Regional Joint Development Assessment Panel Agenda

Meeting Date and Time: Thursday, 13 April 2023; 9.30am
Meeting Number: RJDAP/91
Meeting Venue: Electronic Means

To connect to the meeting via your computer -
https://us06web.zoom.us/j/82206978412

To connect to the meeting via teleconference dial the following phone number -
+61 8 7150 1149 Australia
Insert Meeting ID followed by the hash (#) key when prompted - 822 0697 8412

This DAP meeting will be conducted by electronic means open to the public rather than requiring attendance in person.

1 Table of Contents

1. Opening of Meeting, Welcome and Acknowledgement 2
2. Apologies 2
3. Members on Leave of Absence 2
4. Noting of Minutes 2
5. Declarations of Due Consideration 3
6. Disclosure of Interests 4
7. Deputations and Presentations 4
8. Form 1 – Responsible Authority Reports – DAP Applications 5
8.1 79 (Lot 100) Bussell Highway, Gelorup 5
9. Form 2 – Responsible Authority Reports – DAP Amendment or Cancellation of Approval 5
Nil 5
10. State Administrative Tribunal Applications and Supreme Court Appeals 5
11. General Business 5
12. Meeting Closure 5

Attendance

DAP Members

Mr Tony Arias (Presiding Member)
Ms Kanella Hope (A/Deputy Presiding Member)
Mr Justin Page (A/Third Specialist Member)
Cr Kaara Andrew (Local Government Member, Shire of Capel)
Cr Sebastian Schiano (Local Government Member, Shire of Capel)

Officers in attendance

Mr Scott Price (Shire of Capel)

Minute Secretary

Ms Tenielle Brownfield (DAP Secretariat)

Applicants and Submitters

Mr Aaron Bell (Able Planning and Project Management)

Members of the Public / Media

Nil

1. Opening of Meeting, Welcome and Acknowledgement

The Presiding Member declares the meeting open and acknowledges the traditional owners and pay respects to Elders past and present of the land on which the meeting is being held.

This meeting is being conducted by electronic means (Zoom) open to the public. Members are reminded to announce their name and title prior to speaking.

2. Apologies

Cr Peter McCleery (Local Government Member, Shire of Capel)

3. Members on Leave of Absence

Nil

4. Noting of Minutes

Signed minutes of previous meetings are available on the DAP website.

5. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.

The Presiding Member notes an addendum to the agenda was published to include updated Condition wording form the responsible authority in relation to Item 8.1, received on 28 March 2023.

The Presiding Member notes an addendum to the agenda was published to include details of a DAP request for further information and responsible authority response in relation to Item 8.1, received on 12 April 2023.

6. Disclosure of Interests

Member	Item	Nature of Interest
Ms Kanella Hope	8.1	Impartiality Interest – Ms Hope is the planning consultant for the Satterley Property Group (developer) and Dalyellup Beach Pty Ltd (landowner). The proposal at Item 8.1 is substantively in Gelorup, outside of Dalyellup and separate to her clients interests, however it does include pump station connection into the Dalyellup District Centre. Ms Hope has not had any involvement in this matter. This connection appears to be a minor component of the development and a typical infrastructure connection. It has come to Ms Hope's attention that she has previously (18+ months ago) undertaken work in residential subdivision matters in another Local Government for Kilpatrick Developments P/L. Ms Hope advised the Directors of Kilpatrick Developments P/L are also Directors of City & Regional Fuels who may be competitors of Vibe Petroleum, the applicant. Ms Hope declares she has had no involvement in, and have very little knowledge of, City & Regional Fuels. Ms Hope is not familiar with how many Service Stations they may operate or which Service Stations they may distribute fuel to. Likewise, she has had had no involvement in, and have little knowledge of Vibe Petroleum and their business relationships.
Cr Peter McCleery	8.1	Impartiality Interest – Cr McCleery is currently employed by the Water Corporation and the proponent will connect to the wastewater scheme. Cr McCleery has not been involved with the decision to connect to the wastewater scheme.

7. Deputations and Presentations

The Shire of Capel may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

8. Form 1 – Responsible Authority Reports – DAP Applications

8.1 79 (Lot 100) Bussell Highway, Gelorup

Development Description:	Proposed Service Station and Motor Vehicle Wash
Applicant:	Able Planning and Project Management
Owner:	V Lakshmi Pty Ltd
Responsible Authority:	Shire of Capel
DAP File No:	DAP/22/02256

9. Form 2 – Responsible Authority Reports – DAP Amendment or Cancellation of Approval

Nil

10. State Administrative Tribunal Applications and Supreme Court Appeals

Current SAT Applications				
File No. & SAT DR No.	**LG Name**	**Property Location**	**Application Description**	**Date Lodged**
DP/14/00039 DR 65/2020	Shire of York	Lots 4869 (2256), 5931, 9926 (2948) and 26934 Great Southern Highway, St Ronans	Construction and Use of Allawuna Farm for the purposes of a Class II Landfill	28 July 2020
DAP/21/02063 DR241/2021	Shire of Dardanup	Lot 2 Banksia Road, Crooked Brook	Cleanaway Dardanup Landfill Facility	5 November 2021
DAP/22/02265 DR204/2022	Shire of Harvey	Lot 101 (No. 96) Binningup Road, Binningup	Workers Accommodation Village	28 November 2022

11. General Business

In accordance with Section 7.3 of the DAP Standing Orders 2020 only the Presiding Member may publicly comment on the operations or determinations of a DAP and other DAP members should not be approached to make comment.

12. Meeting Closure

Government of **Western Australia**
Development Assessment Panels

Direction for Further Services from the Responsible Authority

Regulation 13(1) and DAP Standing Orders 2020 cl. 3.3

Guidelines

A DAP Member who wishes to request further services (e.g. technical information or alternate recommendations) from the Responsible Authority must complete this form and submit to daps@dplh.wa.gov.au.

The request will be considered by the Presiding Member and if approved, the Responsible Authority will be directed to provide a response to DAP Secretariat within the form.

It is important to note that **the completed form containing the query, response and any accompanying documentation will be published on the DAP website** as an addendum to the meeting agenda.

DAP Application Details

DAP Name	RJDAP
DAP Application Number	DAP/22/02256
Responsible Authority	Shire of Capel
Property Location	79 (Lot 100) Bussell Highway, Gelorup

Presiding Member Authorisation

Presiding Member Name	Mr Tony Arias
Signature	*Tony Arias*
Date	12 April 2023
Response Due	**12 April 2023; 3pm**

Nature of technical advice or information required*

1	**DAP query**	With regard to the proposed 10m illuminated pylon sign, can the Shire please provide a planning assessment of the plyon sign against the local planning framework (in particular the Shire's local planning signage policy). Also can the Shire please comment on whether Condition 10 is a relevant condition that the Shire can impose, if the Applicant requires a separate signage approval from Main Roads WA?
	Response	The assessment of the sign was contained in the original RAR for the meeting held 4 November 2022. This element of the proposal was supported in the original RAR, and has not since been changed. For this reason, as per the wording set out in the addendum introduction, was not included in any further discussions as the following RAR's only outlined the assessment of revisions to the plans/documentation. Condition 10 was recommended as part of the MRWA referral. The Shire would not be able to comment on whether it is a relevant condition that can be imposed, however it would not be considered any different to a development requiring a further approval from a separate entity for it to be deemed suitable in planning terms. For your convenience, the assessment is attached.

* Any alternate recommendation sought does not infer a pre-determined position of the panel.

Signs

Table: Signage Requirements (Policy 6.28)			
Sign Type	**Requirement**	**Provided**	**Complies**
Pylon Sign	Not have any part less than 2.75m (in the case of a pylon sign) immediately below the sign, or be more than 6m in height, above natural ground level.	The proposed maximum height of the pylon is approximately 10m.	**No**
	Have a maximum width of 2m measured horizontally across the face of the structure.	The width of the proposed pylon is approximately 3m.	**No**
	Be restricted to one sign, per site, may be designed to advertise multiple tenancies and can be illuminated and/or double sided.	The development was amended to remove one pylon, and now seeks approval for the sole pylon sign	**Yes**
	It can be demonstrated that the sign and/or advertisement is consistent with a particular design associated with a specific land use (i.e. pylon signs for petrol stations).	The pylon sign design is largely synonymous with the Service Station land uses and is consistent with a number of other Service Station developments in the broader locality (Lot 16 Bussell Highway). The pylon sign will be used to display pricing of fuel, but also contain signage of the associated brands to services onsite (convenience store, car wash, café).	**Yes**
Wall, Fascia or Building Identification Sign	The sign does not exceed 1.2m in height from the bottom of the sign to the top where the sign is up to 7.5m from ground level.	The sign proposed which relate to the Vibe branded service station on both the western and eastern elevation are positioned at a height where the bottom of the sign is 3.8m from the ground and the top of the sign is 8.5m from the ground.	**No**
	The sign should not extend beyond the frontage of the tenancy either end of the wall.	As shown in figure 1 below, the sign proposed extends beyond the height of the frontage by approximately 0.2m.	**No**
	The purpose of the sign is solely for the identification of the name, address, and/or occupants of a building.	The 'Vibe' signs relate specifically to the company who operate the service station.	**Yes**
	The colour(s) of the sign is/are to be a sympathetic	The colours of the sign (orange and green) are a	**Yes**

	to the colour scheme of the building that it relates.	sympathetic, like-for-like colour scheme with the finishes of the building, which include a pale red and maroon palette.	
	Is restricted to one horizontal sign/logo per building façade per business.	The western façade contains the Vibe logo, but also an illuminated 'Vibe' text which therefore exceeds the required one sign per elevation.	**No**

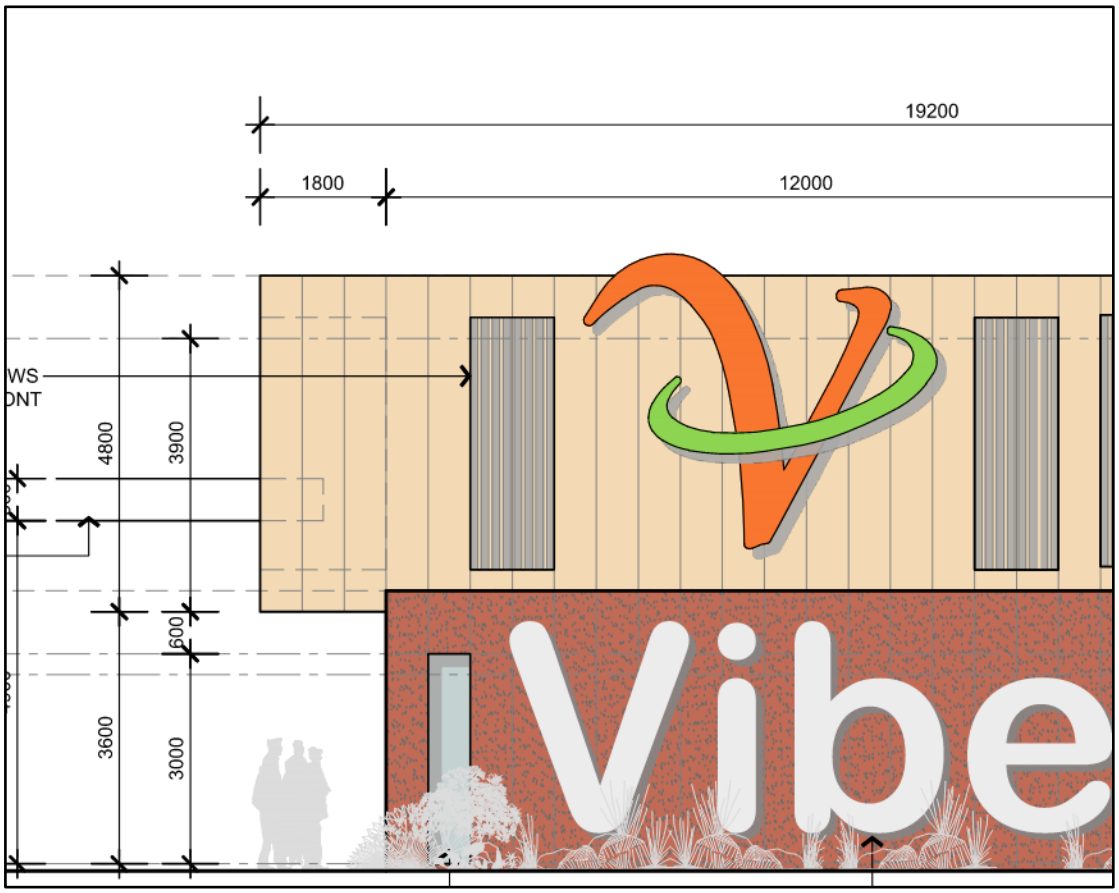


Figure 1: The portion of the fascia signage that extends beyond the height of the façade.

As per Clause 3 of *Local Planning Policy 6.28 – Signs*, the Shire may vary the requirements prescribed above on the basis that the signage proposed satisfies the following:

a. *The cumulative effect of the signage does not negatively impact on the surrounding locality by way of visual clutter.*
b. *The scale and design of the signage is subservient to the building to which it relates, are sized in proportion with parapets, panels, windows and wall areas within close proximity to the proposed sign so as to not dominate the view of the building from the street.*
c. *The signage does not compromise other planning, building or other adopted Shire statutes or standards.*

The development sought two pylon signs in lieu of one, and a variation to the wall, and fascia sign requirements. Notwithstanding the variations outlined above in the

		Table, the proposed pylon, and wall and fascia signage incorporated into the development is supported for the following reasons: • The signage is not considered to result in visual clutter, given the generous frontage of the site and the size of the site. It is recognised that these requirements are standardised for all sites and does not account for the size of the site. As such, the size and scale of these signs may be seen as contributing to a higher level of visual clutter if proposed on a smaller lot where clustering may occur. However, the size of the subject site means that signage is appropriately spaced and not considered visually overwhelming. Furthermore, the site is not located within a typical commercialised area where a high level of signage exists within the locality, meaning that the signs proposed are unlikely to result in an excessive visual cluttering; • The signage is considered subservient in size to the main building onsite, and requires an enlarged branding to ensure a higher level of visibility from the main entrance point, being Bussell Highway; • The proposed signage is not considered to compromise other standards within the Shire's planning framework. It is noted that the external referral feedback from Main Roads Western Australia contained some concerns regarding the installation of two pylon signs facing Bussell Highway. Two pylon signs within a Service Station site would not be considered consistent with the other Service Stations in Gelorup and Stratham that are accessible via Bussell Highway. MRWA have stated that two pylon signs are distracting for passing motorist and is partially due to the two pylon signs being located within close proximity to the street boundary. As such, the applicant amended the development plans to remove one pylon sign from the proposal. Notwithstanding the above, in accordance with the external referral advice, a condition of planning approval will be imposed on the recommendation, requiring that the signage onsite be consistent with the Main Roads' Western Australia Policy and Guidelines for Advertising Signs, prohibiting the development from containing more than one pylon sign.
2	**DAP query**	With regard to Condition 12, should reference to a proposed shared use path in Bussell Highway verge be removed as works in the Bussell Highway reservation is administered by Main Roads WA? Or would a separate condition which requires satisfactory arrangements to be made with MRWA for the provision of a shared path in the Bussell Highway verge be appropriate?
	Response	The Local Structure Plan requiring the proposed shared path to be located along Bussell Highway road reservation was endorsed by MRWA at the time of implementation. Given MRWA are aware of this requirement, the second suggestion of including a separate condition which requires satisfactory arrangements to be made with MRWA for the provision of a shared path in the Bussell Highway verge would be appropriate.
3	**DAP query**	Can the Shire please advise the purpose of Condition 3 and Condition 8 and whether this condition is necessary in context of Condition 17 requirement for connection to reticulated sewerage?
	Response	Condition 3 and 8 can be deleted given Condition 17 captures the general requirement for reticulated sewerage. Condition 3 and 8 were only suggested given the applicant had proposed private sewer connection which fed infrastructure underneath the Bussell Highway road reservation to a separate main connection outside of the lot. In any case, a formal arrangement will need to be reached to locate

		the infrastructure as shown on the development plans. It may be instead necessary to place the wording of Condition 3 and 8 in the advice note section of the RAR.

BUSSELL HIGHWAY, 79 (LOT 100), GELORUP – PROPOSED SERVICE STATION AND MOTOR VEHICLE WASH

Form 1 – Responsible Authority Report
(Regulation 12)

At its meeting on 6 February 2023, the Regional Joint Development Assessment Panel (RJDAP) resolved as follows:

That the consideration of DAP Application DAP/22/02256 and accompanying plans (SK0 Rev B, SK1 Rev F, SK2 Rev C, SK3 Rev C, SK4 Rev C, SK5 Rev C, SK6 Rev C) be deferred until Friday 7 April 2023, in accordance with section 5.10.1.a of the DAP Standing Orders 2020, for the following reasons:

- *The development requires an updated Traffic Impact Assessment to adjust the traffic distribution figures to and from site, with particular reference to the access point linking the subject site to English View and to assess traffic and amenity impacts on the local road network.*
- *The development requires an updated Bushfire Management plan to address the requirements of the State Planning Policy 3.7.*
- *The applicant requires a greater period of time to provide the Shire an updated Environmental Noise Assessment that includes specific details on hours of operation for the outdoor vacuuming stations, and hours of accessibility to the outdoor play area and the balcony to the dining room.*
- *Design and operational response to address the potential amenity impacts of the development on the locality and neighbours, including with regard to the Special Use Zone under LPS7, the Local Structure Plan, and Clause 67 considerations.*

This report primarily relates to the specific deferral reasons outlined by the RJDAP at its meeting on 4 November 2022, and 6 February 2023 and any additional information submitted by the Applicant. This report is to be read as an addendum to the Shire's two previous Responsible Authority Reports.

DAP Name:	Regional JDAP
Local Government Area:	Shire of Capel
Applicant:	Able Planning & Project Management
Owner:	V Lakshmi Pty Ltd
Value of Development:	$3.3 million ☐ Mandatory (Regulation 5) ☒ Opt In (Regulation 6)
Responsible Authority:	Shire of Capel
Authorising Officer:	Scott Price, A/Director Infrastructure & Development
LG Reference:	PA80/2022
DAP File No:	DAP/22/02256
Application Received Date:	6 May 2022
Report Due Date:	28 March 2023 (Deferred to 7 April 2023)
Application Statutory Process Timeframe:	326 days
Attachment(s):	1. Development Plans and Accompanying Material (Environmental Noise

	Assessment, Traffic Impact Assessment, Bushfire Management Plan). 2. Updated Schedule of Submissions and External Referral Responses.	
Is the Responsible Authority Recommendation the same as the Officer Recommendation?	☐ Yes ☒ N/A	Complete Responsible Authority Recommendation section
	☐ No	Complete Responsible Authority and Officer Recommendation sections

Responsible Authority Recommendation

That the Regional Joint Development Assessment Panel resolves to:

1. **Accept** that the DAP Application reference DAP/22/02256 is appropriate for consideration as a 'Service Station' and 'Motor Vehicle Wash' land use and compatible with the objectives of the zoning table in accordance with the Shire of Capel Local Planning Scheme No. 7;

2. **Approve** DAP Application reference DAP/22/02256 and accompanying plans in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015,* and the provisions of the Shire of Capel Local Planning Scheme No. 7, subject to the following conditions:

Conditions

1. This decision constitutes planning approval only and is valid for a period of 4 years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.

2. The development shall be in accordance with the attached approved development plans and documentation which form part of this development approval, subject to modifications required as a consequence of any condition(s) of this approval. The approved plans shall not be modified or altered without first obtaining approval from the Shire.

General

3. If required, the proponent is to enter a Deed of Access Agreement with Main Roads, to the requirements and satisfaction of Main Roads, for the proposed waste water service installation within the Bussell Highway road reserve.

Prior to the lodgement of a Building Permit

4. Prior to the lodgement of a Building Permit, details are to be submitted regarding the provision for onsite storage and collection of garbage and other solid waste. A waste storage and collection area must be graded, drained and screened from public view, and the garbage collected regularly, to the satisfaction of the Shire of Capel.

5. Prior to the lodgement of a Building Permit Application, a landscaping plan must be submitted for approval by the Shire of Capel. The landscape plan must address the following:
    - A site plan of existing and proposed development with natural and finished ground levels.
    - The location, species and size of existing vegetation and vegetation to be removed.
    - Exact species, location and number of proposed plants to be planted.
    - A key or legend detailing proposed species type grouped under the subheadings of tree, shrub and ground cover.
    - Mulching or similar treatments of garden beds including edges.
    - Details of reticulation of landscaped areas including the source of the water supply and proposed responsibility for maintenance.
    - Treatment of paved areas (parking and pedestrian areas).
    - Screening of car parking areas.
    - Fence material, height and treatment.

    Before the development is occupied, the landscaped area(s) must be planted, established and reticulated in accordance with the endorsed landscape plan(s). These areas must be maintained as landscaped areas at all times and to the satisfaction of the Shire of Capel.

6. Prior to the issue of a building permit, a Construction Management Plan shall be submitted to the satisfaction of the Shire of Capel. This plan is to address the following matters:
    a) noise – construction work and deliveries;
    b) hours of construction;
    c) traffic management;
    d) parking management;
    e) access management;
    f) management of loading and unloading of vehicles;
    g) heavy vehicle access;
    h) dust management;
    i) waste management
    j) protection of infrastructure and street trees within the road reserve;
    k) the need for a dilapidation report of adjoining properties; and
    l) any other relevant matters.

    The approved Construction Management Plan shall be observed at all times throughout the construction process to the satisfaction of the Shire of Capel.

Prior to commencement of development

7. Prior to commencement of development, road reserve widening for Bussell Highway and land requirements for the Loretta Ave intersection works is to be set aside in accordance with a Main Roads approved civil engineering design, and is required to be ceded to the Crown free of cost for the purpose of road widening.

8. Prior to commencement, the proponent is to enter a Deed of Access Agreement with Main Roads Western Australia, to the requirements and satisfaction of Main Roads Western Australia, for the proposed waste water service installation within the Bussell Highway road reserve.

9. Prior to commencement of development a Stormwater Management Plan shall be submitted for assessment and approval by the Shire of Capel. Stormwater and roof runoff disposal including driveway drainage shall be contained on site.

10. Prior to commencement of development, the applicant is to demonstrate compliance with Main Roads Policy and Guidelines for Advertising Signs.

11. Prior to commencement of development a detailed engineering design for the car parking, manoeuvring areas and drainage thereof being submitted for approval by the Shire of Capel, and thereafter implemented in accordance with the approved design to the satisfaction of the Shire of Capel.

12. Prior to commencement of development a detailed engineering design for the shared use path along English View, Loretta Ave and Bussell Hwy verges being submitted to the Shire of Capel, and thereafter implemented in accordance with the approved design to the satisfaction of the Shire of Capel.

13. Prior to commencement of development, the Environmental Noise Assessment (ENA) dated 16 January 2023 prepared by Eco Acoustics (Ref. 22061084 – 01c) it to be updated by a suitably qualified acoustical consultant (i.e. once mechanical plant selections and layouts are known following the detailed design phase) confirming that–

    a) the use of the outdoor play area, balcony to the dining room, car wash bays and vacuuming stations is prohibited between 10:00 PM and 7:00 AM each day with management to enforce this by locking relevant gates / doors and turning off equipment and / or lighting to these areas; and
    b) the other recommendations in ‘section 6’ have been implemented in the design.

Prior to practical completion

14. Prior to practical completion, the intersection of Lorretta Avenue and Bussell Highway is to be upgraded to the specifications of Main Roads, generally in accordance with the Main Roads preliminary access concept referenced in the Shawmac Traffic Impact Assessment document, dated 2nd February 2023 (Ref: 2202018-TIA-001), including, but not limited, to provision of a splitter islands and seagull island treatment, at the full cost of the proponent.

