2 classification as per the AS 1547 classification. However there are areas where a classification of soil Category 3 is appropriate.

Groundwater was encountered between ground surface and 0.6 mbgl across five bore holes in the south-west of the site during August 2022. Based on the timing of the investigations (end of winter, end of August) coupled with the increased rainfall received during the 2022 winter months, this groundwater level is considered to represent the maximum groundwater level at this site.

For borehole locations that did not extend to >1.5mbgl, the maximum groundwater level at the depth of refusal has been adopted and is considered to be a conservative approach.

Infiltration tests indicate the site soils have high infiltration capacity to accommodate the infiltration of stormwater and Treated Wastewater (TWW). However, areas of the site have not demonstrated a groundwater separation distance of at least 1.5m, this will be managed implementation of appropriate TWW systems and design of adequate LAA (area and elevation).

Given the relatively high occurrence of clays across the site, the site soils are anticipated to have a very high P retention rates. It is nevertheless recommended that fill be imported to the site to establish the LAA, where the re-use of in-situ is not available i.e., earthwork costs to high or insufficient volumes. Sands with a PRI of 10 are the recommended import fill option and would assist to retain phosphorus within the site's soils. Significant phosphorus retention is expected on site regardless of fill choice.

# 4. Land capability

## 4.1. Determination of soil-terrain units

Although a specific feature survey of the site has not been conducted, and based on topographic mapping available and observations from the site visit, although relatively uniform, the site has been estimated to have an overall slope of approximately between 5 and 10% from the north to the south.

The maximum slope suitable for on-site sewage systems is dependent upon the type of system proposed and ranges from 10% to 30% (Standards Australia and Standards New Zealand 2012), noting that the surface application systems are more sensitive to slope. Although the slope ranges from 5-10%, the slope is relatively uniform across the site and as such, topographical units are not distinguished as part of this assessments.

Soil investigations (Section 3.1) align with the regional geological mapping and show the site can be generally categorised as sandy clay.

## 4.2. Sand soil-terrain unit

Based on the soil descriptions across the site, the soil has been determined to be either a soil Category 2 or Category 3 classification as per the AS 1547 classification (Standards Australia and Standards New Zealand, 2012), primarily based on the measured soil permeabilities across the site.

## 4.3. Additional site considerations

### 4.3.1. Flood-prone areas and erosion potential

The GSP (2019) outlines that on-site systems are not to be located in areas that are subject to inundation and/or flooding in a 10% AEP rainfall event. As outlined in Section 2.7, it is expected that rainfall that the first 15 mm of rainfall events would be infiltrated locally, whilst larger events would be conveyed to a road piped network. Given the high permeability of the site soils, the generation of surface flows and erosion is considered to be a low risk.

The (then) Department of Water (now DWER) maps the site as not being within the flood level for the 1 in 10 (10%) annual exceedance probability (AEP).

### 4.3.2. Drainage system and significant wetland separation

The GSP (2019) stipulates that on-site sewerage systems should not be located within 100 m of a drainage system that discharges directly into a waterway or significant wetland without treatment. Although there are a number of lots that are within 100 m of a drainage system that will discharge directly into the Gingin Brook, all lots will have ATU systems with nutrient stripping as per the GSP (2019).

As outlined in Section 2.9 the site maintains the 100 m setback from the down-gradient CCW's associated with the Gingin Brook, as shown in Figure 7.

### 4.3.3. Groundwater separation and site inundation potential

The groundwater clearance has been determined during observations made during the August 2022 field investigations. Groundwater was only encountered in five of the 26 bore holes conducted across the site and clustered in the south-western portion of the site. Groundwater in this area was measured as ranging from being present at the surface to 0.6 mbgl. Although the remaining bore holes did not encounter groundwater, a number of these bore holes did not extend to 1.5 mbgl or greater (Refer Table 5). As such where bore holes did not extend to >1.5mbgl, the end of the bore hole has been adopted as the maximum groundwater level for the site as a conservative approach.

Additional testing of any imported fill that underlays the disposal area will be required to determine and confirm the soil category of the introduced fill/soil mixture as per AS 1547 and ensure the capacity of the soil to accommodate sewage disposal.

#### 4.3.3.1. Residential lots

Based on the field observations and the depths of the bore holes conducted during the August 2022 fieldworks, recommended additional fill above the natural ground surface has been proposed for the LAA. The proposed additional fill depths in the vicinity of individual bore holes has been outlined previously in Table 5 and summarised in Table 7 below. Figure 8 below presents the proposed additional fill depths for the LAA across the site to achieve a minimum of 1.5 m clearance above the maximum groundwater level for the site.

As such, the wastewater treatment and disposal system design datum has been proposed for each site as detailed in Table 8 that achieves a groundwater separation distance of 1.5m as per GSP (2019).

**Table 7: Proposed wastewater treatment system LAA fill requirements above natural surface.**

| Lot number | LAA additional fill requirements (m) |
|---|---|
| 6-9, 11-19, 27-30, 33-37, 57-67, 78-58 | 0 |
| 31, 32, 38, 40, 72-77 | 0.1 |
| 1-5 ,10 ,20 ,2 2,24 ,26 ,41 ,43 ,49 ,51 ,70 ,71 , 86-94 | 0.2 |
| 42, 50, 95 | 0.4 |
| 96 | 0.6 |
| 97 | 0.8 |
| 98, 99 | 0.9 |

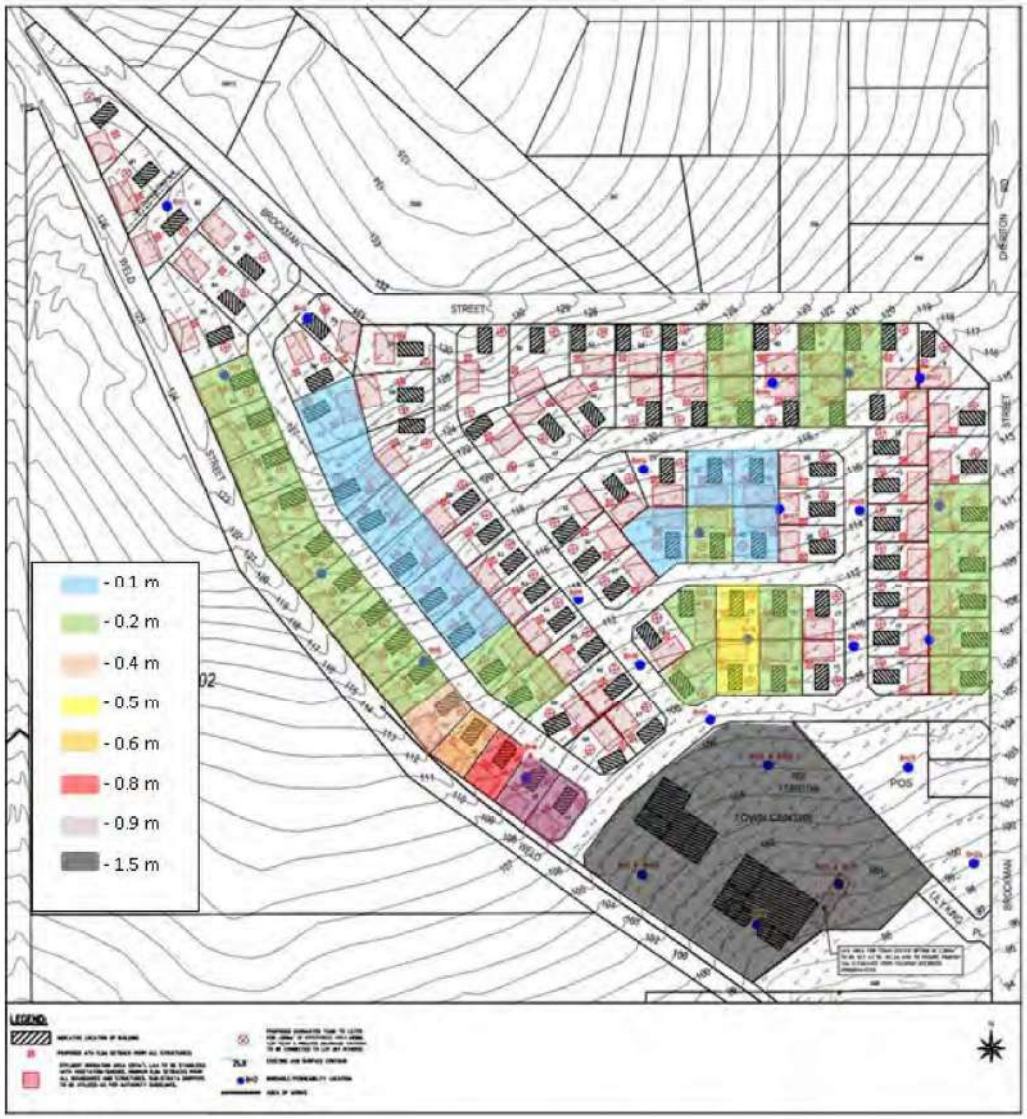



**Figure 8: LAA fill requirements above natural surface**

#### 4.3.3.2. Town Centre

It was observed during the site investigations that groundwater was encountered at the surface and as such would require the LAA to be raised by at least 1.5m above natural ground surface to achieve the required groundwater separation distance. The proposed earthworks design indicate that the Town Centre will be graded to increase the surface elevation approximately 3 m above the existing natural surface in the south-eastern portion of the site. This would raise the LAA by approximately 3 m above the existing natural surface and provide adequate groundwater separation distance. A proposed cut and fill plan for the Town Centre has been included in Appendix C.

### 4.3.4. Rainfall run-off and seepage

The UWMP (Hyd2o 2022) details the stormwater design strategy to manage stormwater post-development. The strategy includes the implementation of:

- Detention of the first rainfall on lots (likely through soak wells)
- Treatment of the first 15 mm of road run-off in biofiltration areas or swales
- Piped road drainage network sized to ensure roads are passable during 20% AEP event
- Road reserves are capable of conveying up to and including the 1% AEP event.
- Flood detention areas to detain up to the 1% AEP event on-site
- 10% and 1% AEP flows to be maintained within pre-development flow rates.

Although it is unlikely rain generated surface flows will occur within individual lots, it is recommended that as part of the development of the LAA (leach drain mounds) within each lot, stormwater diversion drains are used on the perimeter of the leach drain mounds to adequately control stormwater flows.

### 4.3.5. Other setbacks

Other setback distances required for leach drain systems will be in accordance with AS 1547.

## 4.4. Available Land Application Area (LAA)

As outlined in Table 9, the minimum LAA for secondary treatment (excluding setbacks) is 225 $m^2$ (GSP, 2019) for soil category 3 soils. This minimum LAA (as presented in GSP (2019) has been determined using the design loading rates for drip irrigation as presented in Table 5.2 and L1 of AS/NZS 1547.2012. Table 9 also presents the length of leach drain requirements based on AS/NSZ 1547.2012 methodology. The use of irrigation as the disposal method is not recommended as it would require a larger LAA which may be difficult to accommodate within the individual lots.

The calculation of the minimum trench length required to discharge wastewater (based on trench design) is described in AS 1547 using the following methodology:

L = Q / (DLR x W)

Where:

L = length in meters

Q = designed daily flow L/day (900 L/day as per household design in GSP (2019))

DLR = designed loading rate in mm/day (30 mm/day as per AS 1547 for category 3 soils

W = width in m (Aquarius Wastewater leach drain (AqwaCell 16 is 2.5 m)

**Table 8: Land application areas for a single house (occupancy of 6 persons in a 5-bedroom house (900L/day)) (GSP, 2019)**

| Soil category | Soil texture | Land application area ($m^2$) | | | |
|---|---|---|---|---|---|
| | | Drip and Spray Irrigation | | Leach Drain | |
| | | Design loading Rate | Secondary treatment (excludes setback) | Design loading rate (secondary treatment) | Length of trench(m)[1,2] |
| 1 | Gravels and sands | 5 | 180 | 50 | 7.2 |
| 2 | Sandy loams | 5 | 180 | 50 | 7.2 |
| 3 | Loams | 4 | 225 | 30-50 | 7.2 - 12 |
| 4 | Clay loams | 3.5 | 257 | 10-30 | 12 - 36 |

| Soil category | Soil texture | Land application area ($m^2$) | | | |
|---|---|---|---|---|---|
| | | Drip and Spray Irrigation | | Leach Drain | |
| | | Design loading Rate | Secondary treatment (excludes setback) | Design loading rate (secondary treatment) | Length of trench(m)[1,2] |
| 5 | Light clays | 3 | 300 | 8-12 | 30 - 45 |
| 6 | Medium to heavy clays | 2 | 450 | Special design | Special design |

Note: 1 – based on Aquarius AqwaCell 16 leach drain design with 2.5m width.

2 – AS 1547.2012 details leach drain length requirement determined by Q /(DRL x width of drain)

The final design of the LAA will be the responsibility of the individual land owners. However, the LAA requirements for drip and spray irrigation can be adequately met within the urban development.

#### 4.4.1.1. Town Centre

The hydraulic loading volume for Town Centre has been estimated based on the following:

- 33 staff @ 30L/day = 990 L/day
- 200 patrons/diners (3 course meal) @ 30L/day = 6,000L/day

This results in a total hydraulic loading of 6,990 L/day and is in accordance with AS/NSZ 1547.2012 and Supplement to Regulation 29 Health (treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.

Based on aforementioned loading rates, soil category DLR's and prescribed LAA conversion factors the LAA required for the Town Centre is as follows:

- Surface Drippers – 2,000$m^2$
- Leach drain trench length – 93.2 m (maximum trench length to be 21.5 m)
    - 5 x 20 m trenches with 1 m spacing is approximately 410 $m^2$.

The individual lot owner will be responsible for the final selection and approval of the secondary treatment system to be installed.

## 4.5. Results

The soil-terrain unit determined for the site is capable of accommodating on-site sewage treatment and disposal. However, considerations (such as achievable LAA and stormwater management) are needed due to the size of the lots and the ground surface gradients across the site. This will be achieved through special design of the sewage treatment system as per the recommendations of AS 1547 (further discussed in Section 5).

Based on the above assessment, and through the special design of the treatment system to address the achievable setbacks as previously described, the site is considered suitable for on-site sewage treatment and disposal. This will be achieved in lines with the GSP (2019) and AS 1547.

# 5. Wastewater management

## 5.1. Site requirements

The GSP outlines the minimum site requirements for onsite sewerage disposal to protect public health and the environment. An onsite sewage system is not to be located within:

- a wellhead protection zone or on Crown land within a reservoir protection zone
- 30 metres of a private bore used for household/ drinking water purposes
- 100 metres of a waterway or significant wetland and not within a waterway foreshore area or wetland buffer.
- 100 metres of a drainage system that discharges directly into a waterway or significant wetland without treatment
- any area subject to inundation and/or flooding in a 10% AEP rainfall event.
- 1.5 metres above the highest groundwater level (in sewerage sensitive area)

Additional setbacks to structures which impact the sizing and location of the available land application areas include:

- 1.2 metres between treatment tanks to buildings, property boundaries, driveways,
- paths, and other tanks
- 1.2 metres between tranches, beds and soak wells to trafficable areas
- 1.8 metres between tranches, beds and soak wells to boundary, building, tanks and other land application systems
- Sub surface dripper to
  - Boundaries, building, treatment tanks, driveways 0.5 m
  - Open drain 3.0 m
  - Garden bore 10 m

This SSE has demonstrated that the site is able to achieve all the necessary buffers needed to protect public health and the environment.

## 5.2. Proposed treatment systems

The treatment systems must be designed and installed in accordance with AS 1547 and the DoH. Disposal and treatment systems approved by the DoH must be used. Due to the size of the proposed lots, and the site being in a Sewerage Sensitive Area (proximity to sensitive wetlands), each lot will be required to install a secondary treatment system (STS) (such as aerobic treatment unit) with nutrient removal capabilities. This will maximise the useability of each lot as secondary treated effluent required a smaller LAA.

Primary treatment systems, including septic tanks are not suitable at this site due to its location within an SSA, as per ASNZ1547-2012.

STS, with nutrient removal capabilities can produce treated effluent of secondary standard, that is

- ≤20 mg/L of Biochemical Oxygen Demand (BOD),
- ≤ 30 mg/L of Total Suspended Solids (TSS) and
- ≤ 10 cfu/100 mL of *Escherichia (E) coli*.

In addition, the levels of nitrogen and phosphorus must be reduced to:

- <10 mg/L nitrogen
- <1 mg/L phosphorus.

## 5.3. Discharge loading rates

The hydraulic loading is based on 6 persons occupying a 5-bedroom house on a sewage design flow of 150 L/person/day, resulting in a hydraulic loading of 900 L/day per household. The discharge loading rate adopted from Table 5.1 and L1 from AS/NZS 1547.2012 is 30mm/day which is the lower limit recommended for soil Category 3 soils and as such provides a conservative approach to the LAA design.

## 5.4. Land application system and disposal area

The treated wastewater is required to be disposed to land within the lot. The recommended land application systems for Category 3 soils include:

- Trenches and beds (leach drains)
- mounds (inverted leach drains)
- irrigation systems – requires 150 – 250 mm of good quality topsoil to slow down soakage and assist in nutrient reduction.

Leach drains are recommended for this site as they require less LAA and result in a reduced human health risk through reducing potential contact with wastewater.

## 5.5. Land application area

### 5.5.1. Clearance to groundwater

Through the importation of fill to the LAA for each lot and the Town Centre expansion area, the site will be able to achieve a groundwater clearance of 1.5 m from the lowest point of the leach drain system. The site soils are anticipated to have a high PRI, and where possible in-situ soils will be utilised to create the appropriate LAA. However if imported soil is required, it is recommended to have a PRI of 10 and will need additional testing to confirm the soil category aligns with what has been used in this document to ensure appropriately sized LAA.

### 5.5.2. Land application area

The land application area is the area where the treated sewage from a treatment system (in this case secondary treatment with additional nutrient removal) is applied into or onto the ground. Land-application systems typically either discharge treated sewage via soil absorption systems (e.g., leach drains) or irrigation systems (e.g., sub-surface irrigation or surface irrigation). The method by which sewerage is dispersed to the land is determined based on the site conditions and may influence the land area required for disposal.

The proposed land application method, as mentioned above, is via leach drains, however the LAA has also been sized to provide provisions for surface drip irrigation should individual land owners choose to do so.

The GSP states that the land application area required for secondary treatment systems in soil category 3 soils is 225 $m^2$ which is based on the below calculation.

Land Application Area (LAA) for sub surface irrigation ($m^2$) =

$$hydraulic\ load\ (L/day) x\ conversion\ factor\ for\ the\ soil\ texture$$

The conversion factor for secondary treated effluent for heavy clays is 0.25 (as per Table 2 of GSP, 2019).

$$900\ L/day \times\ 0.25 = 225\ m^2$$

It should be noted the LAA conversion rates provided in GSP (2019) are equivalent to the drip irrigation design loading rates (DLR) as presented in Tables 5.2 and L1 of AS/NZS 1547.2012.

The calculation of the minimum trench length required to discharge wastewater (based on trench design) is described in AS 1547 using the following methodology:

L = Q / (DLR x W)

Where:

L = length in meters

Q = designed daily flow L/day (900 L/day as per household design in GSP (2019))

DLR = designed loading rate in mm/day (30 mm/day as per AS 1547 for category 3 soils

W = width in m (Aquarius Wastewater leach drain (AqwaCell 16 is 2.5 m)

The trench length calculations estimate that individual lots require a minimum of trench length of 12 m, whilst the Town Centre will require a trench length of 93.5 m. It should be noted that this is estimated using a width of 2.5 m which is the width of a Aquarius AqwaCell16; a DoH approved, non-concrete leach drain. Should the width of the drain adopted for each site be less, this will result in additional overall length requirements and should be considered as part of the design.

An application to *Construct or Install an Apparatus for the Treatment of Sewerage* will be submitted to the SoG by the lot owners following detailed design to specify the final design and wastewater management systems to be installed.

# 6. Summary

The development consists of 99 residential lots and an expansion of the Town Centre. Lots range between approximately 980 – 2,600 m² and the Town Centre expansion has an area of approximately 24,700 m². The site is in a Sewerage Sensitive Area (SSA) as it is located within 1 km of a sensitive wetland: CCW associated with the Gingin Brook. The GSP (2019) requires that the subdivided lots within SSAs have a minimum lot size of 1 hectare. It has been noted that the site has previously been provided with lot zoning within a regional structure plan and therefore possible these minimum lot sizes are not required provided that the minimum LAA can be achieved, and environmental impacts are considered acceptable. As is not anticipated to be any impact to the nearby wetland due the treatment proposed), and the minimum LAA can be achieved, the development design with 980-2,600m² lots is not considered to pose an environmental or human health risk.

Results of the site and soil assessment indicate the soils have high infiltration capacity to accommodate the infiltration of stormwater and Treated Wastewater (TWW), however achieving the required clearance to groundwater 1.5m across was not achieved in a number of areas across the site. This will be managed through stormwater management, implementation of appropriate TWW systems and disposal design and adequate LAA design and construction. Site soils are anticipated to have a very high P retention due to the clayey nature of the underlying geology.

It is recommended that if appropriate in-situ fill is unavailable, fill be imported to the site to establish the LAA to achieve the required groundwater clearances across the site. Sands with a PRI of 10 are the recommended fill option and would provide additional phosphorus retention benefits. Significant phosphorus retention is expected on site regardless of fill choice.

August 2022 field investigations. Groundwater was only encountered in five of the 26 bore holes conducted across the site and clustered in the south-western portion of the site. Groundwater in this area was measured as ranging from being present at the surface to 0.6 mbgl. Although the remaining bore holes did not encounter groundwater, a number of these bore holes did not extend to 1.5 mbgl or greater (Refer Table 5). As such where bore holes did not extend to >1.5mbgl, the end of the bore hole has been adopted as the maximum groundwater level for the site as a conservative approach.

Section 5.2.2 of the Government Sewerage Policy (2019) relating to the extent of seasonal inundation has been addressed by the following:

- Use of in-situ of importation of fill to create LAA that achieve the required 1.5 m clearance to the groundwater levels observed in August 2022.
- Recommendation to install stormwater diversion drains at the boundary of all LAAs to prevent localised impacts from rain generated surface run-off.

LAA fill requirements have been provided based on achieving clearance to the observed maximum groundwater level (as per 2022 monitoring) in accordance with the GSP (2019).

This SSE demonstrates the site can accommodate a suitable wastewater management system.

# 7. Conclusion

The sewage management strategy for the site, as outlined in this report, has been developed to be consistent with the approach and requirement details in the *Government Sewerage Policy* (DPLH, 2019) and *AS/NZS 1547 On-site domestic wastewater management* (Standards Australia and Standards New Zealand 2012), and includes:

- Utilising secondary treatment systems with additional nutrient removal
- Appropriate sizing of the land application area / trench sizes based on the geotechnical investigations and classification of the soil classification of the site.
- Ensuring there is sufficient disposal area within the site
- Special design of the treatment system to reduce the risk of groundwater pollution in accordance with AS 1547.
- Setting the disposal outlet point/base of leach drain systems at a lot specific elevation to achieve groundwater clearance in accordance with GSP (2019) This will be achieved through the importation of fill to individual lot LAA in increase their surface elevations above the natural surface levels.
- Utilising ameliorated existing site soils or the importation of suitable soil (both with higher nutrient retention than the existing site soils) to comply with the disposal outlet height and minimum groundwater clearance requirement of 1.5 m. This soil will be assessed prior to the installation of the secondary treatment system to ensure the soil category and compliance with the design detailed within this document.
- Ensuring appropriate installation, monitoring and maintenance of the systems is conducted.

It is considered that the above investigations and management demonstrate that the site is able to accommodate the on-site treatment and disposal of sewage within the site and that this can be achieved in a way that mitigates the potential risk to the environmental and human receptors.

# 8. References

Bureau of Meteorology (BoM) 2022, Climate Data Online, viewed October 2022, available from http://www.bom.gov.au/climate/data/

Department of Biodiversity, Conservation and Attractions (DBCA) 2018, Directory of Important Wetlands in Australia - Western Australia (DBCA-045).

Department of Biodiversity, Conservation and Attractions (DBCA) 2020, Geomorphic Wetlands, Swan Coastal Plain (DBCA-019).

Department of Health (DoH), 2015. Code of practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATU's), Perth.

Department of Planning, Lands and Heritage (DPLH), 2019. Government Sewerage Policy, Perth.

Department of Planning, Lands and Heritage (DPLH), 2019. Map of Sewage Sensitive Areas.

Department of Water and Environmental Regulation (DWER) (2022). Water Information Reporting.

Department of Water and Environmental Regulation, 2022. Perth Groundwater Map. Government of Western Australia, Perth, Western Australia.

Department of Water and Environmental Regulation, 2022. Water Register.

Geoscience Australia, 2022. National Map viewer. Australian Government. Viewed March 2022. https://nationalmap.gov.au/ionalMap

Hyd2o (2022): Urban Water Management Plan – Lot 601 Brockman Street, Gingin.

Luke, G J, Burke, K L, and O'Brien T M., 1987. Evaporation data for Western Australia. Department of Agriculture and Food, Western Australia, Perth. Report 65.

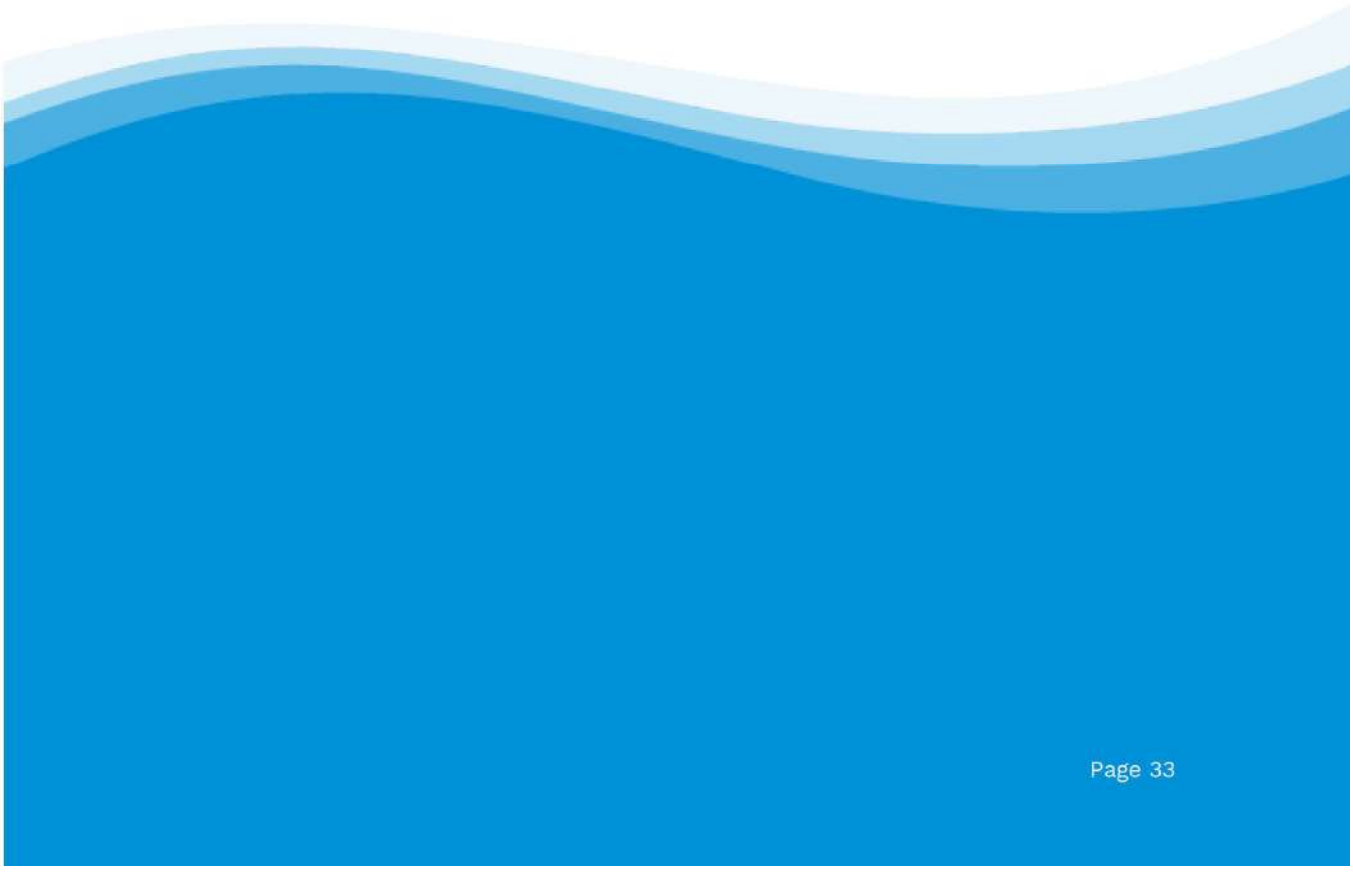
Standards Australia and Standards New Zealand, 2012. AS/NZS 1547:2012 On-site Domestic Wastewater Management, Sydney, New South Wales. 2012.

Structerre (2022a): Geotechnical Investigation Report – Lot 601 Brockman Street, Gingin.

Structerre (2022b): Site and Soil Evaluation Report – Lot 601 Brockman Street, Gingin.

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# Appendix A: Structerre Geotechnical Investigation Report



Doc GE2.1.2

# GEOTECHNICAL INVESTIGATION

**For:** Tabec Pty Ltd

**Project Address:** Proposed Residential Subdivision –
Lot 601 Brockman Street, Gingin WA

**Project Number:** D294537

**Job Number:** J409671

**Revision Number:** 0

**Date:** 31/5/2022

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# 1. PROJECT DETAILS

## 1.1. Introduction

At the request of Tabec Pty Ltd, Structerre Consulting (Structerre) have conducted a Geotechnical Investigation at Proposed Residential Subdivision – Lot 601 Brockman Street, Gingin. The purpose of the investigation was to provide the following for residential subdivision purposes:

- An assessment of subsurface soil profile and groundwater conditions across the proposed area of development;
- Site classification in accordance with AS 2870-2011 Residential Slabs and Footings;
- Wind Classification in accordance with AS 4055-2012 Wind Loads for Housing;
- Recommendations for stormwater drainage design;
- Recommendations on earthworks and site preparation; and
- Provision of a footing detail considering anticipated surface movement and sand pad thickness.

Terms of reference for this investigation were presented in a Structerre Consulting proposal reference Q95958 (dated 5 May 2022), which was submitted to and accepted by Tabec Pty Ltd.

## 1.2. Site Description

The site is located at Lot 601 Brockman Street, Gingin, Shire of Gingin. Brockman Street lies to the north of the site, Weld Street to the west, Cheriton Road to the east and Shire of Gingin and Gingin Community Resource & Visitor Centre to the south.

The site slopes up towards the northern boundary. At the time of the field investigation, the site was vacant and covered in vegetation with small to medium sized trees.

## 1.3. Field Investigation – Scope of Works

The field investigation was carried out on 12 May 2022 and comprised:

- 13 x Sample Retrieval Probes (SRP) to a depth of 2.0m (refusal) over the site for material assessment and soil profiling;
- 12 x In-situ percolation tests to determine the permeability of the materials within the upper 2.0m; and
- 8 x Dynamic Cone Penetrometer (DCP) tests in accordance with AS 1289.6.3.2 (1997) to a depth of 1.0m for evaluation of relative densities of the upper layers.

The borehole test locations are shown on the attached site plan in Appendix 1.

Suitably qualified geotechnical personnel from Structerre supervised the fieldwork and all fieldwork, interpretation and terminology used in this report are in accordance with the guidelines presented in AS1726-2017 Geotechnical Site Investigations.

## 2. DESK STUDY

### 2.1. Geological Setting

The Perth sheet 1: 50,000 Environmental Geology Series (Part Sheets 2034 III and 2134 III, 1986) prepared by the Geological Survey of Western Australia indicates that the following geological layers underlie the site:

- Colluvium – Colluvium soil and undifferentiated sand (Qpo)

### 2.2. Ground Surface and Groundwater Level

The Landgate website indicates the ground surface level at this site was approximately 120.0m – 135.0m Australian Height Datum (AHD).

No published groundwater information available for the site.

### 2.3. Earthquake Coefficient

In accordance with AS 1170.4-2007 Structural Design Actions the site is located within an area with an earthquake acceleration coefficient of 0.10.

### 2.4. Wind Classification

In accordance with AS 4055-2012 Wind Loads for Housing, wind classification of this site falls within the non-cyclonic "N2" –"N3" category.

## 3. RESULTS OF THE INVESTIGATION

### 3.1. Subsurface Soil Profile

The subsurface soil profile presented below was determined from the ground conditions encountered within the boreholes:

**Table 1 – Subsurface Soil Profile**

| Borehole | Topsoil | Gravelly SAND with clay | SAND with clay, with gravel | Sandy CLAY trace gravel | CLAY trace sand, trace gravel |
|---|---|---|---|---|---|
| | Depth to Base of Strata (m) | | | | |
| BH1 | 0.1 | - | 0.7 | 2.0 | 1.3 |
| BH2 | 0.1 | - | 0.8 | - | - |
| BH3 | 0.1 | 0.4 | - | 1.5 | - |
| BH4 | 0.1 | 0.3 | - | 1.0 | - |
| BH5 | 0.1 | 0.3 | - | 1.2 | - |
| BH6 | 0.1 | 0.2 | - | 0.7 | - |
| BH7 | 0.1 | 0.3 | - | 1.5 | - |
| BH8 | 0.1 | 0.2 | - | 0.7 | - |
| BH9 | 0.1 | 0.2 | - | 0.7 | - |
| BH10 | 0.1 | 1.5 | 1.1 | - | - |
| BH11 | 0.1 | 1.1 | 0.9 | 1.9 | - |
| BH12 | 0.1 | 1.0 | 0.7 | 1.2 | - |
| BH13 | 0.2 | - | 0.5 | - | - |
| **Average** | **0.1** | **0.6** | **0.8** | **1.2** | **1.3** |

The soils encountered are consistent with the expected site conditions as predicted from the Environmental Geology Map. It is important to note that there may be pockets of fill on site that are deeper than that encountered by the investigation boreholes. The subsurface soil conditions encountered are presented in the bore logs, within Appendix 3.

### 3.2. Groundwater

Groundwater was not encountered in any of the boreholes during or immediately after drilling. However, the groundwater is expected to be encountered approximately 0.2m below the existing ground level above the more cohesive materials.

### 3.3. Percolation Testing

Percolation testing of the in-situ soils was undertaken in twelve locations. Results of the testing are summarised below:

**Table 2 – In Situ Percolation Test Results**

| Test Location | Testing Depth | Soil Type | Permeability |
|---|---|---|---|
| BH1 | 0.0 - 2.0m | SAND to CLAY trace sand trace gravel | 0.1/day |
| BH2 | 0.0 – 0.8m | SAND | 1.7m/day |
| BH3 | 0.0 - 1.5m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.7m/day |
| BH4 | 0.0 - 1.0m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.5m/day |
| BH5 | 0.0 - 1.2m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.3m/day |
| BH6 | 0.0 – 0.7m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.5m/day |
| BH7 | 0.0 - 1.5m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.9m/day |
| BH8 | 0.0 – 0.8m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.6m/day |
| BH9 | 0.0 – 0.7m | Gravelly SAND with clay to Sandy CLAY with gravel | 0.8m/day |
| BH10 | 0.0 - 1.5m | SAND | 2.6/day |
| BH11 | 0.0 - 1.9m | SAND to Gravelly SAND with clay | 1.4m/day |
| BH12 | 0.0 - 2.0m | SAND to Gravelly SAND with clay | 0.9m/day |

### 3.4. Laboratory Test Results

Selected soil samples were tested for Atterberg Limits.

#### 3.4.1. Atterberg Limits

Atterberg Limits were tested by Structerre's in-house NATA accredited laboratory. Results of the testing are summarised below:

**Table 3 – Atterberg Limit Test Results**

| Sample | Test Hole | Depth (m) | Soil Description | Liquid Limit % AS1289 3.1.2 | Plastic Limit % AS1289 3.2.1 | Plasticity Index % AS1289 3.3.1 | Linear Shrinkage % AS1289 3.4.1 |
|---|---|---|---|---|---|---|---|
| 1 | BH1 | 1.0-1.6 | CLAY trace gravel, trace sand | 70 | 28 | 42 | 14.5 |
| 2 | BH1 | 1.3-1.9 | Sandy CLAY trace gravel | 55 | 21 | 34 | 13 |

Test results indicate that the natural CLAY has moderate to high shrink swell capacity or degree of expansion. A copy of the results are presented in Appendix 4.

#### 3.4.2. California Bearing Ratio (CBR)

Representative samples were tested by Structerre's in-house NATA accredited laboratory in accordance with AS1289.5.2.1 (2003). The test certificates are presented in Appendix 4 and are summarised in Table 4.

**Table 4 – Soaked CBR Test Results**

| Test Hole | Depth (m) | Soil Description | Optimum Moisture Content % | Maximum Dry Density t/m3 | Swell (%) | CBR @ Penetration (%) |
|---|---|---|---|---|---|---|
| BH13 | 0.2 – 0.5 | SAND | 10 | 1.83 | 0 | 12 @5.0mm |
| BH14 | 0.2 – 0.5 | SAND | 10 | 1.99 | 0 | 40 @5.0mm |

Note: CBR samples were remoulded to 95% Modified maximum dry density in accordance with AS1289 5.2.1 prior to soaking for four (4) days. Based on the above results a conservative soaked CBR of 10% would be recommended for pavement design. Copies of the laboratory results are included in Appendix 4 of this report.

Where the placement of 0.5m or greater of sand fill placed and compacted to 95% of (Modified) MDD above the existing clay soils, an improved subgrade CBR of 12% can be used in pavement design.

## 4. GEOTECHNICAL CONSTRUCTION CONSIDERATIONS

### 4.1. Site Classification

AS 2870-2011 Residential Slabs and Footings provides guidance on site classification for residential slabs and footing design based on the expected ground surface movement and depth of expected moisture changes.

**Table 5 – Classification Based on Site Reactivity**

| AS 2870-2011 Residential Slabs and Footings - Clause 2.1.2 Table 2.1 | |
|---|---|
| **Class** | **Foundation** |
| A | Most sand and rock sites with little or no ground movement from moisture changes |
| S | Slightly reactive clay sites, which may experience only slight ground movement from moisture changes (0<ys≤20mm) |
| M | Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes (20<ys≤40mm) |
| H1 | Highly reactive clay sites, which may experience high ground movement from moisture changes (40<ys≤60mm) |
| H2 | Highly reactive clay sites, which may experience very high ground movement from moisture changes (60<ys≤75mm) |
| E | Extremely reactive sites, which may experience extreme ground movement from moisture changes (ys>75mm) |
| **Clause 2.1.3 Classification of other Sites** | |
| P | Sites which include soft or unstable foundations such as soft clay or silt or loose sands, landslip, mine subsidence, collapsing soils and soils subject to erosion, reactive sites subject to abnormal moisture conditions and site that cannot be classified in accordance to Table 2.1 |

The site in its current condition is classified as Class "M" to "H". Based on results of this investigation the site can be upgraded to a Class "S" in accordance with AS 2870-2011 provided that all unsuitable materials are removed and replaced with engineer-controlled sand fill materials in accordance with the earthwork recommendations outlined in Section 4.3 of this report.

Footings suitable for this site should be adopted to accommodate expected ground surface movements of approximately $y_s$ = 20mm associated with the presence of moderately to highly reactive CLAY deposits within the building site.

### 4.2. Drainage

The existing ground conditions are not suitable for on-site disposal of stormwater runoff through the use of soakwells.

The design of the drainage system is unknown at this time, but may include:

- Rainwater Tanks;
- Dams / Compensation basin;
- Overland flow paths; and
- Soakwells, if permeable cover and / or stormwater designs are appropriate.

Sub soil drainage may be required to control groundwater perching in the upper soil layers within the building footprint.

### 4.3. Earthworks

All earthworks shall be undertaken in accordance with AS 3798-2007 Guidelines on earthworks for commercial and residential developments and are to include the following:

- All unsuitable materials to be stripped and removed from the site. Unsuitable materials include topsoil, deleterious and organic materials.
- It is considered that the near surface sand material requires improvement. Therefore, it is proposed to excavate and stockpile the materials for reuse, provided it is free from clay/silt (i.e. <5%), deleterious and organic materials. The depth of excavation may vary depending on conditions encountered and is subject to inspection.
- Excavation should not be greater than 2.0m and/or undermine any surrounding structures. A 1V: 1.5H slope should be maintained for temporary excavations. If excavation is required closer than the 1V: 1.5H slope would allow or deeper, it is recommended that this office be contacted for retaining system design.
- Proof compact the exposed base. The compaction requirements are set out in the table below, as per AS 3798-2007:

**Table 6 – Compaction Requirements**

| Item | Application | Minimum relative compaction, % | |
|---|---|---|---|
| | | Minimum density ratio (Standard Compaction Effort) (Cohesive soils) | Minimum density index (Cohesionless soils) |
| 1 | Residential - lot, fill, house, sites | 95 | 70 |

- After excavation and proof compaction, the excavated base is to be inspected and approved by a representative from this office prior to backfilling. At this stage it can be assessed whether any further materials need to be removed or whether further compaction of the base is required.

- A minimum of 1.0m sand cover is to be placed or maintained above the reactive (clay) material in order to achieve a Class "S" site with $y_s$ = 20mm.
- The ground level for residential construction should be built up to design levels with the stockpiled sand FILL and imported fill, if required. The imported fill should consist of free draining sand with not more than 5% passing a 75µm sieve and be free of organic matter and other deleterious materials. The fill materials should be placed in layers not exceeding 300mm loose thickness and compacted to achieve a minimum 8 PSP blows over the interval
  150 – 450mm, 9 PSP blows over the interval 450 – 750mm and 11 PSP blows over the interval 750 -1050mm.
- After remedial earthworks have been completed, the earthworks should be inspected and approved by a representative from this office.

## 5. CONCLUSIONS

A site investigation has been carried out at the site of the proposed residential development to assess the geotechnical conditions. Parameter and design recommendations are incorporated in the body of the report. The following conclusions have been drawn from the site investigation:

- The average subsurface soil profile encountered comprised topsoil to 0.1m, gravelly sand with clay to 0.6m, sand with clay, with gravel to 0.8m, sandy clay trace gravel to 1.2m and underlain by clay trace sand, trace gravel to the investigated depth of 2.0m.
- Groundwater or perched water was not encountered across the site to the depth of 2.0m.
- It is considered that the site is not suitable for on-site drainage.
- The site can be classified as Class "S" in accordance with AS 2870-2011 due to presence of moderately to highly reactive CLAY deposits within the building site, provided that the recommended earthworks are undertaken.
- The full scope of the recommended earthworks is presented in Section 4.3, but generally comprises:
  - Stripping of topsoil and unsuitable materials
  - Proof compaction of the base
  - Placement of sand fill to required level
  - Compaction to final level

## 6. LIMITATION OF FIELD INVESTIGATIONS

This report has been prepared in accordance with generally accepted consulting practice for Tabec Pty Ltd using information supplied at the time and for the project specific requirements as understood by Structerre. To the best of our knowledge the information contained in this report is accurate at the date of issue, however it should be emphasised that any changes to ground conditions and/or the proposed structures may invalidate the recommendations given herein.

The conclusions and recommendations in this report are based on the site conditions revealed through selective point sampling, representing the conditions of the site in total, although the area investigated represents only a small portion of the site. The actual characteristics may vary significantly between successive test locations and sample intervals other than where observations, explorations and investigations have been made.

The materials and their geotechnical properties presented in this report may not represent the full range of materials and strengths that actually exist on site and the recommendations should be regarded as preliminary in nature. Allowances should be made for variability in ground conditions and any consequent impact on the development. Structerre accepts no responsibility and shall not be liable for any consequence of variations in ground conditions.

If ground conditions encountered during construction are different to that described in this report, this office should be notified immediately.