15. Prior to practical completion, the proposed new left in accessway/driveway, including the internal site access geometry and location of the truck canopy/fuel bowser location, and slip lane on Bussell Highway is to be designed, approved and constructed to the specifications of Main Roads and satisfaction of the Shire. The proposed new left turn in access/driveway shall be designed generally in accordance with the Main Roads preliminary access concept referenced in the Shawmac Traffic Impact Assessment document, dated 2nd February 2023 (Ref: 2202018-TIA-001) and constructed at the full cost of the proponent. The approved design shall include, but not be limited to, provision of street lighting, drainage and kerbing.

16. Prior to practical completion, the existing left turn access/driveway to the property (from the existing extended left turn slip lane at Lorretta Avenue) shall be decommissioned, the existing slip lane modified and the road verge reinstated to the specifications of Main Roads and the satisfaction of the Shire, at the full cost of the proponent.

17. Prior to practical completion, the property shall be connected to reticulated sewerage.

18. Prior to practical completion, the proponent must prepare and submit a Hydrocarbon Management Plan to the satisfaction of the Shire of Capel, detailing the management and treatment of hydrocarbons with appropriate reporting mechanisms.

In perpetuity

19. At all times, the hours of operation for the Service Station and Motor Vehicle Wash are restricted to Monday to Sunday (including public holidays) 5am to 10pm.

20. At all times, waste collection vehicles shall be restricted to Monday to Sunday (including public holidays) 7am to 10pm.

21. All deliveries shall be restricted to Monday to Sunday (including public holidays) 7am to 10pm.

22. All off-street parking and access thereto shall comply with Australian Standard 2890.1 to the satisfaction of the Shire of Capel.

23. The installation of outdoor lighting shall be in accordance with the requirements of the Australian Standard AS 4282-1997: 'Control of the Obtrusive of Outdoor Lighting".

Advice Notes

1. Detailed designs for the proposed road and access/ driveway works are to be submitted and approved by Main Roads Western Australia prior to any construction being commenced.

2. The Stormwater/Groundwater management plan, when prepared, should be referred to the Department of Water and Environmental Regulation (DWER) for review.

3. The proposed development should be consistent with the following documents:
    - Decision process for stormwater management in WA (DWER 2017)
    - Stormwater Management Manual for Western Australia (DoW 2004–2007)
    - WQPN 56 - Tanks for fuel and chemical storage near sensitive water resources (Dec 2018)
    - WQPN 49 - Service stations (Sept 2013)
    - WQPN 10 - Contaminant spills — emergency response plan (May 2020).

4. Acid sulfate soils (ASS) risk mapping indicates that the site is located within an area identified as representing a high to moderate risk of ASS occurring within 3 metres of the natural soil surface at and beyond the western portion of the subject land. Please refer to Department of Water and Environmental Regulation's (DWER) acid sulfate soil guidelines for information to assist with the management of ground and/or groundwater disturbing works: https://www.der.wa.gov.au/your-environment/acid-sulfate-soils/69-acidsulfatesoils-guidelines.

5. The proponent is to obtain developmental approval prior to clearing to ensure the clearing is exempt under the EP Act and clearing to be in accordance with the Shire's Firebreak and Fuel Hazard Reduction notice. If further clarification is required, please contact DWER's Native Vegetation Regulation section by email (admin.nvp@dwer.wa.gov.au) or by telephone (6364 7098).

6. A clearing permit is required unless the water mains/sewage infrastructure mains is considered to comprise a structure. If further clarification is required, please contact DWER's Native Vegetation Regulation section by email (admin.nvp@dwer.wa.gov.au) or by telephone (6364 7098).

7. In the event the take of groundwater is proposed for the irrigation of the landscaped/verge areas, the proponent is advised to contact DWER's Bunbury water licensing section on 9726 4111 to discuss licensing requirements under the *Rights in Water and Irrigation Act 1914.*

8. The proponent be advised to contact DWER on 9726 4111 for a licence to dewater under the RIWI Act if the proposed activity is to exceed the threshold specified at https://www.water.wa.gov.au/licensing/water-licensing/exemptions.

9. The Stormwater Management Plan is to detail the following:
    a. Catchments, flow paths, water quality improvement measures, area calculations and design criteria;
    b. The depth of flood water shall not be deigned to be greater than 150mm on paved areas within the property for any storm; and
    c. Mosquito breeding control measures where stormwater infrastructure is likely to result in standing water that will provide breeding habitat.

10. The Stormwater Management Plan should be in accordance with Shire of Capel information sheet "Specifications for Stormwater" and incorporate the principles and guidelines set out in the WAPC Guidelines for Better Urban Water Management and the Department of Water Stormwater Management Manual for Western Australia.

11. The carpark standards applied to the proposed lot has been assessed as requiring user class classification 3A in accordance with Australian Standard AS/NZS 2890.1. The Class 3A option of 2.6m x 5.4m bays with aisle width of 6.6m has been applied to the proposed lots and subject land.

12. The development that is the subject of this planning approval must comply with the Environmental Protection Act 1986 and the *Environmental Protection (Noise) Regulations 1997* in relation to noise emissions.

13. The developer / landowner is advised of their obligations to ensure that all sand drift, waste, building materials and equipment is contained within the boundaries of the site during the construction period. Each building site shall be provided with a receptacle or enclosure of a size and type which will properly contain all litter and waste materials and on completion all rubbish, litter and waste materials will be removed from site.

14. The applicant will need to conform to the requirements of the Food Standards Code, specifically:
    - Standard 1.2.1 Labelling and other information requirements;
    - Standard 3.2.1 Food Safety Programs;
    - Standard 3.2.2 Food Safety Practises and General Requirements;
    - Standard 3.2.3 Food Premises and Equipment.

    Additionally, the registration as a Food Premises as per the Food Act 2008 and Food Regulations 2009 will be required prior to the premises opening, and an application is to be submitted including floor plan showing fixtures and fittings to the Shire's Environmental Health Division for assessment and approval.

Details: outline of development application

Region Scheme	Greater Bunbury Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	Local Planning Scheme No. 7 Draft Local Planning Scheme No. 8
Local Planning Scheme - Zone/Reserve	'Special Use' – Local Planning Scheme No. 7 'Commercial' – Draft Local Planning Scheme No. 8
Structure Plan/Precinct Plan	Shire of Capel Lots 900 &101 Loretta Avenue and Part Lots 2 & 901 Bussell Highway Local Structure Plan.
Structure Plan/Precinct Plan - Land Use Designation	Service Station and Convenience Store designated as preferred land uses for 'Lot A'
Use Class and permissibility:	Commercial Zone under draft Local Planning Scheme No. 8: Service Station – 'A' use Motor Vehicle Wash – 'A' use
Lot Size:	8495m^2
Existing Land Use:	Vacant Lot
State Heritage Register	No
Local Heritage	☒ N/A ☐ Heritage List ☐ Heritage Area
Design Review	☒ N/A ☐ Local Design Review Panel ☐ State Design Review Panel ☐ Other
Bushfire Prone Area	Yes – Refer to assessment in report
Swan River Trust Area	No

Proposal:

Proposed Land Use	Service Station Motor Vehicle Wash
Proposed Net Lettable Area	262m^2
Proposed No. Storeys	Two storeys (Service Station)
Proposed No. Dwellings	N/A

On 6 May 2022, the Shire received and accepted a Form 1 Joint Development Assessment Panel (JDAP) application at No. 79 (Lot 100) Bussell Highway, Gelorup. The application seeks to develop a Service Station and Motor Vehicle Wash (Carwash) on the subject site. The Service Station will incorporate a convenience store function within the main building that is considered subsidiary to the main use and has been confirmed as a 24-hour operational site.

The proposed development consists of the following:

- Four drive-through car wash stations (two manual and two automatic);
- Four car parking bays dedicated to the stationary cleaning and vacuuming of vehicles;
- 26 car parking bays (including two ACROD bays);
- Vehicular circulation areas;
- Drainage pond;
- Commemorative landscaping ground treatment and dog exercise area;
- Two buildings, of which includes a car wash operating area, a convenience store, café, toilets, mezzanine dining area, and service area;
- One illuminated pylon sign;
- One truck canopy to provide shelter whilst trucks refuel; and
- One fuel canopy providing shelter to eight refuelling bays for standard passenger vehicles.

The application was presented to the Regional Joint Development Assessment Panel (JDAP) on 4 November 2022 and was deferred due to outstanding information needing to be clarified prior to a decision being made. The applicant was not in attendance for the meeting, and as such, the panel believed it was best practice to defer the item to provide the applicant an opportunity to respond to such concerns.

Furthermore, the application was again presented to the JDAP on 6 February 2023, with a recommendation for refusal, and alternative recommendation for a further deferral. It was considered at the time of presenting the item, the applicant had yet to address any of the initial concerns raised at the original meeting, including shortcomings to the development plans and accompanying documentation such as inadequate justification for the excessive Bushfire Assessment Level rating, failure to alleviate amenity issues relating to the proposal's proximity to nearby residential uses, and traffic implications.

It was considered at its meeting held 6 February 2023 that the JDAP would afford the applicant further time to address such concerns. The Planning Assessment section of the report will outline which reasons for deferral have been addressed, and which elements remain outstanding.

Background:

Site Context

The subject site (No. 79 Bussell Highway) is located on the eastern boundary of the Bussell Highway, which is classified as a Primary Regional Road under the Greater Bunbury Region Scheme. The site is contained in the block bound by Loretta Avenue to the south, Jules Road to the east, and Maynard Parade to the north. A minor portion of the northern adjoining site (No. 7 English View, Gelorup) is to be utilised for the slip lane southbound entry from Bussell Highway.

The ground levels of the site fall by approximately 3.5 metres from the east to the west along the southern boundary. The site is currently vacant and contains several mature trees.

The site contains frontages to two gazetted roads, which includes Bussell Highway (Primary Regional Road) and Olearia Court. Development within the surrounding locality predominantly comprises of Single Dwellings on R2.5 coded lots towards the site's east, minor commercial tenancies immediately to the south, and a variety of residential and commercial uses to the west across from Bussell Highway.

Development History
The site has been subject to several previous development applications, including an application for a Takeaway Food Outlet (drive through coffee shop) in 2016 which was later withdrawn, and a Service Station in 2017, that was refused later that year.

The previous Service Station application was refused under delegated authority as the development did not satisfy the requirements of the endorsed Structure Plan at the time. Specific concerns related to the site layout, access and internal road connectivity, drainage and infrastructure concerns, and the envisaged urban growth for this location of Gelorup.

Planning Context
Under the current planning framework, the site is subject to a Local Structure Plan. The Local Structure Plan provides specific provisions to the site due to its current Special Use zoning under LPS7. The subject site is referred to as 'Proposed Lot A' under the Local Structure Plan.

The Local Structure Plan outlines 'Service Station' and 'Convenience Store' as designated land uses for 'proposed Lot A.' The Local Structure Plan also limits the allowable net lettable area (NLA) for Liquor Store, Takeaway Foot Outlet, Restaurant, and Convenience Store land uses. The subject lot is also contained within the Highway Protection Line (area) under LPS7 which includes all land within 100 metres from Bussell Highway in the west.

The Shire has drafted the latest revision to the Local Planning Scheme (Local Planning Scheme No. 8). The draft Local Planning Scheme No. 8 (LPS8) has been advertised, been supported by Council, and submitted with the Western Australian Planning Commission (WAPC) for final adoption. The Shire anticipates the formal gazettal of the draft LPS8 early in 2023, given the scheme has been approved subject to modifications. Given the draft has been advertised and considered by Council, the document is a seriously entertained planning instrument and provisions can be given due regard in the assessment of any current planning applications.

Under draft LPS8, the site will be rezoned from 'Special Use' to 'Commercial.' Both the Service Station and Motor Vehicle Wash uses are classified as 'A' uses within the Commercial Zone. Based upon the imminent planning framework, the development's

use classes can both be considered for approval, subject to external agency approvals and demonstration of acceptable amenity impacts within the broader locality.

Deferral of Regional JDAP Item
The application for a proposed Service Station and Motor Vehicle Wash was presented to the Regional JDAP for its consideration at its meeting on 4 November 2022. Due to the absence of the applicant at the meeting, the panel were unable to ascertain information for the purpose of a decision being made. For this reason, the item was deferred to enable the applicant to address the concerns of the panel, rather than refusing the application.

At its meeting held 6 February 2023, the JDAP further deferred the item as the applicant had withheld crucial information from the Shire of Capel (the Shire) that may have influenced the Officer's Recommendation. The Shire believed that adequate time was afforded to the applicant to rectify the issues raised at the initial JDAP meeting held on the 4 November 2022 and that little to no effort had been made in the time between to further address these concerns, hence why the Officer's recommendation was for refusal. However, the applicant stated at the meeting held 6 February 2023 that they have received updated documentation between the time in which the Responsible Authority Report was due and the meeting date that may have resulted in a more favourable outcome.

The JDAP then further deferred the item so that it would afford the Shire an opportunity to assess the documentation, refer to external agencies if necessary, and revisit the recommendation. The specific nature of reasons for deferral are discussed in greater detail below:

<u>Traffic and Amenity Impact on Local Road Network</u>
The primary concern of the JDAP when discussing traffic implications was the directing of traffic egressing from the site onto the local road network. Further justification was requested by the RJDAP at the 4 November 2022 meeting to gain support for the proposed vehicular egress arrangement onto English View rather than Bussell Highway or Loretta Avenue.

Concerns were linked to an increase in the volume of traffic to a local road (English View, resulting in vehicles onsite exiting and being rerouted past residential properties in order to gain access back onto Bussell Highway. This subsequently results in a higher volume of traffic to a local road network, which may be considered as compromising the existing amenity of residents of English View.

An updated Traffic Impact Assessment was provided and accompanied the report which was presented to the 6 February 2023 meeting. However, the applicants report incorrectly stated traffic movement figures to each of the site's access points and was subsequently deemed inaccurate. Of note, the report stated that no vehicles would utilise the vehicular access point from English View. The applicant was then asked at the meeting to provide an accurate document, with particular reference to the access point linking the subject site to English View, before a determination could be made on the item.

<u>Bushfire Management Plan</u>
At the time of initial lodgement in mid 2022, the application was referred to the Department of Fire and Emergency Services (DFES) for review. As part of this assessment, the applicant was requested to clarify the vegetation classification within their Bushfire Assessment Level (BAL) contour map.

The BAL contour map and accompanying Bushfire Management Plan (BMP) were formulated on the basis that vegetation within the surrounding road reservations were deemed 'low-threat' and subsequently excluded. However, this has been made on the assumption that Main Roads Western Australia (MRWA) and the Shire of Capel would include such nature strips as part of their maintenance schedules.

As such, it was requested that the applicant enters a formal management agreement with MRWA to ensure these areas will be maintained to low threat in perpetuity, prior to any approvals being issued.

DFES had expressed that the development could achieve compliance with State Planning Policy 3.7, despite being considered a sensitive use. Yet, this was dependent upon factors such as maintaining the vegetation on land outside of the subject site.

However, the applicant has since provided the Shire with an updated BMP, which has reclassified the Bussell Highway verge as 'class (G) Grassland' which, to the Shire's understanding, circumvents the need to obtain an in-principle agreement with MRWA for verge maintenance. DFES notes the additional classified Class G Grassland area to Bussell Highway and supports this classification.

Noise Impacts

Whilst the Environmental Noise Assessment (ENA) confirmed that the relevant aspects of the proposal would comply with the *Environmental Protection (Noise) Regulations 1997*, it was acknowledged that the technical expert advice in this case was subject to various limitations. Whilst the acoustic report provided as part of the original application addresses noise impacts in accordance with the *Environmental Protection (Noise) Regulations 1997*, it is noted the regulations do not address the impact of general nuisance noise that the proposed 24-hour operation will have on the surrounding locality. For example, engine noise, closing of vehicle doors, PA announcements and general patron noise are all considered to pose a cumulative detrimental impact on residential amenity.

As such, the panel asked at both meetings held on 4 November 2022 and 6 February 2023, that the applicant considers actions to address such limitations, including potential application of accessibility restraints to the upper floor Service Station balcony and the outdoor play area in evening periods. The panel also requested management strategies to further mitigate these concerns. Furthermore, advice was provided to the applicant to consider the outdoor carwash area operations and potentially limiting these to a daytime capacity, as opposed to a 24-hour service.

It was suggested at the latest deferral that the applicant should consider amending the ENA to incorporate restrictions to balcony areas in evening periods, and even suggested that the applicant reviews the 24-hour operation component, in the hope that it would promote greater land use compatibility with surrounding residential uses.

The applicant provided permission to the Shire that a condition of planning approval can require an updated Environmental Noise Assessment (ENA) that limited the accessibility of the outdoor play area and dining room balcony outside the hours of 7am-10pm. Furthermore, the carwash bays and vacuuming station are to be time restricted and inoperative between 10pm and 7am as part of this condition.

Legislation and Policy:

Legislation

- *Planning and Development Act 2005* (P&D Act);
- *Planning and Development (Local Planning Schemes) Regulations 2015* (LPS Regulations);
- *Planning and Development (Development Assessment Panels) Regulations 2011* (DAP Regulations);
- Greater Bunbury Region Scheme (GBRS);
- Shire of Capel Local Planning Scheme No. 7 (LPS7); and
- Shire of Capel Draft Local Planning Scheme No. 8 (LPS8).

State Government Policies

- State Planning Policy 2.7 Public Drinking Water Source (SPP 2.7);
- State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7);
- State Planning Policy 4.1 State Industrial Buffer (SPP 4.1);
- State Planning Policy 5.4 Road and Rail Noise (SPP 5.4); and
- State Planning Policy 7.0 Design of the Built Environment (SPP 7.0).

Structure Plans/Activity Centre Plans

- Shire of Capel Lots 900 &101 Loretta Avenue and Part Lots 2 & 901 Bussell Highway Local Structure Plan.

Local Policies

- Shire of Capel Draft Local Planning Policy 6.11 – Signs and Advertising.

Consultation:

Public Consultation

In accordance with Clause 8.2.3 of LPS7, and Clause 64(1)(b) of the LPS Regulations, the application was advertised for public comment and submissions made were considered as part of the assessment.

The application was advertised for a period of 21 days from 26 May 2022 to 16 June 2022. The Shire's LPS7 contains provisions relating to the advertisement of applications but is relatively limited in its guidance on whom to advertise to within a specific proximity to the subject site. As such, the Shire adopts an approach to advertise in accordance with the recommended buffers in the *'Separation Distances between Industrial and Sensitive Land Uses'* document of the Environmental Protection Authority. Advertising consisted of landowners and occupiers within 200 metres of the subject site being notified by letter. The application was also made available for viewing on the Shire's website for the duration of the public consultation period.

The Shire received a total of seven submissions from neighbouring landowners. Of the seven submissions by community members, six were objecting to the proposal, and one commenting on the proposal.

Table 1: Submission Summary	
Issue raised	**Officer comments**
Localised flooding	A stormwater management plan will need to be submitted and assessed by the Shire prior to the commencement of the development.

Use of the scheme water supply	As per the advice of DWER, requirements will be made through the form of an advice note for the applicant to lodge a stormwater/groundwater management plan for their review and approval, should the application be approved.
Sewerage connection difficulties	The proponent has previously approached Main Roads Western Australia to gain approval for the installation of a private pressure sewer main across Bussell Highway to service the proposed development. Where the installation of such private infrastructure is supported, the proponent is required to enter into a Deed of Access Agreement with the Commissioner of Main Roads Western Australia.
Increased traffic	It is recognised that any form of development to a vacant site will result in a additional traffic implications to the local road network. However, the applicant has provided a Traffic Impact Assessment which demonstrates that a majority of vehicles visiting site to utilise the Bussell Highway slip lane and exit via Loretta Avenue, as opposed to English View. This is considered to have a more respectful impact to the local traffic network, as opposed to the circumstances where the majority of traffic would be directed to exit via English View.
Light spillage	Any recommendation for approval should include a condition that the installation of outdoor lighting to be in accordance with the requirements of the Australian Standard AS 4282-1997: 'Control of the Obtrusive Effects of Outdoor Lighting.'
Vehicular entry and egress to site	The use of English View local road was consistent with the approved Local Structure Plan, which was designed to enable traffic flow between the site and English View. This approach has also been considered and reviewed by MRWA. At the previous meeting, there was acknowledgement that the applicant's Traffic Impact Assessment was inaccurate failed to account for the number of vehicles using the English View crossover to enter and exit site. As a result, the JDAP could not ascertain the impacts to the local road network or amenity of nearby residents until this document was updated. The document has since been updated to acknowledge the use of that crossover and being considered the most underutilised crossover out of all vehicular entry and exit points to the site during peak hours. Furthermore, the recommended condition of approval limiting operating hours will further alleviate impacts of the vehicular movements on the nearby residential amenity and local road network safety.
Devaluation of nearby residential properties	Devaluation of property is not a relevant planning consideration for the purpose of the assessment.

Noise pollution from 24-hour activities	At its previous meetings held on both 4 November 2022, and 6 February 2023, the JDAP raised concerns about the lack of information in the applicant's ENA, specifically the details regarding the accessibility of amenity areas such as the upper floor dining balcony, and the outdoor play area. It was considered that 24-hour accessibility to such areas could be problematic to maintaining satisfactory levels of amenity in the locality. Whilst the ENA demonstrated that the development could meet the requirements of the Environmental Protection (Noise) Regulations 1997, the regulation is somewhat limited in its capacity to assess and account for noise from human voices. The applicant has since provided permission to impose a planning condition that requires an updated ENA limiting the accessibility of outdoor amenity area and the elements associated with the Motor Vehicle Wash throughout evening periods. It is acknowledged however that nuisance impacts from car doors closing and air brakes will continue to pose concerns by virtue of the Service Station's 24-hour operation.
Endangerment to local wildlife	The lot is vacant and does not contain any area identified specifically as possum habitat. The planning framework does not account for any potential loss of wildlife by virtue of being struck by traffic offsite.
Privacy	Visual privacy from a non-residential land use is not a consideration in the applicable planning framework for the development. However, the neighbour may opt to discuss appropriate boundary fence options with the landowner to satisfy their concerns. The Shire would be supportive of an alternative height if agreed to by both parties.
Maintenance of local roads	This is a cost covered by the Shire for maintaining and upkeeping the local road network.
Lack of community benefit	The proposed development of a Service Station and Motor Vehicle Wash will contribute to the local economy and will facilitate the creation of employment locally. Furthermore, the use assists in the facilitation of regional vehicle travel, providing a functional and convenient opportunity for tourists to refuel when using primary regional roads such as Bussell Highway. It is therefore considered that the development provides benefit to both local users and travellers.

Internal Referrals

The application's latest revised documentation was referred to relevant internal branches of the Shire including:

- Rates;
- Building Services;
- Environmental Health;
- Emergency Management; and
- Projects, Engineering, and Assets.

The Shire's Projects, Engineering, and Assets have provided assessment of the proposal. Whilst the proposed access and egress to site is not considered ideal, the limitations of the site contribute somewhat to the proposed configuration and vehicular entry points.

Given the configuration has been assessed and deemed satisfactory by MRWA, it is supported on the basis that the applicant undertakes the necessary works captured in the conditions as part of any determination for approval.

External Referrals

The updated documentation that was received shortly after the 6 February 2023 deferral decision was referred to Department of Fire and Emergency Services (DFES), and Main Roads Western Australia (MRWA) for comment. Two of the reasons for the further deferral were to ascertain whether the updated Bushfire Management Plan was technically sound, and whether MRWA were satisfied with the access and egress to site noting that large scale vehicles could only exclusively access the site from the southbound slip lane of Bussell Highway.

Main Roads Western Australia

MRWA contacted the Shire shortly after the referral comment request was lodged, and advised that their comments remain as per the previous correspondence provided in the initial deferral process. As such, the following advice of MRWA states:

'The proposed development access arrangements are consistent with that previously developed in consultation with and agreed to by Main Roads for the proposed development site as part of the original WAPC-endorsed structure plan.

The subject land has limited development frontage to Bussell Highway and Main Roads does not support any left-out access onto the highway as this would result in an exit/egress into the left turn treatment/auxiliary lane for Lorretta Avenue, which would create significant potential for vehicle conflicts to occur between vehicles entering the site or the left turn auxiliary lane and vehicles exiting the site, which will detract from the function and safety of the highway. Vehicles egressing into an auxiliary turn lane is ordinarily not supported by Main Roads' Driveway Policy.

Bussell Highway is currently a major arterial road, with declared Control of Access, linking the main rural highway through to Busselton and Margaret River and the South West. With future development of the Bunbury Outer Road the Bussell Hwy will remain a major urban arterial road with significant traffic and commuter demands for the residents of Capel and Busselton.

Main Roads primary concern is to maintain the function and safety of the Bussell Hwy. As such, our previous comments and recommended conditions for access to be agreed remains valid.

As previously advised, the proponent is required to construct, to Main Roads specifications, the proposed left turn deceleration lane and 'left in' access/driveway into the development site and upgrade the intersection of Lorretta Ave and Bussell Hwy, including splitter islands and treatments, and lighting to improve the function and safety of the intersection to cater for the anticipated traffic demands that would be generated by the development.

It is considered that the upgraded intersection of Lorretta Avenue can appropriately accommodate both left and right turn treatments from the development onto Bussell Hwy.

We note the DAP Members' concern regarding potential residential amenity impacts arising from the use of the local road (English View) by heavy vehicles, however, there appears to be no other viable egress alternative to the local road to the east of the site. The use of the existing internal accessway in-between the dwelling house situated on Lot 101 Lorretta Ave and the BWS store or the accessway along Bussell Hwy, both of which do exit onto Loretta Ave, is too close to the Bussell Hwy junction and cannot be used for heavy vehicle egress due to the potential for vehicle conflicts to occur within the operational area of the intersection.'

Based upon the MRWA feedback, future upgrading of the intersection of Loretta Avenue and Bussell Highway will lengthen the northbound turning lane which will reduce the banking of vehicles on the northbound lane, should several large vehicles be idling in anticipation of turning onto Loretta Avenue. This should improve functionality of the site's vehicular accessibility. However, it is noted that no timeline has been placed on this potential upgrade.

Department of Fire and Emergency Services

With regards to the updated Bushfire Management Plan (BMP), the revised documentation revisited the classification of vegetation in the Bussell Highway road reservation. The categorisation of the Bussell Highway verge to Class G Grassland has enabled the site to uphold a BAL29 level.

Support by DFES remains on the basis that the landowner/proponent needs an in-principle agreement with MRWA and the Shire to maintain the vegetation in their respective verges. However, the *Shire of Capel Activities in Thoroughfares and Public Places and Trading Local Law 2016* provides a right to the landowner / occupier to install or maintain a 'permissible verge treatment' (i.e. lawn, garden, hard surface etc.) in a low threat (excluded) state. Further to this notion, Class G Grassland is defined as worst-case (unmanaged) scenario. The need for an in-principle agreement to manage what is defined as a portion of vegetation not requiring 'management' is contradictory.

DFES then state that the 'decision maker should be satisfied that a legally binding and enforceable mechanism is available and that applicable legal agreements/easements are established prior to approval being issued to ensure the management of vegetation in perpetuity. If agreements cannot be reached with the required parties, the submitted BAL ratings may not be accurate.'

Should the JDAP fail to be satisfied with the Shire's interpretation of BMP, it would be suggested that a condition be placed on any potential approval which would require the applicant to obtain an in-principle agreement with MRWA for the maintenance of the Bussell Highway verge vegetation to a Class G Grassland classification.

Planning Assessment:

The planning assessment as part of this addendum will only discuss aspects of the proposal that relate to the RJDAP's reasons for deferral, which were the following elements:

- Traffic and Amenity Impact on Local Road Network
- Bushfire Management Plan
- Noise Impacts

Local Planning Scheme

Land Use
The land use of a "Service Station" is defined under LPS7 as:

> *"land and buildings used for the supply of petroleum products and motor vehicle accessories and for carrying out greasing, tyre repairs and mechanical repairs and may include a cafeteria, restaurant or shop incidental to the primary use, but does not include transport depot, panel beating, spray painting, major repairs or wrecking".*

It is considered that the proposed land use is consistent with the LPS7 definition and can be determined as the use of a Service Station.

The proposed carwash use is not defined under LPS7 but is classified as a 'Motor Vehicle Wash' land use in draft LPS8. The land use of a "Motor Vehicle Wash" is defined under LPS8 as:

> *"premises primarily used to wash motor vehicles".*

The Motor Vehicle Wash has not been considered a land use incidental to the main use of a Service Station, given the similar size and scale of both buildings related to each use. Instead, the application will be assessed based upon a 'dual land use approval' approach.

Table 2: Land Use Permissibility

Land Use	Planning Framework	Permissibility
Service Station	Local Planning Scheme No. 7	Appendix 4 - Special Use Zone provisions indicate that uses may be considered for approval on the site where considered 'compatible within a Local Centre.'
	Draft Local Planning Scheme No. 8	'A'
	Lots 900 &101 Loretta Avenue and Part Lots 2 & 901 Bussell Highway Local Structure Plan (LSP)	The LSP contains a Service Station and Convenience Store as designated land uses for the site.
Motor Vehicle Wash	Local Planning Scheme No. 7	'Use Not Listed'
	Draft Local Planning Scheme No. 8	'A'
	Lots 900 &101 Loretta Avenue and Part Lots 2 & 901 Bussell Highway Local Structure Plan	The LSP contains a Service Station and Convenience Store as designated preferred land uses for the site.

It is established through the above comparisons that the proposed land uses would be entertainable under the introduction of an imminent planning instrument, being draft LPS8, and as such may be supported by the Shire subject to meeting several criteria.

LPS7 does not contain specific zone objectives for the Special Use Zone, however the site's proposed rezoning to 'Commercial' under LPS8 provides guidance for the purpose of assessing the land use compatibility at the site.

Table 3: Draft LPS8 Commercial Zone Objectives		
Objective	**Comments**	**Satisfied**
To provide for a range of shops, offices, restaurants, and other commercial facilities in defined townsites or activity centres.	It is recognised that the site is located along Bussell Highway as is conveniently accessibly to a high traffic volume daily. The development provides for an array of uses on the site and contributes the servicing the local community and passing commuters.	**Yes**
To maintain the compatibility with the general streetscape, for all new buildings in terms of scale, height, style, materials, street alignment and design of facades or to improve the existing streetscape.	The lots abutting Bussell Highway to the east are developed urban residential areas but contain highly vegetated bushland. The context of the locality would mean that development of the subject site would not necessarily contribute to an existing, established streetscape. Nonetheless, the development incorporates several architectural features and contemporary finishes to create visual interest when viewed from the public realm. It is considered that by virtue of the design techniques incorporated into the development, such as the unique fuelling station shelter design, the development improves the existing streetscape.	**Yes**
To ensure that development is not detrimental to the amenity of adjoining owners/occupiers and/or residential properties in the locality.	The subject site does share its northern and southern lot boundary with residential properties (7 English View and 3 Loretta Avenue). Furthermore, the area to the east of the subject site is zoned Residential. Therefore, the proposed uses are considered relatively sensitive from a potential amenity impact perspective, given the level of residential development within vicinity.	**Yes**

	The aspect in which the item was deferred for is largely the uncertainty of nuisance impacts associated with 24-hour operation. Whilst the applicant provided an ENA previously that demonstrated compliance with Environmental Protection (Noise) Regulations 2015, the application does fail to address the aspects of noise and nuisance that sits outside of this legislation, which air brakes, and vehicle doors closing. As part of the deferral process, the applicant was asked to update the ENA to include details on whether the outdoor play area and dining balcony remained accessible for 24 hours, or whether these areas would be restricted to daytime availability. The applicant has suggested a condition to be imposed that enables the ENA to account for the JDAP advice. This would be considered a sufficient mechanism in mitigating against most residential amenity impacts. There is still a question over the nuisance implications of the 24-hour activity for the Service Station and associated air brake and car door noises that may be experienced, but would be for the JDAP to determine whether a condition limiting hours of operation to the Service Station is considered appropriate. Furthermore, it is noted that any recommendation for approval should include a condition that the installation of outdoor lighting to be in accordance with the requirements of the Australian Standard AS 4282-1997: 'Control of the Obtrusive of Outdoor Lighting.'	

Specifically, the Shire must be satisfied that the amenity impacts from the development are considered at a level which will not detrimentally impact adjoining and nearby residents. It is recognised that the use component is considered a 'designated' use under the LSP, however the LSP was formulated at a time when Service Station developments were not typically a 24-hour operation, and as such, was unlikely factored into the use's compatibility when adjoining a residential setting.

The development proposes 24-hour operation, which is considered more of a sensitive use of land by the Environmental Protection Authority in comparison to a typical daytime operation. However, the applicant has not addressed the specific request of the RJDAP, which was to detail and outline any potential operation hour changes that would alleviate the impacts of human noise and general nuisance which does not form part of the *Environmental Protection (Noise) Regulations 2015*. Whilst the above built form measures do provide for a level of mitigation for noise factored into the Regulations, limiting the Service Station hours of operation may significantly alleviate the sensitivities of noise or nuisance to nearby residential areas, further contributing to the efforts made thus far in limiting the Motor Vehicle Wash operating hours and accessibility to outside areas in the evening.

Table 4: Clause 67(2) of Planning & Development Regulations 2015		
Matter to be Considered	**Officer Comment**	**Satisfied**
(a) the aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area.	Demonstrated through Table 2 and 3 above, the proposal is considered to meet the aims and provisions of the LPS7, and the objectives of the soon-to-be implemented draft LPS8.	**Yes**
(b) the requirements of orderly and proper planning including any proposed local planning scheme or amendment to this Scheme that has been advertised under the Planning and Development (Local Planning Schemes) Regulations 2015 or any other proposed planning instrument that the local government is seriously considering adopting or approving.	As established in the report, the application has been assessed against the provisions of draft LPS8, which has been submitted to the Western Australian Planning Commission for final adoption and gazettal. As such, the instrument, albeit in draft form, is still seriously entertained for the purpose of assessment. As shown above, the proposal is considered to meet the objectives of the Commercial Zone under draft LPS8.	**Yes**
(h) any structure plan or local development plan that relates to the development.	The application was referred to the Shire's Strategic Division for assessment and review. The feedback provided states that the development is proposed broadly in alignment with the endorsed Local Structure Plan applicable to the site.	**Yes**

	Elaborating on the referral comments, the land use and location of the built form is consistent with the intents envisaged as part of the Lots 900 &101 Loretta Avenue and Part Lots 2 & 901 Bussell Highway Local Structure Plan.	
(m) the compatibility of the development with its setting, including — i. the compatibility of the development with the desired future character of its setting; and ii. the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development.	The activity and scale of the proposal is considered relatively consistent with multiple Service Stations adjacent to Bussell Highway within Gelorup and Stratham. Furthermore, it is recognised that the proposal reflects the general commercialised ribbon development that occurs on highways and busier roads. The development acts as an appropriate interface to the highway before the eastern side of Bussell Highway transitions into a predominantly residential area. Furthermore, the development is largely compliant with built form requirements, and is appropriate in its scale and appearance. The site is located at the foot of the eastern hills, and as such, means that the development does not project at a height which is inconsistent with surrounding development, as most residential houses to the east of the site sit on a higher topography.	**Yes**
(n) the amenity of the locality including the following — i. environmental impacts of the development; ii. the character of the locality; iii. social impacts of the development.	The reasons for deferral at the previous meeting on 4 November 2022 have not been satisfactorily addressed. An updated Environmental Noise Assessment was requested to limit nuisance and noise associated with the outdoor play areas and balcony. Whilst not forming part of the Environmental Protection (Noise) Regulations 1997, the RJDAP requested details on accessibility throughout the site, given its 24-hour operations and associated human noise and nuisance levels.	**Yes**

	To adequately address this provision, the applicant would need to provide details or management plans that scope limiting of accessibility to such amenities in evening periods where land use conflict is likely to be amplified. This aspect of the proposal was addressed to the satisfaction of the Shire. However, there is also a need to seriously consider a condition of approval to be included in the Officer's Recommendation that would limit the operating hours of the Service Station component. With the imposition of this condition, it is considered that the development addresses all amenity concerns associated with evening activity.	
(t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety.	The development application was accompanied by a Traffic Impact Assessment, which assessed the likelihood of impacts on the local road network and traffic flow. The applicant's updated TIA states that 'on a weekday, the development is estimated to generate 1,704 daily vehicle trips, including 139 trips during the morning peak hour and 153 trips during the afternoon peak hour. With pass by trips excluded, the net increase in traffic generation on a weekday is 792 vehicles per day, 65 vehicles during the morning peak hour and 71 vehicles during the afternoon peak hour.' A peak hour capacity analysis of the Bussell Highway / Loretta Avenue intersection indicates that there will be sufficient capacity to accommodate the development traffic at opening and in the longer-term scenario. Furthermore, the crash history of the adjacent road	**Yes**

	network did not identify any major safety issues. These figures have been generated on the basis of a 24-hour operation, and should reduce if the JDAP endorse the Shire's Officer Recommendation to limit operating hours. It would be considered that through the imposition of such a limitation, the proposed level of traffic would be reflective of traffic levels envisaged for the site at the time the Local Structure Plan was endorsed.	
(y) any submissions received on the application.	It is considered that the updated documentation provided by the applicant alongside the conditions imposed as part of the officer's recommendation adequately address the concerns raised in the schedule of submissions.	**Yes**
(za) the comments or submissions received from any authority consulted under clause 66.	It is considered that the development application responds to the submissions made by relevant external agencies. Acknowledging that initial concerns were raised with the proposal by DFES and MRWA, the applicant has since updated the documentation (TIA and BMP) to adequately resolve these concerns.	**Yes**

Overall, it is deemed that the use of the site for the purpose of a Service Station and Motor Vehicle Wash is deemed acceptable on the basis that parameters are set on appropriate operation hours. Therefore, any recommendation for approval will be accompanied by a condition limiting the operation hours of 5:00am to 10pm Monday to Sunday.

One of the reasons for deferring the item was for the applicant to adequately demonstrate amenity impacts on the local road network, and that a revised Traffic Impact Assessment (TIA) be provided to account for the traffic figures to the English View entry/exit point. It is acknowledged that a greater number of vehicles would be using this crossover to exit site, as opposed to entering site, as it is a designated truck egress point. However, the usage of this crossover is significantly less in terms of peak hour traffic count figures to that of the other access/egress points to site.

As with the argument above, the limitation of operating hours at the site would significantly improve the residential amenity of nearby properties, particularly those that share a frontage to English View and Loretta Avenue. The discussion of amenity on the local road network also accounts for user safety and preservation of a

satisfactory pedestrian environment. It would be considered that amenity of the local road network has been accurately depicted as acceptable given the TIA outlines a significantly less figure of vehicles utilising the crossover to English View, and containing a majority of users to utilising the Bussell Highway slip lane or Loretta Avenue crossover.

State Planning Policy 3.7 – Planning in a Bushfire Prone Area (SPP 3.7)
The application was accompanied by a Bushfire Management Plan, in accordance with the requirements of State Planning Policy 3.7 (SPP 3.7). A service station with flammable goods stored on site is considered a High-Risk land use under SPP 3.7. The proposed service station will store diesel and petroleum, which are both considered dangerous goods under the Dangerous Goods Safety Act 2004 and their storage must comply with the standards described in AS 1940:2017. The site is currently a mix of bare sand and grassland which will be cleared during development and replaced with a sealed trafficable surface.

Assessing the ability of a proposed development site to achieve BAL-29 or less is the objective of one of the bushfire protection criteria. Being able to demonstrate that a BAL rating of BAL-29 or lower is achievable for a proposed development site (i.e. the building footprint) is an acceptable outcome for that criteria, as established by the bushfire provisions, SPP 3.7 and the associated guidelines.

The applicant's BAL and BMP demonstrated that the buildings onsite could achieve a rating of BAL-29 or less but was underpinned by an Asset Protection Zone (APZ) model that relied upon agreements from the Shire and MRWA to maintain vegetation in surrounding road reservations to a 'low threat' state.

Both the Shire and MRWA have been transparent in their communication with the applicant and have stated that such an agreement will not be entered. Without such an agreement, the site will not be able to achieve a BAL rating that deems the proposal acceptable for its location.

Clause 6.6.1 of SPP3.7 states that *development applications for vulnerable or high-risk land uses in areas between BAL-12.5 to BAL-29 will not be supported unless they are accompanied by a Bushfire Management Plan jointly endorsed by the relevant local government and the State authority for emergency services.*

However, as stated above, the applicant has provided an updated BMP which reclassifies the Bussell Highway verge vegetation, which subsequently downgrades the site's BAL rating. As per the above, there is some ambiguity in the definition of Class G Grassland classification and the advice provided by DFES. Shire Officers have interpreted the BMP as being sufficient to support a BAL29 rating without needing a management agreement to be made between the applicant and MRWA, as the classification provided to the Bussell Highway verge vegetation is for a 'worst-case scenario of being unmanaged. For DFES to be supportive of this classification, yet request that a management agreement be reached, would be a considered contradictory statement.

As such, it would be suggested that a condition be placed on any potential approval which would require the applicant to obtain an in-principle agreement with MRWA for the maintenance of the Bussell Highway verge vegetation to a Class G Grassland classification, should the JDAP as the decision-maker fail to be satisfied with the interpretation of both the applicant and the Shire.

State Planning Policy 4.1 – State Industrial Buffer (SPP 4.1)
SPP4.1 identifies the need for land uses commonly associated with off-site amenity impacts (noise, dust, gas, odour, lighting and fumes) to be separated from sensitive land uses.

It is noted in SPP4.1 that a Service Station is not a Prescribed Premises under the Environmental Protection Regulations 1987, however it is acknowledged that the land use generates emissions (odour, noise and light). Therefore, the appropriateness of the service station location and operation requires detailed consideration by the decision-maker to ensure amenity impacts are suitably addressed.

Environmental Protection Authority (EPA) Guidance Statement No. 3 – Separation Distances Between Industrial and Sensitive Land Uses (June 2005)

For a service station operating 24 hours a day (as is proposed for the subject application) a 200-metre separation distance is recommended. In this instance a 75m separation distance has been proposed to the nearest sensitive land use receptor (dwelling) directly to the east of the site. The EPA document suggests that should a development propose a variation to the 200m separation distance, it is expected that clear justification arguing the need for the variation is provided, addressing amenity impacts associated with noise, risk, gas and odour.

The applicant's ENA contains several measures to ensure compliance with the *Environmental Protection (Noise) Regulations,* but as discussed above, fails to address the impact of general nuisance noise the proposed 24-hour operation will have on the surrounding locality. This includes noise emitted from sources such as truck's air brakes, and car doors closing. One positive however was the applicant's willingness to recommend that a condition of approval be placed on any potential approval that requires the ENA to restrict the operation hours of the Motor Vehicle Wash and vacuuming, and outdoor amenity areas within the site.

The reduced setbacks to the Residential Zone is cause for concern, given the amplified nature of such noise in evening periods where the land use would be considered more incompatible, compared to being limited to daytime activities. A recent SAT decision *Puma Energy Australia and City of Cockburn [2016] WASAT 36* concluded that such land uses could coexist within closer proximity to that stated under the EPA requirements, but on the basis that amenity impacts were limited through the imposition of a condition that restricted the development's operating hours.

The Shire does not support the reduced setback to the Residential Zone due to the 24-hour operations of the Service Station. Should the RJDAP seek to approve the development, it would be recommended that conditions were placed on any potential approval limiting the operating hours from 5:00am to 10pm Monday to Sunday for a Service Station directly abutting a residential area.

State Planning Policy 7.0 – Design of the Built Environment (SPP 7.0)
SPP 7.0 applies to all development in Western Australia. The purpose of SPP 7.0 is to inform and guide landowners, proponents, designers, reviewers and decision-makers to achieve good design outcomes in the built environment.

The Shire's summary of the proposed development against SPP 7.0 is as follows:

Table 6: SPP 7.0 – Design of the Built Environment

1. Context and Character *Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*	The broader locality does contain a mixture of development and vegetation. As such, the development site is located in a manner that would facilitate appropriate transition from densely vegetated sites to the east, and predominantly residential, built-up lots to the west of Bussell Highway. The site could also be considered as a buffering between the Bussell Highway carriageway, and R2.5 coded residential sites on the eastern hills of Gelorup. By virtue of proposing development with minimum building footprint, and vast areas of space without permanent structures being built, it is considered as an appropriate design that responds to context and spacious character of lots within the area. Furthermore, the applicant understands the sensitivity of the land use when located nearby residential areas, and as such, has proposed a design that respects its context by incorporating acoustic noise treatment.
2. Landscape Quality *Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*	The development does contain landscaping strips which are orientated towards the Bussell Highway frontage and visible from the public realm. It is recognised however that the landscaping plan is of an indicative nature in terms of only outlining the location. The landscaping plans fails to provide details on deep soil areas, species, landscaping palettes, tree location, or reticulation. For this reason, the recommendation will include the imposition of a condition that requests a detailed landscaping plan to be submitted and approved by the Shire prior to the lodgement of a building permit. By including this condition, the applicant is afforded time to formulate an appropriate document of key information, ultimately satisfying this design principle.
3. Built Form and Scale	The scale and built form of the development is considered to comply with the requires outlined in **Table 5**

Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.	above. The building is respectful to the planning framework but is also considered relatively and reflective of the scale of similar developments for Service Stations that adjoin to Bussell Highway. The development avoids massing by separating the main building from the Motor Vehicle Wash component, and truck fuelling station.
4. Functionality and Build Quality *Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life cycle.*	The development is considered highly functional, provides for efficient and convenient internalised vehicular movement, and is user friendly through the imposition of resting areas and recreational grounds. The development utilises high quality materials and presents to the public realm in a manner that exhibits a contemporary feel.
5. Sustainability *Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*	The design facilitates social benefits for travellers, and includes areas such as a dog park, and a café to allow users to rest. The proposal offers some forms of recreation to visitors and upholds a level of social benefit to complement the economical outcomes of the activity.
6. Amenity *Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*	The development promotes a high level of amenity for users of the site, through the implementation of features such as a dog exercise park area, a playground for children, multiple food vendors, restrooms, nature areas, and rest bays for drivers. The design recognises the need to promote the site for the purposes of rest and recreation, and their vital role in reducing driver fatigue. **However, as discussed in the body of this report, little consideration has been given to the amenity of neighbours. The application does not promote a high level of amenity to neighbours due to a combination of a reduced separation between industrial and sensitive land uses, and the 24-hour operation of the Service Station.**

	For this reason, it does not meet the Amenity clause of SPP7.0.
7. Legibility *Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*	The vehicular entry to the site is clearly defined through a slip lane. This will be constructed as part of a Bussell Highway upgrade for the development. The building contains large glass windows and doors that orientate towards the fuel station canopy. It is envisaged that users will be able to park at fuel bowsers and have direct view to the entry of the building. The canopy linking the fuel station area to the main building is considered an appropriate wayfinding technique that directs patrons towards the service station's main building.
8. Safety *Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*	The design accounts for safe vehicular movement into site by proposing a slip lane. The safety of both pedestrians and drivers is accounted for through the demarcation of pedestrian crossings and vehicular entry and exit points. The development application also contains a recommendation to impose a condition of approval relating to adequate lighting onsite.
9. Community *Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*	The development responds to the local context of Dalyellup's growth suburb status, as well as the stable nature of the Gelorup residency. There is a need to provide for Service Stations within the south west, given the high dependency on the private vehicle and the greater-than-usual distances travelled in daily commutes. It is considered that by providing the community with a Service Station, the development increases the ease in commuting, and enables residents of the south west to maintain connection to other districts within a local and regional context.

10. Aesthetics *Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*	The applicant has provided renders as part of the development plans set. The main Service Station building incorporates a variety of textures, materials, and colours which contribute to a visual interest. Furthermore, the fuel station canopy is of a contemporary nature, featuring a unique 'V' shaped design. The design avoids orientating large portions of blank, single-tone walls towards Bussell Highway, and creates a 'modular' like style of development with square edges and sections of upper floor that cantilever.