For and behalf of

STRUCTERRE CONSULTING

Margie Mortera
Geotechnical Assistant

Checked By: David Harding
Employee Title: Geotechnical Supervisor

Authorised By: Mel Castle
Employee Title: Division Manager - Geotechnical

Disclaimer
This report is at the request of the addressee and no liability is accepted by Structerre Consulting to any third person reading or relying upon the report, not withstanding any rule of law and/or equity to the contrary and that this report is strictly confidential and intended to be read and relied upon only be the addressee.

| Job # | Revision | Authored | Checked | Authorised |
|---|---|---|---|---|
| J409671 | 0 | MM | DH | MC |
| | | | | |

## 7. REFERENCES

Department of Water – Perth Groundwater Atlas

Landgate Map Viewer

Geological Survey of Western Australia 1:50,000 Environmental Geology Series

AS 1170.4-2007 Structural design actions – Earthquake actions in Australia

AS 1289.3.1.2-2009 Methods of testing soils for engineering purposes – Soil classification tests – Determination of the liquid limit of a soil

AS 1289.3.2.1-2009 Methods of testing soils for engineering purposes – Soil classification tests – Determination of the plastic limit of a soil

AS 1289.3.3.1-2009 Methods of testing soils for engineering purposes – Soil classification tests – Calculation of the plasticity index of a soil

AS 1289.3.4.1-2009 Methods of testing soils for engineering purposes – Soil classification tests – Determination of the linear shrinkage of a soil

AS 1289.3.6.1-2009 Methods of testing soils for engineering purposes – Soil classification tests – Determination of the particle size distribution of a soil – Standard method of analysis by sieving

AS 1289.5.2.1-2009 Soil compaction and density tests – Soil classification tests – Determination of the dry density/moisture content relation of a soil using modified compactive effort

AS 1289.6.1.1-2009 Soil strength and consolidation tests – Soil classification tests – Determination of the California Bearing Ratio of a soil

AS 1289.6.3.2-1997 Methods of testing soils for engineering purposes – Soil strength and consolidation tests – Determination of the penetration resistance of a soil – 9kg dynamic cone penetrometer test

AS 1726-2017 Geotechnical site investigation

AS 2870-2011 Residential slabs and footings

AS 3798-2007 Guidelines on earthworks for commercial and residential developments

AS 4055-2012 Wind loads for housing

APPENDIX 1 – SITE LOCATION MAP




Note: Showing approximate test locations only

Google Map 2022

**LEGEND**

BH Borehole

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| PROJECT #: | D294537 |
| JOB #: | J409671 |
| CLIENT: | Tabec Pty Ltd |
| SCALE: | NTS |
| TITLE: | Geotechnical Investigation Site Plan |
| DATE: | 12 May '22 |
| DRAWN BY: | MM |
| CHECKED BY: | DH |

DOC: GE:3.001

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Note: Showing approximate test locations only

Google Map 2022

**LEGEND**

BH Borehole

Depths of Non-reactive Material

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| TITLE: | Geotechnical Investigation Site Plan |
| DATE: | 12 May '22 |
| DRAWN BY: | MM |
| CHECKED BY: | DH |

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APPENDIX 2 – SITE PHOTOS



PHOTO 1



PHOTO 2

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| JOB #: | J409671 |
| CLIENT: | Tabec Pty Ltd |
| SCALE: | NTS |
| TITLE: | Site Photographs |
| DATE: | 12 May '22 |
| DRAWN BY: | MM |
| CHECKED BY: | DH |

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PHOTO 3 - Sample taken at BH2




PHOTO 4 - Sample taken at BH8

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| PROJECT #: | D294537 |
| JOB #: | J409671 |
| CLIENT: | Tabec Pty Ltd |
| SCALE: | NTS |
| TITLE: | Site Photographs |
| DATE: | 12 May '22 |
| DRAWN BY: | MM |
| CHECKED BY: | DH |

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APPENDIX 3 – BORELOGS

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH01**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395281 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531989 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, with clay, grey/brown (Colluvium) | D - VD | | | | W | |
| 1 | | CH: CLAY: fine to medium grained, high plasticity, trace sand, trace gravel, red/grey | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel | | | | | D to M | |
| 2 | | Terminated at 2.00 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH02**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395349 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531845 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: medium to coarse grained, non-plastic to low plasticity, with gravel, trace clay, brown (Colluvium) | D - VD | | | | W | |
| | | | | | | | M | |
| | | Terminated at 0.80 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

WA | QLD | NSW | VIC

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH03**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395403 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531729 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | L - MD | | | | W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F | | | | D to M | |
| 1 | | | | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH04**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395498 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531633 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | VL - L | | | | W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | St - VSt | | | | D to M | |
| 1 | | Terminated at 1.00 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH05**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395611 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531549 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | VL - L | | | | W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | St - VSt | | | | D to M | |
| 1 | | | | | | | | |
| | | Terminated at 1.20 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH06**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395493 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531866 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | W | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown | | | | | D to M | |
| | | Terminated at 0.70 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH07**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 3955974 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531716 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | L | | | | W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | S - F | | | | D to M | |
| | | | F - St | | | | | |
| 1 | | | VSt | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH08**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395714 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531616 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | W | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown | | | | | D to M | |
| | | Terminated at 0.70 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH09**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395594 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531896 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | W | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | | | | | D to M | |
| | | Terminated at 0.70 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH10**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395765 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531884 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| 0 | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | VL - L | | | | W | |
| 1 | | | | | | | M | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown | | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH11**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395755 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531783 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | | | | | W | |
| | | | | | | | M | |
| 1 | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/grey | | | | | D to M | |
| | | Terminated at 1.90 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH12**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395760 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531671 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | VL - L | | | | W | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown | D - VD | | | | M | |
| 1 | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/grey | | | | | D to M | |
| | | Terminated at 1.20 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH13**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395778 |
| **Job No.** | J409671 | **Date** | 12/05/2022 | **Hole Dia.** | 65mm | **Northing** | 6531790 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | W | |
| | | SP: SAND: fine to medium grained, non-plastic, yellow/ brown (Colluvium) | | | | | M | |
| | | Terminated at 0.50 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**

1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

APPENDIX 4 – LABORATORY TEST RESULTS

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| | | | |
|---|---|---|---|
| **Sample No.** | **36527** | **Client** | Geotechnical |
| **Job No.** | J409671 | **Project** | Lot 601 BROCKMAN ST, GINGIN |

Laboratory testing carried out at Malaga Laboratory 44 Crocker Dr Malaga WA 6090

**SAMPLE DETAILS**

| | | | |
|---|---|---|---|
| BH No. / Depth | BH1 1.0-1.6 | Sampling Method | Client |
| Sample History | 50°C Oven Dried | Sample Preparation | AS 1289 1.1 |

**ATTERBERG LIMITS**

| Description | Method | Result (%) |
|---|---|---|
| Liquid Limit | AS 1289.3.1.2 | 70 |
| Plastic Limit | AS 1289.3.2.1 | 28 |
| Plasticity Index | AS 1289.3.3.1 | 42 |
| Linear Shrinkage | AS 1289.3.4.1 | 14.5 |
| Nature of Shrinkage | | Flat |

**PARTICLE SIZE DISTRIBUTION**

**Method:** AS 1289.3.6.1
**Description:** Particle size distribution by sieve analysis

| Sieve Size (mm) | % Passing |
|---|---|
| 19.0 | 100 |
| 2.36 | 98 |
| 0.425 | 96 |
| 0.075 | 90 |

**AS 1726:2017 Clause 6.1**
**Material Description:** CLAY trace gravel, trace sand
**AS Group Symbol:** CH or OH

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STRUCTERRE CONSULTING ENGINEERS BALCATTA LABORATORY ACCREDITATION NUMBER 18743

Jacob Pritchard
Senior Laboratory Technician

**Date:** 27-May-22

Soils Analysis Workbook V 3.43 05-May-21

AS 1289.3.6.1 Report Feb 18

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| | | | |
|---|---|---|---|
| **Sample No.** | **36528** | **Client** | Geotechnical |
| **Job No.** | J409671 | **Project** | Lot 601 Brockman st, gingin |

Laboratory testing carried out at Malaga Laboratory 44 Crocker Dr Malaga WA 6090

**SAMPLE DETAILS**

| | | | |
|---|---|---|---|
| BH No. / Depth | BH1 1.3-1.9 | Sampling Method | Client |
| Sample History | 50°C Oven Dried | Sample Preparation | AS 1289 1.1 |

**ATTERBERG LIMITS**

| Description | Method | Result (%) |
|---|---|---|
| Liquid Limit | AS 1289.3.1.2 | 55 |
| Plastic Limit | AS 1289.3.2.1 | 21 |
| Plasticity Index | AS 1289.3.3.1 | 34 |
| Linear Shrinkage | AS 1289.3.4.1 | 13 |
| Nature of Shrinkage | | Flat |

**PARTICLE SIZE DISTRIBUTION**

**Method:** AS 1289.3.6.1
**Description:** Particle size distribution by sieve analysis

| Sieve Size (mm) | % Passing |
|---|---|
| 19.0 | 100 |
| 2.36 | 98 |
| 0.425 | 80 |
| 0.075 | 56 |

**AS 1726:2017 Clause 6.1**
**Material Description:** Sandy CLAY trace gravel
**AS Group Symbol:** CH or OH

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Jacob Pritchard
Senior Laboratory Technician

**Date:** 27-May-22

Soils Analysis Workbook V 3.43 05-May-21

AS 1289.3.6.1 Report Feb 18

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Website: www.structerre.com.au
ABN: 71 349 772 837 / ACN: 008 966 283

# California Bearing Ratio Test Report

**Report Number: CBR:22S-03682**
**Date of Issue01/06/2022**
**Issue Number: 1**

| | |
|---|---|
| **Client:** | Tabec Pty Ltd |
| **Client Address:** | Level 2, 54-58 Havelock St West Perth WA 6005 |
| **Project:** | Proposed Residential Subdivision - Lot 601 Brockman St, Gingin |
| **Project No:** | D294537 |

Accreditation Number 18742

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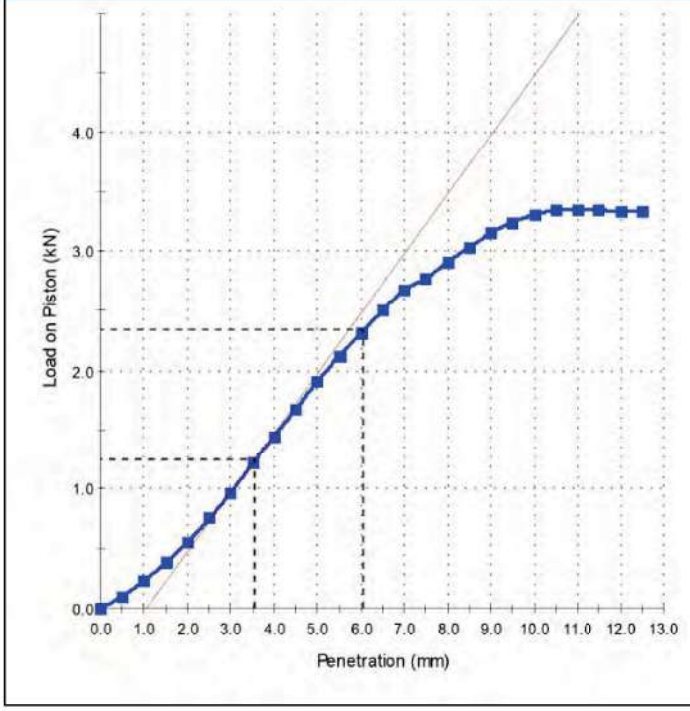
Approved Signatory: Aaron Nicholas

Accredited for compliance with ISO/IEC 17025

## Sample Details

| | | | |
|---|---|---|---|
| **Sample ID:** | Proposed Subdivision | **Field Sample ID:** | BH13 |
| **Date Tested:** | 27/05/2022 | **Date Sampled:** | 24/05/2022 |
| **Soil Description:** | Sand | **Proposed Use:** | Fill |
| **Depth of Test:** | 200-500mm | **Depth of Layer:** | 300 |
| **Sampling Method:** | Sampled by Client | **TRN:** | - |
| **Work Order ID:** | W22-01312 | | |

## Load vs Penetration




## Test Results

AS 1289.6.1.1

| | |
|---|---|
| **CBR at 5.0mm (%):** | **12** |
| Dry Density before Soaking (t/m³): | 1.73 |
| Density Ratio before Soaking (%): | 95.0 |
| Moisture Content before Soaking (%): | 9.9 |
| Moisture Ratio before Soaking (%): | 101.5 |
| Dry Density after Soaking (t/m³): | 1.74 |
| Density Ratio after Soaking (%): | 95.0 |
| Swell (%): | 0.0 |
| Moisture Content of Top 30mm (%): | 14.4 |
| Moisture Content of Remaining Depth (%): | 14.3 |
| Compaction Hammer Used: | Modified AS 1289.5.2.1 |
| Surcharge Mass (kg): | 4.50 |
| Period of Soaking (Days): | 4 |
| Retained on 19 mm Sieve (%): | 0 |
| CBR Moisture Content Method: | AS 1289.2.1.1 |
| Sample Curing Time (h): | 24 |

## Comments


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ABN: 71 349 772 837 / ACN: 008 966 283

# Maximum Dry Density Report

**Report Number: MDD:22S-03682**
**Date of Issue01/06/2022**
**Issue Number: 1**

| | |
|---|---|
| **Client:** | Tabec Pty Ltd |
| **Client Address:** | Level 2, 54-58 Havelock St West Perth WA 6005 |
| **Project:** | Proposed Residential Subdivision - Lot 601 Brockman St, Gingin |
| **Project No:** | D294537 |

Accreditation Number 18742

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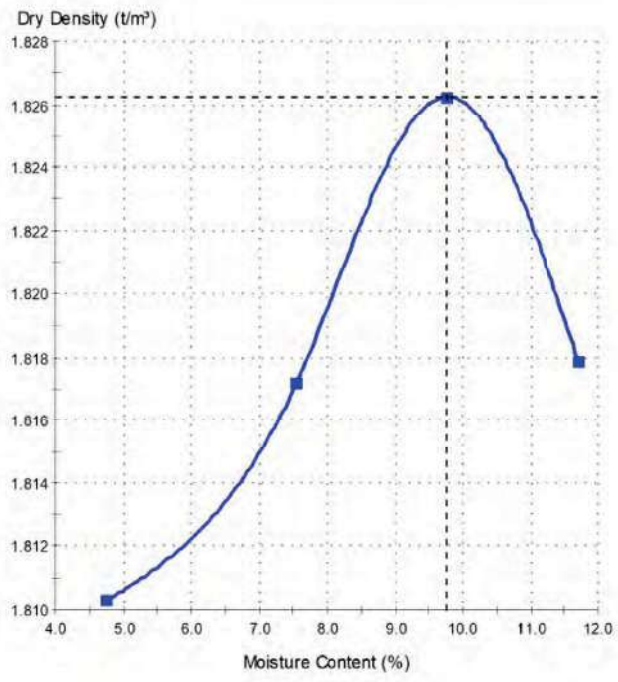
Approved Signatory: Aaron Nicholas

Accredited for compliance with ISO/IEC 17025

## Sample Details

| | | | |
|---|---|---|---|
| **Sample ID:** | Proposed Subdivision | **Field Sample ID:** | BH13 |
| **Date Tested:** | 24/05/2022 | **Date Sampled:** | 24/05/2022 |
| **Soil Description:** | Sand | **Proposed Use:** | Fill |
| **Depth of Test:** | 200-500mm | **Depth of Layer:** | 300 |
| **Sampling Method:** | Sampled by Client | **TRN:** | - |
| **Work Order ID:** | W22-01312 | | |

## Dry Density - Moisture Content Relationship




## Test Results

AS 1289.5.2.1

| | |
|---|---|
| **Modified MDD (t/m³):** | **1.83** |
| **Modified OMC (%):** | **10.0** |
| Retained Sieve (mm): | 19.0 |
| Oversize Material (%): | 0 |
| Curing Time (h): | 2 |
| LL Method: | Visual / Tactile |

## Comments


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# California Bearing Ratio Test Report

**Report Number: CBR:22S-03683**
**Date of Issue01/06/2022**
**Issue Number: 1**

| | |
|---|---|
| **Client:** | Tabec Pty Ltd |
| **Client Address:** | Level 2, 54-58 Havelock St West Perth WA 6005 |
| **Project:** | Proposed Residential Subdivision - Lot 601 Brockman St, Gingin |
| **Project No:** | D294537 |

Accreditation Number 18742

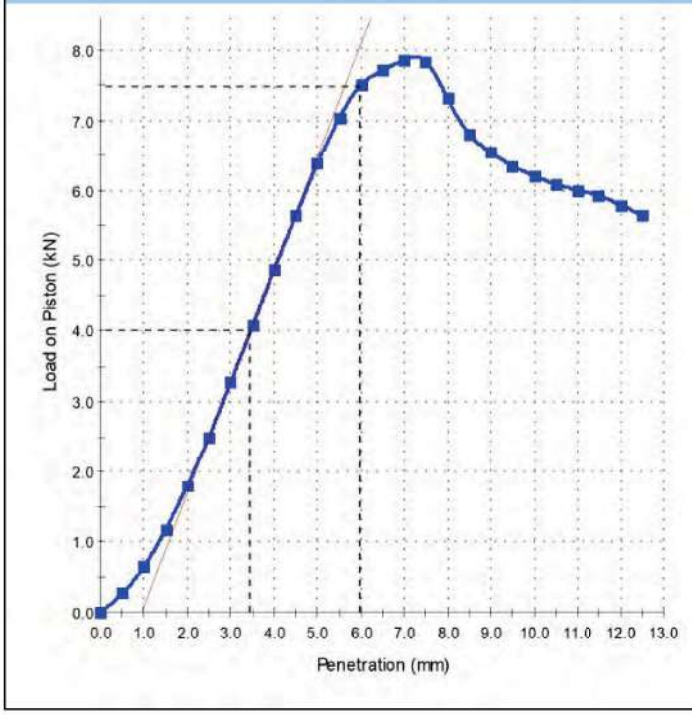
Approved Signatory: Aaron Nicholas

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## Sample Details

| | | | |
|---|---|---|---|
| **Sample ID:** | Proposed Subdivision | **Field Sample ID:** | BH14 |
| **Date Tested:** | 27/05/2022 | **Date Sampled:** | 24/05/2022 |
| **Soil Description:** | Sand | **Proposed Use:** | Fill |
| **Depth of Test:** | 200-500mm | **Depth of Layer:** | 300 |
| **Sampling Method:** | Sampled by Client | **TRN:** | - |
| **Work Order ID:** | W22-01312 | | |

## Load vs Penetration




## Test Results

AS 1289.6.1.1

| | |
|---|---|
| **CBR at 5.0mm (%):** | **40** |
| Dry Density before Soaking (t/m³): | 1.89 |
| Density Ratio before Soaking (%): | 95.0 |
| Moisture Content before Soaking (%): | 10.0 |
| Moisture Ratio before Soaking (%): | 101.5 |
| Dry Density after Soaking (t/m³): | 1.89 |
| Density Ratio after Soaking (%): | 95.0 |
| Swell (%): | 0.0 |
| Moisture Content of Top 30mm (%): | 11.2 |
| Moisture Content of Remaining Depth (%): | 10.8 |
| Compaction Hammer Used: | Modified AS 1289.5.2.1 |
| Surcharge Mass (kg): | 4.50 |
| Period of Soaking (Days): | 4 |
| Retained on 19 mm Sieve (%): | 1 |
| CBR Moisture Content Method: | AS 1289.2.1.1 |
| Sample Curing Time (h): | 24 |

## Comments


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# Maximum Dry Density Report

**Report Number: MDD:22S-03683**
**Date of Issue01/06/2022**
**Issue Number: 1**

| | |
|---|---|
| **Client:** | Tabec Pty Ltd |
| **Client Address:** | Level 2, 54-58 Havelock St West Perth WA 6005 |
| **Project:** | Proposed Residential Subdivision - Lot 601 Brockman St, Gingin |
| **Project No:** | D294537 |

Accreditation Number 18742

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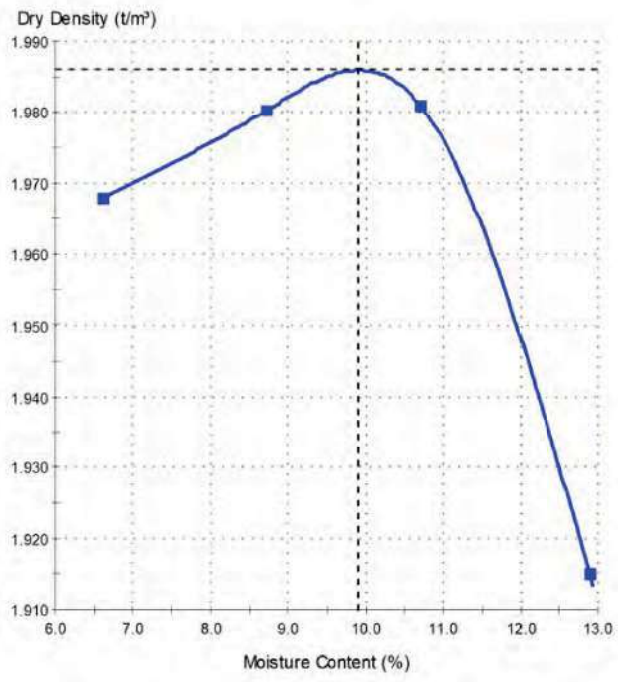
Approved Signatory: Aaron Nicholas

Accredited for compliance with ISO/IEC 17025

## Sample Details

| | | | |
|---|---|---|---|
| **Sample ID:** | Proposed Subdivision | **Field Sample ID:** | BH14 |
| **Date Tested:** | 24/05/2022 | **Date Sampled:** | 24/05/2022 |
| **Soil Description:** | Sand | **Proposed Use:** | Fill |
| **Depth of Test:** | 200-500mm | **Depth of Layer:** | 300 |
| **Sampling Method:** | Sampled by Client | **TRN:** | - |
| **Work Order ID:** | W22-01312 | | |

## Dry Density - Moisture Content Relationship




## Test Results

AS 1289.5.2.1

| | |
|---|---|
| **Modified MDD (t/m³):** | **1.99** |
| **Modified OMC (%):** | **10.0** |
| Retained Sieve (mm): | 19.0 |
| Oversize Material (%): | 1 |
| Curing Time (h): | 2 |
| LL Method: | Visual / Tactile |

## Comments


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# APPENDIX 5 – BORELOG TERMINOLOGY

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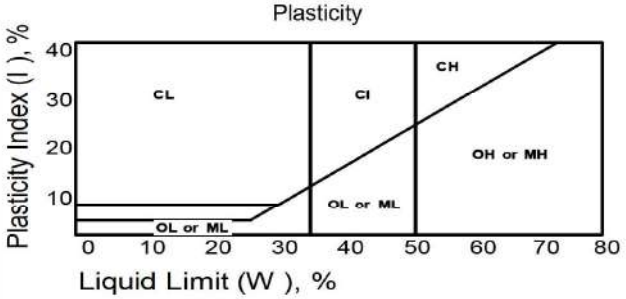
Residential Geotechnical Commercial & Infrastructure
Inspect & Investigate Energy Assessment Environmental

# BOREHOLE TERMINOLOGY

## Particle Size Distribution

| Major Division | Subdivision | Size |
|---|---|---|
| Boulders | | >200mm |
| Cobbles | | 200 - 63mm |
| Gravel | Coarse | 63 - 20mm |
| | Medium | 20- 6mm |
| | Fine | 6 - 2.36mm |
| Sand | Coarse | 2.36 - 0.6mm |
| | Medium | 0.6 - 0.2mm |
| | Fine | 0.2 - 0.075mm |

## Plasticity




## Consistency of Cohesive Soils

| Term | Undrained Strength Su (kPa) | Field Guide |
|---|---|---|
| Very Soft | < 12 | Exudes between the fingers when squeezed in hand |
| Soft | 12 - 25 | Can be moulded by light finger pressure |
| Firm | 25 - 50 | Can be moulded by strong finger pressure |
| Stiff | 50 - 100 | Cannot be moulded by Fingers. Can be indented by thumb. |
| Very Stiff | 100 - 200 | Can be indented by thumb nail |
| Hard | > 200 | Can be indented with difficulty by thumb nail. |
| Friable | - | Crumbles or powders when scraped by thumbnail |

## Consistency/Density of Non-Cohesive Soils

| Term | Density Index (%) | SPT "N" Value Comparison |
|---|---|---|
| Very Loose | < 15 | 0 - 4 |
| Loose | 15 - 35 | 4 - 10 |
| Medium Dense | 35 - 65 | 10 - 30 |
| Dense | 65 - 85 | 30 - 50 |
| Very Dense | > 85 | > 50 |

## Moisture Content

| | |
|---|---|
| D | Dry |
| M | Moist |
| W | Wet |
| S | Saturated |

## Minor Components

| Term | Assessment Guide | Proportion of Minor Component In: |
|---|---|---|
| Trace | Presence just detectable by feel or eye, but soil properties little or no different to general properties of primary component | Coarse grained soils: < 5 %<br>Fine grained soils: <15% |
| With | Presence easily detected by feel or eye, soil properties little different to general properties of primary component | Coarse grained soils: 5 - 12 %<br>Fine grained soils: 15 - 30% |

## Soil Legend

| | | | |
|---|---|---|---|
| FILL | CLAY | GRAVEL | CONCRETE |
| TOPSOIL | SILT | LIMESTONE | COMBINATIONS |
| PEAT | SAND | BEDROCK | eg: Clay, Silty, Sandy |

## USCS

| | | | | | |
|---|---|---|---|---|---|
| GW | Well graded gravel | SC | Clayey sand | OL | Organic low plasticity silt | CL | Low plasticity clay |
| GP | Poorly graded gravel | SM | Silty sand | ML | Low plasticity silt | CI | Intermediate plasticity clay |
| SW | Well graded sand | | | MH | High plasticity silt | CH | High plasticity clay |
| SP | Poorly graded sand | | | OH | Organic high plasticity silt | PT | Peat |

DOC:GE:3.003

WA | QLD | NSW | VIC

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ABN 71 349 772 837 Zemla Pty Ltd ACN 008 966 283 as trustee for the Young Punch and Higham Unit Trust trading as Structerre Consulting Engineers

# Appendix B: Structerre General Site and Soil Evaluation

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ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

# Site & Soil Evaluation Report

**Site and Soil Evaluation for Onsite Sewage Management**

**Lot 601 Brockman Street, Gingin**

Prepared for: Acumen Development Solutions
Prepared by: Structerre Consulting
Telephone: (08) 92054500
Email: wageotecheng@structerre.com.au
Ref No: D294537/J409706-Rev6

**Date: 25.11.2022**

**Document History**

| Issue No (version) | Original prepared by | Issued to (description /section revised) | Date | Reviewed by | Field Assessment Date | Approved by |
|---|---|---|---|---|---|---|
| Rev4 | FS | Approval | 14.09.2022 | MC | 14.09.2022 | MC |
| Rev5 | FS | Approval | 25.11.2022 | MC | 2.11.2022 | MC |
| Rev6 | FS | Approval | 14.12.2022 | MC | 14.12.2022 | MC |

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# 1. Introduction

## 1.1 The Consultant

The field investigation and report have been undertaken and overseen by the following suitably experienced staff.

**Geotechnical Technician – Tony Broadway**

8 years' field experience at Structerre Consulting working across a wide range of site and soil conditions.

**Civil Engineer – Farhad Silwanagh**

Civil and Geotechnical Engineer

8 years' experience in civil and geotechnical engineering at Structerre Consulting. Experience includes the design consultation for various sized waste water treatment applications to include; single residence, mixed use commercial developments.

**Geotech Division Manager – Mel Castle**

Mel Castle has been involved in civil construction inspection and testing for in excess of 35 years. Experienced in earthworks construction monitoring – residential & commercial, site supervision – earthworks, field and laboratory testing & inspection in construction materials including soils, aggregates, concrete, brick and block, rocks and pavements.

## 1.2 Report Summary

Structerre Consulting (Structerre) has been engaged to undertake a Site-and-Soil Evaluation (SSE) for a subdivision of an approximately 176,801m² at Lot 601 Brockman Street Gingin, WA to demonstrate the development meets the requirements outlined in Government Sewage Policy 2019 (GSP).

This report details an onsite sewage management system and is to accompany an application to install an Onsite Sewage System and submitted to the Shire of Gingin. This document provides information about the site and soil conditions. It also provides a detailed SSE for 176,801 square metres comprising 99 lot subdivision plus a 24,700 square metres Town Centre area and includes a conceptual design for a suitable onsite sewage management system for the residential lots, including recommendations for monitoring and management requirements.

Findings of site investigations:

- In accordance with PlanWA online mapping the subject site is located within a sewage sensitive area.
- There are no Private bores and/or other water sources for potable or irrigation purposes within property.
- Natural water courses are located greater than 100m of the Lot.
- The site is not inside a public drinking water source area as per Public drinking water source areas (PDWSA) online mapping.
- Overall site slope calculated at 4.5% with the slope to Individual Sub-lots range between 5 & 10%.
- The site is not located in Floodplains, in accordance with Western Australia Floodplain Mapping (Department of Water and Environmental Regulation).
- Seasonal ground/perched water was recorded over a period of rainfall exceeding the expected medium rainfall recorded for this area. Ground water was encountered in a small number of Boreholes, (refer to Table 2(A)).
- The borehole logs demonstrate differing soil profiles encountered across the site (refer to Table 3) generally classified as either a Category 2 or Category 3 in accordance with AS1547 (refer to Table 3(A)).
- Soil permeability has been carried out using Constant Head method in accordance with AS1547. Daily permeability rates range between 2.6m/day and 8.1m/day (refer to table 4) indicating the soils to be free draining and suitable for on-site effluent disposal.

Based on the results of the site and soil assessment, the overall land capability of the site for onsite wastewater disposal is constrained, however the proposed sewage system is able to be designed and installed to satisfactorily meet the requirements of AS 1547 and the Health Regulations 1974 (treatment of Sewage and Disposal of Effluent and Liquid Waste).

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The recommendations of these findings are:

- To the proposed new sub-divided Lots 1-99, provide secondary level treatment with nutrient removal capabilities that discharges treated sewage with phosphorus and nitrogen concentrations of less than 1mg/L and 10mg/L respectively by a suitable Department of Health (DOH) approved treatment system and the effluent applied to Land Application Area (LAA) via secondary treated irrigation disposal system.
- To the proposed new Town Centre area provide secondary level treatment with nutrient removal capabilities that discharges treated sewage with phosphorus and nitrogen concentrations of less than 1mg/L and 10mg/L respectively by a suitable Department of Health (DOH) approved treatment system and the effluent applied to Land Application Area (LAA) via secondary treated irrigation disposal system.
- Provide suitable fill to identified Sub-lots to raise nominated Land Application Areas (LAA) a minimum of 1.5m above recorded ground water level, refer to Table 2(A).
- Stormwater shall be managed and maintained within each individual Sub-lot. All site civil and stormwater works to be designed to the Shire of Gingin requirements.
- All manufactured products selected as part of future detailed design shall be listed on the Department of Health approved products register.
- System operation and maintenance shall be carried out in accordance with the manufacturer's instructions and to AS/NZS 1547-2012 Section 6, Appendix T & U.

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# 2. Site and Development Description

At the time of the field investigation, the site was vacant and covered in vegetation with small to medium sized trees. Table 1 provides a summary of the proposed development.

**Table 1: Description of development**

| Development Characteristic | Description |
|---|---|
| Site Address | Lot 601 Brockman Street, Gingin WA 6503 |
| Owner/Developer | Gingin Developments Pty Ltd |
| Postal Address | 18 Lyall Street South Perth 6151 |
| Contact/Mob | Chris Bitmead / 0419 939 622 |
| Local Government | Shire of Gingin |
| Zoning | R10/30 (Residential Lots) & R5 (Town Centre) |
| Proposal & Lot sizes | 99 lot sub-division – (980m² - 2,614m²) and a Town Centre area (24,700m²) |
| Water Supply | Water Corporation Water Mains from Brockman Street (extension required) |
| Anticipated Wastewater Load for residential lots only<br>Proposed Town Centre daily hydraulic loading is not known at this stage and does not form part of this report. | Proposed Lots 1-99 ranging between 980m² to 2,614m² in area:<br>Modelled to assume 5 bedroom homes with a daily hydraulic load of 900L/day (150L/Person/Day to AS1547)<br>Town Centre of 2.27Ha in area:<br>• Consisting of community facilities with maximum estimated hydraulic load of 6,990L/day. Refer to item 4.2 of this report |
| Availability of Sewer | The area is currently unsewered and unlikely to be serviced by reticulated sewerage within the next 10-20 years due to low development density in the area and high cost associated with any extension. |

# 3. Site and Soil Assessment

## 3.1 Site Assessment

Structerre Consulting have previously undertaken site investigation on 12th May 2022 and re visited the site on on 16th & 17th August 2022 and also on 7th December 2022 to undertake further site assessment of the groundwater levels.

The assessment of the suitability of this site to retain on-site treated sewage effulent and the recommendations in this report are based on on-site investigations, laboratory testing and desktop study of available geological and topographic published sources relevant to the lot.

On-site investigation of the site including visual inspection, borehole sampling, percolation testing and soil identification. The desktop study involved the review of publicly available publications from various government agencies relating to the geological setting, water table monitoring, climate and topography of the site.

**Site Investigation 2 – 16th & 17th August 2022**

Site investigations note higher than average soil saturations, this is likely due to the higher than average rainfall recorded in this area in the weeks prior to site investigation. The following provides a detailed summary of recorded rainfall.

The Gingin Weather station (Number 9018) indicates the following significant rainfall data recorded prior to site investigations and permeability testing:

- 34.0mm of rainfall recorded in the 2 days prior to initial site investigation carried out on 12th May 2022.
- 254.4mm of rainfall recorded over the 4 week period of 17.07.2022 to 17.08.2022 prior to investigations caried out on 16th and 17th August 2022 (Refer to Notes).

*Notes:*

1. *The rainfall data recorded for the period between 17.07.2022 to 17.08.2022 is approximately double the volume recorded for the same period in 2021.*
2. *254.4mm equating to approximately 64% of the Mean winter rainfall of 399mm between months of June and August recorded for Gingin (9018) from 1889 to present.*
3. *Representing 78% of annual recorded rainfall of 325.2mm for 12 month period to July 2022.*

**Site Investigation 3 – 7th December 2022**

Lower soil moisture content was noted and no ground/perched water was observed in the boreholes where ground water was pervious encountered during site investigation 2 (BH6, 7, 8, 12 & 13) Refer to Appendix 9.

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ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

## SITE KEY FEATURES

Table 2 summarises the key features of the site in relation to effluent management proposed for the site.

- The site is in a sewage sensitive area as per PlanWA online mapping.
- There are no Private bores within property.
- No water courses are located within 100m of the Lot.
- The site is not inside a public drinking water source area as per Public drinking water source areas (PDWSA) online mapping.
- Overall site slope calculated at 4.5%. Slope to individual lots range between 5% & 10%
- The site is not located in Floodplains as per online mapping.
- The risk of effluent transport offsite is low.

**Figure 1: Locality Plan**



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ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

**Table 2: Site characteristics and mitigation measures**

| Feature | Description | Level of Constraint | Mitigation Measures |
|---|---|---|---|
| **Climate** | Station (Gingin) No. 9018<br>Annual rainfall to December 2021 – 795.0mm.<br>Annual rainfall to July 2022 – 327.3mm<br>Rainfall over 2 days prior to testing on 12th of May 2022 - 34mm<br>Rainfall on 16/17 of August 2022 - 39.6mm<br>Average annual pan evaporation is 2,000mm (derived from BOM Annual Average PAN Evaporation Map). | Low | NN |
| **Exposure** | Isolated trees are located throughout the lot, the site is considered to have high exposure to sun and wind. | Low | NN |
| **Vegetation** | Open grassland, no hydrophillic vegetation in the proposed effluent management area or surrounds. | Low | NN |
| **Landform & Drainage** | No visible signs of water ponding at time of assessment. | Low | NN |
| **Slope** | Based on topographical survey of the pre-developed site, it is noted that:<br>• The lot gently grades from Northwest to Southeast, with an overall slope of 4.5%.<br>• The slope measured across individual sub-divided lots varies between 5 and 10% slope. | Low | NN |
| **Fill** | No signs of imported fill material observed at time of assessment. | Low | NN |
| **Surface Gravel and Rock Outcrops** | No surface gravel or rock outcrops observed. | Low | NN |
| **Erosion Potential** | No evidence of sheet or rill erosion; No evidence of landslip and landslip potential is low due to the small slope of site. | Low | NN |
| **Vertical Separation From Groundwater** | **Site investigation 2** - Following a significant above average rainfall period, perched water was encountered in BH's 6, 7, 8, 12 & 13 during drilling at depths between 0-0.6m below surface level.<br>**Site Investigation 3** – No ground water encountered in the same boreholes. | High | Ensure a minimum of 1.5m separation between maximum groundwater level recorded and discharge point of sewage system with use of free |

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| | | | |
|---|---|---|---|
| | • The Perth Groundwater Atlas (Waters & Rivers Commission) has no available information for the groundwater levels for this site.<br>• The Contour feature survey of the subdivision indicates the ground surface level at this site was approximately 98-135m Australian Height Datum (AHD) falling 37m Northwest to Southeast. | | draining fill material for the LAA.<br><br>Refer to Table 2(A) for minimum recommended levels for affected LAA's |
| **Public Drinking Water Source Areas & Sewage Sensitive Areas** | The site is located in a sewage sensitive area as per the GSP due to its location being <1km away from a significant wetland.<br><br>The site is not located in a public drinking water source area as per public drinking source areas (PDWSA) online mapping. | Moderate | Provide a secondary treatment system with nutrient removal capabilities as per the Government Sewage Policy 2019. |
| **Surface Waters and Separation From Water Resources** | No water courses located in close proximity (within 100m) of the Lot. | Low | Installation of secondary treatment system with irrigation disposal type effluent disposal system located minimum 100m from outer edge of riparian. |
| **Rainfall Run-on and Seepage** | No evidence of stormwater run-on to the proposed LAA observed. | Low | NN |
| **Flood Potential** | The lot is not located within the floodplains. | Low | NN |
| **Horizontal Setback Distances** | All relevant setback distances to the LAA are achievable for proposed lots. | Low | NN |
| **Available Land Application Area (LAA)** | Considering all the constraints and buffers, the site has ample suitable land for a LAA for secondary treated effluent disposal. The proposed effluent management area is as nominated in Figure 3. | Low | NN |

*NN: not needed
**LAA: Land Application Area

### Ground Water and Flooding

In accordance with Western Australia Floodplain Mapping (Department of Water and Environmental Regulation) this site is not subject to flooding in 1% Annual Exceedance Probability (AEP).

Based on the site investigations carried out, it has been determined that ground water observed during investigations carried out in August 2022 to be seasonal due to rainfall that exceed the medium winter rainfall recorded for the nearest weather station (9018). To

summarise (seasonal) ground/peached water was encountered in the following boreholes as noted:

**Table 2(A) – Ground Water Levels**

| Test Location | Water Depth | Approx. RL (of water) | Affected Sub-lot(s) | Level of LAA (Req.) |
|---|---|---|---|---|
| BH6 | 0.6m | RL108.90 | Lots 97,98 & 99 | RL110.40 |
| BH7 | Surface | RL104.00 | Town Centre | NN |
| BH8 | Surface | RL100.00 | Town Centre | NN |
| BH12 | Surface | RL105.00 | Town Centre | NN |
| BH13 | Surface | RL100.50 | Town Centre | RL102.00 |

*NN: not needed
**LAA: Land Application Area

## 3.2 Soil Assessment

A geotechnical site investigation was conducted across 13 locations on 12th May 2022 and an additional 26 locations within the original lot as shown in Figures 2 & 3 on 16th & 17th August 2022. A soil retrieval probe was used to sample the soil by bore holes up to 2.0m in depth or refusal due to Stiff Clay or Dense Gravel.

Falling head permeability testing was carried out at each bore hole location as per AS 1289. Lab testing revealed the sub surface material to varying from Sandy loams, loams & clay loams across the proposed subdivision. This was sufficient to adequately characterise the soils expected throughout the area of interest. Soil profile descriptions for each bore hole are provided in the appendix. Table 3 provides a summary of the boreholes across the site.

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ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

Table 3: Soil Assessment

| Feature | Assessment | Level of Constraint | Mitigation Measures |
|---|---|---|---|
| **Profile Depths** | **Soil Profile 1 – Category 2**<br>0-100mm Topsoil, 100-1200mm Silty sand (fine to medium grained, non-plastic)<br>1200-2500mm: Sand (fine to medium) grained, non-plastic, grey, with clay and gravel (Bassendean Sand)<br>**Soil Profile 2 – Category 3**<br>0-100mm Topsoil, 100-650mm Silty sand (fine to medium grained, with gravel non-plastic)<br>650-2500mm: CLAY/SANDY CLAY (fine to medium) high plasticity, trace sand, trace gravel<br>**Soil Profile 3 – Category 3**<br>0-100mm Topsoil.<br>100-2500mm: CLAY/SANDY CLAY (fine to medium) high plasticity, trace sand, trace gravel.<br>***Note:*** *Boreholes provided to a depth of 2500mm or point of refusal (refer to Borehole Logs).*<br>**Refer to Table 3(A) that indicates the areas locating to above mentioned soil profiles.** | Moderate | Provide secondary treatment to systems with large daily hydraulic loads. |
| **Depth to Water Table** | **Site investigation 2** - Following a significant above average rainfall period, perched water was encountered in BH's 6, 7, 8, 12 & 13 during drilling at depths between 0-0.3m below surface level.<br>**Site Investigation 3** – No ground water encountered in the same boreholes. | High | Ensure a minimum of 1.5m separation between maximum recorded groundwater level Refer to Table 2(A). |
| **Particle Size distribution** | 100% passing the 19mm sieve | Low | NN |
| **Soil Colour** | Brown, grey/brown and red/brown soil. | Low | NN |
| **Soil Permeability & Design Loading Rates** | Based on soil profiles and permeability testing, the soils are consistent with soil categories 2 and 3 as per AS1547-2012<br>Permeability testing was carried out using Constant Head Method to AS1547. Refer to Table 4 herein for daily permeability results.<br>Following Design Irrigation Rates (DIR) have been applied for calculating LAA.<br>Category 2 – DIR 5mm/day<br>Category 3 – DIR 4mm/day | Moderate | Installation of secondary treatment system with irrigation disposal type effluent disposal system. |
| **Soil Category** | The proposed lots are categorized accordingly, Refer to Table 3(A). | Moderate | Installation of secondary treatment system with irrigation disposal type effluent disposal system. |

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**Table 3(A): Soil Profiles**

| Soil Profile | Description | Category | Relevant Lots |
|---|---|---|---|
| Profile 1 | 0-100mm Topsoil, 100-1200mm Silty sand (fine to medium grained, non-plastic)<br>1200-2500mm: Sand (fine to medium) grained, non-plastic, grey, with clay and gravel (Bassendean Sand) | Category 2 | 8, 9, 19 to 22 and 85 to 88 |
| Profile 2 | 0-100mm Topsoil, 100-650mm Silty sand (fine to medium grained, with gravel non-plastic)<br>650-2500mm: CLAY/SANDY CLAY (fine to medium) high plasticity, trace sand, trace gravel | Category 3 | 10, 23, 24, 34 to 37, 44 to 84, 89 to 99 and Town Centre |
| Profile 3 | 0-100mm Topsoil.<br>100-2500mm: CLAY/SANDY CLAY (fine to medium) high plasticity, trace sand, trace gravel. | Category 3 | 1 to 7, 11 to 18, 25 to 33 and 38 to 43 |

**Table 4: Permeability Results**

The following record provides daily permeability rates using constant head method to AS1547.

| Test Location | Testing Depth | Soil Type | Permeability |
|---|---|---|---|
| BH1 | 0.0 – 1.9m | SAND to CLAY trace sand trace gravel | 7.2m/day |
| BH2 | 0.0 – 1.3m | SAND to Sandy CLAY trace sand trace gravel | 5.7m/day |
| BH3 | 0.0 – 2.5m | Silty SAND to SAND with gravel | 5.6m/day |
| BH4 | 0.0 - 1.3m | SAND to Sandy CLAY trace sand trace gravel | 5.4m/day |
| BH5 | 0.0 - 1.2m | SAND to Sandy CLAY trace sand trace gravel | 7.7m/day |
| BH6 | 0.0 – 2.5m | SAND to Sandy CLAY trace sand trace gravel | 5.4m/day |
| BH7 | 0.0 - 1.4m | SAND to Sandy CLAY trace sand trace gravel | 5.0m/day |

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| | | | |
|---|---|---|---|
| BH8 | 0.0 - 1.5m | SAND to Sandy CLAY trace sand trace gravel | 3.3m/day |
| BH9 | 0.0 – 2.5m | Silty SAND to Sandy CLAY with gravel | 6.2m/day |
| BH10 | 0.0 – 2.5m | Silty SAND to Sandy CLAY with gravel | 6.5m/day |
| BH11 | 0.0 – 1.5m | Sandy CLAY with gravel | 4.7m/day |
| BH12 | 0.0 - 1.9m | SAND to Sandy CLAY trace sand trace gravel | 3.2m/day |
| BH13 | 0.0 – 1.4m | SAND to Sandy CLAY trace sand trace gravel | 2.6m/day |
| BH14 | 0.0 - 1.8m | Silty SAND to Sandy CLAY with gravel | 4.6m/day |
| BH15 | 0.0 - 1.3m | Silty SAND to Sandy CLAY with gravel | 5.0m/day |
| BH16 | 0.0 – 1.1m | Silty SAND to Sandy CLAY with gravel | 3.1m/day |
| BH17 | 0.0 – 1.m | Silty SAND to Sandy CLAY with gravel | 4.9m/day |
| BH18 | 0.0 – 1.1m | Silty SAND to Sandy CLAY with gravel | 4.6m/day |
| BH19 | 0.0 – 1.3m | Silty SAND to Sandy CLAY with gravel | 3.4m/day |
| BH20 | 0.0 – 1.1m | Silty SAND to Sandy CLAY with gravel | 3.4m/day |
| BH21 | 0.0 – 1.1m | Sandy CLAY with gravel | 3.6m/day |
| BH22 | 0.0 – 1.5m | Sandy Clay to Gravelly SAND with clay | 5.1m/day |
| BH23 | 0.0 – 1.3m | SAND to Sandy CLAY with gravel | 6.0m/day |
| BH24 | 0.0 – 1.3m | SAND to Sandy CLAY with gravel | 8.1m/day |
| BH25 | 0.0 – 0.8m | Gravelly SAND with clay | 5.3m/day |
| BH26 | 0.0 – 0.8m | Gravelly SAND with clay | 6.6m/day |

**OVERALL LAND CAPABILITY OF THE SITE**

Based on the results of the site and soil assessment tabled above and as provided in the appendices, the overall land capability of the proposed onsite sewage system is moderately constrained due to the clay and high water table conditions. However, the proposed onsite sewage system is able to be designed and installed to satisfactorily meet the requirements of AS 1547 and the Health (treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974. The proposed development can comply with the requirements outlined in Government Sewage Policy 2019 (GSP).