Conclusion

Whilst most elements of the proposal are considered supportable, the fundamental concern raised by the RJDAP at its previous meetings held 4 November 2022, and 6 February 2023 that is not considered fully satisfied would be amenity implications resulting from 24-hour operation.

The 24-hour occurrence of noise and light is considered to have an accumulative nuisance impact and negatively impact upon the amenity of the directly abutting residential development. There is a general recognition that the suggested condition of the applicant addresses a majority of amenity concerns by limiting the operation of certain elements within the development site, however the nuisance from air brakes and car doors closing in evening periods should not be underestimated.

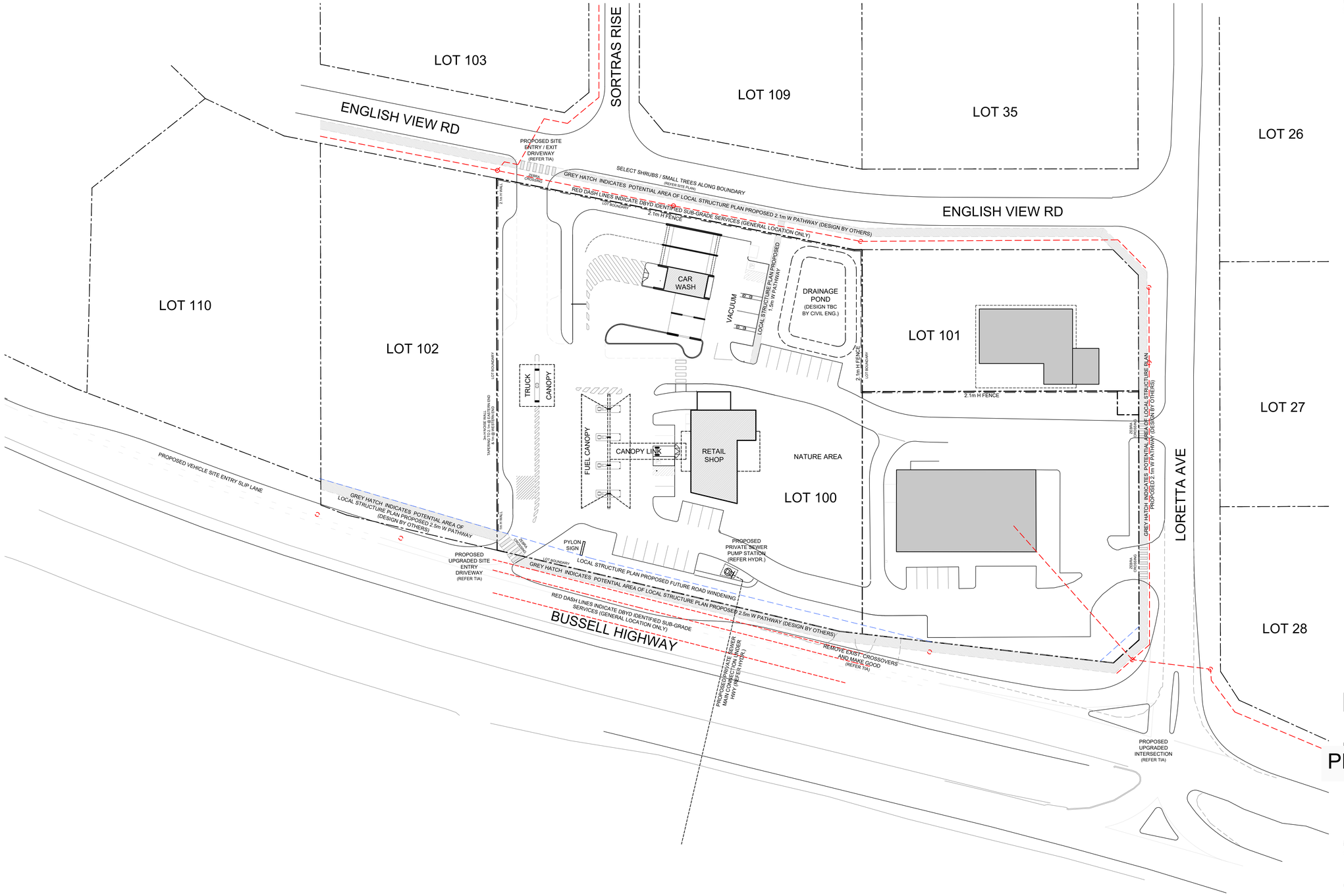
However, it is noted that such issues can be addressed through the imposition of planning conditions. For this reason, the Shire supports the proposal subject to a condition of approval limiting the overall development's operating hours, with the Service Station recommended to be operative from 5:00am to 10pm Monday to Sunday, and further restrictions for the Motor Vehicle Wash and outdoor amenity areas to be restricted in conjunction with the statements under the revised ENA.

In relation to the other reasons for deferral, the Shire is satisfied that the issues around impacts to the local traffic network, safety, and amenity have been resolved by the updated TIA. Lastly, the BMP has been updated to reclassify the Bussell Highway verge area as Class G Grassland, and therefore it is the opinion of the Shire that an in-principle agreement is nor required to be reached between the applicant and MRWA to maintain this vegetation to a low-fuel state.

NOTES

LOCAL STRUCTURE PLAN PROPOSED PATHWAYS:
FINAL POSITION OF PATHS TO BE DETERMINED BY THE CIVIL ENGINEER HAVING REGARD TO EXISTING SERVICES LOCATIONS

EXISTING SERVICES:
RED DASH LINES INDICATE DBYD IDENTIFIED SUB-GRADE SERVICES (GENERAL LOCATION ONLY)



N

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mm

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PRELIMINARY ONLY

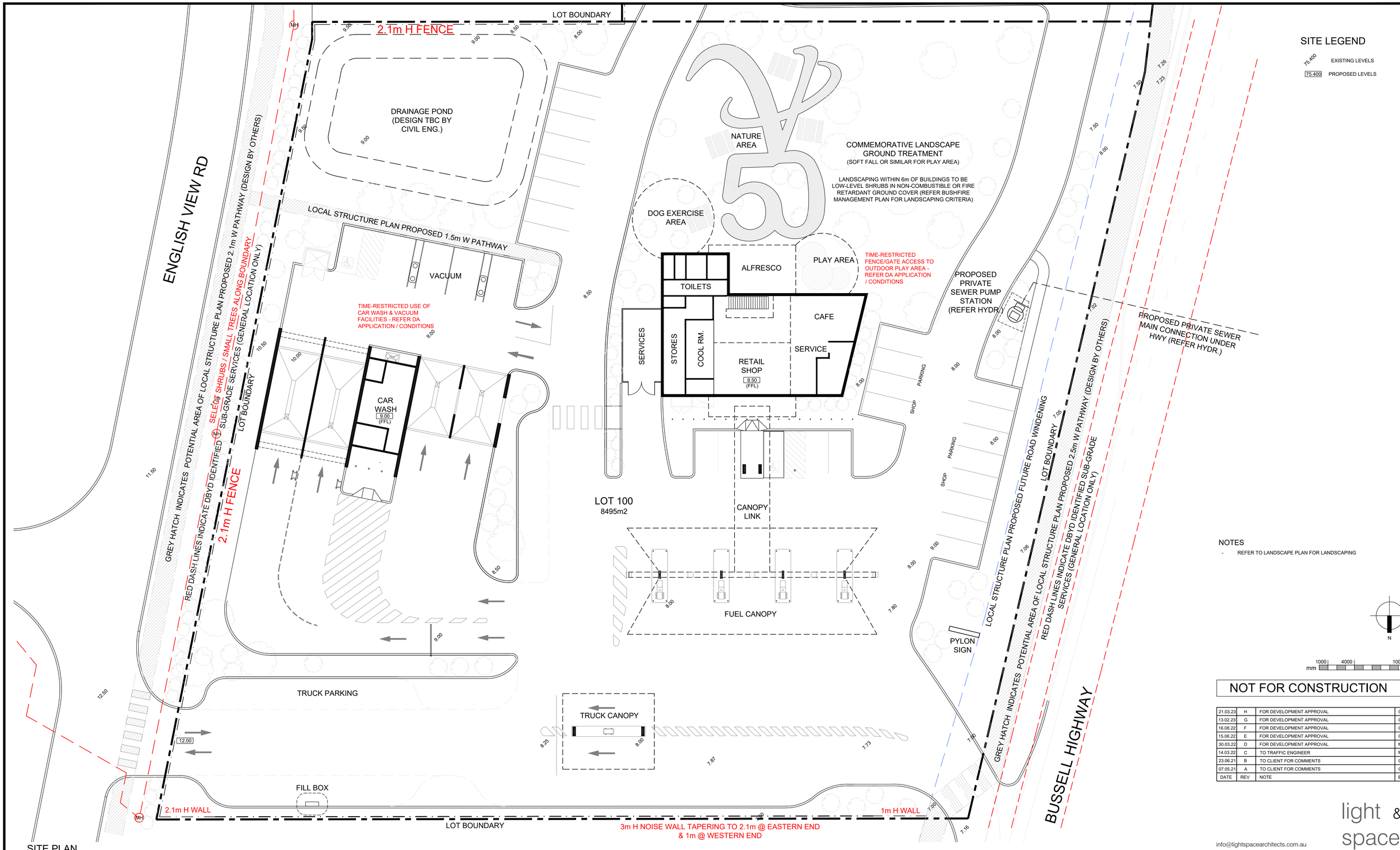
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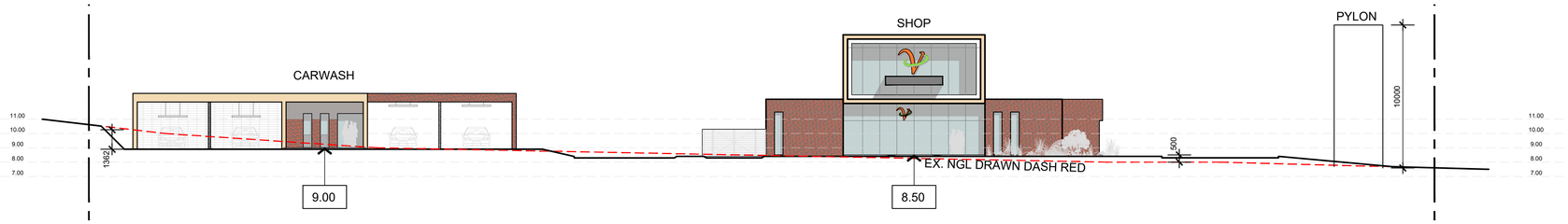
LOT 100, 79 BUSSELL HWY, GELORUP

LOCATION PLAN

DRAWN	DATE	CHECKED	DRAWING No.	REV
GC / MU	15/06/22		SK0	B
JOB No. 21005	SCALE 1:500 @ A1	MU		



SITE PLAN



SITE SECTION THRU
FORECOURT AND CARWASH

SITE LEGEND

75.400 EXISTING LEVELS

75.400 PROPOSED LEVELS

NOTES

- REFER TO LANDSCAPE PLAN FOR LANDSCAPING

N

1000 | 4000 | 10000 mm

NOT FOR CONSTRUCTION

21.03.23	H	FOR DEVELOPMENT APPROVAL	GC
13.02.23	G	FOR DEVELOPMENT APPROVAL	GC
16.08.22	F	FOR DEVELOPMENT APPROVAL	GC
15.06.22	E	FOR DEVELOPMENT APPROVAL	GC
30.03.22	D	FOR DEVELOPMENT APPROVAL	MU
14.03.22	C	TO TRAFFIC ENGINEER	MU
23.06.21	B	TO CLIENT FOR COMMENTS	GC
07.05.21	A	TO CLIENT FOR COMMENTS	GC
DATE	REV	NOTE	BY

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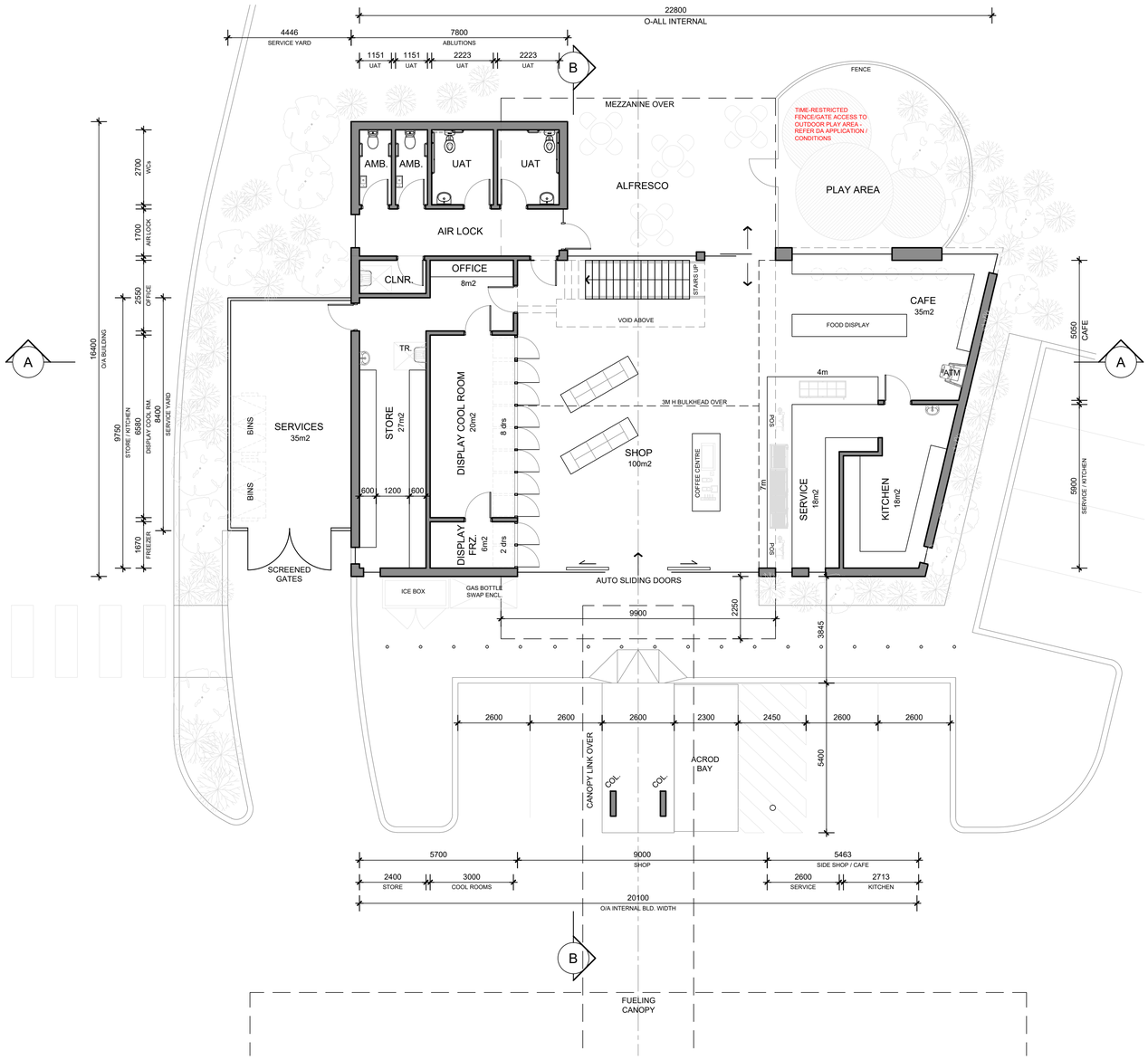
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SITE PLAN & SECTION

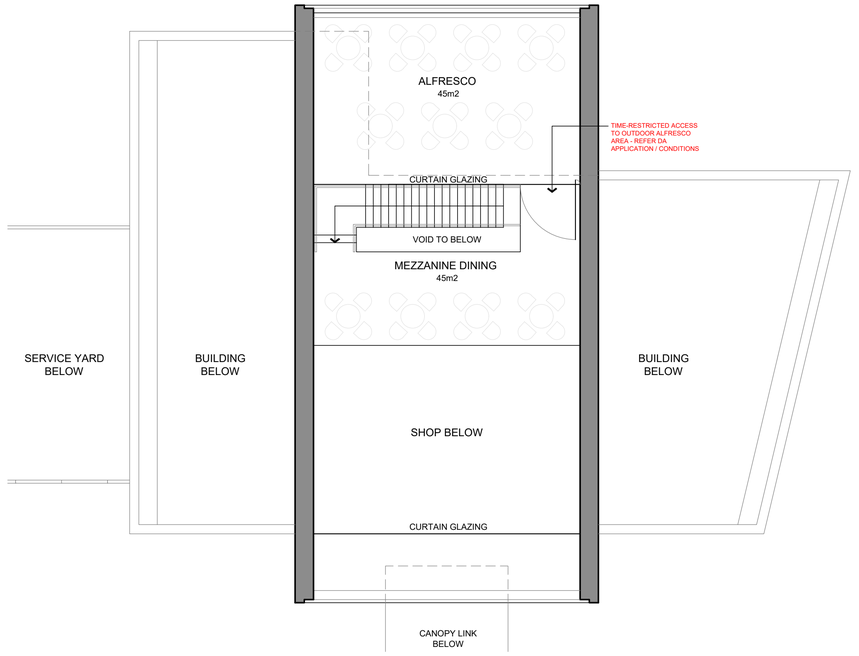
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GC / MU	23/04/21		SK1	H
JOB No. 21005	SCALE 1:200 @ A1	-		

AREAS
(EXTERNAL FOOTPRINT)

TRANSCORE GELORUP	
GR FLOOR	200m2
PROPOSED	
GR FLOOR	300m2
UPPER FLOOR	190m2 (incl. Alfresco)



LOWER FLOOR PLAN



UPPER MEZZANINE PLAN

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23.06.21	B	TO CLIENT FOR COMMENTS	GC
07.05.21	A	TO CLIENT FOR COMMENTS	GC

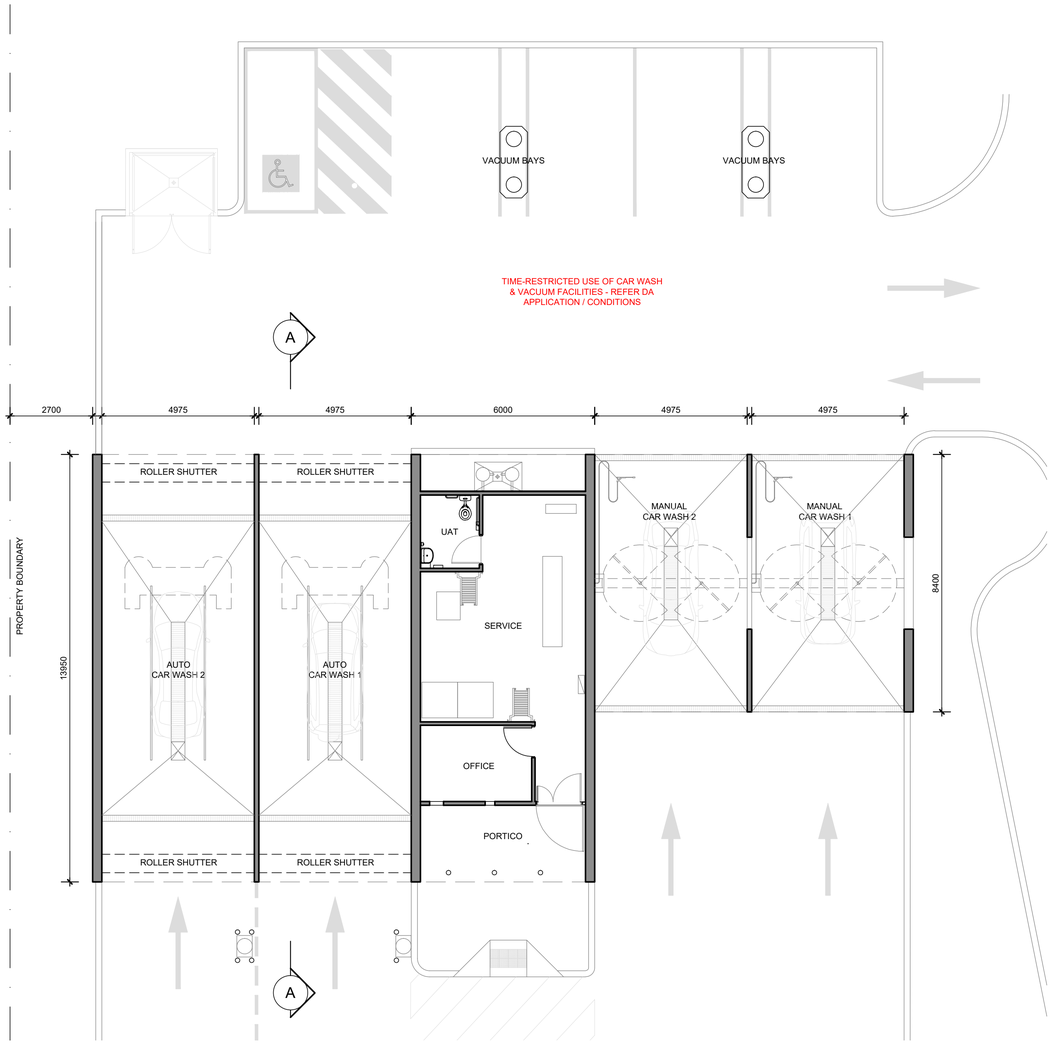
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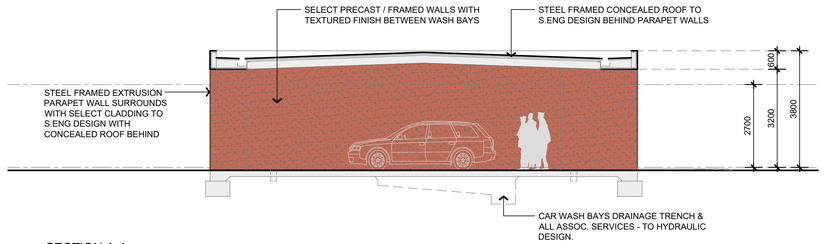
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RETAIL SHOP
CONCEPT PLANS

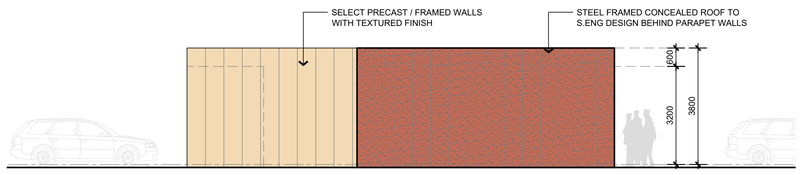
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JOB No. 21005	SCALE 1:100 @ A1			



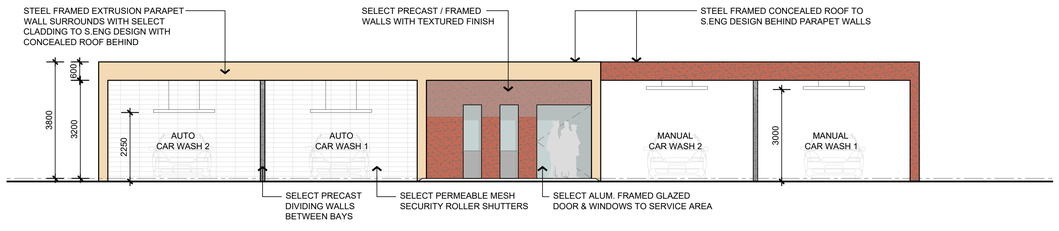
LAYOUT PLAN



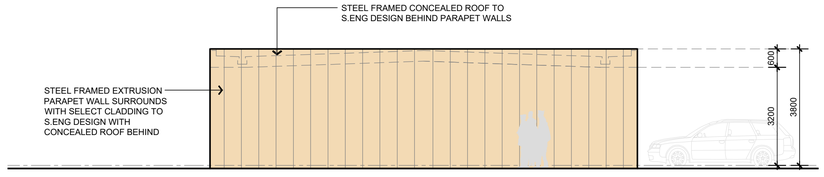
SECTION A-A



WEST / STREET ELEVATION



NORTH / SERVICE ENTRY ELEVATION



EAST / INTERNAL ELEVATION

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21.03.23	D	FOR DEVELOPMENT APPROVAL	GC
30.03.22	C	FOR DEVELOPMENT APPROVAL	MU
23.06.21	B	TO CLIENT FOR COMMENTS	GC
07.05.21	A	TO CLIENT FOR COMMENTS	GC

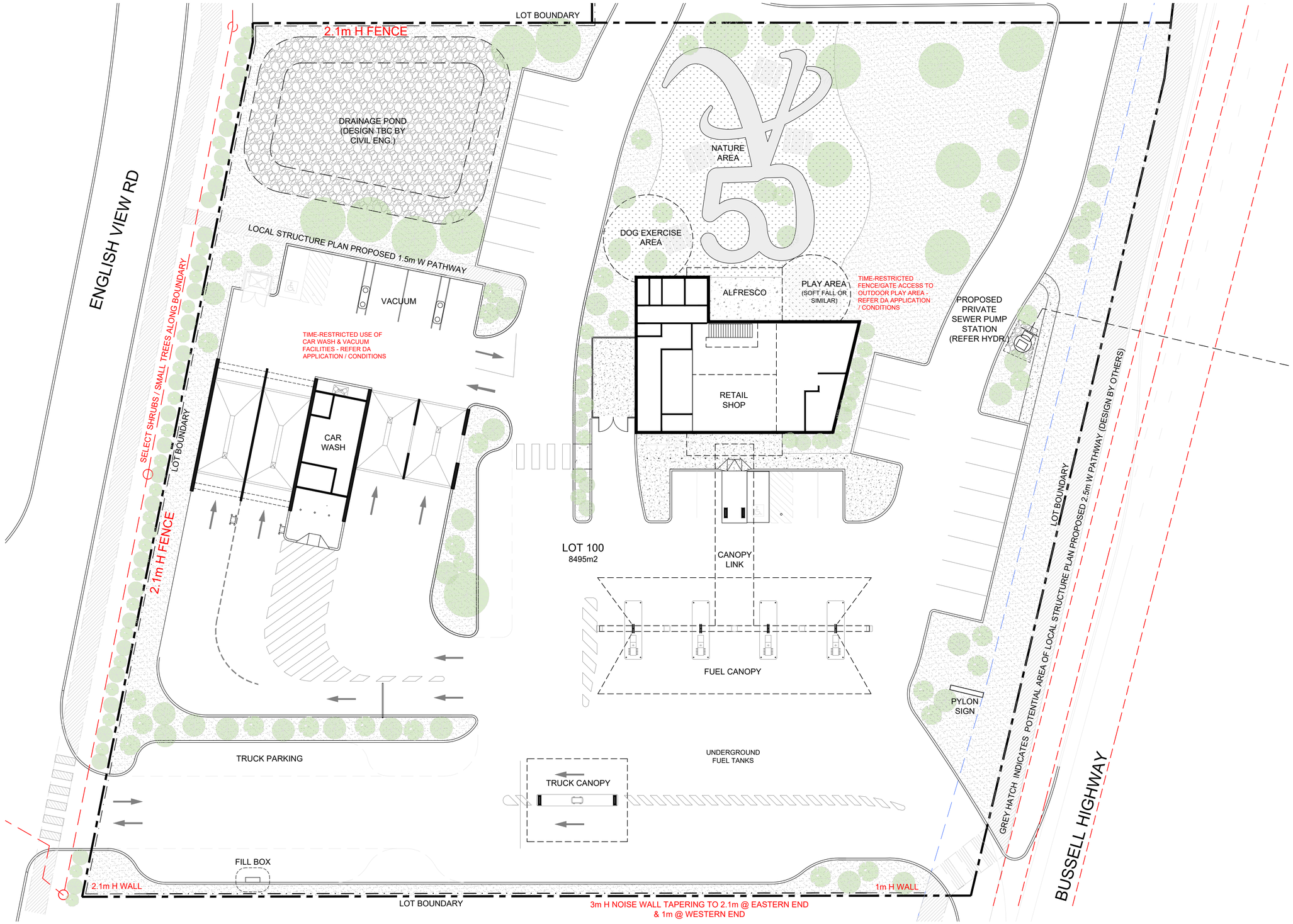
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CAR WASH
CONCEPT DESIGN

DRAWN	DATE	CHECKED	DRAWING No.	REV
GC	23/04/21	GC	SK5	D
JOB No. 21005	SCALE 1:100 @ A1			



INDICATIVE LANSCAPING LEGEND:

BOTANICAL NAME	COMMON NAME	TYPE / MAX. SIZE	QTY.
EUCALYPTUS VICTRIX / AGONIS FLEXUOSA	COOLIBAH / WA PEPPERMINT	PLANT (TREE)	7 X total
WESTRINGIA FRUTICOSA	COASTAL ROSEMARY	SHRUB (0.5m)	
WESTRINGIA DAMPIERI	COASTAL ROSEMARY	SHRUB (0.5m)	3 X / m2
ROSEMARINUS OFFICIANALIS	ROSEMARY	SHRUB (0.4m)	
CONOSTYLIS CANDICAN	COTTONHEAD	SHRUB (0.4m)	
THOMASIA PURPUREA	PURPLE WREN	SHRUB (0.4m)	3 X / m2
LECHENAULTIA BILOBA	BLUE LECHENAULTIA	SHRUB (0.48m)	

AREAS TO BE MULCHED	SCREENED PINE BARK OR SOURCED FROM LGA STOCK PILE NOTE THICKNESS OF WOODEN MULCH TO BE GREATER THAN 6mm NON-COMBUSTIBLE	
LOW LEVEL GRASSLAND	RETICULATED LAWN LESS THAN 100mm HIGH (REFER BUSHFIRE MANAGEMENT PLAN)	
TRAFFICABLE CONCRETE	DETAIL DESIGN BY CIVIL CONSULTANT	
PEDESTRIAN CONCRETE	DETAIL DESIGN BY CIVIL CONSULTANT	

NOTES

- LANDSCAPING TO BE PROVIDED IN ACCORDANCE WITH THE CURRENT BUSH FIRE MANAGEMENT PLAN, AND
- LANDSCAPING TO BE PROVIDED IN ACCORDANCE WITH THE CURRENT 'SHIRE OF CAPEL BUSH FIRE MITIGATION NOTICE'
- ONSITE MODIFICATION AND / OR CLEARING OF NATIVE VEGETATION TO BE CONFIRMED ACCEPTABLE BY RELEVANT AGENCIES AND PROVIDED TO BUSH FIRE CONSULTANT FOR INCLUSION IN BMP (IF APPLICABLE)
- DEAD PLANT MATERIAL TO BE REMOVED FROM SITE PRIOR TO AND DURING BUSHFIRE SEASON
- VERGE AREAS LANDSCAPING TO BE PROVIDED & MAINTAINED IN A LOW THREAT STATE IN ACCORDANCE WITH BMP
- GARDEN BEDS TO BE MULCHED TO A DEPTH OF NO LESS THAN 100mm WITH AN APPROVED NON-COMBUSTIBLE.
- TREES ARE TO BE SEMI MATURE AT A MINIMUM OF 1.5m HIGH AND ALL OTHER PLANTS TO HAVE A MINIMUM POT SIZE OF 200mm.
- ALL GARDEN BEDS ARE TO BE RETICULATED BY DRIP FED IRRIGATION RETICULATION TO BE A FULLY AUTOMATIC SYSTEM FROM ON-SITE SUPPLY.
- FINAL DETAIL DESIGN OF LANDSCAPING AND IRRIGATION SYSTEMS TO BE BY AN APPROPRIATE CONSULTANT.
- LANDSCAPING SCALE AND PLACEMENT TO COMPLY WITH BUSHFIRE MANAGEMENT PLAN BUSHFIRE ATTACK LEVELS
- ALL SHRUBS TO BE MAX. 0.5M HIGH, ASSESSABLE AS 'GROUND COVERS'
- ALL VEGETATION TO BE MAINTAINED AND ALL DEAD PLANT MATERIAL REMOVED AS PART OF THE ONGOING SITE MANAGEMENT PROGRAM

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LANDSCAPE PLAN

DRAWN	DATE	CHECKED	DRAWING No.	REV
GC	13/02/23		SK7	A
JOB No. 21005	SCALE 1:200 @ A1	-		

Proposed Service Station, Convenience Store and Car Wash

79 Bussell Highway, Gelorup

Environmental Noise Assessment

16 January 2023

Report Number: 22061084 - 01c

www.ecoacoustics.com.au

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Telephone: **(08) 9367 1555**

Report: 22061084 - 01c

EcoAcoustics Pty Ltd

ATF Ireland Family Trust ABN: 26 450 946 619

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Signature:		**Signature**	
Date of Issue:	16 January 2023		

Revision History				
Revision	**Description**	**Date**	**Author**	**Checked**

Table of Contents

Executive Summary ..... **i**

1 Introduction **1**

1.1 Site Locality & Surroundings 1

1.2 Site Layout 1

2 Criteria **8**

2.1 Regulation 3(a) – Motor vehicle noise 11

2.2 Assessment of Amenity 12

3 Noise Monitoring **15**

3.1 Noise Measurement Methodology 15

3.2 Ambient Noise Monitoring 15

4 Noise Modelling **18**

4.1 Methodology 18

4.1.1 Meteorological Information *18*

4.1.2 Topographical Data *18*

4.1.3 Ground Absorption *19*

4.1.4 Source Sound Levels *19*

4.1.5 Three-Dimensional Site Render *20*

5 Noise Impact Assessment **21**

5.1 Assessment of Vehicles and Service Station Including Alfresco Dining 21

5.2 Assessment of Air Compressor 22

5.3 Assessment of Car Wash 23

5.4 Assessment of Mechanical Plant Noise 24

6 Recommendations and Discussion **27**

7 Conclusion **28**

Appendix A **29**

Executive Summary

EcoAcoustics Pty Ltd was commissioned by Vibe Petroleum to conduct an assessment of a Proposed Service Station, Convenience Store and Car Wash located at 79 Bussell Highway, Gelorup. This noise impact assessment report has been completed to support the proposal, as part of the development application. The purpose of this report is to assess the noise emissions from the site in accordance with the prescribed standards contained in the *Environmental Protection (Noise) Regulations 1997*.

To ensure compliance with the noise regulations, allowing for 24-hour site operations and to minimise the noise impact of the proposed service station, convenience store and car wash onto nearby residences, it is recommended that the following be incorporated:

- A 3m high acoustic barrier along the northern property boundary, tapering down to 1 m high to the Bussell Highway frontage and to the English View frontage of the site to allow for street visibility (as shown on *Figure 1.2*);
- A 4m high nib wall/acoustic barrier extending from the exit of the automatic car wash bay 3 metres is required.
- The minimum requirements for the acoustic barriers are to be solid barriers with no gaps (<1%) achieving a minimum surface density of 12kg/m^3, located as shown in *Figure 4.1*;
- The automatic car wash bays will be fitted with automatic doors on the entry and exit equivalent to a PVC clear 2.5 mm door blade (which provides a minimum R_w 23);
- Vacuum bays will be fitted with 3 phase vacuums and will include a roof over the top internally lined with 50mm 32kg/m^3 sound absorbing insulation and a rear wall meeting the acoustic barrier specifications above as a minimum;
- The car wash plant room is lined with 50mm 32kg/m^3 sound absorbing insulation.
- Mechanical plant installed as part of the development is to be selected for quiet operation and should not exceed the sound power levels shown in *Table 4.2*. It is recommended that an updated acoustical assessment be required for any mechanical plant exceeding the sound power levels contained in *Table 4.2*.

The results of the noise predictions show that the proposed site can comply with the assigned noise levels associated with the *Environmental Protection (Noise) Regulations 1997* at all nearby residential receivers with the inclusion of the attenuation measures discussed in Section 6. In addition, based on the measured background noise levels, the predicted noise levels from the site are unlikely to adversely impact the amenity of the acoustic environment as the predicted levels are significantly lower than the existing background levels.

1 Introduction

EcoAcoustics Pty Ltd was commissioned by Vibe Petroleum to conduct an assessment of a Proposed Service Station, Convenience Store and Car Wash located at 79 Bussell Highway, Gelorup. This noise impact assessment report has been completed to support the proposal, as part of the development application. The purpose of this report is to assess the noise emissions from the site in accordance with the prescribed standards contained in the *Environmental Protection (Noise) Regulations 1997*.

Appendix A contains a description of some of the terminology used throughout this report.

1.1 Site Locality & Surroundings

The site is located at 79 Bussell Highway, Gelorup within the City of Bunbury. The proposed site is currently a vacant site, with noise sensitive premises located to the north and south of the site, and to the east across English View and west across Bussell Highway. The adjacent site to the north is owned Vibe Petroleum and is proposed to be a commercial premises. The site and surroundings are shown in an aerial photo in *Figure 1.1*.



Figure 1.1: Site and Surroundings (Source: Google Earth)

1.2 Site Layout

It is proposed to construct a service station, convenience store and car wash on the site. The site layout is presented on *Figure 1.2*.

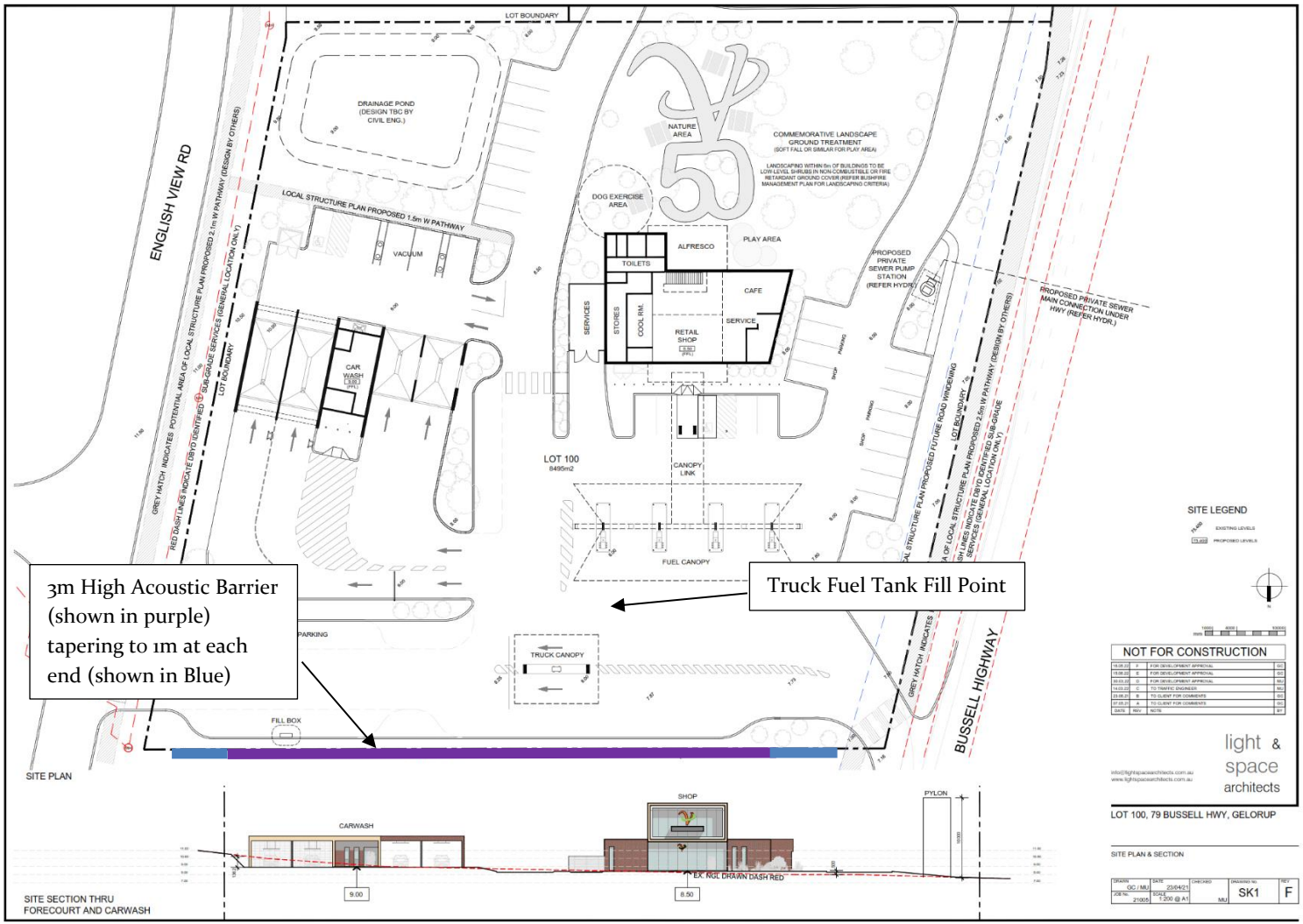


Figure 1.2: Proposed Site Plan (source: Light & Space Architects)

The proposed site will operate 24 hours per day seven days per week.

The convenience store and service station will include one fuel canopy housing 8 petrol fuelling bowsers, and one truck fuel canopy along with car parking for up to 20 vehicles. The convenience store will include a café with an outdoor landscaped area.

The car wash will include:

- Two automatic car wash bays and associated mechanical plant located within a plant room;
- Two manual wash bays; and
- Four vacuum bays.

The noise impacts associated with the site include:

- Cars and trucks at the fuel bays;
- Vehicles traversing the site;
- Automatic wash bays and associated plant room;
- Manual wash bays;
- Mechanical plant including air conditioning, kitchen and toilet exhausts and cool room motors;
- Vacuum bays;
- Air compressor; and
- People dining in the alfresco area.

It is understood that mechanical plant will be installed on the site as part of the development; however, the actual details of this plant are currently unknown. *Figure 1.3* shows the assumed location of mechanical plant associated with the convenience store and service station. The air compressor used for pumping up tyres has been assumed to be located adjacent to the building as shown on *Figure 1.3*. The truck fuel tank fill points are located as shown on *Figure 1.3*.

Figure 1.4 presents the plans of the car wash, while *Figures 1.5 and 1.6* present the elevations of the site.

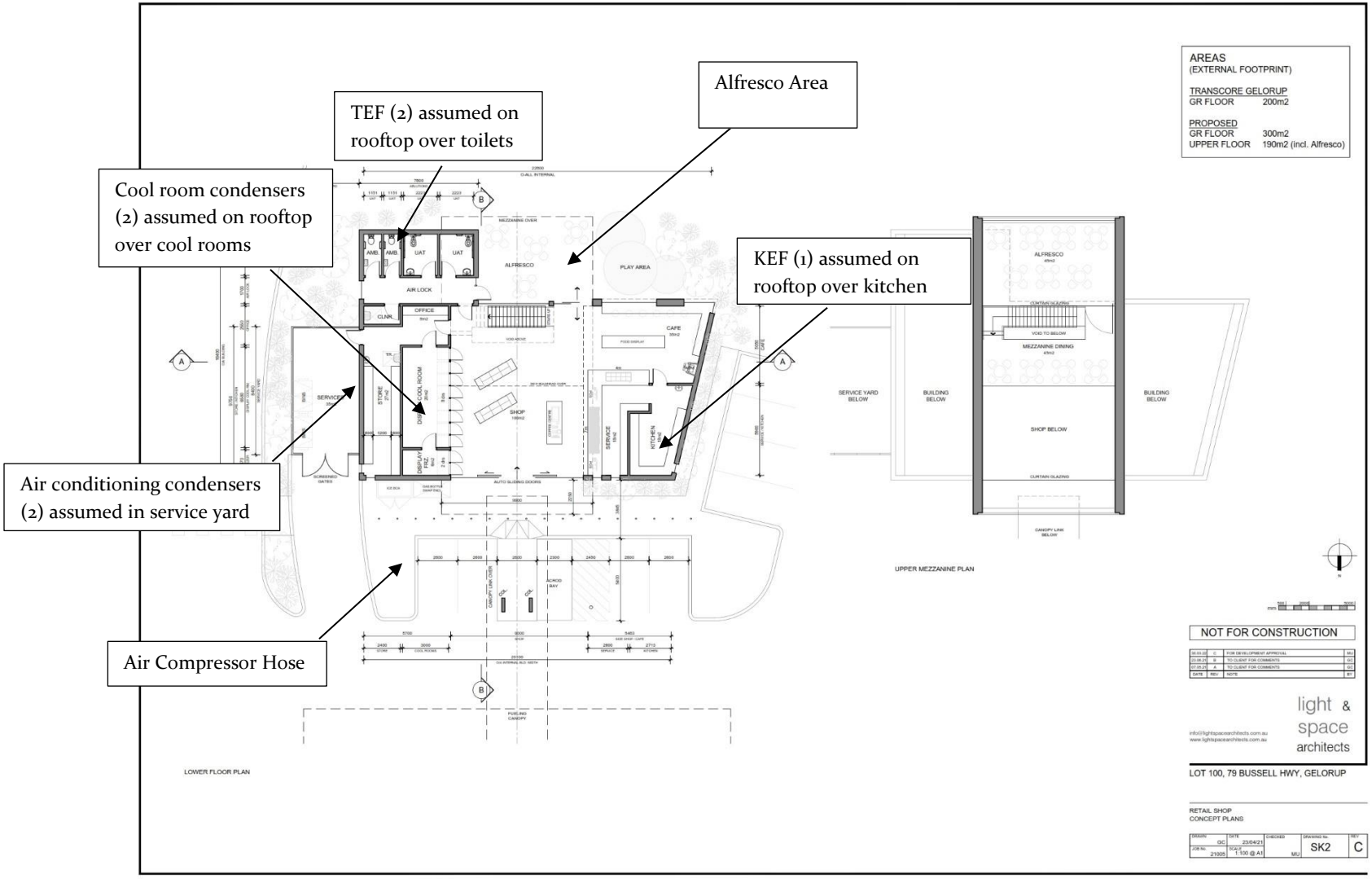


Figure 1.3: Proposed Service Station/Convenience Store plan (including assumed mechanical plant locations) (source: Light & Space Architects)