- R30 zoning is applicable provided reticulated sewer system is available.
- R10 zoning for the proposed residential lots is applicable provided onsite sewage system utlised.
- R5 Zoning for the proposed Town Centre area.

# 4. Wastewater Management System

Refer to the DOH website for the list of approved products: http://ww2.health.wa.gov.au/. The property owner has the responsibility for the final selection of the treatment system and will include the details in the application to install an onsite sewage system for local government approval.

## 4.1 Treatment System

Provide a secondary treated effluent system with nutrient removal and irrigation disposal, with a minimum required effluent quality of:

- Biochemical Oxygen Demand (BOD) ≤ 20 mg/L
- Total Suspended Solids (TSS) ≤ 30 mg/L
- Escherichia (E) coli ≤ 10 cfu/100 mL
- Phosphorus concentration ≤ 1mg/L
- Nitrogen concentration ≤ 10mg/L
- 90% of the samples shall have a $BOD_5$ less than or equal to 20 $g/m^3$ with no sample greater than 30 $g/m^3$
- 90% of the samples shall have TSS less than or equal to 30 $g/m^3$ with no sample greater than 45 $g/m^3$.

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## 4.2 Land Application System

A range of land application systems have been considered and assessed based on their suitability to the site and soil conditions. We recommend the installation of a covered surface drip irrigation type effluent disposal system for proposed Lots 1-99.

***Sizing of Land Application Area – Residential Lots 1-99***
Proposed Sub-divided lots ranging in size between 980m$^2$ to 2,614m$^2$.

Sized, according for disposal of the calculated daily hydraulic load, the soil classification and quality of effluent being disposed.

Data to be used in the sizing of irrigation disposal area:

- Estimated Daily Hydraulic Load (5-bedroom residence);
  - Maximum 6 Residents @ 150L/day = 900L/day
  - Totalling 900L/day Hydraulic Load (from Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste)1974)

For Sub-lots classified as a as "Category 2:Sandy loams–massive as per AS 1547-2012"

- Provide LAA for secondary treatment with minimum area of 180m$^2$ (excluding required setbacks).

For Sub-lots classified as a as "Category 3 Loams–Weakly structured or massive as per AS 1547-2012"

- Provide LAA for secondary treatment with minimum area of 225m$^2$ (excluding required setbacks).

Area of Irrigation System as per Government Sewage Policy 2019.

***Sizing of Land Application Area – Town Centre (with dining facilities)***
Sized, according for disposal of the calculated daily hydraulic load, the soil classification and quality of effluent being disposed.

Data to be used in the sizing of drip irrigation disposal area:

- Estimated Daily Hydraulic Load
  - 33 x Staff @ 30L/day =990 L/day
  - 200 x Patrons/Diners (3 course meal) @ 30L/day = 6,000 L/day
  - Totalling 6,990 L/day Hydraulic Load in accordance with AS1547-2012 and Supplement to Regulation 29 Health (treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.
- "Category 3 Loams–Weakly structured or massive as per AS 1547-2012"
- Area of Irrigation System as per Government Sewage Policy 2019
- Conversion factor for land application area: = 0.286
- LAA area for Secondary treatment for Soil category 3 – Clay loams = 6,990 x 0.286 2,000m$^2$

Note: Application for the new effluent system is to be sized in accordance with current governing regulations.

The property owner/developer has the responsibility for the final selection of the secondary treatment system and will include the details of it in the Onsite sewage system Approval to Install application form for local government approval.

***Siting and configuration of the proposed disposal system***

The irrigation system shall be located in a designated area to enhance evapotranspiration and its amenity and shall:

- Not be used for purposes that compromise the effectiveness of the system or access for future maintenance purposes.
- Be used only for effluent application.
- Have boundaries clearly delineated by appropriate vegetation or other type of border.
- Have no run-off or seepage of effluent beyond the designated area.

***Buffer distances***

Setback buffer distances from effluent land application areas and treatment systems are required to help prevent human contact, maintain public amenity and protect sensitive environments. The relevant buffer distances for this site are:

- The surface gradient of the disposal area should be less than 10%.
- The disposal system should maintain a minimum distance of:
    - 100m from high water mark of a reservoir or any bore used for public drinking, reservoir, waterways, significant wetlands and not within a waterway foreshore area or wetland buffer (the separation distance is to be measured from of riparian or wetland vegetation),
    - 30m from creek, streams and underground water courses, per Health Regulations 1974 may be considered for secondary treatment systems with nutrient removal. (Reduced setback from reservoirs or bores used for public drinking water not supported)
    - 30m from potable private bore intended for consumption
    - 1.8m downslope from property boundaries (may be more dependent on local authority guidelines)
    - 1.2m from driveways and paved surfaces
    - 6.0m from private sub-soil /drainage
    - 1.8m from building footings
- The distance between the base of the disposal system (i.e. trench bottom, bed base) and the groundwater table should not be less than 1.5m (for secondary treatment systems).

- On completion of the proposed disposal area, appropriate landscaping should be undertaken (i.e. planting of shallow rooted grasses / shrubs).
- The distance to the nearest waterway from proposed LAA locations is 227m (greater than minimum 100m separation required as per GSP),

The site plan in Figure 3 shows the proposed locations of the Land Application Area for secondary treated drip irrigation disposal system.

***Installation of the drip irrigation disposal system***

Installation of the drip irrigation disposal system must be carried out by a suitably qualified and licensed plumber or drainer experienced with onsite sewage disposal systems. Figure 3 shows the preliminary siting of the proposed wastewater disposal system in line with the required setbacks. This plan may differ based on the final number of occupants per building, dwelling location and any other intended developments on site.

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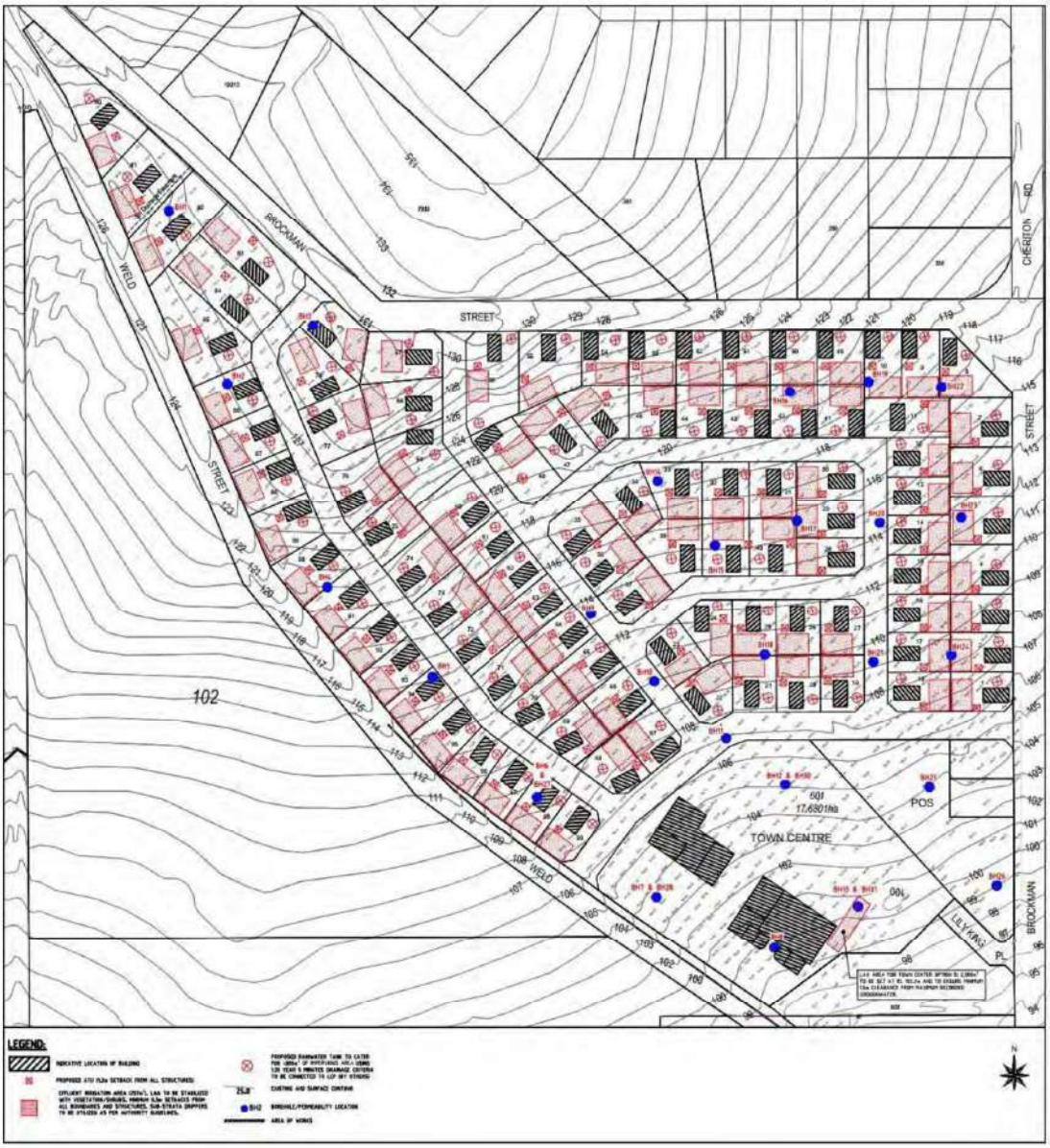
**Figure 2: Locality Site Plan**



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CLIENT: TABEC PTY LTD

**Figure 3: Site Plan A – Proposed Effluent Disposal & Stormwater Management**



# 5. Stormwater Management

Stormwater run-on is not expected to be a concern for the proposed effluent disposal area, as it is expected that run-off from the developed site will be managed and maintained within the lot.

All site civil and stormwater works to be designed to the Shire of Gingin requirements and approvals, with proposed criteria of 1 in 20-year ARI 5-minute duration event (subject to council approval) for proposed Lots 1 to 99 and Town Centre.

| | |
|---|---|
| Lot sizes | 980m² - 2,614m² |
| Approximate Impervious Area | 300m² |
| Required Retention | 3.75m³ Volume |

Stormwater collected from roofs and other impervious surfaces must not be disposed of into the wastewater treatment system or onto the land application area system.

Note: design of the stormwater drainage including subsoil (if required) will be done by others at a later stage.

# 6. Monitoring, Operation and Maintenance

Maintenance is to be carried out in accordance with the manufacturers instructions and to AS/NZS 1547-2012 Section 6, Appendix T & U. The treatment system will only function adequately if appropriately and regularly maintained.

To ensure the treatment system functions adequately, residents must:

- Scrape dishes and remove fats and solids before washing.
- Not dispose solids, sanitary napkins and other hygiene products in the system.
- Not use a food waste disposal unit.
- Use household cleaning products that are suitable for septic tanks.
- Keep as much fat and oil out of the system as possible.
- Conserve water (AAA rated fixtures and appliances are recommended).

To maintain adequate performance of the system, residents must ensure:

- Septic tanks and biosolids settling vessels undergo regular pump-out by licensed waste contractors to remove accumulated sediment.
- No structures and/or paths are constructed over the LAA, vehicles avoid access to the LAA to prevent damage.

- ATUs to undergo maintenance servicing by a provider approved by the Department of Health at minimum three-monthly intervals.

# 7. Conclusions

As a result of our investigations we conclude that a sustainable onsite sewage management system can be installed to meet the needs of the proposed development at Lot 601 Brockman Street, Gingin. Specifically, we recommend the following:

- The site is in a sewage sensitive area as per PlanWA online mapping.
- The site is not subject to flooding based on mapping provided by Western Australia Floodplain Mapping (Department of Water and Environmental Regulation).
- Site slope, as calculated for proposed individual Sub-lots does not exceed 10%.
- Ground/perched water has been assessed to be seasonal, effecting a minimal number proposed sub-lots and the Town Centre. Finished ground level for LAA for affected lots shall be as recommended herein.
- To the proposed development) provide secondary level treatment with nutrient removal capabilities as per Government Sewage Policy 2019 (GSP) requirements.
- Installation of Secondary treated effluent system, by a suitable DOH-approved treatment system of volume required for final calculated daily hydraulic load for Lots 1-99 and Town Centre.
- Prescribed sizing of LAA shall be consistent with the classified Soil Category determined for an individual proposed Sub-lot as indicated in Table 3(A).
- Operation and management of the treatment and disposal system in accordance with the manufacturers instructions and to AS/NZS 1547, the DOH Approval and the recommendations made in this report.

# 8. References

*Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*

Government of Western Australia (2019). *Government Sewerage Policy.*

Standards Australia/Standards New Zealand (2012). AS/NZS 1547:2012 *On-site domestic-wastewater management*.

Standards Australia/Standards New Zealand (2014). AS/NZS 1289:2014 *Methods of testing soils for engineering purposes Definitions and general requirements*.

Government of Western Australia, Department of Planning, Lands and Heritage. *PlanWA* https://espatial.dplh.wa.gov.au/PlanWA/Index.html?viewer=PlanWA

Government of Western Australia, Department of Water and Environmental Regulation. *Western Australia floodplain mapping* https://dow.maps.arcgis.com/apps/webappviewer/index.html?id=9817b8d31c224846abb68a75478e9cf0

Government of Western Australia, Department of Water and Environmental Regulation. *Water Information Reporting* http://wir.water.wa.gov.au/Pages/Water-Information-Reporting.aspx

Government of Western Australia, Department of Water and Environmental Regulation. *Public drinking water source area mapping tool* https://www.water.wa.gov.au/maps-and-data/maps/public-drinking-water-source-area-mapping-tool

Government of Western Australia, Department of Water and Environmental Regulation. *Perth groundwater map* https://www.water.wa.gov.au/maps-and-data/maps/perth-groundwater-atlas

Water Corporation WA. *ESInet* https://esinet.watercorporation.com.au/

Government of Western Australia, Department of Industry and Resources. *Geology and landforms of the Perth region.*

Government of Western Australia, Department of Mines, Industry Regulation and Safety. *GeoVIEW.WA* https://geoview.dmp.wa.gov.au/geoview/?Viewer=GeoView

Government of Western Australia, Department of Water. *Lower Serpentine Hydrological Studies – Conceptual Model Report* https://www.water.wa.gov.au/__data/assets/pdf_file/0020/3656/101835.pdf

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JOB No: J409706-Rev6
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CLIENT: TABEC PTY LTD

# 9. Appendix

**Appendix 9.A: Laboratory results are from the site investigation carried out on 12.05.2022**

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| | | | |
|---|---|---|---|
| **Sample No.** | **36528** | **Client** | Geotechnical |
| **Job No.** | J409671 | **Project** | Lot 601 Brockman st, gingin |

Laboratory testing carried out at Malaga Laboratory 44 Crocker Dr Malaga WA 6090

**SAMPLE DETAILS**

| | | | |
|---|---|---|---|
| BH No. / Depth | BH1 1.3-1.9 | Sampling Method | Client |
| Sample History | 50°C Oven Dried | Sample Preparation | AS 1289 1.1 |

**ATTERBERG LIMITS**

| Description | Method | Result (%) |
|---|---|---|
| Liquid Limit | AS 1289.3.1.2 | 55 |
| Plastic Limit | AS 1289.3.2.1 | 21 |
| Plasticity Index | AS 1289.3.3.1 | 34 |
| Linear Shrinkage | AS 1289.3.4.1 | 13 |
| Nature of Shrinkage | | Flat |

**PARTICLE SIZE DISTRIBUTION**

**Method:** AS 1289.3.6.1
**Description:** Particle size distribution by sieve analysis

| Sieve Size (mm) | % Passing |
|---|---|
| 19.0 | 100 |
| 2.36 | 96 |
| 0.425 | 80 |
| 0.075 | 56 |

**AS 1726:2017 Clause 6.1**
**Material Description:** Sandy CLAY trace gravel
**AS Group Symbol:** CH or OH

NATA

Jacob Pritchard
Senior Laboratory Technician

**Date:** 27-May-22

Soils Analysis Worksheet V 3.4 05-May-21

AS 1289.3.6.1 Report Feb 18

WA | QLD | NSW | VIC

1 Erindale Road, Balcatta, Western Australia 6021 | PO Box 792, Balcatta, Western Australia 6914

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**Appendix 9.B: Borehole results are from the site investigation carried out on 16 & 17 / 08/2022..**

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH01**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395280 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531982 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, grey (Colluvium) | L - MD | | | | M to W | |
| | | CH: CLAY: fine to medium grained, high plasticity, with sand, trace gravel, red/brown | | | | | | |
| 1 | | | F - St | | | | W | |
| | | Terminated at 1.90 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

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ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH02**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395373 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531912 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm 5 10 15 20 | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, brown (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, red/brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
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CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH03**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395375 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531913 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | | | | | M | |
| 1 | | SP: SAND: fine to medium grained, non-plastic, with clay, with gravel, red/brown | L - MD | | | | W | |
| 2 | | Terminated at 2.50 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH04**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395228 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531810 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, brown (Colluvium) | L - MD | | | | M to W | |
| 1 | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown | F - St | | | | W | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH05**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395394 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531714 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm 5 10 15 20 | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, brown (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.20 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

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CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH06

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395502 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531621 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown (Colluvium) | S | | | | W | ▼ |
| 1 | | | F - St | | | | S | |
| 2 | | | | | | | | |
| | | Terminated at 2.50 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
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CLIENT: TABEC PTY LTD

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH07**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395567 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531570 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown (Colluvium) | S | | | | S | |
| 1 | | | F - St | | | | | |
| | | Terminated at 1.40 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH08**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395659 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531532 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, with gravel, brown (Colluvium) | S | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, red/brown | F - St | | | | S | |
| 1 | | | | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH09

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395468 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531849 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, trace clay, brown (Colluvium) | L - MD | | | | M to W | |
| 1 | | | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 2 | | | | | | | | |
| | | Terminated at 2.50 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH10**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395582 |
| **Job No.** | J409706 | **Date** | 16/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531749 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, trace clay, brown (Colluvium) | L - MD | | | | M to W | |
| 1 | | | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, brown | F - St | | | | W | |
| 2 | | Terminated at 2.50 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH11

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395626 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531700 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown (Colluvium) | F - St | | | | M to W | |
| 1 | | | | | | | | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH12**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395700 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531639 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm 5 10 15 20 | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown (Colluvium) | F - St | | | | S | |
| 1 | | | | | | | | |
| | | Terminated at 1.90 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH13

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395697 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531576 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown (Colluvium) | F - St | | | | S | |
| 1 | | | | | | | | |
| | | Terminated at 1.40 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH14

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395539 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531858 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | | | | | | |
| 1 | | | F - St | | | | W | |
| | | Terminated at 1.80 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH15**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395586 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531770 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L - MD | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH16**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395586 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531872 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH17**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395679 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531770 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm 5 10 15 20 | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.60 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH18

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395723 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531688 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH19**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395720 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531888 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, trace gravel, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

**Test No.** BH20

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395732 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531791 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | SP: Silty SAND: fine to medium grained, non-plastic, brown (Colluvium) | L | | | | M to W | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| 1 | | | | | | | | |
| | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH21**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395747 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531672 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, grey (Colluvium) | S - F | | | | | |
| | | *red/brown* | F - St | | | | S | |
| 1 | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH22**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395774 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531870 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown (Colluvium) | F | | | | M to W | |
| 1 | | GP: Gravelly SAND: coarse grained, non-plastic, with clay, brown | MD - D | | | | W | |
| | | Terminated at 1.50 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH23**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395777 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531774 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm 5 10 15 20 | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | SP: Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | L - MD | | | | M to W | |
| 1 | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH24**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395780 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531678 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | SP: Topsoil: | | | | | | |
| | | SP: SAND: fine to medium grained, non-plastic, grey (Colluvium) | L - MD | | | | M to W | |
| 1 | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | W | |
| | | Terminated at 1.30 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH25**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395766 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531627 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: fine to medium grained, non-plastic, with clay, brown (Colluvium) | VD | | | | S | |
| | | Terminated at 0.80 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability: Hole partially stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH26**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395802 |
| **Job No.** | J409706 | **Date** | 17/08/2022 | **Hole Dia.** | 65mm | **Northing** | 6531587 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: fine to medium grained, non-plastic, with clay, brown (Colluvium) | VD | | | | S | |
| | | Terminated at 0.80 m | | | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on dense gravel
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

**Appendix 9.C: Borehole results are from the site investigation carried out on 07.12.2022**

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**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

Test No. **BH27**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395550 |
| **Job No.** | J409706 | **Date** | 07/12/2022 | **Hole Dia.** | 65mm | **Northing** | 65315772 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5, 10, 15, 20) | Samples: Depth | Samples: Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, brown (Colluvium) | D | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown | F - St | | | | D | |
| 1 | | | | | | | | |
| 2 | | Terminated at 2.10 m | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH28**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395593 |
| **Job No.** | J409706 | **Date** | 07/12/2022 | **Hole Dia.** | 65mm | **Northing** | 6531551 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm 5 10 15 20 | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, brown (Colluvium) | D | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | D | |
| 1 | | | | | | | | |
| | | Terminated at 1.10 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability: Hole stable
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin

**Client** Tabec Pty Ltd

Test No. **BH29**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395669 |
| **Job No.** | J409706 | **Date** | 07/12/2022 | **Hole Dia.** | 65mm | **Northing** | 6531532 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | D | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, with gravel, brown | F - St | | | | D | |
| 1 | | Terminated at 1.00 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH30

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395700 |
| **Job No.** | J409706 | **Date** | 07/12/2022 | **Hole Dia.** | 65mm | **Northing** | 6531639 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, with clay, brown (Colluvium) | D | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | D | |
| 1 | | | | | | | | |
| | | Terminated at 1.40 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Refusal - interpreted on stiff clay
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

STRUCterre consulting engineers

**Project** Proposed Residential Subdivision - Lot 601 Brockman Street, Gingin
**Client** Tabec Pty Ltd

**Test No.** BH31

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project No.** | D294537 | **Logged By** | Tony Broadway | **Machine** | Soil Retrieval Probe | **Easting** | 395697 |
| **Job No.** | J409706 | **Date** | 07/12/2022 | **Hole Dia.** | 65mm | **Northing** | 6531576 |

| Depth | Graphic | Stratum Description | Consistency | DCP Blows/150mm (5 10 15 20) | Samples Depth | Samples Type | Moisture | Water Level |
|---|---|---|---|---|---|---|---|---|
| | | Topsoil: | | | | | | |
| | | GP: Gravelly SAND: medium to coarse grained, non-plastic, brown (Colluvium) | D | | | | | |
| | | CH: Sandy CLAY: fine to medium grained, high plasticity, trace gravel, brown | F - St | | | | D | |
| 1 | | | | | | | | |
| | | Terminated at 1.40 m | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

**Remarks**
1. Termination reason: Target depth
2. Hole stability:
3. Samples taken: None
4. Co-ordinate system: WGS 84

STRUCterre consulting

ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

## Appendix B: Boreholes site photos Site investigation 2

Borehole 1




Borehole 2



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ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
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Borehole 3




Borehole 5




Borehole 6




57

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JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
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Borehole 7




Borehole 8




Borehole 9



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PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

Borehole 10



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ROJECT No: D294537
JOB No: J409706-Rev6
PROJECT ADDRESS: LOT 601 BROCKMAN ST, GINGIN
CLIENT: TABEC PTY LTD

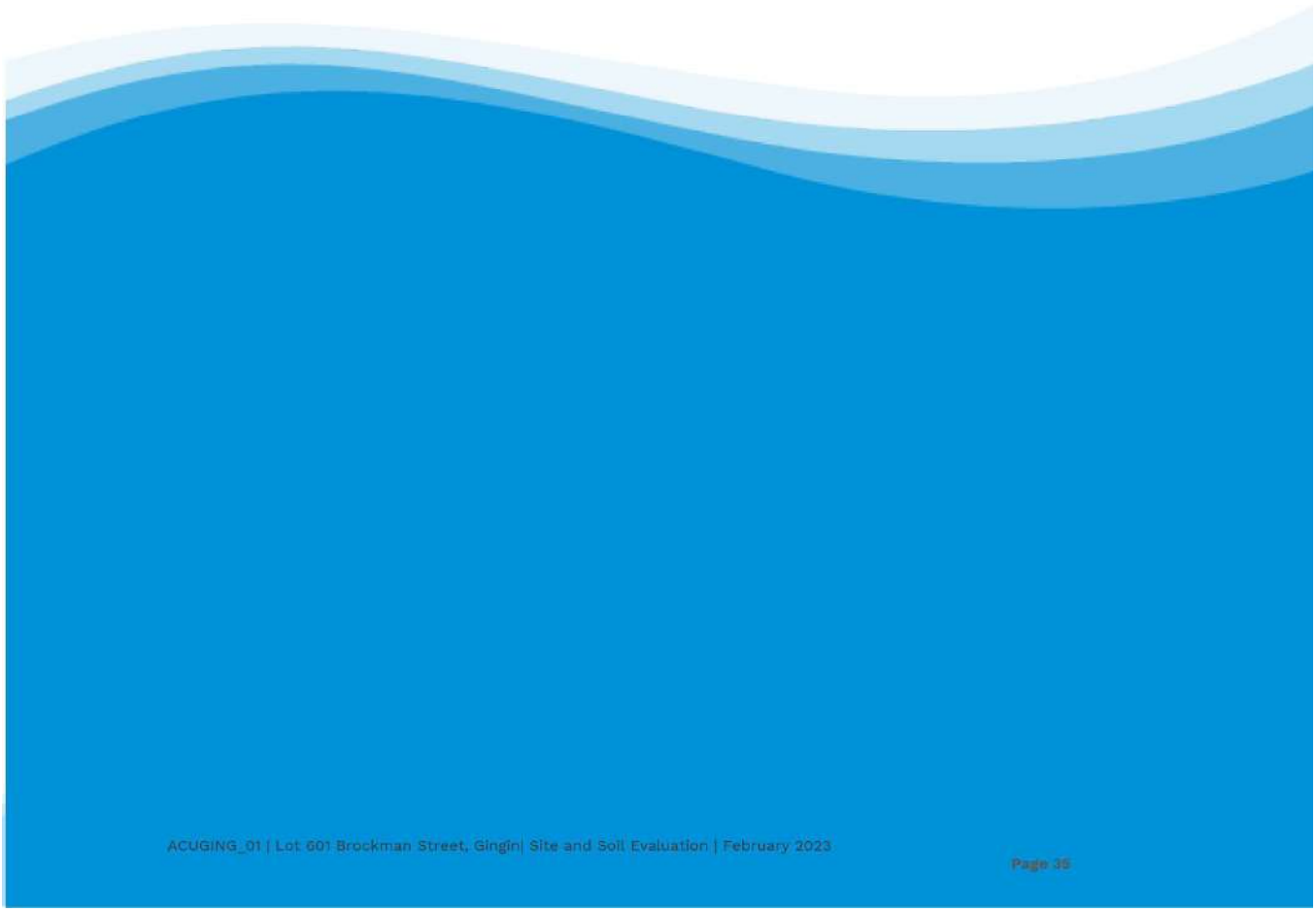
photos

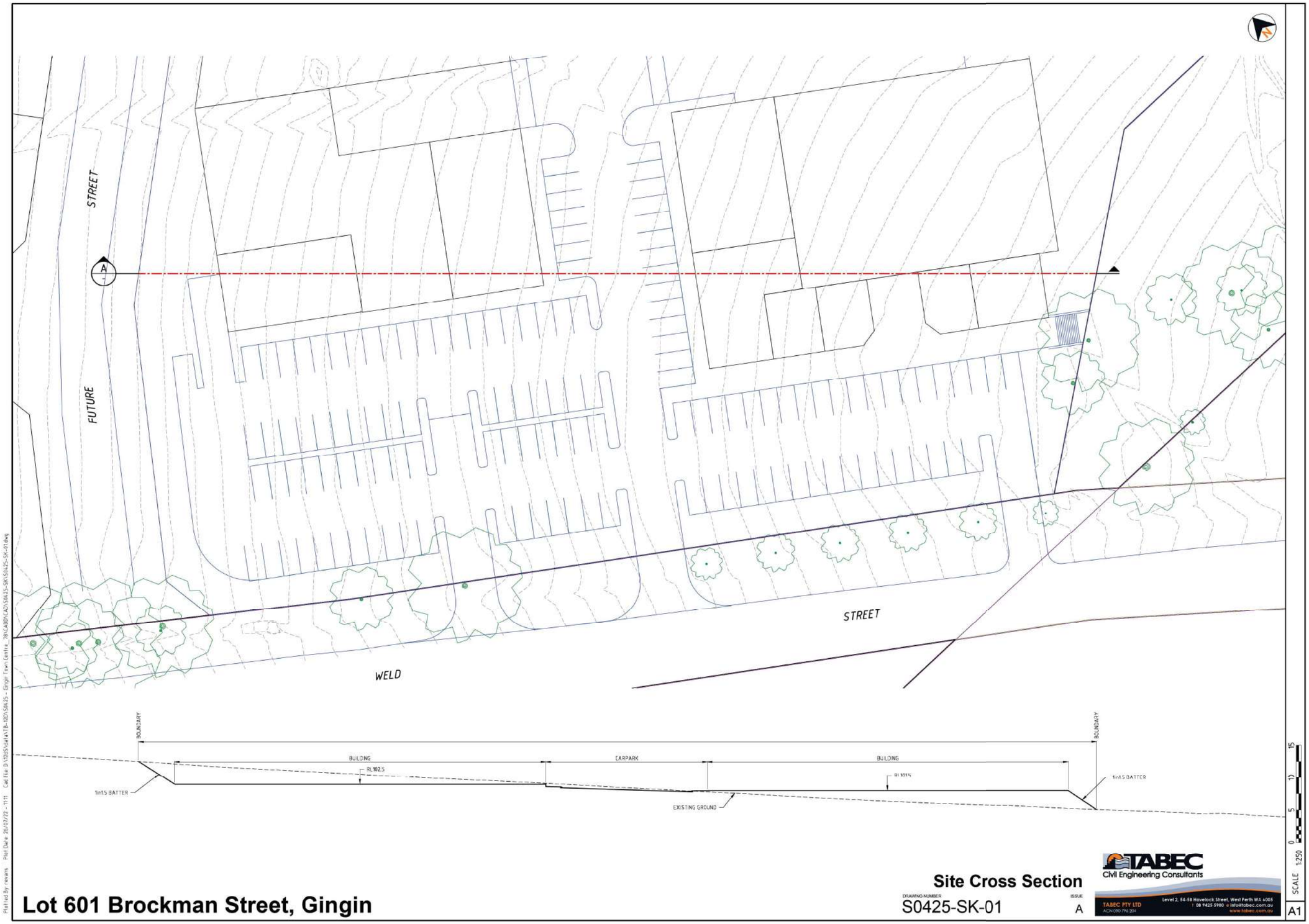






# Appendix C: Draft Town Centre Cut and Fill Plan




STREET
A
FUTURE
STREET
WELD
BOUNDARY
BUILDING
RL102.5
CARPARK
BUILDING
RL101.5
BOUNDARY
1in1.5 BATTER
EXISTING GROUND
1in1.5 BATTER
Site Cross Section
Lot 601 Brockman Street, Gingin
DRAWING NUMBER
S0425-SK-01
ISSUE
A
TABEC
Civil Engineering Consultants
TABEC PTY LTD
ACN 090 776 204
Level 2, 54-58 Havelock Street, West Perth WA 6005
t: 08 9425 5900 e: info@tabec.com.au
www.tabec.com.au
SCALE 1:250
A1

# SCHEDULE OF SUBMISSIONS AND APPLICANTS RESPONSES

***DEVELOPMENT APPLICATION: LOCAL DEVELOPMENT PLAN ON LOT 601 BROCKMAN STREET, GINGIN***

| No. | Submitter | Submission details | Officers response |
|---|---|---|---|
| 1. | Ratepayer | The submitter provides the following general comment:<br><br>***Building envelope and/ or setback:***<br>*No comment*<br><br>***Land application areas:***<br>*No comment*<br><br>***Fencing:***<br>*It is to be commended that the height limit of the front fences is to be 1.2m and of rural design with the intent that the verge will meld into the road reserve and thereby improve the appearance of the streetscape etc. However, "of a rural design" has a wide range of interpretations and it is asked of Council/Planning how much latitude will be given to landowners with this issue?*<br><br>*The following materials could all fall into this "rural" category – "Chicken wire", "ring-lock", "weldmesh", "lattice wood", "picket and post", "slip rail style", "wire and post", "colour-bond panelling".*<br><br>*It is requested this matter is given further definition in the building specifications.*<br><br>*Although there is no mention of the materials for the rear and lateral boundary fencing to the individual lots, current trends within the Gingin town site would indicate that colour-bond panelling is the product of choice at most "new build" sites. Should colour-bond be the material of choice by the new landowners it will give, in my view, the appearance of high-density urban living in the heart of the town.*<br>*Request is made for a regulation/by-law to be considered for the materials and heights of lateral and rear fences to be more in keeping with the rural ambience of the town.* | Noted.<br><br>Noted.<br><br>The officer generally concurs. In response, the applicant has provided clarity in relation to the fencing design.<br><br>The land is zoned 'residential' and the anticipated built form would therefore reflect that of an urban environment.<br><br>The frontage to Weld Street will include rural fencing to maintain the existing streetscape amenity (condition 18 of the subdivision approval refers). |

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| | | *Standard height colour-bond for rear and lateral fences is traditionally 2 metres plus and although it creates an aura of privacy and security – it is believed "neighbourliness" and "neighbourhood watch" for which Gingin is renown will be lost. The new buyers of these blocks are doing so for that "country lifestyle" and "old world charm" as described by the sales prospective titled "Brookview Gingin". It will not be found amidst a sea of colour-bond enclosures. The "country ambience" that can still be felt within the heart of Gingin townsite will be destroyed.*<br><br>*"Brookview on Brockman" could acquire the pseudonym of "Banksia Grove on Brockman" created through a high density of colour-bond fencing.*<br><br>***Vehicle access points:***<br>*It is noted that 19 of the 99 building envelopes will have direct vehicle access to Brockman and Weld Streets with the remaining lots feeding into the internal road system of the subdivision.*<br><br>*Although two of the internal roads feed onto the north-eastern portion of Brockman Street, it is speculated that human nature being what it is, the bulk of the residential traffic within the 2 subdivision will feed down into the existing shopping precinct portion of Brockman Street – as this is the focus of the town's businesses, recreational and leisure areas and eateries.*<br><br>*Furthermore, all traffic travelling onto Old/New Mooliabenee Road or onto the Brand Highway to travel south into the Tonkin Highway North will do likewise.*<br><br>*Given households nowadays have an average of 2.1 cars, exclusive of trailers, boats, caravans, commercial vehicles, motorhomes and motorbikes (Australian Bureau of Statistics) it is "guesstimated" there will be a minimum of 250 cars accessing the East -West corridor of Brockman Street, exclusive of those vehicles that which will be using a presumed new shopping complex car park.* | Dividing fences will be to a height of 1.8m and be of a uniform colour scheme.<br><br>The officer does not intend to speculate on why purchasers may choose to reside on the land. The reality is that the land is zoned 'residential' and the built form will reflect that. The Shire (and landowner) is mindful to balance the freedom of choice and privacy expectations for prospective purchasers while maintaining open streetscapes to limit the urbanised built form in an attempt to maintain the existing character of the town.<br><br>Noted. |

| | | | |
|---|---|---|---|
| | | *Has consideration been given to **modifying the existing road configuration** to cater for this extra traffic? For example, a "Roundabout" at some point on Brockman Street and removing the "triangular island" scenario at the Cheriton/Brockman intersection.*<br><br>*Currently Robinson, Constable, and Lily King Place flow into Brockman Street. These have a credible amount of traffic movements feeding onto Brockman Street – and Robinson and Constable Streets are feeder routes for the local school buses.*<br><br>*There will also be a further increase of traffic from Cheriton Road onto Brockman Street as the "Country Heights" subdivision progresses, and the Marchmont subdivision continues to have further residential development, plus the new housing builds on Mallee Lane are already adding more traffic to this street. Added to which, the intersection at Brockman and Cheriton with the slip road and triangular island already causes confusion and is a traffic hazard.*<br><br>*Note also a portion of Brockman Street near this intersection was previously narrowed by Council works some years ago – and should be reviewed for safety as part of the overall traffic management plan for this new development.*<br><br>*Finally, in commenting on traffic management – where is the traffic flow from the new shopping complex to go – onto Lily King Place or onto the feeder road that also flows onto Brockman Street?*<br><br>*Lily King Place is already a high risk area with a Library, Medical Centre, Community Resource Centre and Community Garden feeding onto what is essentially a narrow, almost one way, lane.*<br><br>*Summary – Traffic congestion and hazards are expected with the existing plan as presented both from a residential perspective and with the intersection of the internal roads onto the existing street intersections within this area.*<br><br>*It is requested Council gives consideration to the matters raised and act upon the concerns accordingly.* | The officer does not necessarily disagree with the submitter's comments, however notes that there is currently no intention to progress with any road reconfigurations at this point in time.<br><br>In any event, road configurations are not pertinent to the consideration of the LDP to clear condition 19 of the subdivision approval. |

| | | | |
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| | | ***Incidental:***<br>*Although the following matters are not within the Brief of this Submission – that is - a response to Condition 19 of Proposed Local Development Plan, I wish to raise concerns on the following matters – as I have not had the opportunity, nor been aware of the time frame, for previous comment.*<br><br>1. ***Onsite vegetation – notably the large stands of onsite Marri Trees (aka Redgums)***<br><br>*Is the Registered Proprietor through Dynamic Planning Developments, required to proceed with "offset planting" of these trees in another like, and local area, within the townsite?*<br><br>*The Marri, locally called Redgums (Eucalyptus calophylla), are a roost, food source, and provide nesting sites for the critically endangered Carnaby's Cockatoos. Gingin is recognized by Birdlife Australia as one of the few remaining habitats for these birds, and flocks in their hundreds fly in each night to feed, drink and roost within the townsite – with Lot 601 Brockman Street being one of these sites.*<br><br>*It is acknowledged a number of these trees have been identified for retention within the Lot, but it is also well known that most new subdivisions completely clear fell all vegetation for ease of development, irrespective of the ear marking of the retention of specific trees.*<br><br>*Also, Australian native species do not generally survive root disturbance, nor the added nutrients typically used to establish and maintain suburban gardens.*<br><br>*Therefore, it is speculated that the retention of the specifically identified Marri trees on Lot 601 will not be successful/adhered to, and a condition of development is that another area within the townsite is identified and set aside for a substantial planting of this species – the cost being met by the Proprietor/ Development company. Likewise, this offset be achieved within a timely manner to enable a continuum of bird and wildlife habitat.* | Noted.<br><br>Offsets (if required) would be determined by the Department of Water and Environmental Regulation (DWER) through a clearing permit process. The officer understands that the DWER supported the subdivision and as such the WAPC issued approval. The Shire is not privy to any obligation to provide environmental offsets. |

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| | | *2. **Sewerage and gray water waste***<br>*Where is the sewerage and grey water waste from the individual lots to be directed? All homes in the Gingin townsite are connected to individual septic tanks with accompanying leach drains.*<br><br>*Lot 601 Brockman Street is on a downward slope and all groundwater and drainage flows into the subterranean streams on the Lot and into the Gingin Brook.*<br><br>*What plans are in place to prevent contamination of this extremely significant and important freshwater source of water from such an occurrence?*<br><br>*3. **General drainage and soil disturbance***<br>*It is noted on the Lot Development Plan, drainage connections have been marked - presumably for storm water drainage to most lots but not all. How is this to work?*<br><br>*Regretfully, in four of the major development sites within Gingin over the last 15 years – the Hardcourts Recreational site, the Honeycomb and Marchmont residential sites and more recently the Department of Fire and Emergency Services site (the Fire Station), have all had major run off and associated drainage problems – requiring major remedial work, and obviously at great cost and inconvenience, to the extent some of the problems seem to have been unresolvable and are ongoing.*<br><br>*Have there been comprehensive reports on the matter of general drainage and the effect of soil disturbance from an appropriately qualified and independent Hydrogeologist and Environmental Engineer?*<br><br>*Several years ago, when Lot 601 was identified by a previous landowner as a site for residential development, Public Comment was called for, and a local resident lodged a substantial submission identifying underground streams and surface springs within the Lot that would be severely impacted upon by any intensive land disturbance - removal of the trees, roads, houses, drains etc.* | Noted.<br><br>Noted. |

| | | | |
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| | | *Hence the question - Has there been an independent environmental assessment by either/both of the above expert groups - and what was the report – and were there recommendations of how to avoid the "dramas" that were/are at the aforementioned sites.* | |
| | | *4. **Footpaths***<br>*Is there provision within this development for public footpaths to be made along all of the internal roads, and connecting to the main (existing) shopping area - Brockman Street - and the Town Centre (Shopping Centre)?*<br><br>*The Gingin townsite is poorly serviced for footpaths throughout the town – despite long standing requests by local residents for upgrades and installation.*<br>*Is this Development site to be any different?* | Noted. |
| | | *5. **Public Open Space (POS)***<br>*Currently the location of the Public Open Space has an assortment of vegetation – predominantly cactus and a substantial stand of Marri saplings. Is this all to be clear felled to create a Public Open Space?*<br><br>*Note previous comments on the value of Marri gums to the endangered Carnaby Cockatoo that inhabit this area – and any other birdlife/wildlife that may currently use this vegetation for food, roost, and safety.*<br><br>*Who is going to use this area, which is adjacent to a busy thoroughfare (Brockman Street et al), as a place to meet, rest, and for recreation.*<br><br>*Why wasn't the Public Open Space placed central to the Development in a "Village Green" format, and to include a playground, BBQ area and meeting point.*<br><br>*The Lot 601 Brockman Street is a substantial building project, and when completed – with an average of 4 people per home, 400 people living on site, it is an intensive subdivision. The Gingin Recreation Centre and the Outdoor Activity Space is a* | Noted. |

| | | | |
|---|---|---|---|
| | | *distance away – and the only other public space is the Granville Park, from which leisure activity has recently been removed.*<br><br>*As a seemingly "tongue in cheek", but valid comment, where are a 99 – 198 "off leash" dogs that are likely to accompany the "new build" owners to this Development going to walk and socialize?*<br><br>*It is also likely these 99 – 198 under-exercised dogs will also become barking dogs and unhappy dogs that will disrupt the life of the nearby residents and townspeople in general.*<br><br>*The current "off leash" dog exercise areas within the town are totally inappropriate.*<br><br>*A central and substantial village green/park in the Centre of this development as the Public Open Space would have been pleasant and welcomed by all, not as it is now located adjacent to a busy and noisy thoroughfare.*<br><br>*It is acknowledged that the above, marked Incidental, is beyond the brief as required in Public Comment to Condition No.19. Of WAPC subdivision approval no. 162831, but it is hoped all of the matters raised have been taken into consideration during the planning of this project on Lot 601 Brockman Street.*<br><br>*I do not want to say in years to come to Council or Councillors – "You were told and asked" –*<br>*particularly on the issue of drainage.*<br>*Finally, what effect will the recently passed Aboriginal Cultural Heritage Act have on the entirety of*<br>*the Development Plan for Lot 601 Brockman Street? Is its content relevant to the total development plans put forward by Dynamic Planning and Developments on behalf of the Registered Proprietor?* | |
| 2. | Ratepayer | The submitter provides the following general comment:<br><br>*We live E-N of the town side of the cemetery. We have concerns regarding the designated crossover locations opposite us… Why can't these be internal access? The traffic flow along this* | It is not uncommon for local access roads to have property entry points. |

| | | | |
|---|---|---|---|
| | | *stretch can be quite busy, cars scream down this part, even know there is a 50 sign, there is continual b double's every single day, all day driving past us, this extra build up of traffic is very concerning.* | |
| | | *Also with these cross over's comes the removal of 100's of year old trees that are the homes to our black endangered Carnaby birds! They were listed as endangered (EPBC Act 1999). Trees are becoming very extinct with these proposed developments, for example Country Heights estate. We have been told from the locals of Gingin that the population of the Carnaby's has now halved or more due to these new estates. We literally have hundreds of the Carnaby's, in the tree's across from us, as well as the pink and greys, magpies that mate in season there, 28's, plus many more varieties of these beautiful birds. This is their permanent homes, there habitat...* | The intention in relation to capturing crossovers as part of the LDP was to control where the crossover is located to avoid the removal vegetation. |
| | | *Will our end of Brockman st be widened due to these proposed cross overs? Will our end of Brockman st be fitted with Street lights? We are totally against this... we purchased our "forever" country home here in Brockman st Gingin to escape the who ha of suburbia living, to stop from living on top of one another, the bright streetlights, the roofs vertically touching and hearing of neighbour's conversations. Etc etc. Our bedroom faces Brockman Street, we already have the Gingin council depot spotlight shining in our bedroom every night. Which drives us mad. This is a Beautiful street, full of gorgeous mature trees, filled with the 100's of beautiful different species of the bird life, they come down and bath and splash around in our retic when its on. I get so excited to drive home after travelling into Perth for a day and drive into our street, our 'home'..* | No road widening is proposed to occur. |
| | | *The sewage system we were told from a representative in the Gingin Shire that it will be a bio system, a very expensive system. Can us as the rate payers be guaranteed that we won't be paying levies on the system as an ongoing annual fee???* | Each property will have its own effluent disposal system. Each property owner is obligated to maintain their own system, at their own expense. |
| | | *Can we be guaranteed if there will be government housing?? As this will bring more crime to our town... and run down the value on all our home's...* | No relevance to the LDP. |

| | | | |
|---|---|---|---|
| | | *In our opinion, this proposed site, lot 601 Brockman Street Gingin will lose the beautiful country look/ feel driving through it, we get so many tourists on weekends driving through…It's a real a shame that this will be taken away from Gingin and the locals. And our personal take on this is we prefer to watch the sheep that have taken up residence across from us in the paddock, and the flocks of different species of bird life that live in their habitat, there home's. This is how it should be left. We are in the country, not suburbia, why can't it be left like it is?? This whole ordeal for us is devastating ..* | |
| 3. | Ratepayer | The submitter provides the following general comment:<br><br>*We have inspected the documents/plans and comment as follows:*<br><br>*1) The portion of Brockman St, Cemetery portion E- W covering Lots 9 through to 80 be a rear boundary fence. Eliminating all crossovers, thus the sole access be from a southern side internal road with Brockman St the rear north facing boundary with zero crossovers.*<br><br>*2) By eliminating crossovers there is NO need to rip out any diminishing habitat that is require for the Carnaby's. We would also like to know if the development will be retaining the large trees on the lot and thus building around these feeding grounds for the Carnaby?*<br><br>*3) This portion of Brockman St carries a tremendous amount of Fast moving traffic, not just the locals but heavy traffic of trucks of varying size. With the installation of crossovers therefore bring more traffic to this street this will become a very real safety issue, not that it already isn't !*<br><br>*4) We note your selected BIO SEWAGE SYSTEM, which comes at quite an expense.*<br><br>*5) Can you please furnish us, the town, with the GINGIN WA councils assurance that the existing town rate payer are not going to be levied to cover the cost of installation and the ON GOING SERVICE / REPAIR /REPLACEMENT CHARGE of* | <br><br><br><br>Noted. The approved subdivision design does not consider this scenario.<br><br>Refer to comment above.<br><br>Noted.<br><br>Noted.<br><br>Each property will have its own effluent disposal system. Each property owner is obligated to maintain their own system, at their own expense. |

| | | | |
|---|---|---|---|
| | | *the Bio Sewage System. That all expense born will be levied on the owner of the Preposed Lots as the rest of the township have their own septic system.*<br><br>6) *In regard to the proposed shops after infill of the proposed new lots. We think this is quite ludicrous given that there are a number of vacant commercial spaces in the original town. This is a historical town and new shopping centre will kill off the existing shops and you will have a DEAD CENTRE, DEAD CENTRE ! This could be a very bustling little town if the existing shops had a street front makeover. There is so much that could be done to this town if someone had the foresight, not just the usual dollars & cents in their view.* | No relevance to the LDP. |

## 13.2 APPLICATION FOR DEVELOPMENT APPROVAL PROPOSED CHALET AT LOT 414 (238) CARABAN ROAD, CARABAN

| | |
|---|---|
| File | BLD/5303 |
| Applicant | Developed Property Pty Ltd |
| Location | Lot 414 (238) Caraban Road, Caraban |
| Owner | Scott Chatwin |
| Zoning | General Rural |
| WAPC No | N/A |
| Author | Natasha Jurmann – Statutory Planning Officer |
| Reporting Officer | Bob Kelly - Executive Manager Regulatory and Development Services |
| Refer | N/A |
| Appendices | 1. Development Plans [**13.2.1** - 5 pages]<br>2. Property Management Plan [**13.2.2** - 8 pages]<br>3. House Rules [**13.2.3** - 1 page]<br>4. Bushfire Management Plan [**13.2.4** - 53 pages]<br>5. Bushfire Emergency Evacuation Plan [**13.2.5** - 23 pages]<br>6. Bushfire Emergency Information Poster [**13.2.6** - 1 page] |

### DISCLOSURES OF INTEREST

Nil

### PURPOSE

To consider an application for development approval for a chalet to accommodate a maximum of six people for short stay accommodation on Lot 414 (238) Caraban Road, Caraban.