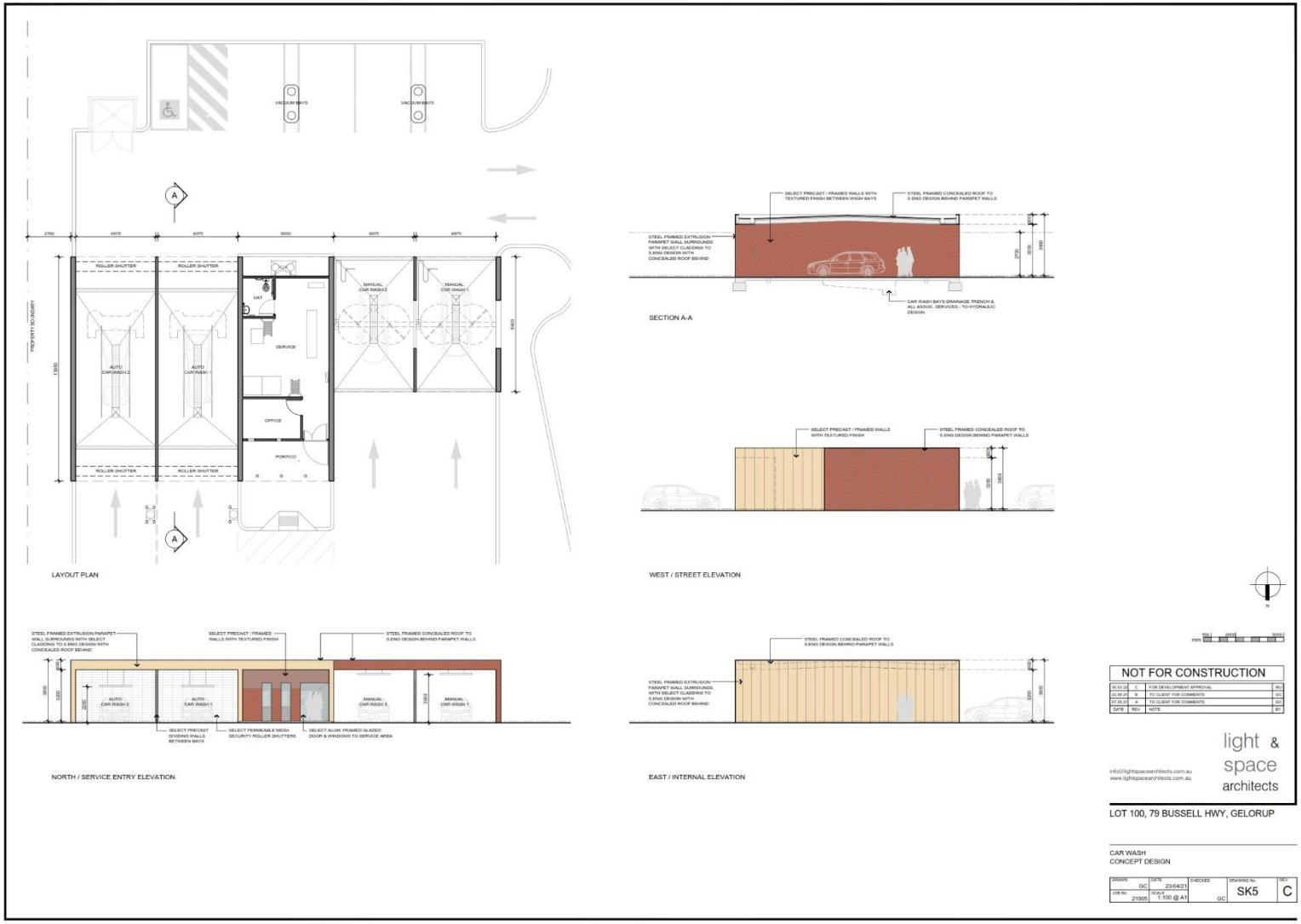


Figure 1.4: Proposed Car Wash Floor Plan & Elevations (source: Light & Space Architects)

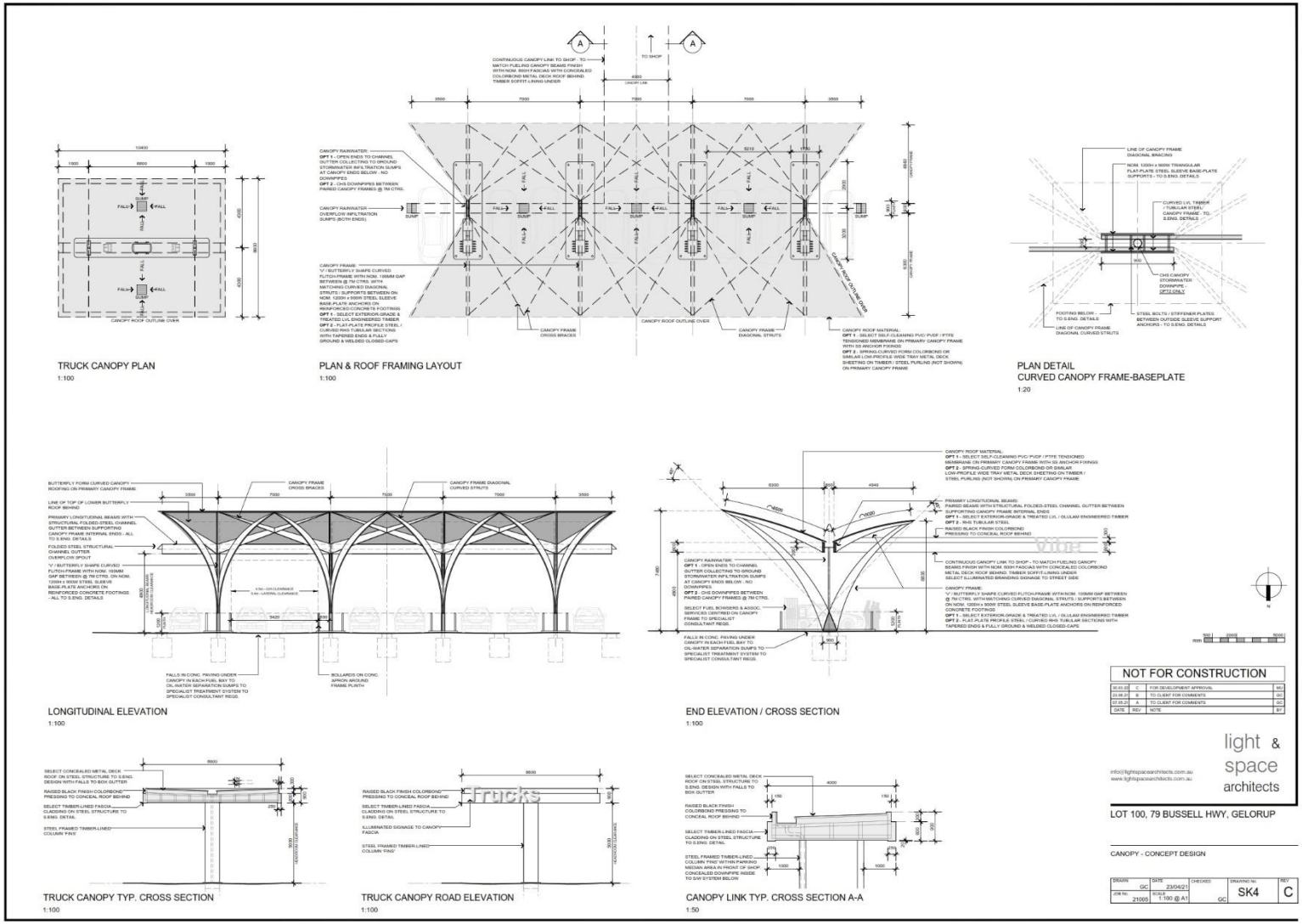


Figure 1.5: Fuel Canopy Elevations (source: Light & Space Architects)



Figure 1.6: Convenience Store Elevations (source: Light & Space Architects)

2 Criteria

In Western Australia all Environmental noise is regulated by the *Environmental Protection Act 1986* and the *Environmental Protection (Noise) Regulations 1997*. Noise emissions from the site are required to satisfy the assigned noise levels specified in Regulations 7, 8 and 9.

The standard stipulated in Regulation 7 of the Environmental Protection (Noise) Regulations 1997 states:

7. (1) Noise emitted from any premises or public place when received at other premises –

a) Must not cause or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind; and

b) Must be free of –

- *Tonality;*
- *Impulsiveness; and*
- *Modulation.*

Regulation 9 defines tonality, impulsiveness and modulation. It is regarded that noise is free of these characteristics if:

a) Tonality, impulsiveness and modulation cannot be equitably removed by means other than decreasing the overall level of noise emission; and

b) Subsequent to any adjustments as displayed in *Table 2.1* noise emissions remain compliant with the required standards when measured at the point of reception.

Table 2.1: Adjustments for Intrusive Characteristics

Tonality	Modulation	Impulsiveness
+ 5dB	+ 5dB	+ 10dB

The baseline assigned levels (prescribed standards) are specified in Regulation 8 and are shown below in *Table 2.2*.

Table 2.2: Baseline Assigned Noise Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise Sensitive	0700 to 1900 hours Monday to Saturday **(Day)**	45 + influencing factor	55 + influencing factor	65 + influencing factor
	0900 to 1900 hours Sunday and public holidays **(Sunday)**	40 + influencing factor	50 + influencing factor	65 + influencing factor
	1900 to 2200 hours all days **(Evening)**	40 + influencing factor	50 + influencing factor	55 + influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays **(Night)**	35 + influencing factor	45 + influencing factor	55 + influencing factor
Commercial	All hours	60	75	80
Industrial	All hours	65	80	90

For the residences located adjacent to the site, the influencing factor has been determined, owing to their proximity to Bussell Highway (Major Road with 25,000vpd according to Main Roads 2017 Traffic Map data) and nearby commercial premises. *Table 2.3* shows the calculations used in determining the influencing factor at the nearest residential premises.

Table 2.3: Calculation of Influencing Factor

Premises Receiving Noise (ref Figure 1.1)	Description	Within 100 metre Radius	Within 450 metre Radius	Total
Res R1	Industrial Land	0%	0%	0
	Commercial Land	31%	6%	2
	Major Road (Bussell Highway)	6	0	6
	Minor Road	0	0	0
			Total Influencing Factor	**8dB**

Premises Receiving Noise (ref Figure 1.1)	Description	Within 100 metre Radius	Within 450 metre Radius	Total
Res R2 & R4	Industrial Land	0%	0%	0
	Commercial Land	2%	3%	0.2
	Major Road (Bussell Highway)	0	2	2
	Minor Road	0	0	0
			Total Influencing Factor	**2 dB**
Res R3 & R5	Industrial Land	0%	0%	0
	Commercial Land	7%	7%	1
	Major Road (Bussell Highway)	6	0	6
	Minor Road	0	0	0
			Total Influencing Factor	**7dB**

Based on the influencing factors contained in *Table 2.3*, the assigned noise levels are shown in *Table 2.4*.

Table 2.4: Assigned Noise Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Res R1	0700 to 1900 hours Monday to Saturday **(Day)**	53	63	73
	0900 to 1900 hours Sunday and public holidays **(Sunday)**	48	58	73
	1900 to 2200 hours all days **(Evening)**	48	58	63
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays **(Night)**	43	53	63
Res R2 & R4	0700 to 1900 hours Monday to Saturday **(Day)**	47	57	67
	0900 to 1900 hours Sunday and public holidays **(Sunday)**	42	52	67
	1900 to 2200 hours all days **(Evening)**	42	52	57
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays **(Night)**	37	47	57
Res R3 & R5	0700 to 1900 hours Monday to Saturday **(Day)**	52	62	72
	0900 to 1900 hours Sunday and public holidays **(Sunday)**	47	57	72
	1900 to 2200 hours all days **(Evening)**	47	57	62
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays **(Night)**	42	52	62

2.1 Regulation 3(a) – Motor vehicle noise

Regulation 3 states:

3. *Regulations do not apply to certain noise emissions*

(1) Nothing in these regulations applies to the following noise emissions –

(a) noise emissions from the propulsion or braking systems of motor vehicles operating on a road;

Based on discussions with the Department of Environment Regulation noise from cars and trucks associated with the propulsion or braking travelling within a car park are not required to comply with the assigned noise levels as a road is defined as:

> *"**road**" means any highway, road or street open to or used by, the public, and includes every carriageway, footway, reservation, median strip and traffic island thereon;*

For the purposes of this assessment, the following should be noted:

- Noise from the propulsion system of vehicles **are not** required to comply with the assigned noise levels of the Regulations whilst on the surrounding streets;
- Noise from the braking system of vehicles **are not** required to comply with the assigned noise levels of the Regulations whilst on the surrounding streets; and
- Noise from the propulsion system of vehicles **are** required to comply with the assigned noise levels of the Regulations whilst in the petrol station.

2.2 Assessment of Amenity

The Western Australian Environmental Protection Act 1986 defines noise to be unreasonable if:

(a) *It is emitted or the equipment emitting it is used in contravention of –*

i. this Act;

ii. any subsidiary legislation made under this Act; or

iii. any requirement or permission … made or given by or under this Act;

(b) *having regard to the nature and duration of the noise emissions, the frequency or similar noise emissions from the same source (or a source under the control of the same person or persons) and the time of day at which the noise is emitted, the noise unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person; or*

(c) *it is prescribed to be unreasonable for the purposes of this Act.*

The Noise Regulations are considered subsidiary legislation and are used almost exclusively in Western Australia to determine the "reasonableness" of the noise emission. It is clear that the intent of the Act is to meet the requirements of the Noise Regulations, however it is also clear that meeting this may not ensure that the noise source is reasonable as it may interfere with the acoustic amenity of nearby noise sensitive uses. It has been widely accepted in the past in Western Australia that acousticians are required only to assess the impact the noise source has on the Regulatory noise levels. There are certainly a significant number of situations whereby assessing the noise against the Regulations will not provide enough information to assess the noise in terms of its reasonableness. Such situations include areas where the background and ambient noise levels are significantly low or high when compared with the baseline assigned noise levels, and areas where high numbers of vehicles, trains or aircraft are present. The noise regulations specifically exclude the presence of vehicles, trains or aircraft when determining the influencing factor of the site.

To conduct a quantitative assessment on the acoustic amenity of the surrounding residential premises, regard has been given to a number of legislative sources and guidance resources throughout Australia. Although these documents refer to separate state and local jurisdictions, they all have similar objectives and aim to provide a consistent and balanced approach to noise intrusion.

Each of these requires an understanding of the existing ambient noise environment to which a noise source is being introduced. Rather than providing an all-encompassing definitive noise level, similar to that contained in the Western Australian Noise Regulations, they require significant judgement from the acoustician based on the following variables:

- location of the noise sources;
- audibility of the noise at neighbouring residential premises;
- time and duration of the noise;
- noise characteristics, including any offensive characteristics such as tonality, impulsiveness;
- intrusiveness of the noise;
- whether the noise is typical for the area; and
- likely number of people affected by the noise.

The determination of each of these variables is decidedly similar throughout each state. Firstly, it is necessary to attend the site and to measure the noise within the vicinity of the proposed site, to determine the existing ambient and background noise present. The site visit and ambient noise levels are used to assess:

- audibility of the noise at neighbouring residential premises;
- intrusiveness of the noise;
- whether the noise is typical for the area; and
- the likely number of people affected by the noise.

Secondly, the noise from the proposed development is analysed to determine:

- its location in relation to nearby residential premises;
- its duration, ie how long does the source operate, is it continuous or intermittent etc; and
- the time in which the noise occurs ie does it occur when the ambient noise levels are at their minimum or maximum.

For this site, the location is within close proximity to a major road, with road traffic volume of 18,000 vehicles per day (based on Main Roads 2019 volumes). It is considered that properties within the vicinity of this road are already subjected to high levels of noise from vehicles, thus the noise is not atypical of the area.

Each of the documents noted above provide criteria and guidance based on these factors. Commonly, intrusive noise is identified as noise that is **noticeably** louder than the existing ambient noise. Comparing the predicted noise level to the existing background noise levels measured in the vicinity of the site provides an understanding as to the intrusiveness of the noise. Steady state or continuous

noise sources, such as air conditioning or mechanical plant noise, noise from dining areas or noise associated with continuous machinery are required to meet the following to ensure that they are not intrusive:

- During the day time and evening periods from 7am until 10pm
    - L_{A90} + 5dB
- During the night time periods from 10pm until 7am
    - L_{A90} + 3dB

Annoying characteristics, such as tonality and impulsivity are given penalty adjustments to consider the higher level of disturbance and annoyance that they may cause. These adjustments are consistent across the documents denoted above.

- For a noticeably tonal noise (where the one-third octave band exceeds the adjacent bands on each side by more than 5dB) a penalty adjustment of +5dB is applied;
- For a noticeably impulsive noise (considered if the difference in A-weighted maximum noise levels between fast and impulsive response times is greater than 2dB) a penalty adjustment of +5dB is applied.

3 Noise Monitoring

3.1 Noise Measurement Methodology

The Regulations specify certain requirements when conducting noise measurements. These requirements are defined in Regulations 19, 20, 22 and 23 and Schedule 4. Site noise measurements have satisfied these requirements, with the following detailed:

- Measurements were completed on the site using a Rion NL42 Class 2 Sound Level Meter (s/n 00469919);
- The noise logger was located on the site adjacent to Residence R1;
- The sound level meter holds current laboratory certificate of calibration, available upon request;
- The meter was calibrated before and after the measurements and was found to be within 0.1dB of the reference signal;
- The meter records both slow and fast time weighted sound levels, allowing relevant data to be collected;
- The microphone was fitted with a standard wind screen; and
- During the measurements, the microphone was at least 1.3 metres above the ground level and in a free field location; as such no adjustment has been applied to account for reflected noise.

Ambient noise level measurements were taken over a four-day period commencing on Thursday 30th June 2022. Average meteorological conditions at the time, recorded at the Bureau of Meteorology's Bunbury site, were:

- Temperature: 0.8°C to 18.6 °C
- Relative Humidity: 66 - 96%

3.2 Ambient Noise Monitoring

The results of the noise logging is summarised in *Table 3.1*. *Figure 3.1* presents a chart of the measured noise levels.

Table 3.1: Measured Average Noise Levels

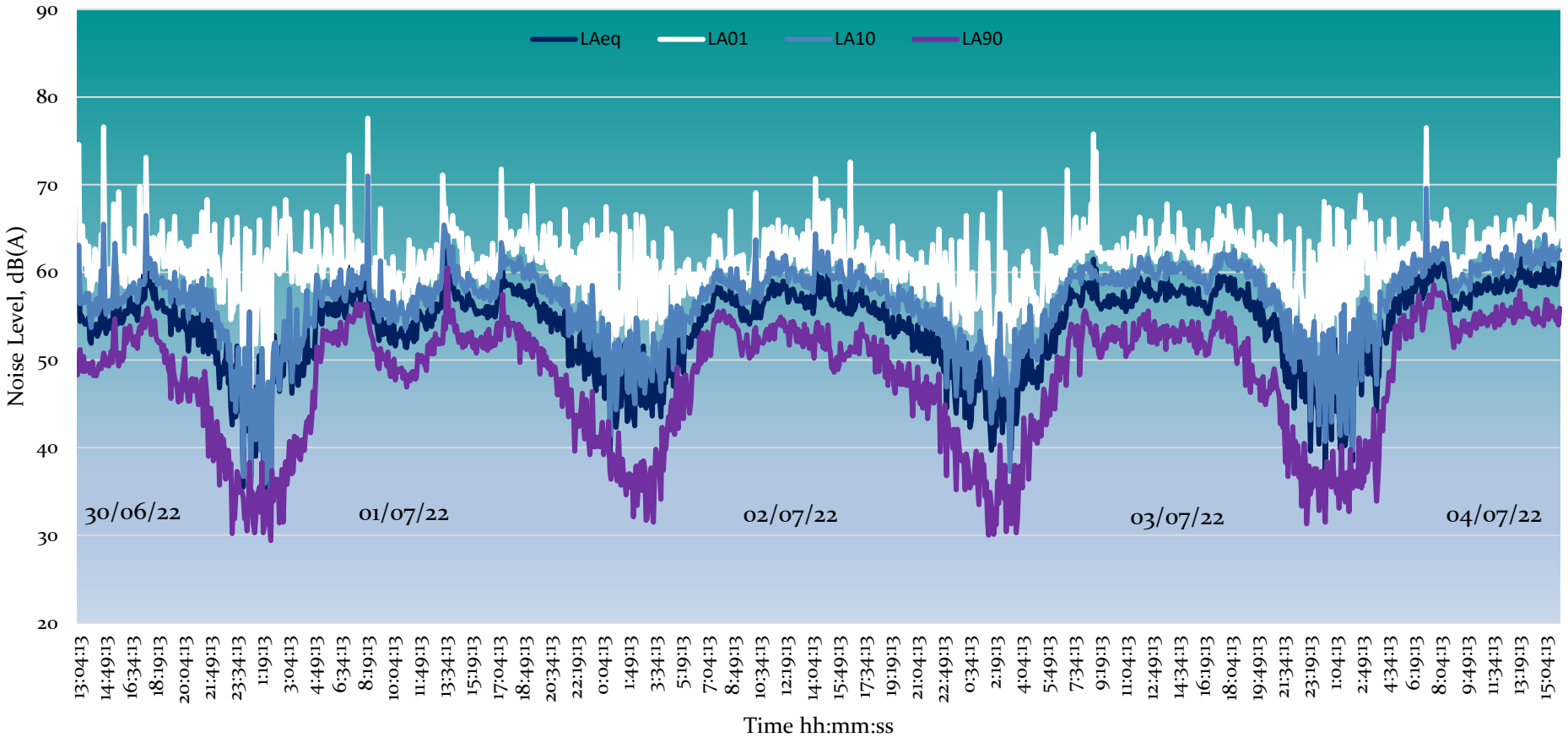
Time of Day (as defined in Regulations)	Average Noise Level, dB (A)			
	L_{Aeq}	L_{A1}	L_{A10}	L_{A90}
Day (7am to 7pm) Monday to Saturday	57	62	59	53
Sunday & Evening (7pm to 10pm)	55	62	58	49
Night (10pm to 7am)	51	59	52	41

Using the noise level measurements shown in *Table 3.1*, the accepted amenity targets are:

- Day time 7am to 7pm
  - L_{A90} + 5dB = 58 dB(A)
- Evening periods from 7pm until 10pm
  - L_{A90} + 5dB = 54 dB(A)
- During the night time periods from 10pm until 7am
  - L_{A90} + 3dB = 44

These level exceed the assigned levels, thus it can be inferred that compliance with the assigned noise levels will similarly meet acceptable amenity levels.

Figure 3.1: Ambient Noise Monitoring
30th June to 4th July 2022



4 Noise Modelling

4.1 Methodology

Computer modelling using SoundPlan 8.2 has been used to calculate the noise levels at nearby residences. Noise modelling is used as it is not affected by background noise sources and can provide the noise level for various weather conditions. Input data required in the model are:

- Meteorological Information;
- Topographical data;
- Ground Absorption; and
- Source sound power levels.

4.1.1 Meteorological Information

Meteorological information utilised is based on data specified in the May 2021 draft EPA *Guidance for the Assessment of Environmental Noise Emissions* and are shown below in *Table 4.1*.

Table 4.1: Modelling Meteorological Conditions

Parameter	Night (1900-0700)	Day (0700-1900)
Temperature (°C)	15	20
Humidity (%)	50	50
Wind Speed (m/s)	3	4
Wind Direction*	All & Prevailing	All & Prevailing
Pasquil Stability Factor	F	E

Note that the modelling package used allows for all wind directions to be modelled simultaneously.

The above conditions approximate the typical worst-case for enhancement of sound propagation. The EPA policy is that compliance with the assigned noise levels needs to be demonstrated for 98% of the time, during the day and night periods, for the month of the year in which the worst-case weather conditions prevail. In most cases, the above conditions occur for more than 2% of the time and therefore must be satisfied.

At wind speeds greater than those shown above, sound propagation may be further enhanced, however background noise from the wind itself and from local vegetation is likely to be elevated and dominate the ambient noise levels.

4.1.2 Topographical Data

Topographical data was based on information provided by the client and obtained through Google Earth, and Open Street Maps.

4.1.3 Ground Absorption

Ground absorption varies from a value of 0 to 1, with 0 being for an acoustically reflective ground (e.g. water or bitumen) and 1 for acoustically absorbent ground (e.g. grass). In this instance value of 0.8 has been used for the surrounding area, and 0 has been used for the site.

4.1.4 Source Sound Levels

Table 4.2 shows the sound power levels used in the modelling. The sound power levels have been determined based on file data for similar sites.

Table 4.2: Source Sound Power Levels

Description	Octave Band Centre Frequency, dB (Hz)							Overall dB(A)
	63	125	250	500	1k	2k	4k	
Coolroom fan (2 off)	87	79	76	68	68	66	60	**74**
Air conditioning outdoor units (2 off)	78	75	72	70	67	60	57	**72**
Air compressor	92	84	85	101	95	95	95	**102**
Vehicles starting	96	89	85	83	79	78	70	**85**
Car doors shutting	97	90	86	84	80	77	71	**86**
Trucks idling	103	97	93	91	87	86	57	**93**
Automated Car wash entry (without doors) & plant room	82	83	84	85	87	86	85	**92**
3 Phase Vacuum System	75	70	72	70	71	72	75	**79**
Hand wash bay	79	80	80	82	83	83	80	**88**
Kitchen exhaust	39	71	75	62	61	60	75	**77**
Toilet exhaust	29	61	65	52	51	50	65	**67**
Refrigeration Condenser Unit based on Kirby Titan PPA205LMA1-4	82	79	73	72	73	67	62	**76**
Freezer Condenser Unit based on Kirby Titan PPH217MHA1-2	90	87	81	80	81	75	70	**84**

Description	Octave Band Centre Frequency, dB (Hz)							Overall dB(A)
	63	125	250	500	1k	2k	4k	
Automated Carwash entry or exit with closed automatic PVC 3mm door (achieving R_w 23)	70	75	72	71	65	61	53	**71**
Patrons dining (20 people with slightly raised voice)	44	63	63	70	76	75	68	**80**

4.1.5 Three-Dimensional Site Render

Figure 4.1 presents the 3-dimensional render showing the site and surroundings.

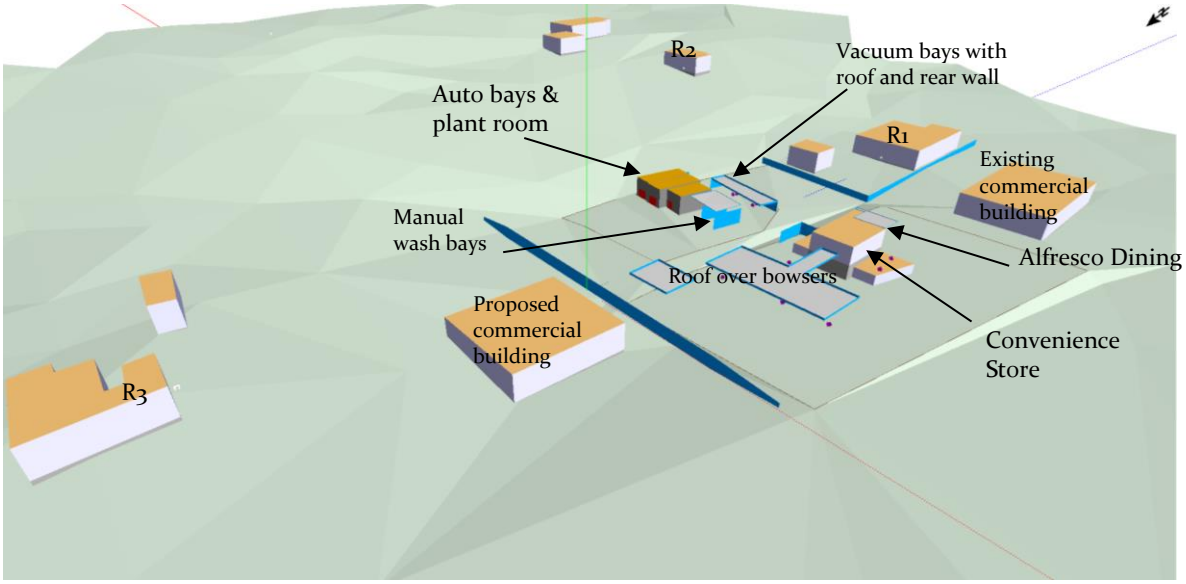


Figure 4.1: 3-d SoundPlan Render of Site and surroundings

5 Noise Impact Assessment

5.1 Assessment of Vehicles and Service Station Including Alfresco Dining

Table 5.1 presents the predicted noise levels associated with vehicles on the site and compares this to the Regulations for each time period. The predictions assume the following:

- The inclusion of a 3m high acoustic barrier along the northern property boundary, tapering down to 1 m high to the Bussell Highway frontage and to the English View frontage of the site to allow for street visibility (as shown on *Figure 1.2*);
- The barrier is required to be a solid barrier with no gaps achieving a minimum surface density of 12kg/m^3, located as shown in *Figure 4.1*;
- Day assessment – seven vehicles parked in car park areas, one truck filling the underground fuel tanks, three trucks on site, one at truck fuel bowser, one entering the site from Bussell Highway and one exiting onto Bussell Highway, three light vehicles adjacent to the bowsers and diners in the open alfresco areas (up to 20 people talking simultaneously).
- Evening assessment – three vehicles at convenience store carpark and three light vehicles adjacent to the bowsers, one truck at the truck fuel bowser and diners in the open alfresco areas (up to 20 people talking simultaneously).
- Night assessment – two vehicles adjacent to the bowsers, one vehicle starting in convenience store car park, one truck at the truck fuel bowser and diners in open alfresco areas (up to 10 people talking).

Table 5.1: Assessment of Noise from Vehicles Daytime and Evening

Location (ref *Figure 1.1*) – most affected façade	Daytime Predicted Noise Level, L_{A10}, dB(A)	Assigned Noise Level, Daytime L_{A10}, dB(A)	Complies with Assigned Noise Level, Day	Evening Predicted Noise Level L_{A10}, dB(A)	Assigned Noise Level, Evening & Sunday L_{A10}, dB(A)	Complies with Assigned Noise Level, Evening?
R1	43	53	Complies	39	48	Complies
R2	36	47	Complies	34	42	Complies
R3	34	52	Complies	30	47	Complies
R4	32	47	Complies	29	42	Complies
R5	33	52	Complies	30	47	Complies

Table 5.2: Assessment of Noise from Vehicles Nighttime

Location (ref *Figure 1.1*) – most affected façade	Night time Predicted Noise Level L_{A10}, dB(A)	Assigned Noise Level, Nighttime L_{A10}, dB(A)	Complies with Assigned Noise Level, Night L_{A10},
R1	38	43	Complies
R2	30	37	Complies
R3	29	42	Complies
R4	26	37	Complies
R5	27	42	Complies

The results presented in *Tables 5.1 and 5.2* show that the predicted L_{A10} noise levels from vehicles on site comply with the assigned levels at all receivers.

5.2 Assessment of Air Compressor

Table 5.3 presents the predicted noise levels associated with the proposed compressor unit and compares this to the Regulations. As the noise associated with the compressor will be on an as needs basis, as such the noise will not be constant, therefore the appropriate evening parameter is the L_{A1}. A penalty adjustment of +10dB(A) has been applied to the results (shown in brackets) to account for impulsivity.

Table 5.3: Noise from Compressor

Location (ref *Figure 1.1*) most affected façade	Predicted Noise Level L_{A1}, dB(A)[1]	Assigned Noise Level, Nighttime L_{A1}, dB(A)	Complies with Assigned Noise Level, Night dB(A) L_{A1}
R1	40 (50)	63	Complies
R2	40 (50)	57	Complies
R3	36 (46)	62	Complies
R4	39 (49)	57	Complies
R5	41 (51)	62	Complies

1. +10dB penalty adjustment shown in brackets for impulsivity

The results presented in *Table 5.3* show that the predicted noise levels from the air compressor comply the assigned noise levels at all residential receivers during the night-time period with the inclusion of a +10dB penalty adjustment for impulsivity. Once the details of the compressor have been finalised, including the location, make and model, an acoustic assessment should be conducted to ensure compliance during the nighttime period.

5.3 Assessment of Car Wash

The noise level predictions for the car wash assume the following:

- Daytime operations assume that all wash bays, both automatic and manual, along with the vacuum bays are operating simultaneously to represent a worst case scenario;
- Evening operations assume that one automatic bay and one manual bay are operating simultaneously, along with two vacuum bays;
- Night operations assume that one automatic bay and one manual bay are operating simultaneously, along with one vacuum bay;
- The proposed automatic car wash bays will be fitted with automatic doors on the entry and exit equivalent to a PVC clear 2.5 mm door blade (which provides a minimum R_w 23);
- Based on the sound power data provided in *Table 4.2*, the noise associated with the automatic car wash has no tonal, impulsive or modulating characteristics therefore no penalty adjustment is applicable;
- Vacuum bays will be fitted with 3 phase vacuums;
- A +5dB tonality adjustment has been applied for the vacuum noise levels as these are considered tonal; and
- The plant room is lined with 50mm 32kg/m^3 sound absorbing insulation.

Table 5.4 presents the predicted daytime and evening noise levels associated with both automatic car wash bays, all hand wash bays and vacuum bays and compares the results to the assigned noise levels. *Table 5.5* presents the predicted night time noise levels associated with the car wash and compares these results to the assigned noise levels.

Table 5.4: Predicted Noise from Proposed Car wash Site During Day and Evening Time Periods

Location (ref *Figure 1.1*) – most affected façade	Daytime Predicted Noise Level, L_{A10}, dB(A)	Assigned Noise Level, Daytime L_{A10}, dB(A)	Complies with Assigned Noise Level, Day	Evening Predicted Noise Level L_{A10}, dB(A)	Assigned Noise Level, Evening & Sunday L_{A10}, dB(A)	Complies with Assigned Noise Level, Evening?
R1	45	53	Complies	31	48	Complies
R2	41	47	Complies	32	42	Complies
R3	38	52	Complies	27	47	Complies
R4	40	47	Complies	27	42	Complies
R5	37	52	Complies	29	47	Complies

The results presented in *Table 5.4* show that the predicted noise levels comply with the most stringent criteria during the day and evening time periods. These predicted noise levels are at least 8dB below the measured daytime background noise levels, thus will not adversely impact the daytime noise

amenity. Similarly, the predicted evening noise level predictions are 17dB below the existing evening background noise levels, therefore will not adversely impact the existing acoustic amenity.

Table 5.5: Predicted Noise from Car Wash during Nighttime

Location (ref *Figure 1.1*) – most affected façade	Night time Predicted Noise Level L_{A10}, dB(A)	Assigned Noise Level, Nighttime L_{A10}, dB(A)	Complies with Assigned Noise Level, Night L_{A10},
R1	36	43	Complies
R2	30	37	Complies
R3	24	42	Complies
R4	25	37	Complies
R5	27	42	Complies

The results presented in *Table 5.5* show that the predicted noise levels comply with the most stringent criteria during the nighttime period at all residential receivers.

In addition to the predicted noise levels during the night time, and the assessment to the assigned noise levels, the predicted noise levels during the night time are at least 5dB below the measured background noise levels, thus, it is considered that the site will not adversely impact the existing acoustic amenity.

5.4 Assessment of Mechanical Plant Noise

Table 5.6 presents the predicted noise levels associated with the proposed air-conditioning units, and coolroom condensers as discussed in *Section 1.2* and compares this to the Regulations. The actual details associated with the mechanical plant are unknown, however the assumed locations are presented on *Figure 1.3*. Following completion of the mechanical services selections it is recommended that the actual details be reviewed by a suitably qualified acoustical consultant to ensure compliance with the assigned noise levels.

It is possible that the mechanical plant will have tonal characteristics present, as such, *Table 5.6* provides the adjusted noise level predictions with the inclusion of a 5dB penalty adjustment and compares this to the assigned noise levels.

Table 5.6: Predicted Noise from Mechanical Plant

Location (ref *Figure 1.1*) – most affected façade	Night time Predicted Noise Level L_{A10}, dB(A) [1]	Assigned Noise Level, Nighttime L_{A10}, dB(A)	Complies with Assigned Noise Level, Night L_{A10},
R1	34 (39)	43	Complies
R2	28 (33)	37	Complies
R3	23 (28)	42	Complies
R4	24 (29)	37	Complies
R5	17 (22)	42	Complies

1. +5dB penalty adjustment shown in brackets for tonality

The results presented in *Table 5.6* show that the predicted noise levels from the mechanical plant comply with the assigned noise levels at all nearby residential receivers. The nighttime assigned noise levels are the most stringent therefore it follows that all other time periods would similarly achieve compliance.

Figure 5.1 presents the daytime noise contour plot with constant noise sources of the site including the mechanical plant, carwash and service station.



Customer: Vibe Petroleum
Project: Service Station Convenience Store and Carwash
Project-No. 22061084

Figure

5.1

Predicted Daytime Noise Assessment with all site operating simultaneously

Calculation in 1.4 m above ground

Project engineer: Rebecca Ireland
Created: 16/01/2023
Processed with SoundPLAN 8.2, Update 2/08/2022

Levels L_{A10}
in dB(A)

- <= 42
- <= 47
- <= 52
- <= 57
- > 57

Signs and symbols

- Main building
- Auxiliary building
- Elevation point
- Point receiver
- Industrial building; Room
- Outdoor area source
- Point source
- Wall
- Berm
- Floating screen
- Roof area
- Wall
- Area source

N

Length scale 1:2351
0 15 30 60 90 120 m

EcoAcoustics

6 Recommendations and Discussion

To ensure compliance with the noise regulations and to ensure that the site does not adversely impact the acoustic amenity of the surroundings, it is recommended that the following be incorporated:

- A 3m high acoustic barrier along the northern property boundary, tapering down to 1 m high to the Bussell Highway frontage and to the English View frontage of the site to allow for street visibility (as shown on *Figure 1.2*);
- A 4m high nib wall/acoustic barrier extending 3 metres from the exit of the automatic car wash bay is required.
- The minimum requirements for the acoustic barriers are to be solid barriers with no gaps (<1%) achieving a minimum surface density of 12kg/m^3, located as shown in *Figure 4.1*;
- The automatic car wash bays will be fitted with automatic doors on the entry and exit equivalent to a PVC clear 2.5 mm door blade (which provides a minimum R_w 23);
- Vacuum bays will be fitted with 3 phase vacuums and will include a roof over the top internally lined with 50mm 32kg/m^3 sound absorbing insulation and a rear wall meeting the acoustic barrier specifications above as a minimum;
- The car wash plant room is lined with 50mm 32kg/m^3 sound absorbing insulation.
- Mechanical plant installed as part of the development is to be selected for quiet operation and should not exceed the sound power levels shown in *Table 4.2*. It is recommended that an updated acoustical assessment be required for any mechanical plant exceeding the sound power levels contained in *Table 4.2*.

7 Conclusion

The results of the noise predictions show that the proposed site can comply with the assigned noise levels associated with the *Environmental Protection (Noise) Regulations 1997* at all nearby residential receivers with the inclusion of the attenuation measures discussed in Section 6. In addition, based on the measured background noise levels, the predicted noise levels from the site are unlikely to adversely impact the amenity of the acoustic environment as the predicted levels are significantly lower than the existing background levels.

Appendix A

Terminology

Terminology

Ambient Noise

Ambient noise refers to the level of noise from all sources, including background noise as well as the source of interest.

A-Weighting

An A-weighted noise level is a noise level that has been filtered as to represent the way in which the human ear distinguishes sound. This weighting indicates the human ear is more sensitive to higher frequencies than lower frequencies. The A-weighted sound level is described as L_A dB.

Background Noise

Background noise is the noise level from sources other than the source of interest. Background may originate from such things as traffic noise, wind induced noise, industrial noise etc.

Decibel (dB)

The decibel is the unit that characterises the sound power levels and sound pressure of a noise source. It is a logarithmic scale with regard to the threshold of hearing.

Impulsive Noise

An impulsive noise source is a short-term impact noise which may originate from such things as banging, clunking or explosive sound.

Influencing factor

$=1/10\ (\%\ \text{Type}\ A_{100} + \%\ \text{Type}\ A_{450}) + 1/20(\%\ \text{Type}\ B_{100} + \%\ \text{Type}\ B_{450})$

Where:

% Type A_{100} =	The percentage of industrial land within a 100m radius of the premises receiving noise
% Type A_{450} =	The percentage of industrial land within a 450m radius of the premises receiving noise
% Type B_{100} =	The percentage of commercial land within a 100m radius of the premises receiving noise
% Type B_{450} =	The percentage of commercial land within a 450m radius of the premises receiving noise

+ Traffic factor (maximum 6 dB)

= 2 for each secondary road within 100m

= 2 for each major road within 450m

= 6 for each major road within 450m

L_{A1}

An L_{A1} level is the A-weighted noise level which is overreached for one percent of a measurement period. It represents the average of the maximum noise levels measured.

L_{A1} assigned level

An assigned L_{A1} level which is not to be exceeded for more than 1% of a delegated assessment period.

L_{A10} assigned level

An assigned L_{A10} level which is not to be exceeded for more than 10% of a delegated assessment period.

L_{A10}

An L_{A10} level is the A-weighted noise level which is exceeded for 10 percent of the measurement period and is considered to represent the "*intrusive*" noise level.

L_{A90}

An L_{A90} level is the A-weighted noise level which is overreached for 90 percent of the measurement period. It is represents the "*background*" noise level.

L_{Aeq}

L_{Aeq} refers to the comparable steady state of an A-weighted sound which, over a specified time period, contains the same acoustic energy as the time-varying level during the specified time period. It represents the "*average*" noise level.

L_{AFast}

The noise level in decibels, obtained using the A frequency weighting and the F time weighting as specified in AS1259.1-1990. L_{AFast} is used when examining the presence of modulation.

L_{Amax}

The L_{AMax} level is the maximum A-weighted noise level throughout a specified measurement.

L_{Amax} assigned level

The L_{Amax} assigned level describes a level which is not to be exceeded at any time.

L_{APeak}

The L_{APeak} level is the maximum reading (measured in decibels) during a measurement period, using the A frequency weighting and P time weighting AS1259.1-1990.

L_{ASlow}

A L_{ASlow} level is the noise level (measured in decibels) obtained using the A frequency weighting and S time weighting as specified in AS1259.1-1990

Major Road

A Major road has an estimated average daily traffic count of more than 15,000 vehicles.

Maximum Design Sound Level

Maximum Design Sound Level is the level of noise beyond hearing range of most people occupying the space start, become dissatisfied with the level of noise.

Modulating Noise

A modulating source is an audible, cyclic and regular source. It is present for at least 10% of a measurement period. The quantitative definition of tonality is:

a fluctuation in the discharge of noise which;

a) is more than 3 dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band;

b) is present for at least 10% of the representative

One-Third-Octave Band

One-Third-Octave-Band are frequencies that span one-third of an octave which have a centre frequency between 25 Hz and 20 000 Hz inclusive.

Representative Assessment Period

Representative Assessment Period describes a period of time not less than 15 minutes, and not surpassing four hours. It is determined by an inspector or authorised person to be suitable for the assessment of noise emissions.

Reverberation Time

Reverberation time refers to an enclosure for a sound of a specified frequency or frequency band as well as the time that would be necessary for the reverberantly decaying sound pressure level in the enclosure to decrease by 60 decibels.

RMS

The root mean square level is used to represent the average level of a wave form such as vibration.

Satisfactory Design Sound Level

Satisfactory Design Sound Level refers to the level of noise that has been found to be acceptable for the environment in question, which is also to be non-intrusive.

Secondary / Minor Road

A Secondary / Minor road has an estimated average daily traffic count of between 6,000 and 15,000 vehicles.

Sound Pressure Level (L_p)

Sound Pressure Level refers to a noise source which is dependent upon surroundings, and is influenced by meteorological conditions, topography, ground absorption; distance etc. Sound Pressure Level is what the human ear actually hears. Noise modelling predicts the sound pressure level from the sound power levels whilst taking into account the effect of relevant factors (meteorological conditions, topography, ground absorption; distance etc).

Sound Power Level (L_w)

A sound power level of a noise source cannot be directly measured using a sound level meter. It is calculated based on measured sound pressure levels at recognised distances. Noise modelling includes source sound power levels as part of the input data.

Specific Noise

Specific Noise relates to the component of the ambient noise of interest. It can be specified as the noise of interest or the noise of concern.

Tonal Noise

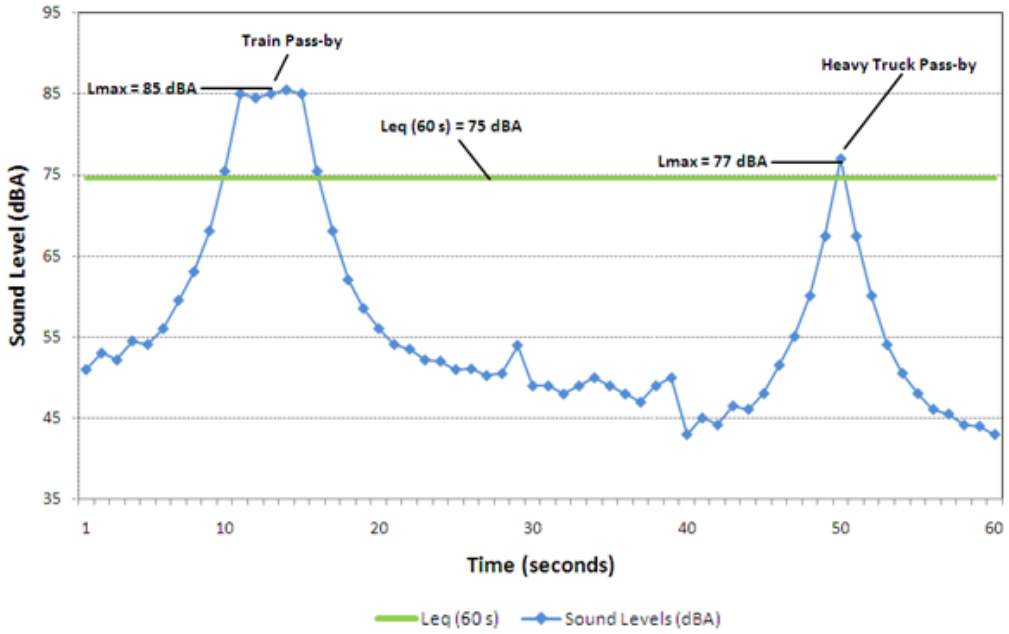
A tonal noise source can be designated as a source that has a specific noise emission over one or several frequencies, such as droning. The quantitative definition of tonality is:

the presence in the noise emission of tonal characteristics where the difference between —

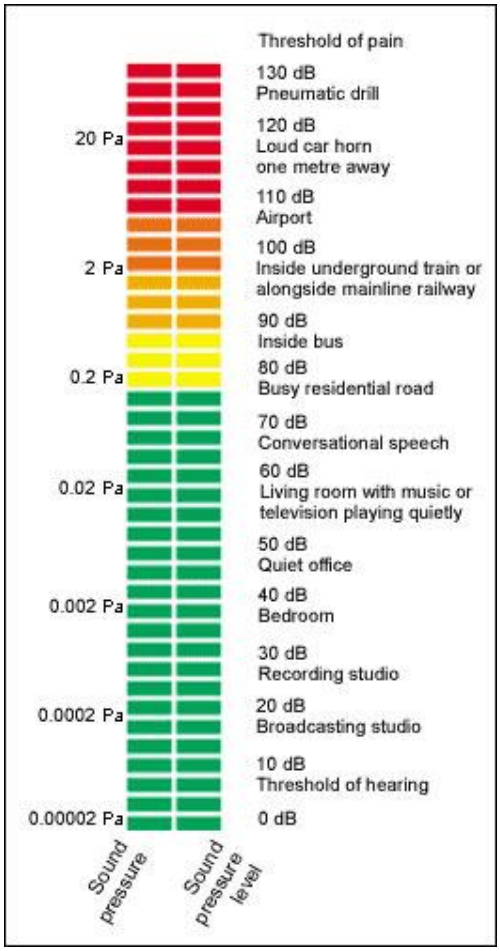
a) the A-weighted sound pressure level in any one-third octave band; and

b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands, is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

Chart of Noise Level Descriptors



Typical Noise Levels





Transport Impact Assessment

Project:	Proposed Service Station 79 Bussell Highway, Gelorup
Client:	Vibe Petroleum c/o Able Planning
Author:	Paul Nguyen
Date:	2nd February 2023
Shawmac Document #:	2202018-TIA-001

CONSULTING CIVIL AND TRAFFIC ENGINEERS
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PHONE|+61 8 9355 1300
EMAIL| admin@ shawmac.com.au

ISO 9001 QUALITY
Certified System

Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire Management Plan and Site Details

Site Address / Plan Reference: Lot 100 (79) Bussell Highway, Gelorup		
Suburb: Gelorup	**State:** WA	**P/code:** 6230
Local government area: Shire of Capel		
Description of the planning proposal: Proposed Construction of a Service Station & Carwash		
BMP Plan / Reference Number: 211035	**Version:** 1.2	**Date of Issue:** 03/01/2023
Client / Business Name: Aaron Bell (ABLE PLANNING & PROJECT MANAGEMENT)		

Reason for referral to DFES	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 BPC elements)?	☐	☒
Is the proposal any of the following special development types (see SPP 3.7 for definitions)?		
Unavoidable development (in BAL-40 or BAL-FZ)	☐	☒
Strategic planning proposal (including rezoning applications)	☐	☒
Minor development (in BAL-40 or BAL-FZ)	☐	☒
High risk land-use	☒	☐
Vulnerable land-use	☐	☒

If the development is a special development type as listed above, explain why the proposal is considered to be one of the above listed classifications (E.g. considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

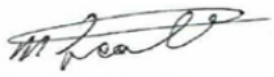
Service Station is a High Risk Land use - A risk management plan has been prepared in support of this proposal.