### BACKGROUND

The Shire received an Application for Development Approval on 7 July 2023 for a four bedroom chalet to accommodate a maximum of six people for short stay accommodation on Lot 414 (238) Caraban Road, Caraban.

The site has an area of 16.9 hectares currently accommodating a single house and an outbuilding towards the rear of the lot adjacent to the river.

The proposal consists of four transportable buildings which are to be combined into one chalet structure and fitted with a wraparound verandah. The chalet will have four bedrooms and provide short stay accommodation for a maximum of six people.

The chalet is to be set back more than the scheme requirement of 20m within the General Rural zone, with the closest boundary being approximately 41m to the west. The chalet is to fit aesthetically into the environment and will have adequate rainwater supply suitable for drinking, cooking and personal hygiene.

Visitors will check in at the chalet between the hours of 2pm and 10pm, with checkout occurring between the hours of 7am and 10am.

The proposal is considered to be a low impact tourist development as defined in the Shire's Local Planning Policy 3.1 Tourist Development in Rural Areas (LPP 3.1), as the chalet will not accommodate more than six people at any one time.

A Location Plan and copy of the Applicant's Proposal are provided in the **appendices**.

## COMMENT

Stakeholder Consultation

The application was advertised to surrounding landowners for period of 14 days in accordance with clause 64 of the *Planning and Development (Local Planning Scheme) Regulations 2015*.

The Shire received no submissions during the advertising period.

## PLANNING FRAMEWORK

Local Planning Scheme No. 9 (LPS 9) Planning Assessment

The subject land is zoned General Rural (GR) under LPS 9, the objectives of which are to:

*a) Manage land use changes so that the specific local rural character of the zone is maintained or enhanced;*

*b) Encourage and protect broad acre agricultural activities such as grazing and more intensive agricultural activities such as horticulture as primary uses, with other rural pursuits and rural industries as secondary uses in circumstances where they demonstrate compatibility with the primary use;*

*c) Maintain and enhance the environmental qualities of the landscape, vegetation, soils and water bodies, to protect sensitive areas especially the natural valley and water course systems from damage; and*

*d) Provide for the operation and development of existing, future and potential rural land uses by limiting the introduction of sensitive land uses in the General Rural zone.*

The application is considered to satisfy the above objectives as it is a low impact tourism proposal which will strengthen the economic base while enhancing the rural character of the area.

The proposal is defined as 'chalet' under LPS9 which is defined as follows:

*...means an individual self-contained unit usually comprising of cooking facilities, ensuite, living area and one or more bedrooms designed to accommodate short-stay guests, and where occupation by any person is limited to a maximum if three months in any 12 month period.*

Chalets are an 'A' land use within the General Rural zone, which means the use is not permitted unless the local government has exercised its discretion by granting development approval after giving special notice in accordance with clause 64 of the Deemed Provisions.

Setbacks

In accordance with Table 2 – Site Requirements of LPS 9, development in the General Rural zone is required to be set back 20 metres from the lot boundary. The proposed setbacks are as follows:

- 358m (front setback – Caraban Road);
- 41.7m (rear setback – Moore River); and
- 119.8m (side – Northern boundary).

Parking and Access

In accordance with Clause 4.7.2.5, where there is a use of land referred to in the Zoning Table (Table 1) for which no provision is made in respect of car parking spaces in Table 3, the car parking spaces required for that use of land shall be as determined by local government.

The chalet will be accessed by a 3m wide crushed limestone road. The chalet will accommodate parking for two vehicles. The application proposes a new crossover which will need an application to the Shire's Operations and Assets department.

It is therefore envisaged that no more than two cars will be onsite at any one time. As the proposed chalet is surrounded by a limestone pad, there is capacity for additional parking in line with what would be required for a bed and breakfast if allowed.

Given the low intensity of the proposal and not having no more than six people onsite at any one time, the parking and road access proposed is considered sufficient to accommodate the proposal.

Local Planning Policy 3.1 Tourist Development in Rural Areas (LPP 3.1)

LPP 1.5 provides guidelines for tourism facilities within the General Rural zone. The proposal is considered to comply with LPP3.1 as it is a low impact proposal comprising of one 4 bedroom chalet accommodating no more than 6 people at any one time and is located along the rear edge of the subject lot and within a landscape setting so as not to be visually intrusive upon the adjoining landowners or the rural landscape.

Local Planning Policy No. 1.4 – Foreshore Reserves along Water Course (LPP 1.4)

The policy objective of LPP 1.4 is to protect the margins and foreshores of water courses from future development. Furthermore, LPP 3.1 requires the building line for all development adjacent to a water course to be 50 metres measured from the top of the bank of the water course, unless an existing foreshore reserve is already present.

The proposed development is set back over 45m from the Moore River and an existing foreshore reserve is mapped for the area. In addition to this, the applicant notes that no vegetation is proposed to be removed to accommodate the development and a fence is located between the proposed development and the river.

*Planning and Development (Local Planning Schemes) Regulations 2015*

In accordance with Schedule 2, Part 9, Clause 67(2) of the Deemed Provisions, the local government is to have due regard to a range of matters to the extent that, in the opinion of the local government, those matters are relevant to the development the subject of the application. In this instance, the following matters are considered to be relevant to the proposal.

*(a) the aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area;*

*(m) the compatibility of the development with its setting, including –*
*(i) the compatibility of the development with the desired future character of its setting;*

*(n) the amenity of the locality including the following -*
*(ii) the character of the locality;*
*(iii) social impacts of the development;*

The officer is of the view that it is also pertinent to outline objective a) of the General Rural zone as it is complementary to the above provisions.

*(a) manage land uses so that the specific local rural character of the zone is maintained or enhanced.*

Officer comment

The relevant objective requires the 'specific local rural character' to be maintained or enhanced.

The locality generally consists of rural land that has been predominantly cleared of vegetation to facilitate the grazing of livestock. Smaller lots are located closer to the Moore River which is situated to the west of Caraban Road, with larger landholdings present to the east. An approved restaurant and micro-brewery is located to the north and a canoe hire business to the south.

The character of the area therefore comprises an array of land uses (commercial and residential) of varying scales, within an area that has tourism-related opportunities given close proximity to the Moore River.

The officer is of the view that the development will maintain the specific local rural character.

Noise

The regulatory regime relating to noise control and management in Western Australia is established by the *Environmental Protection Act 1986* (EP Act) and the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations).

The proximity of the development to surrounding dwellings, in the context of approved adjoining uses, is viewed as being acceptable. The Property Management Plan outlines noise mitigation and complaints handling, which the officer views as being adequate.

*(q) the suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bush fire, soil erosion, land degradation or any other risk;*

*(r) the suitability of the land for the development taking into account the possible risk to human health or safety;*

Officer comment

State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7) provides a foundation for land use planning to address bushfire risk management. The subject lot is designated as being partially bushfire prone.

The entirety of the development footprint is located inside the designated area and a Bushfire Management Plan and Bushfire Emergency Evacuation Plan has been provided in the **appendices**.

*(s) the adequacy of —*
*(i) the proposed means of access to and egress from the site; and*
*(ii) arrangements for the loading, unloading, maneuvering and parking of vehicles;*

Government Sewerage Policy 2019 (GSP)

The GSP establishes the Western Australian Government's position on the provision of sewerage services in the State and requires reticulated sewerage to be provided during the subdivision and development of land. In instances where reticulated sewerage cannot be provided, which applies to a large portion of the Shire, it adopts a best practice approach to the provision of onsite sewage treatment and disposal.

In this instance, via clause 4 of the GSP, a Site and Soil Evaluation (SSE) with detail commensurate with the nature of the development should support such proposals. Typically an SSE report identifies the most suitable location for the effluent disposal area on the lot based on site and soil characteristics such as depth to groundwater and type and depth of soils (amongst other things).

The subject land is within a Sewage Sensitive Area (SSA) given its proximity to the Moore River, and on that basis the landowner will be required to install, at a minimum, a secondary treatment system and potentially a system with nutrient removal capabilities. The wastewater disposal system may require a separate approval by the Department of Health (DoH) and/or the Department of Water and Environmental Regulation (DWER) in addition to lodgment with the Shire's Environmental Health Section. The officer is of the view that the level of detail required within the SSE, if required at all, is appropriately determined by those departments. The officer notes that the development scale is largely uncontroversial in the GR zone in a planning sense.

Summary

In view of the above assessment, the officer supports the proposal subject to conditions.

## STATUTORY/LOCAL LAW IMPLICATIONS

*Planning and Development (Local Planning Scheme) Regulations 2015*

*Planning and Development Act 2005*
*Local Planning Scheme No. 9*

## POLICY IMPLICATIONS

Local Planning Policy No. 1.4 Foreshore Reserves along Water Courses
Local Planning Policy 3.1 Tourist Development in Rural Areas

State Planning Policy 3.7 Planning in Bushfire Prone Areas

## BUDGET IMPLICATIONS

Nil

## STRATEGIC IMPLICATIONS

Shire of Gingin Strategic Community Plan 2022-2032

| | |
|---|---|
| **Aspiration** | 3. Planning & Sustainability - Plan for Future Generations |
| **Strategic Objective** | 3.3 Planning & Land Use - Plan the use of the land to meet future requirements incorporating economic development objectives and community amenity |

## VOTING REQUIREMENTS - SIMPLE MAJORITY

**COUNCIL RESOLUTION/OFFICER RECOMMENDATION**

**MOVED: Councillor Johnson SECONDED: Councillor Vis**

**That Council grant Development Approval for one Chalet on Lot 414 (238) Caraban Road, Caraban subject to the following conditions:**

1. **The approved development plans and accompanying documentation, together with any requirements and annotations detailed thereon, are the plans approved as part of this application and shall form part of the development approval issued;**

2. **All works required to satisfy a condition of this approval are required to be installed/constructed and maintained in accordance with the approved plans and conditions of approval for the life of the development;**

3. **Prior to the commencement of site works, the landowner/applicant shall demonstrate to the Shire of Gingin that an effluent disposal system has been approved by the relevant authorities;**

4. **The Property Management Plan (PMP) dated June 2023 (accompanying documentation) is to be implemented and adhered to, to the satisfaction of the Shire of Gingin;**

5. **Prior to the commencement of the approved use, a new crossover from Caraban Road is to be constructed to the satisfaction of the Shire of Gingin at the landowners' cost;**

6. **Prior to the commencement of the approved use, the landscaping as detailed in the Landscaping Plan shall be installed and thereafter maintained to the satisfaction of the Shire of Gingin;**

7. The Bushfire Attack Level (BAL) rating for the Chalet is to comply with the 'conditional' BAL- 29 outlined in the Bushfire Management Statement (BMS) prepared by Bushfire Prone Planning dated 24 May 2023. The removal of vegetation is permitted in order to comply with this condition;

8. Prior to occupation of the Development the Applicant/Owner shall execute and provide to the Shire of Gingin a notification pursuant to Section 70A of the *Transfer of Land Act 1893* to be registered on the title to the land as notification to prospective purchasers as follows:

   *Bushfire Prone Area – This lot is located in a bushfire prone area. Additional planning and building requirements may apply to development on this land*;

9. The approved development is to comply with the definition of 'Short Stay Accommodation' as defined by Local Planning Scheme No. 9 (LPS9) which defines short stay as:

   *means tourist accommodation facilities (including motels, caravan and camping facilities, chalets, guest houses, holiday houses or any other form of tourist accommodation) set aside either continuously or from time to time for temporary living purposes but which are not occupied by the same person or group of persons for a period in excess of 3 months in any one 12 month period*;

10. The chalet accommodation shall only accommodate up to 6 persons at any one time; and

11. The operator is required to keep up to date records of occupants residing in the chalet accommodation and shall provide the Shire of Gingin with a copy of such records within 14 days upon written request.

Advice Notes

Note 1: If you are aggrieved by the conditions of this approval, you have the right to request that the State Administrative Tribunal (SAT) review the decision under Part 14 of the *Planning and Development Act 2005*.

Note 2: If the development subject to this approval is not substantially commenced within a period of two years, the approval shall lapse and have no further effect.

Note 3: Where an approval has so lapsed, no development may be carried out without further approval of the local government having first been sought and obtained.

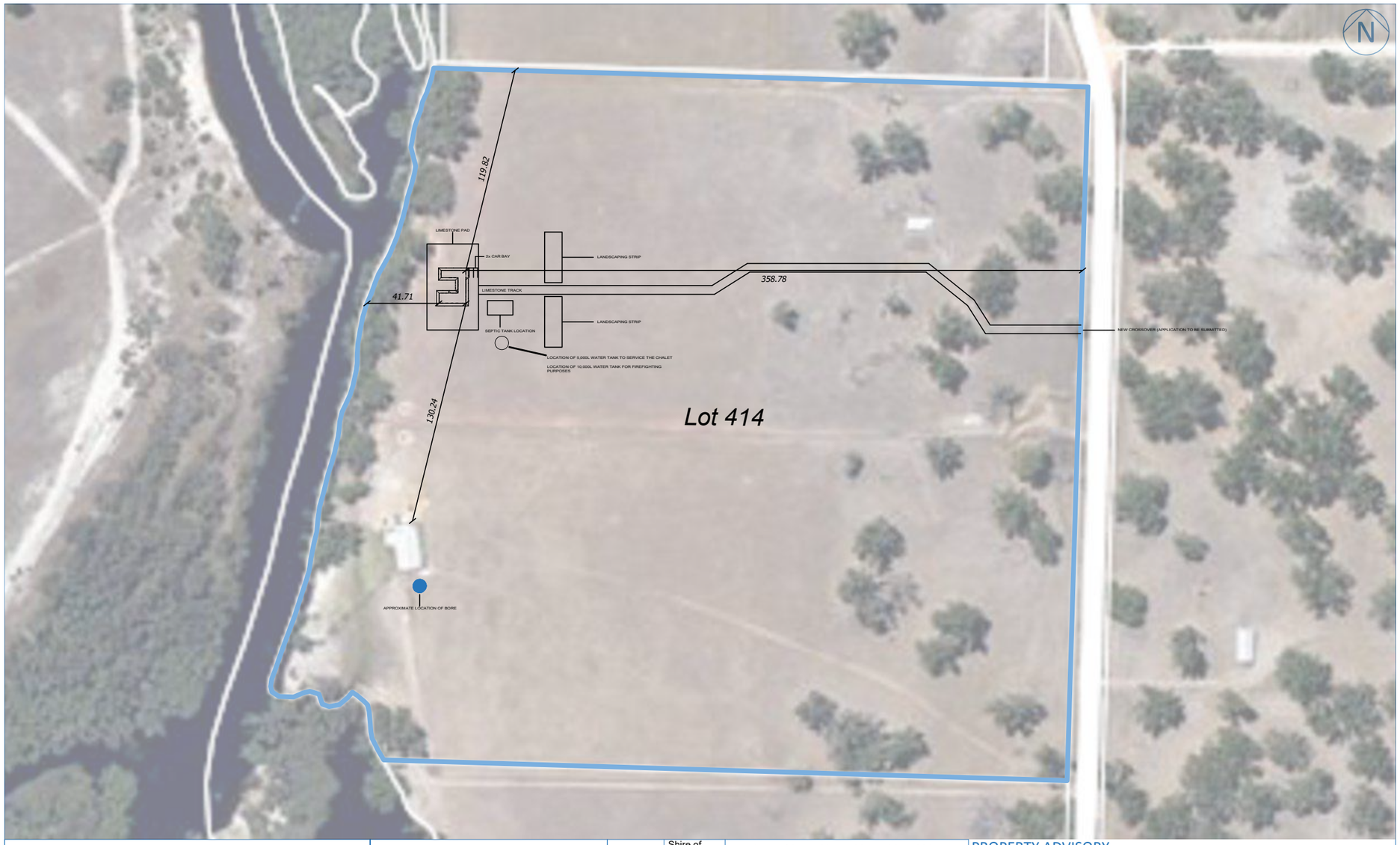
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|---|---|
| Note 4: | Please note that you may be required to provide a Soil Evaluation Report, prepared in accordance with *AS/NZS 1547 Onsite domestic wastewater management,* prior to obtaining an effluent disposal system approval. For further information please refer to the fact sheet 'Guidance on Site and Soil Evaluation for Onsite Sewer Management' at the following link: https://ww2.health.wa.gov.au/~/media/Files/Corporate/general%20documents/water/Wastewater/Site-Soil-Evaluation.pdf. |
| Note 5: | The wastewater disposal system may require a separate approval by the Department of Health (DoH) and/or the Department of Water and Environmental Regulation (DWER). |
| Note 6: | All noise associated with the development is required to comply with the *Environmental Protection (Noise) Regulations 1997.* |
| Note7: | The development is to have access to a sufficient supply of potable water that is of the quality specified under the *Australian Drinking Water Quality Guidelines 2004*. |
| Note 8: | In relation to the new crossover from Caraban Road, please note that a Vehicle Crossover Application is required to be submitted to and approved by the Shire of Gingin prior to the installation of the crossover. |
| Note 9: | It is the landowner's responsibility to implement and maintain bushfire protection and mitigation measures on their property. |
| Note 10: | Please be advised that the proximity of the subject land to the Moore River may result in the land being subject to flooding. The proponent is encouraged to undertake further due diligence to ensure that the building design is appropriate in the event inundation occurs. |

CARRIED UNANIMOUSLY
7 / 0

**FOR:** *Councillor Fewster, Councillor Balcombe, Councillor Johnson, Councillor Kestel, Councillor Peczka, Councillor Sorensen and Councillor Vis*

**AGAINST:** *Nil*

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SITE PLAN
OF
L414 CARABAN ROAD,
CARABAN

CLIENT: Scott Chatwin

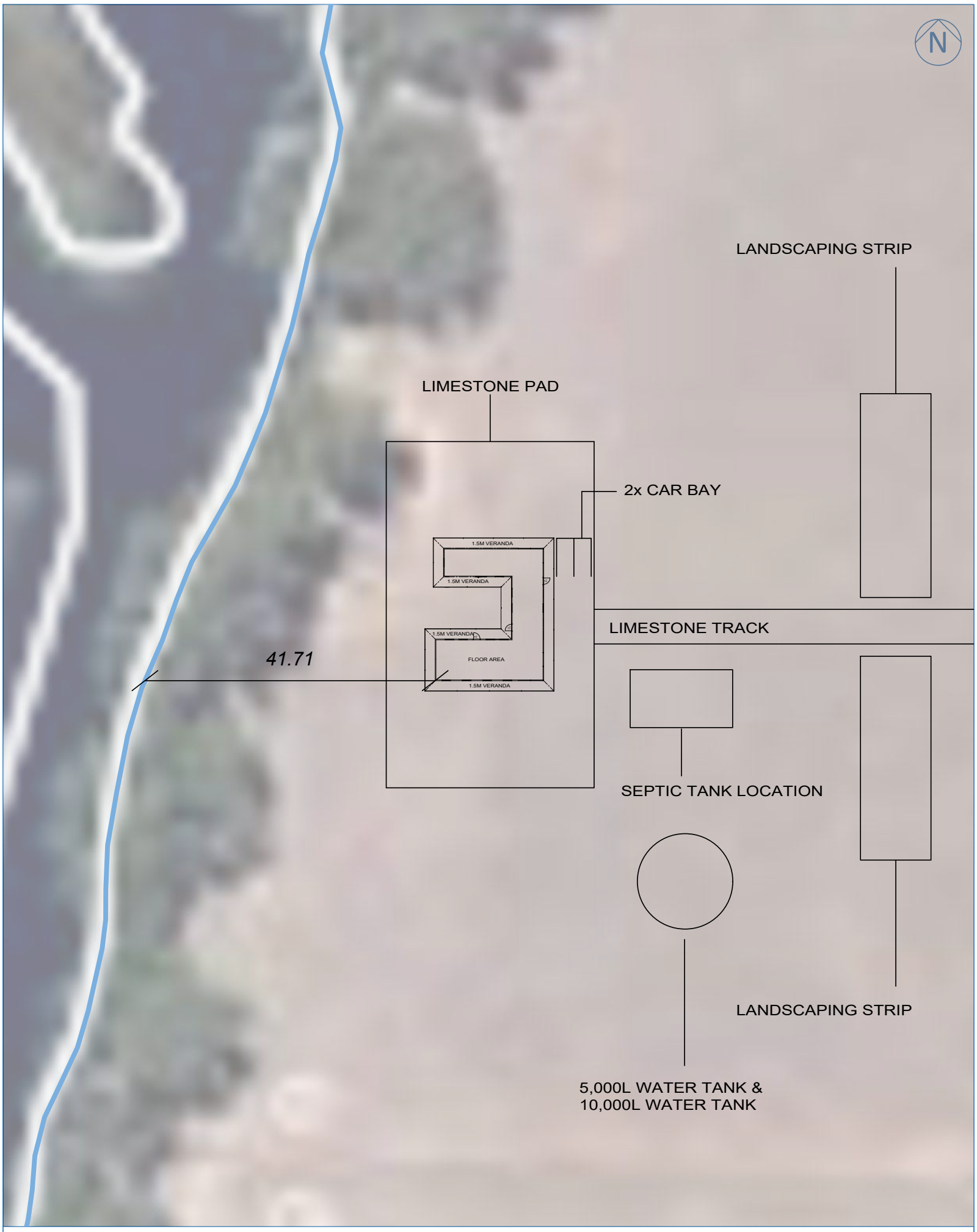
| | |
|---|---|
| COUNCIL | Shire of Gingin |
| ZONING | General Rural |
| BAL AREA | Yes |

0 20 40 60 80 100m
1:2000
1:2000 at A3 size

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EXTRACT 1

CLIENT: Scott Chatwin

| | |
|---|---|
| COUNCIL | Shire of Gingin |
| ZONING | General Rural |
| BAL AREA | YES |

0 5 10 15 20 25m
1:500
1:500 at A3 size

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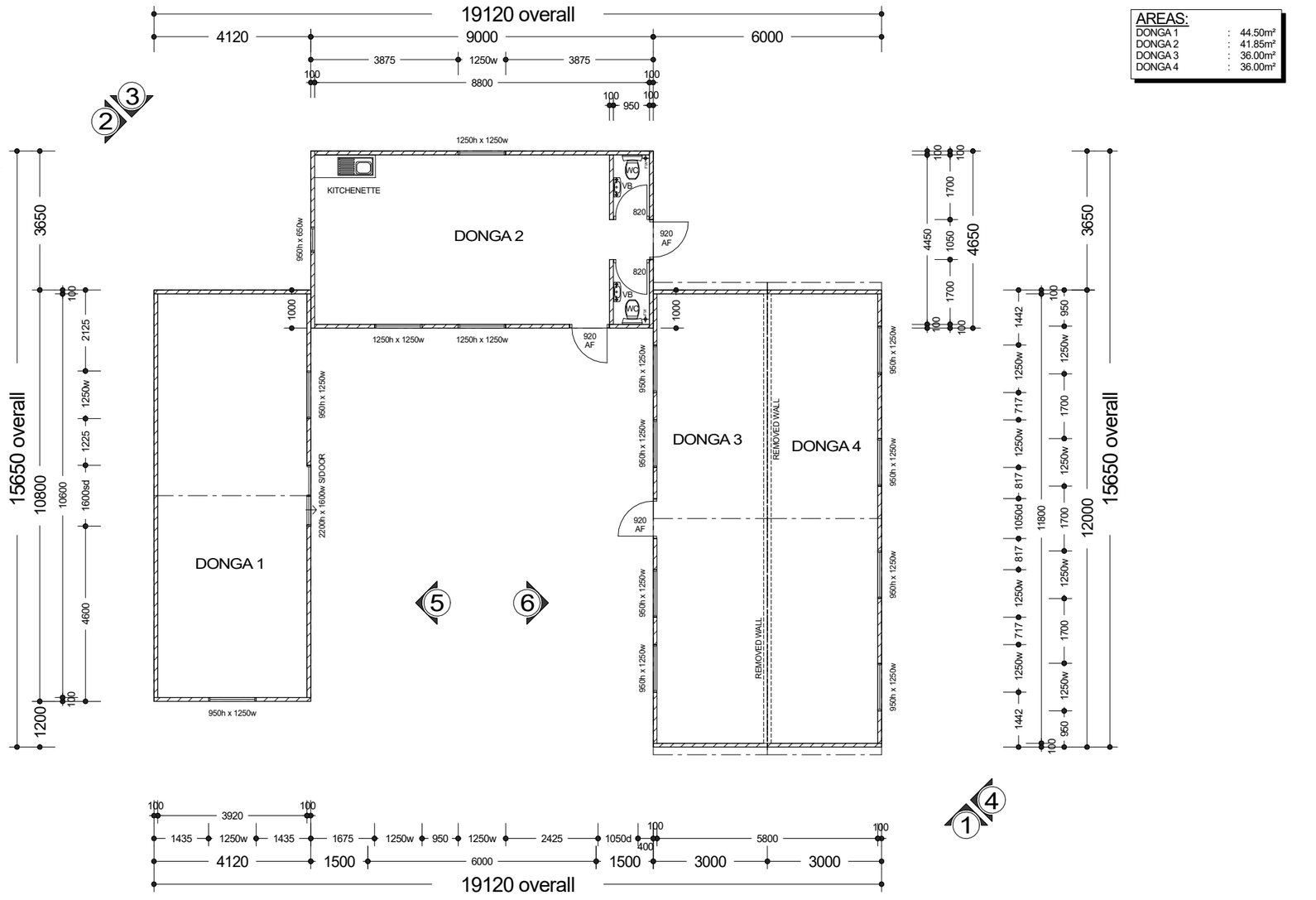
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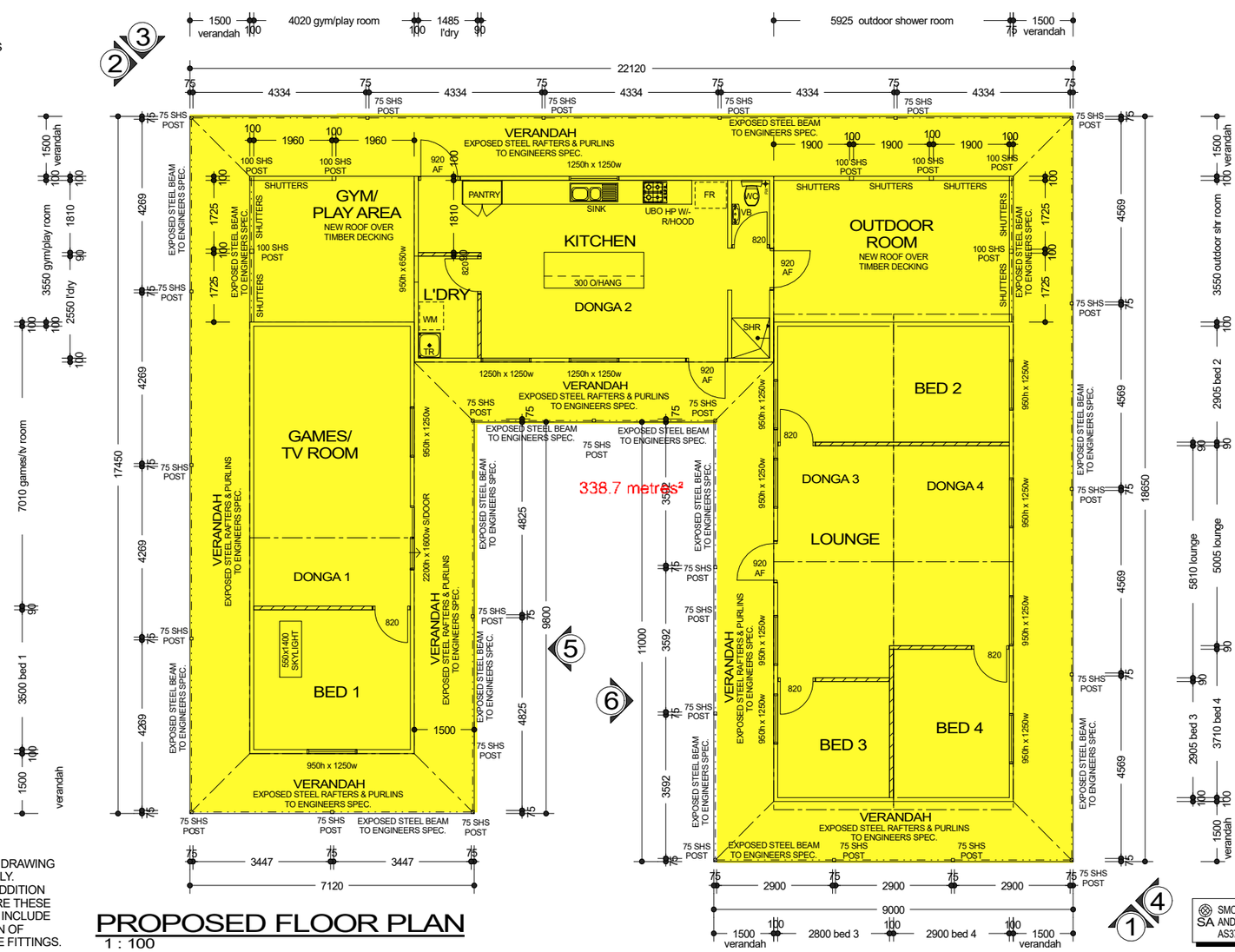
| AREAS: | | |
|---|---|---|
| DONGA 1 | : | 44.50m² |
| DONGA 2 | : | 41.85m² |
| DONGA 3 | : | 36.00m² |
| DONGA 4 | : | 36.00m² |




## EXISTING FLOOR PLAN
1 : 100

| | | | |
|---|---|---|---|
| Redgum Designs Drafting Services<br>1210 HUMMERSTON STREET<br>MOUNT HELENA, WA 6082<br>MOBILE : 0438 936 786<br>EMAIL : redgumdesigns@westnet.com.au | PROPOSED NEW RESIDENCE FOR :<br>CHAMBERS<br>ADDRESS.<br>LOT 414<br>CARABAN ROAD<br>CARABAN | DRAWN: LS<br>DATE: 12/11/2022<br>SCALE 1 = 100<br>REV / VO # / DRN / DATE<br>A – ADD PROPOSED LAYOUT – LS – 26/11/2022<br>B – VERANDAHS – LS – 30/11/2022<br>C – CERTIFICATION – LS – 28/02/2023<br>© Copyright REDGUM DESIGNS 2023 | David A. Lavell & Associates<br>Brookbridge Horizons Pty Ltd (ACN 009 371 528) trading as<br>Registered Professional Engineer<br>CONSULTING CHARTERED ENGINEERS<br>14 Sandover Road, Darlington WA 6070<br>Phone / Fax (08) 9299 7720<br>THE APPROVED SIGNATURE ON THIS DRAWING ENDORSES ITS USE FOR CONSTRUCTION<br>APPROVED: | This plan is covered by Copyright.<br>Copyright exists in whole, in part and in concept. Discussion with any party for the purpose of comment, costing, redesign or construction in any form without written permission from REDGUM DESIGNS will be deemed a breach of Copyright<br>JOB No. 1864<br>REVISION C 28/02/2023<br>SHEET No. 1 OF 3 |

**SUB-CONTRACTORS NOTE**
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2. *DO NOT* SCALE FROM DRAWINGS




| AREAS: | |
|---|---|
| DONGA 1 | : 44.50m² |
| DONGA 2 | : 41.85m² |
| DONGA 3 | : 36.00m² |
| DONGA 4 | : 36.00m² |
| OUTDOOR AREAS | : 36.94m² |
| VERANDAH | : 142.71m² |

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## PROPOSED FLOOR PLAN
1 : 100

SMOKE ALARMS SHALL BE HARD WIRED AND INSTALLED TO COMPLY TO AS3786-2014 SMOKE ALARMS

Redgum Designs Drafting Services

1210 HUMMERSTON STREET
MOUNT HELENA, WA 6082

MOBILE : 0438 936 786
EMAIL : redgumdesigns@westnet.com.au

PROPOSED NEW RESIDENCE FOR :

CHAMBERS

ADDRESS.

LOT 414
CARABAN ROAD
CARABAN

DRAWN: LS
DATE: 12/11/2022

SCALE 1 = 100

| REV | VO # | DRN | DATE |
|---|---|---|---|
| A | ADD PROPOSED LAYOUT | LS | 26/11/2022 |
| B | VERANDAHS | LS | 30/11/2022 |
| C | CERTIFICATION | LS | 28/02/2023 |

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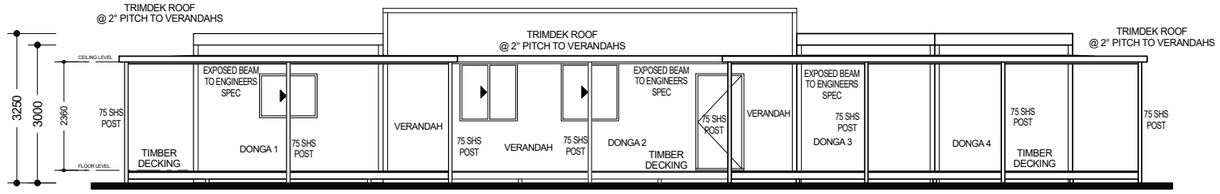
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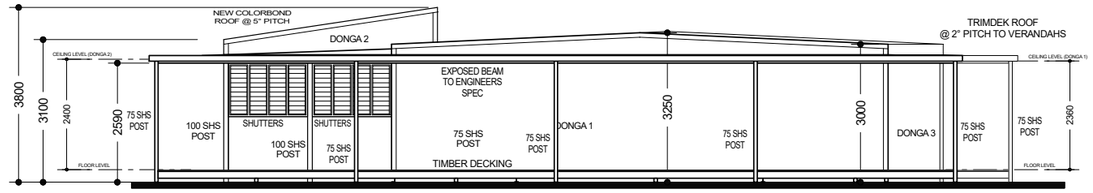
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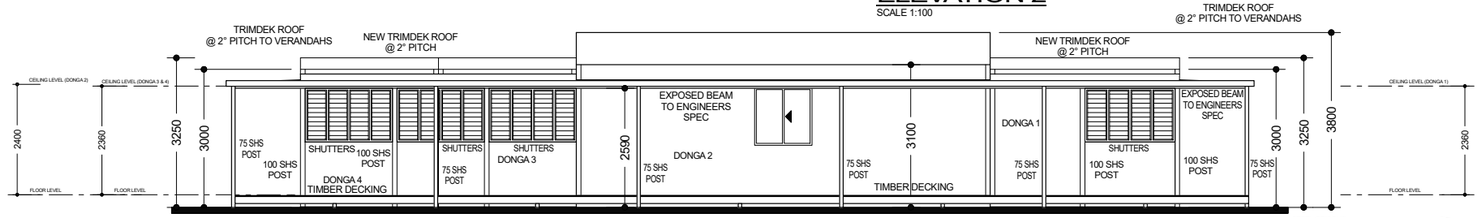
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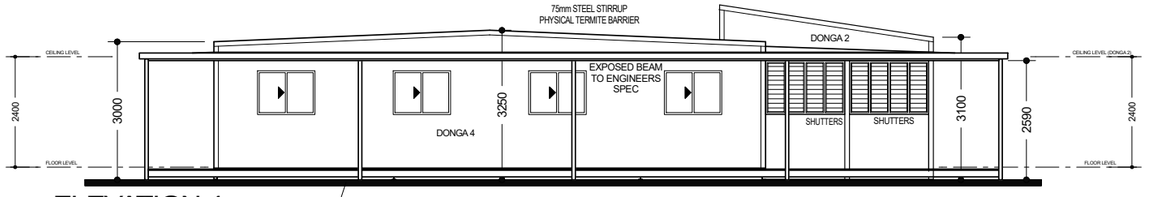

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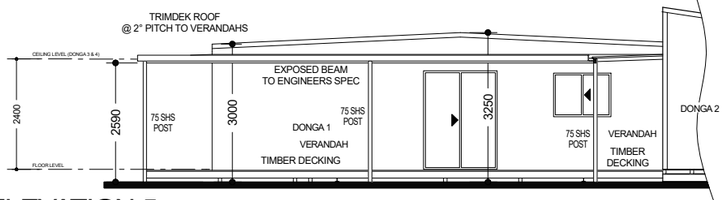

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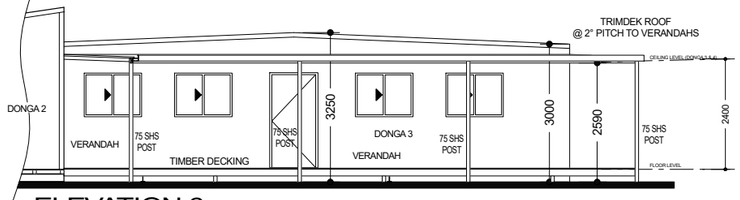

ELEVATION 3
SCALE 1:100




ELEVATION 4
SCALE 1:100




ELEVATION 5
SCALE 1:100




ELEVATION 6
SCALE 1:100

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PROPOSED NEW RESIDENCE FOR :

CHAMBERS

ADDRESS.

LOT 414
CARABAN ROAD
CARABAN

DRAWN: LS
DATE: 12/11/2022

SCALE
1 = 100

| REV | VO # | DRN | DATE |
|---|---|---|---|
| A | ADD PROPOSED LAYOUT | LS | 26/11/2022 |
| B | VERANDAHS | LS | 30/11/2022 |
| C | CERTIFICATION | LS | 28/02/2023 |

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SHEET No. 3 OF 3

# PROPERTY MANAGEMENT PLAN

**Chalet stay at**

**Lot 414 (No. 556) Caraban Road, Caraban**

**June 2023**

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## 1. Property Overview

This Property Management Plan has been prepared on behalf of the residents and property managers, Shawn and Naomi and applies to the chalet at 556 Caraban Road, Caraban. The Plan includes details of the property accommodation and parking; house rules and noise management; as well as booking procedures, complaint handling and other matters managed by the landowner.

The chalet is intended for families and groups of up to 6 people, who are seeking a relaxed, rural retreat along the Moore River. It is not intended for large groups, parties and late-night activities, which are more suited to hotels and tourism precincts.

Guests will be aware of the available car parking spaces within the property prior to booking.

| | |
|---|---|
| **Property Address** | 556 Caraban Road, Caraban |
| **Number of Bedrooms** | Four (4) bedrooms |
| **Max Number of Guests** | Six (6) guests |
| **Car Parking Location** | Two (2) car parking bays provided |
| **Visitors** | Visitors require management consent.<br>No overnight visitors |
| **Pets** | Pets are permitted at the property but must confirm the nature and breed prior to booking |
| **Parties & Gatherings** | No parties or large gatherings permitted |
| **Music & Noise** | No loud music, movies, noise etc to be heard outside the property between 10pm to 7am |
| **Smoking** | No smoking permitted at the property |

## 2. Guest Screening & Booking Process

Any persons that want to book the unit will use the Airbnb website. When a guest requests or books a stay at this property, we can view or determine whether the guest's profile includes their required verification steps, including:

- Contact details including full name(s), phone number & e-mail address
- Acceptance of our stipulated house rules
- Confirmed payment
- Profile photo (if set)
- Government issued ID (such as driver's licence or passport)
- Written reviews/recommendations from other hosts
- Their overall star rating which can be categorised for items such as observance of house rules, cleanliness & communication
- Total number of guests & location based
- Their reason for visiting Perth & booking the property

We have set a "pre-booking questionnaire" requesting applicable responses in relation to the above. Once we have carried out a thorough check of the prospective guest, we then have a right to refuse, accept or cancel the reservation. Prior or after acceptance of the booking, we also send our "party screening" message which essentially reiterates our stance on no parties to be hosted at the premises and encourages guests to cancel their booking if that is their intent.

Our set of house rules are displayed both on the online listing and in our comprehensive guest handbook which is located inside the property in the kitchen. We can add additional house rules to suit the property, location, neighbourhood, or landlord's desires.

Once a guest is confirmed, our direct phone numbers are automatically exchanged for any further required communication. We privately message our guests before, during and after their stays and all the correspondence is saved for our own records.

We anticipate approximately three bookings per week and with a minimum stay length of two (2) nights to deter any unwanted use of the Chalet for parties or gatherings. We also have a booking cut-off time after 7:00pm so that we can't allow last minute and late-night bookings to occur from opportunistic and likely undesirable guests.

## 3. Check-In & Check-Out Procedure

All guests are advised that the check-in and check-out times will be limited as follows:

| Check-in | Check-out |
|---|---|
| **2pm to 10pm** | **7am to 10am** |

Check-in and check-out times from the unit will not be permitted between the hours of 10pm and 7am. Once the Guest(s) is confirmed, the tenants phone numbers are automatically exchanged for any further required communication. We privately message with the Guest(s) before, during and after their stays and all the correspondence is saved for our own records.

Bookings will only be accepted when the tenants are presents during their stay.

## 4. Expectation of Guests and House Rules

When a guest checks in, they are encouraged to read our 'Guest Handbook' which provides them with all the important information they need to know to have an enjoyable, safe & respectful stay.

The Handbook includes the property managers contact details, emergency contact details, emergency plan, house rules, parking rules, bin collection days, nearby amenities, sights, and attractions in the area and more.

Guests will also always have access to the Airbnb platform during their stay and are required to communicate with their property managers on this platform so all details pertaining to their booking are documented. The Airbnb platform also provides guests with the hosts contact details.

The guest handbook which we have created is very comprehensive which significantly mitigates any risk and issues regarding the stays. Included in the Guest handbook is the House Rules – which summarises the rules for all guests and any approved visitors. It also provides property management and emergency contact details.

The Code of Conduct is printed on a one-page, laminated document and affixed in a prominent place/s at each of the dwellings.

The following House Rules are displayed at the property:

1. Parties & Gatherings – This property has a strict no party policy. Prior permission must be obtained from management for any visitors.
2. Music & Noise – All guests must not create excessive noise, that may disturb any surrounding properties. Amplified music, loud movies, or other such entertainment must not be audible from outside the property between 10pm to 9am every day.
3. Outdoor Use – All guests shall ensure that the use of the Verandahs and other outdoor areas are kept to a minimum after 10:00pm. Guests will be notified, should there be any issues that arise.
4. Car Parking – Car parking is to be on-site in the allocated car bays only.

5. Smoking - This property has a strict no smoking policy. If there is a clear odour of any smoking odour upon checkout or cigarette butts have been found, guests will be charged a deodorising fee.
6. Pets – Pets are permitted at the property but must confirm the nature and breed prior to booking.
7. Rubbish - Rubbish and recycling items are to be disposed of and placed in the bins provided on the property. Deposits will not be refunded if rubbish and litter is found outside the property.
8. Security - All doors and windows should be locked when property is not occupied and the security alarm used (where applicable).

## 5. Safety

The property includes compliant RCDs and Smoke Alarms. A licenced electrician may be required to provide an electrical safety certificate from time to time to make sure the property is compliant and safe. We also offer first aid kits.

If required, we can consider fire extinguishers, fire blankets and implementing an emergency safety plan in case of a house fire. In our detailed guest handbook, guests are provided with the contact details for the local police station, hospitals & fire station and that our emergency contact number is '000'.

## 6. Bushfire Emergency Evacuation Plan (BEEP)

A copy of the Bushfire Emergency Evacuation Plan is provided near the front door. Guests will be required to remain calm and follow the instructions of the BEEP in the case of a bushfire emergency.

## 7. Noise Mitigation & Complaints Procedure

Guests and visitors must not create noise which is offensive and excessive to occupiers of neighbouring properties especially between 10pm and 7am at any day of the week, during arrival, and during departure, and at any time throughout the occupancy. Guests and visitors must not engage in any anti- social behaviour and must minimize their impact upon the residential amenity of neighbours and local community.

If guests fail to adhere to our house rules, they will be at risk of having their booking cancelled immediately. We and/or the police may attend in person to have the guest/s removed, lockbox code and door lock/s may also be required to be changed depending on the circumstances.

If we receive any complaints about guests, they will be dealt with immediately upon receipt of said complaint. We will contact the guests informing them of the situation and any breach of house rules and based on severity of the breach then the reservation may be terminated. We are contactable 24/7 and our phone numbers and e-mail addresses are provided to our guests upon confirmation of booking and are also advertised in the property for easy access.

We are more than happy to provide these contact details to nearby neighbours for us to be even more effective in managing our properties. Professionals and/or police may be engaged to attend during & after normal business hours to minimise disruptions to neighbours.

Any complainant will be kept informed throughout the process and will be encouraged to provide evidence to support the cause of us taking swift action. From receipt of a complaint, it is extremely rare for an issue to extend beyond just a few minutes, and we aim to resolve all issues within 5 to 10 minutes total.

## 8. Property Managers details for emergencies and complaints

Nadine and Scott live on the property and will be responsible for the management of the chalet. Should any problems arise, their mobile contact details are listed below:

| | |
|---|---|
| Mobile (Nadine) | 0422 414 113 |
| Mobile (Scott) | 0417 910 168 |

Our contact details are made available to all guests for properties under our management and we are obliging to provide our contact details to all adjacent neighbours in the rare chance of an issue arising. We are contactable and will attend the property in person within an hour for emergencies.

**APPENDIX A – COMPLAINTS REGISTER**

| DATE | TIME | SOURCE OF COMPLAINT | NATURE OF COMPLAINT | HOW THE MATTER WAS RESOLVED |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# House Rules

## These rules apply to all guests and visitors to this property

1. **Parties & Gatherings** – This property has a strict no party policy.
2. **Music & Noise** – All guests must not create excessive noise, that may disturb any surrounding properties. Amplified music, loud movies, or other such entertainment must not be audible from outside the property between 10pm to 7am every day.
3. **Outdoor Use –** All guests shall ensure that the use of the Verandahs and other outdoor areas are kept to a minimum after 10:00pm. Guests will be notified, should there be any issues that arise.
4. **Car Parking** – Car parking is to be on-site in the allocated car bays only. Guests must not block access to neighbouring driveways / properties. Use of the visitor bays is not permitted.
5. **Smoking** - This property has a strict no smoking policy. If there is a clear odour of any smoking odour upon checkout or cigarette butts have been found, guests will be charged a deodorising fee.
6. **Pets** – Pets are permitted at the property but must confirm the nature and breed prior to booking. If there is a clear animal odour and/or if pet hair has been discovered upon checkout, guests will be charged a cleaning fee.
7. **Rubbish** - Rubbish and recycling items are to be disposed of and placed in the bins provided on the property. Deposits will not be refunded if rubbish and litter is found outside the property.
8. **Security** - All doors and windows should be locked when the property is not occupied, and the security alarm used (where applicable).

## Property Manager / Emergency Contact

| Property Manager(s) and Residents | |
|---|---|
| Mobile (Nadine) | 0422 414 113 |
| Mobile (Scott) | 0417 910 168 |

# Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address: Lot 414 Caraban Road, Caraban

Site visit: Yes ☑ No ☐

Date of site visit (if applicable): Day 07 Month 03 Year 2023

Report author or reviewer: Kathy Nastov

WA BPAD accreditation level (please circle):

Not accredited ☐ Level 1 BAL assessor ☐ Level 2 practitioner ☐ Level 3 practitioner ☑

If accredited please provide the following.

BPAD accreditation number: 27794 Accreditation expiry: Month August Year 2023

Bushfire management plan version number: 1.0

Bushfire management plan date: Day 24 Month 05 Year 2023

Client/business name: Scott Chatwin

| | Yes | No |
|---|---|---|
| **Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?** | | ✔ |
| **Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the bushfire protection criteria elements)?** | | ✔ |

| Is the proposal any of the following (see SPP 3.7 for definitions)? | Yes | No |
|---|---|---|
| **Unavoidable development (in BAL-40 or BAL-FZ)** | | ✔ |
| **Strategic planning proposal (including rezoning applications)** | | ✔ |
| **High risk land-use** | | ✔ |
| **Vulnerable land-use** | ✔ | |

None of the above ☐

**Note:** Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

Why has it been given one of the above listed classifications (E.g. Considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

Short Term accommodation

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Signature of report author or reviewer 

Date 24/05/2023

BUSHFIRE PRONE PLANNING

# Bushfire Management Plan (BMP)




Produced to meet the relevant requirements of STATE PLANNING POLICY 3.7 Planning in Bushfire Prone Areas & Guidelines

**Lot 414 Caraban Road, Caraban**

**Shire of Gingin**

**Development Application - Vulnerable Land Use**

**24 May 2023**

**Job Reference No: 230813**

**BPP GROUP PTY LTD T/A BUSHFIRE PRONE PLANNING**

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**PO BOX 388**
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**08 6477 1144 | admin@bushfireprone.com.au**

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| Co-Author: | Kyle Calder-Bryan | |

| VERSION HISTORY | | |
|---|---|---|
| Version | Status/Details | Date |
| 1.0 | Original | 31 May 2023 |
| - | - | |

BMP (Master) Template v9.15

| DISTRIBUTION | | | | | |
|---|---|---|---|---|---|
| Destination | | Version | No. Copies | Hard Copy | Electronic Copy |
| Person | Email | | | | |
| Scott Chatwin | | 1.0 | | ☐ | ☒ |
| | | - | | ☐ | ☐ |

***Limitations:*** *The protection measures that will be implemented based on information presented in this Bushfire Management Plan are minimum requirements and they do not guarantee that buildings or infrastructure will not be damaged in a bushfire, persons injured, or fatalities occur either on the subject site or off the site while evacuating.*

*This is substantially due to the unpredictable nature and behaviour of fire and fire weather conditions. Additionally, the correct implementation of the required protection measures (including bushfire resistant construction) and any other required or recommended measures, will depend upon, among other things, the ongoing actions of the landowners and/or operators over which Bushfire Prone Planning has no control.*

*All surveys, forecasts, projections and recommendations made in this report associated with the proposed development are made in good faith based on information available to Bushfire Prone Planning at the time. All maps included herein are indicative in nature and are not to be used for accurate calculations.*

*Notwithstanding anything contained therein, Bushfire Prone Planning will not, except as the law may require, be liable for any loss or other consequences whether or not due to the negligence of their consultants, their servants or agents, arising out of the services provided by their consultants.*

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## SUMMARY STATEMENTS

| THIS DOCUMENT – STATEMENT OF PURPOSE |
|---|

**The Bushfire Management Plan (BMP)**

The BMP sets out the required package of bushfire protection measures to lessen the risks associated with a bushfire event. It establishes the responsibilities to implement and maintain these measures.

The BMP also identifies the potential for any negative impact on any environmental, biodiversity and conservation values that may result from the application of bushfire protection measures or that may limit their implementation.

**Risks Associated with Bushfire Events**

The relevant risks are the potential for loss of life, injury, or destroyed or damaged assets which results in personal loss and economic loss. For a given site, the level of that risk to persons and assets (the exposed elements) is a function of the potential threat levels generated by the bushfire hazard, and the level of exposure and vulnerability of the at risk elements to the threats.

**Bushfire Protection Measures**

The required package of protection measures is established by *State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7),* its associated *Guidelines* and any other relevant guidelines or position statements published by the Department of Planning, Lands and Heritage. These measures are limited to those considered by the WA planning authorities as necessary to be addressed for the purpose of land use planning. They do not encompass all available bushfire protection measures as many are not directly relevant to the planning approval stage. For example:

- Protection measures to reduce the vulnerability of buildings to bushfire threats is primarily dealt with at the building application stage. They are implemented through the process of applying the Building Code of Australia (Volumes 1 and 2 of the national Construction Code) in accordance with WA building legislation and the application of construction requirements based on a building's level of exposure - determined as a Bushfire Attack Level (BAL) rating); or
- Protection measures to reduce the threat levels of consequential fire (ignited by bushfire and involving combustible materials surrounding and within buildings) and measures to reduce the exposure and vulnerability of elements at risk exposed to consequential fire, are not specifically considered.

The package of required bushfire protection measures established by the Guidelines includes:

- The requirements of the bushfire protection criteria which consist of:
  - Element 1: Location (addresses threat levels).
  - Element 2: Siting and Design of Development (addresses exposure levels of buildings).
  - Element 3: Vehicular Access (addresses exposure and vulnerability levels of persons).
  - Element 4: Water (addresses vulnerability levels of buildings).
  - Element 5: Vulnerable Tourism Land Uses (addresses exposure and vulnerability as per Elements 1-4 but in use specific ways and with additional considerations of persons exposure and vulnerability).
- The requirement to develop Bushfire Emergency Plans / Information for 'vulnerable' land uses for persons to prepare, respond and recover from a bushfire event (this addresses vulnerability levels).
- The requirement to assess bushfire risk and incorporate relevant protection measures into the site emergency plans for 'high risk' land uses (this addresses threat, exposure and vulnerability levels).

**Compliance of the Proposed Development or Use with SPP 3.7 Requirements**

The BMP assesses the capacity of the proposed development or use to implement and maintain the required 'acceptable' solutions and any additionally recommended bushfire protection measures - or its capacity to satisfy the policy intent through the justified application of additional bushfire protection measures as supportable 'alternative' solutions.

| THE PROPOSED DEVELOPMENT/USE – BUSHFIRE PLANNING COMPLIANCE SUMMARY | | |
|---|---|---|
| **Environmental Considerations** | | **Assessment Outcome** |
| Will land with identified environmental, biodiversity and conservation values limit the full application of the required bushfire protection measures? | | No |
| Will land with identified environmental, biodiversity and conservation values need to be managed in the implementation and maintenance of the bushfire protection measures - but not limit their application? | | No |
| **Required Bushfire Protection Measures**<br>The Acceptable Solutions of the Bushfire Protection Criteria (Guidelines) | | **Assessment Outcome** |
| Element | The Acceptable Solutions | |
| 5: Vulnerable Tourism Land Uses | | |
| Other Short Term Accommodation | A5.7a Siting and design – APZ – caravan park | N/A |
| | A5.7b Siting and design – APZ – certain accommodation | N/A |
| | A5.7c Siting and design – APZ – all other accommodation | Fully Compliant |
| | A5.7d Siting and design – APZ – landscape management | N/A |
| | A5.7e Siting and design – onsite shelter – pedestrian paths | N/A |
| | A5.7f Siting and design – onsite shelter – exposure to hazard | N/A |
| | A5.7g Siting and design – onsite shelter – construction requirements. | N/A |
| | A5.8.1a Vehicular access – internal access/private driveway - availability | Fully Compliant |
| | A5.8.1b Vehicular access – internal access/private driveway – tech. req. | Fully Compliant |
| | A5.8.1c Vehicular access – signage | Fully Compliant |
| | A5.8.2a Vehicular access – multiple access routes | Fully Compliant |
| | A5.8.2b Vehicular access – no-through roads – maximum length | N/A |
| | A5.8.2c Vehicular access – EAW – alternative access option | N/A |
| | A5.8.2d Vehicular access – public roads - technical requirements | N/A |
| | A5.8.2e Vehicular access – access limitations - onsite shelter option | N/A |
| | A5.9a Provision of water - reticulated | N/A |
| | A5.9b Provision of water – non-reticulated | Fully Compliant |

| Other 'Bushfire Planning' Documents to Be Produced<br>This necessity for additional documents is determined by the proposed development/use type and the requirements established by SPP 3.7 and the associated Guidelines (as amended).<br>They may be produced concurrently or subsequent to the BMP. Relevant actions will be identified within Section 6 'Responsibilities for Implementation of Bushfire Protection Measures. | **Required** |
|---|---|
| **Bushfire Emergency Plan:** An operational document presenting prevent, prepare, respond and recover procedures and associated actions. As necessary, supporting information to justify determinations is included. | Yes |
| Summary Statement: The proposal is a Vulnerable Land Use outside of a built-out residential area and as such a Bushfire Emergency Plan (BEP) to manage the safety of occupants in a bushfire event is likely required. The BEP is a separate document for operation use by the landowners of the development site. | |
| **Bushfire Emergency Information (Poster):** As a concise response information poster for certain vulnerable land uses. | Yes |
| Summary Statement: The Local Government may request this approach in lieu of a complex BEP due to the small scale of the proposed land use. | |
| **Bushfire Emergency Information (Content):** As content for inclusion into the Site's Emergency Plan for certain high risk land uses: | No |
| Summary Statement: N/A. | |

# 1 PROPOSAL DETAILS AND THE BUSHFIRE MANAGEMENT PLAN

## 1.1 The Proposed Development/Use Details, Plans and Maps

| | | |
|---|---|---|
| **The Proposal's Planning Stage**<br>For which certain bushfire planning documents are required to accompany the planning application. | | Development Application |
| **The Subject Land/Site** | | Lot 414 Caraban Road, Shire of Gingin |
| **Total Area of Subject Lot/Site** | | 16.9691 hectares |
| **Number of Additional Lots Created** | | N/A |
| **Primary Proposed Construction** | **Type(s)** | New Building(s) |
| | **NCC Classification** | Class 1a (house) |
| **The 'Specific' Land Use Type** for **Bushfire Planning**<br>When applicable, this classification establishes a requirement to conduct assessments and develop documents that are additional to this Bushfire Management Plan. | | Vulnerable Land Use |
| **Factors Determining the 'Specific' Land Use Type** | | The proposed development is a land use that is categorised as a Short term accommodation (other than B&B/Holiday House) including motel, serviced apartments, tourist development (includes cabins and chalets), holiday accommodation and caravan park (which incorporates camping grounds).<br><br>The proposed tourism land use involves visitors who are unfamiliar with the surroundings and/or where they present evacuation challenges.<br><br>The proposal would benefit from a Bushfire Emergency Plan to manage the safety of occupants in a bushfire event. Therefore, it should be treated as 'vulnerable'. |
| **Description of the Proposed Development/Use** | | |
| The Bushfire Management Plan has been prepared to accompany a Development Application for the construction of a chalet located at lot 414 Caraban Road, the Shire of Gingin. | | |

Figure 1.1: Proposed development plan.



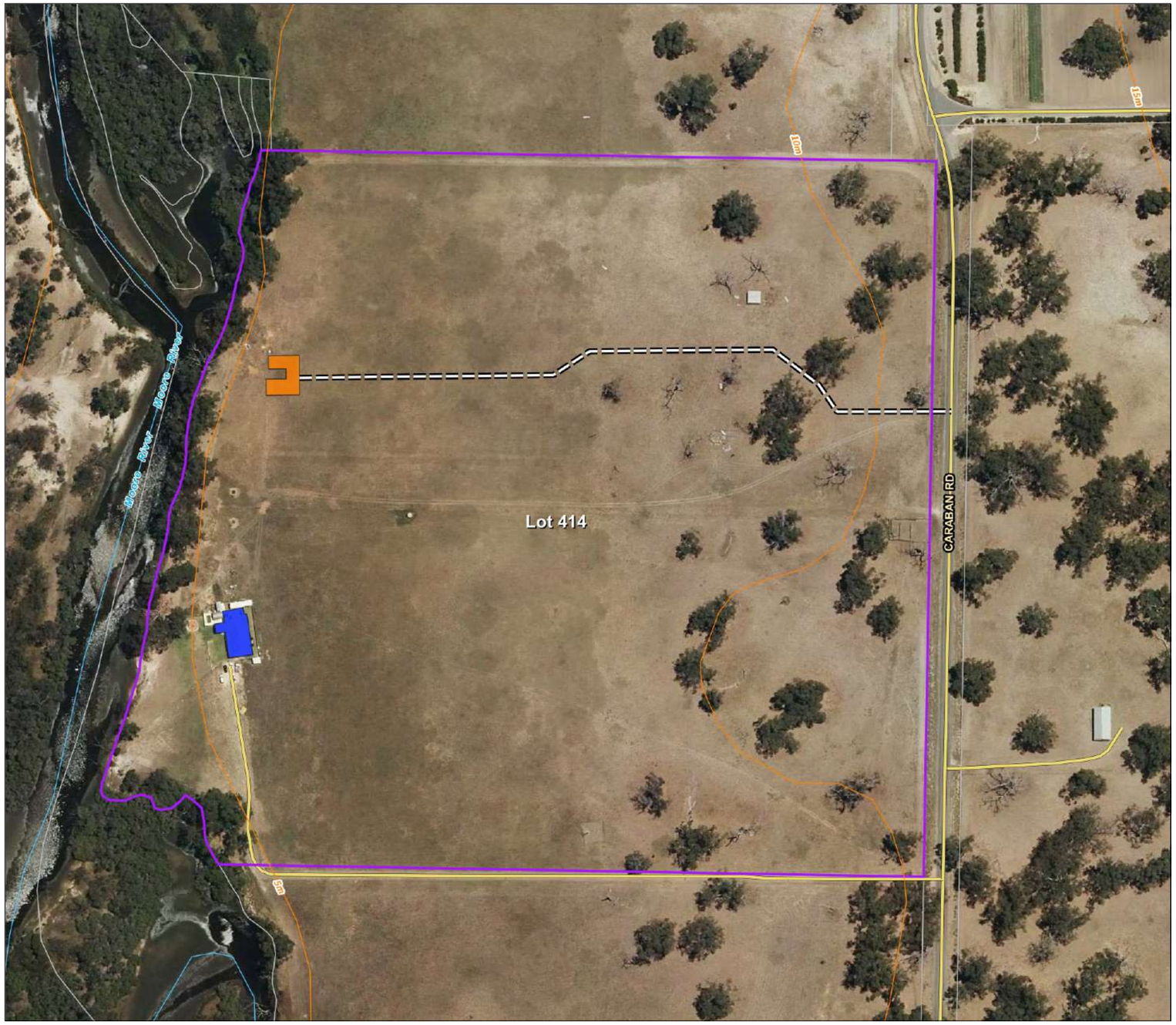



*Figure 1.2*

**Proposed Development**

Lot 414 on Plan 231045
Caraban Road
CARABAN
SHIRE OF GINGIN

------ LEGEND ------

- Subject Site
- Cadastral
- Elevation (m)
- Access-Egress

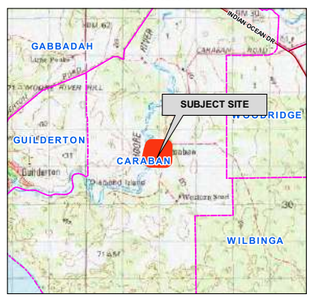
**Buildings**

- Existing Dwelling
- Proposed Chalet

0 20 40 60 80

Metres

------ LOCALITY ------




AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: Kyle Calder-Bryan 23-05-2023
SCALE (A3): 1 : 2000

BUSHFIRE PRONE PLANNING

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220813 - Fig 1.2_DEV_Lot 414 Caraban Road Caraban.qgz

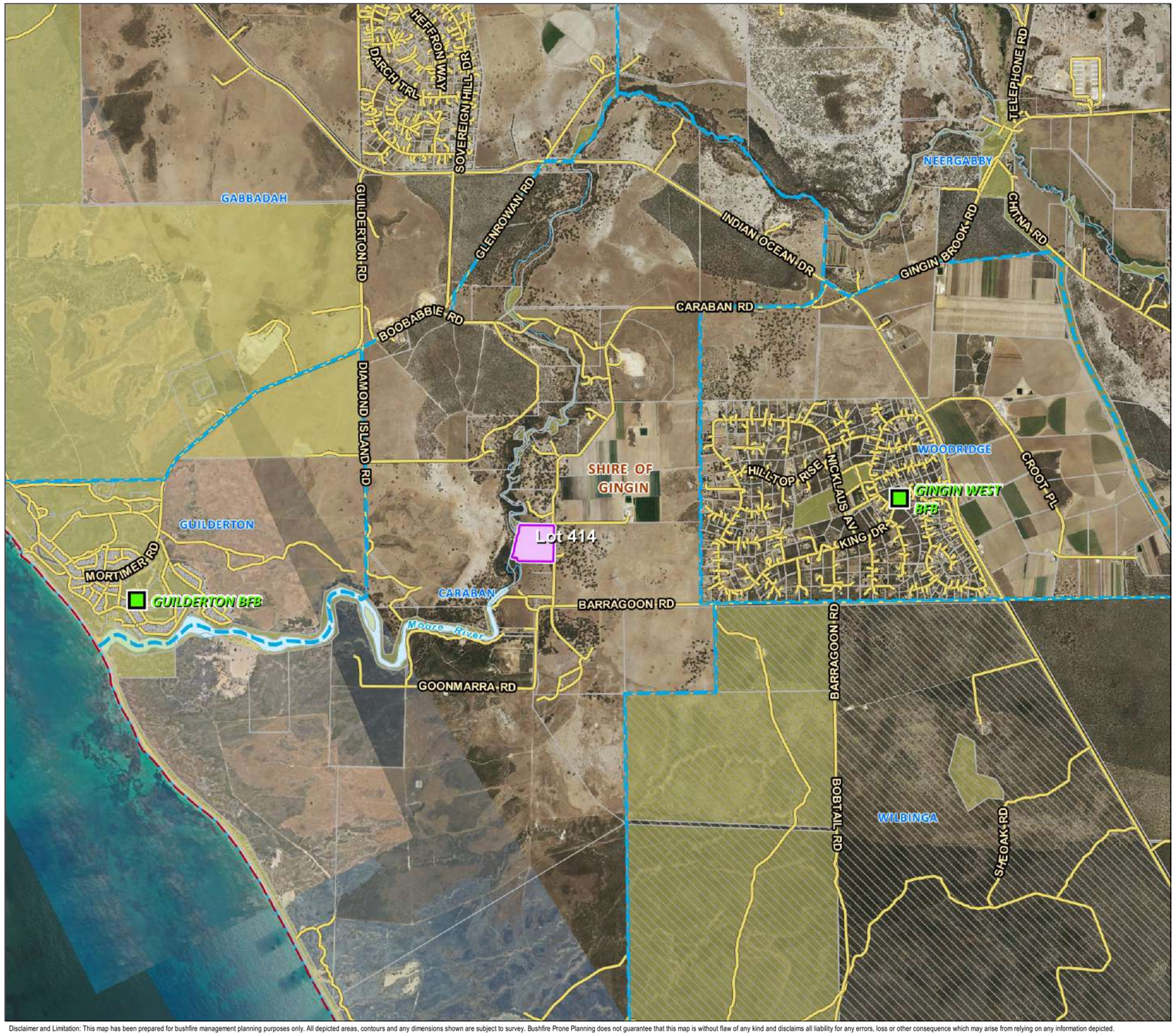



*Figure 1.3*

## Location Map

Lot 414 on Plan 231045
Caraban Road
CARABAN
SHIRE OF GINGIN

------ LEGEND ------

- Subject Site
- Cadastral
- Reserves
- Localities_Suburb

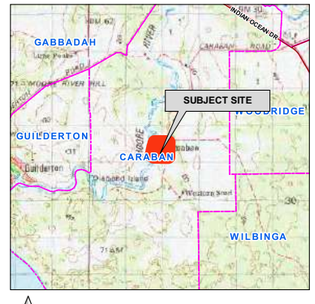
**DFES Stations (DFES-023)**

- Bush Fire Brigade

2000

Metres

------ LOCALITY ------




AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map by: Kyle Calder-Bryan 23-05-2023
SCALE (A3): 1 : 40000

BUSHFIRE PRONE PLANNING

220813 - Fig 1.3_LOC_Lot 414 Caraban Road Caraban.qgz

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WHERE SPP 3.7 AND THE GUIDELINES ARE TO APPLY – DESIGNATED BUSHFIRE PRONE AREAS

All higher order strategic planning documents, strategic planning proposals, subdivisions and development applications located in designated bushfire prone areas need to address SPP 3.7 and its supporting Guidelines. This also applies where an area is not yet designated as bushfire prone but is proposed to be developed in a way that introduces a bushfire hazard.

For development applications where only part of a lot is designated as bushfire prone and the proposed development footprint is wholly outside of the designated area, the development application will not need to address SPP 3.7 or the Guidelines. (Guidelines DPLH 2021 v1.4, s1.2).

For subdivision applications, if all the proposed lots have a BAL-LOW indicated, a BMP is not required. (Guidelines DPLH 2021 v1.4, s5.3.1).

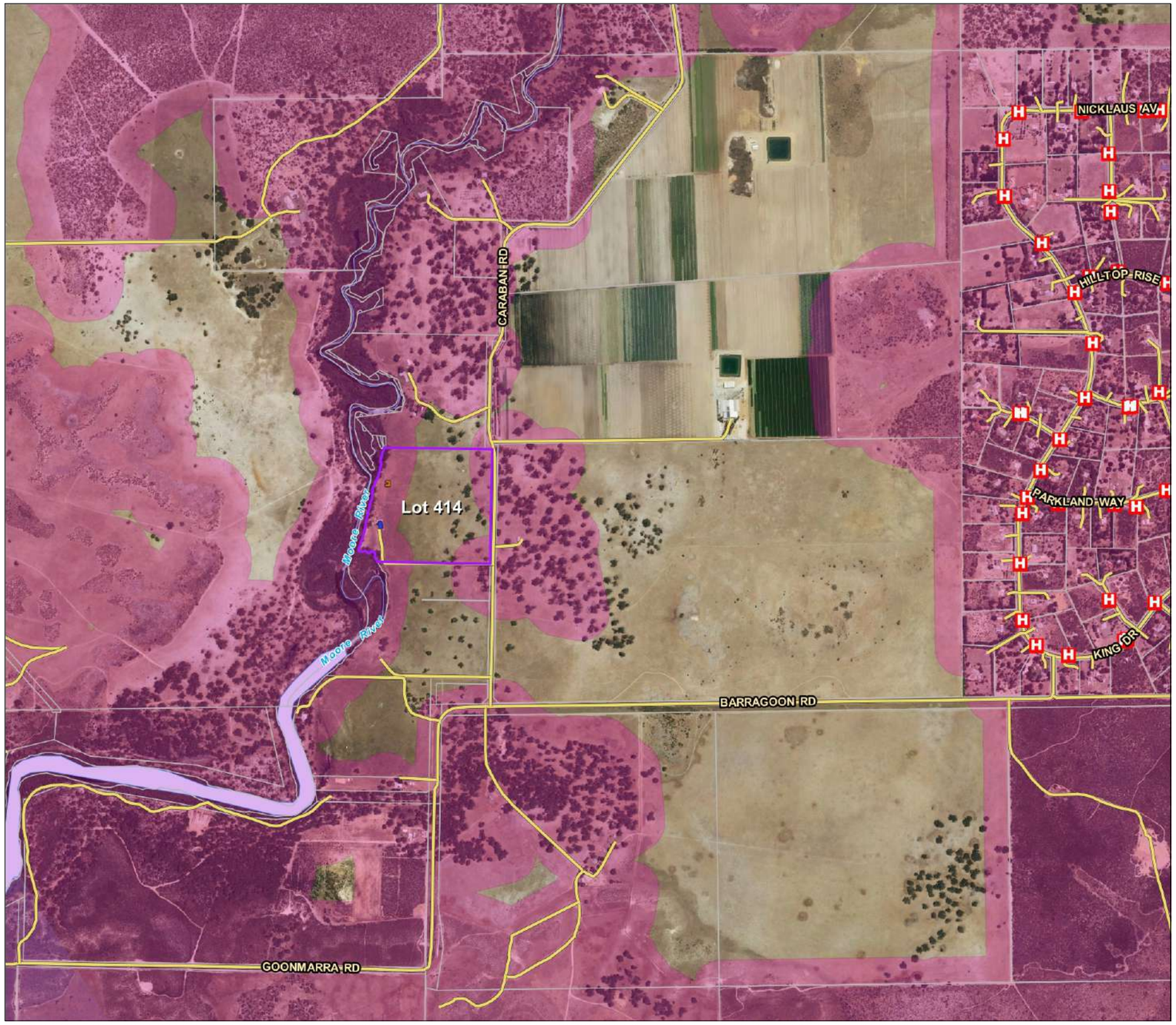



*Figure 2.1*

## Environmental Considerations Map

Lot 414 on Plan 231045
Caraban Road
CARABAN
SHIRE OF GINGIN

------ LEGEND ------

- Subject Site
- Cadastral
- Hydrants
- Bush Fire Prone Areas

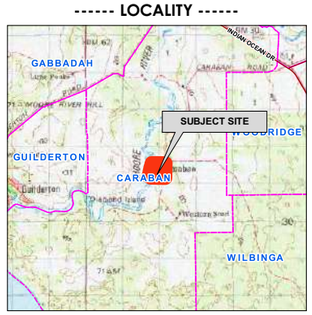
**Buildings**

- Existing Dwelling
- Proposed Chalet

0 100 200 300 400 500

Metres

------ LOCALITY ------




AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: Kyle Calder-Bryan 23-05-2023
SCALE (A3): 1 : 12500

220813 - Fig 1.4_BPA_Lot 414 Caraban Road Caraban.qgz

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## 1.2 The Bushfire Management Plan (BMP)

### 1.2.1 Commissioning and Purpose

| | |
|---|---|
| Landowner / proponent: | Scott Chatwin |
| Bushfire Prone Planning commissioned to produce the BMP by: | Ryan Djanegara, Developed. |
| Purpose of the BMP: | To assess the proposal's ability to meet all relevant requirements established by State Planning Policy 3.7: Planning in Bushfire Prone Areas (SPP 3.7), the associated 'Guidelines and any relevant Position Statements; and<br><br>To satisfy the requirement for the provision of a Bushfire Management Plan to accompany the development application. |
| BMP to be submitted to: | Shire of Gingin |

### 1.2.1 Other Documents with Implications for Development of this BMP

This section identifies any known assessments, reports or plans that have been conducted and prepared previously, or are being prepared concurrently, and are relevant to the planned proposal for the subject. They potentially have implications for the assessment of bushfire threats and the identification and implementation of the protection measures that are established by this Bushfire Management Plan.

Table 1.4: Other relevant documents that may influence threat assessments and development of protection measures.

| RELEVANT DOCUMENTS | | | | | |
|---|---|---|---|---|---|
| Document | Relevant | Currently Exists | To Be Developed | Copy Provided by Proponent / Developer | Title |
| Structure Plan | No | No | No | No | - |
| Bushfire Management Plan | No | No | No | No | - |
| Bushfire Emergency Plan or Information | Yes | No | Yes | No | - |
| Implications for this BMP: A BEP will accompany this Bushfire Management Plan as ana additional bushfire protection criteria. | | | | | |
| Bushfire Risk Assessment and Management Report | No | No | No | No | - |
| Environmental Asset or Vegetation Survey | No | No | No | No | - |
| Landscaping and Revegetation Plan | No | No | No | No | - |
| Land Management Agreement | No | No | No | No | - |

## 2 BUSHFIRE PRONE VEGETATION – ENVIRONMENTAL & ASSESSMENT CONSIDERATIONS

### 2.1 Environmental Considerations – 'Desktop' Assessment

*This 'desktop' assessment must not be considered as a replacement for a full Environmental Impact Assessment. It is a summary of potential environmental values at the subject site, inferred from information contained in listed datasets and/or reports, which are only current to the date of last modification.*

*These data sources must be considered indicative where the subject site has not previously received a site-specific environmental assessment by an appropriate professional.*

Many bushfire prone areas also have high biodiversity values. Consideration of environmental priorities within the boundaries of the land being developed can avoid excessive or unnecessary modification or clearing of vegetation. Approval processes (and exemptions) apply at both Commonwealth and State levels.

Any 'modification' or 'clearing' of vegetation to reduce bushfire risk is considered 'clearing' under the ***Environmental Protection Act 1986*** (EP Act) and requires a clearing permit under the ***Environmental Protection (Clearing of Native Vegetation) Regulations 2004*** (Clearing Regulations) – unless for an exempt purpose.

Clearing native vegetation is an offence, unless done under a clearing permit or the clearing is for an exempt purpose. Exemptions are contained in the EP Act or are prescribed in the Clearing Regulations (note: these do not apply in environmentally sensitive areas).

The ***Department of Water and Environmental Regulation*** (DWER) is responsible for issuing 'clearing' permits and the framework for the regulation of clearing. Approvals under other legislation, from other agencies, may also be required, dependent on the type of flora or fauna present.

**Local Planning Policy or Local Biodiversity Strategy:** Natural areas that are not protected by the above Act and Regulation (or any other National or State Acts) may be protected by a local planning policy or local biodiversity strategy. Permission from the local government will be required for any modification or removal of native vegetation in these Local Natural Areas (LNA's). Refer to the relevant local government for detail.

For further Information refer to Guidelines v1.4, the Bushfire and Vegetation Factsheet - WAPC, Dec 2021 and https://www.der.wa.gov.au/our-work/clearing-permits

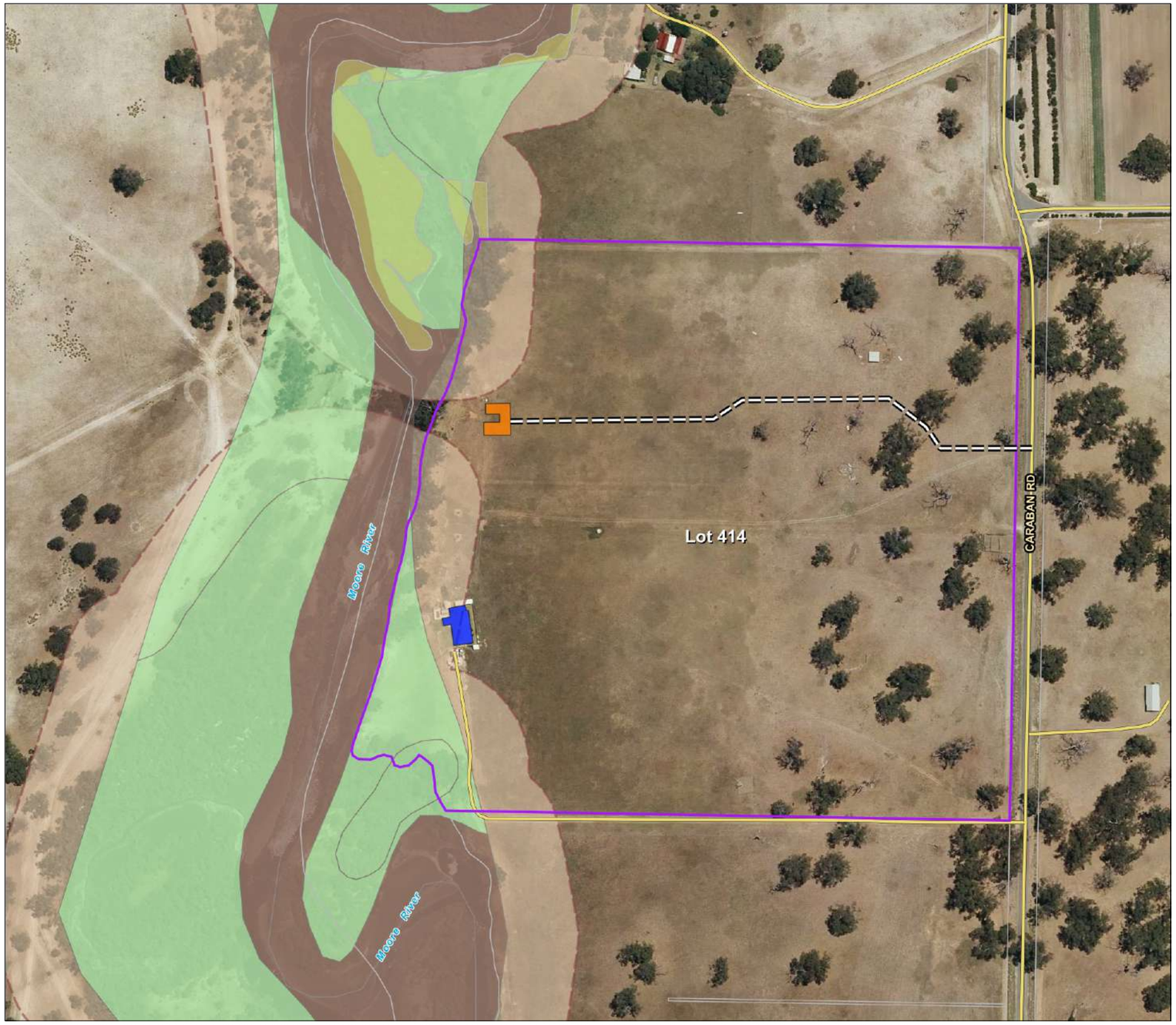



*Figure 2.1*

## Environmental Considerations Map

Lot 414 on Plan 231045
Caraban Road
CARABAN
SHIRE OF GINGIN

------ LEGEND ------

- Subject Site
- Cadastral
- Clearing Regulations
- Reserves

**Geomorphic Wetlands Swan Coastal Plain**

- Floodplain
- River

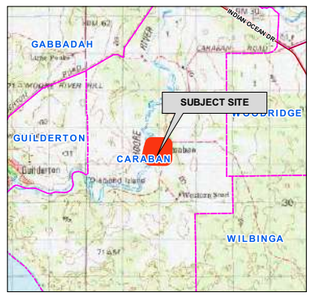
**Buildings**

- Existing Dwelling
- Proposed Chalet

0 20 40 60 80

Metres

------ LOCALITY ------




AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: Kyle Calder-Bryan 23-05-2023
SCALE (A3): 1 : 2500

BUSHFIRE PRONE PLANNING

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220813 - Fig 2.1_ENV_Lot 414 Caraban Road Caraban.qgz

### 2.1.1 Declared Environmentally Sensitive Areas (ESA)

| IDENTIFICATION OF RELEVANT ENVIRONMENTALLY SENSITIVE AREAS | | | | | | | |
|---|---|---|---|---|---|---|---|
| ESA Class | Relevant to Proposal | Influence on Bushfire Threat Levels and / or Application of Bushfire Protection Measures | Relevant Dataset | Information Source(s) Applied to Identification of Relevant Vegetation | | | Further Action Required |
| | | | | Dataset | Landowner or Developer | Environmental Asset or Vegetation Survey | |
| Wetlands and their 50m Buffer (Ramsar, conservation category and nationally important) | Possible | No | DBCA-010 and 011, 019, 040, 043, 044 | ☒ | ☐ | ☐ | Confirm with relevant agency |
| Bush Forever | No | No | DPLH-022, SPP 2.8 | ☒ | ☐ | ☐ | None |
| Threatened and Priority Flora + 50m Continuous Buffer | No | No | DBCA-036 | Restricted Scale of Data Available (security) | ☐ | ☐ | Data not available - confirm with relevant agency |
| Threatened Ecological Community | No | No | DBCA-038 | | ☐ | ☐ | Data not available - confirm with relevant agency |
| Heritage Areas National / World | No | No | Relevant register or mapping | ☒ | ☐ | ☐ | None |
| Environmental Protection (Western Swamp Tortoise) Policy 2002 | No | No | DWER-062 | ☒ | ☐ | ☐ | None |

**DESCRIPTION OF THE IDENTIFIED ENVIRONMENTALLY SENSITIVE AREAS:**

The shire of Gingin has a requirement for buildings to be a minimum of 50 metres from a water course when a foreshore reserve is not present. If this is applied to the water course adjacent to the subject lot boundary, the development may be required to be moved to allow relevant development to occur.

### 2.1.2 Other Protected Vegetation on Public Land

| IDENTIFICATION OF PROTECTED VEGETATION ON PUBLIC LAND | | | | | | | |
|---|---|---|---|---|---|---|---|
| Land with Environmental, Biodiversity, Conservation and Social Values | Relevant to Proposal | Influence on Bushfire Threat Levels and / or Application of Bushfire Protection Measures | Relevant Dataset | Information Source(s) Applied to Identification of Relevant Vegetation | | | Further Action Required |
| | | | | Dataset | Landowner or Developer | Environmental Asset or Vegetation Survey | |
| Legislated Lands (tenure includes national park/reserve, conservation park, crown reserve and state forest) | No | No | DBCA-011 | ☒ | ☐ | ☐ | None |
| Conservation Covenants | No | No | DPIRD-023 | Only Available to Govt. | ☐ | ☐ | Confirm with relevant agency |
| National World Heritage Areas | No | No | - | ☒ | ☐ | ☐ | None |
| Designated Public Open Space | No | No | - | ☒ | ☐ | ☐ | None |

### 2.1.3 Locally Significant Conservation Areas – Local Natural Areas (LNA)

| IDENTIFICATION OF LOCALLY SIGNIFICANT CONSERVATION AREAS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Land with Environmental, Biodiversity and Conservation Values | Relevant to Proposal | Influence on Bushfire Threat Levels and / or Application of Bushfire Protection Measures | Relevant Dataset | Information Source(s) Applied to Identification of Relevant Vegetation | | | Further Action Required |
| | | | | Dataset | Landowner or Developer | Environmental Asset or Vegetation Survey | |
| Native Vegetation / Remnant Vegetation | Yes | Possible | Identified mapping (Figure 2.1) | ☒ | ☐ | ☐ | Confirm with relevant agency |
| Riparian Zones / Foreshore Areas | Possible | Possible | | ☒ | ☐ | ☐ | Confirm with relevant agency |
| Habitat Vegetation and Wildlife Corridors | No | No | | ☒ | ☐ | ☐ | None |

**DESCRIPTION OF THE IDENTIFIED AREA(S) OF VEGETATION**

The shire of Gingin has a requirement for buildings to be a minimum of 50 metres from a water course when a foreshore reserve is not present. If this is applied to the water course adjacent to the subject lot boundary, the development may be required to be moved to allow relevant the development to occur.

### 2.1.4 Response of Proposed Development to Identified Environmental Limitations

Consideration of the implications that identified protected areas of vegetation (i.e., those with environmental and subject to conservation) have for the proposed development.

| PROPOSED DEVELOPMENT RESPONSE TO IDENTIFIED 'PROTECTED' VEGETATION | |
|---|---|
| The existence of 'protected' areas of vegetation has implications for the ability of the proposed development to reduce potential bushfire impact through modification or removal of vegetation. | No |
| **Application of Design and/or Construction Responses to Limit Vegetation Modification or Removal** | |
| Modify the development location to reduce exposure by increasing separation distance. | No |
| N/A. | |
| Redesign development, structure plan or subdivision. | No |
| N/A. | |
| Reduction of lot yield where this can increase available separation distances. | No |
| N/A. | |
| Cluster development to limit modification or removal of vegetation. | No |
| N/A. | |
| Construct building(s) to the requirements corresponding to higher BAL ratings to reduce required separation distances. | No |
| N/A. | |

## 2.2 Bushfire Assessment Considerations

### 2.2.1 Planned Onsite Vegetation Landscaping

Identification of areas of the subject site planned to be landscaped, creating the potential for increased or decreased bushfire hazard for proposed development.

| PLANNED LANDSCAPING | |
|---|---|
| Relevant to Proposal: | No |
| No planned landscaping is planned to occur on the subject site. | |

### 2.2.2 Planned / Potential Offsite Rehabilitation or Re-Vegetation

Identification of areas of land adjacent to the subject site on which re-vegetation (as distinct from natural re-generation) will or may occur and is likely to present a greater bushfire hazard for proposed development.

| POTENTIAL RE-VEGETATION PROGRAMS | | |
|---|---|---|
| Land with Environmental, Biodiversity, Conservation and Social Values | Relevant to Proposal | Description |
| Riparian Zones / Foreshore Areas | No | N/A. |
| Wetland Buffers | No | N/A. |
| Legislated Lands | No | N/A. |
| Public Open Space | No | N/A. |
| Road Verges | No | N/A. |
| Other | No | N/A. |

### 2.2.3 Identified Requirement to Manage, Modify or Remove Onsite or Offsite Vegetation

Identification of native vegetation subject to management, modification or removal.

| REQUIREMENT TO MANAGE, MODIFY OR REMOVE NATIVE VEGETATION | |
|---|---|
| Has a requirement been identified to manage, modify or remove **onsite** native vegetation to establish the required bushfire protection measures on the subject site? | No |
| As depicted within Figure 3.2, only Class G grassland will be required to be managed in order to achieve the appropriate Asset Protection Zone. | |
| Is approval, from relevant state government agencies and/or the local government, to modify or remove **onsite** native vegetation required?<br>(Note: if 'Yes' evidence of its existence should be provided in this BMP). | No |
| Has a requirement been identified to manage, modify or remove **offsite** native vegetation to establish the required bushfire protection measures on the subject site? | No |
| Is written approval required, from relevant state government agencies and/or the local government, that permits the landowner, or another identified party, to modify or remove **offsite** | No |

| | |
|---|---|
| bushfire prone vegetation and/or conduct other works, to establish an identified bushfire protection measure(s)?<br><br>If 'Yes', appropriate evidence of the approval or how it is to be established, shall be provided in this BMP as an addendum. | |
| Is a written management agreement required that states the obligation of the landowner, or another responsible party, to manage defined areas of **offsite** bushfire prone vegetation, in perpetuity, to ensure the conditions of no fire fuels and/or low threat vegetation and/or vegetation managed in a minimal fuel condition, continue to be met?<br><br>If 'Yes', appropriate evidence of the agreement or how it is to be established, shall be provided in this BMP as an addendum. | No |

### 2.2.4 Variations to Assessed Areas of Classified Vegetation to be Applied

| FOR THE PROPOSED DEVELOPMENT<br>SITUATIONS TO BE ACCOUNTED FOR IN ASSESSING THE POTENTIAL BUSHFIRE IMPACT (BAL) | |
|---|---|
| Area(s) of land will be subject to future vegetation rehabilitation or re-vegetation that will require a change to a higher threat classification of vegetation on that land to. (Note: this is not regeneration to the mature natural state which is accounted for in the 'existing state' assessment in accordance with AS 3959:2018). | No |
| Modification of existing area(s) of classified vegetation due to the implementation of the proposed development and/or prior to the site's occupancy or use. This modification will require a change to a lower threat classification (or exclusion from classification) for that area of vegetation. | No |
| Complete removal of existing area(s) of classified vegetation due to the implementation of the proposed development and/or prior to the site's occupancy or use. This modification will require an exclusion from classification for that area of vegetation. | Yes |
| Refer to Figure 3.1 Classified Vegetation & Topography Map – Post Development to view the required management of Class G grassland vegetation due to development and the required APZ. | |

## 3 BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT

**BUSHFIRE ATTACK LEVELS (BAL) - UNDERSTANDING THE RESULTS**

The potential transfer (flux/flow) of radiant heat from the bushfire to a receiving object is measured in kW/m$^2$. The AS 3959:2018 BAL determination methodology establishes the ranges of radiant heat flux that correspond to each bushfire attack level. These are identified as BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ.

The bushfire performance requirements for certain classes of buildings are established by the Building Code of Australia (Vol. 1 & 2 of the NCC). The BAL will establish the bushfire resistant construction requirements that are to apply in accordance with AS 3959:2018 - *Construction of buildings in bushfire prone areas* and the NASH Standard – *Steel framed construction in bushfire areas (NS 300 2021),* whose solutions are deemed to satisfy the NCC bushfire performance requirements.

**DETERMINED BAL RATINGS**

A BAL Certificate can be issued for a determined BAL. A BAL can only be classed as 'determined' for an existing or future building/structure when:

1. It's final design and position on the lot are known and the stated separation distance from classified bushfire prone vegetation exists and can justifiably be expected to remain in perpetuity; or
2. It will always remain subject to the same BAL regardless of its design or position on the lot after accounting for any regulatory or enforceable building setbacks from lot boundaries as relevant and necessary (e.g., R-codes, restrictive covenants, defined building envelopes) or the retention of any existing classified vegetation either onsite or offsite.

If the BMP derives determined BAL(s), the BAL Certificate(s) required for submission with building applications can be provided, using the BMP as the assessment evidence.

**INDICATIVE BAL RATINGS**

A BAL Certificate cannot be issued for an indicative BAL. A BAL will be classed as 'indicative' for an existing or future building/structure when the required conditions to derive a determined BAL are not met.

This class of BAL rating indicates what BAL(s) could be achieved and the conditions that need to be met are stated.

Converting the indicative BAL into a determined BAL is conditional upon the currently unconfirmed variable(s) being confirmed by a subsequent assessment and evidential documentation. These variables will include the future building(s) location(s) being established (or changed) and/or classified vegetation being modified or removed to establish the necessary vegetation separation distance. This may also be dependent on receiving approval from the relevant authority for that modification/removal.

**BAL RATING APPLICATION – PLANNING APPROVAL VERSUS BUILDING APPROVAL**

1. **Planning Approval**: SPP.3.7 establishes that where BAL- LOW to BAL-29 will apply to relevant future construction (or existing structures for proposed uses), the proposed development may be considered for approval (dependent on the other requirements of the relevant policy measures being met). That is, BAL40 or BAL-FZ are not acceptable on planning grounds (except for certain limited exceptions).

   Because planning is looking forward at what can be achieved, as well as looking at what may currently exist, both determined and indicative BAL ratings are acceptable assessment outcomes on which planning decisions can be made (including conditional approvals).

2. **Building Approval:** The Building Code of Australia (Vol. 1 & 2 of the NCC) establishes that relevant buildings in bushfire prone areas must be constructed to the bushfire resistant requirements corresponding to the BAL rating that is to apply to that building. Consequently, a determined BAL rating and the BAL Certificate is required for a building permit to be issued - an indicative BAL rating is not acceptable.

## 3.1 BAL Assessment Summary (Table Format)

### 3.1.1 The BAL Determination Methodology and Location of Data and Results

| LOCATION OF DATA & RESULTS | | | | | |
|---|---|---|---|---|---|
| BAL Determination Methodology | | Location of the Site Assessment Data | | | Location of the Results |
| AS 3959:2018 | Applied to Assessment | Classified Vegetation and Topography Map(s) | Calculation Input Variables | | Assessed Bushfire Attack Levels and/or Radiant Heat Levels |
| | | | Summary Data | Detailed Data with Explanatory and Supporting Information | |
| Method 1 (Simplified) | Yes | Figure 3.1 | Table 3.2 | Appendix A1 | Table 3.2 |
| Method 2 (Detailed) | No | N/A | N/A | N/A | |

Table 3.1: Indicative and determined BAL(s) for existing and/or proposed building works.

| BUSHFIRE ATTACK LEVEL FOR EXISTING/PLANNED BUILDINGS/STRUCTURE [1] | | |
|---|---|---|
| Building/Structure Description | Indicative BAL [2] | Determined BAL [2] |
| Proposed chalet | BAL-29 | BAL-FZ |

[1] The assessment data used to derive the BAL ratings is sourced from Table 3.1 and Figure 3.2: Classified Vegetation & Topography Map – Post Development.

[2] Refer to the start of Section 3 for an explanation of indicative versus determined BAL ratings.

### 3.1.2 Site Assessment Data and BAL Results

Table 3.2: Summary of applied calculation input variables applied to deriving the BAL rating for the identified exposed element (the relevant building/structure).

| DATA APPLIED TO THE DERIVATION OF THE BUSHFIRE ATTACK LEVELS (BAL) [1] | | | | | | |
|---|---|---|---|---|---|---|
| BAL Determination Method | METHOD 1 - AS 3959:2018 CLAUSE 2.2 - SIMPLIFIED PROCEDURE | | | | Applied Fire Danger Index | FDI 80 |
| The Receiver of Radiant Heat<br>Relevant Building(s) / Structure(s) and Their Location | Vegetation Classification | | Effective Slope | | Separation Distance | Bushfire Attack Level (AS 3959:2018 Table 2.5) |
| | | | Measured | Applied Range | Total | |
| | Area | Class | degrees | degree range | metres | |
| Proposed chalet | 1 | (A) Forest | flat 0 | Upslope or flat 0 | 23 | BAL-29 |
| | 2 | (G) Grassland | flat 0 | Upslope or flat 0 | 3 | BAL-FZ |
| | 3 | Excluded cl 2.2.3.2(e & f) | N/A | N/A | N/A | N/A |
| | | | | | **Determined Bushfire Attack Level** | **BAL-FZ** |

[1] All data and information supporting the determination of the classifications and values stated in this table and any associated justification, is presented in Appendix A.

[2] This is the minimum building setback (i.e., the distance from a proposed building to the lot boundary) that is established by either the applicable R-code setback or another mechanism (e.g., restricted covenant), that is to apply to the proposed building/structure on the relevant lot. It is identified as a fixed component of the total separation distance from vegetation when its application is important to be identified because it establishes the closest distance to the lot boundary that a building/structure can legally exist. In other words, it identifies the part of the lot on which development cannot occur. When it is not critical for this distance to be identified, just the total separation distance is stated.

A BAL-29 can be achieved on the proposed development via the installation of an appropriate APZ as detailed in Section 5 and Figure 3.2.

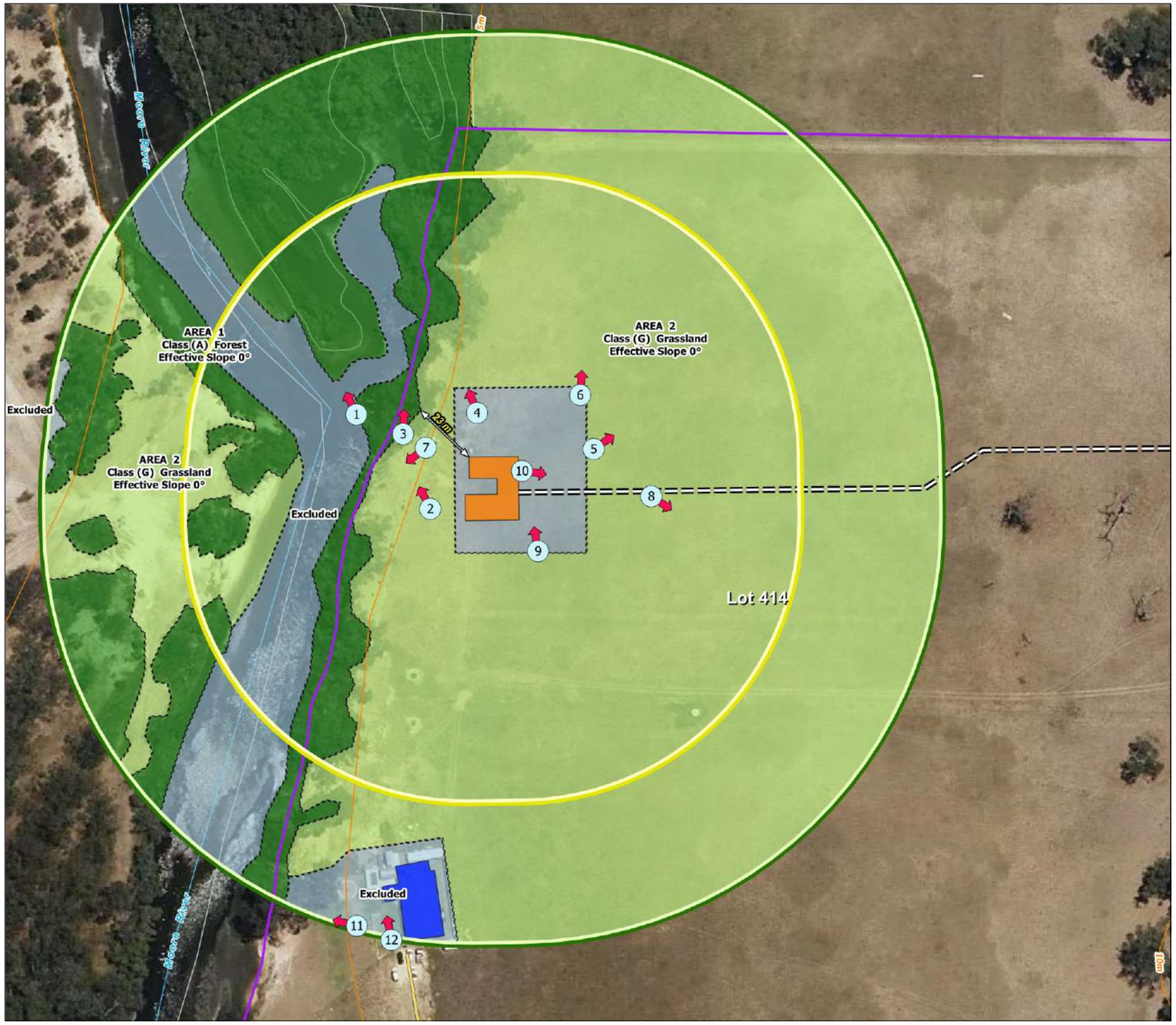



*Figure 3.1*

## Existing Topography & Classified Vegetation

Lot 414 on Plan 231045
Caraban Road
CARABAN
SHIRE OF GINGIN

------ LEGEND ------

- Subject Site
- Cadastral
- Photo and Direction
- Elevation (m)
- Vegetation Distance (m)
- Access-Egress
- 150m Assessment Area
- 100m Assessment Area

**Buildings**

- Existing Dwelling
- Proposed Chalet

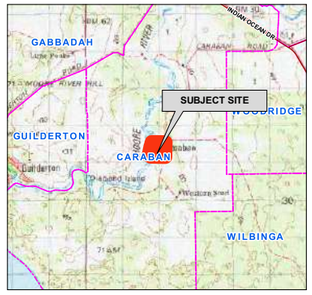
**Classified Vegetation**

- Class A - Forest
- Class G - Grassland
- Exclusion 2.2.3.2

0 20 40 60 80

Metres

------ LOCALITY ------




AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Merctaor Units: Metre
Map by: Kyle Calder-Bryan 23-05-2023
SCALE (A3): 1 : 1250

BUSHFIRE PRONE PLANNING

220813 - Fig 3.1_VEG_Lot 414 Caraban Road Caraban.qgz

Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

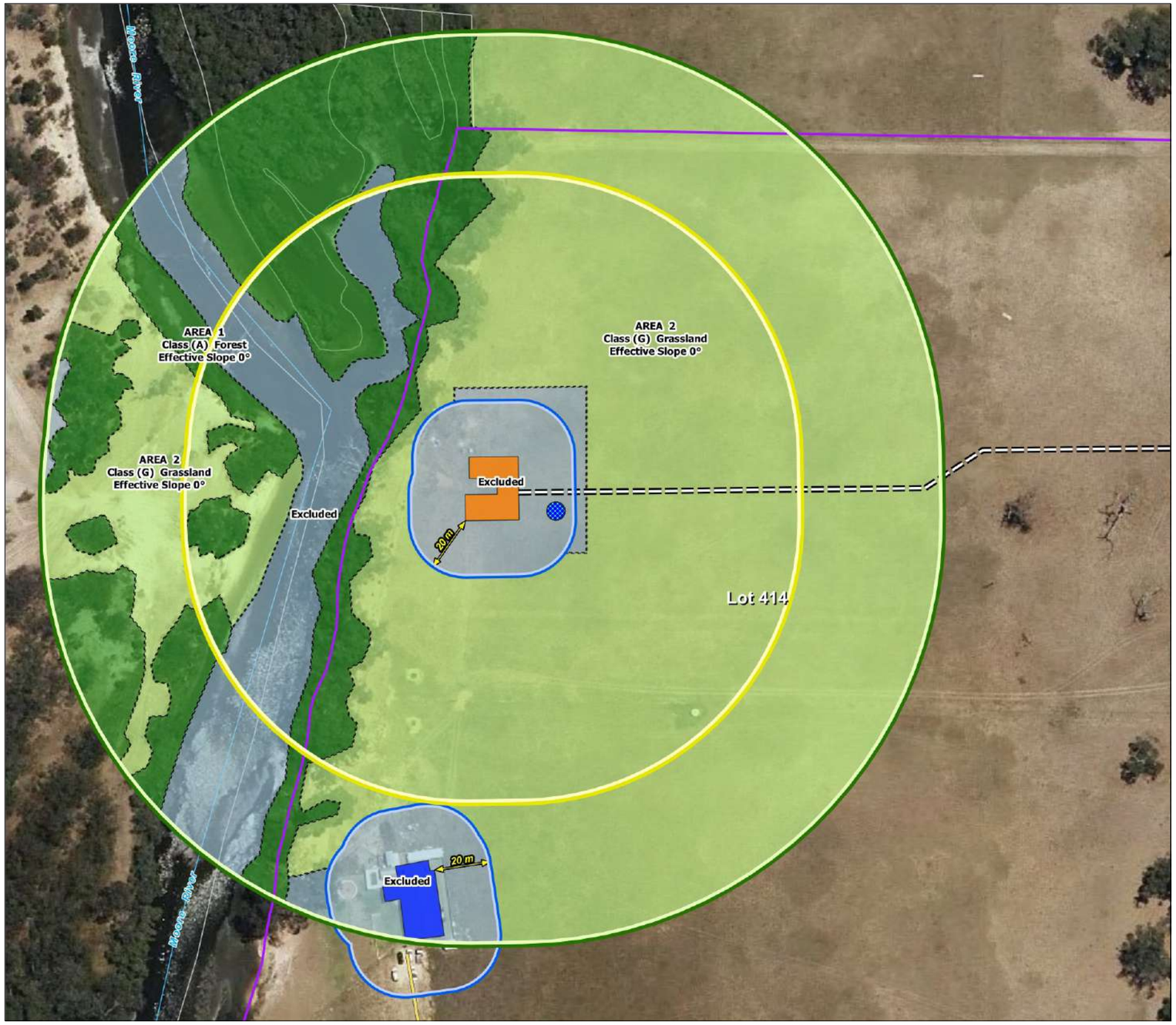



*Figure 3.2*

## Existing Topography & Classified Vegetation

Lot 414 on Plan 231045
Caraban Road
CARABAN
SHIRE OF GINGIN

------ LEGEND ------

- Subject Site
- Cadastral
- Access-Egress
- 150m Assessment Area
- 100m Assessment Area
- APZ - LGA
- Proposed Water Tank

**Buildings**

- Existing Dwelling
- Proposed Chalet

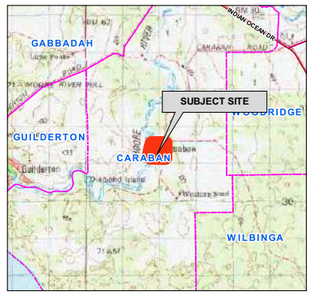
**Classified Vegetation**

- Class A - Forest
- Class G - Grassland
- Exclusion 2.2.3.2

0 20 40 60 80

Metres

------ LOCALITY ------




AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map by: Kyle Calder-Bryan 23-05-2023
SCALE (A3): 1 : 1250

BUSHFIRE PRONE PLANNING

220813 - Fig 3.2_VEG POST_Lot 414 Caraban Road Caraban.qgz

Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

## 4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 v1.4), Appendix 5, establish that the application of this section of the BMP is intended to support ***strategic planning*** proposals. At the strategic planning stage there will typically be insufficient proposed development detail to enable all required assessments, including the assessment against the bushfire protection criteria.

**Strategic Planning Proposals**

For strategic planning proposals this section of the BMP will identify:

- Issues associated with the level of the threats presented by any identified bushfire hazard;
- Issues associated with the ability to implement sufficient and effective bushfire protection measures to reduce the exposure and vulnerability levels (of elements exposed to the hazard threats), to a tolerable or acceptable level; and
- Issues that will need to be considered at subsequent planning stages.

**All Other Planning Proposals**

For all other planning stages, this BMP will address what are effectively the same relevant issues but do it within the following sections:

- Section 2 – Bushfire Prone Vegetation - Environmental and Assessment Considerations: Assess environmental, biodiversity and conservation values;
- Section 3 – Potential Bushfire Impact: Assess the bushfire threats with the focus on flame contact and radiant heat; and
- Section 5 – Assessment Against the Bushfire Protection Criteria (including the guidance provided by the *Position Statement: 'Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2'):* Assess the ability of the proposed development to apply the required bushfire protection measures thereby enabling it to be considered for planning approval for these factors.

| | |
|---|---|
| **Is the proposed development a strategic planning proposal?** | No |

## 5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA (GUIDELINES V1.4)

### 5.1 Bushfire Protection Criteria Elements Applicable to the Proposed Development/Use

**APPLICATION OF THE CRITERIA, ACCEPTABLE SOLUTIONS AND PERFORMANCE ASSESSMENT**

The criteria are divided into five elements – location, siting and design, vehicular access, water and vulnerable tourism land uses. Each element has an intent outlining the desired outcome for the element and reflects identified planning and policy requirements in respect of each issue.

The example acceptable solutions (bushfire protection measures) provide one way of meeting the element's intent. Compliance with these automatically achieves the element's intent and provides a straightforward pathway for assessment and approval.

Where the acceptable solutions cannot be met, the ability to develop design responses (as alternative solutions that meet bushfire performance requirements) is an alternative pathway that is provided by addressing the applicable performance principles (as general statements of how best to achieve the intent of the element).

A merit based assessment is established by the SPP 3.7 and the Guidelines as an additional alternative pathway along with the ability of using discretion in making approval decisions (sections 2.5, 2.6 and 2.7). This is formally applied to certain development (minor and unavoidable – sections 5.4.1 and 5.7). Relevant decisions by the State Administrative Tribunal have also supported this approach more generally.

Elements 1 – 4 should be applied for all strategic planning proposals, subdivision or development applications, except for vulnerable tourism land uses which should refer to Element 5. Element 5 incorporates the bushfire protection criteria in Elements 1 – 4 but caters them specifically to tourism land uses. (Guidelines DPLH 2021v1.4)

| The Bushfire Protection Criteria | Applicable to the Proposed Development/Use |
|---|---|
| Element 1: Location | No |
| Element 2: Siting and Design | No |
| Element 3: Vehicular Access | No |
| Element 4: Water | No |
| Element 5: Vulnerable Tourism Land Uses | Yes |

### 5.2 Local Government Variations to Apply

| | |
|---|---|
| Local governments may add to or modify the acceptable solutions to recognise special local or regional circumstances (e.g., topography / vegetation / climate). These are to be endorsed by both the WAPC and DFES before they can be considered in planning assessments. (Guidelines DPLH 2021v1.4). | |
| Do endorsed regional or local variations to the acceptable solutions apply to the assessments against the Bushfire Protection Criteria for the proposed development /use? | None known or identified |

## 5.3 Assessment Statements for Element 5: Vulnerable Tourism Land Uses

### 5.3.1 Other Short Term Accommodation

| VULNERABLE TOURISM | |
|---|---|
| **Element Intent** | To provide bushfire protection for tourism land uses relevant to the characteristics of the occupants and/or the location, to preserve life and reduce the impact of bushfire on property and infrastructure. |
| **Proposed Development/Use – Relevant Type** | **Short term accommodation (other than B&B/Holiday House) including motel, serviced apartments, tourist development (includes cabins and chalets), holiday accommodation and caravan park (which incorporates camping grounds).** |
| **Element Compliance Statement** | The proposed development/use achieves the intent of this element by being fully compliant with all applicable acceptable solutions. |
| **Pathway Applied to Provide an Alternative Solution** | N/A |

**Acceptable Solutions - Assessment Statements**

*All details of acceptable solution requirements are established in the Guidelines for Planning in Bushfire Prone Areas, DPLH v1.4 (Guidelines) and apply the guidance established by the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (WA Department of Planning, Lands and Heritage, 2021 Rev B) as relevant. These documents are available at https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas.*

*The technical construction requirements for access types and components, and for each firefighting water supply component, are also presented in Appendices 2 and 3. The local government will advise the proponent where different requirements are to apply and when any additional specifications such as those for signage and gates are to apply (these are included in the relevant appendix if requested by the local government).*

**Solution Component Check Box Legend** ☑ Relevant & met ☒ Relevant & not met ⃠ Not relevant

| A5.7 Siting and Design | | | | |
|---|---|---|---|---|
| **A5.7a Asset protection zone (APZ) – caravan park only** | **Applicable:** | No | **Compliant:** | N/A |
| **A5.7b Asset protection zone (APZ) – certain accommodation** | **Applicable:** | No | **Compliant:** | N/A |
| **A5.7c Asset protection zone (APZ) – all other accommodation** | **Applicable:** | Yes | **Compliant:** | Yes |

**APZ DIMENSIONS – DIFFERENCES IN REQUIREMENTS FOR PLANNING ASSESSMENTS COMPARED TO IMPLEMENTATION**

A key required bushfire protection measure is to reduce the exposure of buildings/infrastructure (as exposed vulnerable elements at risk), to the direct bushfire threats of flame contact, radiant heat and embers and the indirect threat of consequential fires that result from the subsequent ignition of other combustible materials that may be constructed, stored or accumulate in the area surrounding these structures. This reduces the associated risks of damage or loss.

This is achieved by separating buildings (and consequential fire fuels as necessary) from areas of classified bushfire prone vegetation. This area of separation surrounding buildings is identified as the Asset Protection Zone (APZ) and consists of no vegetation and/or low threat vegetation or vegetation continually managed to a minimal fuel condition. The required separation distances will vary according to the site specific conditions and local government requirements.

The APZ dimensions stated and/or illustrated in this Report can vary dependent on the purpose for which they are being identified.

*Note: Appendix B 'Onsite Vegetation Management' provides further information regarding the different APZ dimensions that can be referenced, their purpose and the specifications of the APZ that are to be established and maintained on the subject lot.*

**THE 'PLANNING BAL-29' APZ DIMENSIONS**

**Purpose: To provide evidence of the development or use proposal's ability to achieve minimum vegetation separation distances.** To achieve 'acceptable solution' planning approval for this factor, it must be demonstrated that the minimum separation distances corresponding to a maximum level of radiant transfer to a building of 29 kW/m$^2$, either exist or can be implemented (with certain exceptions). These separation distances are the 'Planning BAL-29' APZ dimensions.

***The 'Planning BAL-29' APZ is not necessarily the size of the APZ that must be physically implemented and maintained by a landowner. Rather, its sole purpose is to identify if an acceptable solution for planning approval can be met.***

**THE 'REQUIRED' APZ DIMENSIONS**

**Purpose: Establishes the dimensions of the APZ to be physically implemented by the landowner on their lot:** These will be the minimum required separation distances from the subject building(s) to surrounding bushfire prone vegetation (identified by type and associated ground slope). These are established by:

A. The 'BAL Rating APZ' of the subject building(s) when distances are greater than 'B' below (except when 'B' establishes a maximum distance); or

B. The 'Local Government' APZ' derived from the Firebreak/Hazard Reduction Notice when distances are greater than 'A' above, other than when a maximum distance is established, in which case this will apply; or

C. A combination of 'A' and 'B'.

*Within this Report/Plan it is the **'Planning BAL-29' APZ** that will be identified on maps, diagrams and in tables as necessary – unless otherwise stated.*

*The **'Required' APZ** dimension information will be presented in Appendix B1.1 and on the Property Bushfire Management Statement, when required to be included for a development application.*

| | |
|---|---|
| ☑ ☐ ☐ | **APZ Width:** Every existing or a future habitable building on the lot(s) of the proposed development, can be located within the developable portion of the lot and be surrounded by a 'Planning BAL-29' APZ of the required dimensions (measured from any external wall or supporting post or column to the edge of the classified vegetation), that will ensure their exposure to the potential radiant heat impact of a bushfire does not exceed 29 kW/m$^2$. |
| ☐ ☐ ⦸ | **Restriction on Building Location:** It has been identified that the current developable portion of a lot(s) provides for a future building location that will result in that building being subject to a BA-40 or BAL-FZ rating. Consequently, it may be considered necessary to impose the condition that a restrictive covenant to the benefit of the local government pursuant to section 129BA of the Transfer of Land Act 1893, is to be placed on the certificate(s) of title of the proposed lot(s) advising of the existence of a restriction on the use of that portion of land (refer to Code F3 of Model Subdivision Conditions Schedule, WAPC June 2021 and Guidelines s5.3.2). |
| ☑ ☐ ☐ | **APZ Location:** The required dimensions for a 'Planning BAL-29' APZ can be contained solely within the boundaries of the lot(s) on which the existing or future building(s) is situated. |
| ☐ ☐ ⦸ | **APZ Location:** The required dimensions for a 'Planning BAL-29' APZ can be partly established within the boundaries of the lot(s) on which the existing or future building(s) is situated. The balance of the APZ would |

| | |
|---|---|
| | exist on adjoining land that satisfies the exclusion requirements of AS 3959:2018 cl 2.2.3.2 for non-vegetated areas and/or low threat vegetation and/or vegetation managed in a minimal fuel condition. |
| ☐ ☐ ⦸ | **APZ Location:** It can be justified that any adjoining (offsite) land forming part of a 'Planning BAL-29' APZ will:<br>• If non-vegetated, remain in this condition in perpetuity; and/or<br>• If vegetated, be low threat vegetation or vegetation managed in a minimal fuel condition in perpetuity. |
| ☑ ☐ ☐ | **APZ Management:** The area of land (within each lot boundary), that is to make up the required 'Landowner' APZ dimensions (refer to Appendix B, Part B1), can and will be managed in accordance with the requirements of the Guidelines Schedule 1 'Standards for Asset Protection Zones' (refer to Appendix B). |
| ☐ ☐ ⦸ | **Subdivision Staging:** There are undeveloped future stages of subdivision, containing bushfire prone vegetation, that have been taken into consideration for their potentially 'temporary' impact on the ability to establish a 'Planning BAL-29 APZ' on adjoining developed lots. A staging plan is developed to manage this. |
| ☑ ☐ ☐ | **Firebreak/Hazard Reduction Notice:** Any additional requirements established by the relevant local government's annual notice to install firebreaks and manage fuel loads (issued under s33 of the Bushfires Act 1954), can and will be complied with. |
| **Supporting Assessment Details:** The chalet can be sited in a BAL-29 or lower area. The development requires the provision of an APZ to achieve a maximum 29kW/m2 around the chalet. Refer to Figure 3.2 and Table 3.2 contained in this report. | |

| | | | | |
|---|---|---|---|---|
| **A5.7d Asset protection zone (APZ) – landscape management** | **Applicable**: | No | **Compliant**: | N/A |
| **A5.7e Onsite shelter – pedestrian paths** | **Applicable**: | No | **Compliant**: | N/A |
| **A5.7f Onsite shelter – exposure to the bushfire hazard** | **Applicable**: | No | **Compliant**: | N/A |
| **A5.7g Onsite shelter – bushfire construction requirements** | **Applicable**: | No | **Compliant**: | N/A |

| A5.8 Vehicular Access<br>A5.8.1 Vehicular Access for All Proposals | | | | |
|---|---|---|---|---|
| **A5.8.1a Internal access/private driveway - availability** | **Applicable**: | Yes | **Compliant**: | Yes |
| ☑ ☐ ☐ The internal vehicular access/private driveway can provide emergency access/egress for all patrons and staff in the event of a bushfire. | | | | |
| ☑ ☐ ☐ It is possible to provide at least two internal access/egress points to the public road network. | | | | |
| **Supporting Assessment Details:** An existing access egress point currently connects to the location of the proposed chalet to Caraban Road. If two internal access/egress points are required, another existing access/egress point that connects to the existing dwelling also exists, and can be extended to the location of the proposed chalet to provide a second point of access/egress. | | | | |
| **A5.8.1b Internal access/private driveway - technical requirements** | **Applicable**: | Yes | **Compliant**: | Yes |
| ☐ ☐ ⊘ The internal vehicular access/private driveway length is no greater than 70m. No technical requirements need to be met. | | | | |
| ☑ ☐ ☐ The technical construction requirements for widths, clearances, capacity, gradients and curves (Guidelines, Table 6. Refer also to Appendix C in this BMP), can and will be complied with. | | | | |
| ☑ ☐ ☐ Passing bays can and will be installed every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m. | | | | |
| ☑ ☐ ☐ The turnaround area requirements (Guidelines, Figure 28, and within 30m of the habitable building) can and will be complied with. | | | | |
| **Supporting Assessment Details:** None required. | | | | |
| **A5.8.1c Signage** | **Applicable**: | Yes | **Compliant**: | Yes |
| ☑ ☐ ☐ The required information to inform the actions of those persons onsite in the event of a bushfire will be prominently displayed within the site. | | | | |
| ☑ ☐ ☐ This information will include evacuation routes and distance and the site specific procedural detail that will be established by the Bushfire Emergency Plan (or Information) that is required to be developed for the proposed use. | | | | |
| **Supporting Assessment Details:** Implementation of the required internal signage within the site will be undertaken at the development stage. | | | | |
| **A5.8.2 Vehicular Access for Short Term Accommodation Outside a Residential Built-out Area** | | | | |
| **A5.8.2a Multiple access routes** | **Applicable**: | Yes | **Compliant**: | Yes |
| ☑ ☐ ☐ Two-way public road access is provided in two different directions to at least two different suitable destinations. | | | | |

| | | | | |
|---|---|---|---|---|
| **Supporting Assessment Details:** Two-way public road access is provided in two different diresctions to at least two suitable destinations via Caraban Road. | | | | |
| **A5.8.2b No-through roads – maximum length** | **Applicable**: | No | **Compliant**: | N/A |
| **A5.8.2c Emergency access way – alternative access option** | **Applicable**: | No | **Compliant**: | N/A |
| **A5.8.2d Public roads - technical requirements** | **Applicable**: | No | **Compliant**: | N/A |
| ☑ ☐ ☐ The technical construction requirements of vertical clearance and weight capacity (Guidelines, Table 6. Refer also to Appendix C in this BMP), can and will be complied with. | | | | |
| ☑ ☐ ☐ All other applicable technical requirements of trafficable width, gradients and curves, are required to be in "accordance with the class of road as specified in the IPWEA Subdivision Guidelines, Liveable Neighbourhoods, Ausroad Standards and/or any applicable standard in the local government area" (Guidelines, Table 6 and sE3.1. Refer also to Appendix C in this BMP).<br>The assessment conducted for the bushfire management plan indicates that it is likely that the proposed development can and will comply with the requirements.<br>The applicable class(s) of road and technical requirements have been confirmed with the relevant local government/Main Roads WA. These can and will be complied with. | | | | |
| ☑ ☐ ☐ A traversable verge is available adjacent to classified vegetation (Guidelines, E3.1), as recommended. | | | | |
| **Supporting Assessment Details:** None Required as Public Roads are existing. | | | | |
| **A5.8.2e Access limitations - onsite shelter option** | **Applicable**: | No | **Compliant**: | N/A |

| **A5.9 Provision of Water for Firefighting Purposes** | | | | |
|---|---|---|---|---|
| **A5.9a Reticulated supply** | **Applicable**: | No | **Compliant**: | N/A |
| **A5.9b Non-reticulated supply** | **Applicable**: | Yes | **Compliant**: | Yes |
| ☑ ☐ ☐ A static water supply (tank) for firefighting purposes will be installed on the lot that is additional to any water supply that is required for drinking and other domestic purposes. | | | | |
| ☑ ☐ ☐ The technical requirements (location, volumes, design, materials, pipes and fittings), as established by the Guidelines (Schedule 2 and E4) and/or the relevant local government, can and will be complied with. | | | | |
| **Supporting Assessment Details:** The subject site is within a non-reticulated water supply area for potable water and fire-fighting operations. Bushfire technical standards for water supply apply. A 10,000 litre water tank is required for the chalet and is to include direct connection coupling for firefighting operations. Refer to information contained in Appendix D for the firefighting water supply specifications and technical requirements. | | | | |

## 6 BUSHFIRE PROTECTION MEASURES - RESPONSIBILITY FOR IMPLEMENTATION CHECKLIST

### 6.1 Developer / Landowner Responsibilities – Prior to Building and Occupancy / Operation

| DEVELOPER/LANDOWNER RESPONSIBILITIES – PRIOR BUILDING AND OCCUPANCY/OPERATION | |
|---|---|
| No. | Implementation Actions |
| 1 | The local government may condition a development application approval with a requirement for the landowner/proponent to register a notification onto the certificate of title and deposited plan (with the required wording stated by the local government).<br>This will be done pursuant to *Section 70A Transfer of Land Act 1893 (as amended) as per 'Factors affecting use and enjoyment of land, notification on title'*.<br>This is to notify owners and prospective purchasers of the land that:<br>1. The land is in a designated bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner;<br>2. The land is subject to a Bushfire Management Plan that establishes certain protection measures to manage bushfire risk that are to be implemented and continue to be applied at the owners cost; and<br>3. That additional planning and building requirements may apply to development on this land. |
| 2 | Prior to relevant building work, inform the builder of the existence of this approved Bushfire Management Plan (BMP). The plan identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures. A BAL assessment report may be required to confirm determined ratings and will be required when ratings are indicative. BAL certificates will need to be issued to accompany building applications.<br>The BMP may also establish, as an additional bushfire protection measure, that construction requirements to be applied will be those corresponding to a specified higher BAL rating.<br>Compliance with the Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks). Other classes of buildings may also be required to comply with these construction when established by the relevant authority or if identified as an additional bushfire protection measure within the BMP.<br>The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended). |
| 3 | Prior to occupancy/operation establish the 'Required' Asset Protection Zone (APZ) around habitable buildings (and other structures as required) to satisfy:<br>• The minimum required dimensions established in Appendix B1; and<br>• The standards established by the Guidelines DPLH, 2021 v1.4, Schedule 1, or as varied by the local government through their annually issued firebreak / hazard reduction notice when the variations have been endorsed by the WAPC and DFES as per s4.5.3 of the Guidelines.<br>If native vegetation is required to be modified or removed, ensure that approval has been received from the relevant authority (refer to the applicable local government for advice). |
| 4 | Prior to occupancy, a copy of the Bushfire Emergency Plan (BEP) must be provided to the landowner, and they are to be informed that it contains responsibilities that must be actioned due to the use of the land being defined |

| | |
|---|---|
| | as a 'Vulnerable Land Use' for the reasons identified in Section 1.1. The 'Pre-Season Preparation Procedure' instructions must be complied with. |
| 5 | Prior to occupancy, install the required firefighting static water supply to comply with the technical requirements stated in the BMP. |
| 6 | Internal private driveways are to provide vehicular access to the chalet in the event of a bushfire. The private driveways must comply with the technical requirements outlined within Appendix C. The internal access must also have passing bays of 20 metres in length and must be placed every 200 metres along the private driveway. |
| 7 | Prior to occupancy, signage must be prominently displayed within the site that informs the actions of those persons onsite in the event of a bushfire. This will include evacuation route information, site procedures – as per the instructions within the Bushfire Emergency Plan developed for the site and use. |
| 8 | Prior to occupancy, all actions contained within the 'Pre-Season Preparation Procedure' established by the Bushfire Emergency Plan, must be completed. |

## 6.2 Landowner / Occupier Responsibilities – Ongoing Management

| LANDOWNER/OCCUPIER – ONGOING MANAGEMENT | |
|---|---|
| No. | Management Actions |
| 1 | Maintain the 'Required' Asset Protection Zone (APZ) around habitable buildings (and other structures as required) to satisfy:<br>• The minimum required dimensions established in Appendix B1; and<br>• The standards established by the Guidelines DPLH, 2021 v1.4, Schedule 1, or as varied by the local government through their annually issued firebreak / hazard reduction notice when the variations have been endorsed by the WAPC and DFES as per s4.5.3 of the Guidelines. |
| 2 | Comply with the Shire of Gingin Firebreak Orders & Bush Fire Information issued under s33 of the Bush Fires Act 1954. Check the notice annually for any changes. |
| 3 | Maintain vehicular access routes within the lot to comply with the technical requirements referenced in the BMP and the relevant local government's annual firebreak / hazard reduction notice. |
| 4 | Maintain the static firefighting water supply tank and associated pipes/fittings/pump and vehicle hardstand in good working condition. |
| 5 | Ensure that builders engaged to construct dwellings/additions and/or other relevant structures on the lot, are aware of the existence of this approved Bushfire Management Plan (BMP). The plan identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures.<br>A BAL assessment report may be required to confirm determined ratings and will be required when ratings are indicative. BAL certificates will need to be issued to accompany building applications.<br>Compliance with the Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks). The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended).<br>As an additional bushfire protection measure, other classes of buildings may also be required to comply with these construction requirements when established by the relevant authority or if identified as an additional bushfire protection measure within the BMP. The BMP may also establish that construction requirements to be applied will be those corresponding to a specified higher BAL rating. When applicable, these requirements will be identified in Section 5.7. |
| 6 | Ensure all future buildings the landowner has responsibility for, are designed and constructed in full compliance with:<br>• The bushfire resistant construction requirements of the Building Code of Australia (Volumes 1 and 2 of the National Construction Code), as established by the Building Regulations 2012 (WA Building Act 2011); and<br>• Any additional bushfire protection measures this Bushfire Management Plan has established are to be implemented. |

| | |
|---|---|
| 7 | Annually review the Bushfire Emergency Plan and complete all actions contained within the 'Pre-Season Preparation Procedure' and the 'In-Season Preparation Procedure' at the appropriate times of the year. |

## 6.3 Local Government Responsibilities – Ongoing Management

| LOCAL GOVERNMENT – ONGOING MANAGEMENT | |
|---|---|
| No. | Management Actions |
| 1 | Monitor landowner compliance with the annual Shire of Gingin Firebreak Orders & Bush Fire Information and with any bushfire protection measures that are:<br>• Established by this BMP;<br>• Are required to be maintained by the landowner/occupier; and<br>• Are relevant to local government operations. |

## APPENDIX A: DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION

### A1: BAL Assessment Inputs Common to the Method 1 and Method 2 Procedures

#### A1.1: FIRE DANGER INDICES (FDI/FDI/GFDI)

When using Method 1 the relevant FDI value required to be applied for each state and region is established by AS 3959:2018, Table 2.1. Each FDI value applied in Tables 2.4 – 2.7 represents both the Forest Fire Danger Index (FFDI) and a deemed equivalent for the Grassland Fire Danger Index (GFDI), as per Table B2 in Appendix B. When using Method 2, the relevant FFDI and GFDI are applied.

The values may be able to be refined within a jurisdiction, where sufficient climatological data is available and in consultation with the relevant authority.

| | | | | | | |
|---|---|---|---|---|---|---|
| Relevant Jurisdiction: | WA | Region: | Whole State | Method 1 | Applied FDI: | 80 |
| | | | | Method 2 | Applied FFDI: | N/A |
| | | | | | Applied GFDI: | N/A |

#### A1.2: VEGETATION ASSESSMENT AND CLASSIFICATION

**Vegetation Types and Classification**

In accordance with AS 3959:2018 clauses 2.2.3 and C2.2.3.1, all vegetation types within 100 metres of the 'site' (defined as "the part of the allotment of land on which a building stands or is to be erected"), are identified and classified. Any vegetation more than 100 metres from the site that has influenced the classification of vegetation within 100 metres of the site, is identified and noted. The maximum excess distance is established by AS 3959: 2018 cl 2.2.3.2 and is an additional 100 metres.

Classification is also guided by the Visual Guide for Bushfire Risk Assessment in WA (WA Department of Planning February 2016) and any relevant FPA Australia practice notes.

**Modified Vegetation**

The vegetation types have been assessed as they will be in their natural mature states, rather than what might be observed on the day. Vegetation destroyed or damaged by a bushfire or other natural disaster has been assessed on its expected re-generated mature state. Modified areas of vegetation can be excluded from classification if they consist of low threat vegetation or vegetation managed in a minimal fuel condition, satisfying AS 3959:2018 s2.2.3.2(f), and there is sufficient justification to reasonable expect that this modified state will exist in perpetuity.

**The Influence of Ground Slope**

Where significant variation in effective slope exists under a consistent vegetation type, these will be delineated as separate vegetation areas to account for the difference in potential bushfire behaviour, in accordance with AS 3959:2018 clauses 2.2.5 and C2.2.5.

| THE INFLUENCE OF VEGETATION GREATER THAN 100 METRES FROM THE SUBJECT SITE | |
|---|---|
| Vegetation area(s) within 100m of the site whose classification has been influenced by the existence of bushfire prone vegetation from 100m – 200m from the site: | None |
| Assessment Statement: | No vegetation types exist close enough, or to a sufficient extent, within the relevant area to influence classification of vegetation within 100 metres of the subject site. |

| VEGETATION AREA 1 | | | | | | |
|---|---|---|---|---|---|---|
| Classification | **A. FOREST** | | | | | |
| Types Identified | Open forest A-03 | | | | | |
| Effective Slope | Measured | flat 0 degrees | | Applied Range (Method 1) | | Upslope or flat 0 degrees |
| Foliage Cover (all layers) | 30-70% | | Shrub/Heath Height | 1-2m | Tree Height | Up to 15m |
| Dominant & Sub-Dominant Layers (species as relevant) | Forest area consists of Mature trees with heights up to 15 metres and canopy cover of approximately 40%. The understory is primarily grass, with shrub type vegetation also present. | | | | | |
| Post Development Assumptions: | The forest area is not within a required Asset Protection Zone area, therefore does not need to be managed. Forest area that is not within the subject lot, cannot be managed by the subject lot landowner. | | | | | |




PHOTO ID: 1




PHOTO ID: 2




PHOTO ID: 3




PHOTO ID: 4

| VEGETATION AREA 2 | | | | | | |
|---|---|---|---|---|---|---|
| Classification | **G. GRASSLAND** | | | | | |
| Types Identified | Closed tussock grassland G-21 | | | | | |
| Effective Slope | Measured | flat 0 degrees | Applied Range (Method 1) | | Upslope or flat 0 degrees | |
| Foliage Cover (all layers) | N/A | Shrub/Heath Height | N/A | Tree Height | N/A | |
| Dominant & Sub-Dominant Layers (species as relevant) | Cleared land that exclusively has grass type vegetation. Grass vegetation has a maximum height of 0.5 metres, consistent through the entire grassland area. The occasional mature tree is also present within grassland area, creating <10% canopy cover. | | | | | |
| Post Development Assumptions: | Class G grassland that is within the Asset Protection Zone must be managed to local government standards in perpetuity. | | | | | |




PHOTO ID: 5




PHOTO ID: 6




PHOTO ID: 7




PHOTO ID: 8

| EXCLUDED AREA 3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Exclusion Clause | 2.2.3.2 (e) non-vegetated areas and (f) vegetation managed in a minimal fuel condition. | | | | | | |
| Effective Slope | Measured | N/A | | Applied Range (Method 1) | | N/A | |
| Foliage Cover (all layers) | N/A | Shrub/Heath Height | N/A | | Tree Height | N/A | |
| Additional Justification: | Excluded areas consist of the limestone pad (PHOTO ID: 9) installed for the proposed chalet, as well the access route from Caraban Road to the limestone pad (PHOTO ID: 10). Excluded areas also include the existing dwelling as well as the reticulated lawn and managed gardens surrounding the existing dwelling. | | | | | | |
| Post Development Assumptions: | N/A. | | | | | | |




PHOTO ID: 9




PHOTO ID: 10




PHOTO ID: 11




PHOTO ID: 12

### A1.3: EFFECTIVE SLOPE

**Measuring**

Effective slope refers to the slope "under the classified vegetation which most significantly influences bushfire behaviour (AS 3959:2018, clause B4, CB4). It is not the average slope.

It is described as upslope, flat or downslope when viewed from the exposed element (e.g., building) looking towards the vegetation – and measured in degrees. Ground slope has a direct and significant influence on a bushfire's rate of spread and intensity, which increases when travelling up a slope.

The slope under the vegetation in closest proximity to the exposed element(s), over the distance that will most likely carry the entire depth of the flaming front, will be a significant consideration in the determination of the effective slope. This distance is determined as a function of the potential quasi-steady rate of spread and expected residence time (i.e., the flaming combustion period at a single point on the ground), of a bushfire in the specific vegetation type/landscape scenario.

**Slope Variation Within Areas of Vegetation**

Where a significant variation in effective slope exists under a consistent vegetation type, these will be delineated as separate vegetation areas to account for the difference in potential bushfire behaviour, in accordance with AS 3959:2018 clauses 2.2.5 and C2.2.5.

**Slope Variation Due to Multiple Development Sites**

When the effective slope, under a given area of bushfire prone vegetation, will vary significantly relative to multiple proposed development sites (exposed elements), then the effective slopes corresponding to each of the different locations, are separately identified.

The relevant (worst case) effective slope is determined in the direction corresponding to the potential directions of fire spread towards the subject building(s).

**Differences in Application of Effective Slope - AS 3959:2018 Method 1 versus Method 2 Procedures**

The Method 1 procedure provides five different slope ranges from flat (including all upslopes) to 20 degrees downslope to define the effective slope and bushfire behaviour model calculations apply the highest value in each range (i.e., $0^0$, $5^0$, $10^0$, $15^0$ or $20^0$).

The Method 2 procedure requires an actual slope (up or down in degrees) to be determined. AS 3959:2018, clause B1 limits the effective slope that can be applied to 30 degrees downslope and 15 degrees upslope. Where any upslope is greater than 15 degrees, then 15 degrees is to be used.

**SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION**

The effective slopes determined from the site assessment are recorded in Table 3.2 of this Bushfire Management Plan. When their derivation requires additional explanation and justification, this is provided below.

### A1.4: SEPARATION DISTANCE

**Measuring**

The separation distance is the distance in the horizontal plane between the receiver (building/structure or area of land being considered) and the edge of the classified vegetation (AS 3959:2018, clause 2.2.4)

The relevant parts of a building/structure from which the measurement is taken is the nearest part of an external wall or where a wall does not exist, the supporting posts or columns. Certain parts of buildings are excluded including eaves and roof overhangs.

The edge of the vegetation, for forests and woodlands, will be determined by the unmanaged understorey rather than either the canopy (drip line) or the trunk (AS 3959:2018, clause C2.2.5).

**Measured Separation Distance as a Calculation Input**

If a separation distance can be measured because the location of the building/structure relative to the edge of the relevant classified vegetation is known, this figure can be entered into the BAL calculation. The result is a determined BAL rating.

**Assumed Separation Distance as a Calculation Input**

When the building/structure location within the lot is not known, an assumed building location may be applied that would establish the closest positioning of the building/structure relative to the relevant area of vegetation.

The assumed location would be based on a factor that puts a restriction on a building location such as:

- An established setback from the boundary of a lot, such as a residential design code setback or a restrictive covenant; or
- Within an established building envelope.

The resultant BAL rating would be indicative and require later confirmation (via a Compliance Report) of the building/structure actual location relative to the vegetation to establish the determined BAL rating.

**Separation Distance as a Calculation Output**

With the necessary site specific assessment inputs and using the AS 3959:2018 bushfire modelling equations, the range of separation distances that will correspond to each BAL rating (each of which represents a range of radiant heat flux), can be calculated. This has application for bushfire planning scenarios such as:

- When the separation distance cannot be measured because the exact location of the exposed element (i.e., the building, structure or area), relative to classified vegetation, is yet to be determined.

  In this scenario, the required information is the identification of building locations onsite that will correspond to each BAL rating. That is, indicative BAL ratings can be derived for a variety of potential building/structure locations; or

- The separation distance is known for a given building, structure or area (and a determined BAL rating can be derived), but additional information is required regarding the exposure levels (to the transfer of radiant heat from a bushfire), of buildings or persons, that will exist at different points within the subject site.

The calculated range of separation distances corresponding to each BAL rating can be presented in a table and/or illustrated as a BAL Contour Map – whichever is determined to best fit the purpose of the assessment.

For additional information refer to the information boxes in Section 3 'Bushfire Attack Levels (BAL) - Understanding the Results and Section 3.2. 'Interpretation of the BAL Contour Map'.

**SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION**

For the subject development/use the applicable separation distances values are derived from calculations applying the assessed site data. They are an output value, not an input value and therefore are not presented or justified in this appendix.

The derived values are presented in Section 3, Table 3.2 and illustrated in Figure 3.1 Classified Vegetation & Topography Map.

## APPENDIX B: ADVICE - ONSITE VEGETATION MANAGEMENT - THE APZ

**THE ASSET PROTECTION ZONE (APZ) - DESCRIPTION**

This is an area surrounding a habitable building containing low threat fire fuel fuels (including vegetation), or vegetation managed in a minimal fuel condition, no fire fuels or any combination. The primary objectives include:

- To ensure the building is sufficiently separated from the bushfire hazard to limit the impact of its direct attack mechanisms. That is, the dimensions of the APZ will, for most site scenarios, remove the potential for direct flame contact on the building, reduce the level of radiant heat to which the building is exposed and ensure some reduction in the level of ember attack (with the level of reduction being dependent on the vegetation types of present);
- To ensure any vegetation retained within the APZ is low threat and/or is managed in a minimum fuel condition and prevents surface fire spreading to the building;
- To ensure other combustible materials that can result in consequential fire (typically ignited by embers) within both the APZ and parts of the building, are eliminated, minimised and/or appropriately located or protected. (Note: The explanatory notes in the Guidelines provide some guidance for achieving this objective and other sources are available. Research shows that consequential fire, ignited by embers, is the primary cause of building loss in past bushfire events); and
- To provide a defendable space for firefighting activities.

### B1: Asset Protection Zone (APZ) Dimensions

**APZ DIMENSIONS – DIFFERENCES IN REQUIREMENTS FOR PLANNING ASSESSMENTS COMPARED TO IMPLEMENTATION**

**THE 'PLANNING BAL-29' APZ DIMENSIONS**

***The 'Planning BAL-29' APZ is not necessarily the size of the APZ that must be physically implemented and maintained by a landowner. Rather, its purpose is to identify if an acceptable solution for planning approval can be met i.e., can a specified minimum separation distance from bushfire prone vegetation exist.***

An assessment against the Bushfire Protection Criteria is conducted for planning approval purposes. To satisfy 'A2.1: Asset Protection Zone', it must be demonstrated that certain minimum separation distances between the relevant building/structure and different classes of bushfire prone vegetation, either exist or can be created and will remain in perpetuity. These minimum separation distances determine the 'Planning BAL-29' APZ dimensions.

**Dimensions:** The minimum dimensions are those that will ensure the potential radiant heat impact on subject buildings does not exceed 29 kW/m$^2$. These dimensions will vary dependent on the vegetation classification, the slope of the land they are growing on and certain other factors specific to the subject site.

> *Note: For certain purposes associated with vulnerable land uses, the 'Planning BAL-29' APZ may be replaced with dimensions corresponding to radiant heat impact levels of 10 kW/m$^2$ and 2 kW/m$^2$ and calculated using 1200K flame temperature.*

**Location:** The identified 'Planning BAL-29' APZ must not extend past lot boundaries onto land the landowner has no control over either now or potentially at some point in the future. Limited exceptions include:

- When adjoining land is not vegetated (e.g., built out, roads, carparks, drainage, rock, water body etc.);
- When adjoining land currently or, will in the short term, contain low threat vegetation and or vegetation managed in a minimal fuel condition as per AS 3959:2018 cl. 2.2.3.2. It must be reasonable (justifiable) to expect this low threat vegetation and/or level of management will continue to exist or be conducted in perpetuity and require no action from the owner of the subject lot.

  Such areas of land include formally managed areas of vegetation (e.g., public open space / recreation areas / services installed in a common section of land). For specific scenarios, evidence of the formal

commitment to manage these areas to a certain standard may be required and would be included in the BMP.

These areas of land can also be part of the required APZ on a neighbouring lot for which the owner of that lot has a recognised responsibility to establish and maintain; and

- When there is a formalised and enforceable capability and responsibility created for the subject lot owner, or any other third party, to manage vegetation on land they do not own in perpetuity. This would be rare, and evidence of the formal authority would be included in the BMP.

The bushfire consultant's 'Supporting Assessment Detail', that is presented in the assessment against the acceptable solution A2.1, will identify and justify how any adjoining land within the 'Planning BAL-29 APZ will meet the APZ standards. Or otherwise, explain how this condition cannot be met.

### THE 'BAL RATING' APZ DIMENSIONS

The applicable BAL rating will have been stated in the BAL Assessment Data section of the BAL Assessment Report or BMP (as relevant). The BAL rating can be assessed as 'determined' or 'indicative' or be 'conditional', dependent of the specific conditions associated with the site and the stage of assessment or planning. It is the eventual assessment of the 'Determined' BAL that will establish both the BAL rating that is to apply and its corresponding 'BAL Rating' APZ dimensions.

**Dimensions:** The minimum dimensions of the 'BAL Rating' APZ to be established and maintained will be those that correspond to the determined BAL rating for the subject building/structure that has accounted for surrounding vegetation types, the slope of the land they are growing on and certain other factors specific to the subject site and surrounding land.

Establishing the 'BAL Rating' APZ will ensure that the potential radiant heat exposure of the building/structure will be limited to the level that the applied construction requirements are designed to resist when that building/structure is required to be constructed to the standard corresponding to the Determined BAL.

> *Note: For certain purposes associated with vulnerable land uses, the 'BAL Rating' APZ dimensions may be replaced with dimensions corresponding to the specific radiant heat impact levels of 10 kW/m$^2$ and 2 kW/m$^2$ and calculated using 1200K flame temperature.*

**Location:** The same conditions will apply as for the 'Planning BAL-29' APZ.

### THE 'LOCAL GOVERNMENT' APZ DIMENSIONS

Some Local Government's establish the dimensions of the APZ that must be established surrounding buildings in their annual Firebreak/Hazard Reduction Notice. Or for a specific site they may establish a maximum allowable dimension (typically that corresponding to BAL-29). When established, the landowner will need to be comply with these.

### THE 'REQUIRED' APZ DIMENSIONS

This is the APZ that is to be established and maintained by the landowner within the subject lot and surrounding the subject building(s). It will be identified on the Property Bushfire Management Statement when it is required to be included in this Report/Plan.

**Dimensions:** The 'Required APZ' dimensions are the minimum (or maximum when relevant) distances away from the subject building(s) that the APZ must extend. These distances will not necessarily be the same all around the building(s). They can vary and are dependent on the different vegetation types (and their associated ground slope) that can exist around the building(s), and specific local government requirements. The dimensions to implement are determined by:

A. The 'BAL Rating APZ' of the subject building(s) when distances are greater than 'B' below (except when 'B' establishes a maximum distance); or

B. The 'Local Government' APZ' derived from the Firebreak/Hazard Reduction Notice when distances are greater than 'A' above, other than when a maximum distance is established, in which case this will apply; or

C. A combination of 'A' and 'B'.

**Location:** The same conditions will apply as for the 'Planning BAL-29' APZ.

### B1.1: THE APZ DIMENSIONS REQUIRED TO BE IMPLEMENTED BY THE LANDOWNER

| DETERMINATION OF THE 'REQUIRED' APZ DIMENSIONS TO BE IMPLEMENTED AND MAINTAINED BY LANDOWNER WITHIN THEIR LOT | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Relevant Buildings(s) | Vegetation Classification [Refer to Fig 3.1] | | Minimum Required Separation Distances from Building to Vegetation (metres) | | | | | | | |
| | | | Established by the 'BAL Rating' APZ Dimension | | | | | Established by the "Local Government' APZ Dimension | | The 'Required' APZ Dimensions [see note] |
| | | | Determined Radiant Heat Impact | Stated 'Indicative' or 'Conditional' BAL | | | | Firebreak / Hazard Reduction Notice | Maximum Allowed | |
| | Area | Class | | BAL-29 | BAL-19 | BAL-12.5 | BAL-LOW | | N/A | |
| | 1 | (A) Forest | BAL-29 | 21-<31 | 31-<42 | 42-<100 | 100< | 20m | N/A | 21 |
| | 2 | (G) Grassland | | 8-<12 | 12-<17 | 17-<50 | 50< | 20m | N/A | 20 |
| | 3 | Excluded cl 2.2.3.2(e & f) | | - | - | - | - | N/A | - | - |
| **Note:** The 'Required' APZ Dimension corresponding to each area of vegetation is the greater of the 'BAL Rating' or the 'Firebreak/Hazard Reduction Notice' APZ dimensions - unless a local government maximum distance(s) is established as a result of their environmental assessment of the subject site. The area of the APZ will also be limited to the subject lot boundary unless otherwise justified in this Report/Plan. Final determination of the dimensions will require that any indicative or conditional BAL becomes a 'Determined' BAL. | | | | | | | | | | |
| **Comments:** Firebreaks are to be installed, firebreaks must be 3 metres in width from the lot boundary and must be free of any flammable material. There must not be any vegetation overhanging driveways, access ways or firebreaks. The 20 metre APZ surrounding all buildings, must be maintained from 1 November to 15 May, unless the latest Shire of Gingin Firebreak Notice states otherwise. | | | | | | | | | | |

## B2: The Standards for the APZ as Established by the Guidelines (DPLH, v1.4)

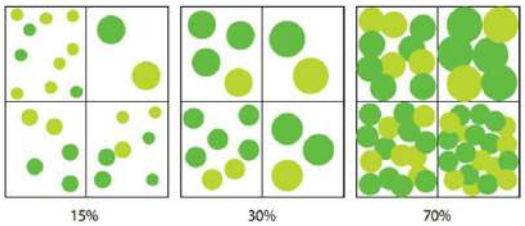
Within the Guidelines (source: https://www.wa.gov.au/government/document-collections/state-planning-policy-37-planning-bushfire-prone-areas), the management Standards are established by:

- Schedule 1: Standards for Asset Protection Zones (see extract below) established by the Guidelines; and
- The associated explanatory notes (Guidelines E2) that address (a) managing an asset protection zone (APZ) to a low threat state (b) landscaping and design of an asset protection zone and (c) plant flammability.




**ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT**

**SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES**

| OBJECT | REQUIREMENT |
|---|---|
| Fences within the APZ | • Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959). |
| Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness) | • Should be managed and removed on a regular basis to maintain a low threat state.<br>• Should be maintained at <2 tonnes per hectare (on average).<br>• Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch >6 millimetres in thickness. |
| Trees* (>6 metres in height) | • Trunks at maturity should be a minimum distance of six metres from all elevations of the building.<br>• Branches at maturity should not touch or overhang a building or powerline.<br>• Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation.<br>• Canopy cover within the APZ should be <15 per cent of the total APZ area.<br>• Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ.<br>**Figure 19:** Tree canopy cover – ranging from 15 to 70 per cent at maturity<br>  <br>15% 30% 70% |

| | |
|---|---|
| Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees. | • Should not be located under trees or within three metres of buildings.<br>• Should not be planted in clumps >5 square metres in area.<br>• Clumps should be separated from each other and any exposed window or door by at least 10 metres. |
| Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs) | • Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above.<br>• Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height. |
| Grass | • Grass should be maintained at a height of 100 millimetres or less, at all times.<br>• Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation. |
| Defendable space | • Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above. |
| LP Gas Cylinders | • Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building.<br>• The pressure relief valve should point away from the house.<br>• No flammable material within six metres from the front of the valve.<br>• Must sit on a firm, level and non-combustible base and be secured to a solid structure. |

** Plant flammability, landscaping design and maintenance should be considered – refer to explanatory notes*

## B3: The Standards for the APZ as Established by the Local Government

Refer to the firebreak / hazard reduction notice issued annually (under s33 of the Bushfires Act 1954) by the relevant local government. It may state Standards that vary from those established by the Guidelines and that have been endorsed by the WAPC and DFES as per Section 4.5.3 of the Guidelines.

A copy of the applicable notice is not included here as they are subject to being reviewed and modified prior to issuing each year. Refer to ratepayers notices and/or the local government's website for the current version.

## B4: Vegetation and Areas Excluded from Classification - Ensure Continued Exclusion

AS 3959:2018 establishes the methodology for determining a bushfire attack level (BAL). The methodology includes the classification of the subject site's surrounding vegetation according to their 'type' and the application of the corresponding relevant bushfire behaviour models to determine the BAL.

Certain vegetation can be considered as low threat or managed in a minimal fuel condition and can be excluded from classification. Where this has occurred in assessing the site, the extract from AS3959:2018 below states the requirements that must continue to exist for the vegetation on those areas of land to be excluded from classification (including the size of the vegetation area if relevant to the assessment).



**2.2.3.2** *Exclusions—Low threat vegetation and non-vegetated areas*

The following vegetation shall be excluded from a BAL assessment:

(a) Vegetation of any type that is more than 100 m from the site.

(b) Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified vegetation.

(c) Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site, or each other or of other areas of vegetation being classified vegetation.

(d) Strips of vegetation less than 20 m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified vegetation.

(e) Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.

(f) Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a minimal fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and windbreaks.

NOTES:

1 Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass for example, to a nominal height of 100 mm).

2 A windbreak is considered a single row of trees used as a screen or to reduce the effect of wind on the leeward side of the trees.

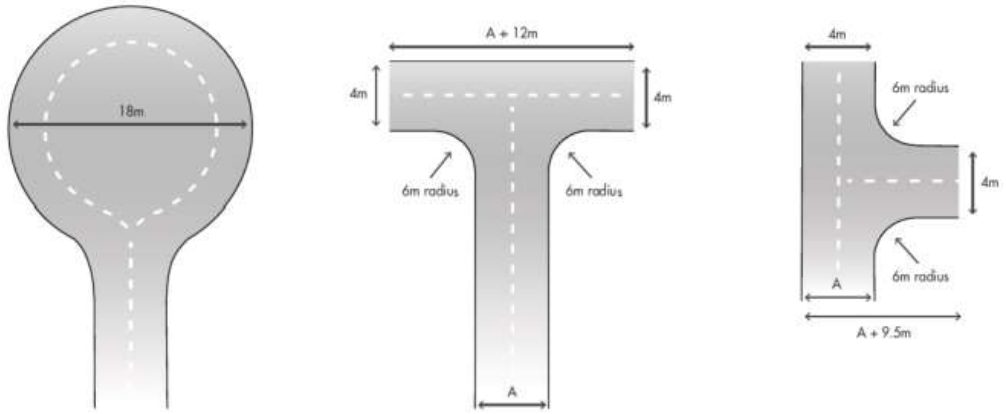
## APPENDIX C: TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS

The design/layout requirements for access are established by the acceptable solutions of the Guidelines (DPLH, 2021 v1.4) Element 3 and vary dependent on the access component, the land use and the presence of 'vulnerable' persons. Consequently, the best reference source are the Guidelines. The technical requirements that are fixed for all components and uses are presented in this appendix.

**GUIDELINES TABLE 6, EXPLANATORY NOTES E3.3 & E3.6 AND RELEVANT ACCEPTABLE SOLUTIONS**

| Technical Component | Vehicular Access Types / Components | | | |
|---|---|---|---|---|
| | Public Roads | Emergency Access Way [1] | Fire Service Access Route [1] | Battle-axe and Private Driveways [2] |
| Minimum trafficable surface (m) | In accordance with A3.1 | 6 | 6 | 4 |
| Minimum Horizontal clearance (m) | N/A | 6 | 6 | 6 |
| Minimum Vertical clearance (m) | 4.5 | | | |
| Minimum weight capacity (t) | 15 | | | |
| Maximum Grade Unsealed Road [3] | As outlined in the IPWEA Subdivision Guidelines | 1:10 (10%) | | |
| Maximum Grade Sealed Road [3] | | 1:7 (14.3%) | | |
| Maximum Average Grade Sealed Road | | 1:10 (10%) | | |
| Minimum Inner Radius of Road Curves (m) | | 8.5 | | |

Turnaround Area Dimensions for No-through Road, Battle-axe Legs and Private Driveways [4]




Passing Bay Requirements for Battle-axe leg and Private Driveway

When the access component length is greater than the stated maximum, passing bays are required every 200m with a minimum length of 20m and a minimum additional trafficable width of 2m (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum 6m).

Emergency Access Way – Additional Requirements

Provide a through connection to a public road, be no more than 500m in length, must be signposted and if gated, gates must be open the whole trafficable width and remain unlocked.

[1] To have crossfalls between 3 and 6%.

[2] Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

[3] Dips must have no more than a 1 in 8 (12.5% or 7.1 degree) entry and exit angle.

[4] The turnaround area should be within 30m of the main habitable building.

## APPENDIX D: TECHNICAL REQUIREMENTS FOR FIREFIGHTING WATER SUPPLY

### D2: Non-Reticulated Areas – Static Supply

For specified requirements, refer to the Guidelines Element 4: Water – Acceptable Solution A4.2 , Explanatory Notes E4 (that provide water supply establishment detail under the headings of water supply; independent water and power supply; strategic water supplies, alternative water sources and location of water tanks) and the technical requirements established by Schedule 2 (reproduced below).

**SCHEDULE 2: WATER SUPPLY DEDICATED FOR BUSHFIRE FIREFIGHTING PURPOSES**

#### 2.1 Water supply requirements

Water dedicated for firefighting should be provided in accordance with Table 7 below, and be in addition to water required for drinking purposes.

Table 7: Water supply dedicated for bushfire firefighting purposes

| PLANNING APPLICATION | NON-RETICULATED AREAS |
|---|---|
| Development application | 10,000L per habitable building |
| Structure Plan / Subdivision: Creation of 1 additional lot | 10,000L per lot |
| Structure Plan / Subdivision: Creation of 3 to 24 lots | 10,000L tank per lot **or** 50,000L strategic water tank |
| Structure Plan / Subdivision: Creation of 25 lots or more | 50,000L per 25 lots or part thereof Provided as a strategic water tank(s) or 10,000L tank per lot |

#### 2.2 Technical requirements

##### 2.2.1 Construction and design

An above-ground tank and associated stand should be constructed of non-combustible material. The tank may need to comply with AS/NZS 3500.1:2018.

Below ground tanks should have a 200mm diameter access hole to allow tankers or emergency service vehicles to refill direct from the tank, with the outlet location clearly marked at the surface. The tank may need to comply with AS/NZS 3500.1:2018. An inspection opening may double as the access hole provided that the inspection opening meets the requirements of AS/NZS 3500.1:2018. If the tank is required under the BCA as part of fire hydrant installation, then the tank will also need to comply with AS 2419.

Where an outlet for an emergency service vehicle is provided, then an unobstructed, hardened ground surface is to be supplied within four metres of any water supply.

##### 2.2.2 Pipes and fittings

All above-ground, exposed water supply pipes and fittings should be metal. Fittings should be located away from the source of bushfire attack and be in accordance with the applicable section below, unless otherwise specified by the local government.

**2.2.2.1 Fittings for above-ground water tanks:**

- Commercial land uses: 125mm Storz fitting; or
- Strategic water tanks: 50mm or 100mm (where applicable and adapters are available) male camlock coupling with full flow valve; or
- Standalone water tanks: 50mm male camlock coupling with full flow valve; or
- Combined water tanks: 50mm male camlock coupling with full flow valve or a domestic fitting, being a standard household tap that enables an occupant to access the water supply with domestic hoses or buckets for extinguishing minor fires.

**2.2.2.2 Remote outlets**

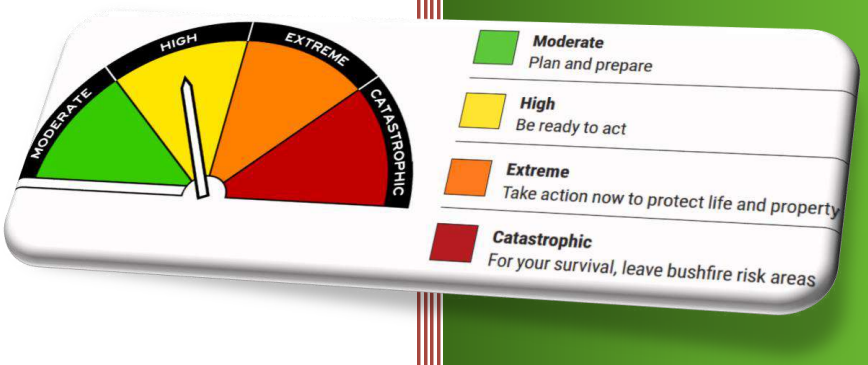
In certain circumstances, it may be beneficial to have the outlet located away from the water supply. In such instances in which a remote outlet is to be used, the applicant should consult the local government and DFES on their proposal.

| EXAMPLE CONSTRUCTION AND FITTINGS | |
|---|---|
|  |  |
| Strategic 47,000 Litre Concrete Tank & Protected Fittings | |
|  |  |
| 10,000 Litre Concrete Tank | Storz and Camlock Couplings |
|  |  |
| ll Flow 50mm Ball Valve | Full Flow 50mm Gate Valve and Male Camlock |

BUSHFIRE PRONE PLANNING

# Bushfire Emergency Plan

An Information Document for Premises Without Onsite Personnel Responsible for Emergency Management




PREVENT | PREPARE | RESPOND

**Lot 414 Caraban Road, Caraban**

**Shire of Gingin**

**Facility/Premises Use:** **Holiday accommodation**

**24 May 2023**

**Associated BMP: 220813** **BPP Ref. No. 220813**

**BPP GROUP PTY LTD T/A BUSHFIRE PRONE PLANNING**

**ACN: 39 166 551 784 | ABN: 39 166 551 784**

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**GUILDFORD WA 6055**

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| Version | Details | Date |
| 1.0 | Original | 24 May 2023 |
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BEP Template (Unsupervised Site) v9.3

| DISTRIBUTION | | | | | |
|---|---|---|---|---|---|
| Destination | | Version | No. Copies | Hard Copy | Electronic Copy |
| Person | Email | | | | |
| Scott Chatwin | | 1.0 | | ☐ | ☒ |
| | | - | | ☐ | ☐ |

***Limitation of Liability:*** *The procedures and their associated actions contained in this Bushfire Emergency Plan do not guarantee that, in the event of a bushfire, buildings or infrastructure will not be damaged, persons injured, or fatalities occur either on the subject site or off the site while evacuating. This is substantially due to the unpredictable nature and behaviour of fire and fire weather conditions. Additionally, the correct implementation of the required procedures will depend upon, among other things, the ongoing actions of the landowners and/or operators over which Bushfire Prone Planning has no control.*

*Any representation, statement, opinion, or advice expressed or implied in this document is made in good faith based on information available to Bushfire Prone Planning at the time. Bushfire Prone Planning will not, except as the law may require, be liable for any loss or other consequences whether or not due to the negligence, lack of care or otherwise of their consultants, their servants or agents, arising out of the services provided by their consultants.*

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| THE BUSHFIRE EMERGENCY PLAN – ITS PURPOSE AND APPLICATION |
|---|
| The purpose of this Bushfire Emergency Plan (BEP) is to provide usable bushfire emergency management information that is relevant and targeted to the different types of persons who will be associated with the subject premises.<br><br>There will be two distinct types of persons who will have different reasons for being onsite and will typically not be on site together at the same time (although for some uses this may occur). These persons are:<br><br>1. The owner and/or operator of the premises, who, in most cases, will not reside or work on the site and will have no responsibility for actively managing the safety of occupants during a bushfire emergency event; and<br><br>2. Those persons who will typically be short stay occupants of the premises.<br><br>To best support the purpose, this BEP is constructed as an **INFORMATION DOCUMENT** to provide the most relevant required information independently to each type of person.<br><br>**FOR THE OWNER/OPERATOR**<br><br>This BEP provides the 'Prevention' and 'Preparation' procedures and their associated actions that must be conducted prior to and during the bushfire season. Additional reference information is included as appendices.<br><br>**FOR THE SHORT STAY OCCUPANTS**<br><br>This BEP provides a 'Bushfire Emergency Information Poster' that will be displayed within the premises to inform the occupants, in the event of a bushfire emergency, of the appropriate 'Response' procedure (and associated actions), for a given scenario, along with the safer locations for relocation when necessary to reduce their exposure to bushfire threats.<br><br>*When necessary, the specific site/use data and consultant considerations applied in developing the BEP are included as an addendum to explain and justify the actions established by this BEP.* |

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## 1. APPLYING THE BUSHFIRE EMERGENCY PLAN

**FOR THE OWNER OPERATOR OF THE PREMISES**

- **Be familiar with all content in this Bushfire Emergency Plan, including the Appendices.**
- **Prior to and during the bushfire season (October to April) conduct the Pre-Season Prepare and Monitor and Maintain Maintenance procedures.**

**FOR THE SHORT STAY OCCUPANTS**

- **Refer to the displayed Bushfire Emergency Information Poster**

## 2. EMERGENCY CONTACTS

### 2.1. EMERGENCY SERVICES

| AGENCY/AUTHORITY | SERVICES | CONTACT |
|---|---|---|
| Department of Fire and Emergency Services / Police / Ambulance | Will respond to life threatening emergencies. Use to report a fire. | **Phone call: triple zero '000'**<br>**Phone app: EMERGENCY PLUS** |
| State Emergency Service (SES) | Emergency assistance - securing your property, rescuing persons. | 13 2500 |

### 2.2. UTILITIES / MEDICAL / ASSISTANCE

| AGENCY/ORGANISATION | SERVICES | CONTACT |
|---|---|---|
| Joondalup Health Campus | Emergency medical services | (08) 9400 9400 |
| Western Power | Response to electricity supply outages and damage. | 13 1351 |
| Crisis Care | Crisis accommodation | 1800 199 008 |
| Australian Red Cross | Humanitarian assistance | 1800 733 276<br>**Website:** redcross.org.au/emergencies |
| Salvation Army | Social services care | 13 72 58 (13 SALVOS)<br>**Website:** salvationarmy.org.au/need-help/disasters-and-emergencies/ |

## 3. EMERGENCY INFORMATION SOURCES

**THE IMPORTANCE OF BEING AWARE OF YOUR SURROUNDINGS**

Know the types of vegetation that grow on surrounding land. Be aware of the potential behaviour of a fire in this vegetation and the threats it can present under different conditions. Relevant information is included in **Appendix 6**.

Knowledge and awareness of the local environment and immediate past and current conditions is a valuable source of information that will assist with decision making – with hot/dry/windy weather presenting the worst conditions.

Lookout for smoke (i.e., evidence of fire) within your surrounding landscape, for as far as you can see. Be aware of the current and forecast wind direction as any fire will be likely to spread in the direction to which the wind is blowing.

| YOUR FIRE WEATHER DISTRICT (BOM) | **Swan Coastal North** |
|---|---|
| SOURCE | INFORMATION |
| **Emergency WA**<br>emergency.wa.gov.au | This is the primary and most up to date source of information (maps and lists) for:<br>• Current warnings and incidents.<br>• Designated bushfire evacuation centre.<br>• Fire Danger Ratings (FDR)<br>• Total Fire Bans (TFB) |
| **Bureau of Meteorology (BOM)**<br>bom.gov.au/wa/forecasts/fire-danger-ratings.shtml | Fire Danger Ratings (FDR) and the corresponding Fire Behaviour Index (FBI). |
| **WA Department of Fire & Emergency Services (DFES)**<br>Information Line: 13 3337 (13 DFES)<br>dfes_wa<br>dfeswa<br>dfes.wa.gov.au/hazard-information/bushfire | Republishing of Emergency WA Warnings.<br>General emergency information.<br>Provides overviews of bushfire hazard educational information, including bushfire behaviour and preparation, response, recovery information, and FAQ. |
| **Local Radio Stations**<br>ABC (AM/digital) or 6PR (882)<br>abc.net.au/radio/stations | Current bushfire warnings, designated bushfire evacuation centre and other relevant information. |
| **Emergency Alerts – through automated government telephone warning system** | Voice messages (landline) and text messages (mobile) can be sent within a defined area under an immediate threat. |
| **Bushfire.IO**<br>bushfire.io | Map based bushfire warnings, bushfire incidents and wind forecasts. A visual tool run privately – crosscheck with other sources. |
| **WA Parks and Wildlife Service**<br>dpaw.wa.gov.au Website | Bushfire alerts and warnings, current prescribed burns in national parks. |
| **Main Roads WA**<br>Phone: 13 8138<br>travelmap.mainroads.wa.gov.au/Home/Map | Road alerts and closures (incidents and roadworks). |

## 4. PRE-SEASON PREPARE PROCEDURE – ACTIONS TO IMPLEMENT

### 1. ANNUAL REVIEW OF THE BUSHFIRE EMERGENCY PLAN

Prior to the bushfire season (October to April), update and amend the Bushfire Emergency Plan as required. Assistance from a bushfire consultant is advised.

- ☐ Make required changes to emergency contacts and emergency information sources. Ensure that any changes are also applied to the bushfire emergency information displayed within the facility/premises.
- ☐ Ensure the designated assembly area, shelter-in-place building/area and the off-site safer locations and nominated evacuation routes are still the best options. Incorporate any changes into the Bushfire Emergency Plan and the information displayed within the premises.
- ☐ Where an offsite safer destination is an identified building(s), contact relevant persons to confirm continued availability for potential use during a bushfire emergency.
- ☐ Account for any change to buildings or equipment onsite that has implications for emergency management.
- ☐ Incorporate any improvements or additions to the emergency management procedures/actions that have been identified through experience with a bushfire event or changes in best practice bushfire emergency management that are developed over time.
- ☐ In the event any part of this BEP is amended as part of its annual review, replace old copies and destroy them.

### 2. DISPLAY & AVAILABILITY OF BUSHFIRE EMERGENCY INFORMATION

- ☐ Ensure the Display Poster 'Bushfire Emergency Information' (updated as necessary) is displayed (framed or laminated), in a prominent and accessible position within the premises.

  Additional information can be displayed when considered appropriate. Examples are contained within the appendices. Copies of these resources are available for download on the DFES website.

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- ☐ Ensure signage for bushfire water supply and evacuation routes are in place and legible.

### 3. BUILDING PREPARATION

These actions address the required maintenance of premises buildings, prior to and during the bushfire season to ensure:

- Continued compliance with the construction standards that correspond to its Bushfire Attack Level (as determined in the Bushfire Management Plan);
- The vulnerability of buildings and other consequential fire fuels, to the direct and indirect attack mechanisms of bushfire is minimised; and
- The operational readiness of any installed firefighting equipment and infrastructure.

- ☐ If the facility/premises is constructed to BAL-12.5 requirements or higher, ensure any external gaps continue to be blocked or screened with non-combustible material (e.g. rock wool, sealant, mesh – maximum aperture of 2mm) to prevent ember entry. This includes under eaves, external cladding, roofs, external vents, skylights etc. Otherwise it is recommended that this action is applied.

- ☐ Check that all required window and door screening is in place (prevents ember entry to internal spaces and reduces radiant heat load on the glass).

- ☐ If installed, ensure all installed bushfire shutters are operational.

- ☐ If there is recent construction or planned construction of attached structures (decks, stairs, patio, carport etc.) or adjacent structures (dwelling, shed, carport etc.), ensure bushfire resistant materials (including non-combustible) have been used to the greatest extent possible.

- ☐ If an evaporative air cooler is installed ensure it is either constructed to the required BAL rating or is fitted with an appropriate ember protection screen.

- ☐ All gas cylinders to be installed and maintained in accordance with AS 1596. This standard includes requirements for small portable cylinders and larger cylinders used for domestic house supply. These include:
    - Safety release valve shall be directed away from the building and persons access/egress routes;
    - Metal piping and fittings shall be used on all piping inside the building's cavities and enclosable occupied spaces and the high pressure side of any gas regulators; and
    - Tethers securing cylinders are to be non-combustible.

  This is to limit the potential for flames and high levels of radiant heat from gas flaring or explosion, to directly impact a building. The heat from the bushfire or a closer consequential fire can cause gas cylinder pressures to reach critical levels beyond which their pressure release valve releases large quantities of LP gas. If these gas cylinders fall over, this pressure release valve may no longer function correctly, and internal pressures continue to rise with continued heating until the cylinder ruptures. The resulting explosion includes a pressure wave and large ball of flame which can threaten nearby life and buildings. Flared or ruptured gas bottles are commonly found in post bushfire surveys.

- ☐ Remove and maintain at low levels, accumulated vegetation debris (fine fuels) near, on, in and against buildings and structures, including:
    - In construction crevices, gaps, on horizontal / shallow angle surfaces and at re-entrant corners in access ways, at wall/floor, wall/ground, roof/wall junctions and around doors, vents, windows;
    - In roof gutters and valleys; and
    - Adjoining/adjacent drains, culverts and pits.

- ☐ Around building(s), including verandahs and decks, remove or relocate away from the facility/premises those combustible items that may be seldom used or able to be stored more appropriately in the bushfire season. This includes furniture and mats. Refer to Appendix 7 'LANDSCAPING DESIGN & CONSTRUCTION PRINCIPLES TO APPLY' for further information regarding consequential fire fuels and recommended separation distances.

- ☐ Ensure all emergency lighting including pathway lighting and signage lighting is fully functional.

**4. GROUNDS PREPARATION**

These actions address the required management of onsite combustible items/materials (fuels) around, on or in buildings. By removing or reducing fuels, the likelihood and intensity of consequential fire is significantly reduced.

Consequential (local) fire which is the most significant cause of building/structure damage/loss in bushfire events.

Fuel management must be completed prior to the start of the bushfire season and maintained during the season.

For additional guidance, refer to:

- The *Guidelines for Planning in Bushfire Prone Areas within the Explanatory Notes for Element 2 of the Bushfire Protection Criteria and Schedule 1: Standards for Asset Protection Zones (WAPC 2021);*
- The DFES '*Bushfire Preparation Toolkit*' publication. Website: publications.dfes.wa.gov.au/?hazard=Bushfire; and
- Where initial or renovation landscaping of grounds surrounding the facility/premises is being conducted, apply the directions and principles of the measures presented in Appendix 7 to the greatest extent possible.

☐ **The Firebreak Notice:** Maintain compliance with the local government's annual firebreak and fuel load notice issued under section 33 of the Bush Fires Act 1954. Where the requirements are additional to or provide a greater level of bushfire protection than those established in this Emergency Plan, they must be complied with.

☐ **Accessibility:** Ensure all property access/egress routes are kept clear and easily trafficable.

☐ **The Asset Protection Zone (APZ) Dimensions:** Ensure the APZ dimensions stated below (established by the associated Bushfire Management Plan for the premises/facility), are installed and maintained.

- Minimum Local Government Authority (Shire of Gingin) APZ (Refer to Bushfire Management Plan for distances).

☐ **Asset Protection Zone Management:**

Trees (greater than 6 metres in height):

- Remove branches overhanging buildings and powerlines;
- Remove lower branches to a height of 2m above the ground or any surface vegetation; and
- Remove loose bark (rake) to at least a height of 2m above the ground or any surface vegetation.

Shrubs (0.5 metres to 5 metres in height) and ground covers (greater than 0.5 metres in height):

- Ensure location and clump sizes remain in accordance with guidance in Appendix 7; and
- Remove all dead plant material.

Grass to be reduced and maintained at a height of 50 mm.

Fine Fuels (i.e., less than 6 mm in thickness):

- Ensure combustible dead vegetation matter is reduced to and maintained at less than 2 t/ha on average. Collecting and weighing an indicative 1m$^2$ of this litter above the mineral earth will indicate the fuel load (100g/m$^2$ = 1 t/ha); and
- Remove all debris piles.

Heavy Fuels (i.e., greater than 6 mm in thickness):

- Such as fallen branches, timber, firewood, packaging materials, building materials, outdoor furniture, garbage bins, debris piles.
- To be removed from the APZ or be separated from buildings/structures in accordance with guidance in

Appendix 7.

Applied mulches:

- Should be non-combustible e.g., stone, gravel and crushed rock. Where wood mulch is used it should be greater than 6mm in thickness.

## 5. IN-SEASON MAINTENANCE PROCEDURE – ACTIONS TO IMPLEMENT

### 1. MAINTAIN BUILDINGS

☐ During the bushfire season (October to April), refer to Action List No. 3 in the 'Pre-Season Prepare Procedure' and ensure all actions applicable to management during the bushfire season are implemented.

### 2. MAINTAIN ASSET PROTECTION ZONES

☐ During the bushfire season (October to April), refer to Action List No. 4 in the 'Pre-Season Prepare Procedure' and ensure all actions applicable to management during the bushfire season are implemented.

# BUSHFIRE EMERGENCY INFORMATION

Facility / Premises Name / Address

Produced by Bushfire Prone Planning May 2023. Additional procedure details and information are contained in the Bushfire Emergency Plan developed for the facility premises.

## In Emergency Dial 000

or use the EMERGENCY PLUS phone app

**EMERGENCY INFORMATION SOURCES**

emergency.wa.gov.au | 13 DFES (13 33 37)

@dfeswa | @dfes_wa | Local ABC Radio

**EVACUATION DESTINATION(S)**

The Controlling Agency, together with the Local Government and Department of Communities will determine when and where the opening of an evacuation centre may be required.

1. Guilderton Country Club (17 minutes): Head north on Caraban Rd, left onto Indian Ocean Dr, south on Guilderton Rd. Drive south onto Mortimer Rd, left onto Mullins St and left onto Wedge St, destination will be on the left.

2. Granville Civic Centre (30 minutes): Head north on Caraban Rd, right on Indian Ocean Dr, east on Gingin Brook Rd, North on Brand Hwy, southeast on Dewar Rd and southeast on Weld Street. Destination will be on the right.

**A FIRE EXISTS - BROADCAST BUSHFIRE WARNINGS**

**EMERGENCY WARNING**
There is a threat to lives or homes. You are in danger and need to take immediate action to survive.

**WATCH AND ACT**
There is a possible threat to lives or homes. You need to leave or get ready to defend – do not wait and see.

**ADVICE**
A fire has started but there is no immediate threat to lives or homes. Be aware and keep up to date.

**FORECAST FIRE DANGER (FDR) RATINGS**

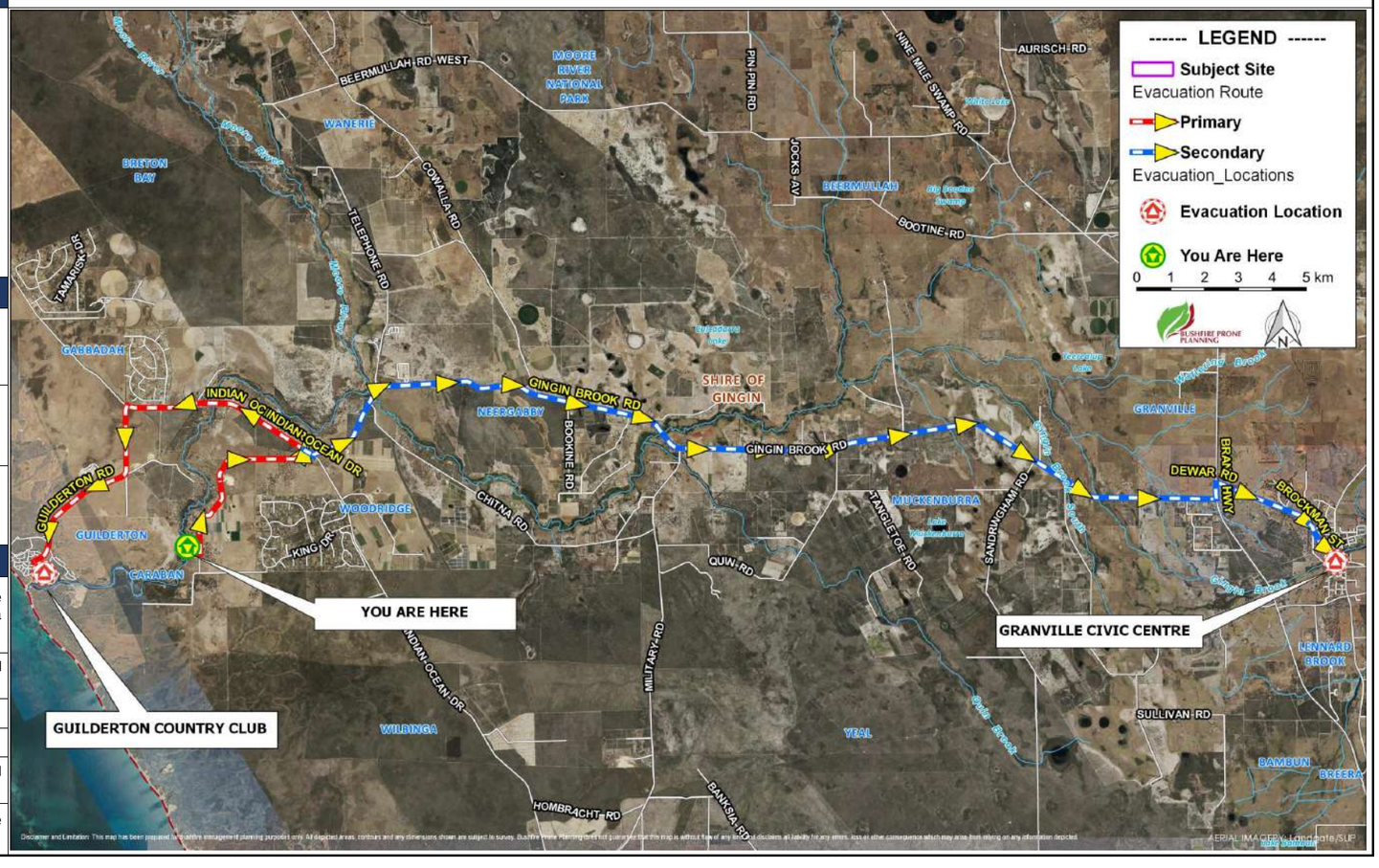
The higher the rating, the more dangerous the conditions and the greater the consequences if a fire starts.

| | |
|---|---|
| No Rating | No action required. Remain alert and abide by local seasonal laws and regulations. |
| Moderate | Plan and prepare. Most fires can be controlled. |
| High | Be ready to act. Fires can be dangerous. |
| Extreme | Act now to protect your life and property. Fires will spread quickly and be extremely dangerous. |
| Catastrophic | For your survival, leave bush fire risk areas. If a fire starts and takes hold, lives are likely to be lost. |

**SCENARIO 1: A BUSHFIRE EXISTS A CONSIDERABLE DISTANCE AWAY; A BUSHFIRE ADVICE WARNING MAY OR MAY NOT BE ISSUED; YOU ARE CONCERNED FOR YOUR SAFETY; IMPLEMENT THE ELEVATED THREAT PROCEDURE ➔** Check for bushfire warning & if none, call 000 to report; Ensure all persons at the premises are aware of the situation; Monitor the sources of emergency information and the situation outside for changes; Consider relocating to a lower threat area for the day If the current FDR is Extreme or Catastrophic or persons have health conditions.

**SCENARIO 2: A BUSHFIRE EXISTS RELATIVELY CLOSE; A BUSHFIRE EMERGENCY OR WATCH AND ACT WARNING MAY OR MAY NOT BE ISSUED; IMPLEMENT THE EVACUATION PROCEDURE ➔** Check for bushfire warning & if none, call 000 to report; Shut all doors/windows, turn off bottled (or mains) gas & any evaporative air cooler fans (not water); Gather belongings & prepare vehicles; Check emergency information sources for latest updates; Assess the situation to ensure an evacuation route (see map) remains available; If none available apply the Shelter in Place actions (refer to Scenario 3) otherwise evacuate using the evacuation route & destination identified as the most appropriate.

**SCENARIO 3: IMPACT FROM A BUSHFIRE IS IMMINENT; EVACUATION ROUTES ARE THREATENED; THERE IS NO TIME TO PERFORM A SAFE (EARLY) EVACUATION OR EMERGENCY SERVICES HAVE INSTRUCTED YOU TO SHELTER IN PLACE; IMPLEMENT THE SHELTER IN PLACE PROCEDURE ➔** Stay in the Shelter in Place Building/Area CHALET**.** Call 000 to inform them you are sheltering in place; Shut all doors/windows, turn off bottled (or mains) gas & any evaporative air cooler fans (not water); Outside - move all combustible materials (mats, outdoor furniture, rubbish bins well away from the building; Block gaps around doors to prevent ember entry with wet cloth materials; Stay hydrated and aware of what is happening; Monitor emergency information sources; Move outside after the fire front has passed and conditions outside are tenable; Continually check for spot fires involving the building or nearby materials and extinguish if possible.



## APPENDIX 1: BUSHFIRE WARNINGS – WHEN A BUSHFIRE IS IDENTIFIED

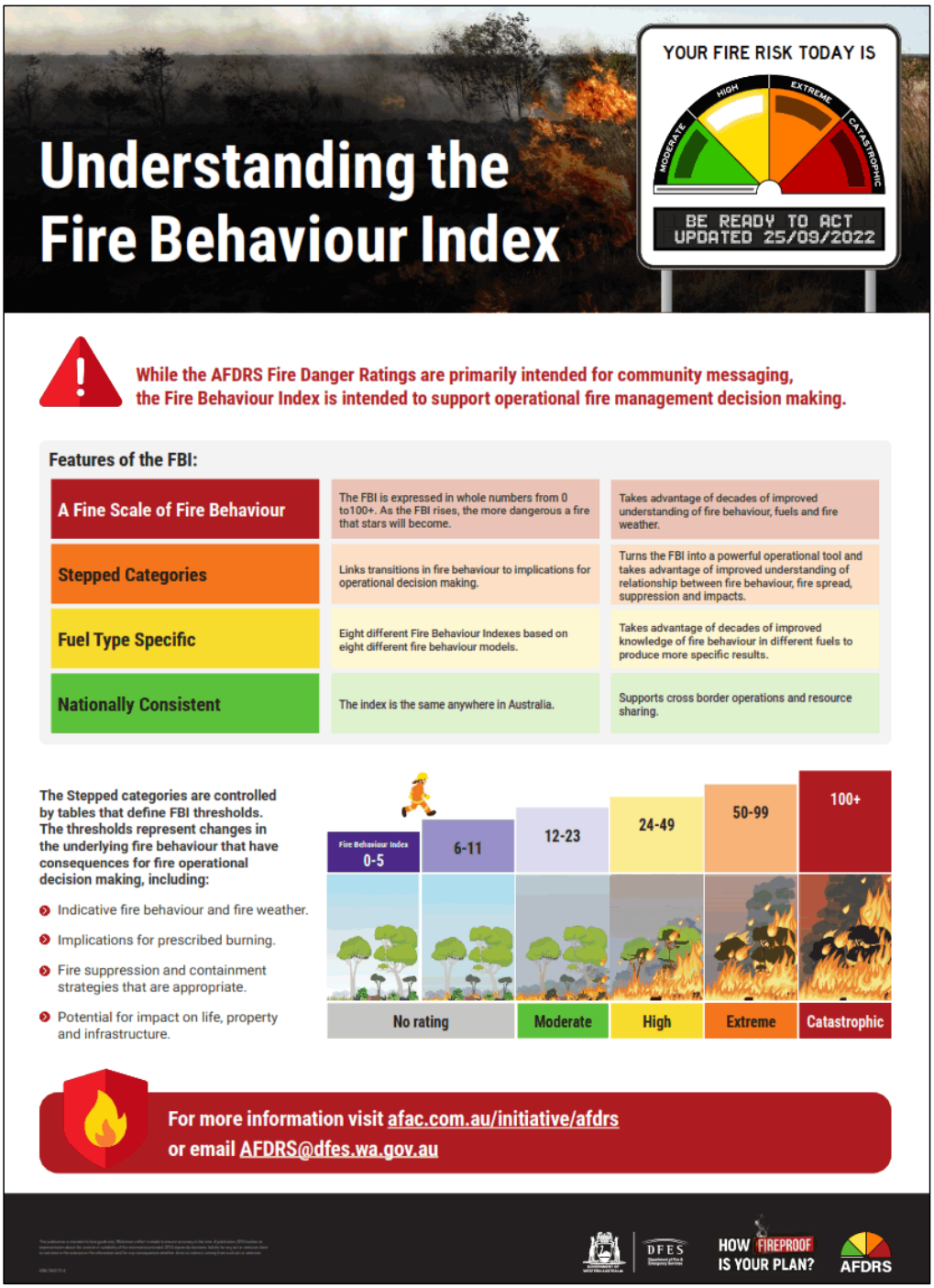


## APPENDIX 2: FIRE DANGER RATINGS - FORECAST BUSHFIRE RISK

**THE HIGHER THE RATING, THE MORE DANGEROUS THE CONDITIONS AND THE GREATER THE CONSEQUENCES IF A FIRE STARTS.**



## APPENDIX 3: FIRE BEHAVIOUR INDEX - FORECAST BUSHFIRE RISK



**APPENDIX 4: BUSHFIRE RISKS AND DANGERS**



## APPENDIX 5: GUIDELINES FOR TRAVELLING IN CARS DURING A BUSHFIRE



# TRAVELLING DURING A BUSHFIRE

**BUSHFIRES CAN START WITHOUT WARNING.** People have been killed or seriously injured during bushfires. If you are travelling or staying near bushland, fire is a real risk to you. Pack an emergency kit including important items such as woollen blankets, drinking water and protective clothing.

## IF THERE IS A LOT OF SMOKE

- ◯ Slow down as there could be people, vehicles and livestock on the road.
- ◯ Turn your car headlights and hazard lights on.
- ◯ Close the windows and outside vents.
- ◯ If you can't see clearly, pull over and wait until the smoke clears.

For more information visit **dfes.wa.gov.au/bushfire**
or contact DFES Community Preparedness:
**Community.Preparedness@dfes.wa.gov.au**
or **9395 9816**

## IF YOU BECOME TRAPPED BY A FIRE

Sheltering inside a vehicle is a very high risk strategy. It is unlikely that a person will survive in all but the mildest circumstances.

- ◯ Park the vehicle off the roadway where there is little vegetation, with the vehicle facing towards the oncoming fire front.
- ◯ Turn the engine off.
- ◯ Close the car doors, windows and outside vents, and call 000.
- ◯ Stay in the car until the fire front has passed. Stay as close to the floor as possible and cover your mouth with a damp cloth to avoid inhalation of smoke.
- ◯ Stay covered in woollen blankets, continue to drink water and wait for assistance.
- ◯ Once the front has passed and the temperature has dropped, cautiously exit the vehicle.

## IMPORTANT INFORMATION

- ◯ Find the local ABC radio frequency in the area. Stay up to date in a major emergency, when lives and property are at risk, ABC radio will issue broadcast warnings at a quarter to and a quarter past the hour.
- ◯ Main Roads provides updated information on road closures throughout WA. Call 138 138 or www.mainroads.wa.gov.au
- ◯ Check the weather forecast and current fire restrictions. Be aware of the Fire Danger Rating for the area you are travelling to and be prepared to reassess your plans.
- ◯ Download the Bushfire Traveller's Checklist at www.dfes.wa.gov.au

The information contained in this material is provided voluntarily as a public service by the Department of Fire and Emergency Services (DFES). This material has been prepared in good faith and is derived from sources believed to be reliable and accurate at the time of publication. Nevertheless, the reliability and accuracy of the information cannot be guaranteed and DFES expressly disclaims liability for any act or omission done or not done in the reliance on the information and for any consequences whether direct or indirect, arising from such act or omission. This publication is intended to be a guide only and viewers should obtain their own independent advice and make their own necessary inquiries.

November/2021/V1.0

DFES Department of Fire & Emergency Services

HOW FIREPROOF IS YOUR PLAN?

## APPENDIX 6: INDICATIVE BUSHFIRE BEHAVIOUR TO IMPACT THE FACILITY/PREMISES

**Information Relevance:** This information is included in the Bushfire Emergency Plan to inform and assist the decision making of those persons onsite who have the responsibility to manage a bushfire emergency for the subject facility/premises.

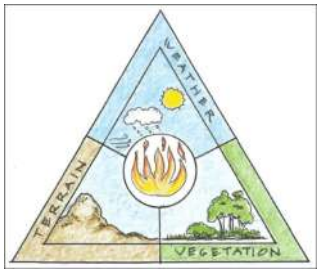
The information establishes the key factors to be considered in understanding the types and scale of key bushfire behaviours that can be expected to impact the facility/premises on a given day. These factors are the type of vegetation that exists on the land surrounding the subject premises/facility, the relevant surrounding terrain, and the forecast Fire Danger Rating (FDR) that applies to the locality.

**Information Source:** The information is taken from the bushfire behaviour modelling applied within the **Australian Fire Danger Rating System (AFDRS).** Within this system, eight accepted bushfire behaviour models, describing mathematically the way fire moves and spreads through different vegetation types, are currently available and are applied to twenty two different vegetation types across Australia.

The modelling is used to derive the Fire Behaviour Index (FBI) that assists firefighting operational decision making. From the FBI, Fire Danger Ratings (FDR) are derived which provide the broad categories needed to communicate fire danger to the community. The determination of the daily FDR considers the vegetation types present and the forecast fire weather conditions. The higher the rating, the more dangerous the conditions and the greater the consequences if a fire starts. (Source: AFDRS project led by NSW RFS, Australian Bureau of Meteorology and AFAC).

**The Fire Behaviour Triangle**

The behaviour of a bushfire, including the types of threats, intensity and how quickly it moves, depends on the three factors of vegetation, weather and terrain.



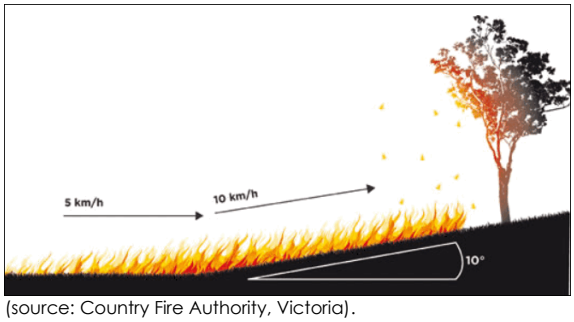

This is known as the fire behaviour triangle – because all three factors combine to shape the characteristics of the bushfire (source: CSIRO 'Bushfire best practice guide' at … research.csiro.au/bushfire/).

The influence of fire weather (FDR) and vegetation types (as per AFDRS) on the potential bushfire impact to the subject facility/premises, can be derived from the tables presented on the following page(s). Greater fuel loads will result in behaviours at the higher end of stated values.

The influence of terrain can be derived by considering the existence and degree of sloping ground and changes in changes in relief (e.g., flat, undulating or rugged land), surrounding the subject facility/premises and particularly under the vegetation.

**The Influence of Terrain (topography)**

A fire will burn faster uphill. This is because the flames can easily reach more unburnt fuel in front of the fire. Radiant heat pre-heats the fuel in front of the fire, making the fuel even more flammable.

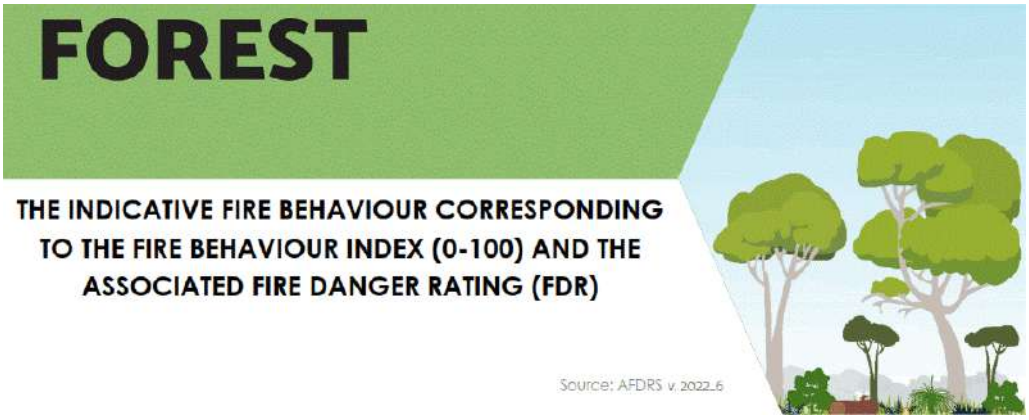



For every 10˚ slope, the fire will double its speed. For example, if a fire is travelling at 5 km per hour along flat ground and it hits a 10˚ slope it will double in speed to 10 km per hour up the hill. By increasing in speed the fire also increases in intensity, becoming even hotter.

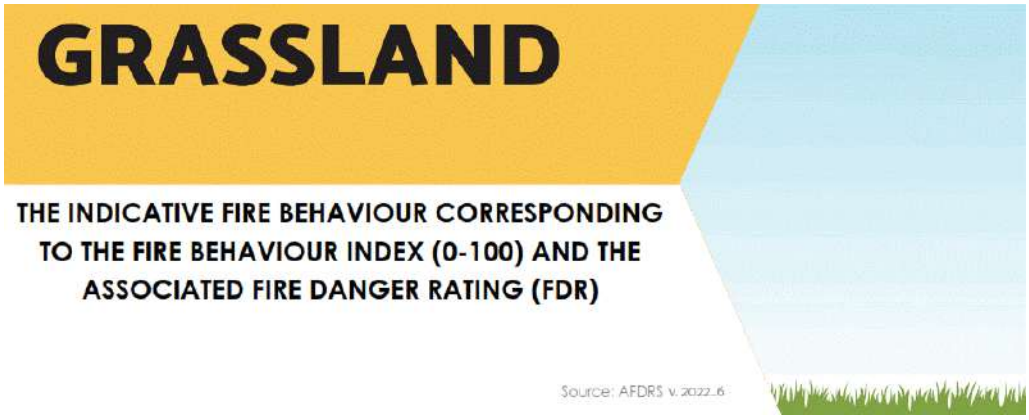
The opposite applies to a fire travelling downhill. The flames reach less fuel, and less radiant heat pre-heats the fuel in front of the fire. For every 10˚ of downhill slope, the fire will halve its speed. Fires tend to move more slowly as the slope decreases (source: Country Fire Authority, Victoria).

Terrain should be considered for its potential to increase adverse fire behaviour including flame heights, forward rates of spread and ember production (in relevant vegetation i.e., primarily bark fuels). Essentially, where vegetation exists on sloping land near your site, assume that the higher end of adverse fire behaviours is much more likely to apply.

| VEGETATION TYPES IDENTIFIED SURROUNDING THE SUBJECT FACILITY/PREMISES | | |
|---|---|---|
| As Applied in the AFDRS | | Vegetation Location Relative to the Facility/Premises |
| Fire Behaviour Model (short name) | Fuel Types / Description | |
| Forest | Dry eucalypt forests, shrubby understorey/litter surface fuel.<br>Forests with high moisture content due to structure, topography or inundation. | Forest area has developed as part of riparian vegetation along a water course. This vegetation is adjacent to the lot boundary. The forest vegetation is primarily off site and not manageable by the subject site landowners. |
| Grassland | Continuous/tussock grasslands.<br>Modified/native pasture (grazing). Non-irrigated cropping.<br>Low shrublands (wet or arid) with no overstorey. | Grassland areas surround the chalet and are located primarily within the lot boundary. Grassland is also located offsite around areas of Forest vegetation. |




| FDR | INDICATIVE BUSHFIRE BEHAVIOUR | | | |
|---|---|---|---|---|
| NO RATING | MAX FLAME HEIGHT <1 m | 0-5 | RATE OF SPREAD 0-40 m/hr | Fire difficult to ignite and sustain.<br>Fires generally unlikely to spread and likely to self-extinguish. | **SPOTTING POTENTIAL**<br>Potential for any spotting is very limited and likely **<150 m** |
| | <4 m | 6-11 | 20-110 m/hr | Slow spreading fires, typically involving surface and near-surface fuels and sometimes bark and elevated fuels.<br>Spotting is sporadic and limited to short-distances. | Potential for spotting is limited with short distance spotting possible up to **400 m** |
| MODERATE | 2-8 m | 12-23 | 60-600 m/hr | Actively spreading fires typically involving surface, near-surface, elevated and bark fuel layers and occasionally canopy fuels.<br>Low-moderate spotting frequency; isolated medium range spotting can occur. | Short distance spotting occurring with increasing frequency with possible medium distance spotting up to **2 km** |
| HIGH | 7-14 m | 24-49 | 0.3-1 km/hr | Rapidly spreading fires with potential for development into large burn areas within burning period. Fires typically involving most fuel layers. Short-range spotting is prevalent, with possibility of medium range and occasional long-range distance spotting. | Short and medium distance spotting occurring with increasing frequency with possible long distance spotting up to **4 km** |
| EXTREME | 11 m - approx. double forest | 50-99 | 0.7-3 km/hr | Fires likely to quickly transition to crowning.<br>Possibility for fire behaviour to become erratic and plume driven.<br>Strong convective column formation.<br>Wind speed and direction likely to be erratic at times. | High ember density in short and medium range with possible long distance spotting up to **12 km** |
| CATASTROPHIC | >30 m (approx. double forest height) | 100+ | >2 km/hr can be expected, possibly >3 km/hr | Fires likely to quickly transition to crowning.<br>Possibility for fire behaviour to become erratic and plume driven.<br>Strong convective column formation.<br>Wind speed and direction likely to be erratic at times. | High ember density in short and medium range with possible long distance spotting occurring **20-30 km** ahead of the main fire front |




| FDR | INDICATIVE BUSHFIRE BEHAVIOUR | | | |
|---|---|---|---|---|
| NO RATING | MAX FLAME HEIGHT <1 m | 0-5 | RATE OF SPREAD 0-30 m/hr | Fire difficult to ignite and sustain. Fires generally unlikely to spread and likely to self-extinguish. | SPOTTING POTENTIAL Potential for any spotting is very limited. |
| | <1.5 m | 6-11 | <1.3 km/hr | Fire easily sustained. Typically wind driven fires that can spread quickly. | Potential for spotting Potential for short distance spotting is limited. |
| MODERATE | 1.5-2.5 m | 12-23 | 0.5-6 km/hr | Typically wind driven and rapidly spreading fires with the potential to gain size quickly. | Possible short distance spotting occurring. |
| HIGH | 2-3 m | 24-49 | 2.5-10 km/hr | Wind driven, rapidly spreading fires with potential for development into large fire area/size and with the potential for short distance spotting and long flame lengths. | Short distance spotting occurring with increasing frequency. |
| EXTREME | 2.5-3.5m | 50-99 | 5-16 km/hr | Extremely rapid fire growth and increasing likelihood of large final fire area/size. Possibility for fire behaviour to become erratic and plume driven. Strong convective column formation. Wind speed and direction likely to be erratic at times. | Likely short distance spotting occurring with increasing frequency. |
| CATASTROPHIC | >3m | 100+ | >8 km/hr can be expected, possibly >16 km/hr | Extremely rapid fire growth and high likelihood of large final fire area/size. Possibility for fire behaviour to become erratic and plume driven. Strong convective column formation. Wind speed and direction likely to be erratic at times. | Likely short distance spotting occurring with increasing frequency. |

## APPENDIX 7: LANDSCAPING DESIGN & CONSTRUCTION PRINCIPLES TO APPLY

Where initial or renovation landscaping of grounds surrounding the facility/premises is being conducted, apply the directions and principles of the following measures to the greatest extent possible.

For additional guidance, refer to:

- The *Guidelines for Planning in Bushfire Prone Areas within the Explanatory Notes for Element 2 of the Bushfire Protection Criteria and Schedule 1: Standards for Asset Protection Zones (WAPC 2021); and*
- The DFES *'Bushfire Preparation Toolkit'* publication. Website: publications.dfes.wa.gov.au/?hazard=Bushfire

☐ **Landscaping – Non-Combustible Construction:** Ensure non-combustible materials are used for fencing and any other landscaping construction, including retaining walls.

☐ **Landscaping – Tree and Plant Separation from the Facility/Premises (Location):**

Trees (greater than 6 metres in height: Minimise the potential for tree strike damage (falling or blown) to the facility/premises (allowing flame, radiant heat and ember entry to internal spaces), and debris accumulation on, in and around the facility/premise. Principles to apply are:

- Ideally trees will be separated from buildings/structures by a distance of at least 1.5 times the height of the tallest tree;
- As a minimum, trunks at maturity should be at least 6 metres from all elevations of the building, branches at maturity should not touch or overhang a building or powerlines. Mature tree canopies should be separated at least 5m with total canopy cover not exceeding 15% and not connected to tree canopy outside the APZ;
- Species of trees that produce significant quantities of debris (fine fuels) during the bushfire season should be located a sufficient distance away from vulnerable exposed elements to ensure debris cannot drop and accumulate within at least 4m of buildings/structures or be likely to be relocated by wind to closer than 4m to buildings / structures.

Shrubs and scrub (0.5 metres to 6 metres in height):

- Should not be located under trees or within 3 metres of buildings;
- Should not be planted in clumps greater than 5m$^2$ in area;
- Clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres (unless they can be classified as low flammability plants); and
- Shrubs greater than 6 metres in height are to be treated as trees.

Ground covers (less than 0.5 metres in height):

- Can be planted under trees but and no closer than two metres from a structure but 3 metres from doors or windows if greater than 100 mm in height; and
- Ground covers greater than 0.5 metres in height are to be treated as shrubs.

Grass: Where possible utilise irrigated perennial species.

Mulches should be non-combustible e.g., stone, gravel and crushed rock. Where wood mulch is used it should be greater than 6mm in thickness.

☐ **Constructed Barriers to Shield Facility/Premises from Bushfire:** Where applicable, install walls, fences and/or landforms to shield the facility/premises (or any identified consequential fire fuels – refer to previous item) from direct and indirect bushfire attack mechanisms and reduce the potential impact of these threats.

These barriers should be constructed using appropriate fire resistant / non-combustible construction materials (e.g. masonry, steel, earthworks). These are to withstand the impact of direct bushfire attack mechanisms for the required period.

☐ **Constructed Barrier to Shield Persons on Pathways to Safer Onsite Area/Building:** Where possible, alongside the relevant pathways, utilise walls / fences / landforms as shielding structures constructed using fire resistant / non-combustible construction materials (e.g. masonry, steel, earthworks).

These are to withstand the impact of direct bushfire attack mechanisms for the required period and provide the required reduction in threat levels to persons (including firefighters) traversing the pathway.

# BUSHFIRE EMERGENCY INFORMATION

Facility / Premises Name / Address

Produced by Bushfire Prone Planning May 2023. Additional procedure details and information are contained in the Bushfire Emergency Plan developed for the facility premises.

## In Emergency Dial 000

or use the EMERGENCY PLUS phone app

### EMERGENCY INFORMATION SOURCES

emergency.wa.gov.au | 13 DFES (13 33 37)

@dfeswa | @dfes_wa | Local ABC Radio

### EVACUATION DESTINATION(S)

The Controlling Agency, together with the Local Government and Department of Communities will determine when and where the opening of an evacuation centre may be required.

1. Guilderton Country Club (17 minutes): Head north on Caraban Rd, left onto Indian Ocean Dr, south on Guilderton Rd. Drive south onto Mortimer Rd, left onto Mullins St and left onto Wedge St, destination will be on the left.

2. Granville Civic Centre (30 minutes): Head north on Caraban Rd, right on Indian Ocean Dr, east on Gingin Brook Rd, North on Brand Hwy, southeast on Dewar Rd and southeast on Weld Street. Destination will be on the right.

### A FIRE EXISTS - BROADCAST BUSHFIRE WARNINGS

**EMERGENCY WARNING**
There is a threat to lives or homes. You are in danger and need to take immediate action to survive.

**WATCH AND ACT**
There is a possible threat to lives or homes. You need to leave or get ready to defend – do not wait and see.

**ADVICE**
A fire has started but there is no immediate threat to lives or homes. Be aware and keep up to date.

### FORECAST FIRE DANGER (FDR) RATINGS

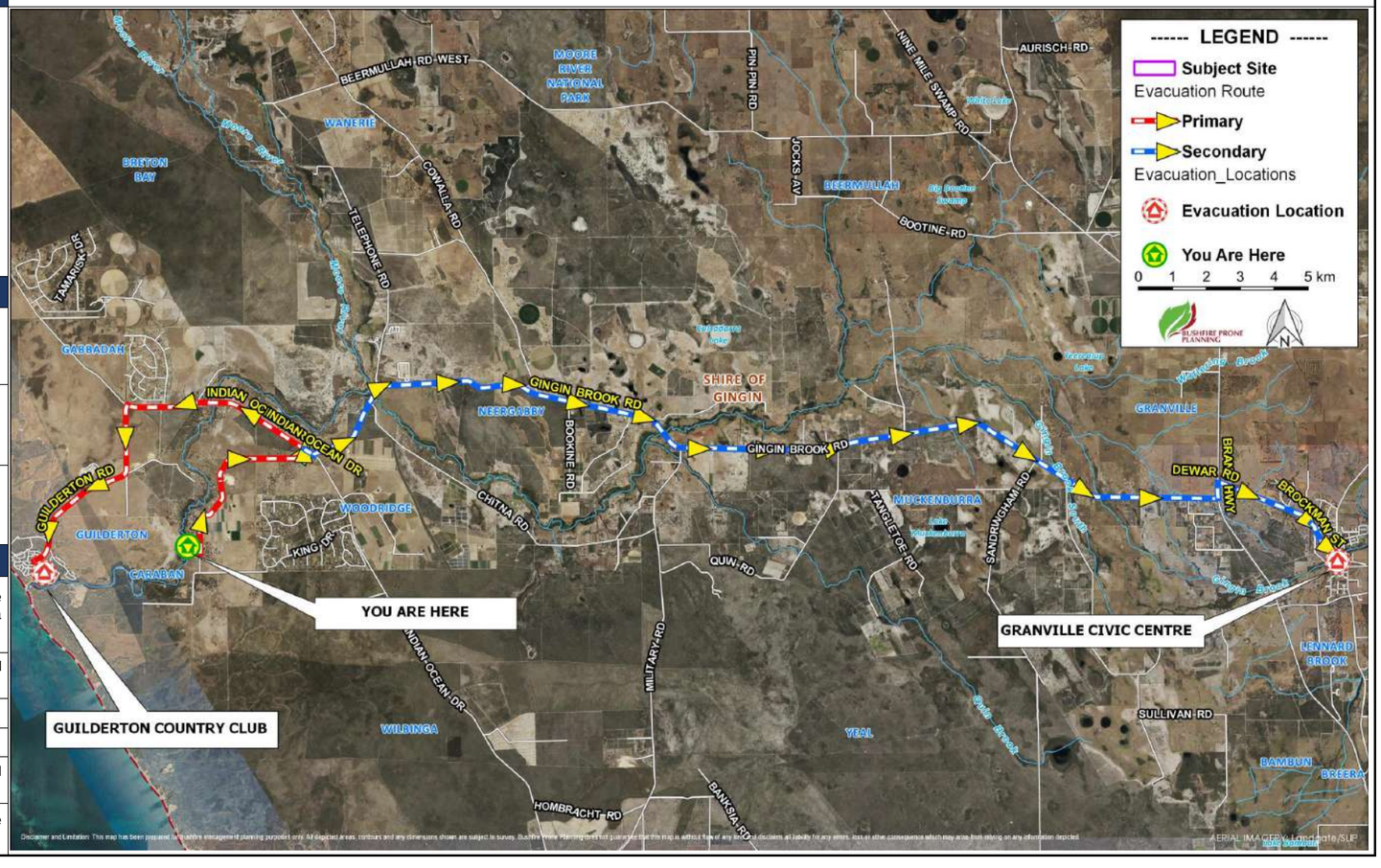
The higher the rating, the more dangerous the conditions and the greater the consequences if a fire starts.

| | |
|---|---|
| No Rating | No action required. Remain alert and abide by local seasonal laws and regulations. |
| Moderate | Plan and prepare. Most fires can be controlled. |
| High | Be ready to act. Fires can be dangerous. |
| Extreme | Act now to protect your life and property. Fires will spread quickly and be extremely dangerous. |
| Catastrophic | For your survival, leave bush fire risk areas. If a fire starts and takes hold, lives are likely to be lost. |

**SCENARIO 1: A BUSHFIRE EXISTS A CONSIDERABLE DISTANCE AWAY; A BUSHFIRE ADVICE WARNING MAY OR MAY NOT BE ISSUED; YOU ARE CONCERNED FOR YOUR SAFETY; IMPLEMENT THE ELEVATED THREAT PROCEDURE ➔** Check for bushfire warning & if none, call 000 to report; Ensure all persons at the premises are aware of the situation; Monitor the sources of emergency information and the situation outside for changes; Consider relocating to a lower threat area for the day If the current FDR is Extreme or Catastrophic or persons have health conditions.

**SCENARIO 2: A BUSHFIRE EXISTS RELATIVELY CLOSE; A BUSHFIRE EMERGENCY OR WATCH AND ACT WARNING MAY OR MAY NOT BE ISSUED; IMPLEMENT THE EVACUATION PROCEDURE ➔** Check for bushfire warning & if none, call 000 to report; Shut all doors/windows, turn off bottled (or mains) gas & any evaporative air cooler fans (not water); Gather belongings & prepare vehicles; Check emergency information sources for latest updates; Assess the situation to ensure an evacuation route (see map) remains available; If none available apply the Shelter in Place actions (refer to Scenario 3) otherwise evacuate using the evacuation route & destination identified as the most appropriate.

**SCENARIO 3: IMPACT FROM A BUSHFIRE IS IMMINENT; EVACUATION ROUTES ARE THREATENED; THERE IS NO TIME TO PERFORM A SAFE (EARLY) EVACUATION OR EMERGENCY SERVICES HAVE INSTRUCTED YOU TO SHELTER IN PLACE; IMPLEMENT THE SHELTER IN PLACE PROCEDURE ➔** Stay in the Shelter in Place Building/Area CHALET**.** Call 000 to inform them you are sheltering in place; Shut all doors/windows, turn off bottled (or mains) gas & any evaporative air cooler fans (not water); Outside - move all combustible materials (mats, outdoor furniture, rubbish bins well away from the building; Block gaps around doors to prevent ember entry with wet cloth materials; Stay hydrated and aware of what is happening; Monitor emergency information sources; Move outside after the fire front has passed and conditions outside are tenable; Continually check for spot fires involving the building or nearby materials and extinguish if possible.



## 14 REPORTS - OPERATIONS AND ASSETS

Nil

## 15 MOTIONS OF WHICH PREVIOUS NOTICE HAS BEEN GIVEN

Nil

## 16 COUNCILLORS' OFFICIAL REPORTS

### 16.1 LANCELIN CHRMAP WORKSHOP

| | |
|---|---|
| File: | GOV/20 -1 |
| Councillor: | F J Peczka |
| Report Date: | 15 August 2023 |

Councillor Peczka advised that he attended the Lancelin CHRMAP Workshop on Saturday 12 August 2023. It was great to see the community providing their feedback. The Local Coastal Neighborhood Watch Meeting which was on the same night as the storms in Lancelin was cancelled.

### 16.2 LANCELIN CHRMAP WORKSHOP, WOODRIDGE COMMUNITY ASSOCIATION AGM AND SOVEREIGN HILL COMMUNITY ASSOCIATION AGM

| | |
|---|---|
| File: | GOV/20 -1 |
| Councillor: | F Johnson |
| Report Date: | 15 August 2023 |

Councillor Johnson advised that he attended the Lancelin CHRMAP Workshop on Saturday 12 August 2023. He also attended the Woodridge Community Association AGM with Councillor Balcombe and the Sovereign Hill Community Association AGM with Councillor Sorensen.

### 16.3 LANCELIN CHRMAP WORKSHOP

| | |
|---|---|
| File: | GOV/20 -1 |
| Councillor: | A Vis |
| Report Date: | 15 August 2023 |

Councillor Vis advised she attended the Lancelin CHRMAP Workshop on Saturday 12 August 2023 and thought the turnout and feedback was fantastic. It appears there is quite a lot of misinformation being circulated in relation to the process. Therefore it is very important to get a clear message out that we are still in a consultation period, and that no decisions have been made.

## 16.4 GINGIN CRC AND WOODRIDGE COMMUNITY ASSOCIATION AGM

| | |
|---|---|
| File: | GOV/20 -1 |
| Councillor: | L Balcombe |
| Report Date: | 15 August 2023 |

I attended the bimonthly meeting at the CRC and it was positive to see the CRC is tracking along nicely and meeting their budget requirements. They came in with a small profit showing the group are following the not-for-profit theme correctly.

They have agreed in principle to take on the contract to provide the 'staying in place' program and have been successful in receiving some seed funding from the Bendigo Bank. They have advertised for the position of Care Coordinator and are in the process of interviewing.

Councillor Johnson and I attended the Woodridge Community Association AGM and it was good to see a few attendees with all but the VC position filled. They discussed their master plan and their Spring Fair and it's good to see how much fundraising they have been doing to achieve their ambitions.

## 16.5 SOVEREIGN HILL COMMUNITY ASSOCIATION AGM

| | |
|---|---|
| File: | GOV/20 -1 |
| Councillor: | E Sorensen |
| Report Date: | 15 August 2023 |

Councillor Sorenson advised he attended the Sovereign Hill AGM and that everything is going smoothly.

## 16.6 LEMC MEETING, REGIONAL ROAD GROUP MEETING AND LANCELIN CHRMAP WORKSHOP

| | |
|---|---|
| File: | GOV/20 -1 |
| Councillor: | C W Fewster |
| Report Date: | 15 August 2023 |

Councillor Fewster advised that he attended the LEMC meeting at the Emergency Services Centre on 9 August 2023 and the Regional Road Group meeting on Monday 14 August 2023. The Regional Road Group meeting was an important meeting regarding the funding model and a report is to be presented to Council at a future date.

Councillor Fewster also attended the CHRMAP Workshop in Lancelin and agrees with Councillor Vis that there is a lot of misunderstanding in the community about the purpose of the workshops. It is a consultation process where decisions and a plan have not yet been finalised. Councillor Fewster advised that part of the rationale behind the plan is to prepare for the worst and hope for the best with regards to coastal erosion.

## 17 NEW BUSINESS OF AN URGENT NATURE

Nil

## 18 MATTERS FOR WHICH MEETING IS TO BE CLOSED TO THE PUBLIC

Nil

## 19 CLOSURE

There being no further business, the Shire President declared the meeting closed at 4:11 pm.

The next Ordinary Council Meeting will be held in Council Chambers at the Shire of Gingin Administration Centre, 7 Brockman Street, Gingin on 19 September 2023, commencing at 5.00pm.