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

BPAD Accredited Practitioner Details and Declaration

Name	Accreditation Level	Accreditation No.	Accreditation Expiry
Mike Scott	Level 3	BPAD 27795	28/02/2023
Company Bushfire Prone Planning		**Contact No.** 6477 1144	

I declare that the information provided within this bushfire management plan is to the best of my knowledge true and correct

Signature of Practitioner  **Date** 03/01/2023

Bushfire Management Plan

Lot 100 (79) Bussell Highway, Gelorup

Shire of Capel

Planning Stage:	Development Application
Development Type:	Construction of a Class 4 - 9 Building (Service Station)
Bushfire Policy – Specific Development or Use Type:	High Risk Land Use

Job Number:	211035
Assessment Date:	15 February 2022
Report Date:	3 February 2023

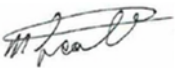
BPP Group Pty Ltd t/a Bushfire Prone Planning
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DOCUMENT CONTROL

PREPARATION		
Author:	Mick Whitelaw (BPAD Level 2 - No. 37265)	
Review/Authorise:	Mike Scott (BPAD Level 3 - No. 27795)	

VERSION HISTORY		
Version	**Version Details**	**Date**
1.0	Original	25 March 2022
1.1	Updated Site Plan and Response to DFES Comments	2 December 2022
1.2	Text and Mapping Updates (Additional DFES Comments)	3 February 2023

DISTRIBUTION				
Destination	**Version**	**No. Copies**	**Hard Copy**	**Electronic Copy**
Person/Business: ABLE PLANNING & PROJECT MANAGEMENT **Email:** Aaron@ableplanning.com.au	1.2	1	☐	☒

Limitation of Liability: The measures contained in this Bushfire Management Plan, are considered to be minimum requirements and they do not guarantee that a building 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 bushfire protection 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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TABLE OF CONTENTS

EXECUTIVE SUMMARY **2**

1 PROPOSAL DETAILS **3**

1.1 DESCRIPTION AND ASSOCIATED PLANS AND MAPS 3
1.2 THE SPECIFIC 'LAND USE' AND THE BUSHFIRE PLANNING REQUIREMENTS 8
1.3 EXISTING DOCUMENTATION RELEVANT TO THE CONSTRUCTION OF THIS PLAN 9

2 ENVIRONMENTAL CONSIDERATIONS **10**

2.1 NATIVE VEGETATION – RESTRICTIONS TO MODIFICATION AND/OR CLEARING. 10

3 POTENTIAL BUSHFIRE IMPACT ASSESSMENT **11**

3.1 ASSESSMENT INPUT 11
3.1.1 Fire Danger Index (FDI) Applied 11
3.1.2 Vegetation Classification and Effective Slope 11
3.2 ASSESSMENT OUTPUT 19
3.2.1 Bushfire Attack Level Results – Table Format 19
3.2.2 Bushfire Attack Level Results - BAL Contour Map Format 21

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES **24**

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA ESTABLISHED BY THE GUIDELINES **25**

5.1 SUMMARY OF ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA 25
5.2 ASSESSMENT DETAIL 26
Element 1: Location 26
Element 2: Siting and Design of Development 27
Element 3: Vehicular Access 28
Element 4: Water 29
5.3 ADDITIONAL BUSHFIRE PROTECTION MEASURES TO BE IMPLEMENTED 30
5.3.1 ADDITIONAL PROTECTION MEASURES TO IMPROVE BUSHFIRE PERFORMANCE 30
5.3.2 ADDITIONAL BUSHFIRE PROTECTION MEASURES ESTABLISHED BY THE RISK MANAGEMENT PLAN ('HIGH RISK' LAND USE) 32

6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE PROTECTION MEASURES **33**

6.1 LANDOWNER (DEVELOPER) 33
6.2 LANDOWNER/OCCUPIER - ONGOING 34
6.3 LOCAL GOVERNMENT - ONGOING 34

APPENDIX 1: TECHNICAL REQUIREMENTS FOR ONSITE VEGETATION MANAGEMENT **35**

APPENDIX 2: TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS **42**

APPENDIX 3: TECHNICAL REQUIREMENTS FOR FIREFIGHTING WATER **47**

ADDENDUM #1 – ADDRESSING THE DFES RESPONSE (D26252) TO THE BMP_V1.0 ..... **52**

ADDENDUM #2 – ADDRESSING THE DFES RESPONSE (D26252) TO THE BMP_V1.1 ..... **56**

LIST OF FIGURES

Figure 1.0: Proposed development plan 4

Figure 1.1: Proposed development map 5

Figure 1.2: Location map (spatial context) 6

Figure 1.3: Location map (spatial context) 7

Figure 3.1: Vegetation classification and topography map 18

Figure 3.2: Indicative BAL Contour Map 22

Figure 3.2.1: Indicative BAL Contour Map 23

EXECUTIVE SUMMARY

This Bushfire Management Plan (the Plan) has been prepared to accompany the Development Application for Lot 100 (79) Bussell Highway, Gelorup in the Shire of Capel. Vibe Petroleum, through their proponents, propose the construction of a service station consisting of sealed driveways and parking bays covering the majority of the subject lot, a Café & retail shop, refuelling stations, ablutions and a carwash.

The total area of the subject lot is 12,842 m^2. Lot 100 is currently a mix of bare sand and grassland which will be cleared in the course of development and replaced with a sealed trafficable surface. Any undeveloped or proposed revegetation area will be maintained in a low threat state subject to Appendix 1 of this Plan and the Shire of Capel Bushfire Mitigation Notice.

A service station with flammable goods stored on site is considered a High-Risk land use under State Planning Policy 3.7. The proposed service station will store diesel (Class 1 Combustible liquid) and petroleum (Class 1 Combustible liquid) on site. Diesel and petroleum are both considered dangerous goods under the Dangerous Goods Safety Act 2004 and their storage must comply with the standards described in AS 1940:2017 The storage and handling of flammable and combustible liquids.

Contained within this bushfire management plan, contour mapping is utilised to visually show the potential radiant heat impacts (from bushfire prone vegetation), as separate Bushfire Attack Level contours across the site. The BAL's have been derived for the proposed development within the assessed area. The purpose is to inform future development planning by indicating the Bushfire Attack Levels (BAL's) that the future buildings/ structures, within the development site, are potentially subject to.

The assessed bushfire risk is considered to be manageable and will be achieved by the identified stakeholders implementing and maintaining the bushfire risk management measures that are presented in this Plan. Against the Bushfire Protection Criteria, the decision maker's assessment of the Proposal will be on the basis of it being able to meet the Acceptable Solutions, once construction and landscaping is complete.

1 PROPOSAL DETAILS

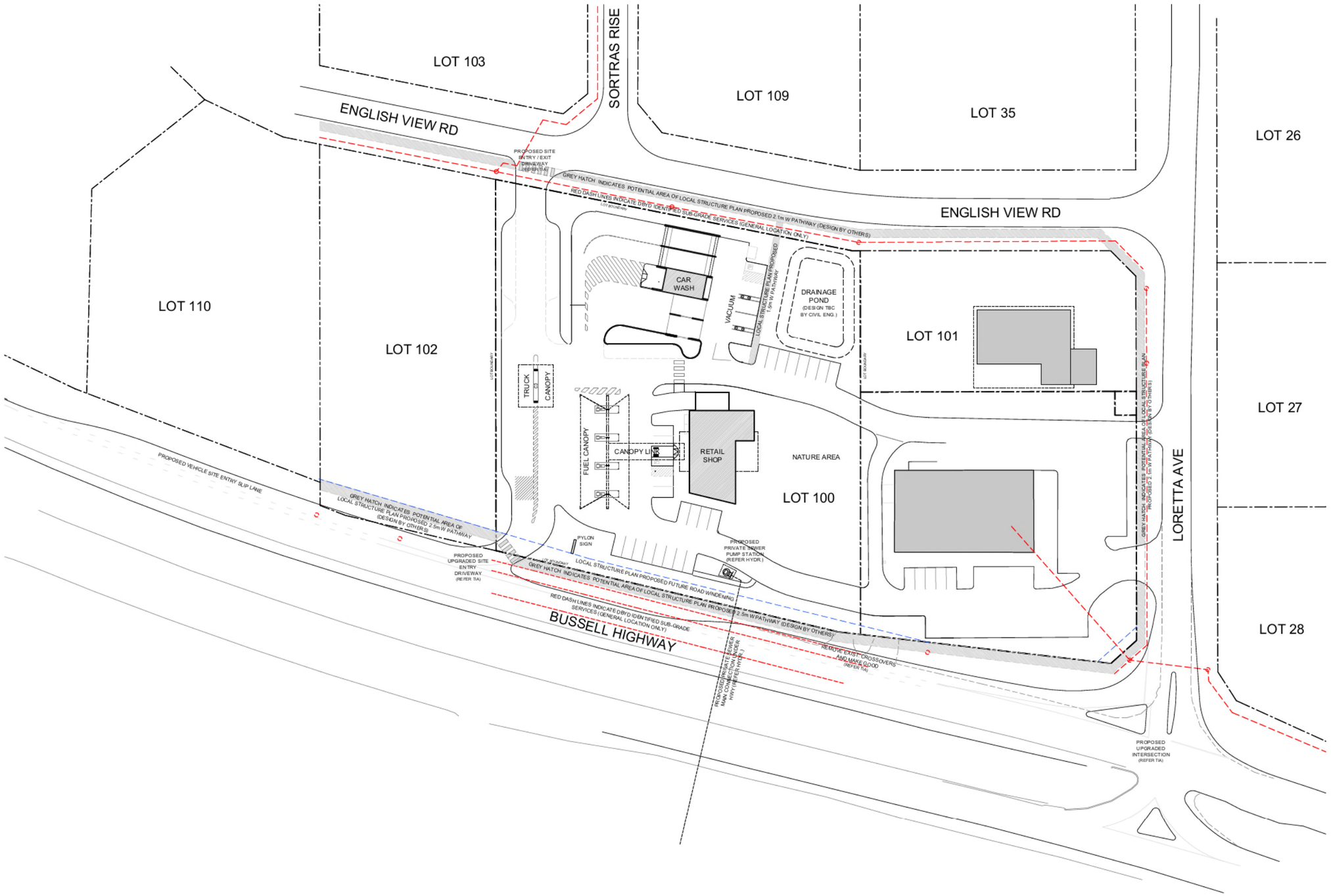
1.1 Description and Associated Plans and Maps

Project Representative:	Aaron Bell (ABLE PLANNING & PROJECT MANAGEMENT)
For Submission To:	Shire of Capel
Purpose of the BMP:	To accompany a planning application
'Development' Site Total Area:	12,842 m^2
Description of Development:	Development approval application for a service station and carwash

NOTES

LOCAL STRUCTURE PLAN PROPOSED PATHWAYS:
FINAL POSITION OF PATHS TO BE DETERMINED BY THE CIVIL ENGINEER HAVING REGARD TO EXISTING SERVICES LOCATIONS

EXISTING SERVICES:
RED DASH LINES INDICATE DBYD IDENTIFIED SUB-GRADE SERVICES (GENERAL LOCATION ONLY)



2500 1000 2500
mm

NOT FOR CONSTRUCTION

DATE	REV	NOTE	
16.08.22	B	FOR DEVELOPMENT APPROVAL	GC
15.06.22	A	FOR DEVELOPMENT APPROVAL	GC

info@lightspacearchitects.com.au
www.lightspacearchitects.com.au

light & space architects

LOT 100, 79 BUSSELL HWY, GELORUP

LOCATION PLAN

DRAWN	DATE	CHECKED	DRAWING No.	REV
GC / MU	15/06/22		SK0	B
JOB No. 21005	SCALE 1:500 @ A1	MU		

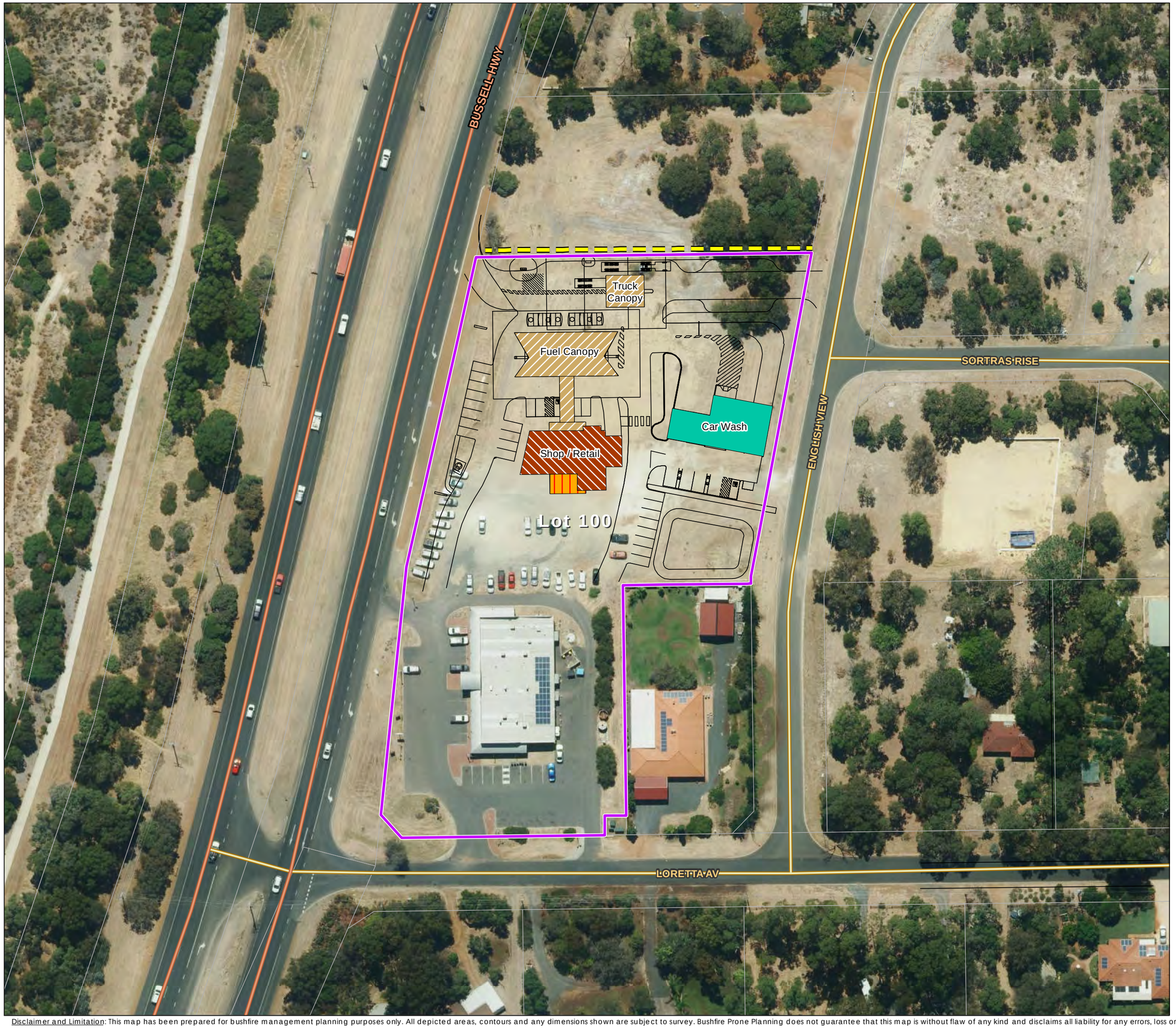


Figure 1.1

Proposed Development

Lot 100 on Plan 403593, Area : 12,842 sq m
79 Bussell Highway,
GELORUP 6230
SHIRE OF CAPEL

------ LEGEND ------

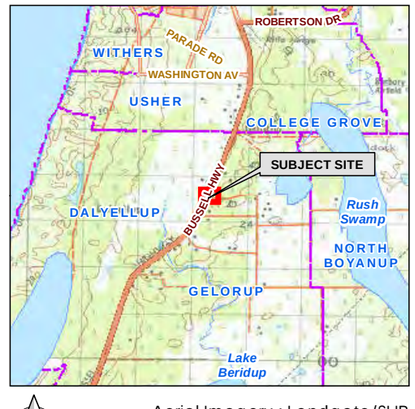
- Subject Site
- Other Lots

Proposed Building

- Shop / Retail
- Car Wash
- Roof
- Alfresco
- Easement

0 10 20 30 40 50
Metres

------ LOCALITY ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2021

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Ian Ross 2/02/2023
Map updated by: Ian Ross 2/02/2023
A3 Scale 1:1,000

BUSHFIRE PRONE PLANNING

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 arising from relying on any information depicted.
Map Document Path / Name: K:\Projects\Jobs 2021\211035 - 79 Bussell Highway Gelorup (BMP)\Mapping\MXD\211035_Fig1-1_DEV_79 Bussell Highway Gelorup.mxd

Figure 1.2

Proposed Development

Lot 100 on Plan 403593, Area : 12,842 sq m
79 Bussell Highway,
GELORUP 6230
SHIRE OF CAPEL

SUBJECT SITE

------ LEGEND ------

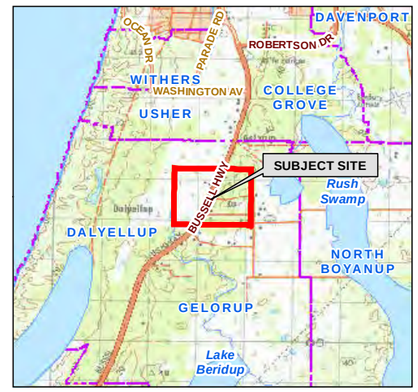
- Subject Site
- Other Lots

Proposed Building

- Shop / Retail
- Car Wash
- Roof
- Alfresco

0 50 100 150 200 250 300
Metres

------ LOCALITY ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2021

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Ian Ross 1/12/2022
Map updated by: Ian Ross 1/12/2022
A3 Scale 1:5,000

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Map Document Path / Name: K:\Projects\Jobs 2021\211035 - 79 Bussell Highway Gelorup (BMP)\211035 - BMP - Feb 2022\Mapping\MXD\211035_Fig1-2_DEV_79 Bussell Highway Gelorup.mxd

Figure 1.3

Location Plan

Lot 100 on Plan 403593, Area : 12,842 sq m
79 Bussell Highway,
GELORUP 6230
SHIRE OF CAPEL

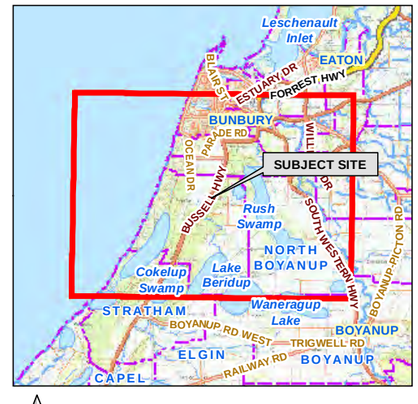
SUBJECT SITE

------ LEGEND ------

- Subject Site
- Bush Fire Brigade
- Career Fire & Rescue Service
- State Emergency Service Unit
- Volunteer Fire & Rescue Service

0 1 2 3
Kilometres

------ LOCALITY ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2021

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Ian Ross 18/02/2022
Map updated by: Ian 18/02/2022
A3 Scale 1:50,000

BUSHFIRE PRONE PLANNING

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Map Document Path / Name: K:\Projects\Jobs 2021\211035 - 79 Bussell Highway Gelorup (BMP)\Mapping\MXD\211035_Fig1-3_LOC_79 Bussell Highway Gelorup.mxd

1.2 The Specific 'Land Use' and the Bushfire Planning Requirements

SPP 3.7, the associated Guidelines and Position Statements, define certain land uses that require additional and/or alternative bushfire related assessment and additional information to be provided. This is necessary to facilitate planning application assessment and for subsequent operational use.

When such a proposal is unable to fully achieve the implementation of all required bushfire protection measures - as established by the 'acceptable solutions' contained in the Guidelines and Position Statements – further assessments and the development of additional protection measures are required.

The land use classification that applies to the proposal is identified in Table 1.2, along with the required additional assessments and information and the form and location in which this is provided.

Table 1.2: The determined land use and assessment/information requirements.

THE PROPOSED LAND USE CLASSIFICATION AND BUSHFIRE PLANNING REQUIREMENTS		
Assessment / Information / Documents Detail		
The proposed land use classification is determined to be:		High Risk
Category, type and/or operations of the land use that have determined the classification:		Combustible (flammable) materials (including hazardous materials) stored onsite
The Policies, Guidelines and Position Statements against which the proposed land use will be assessed, and which guide the information to be provided.[1]	SPP 3.7	☒
	Guidelines including the BPC	☒
	Position Statement - BPC Element 1 and 2	☒
The documents and the information developed and the format and location in which they are provided.	Risk Management Plan (RMP)	☒ Separate Document
	Bushfire Emergency Plan (BEP)	☒ Content for operator's Emergency Plan
	Additional bushfire protection measures	☒ In BMP s5.3
	Owner/operator additional responsibilities associated with the land use.	☒ In BMP s6
Note [1]: State Planning Policy 3.7 Planning in Bushfire Prone Areas; Guidelines for Planning in Bushfire Prone Areas WAPC 2017 v1.3; Bushfire Protection Criteria (BPC) established in the Guidelines; Position Statement: Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design WAPC November 2019; Position Statement: Tourism land uses in bushfire prone areas WAPC October 2019.		

1.3 Existing Documentation Relevant to the Construction of this Plan

This section acknowledges any known reports or plans that have been prepared for previous planning stages, that refer to the subject area and that may or will impact upon the assessment of bushfire risk and/or the implementation of bushfire protection measures and will be referenced in this Bushfire Management Plan.

Table 1.3: Relevant existing documentation.

RELEVANT EXISTING DOCUMENTS		
Existing Document	Copy Provided by Client	Title
Site Plan/ Location Plan	Yes	79 Bussell Hwy Gelorup - SK0_Location Plan_revB (Light & Space architects: 16-8-22)
Environmental Report	No	
Landscaping (Revegetation) Plan	No	
Historical Bushfire Risk Assessments	No	
DFES Comments (Nov 22)	Yes	Lot 100 (79) Bussell Highway Gelorup - Proposed Service Station & Carwash - DFES Response
DFES Comments (Dec 22)	Yes	Lot 100 (79) Bussell Highway Gelorup - Proposed Service Station & Carwash - DFES Response (2nd Round)

2 ENVIRONMENTAL CONSIDERATIONS

2.1 Native Vegetation – Restrictions to Modification and/or clearing.

Many bushfire prone areas also have high biodiversity values. SPP 3.7 policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values (Guidelines s2.3).

There is a requirement to identify the need for onsite modification and/or clearing of native vegetation and whether this might trigger potential environmental impact/referral requirements under State and Federal environmental legislation. Confirmation that any proposed native vegetation modification and/or clearing is acceptable, should be received from the relevant agencies by the proponent and provided to the bushfire consultant for inclusion in the Bushfire Management Plan if it will influence the required bushfire planning assessments and outcomes. The following table details any potential environmental restrictions of which the author of this report is aware.

Vegetation Modification and Clearing Assessment	
Will on-site clearing of native vegetation be required?	No. Refer to Figure 3.2. Any retained vegetation or proposed revegetation/ landscaping works within the nominated Asset Protection Zones will be managed in accordance with the technical requirements established by the Schedule 1: 'Standards for Asset Protection Zones (Guidelines).

Shire of Capel: Where an area of land is vested in the control of the local government (Pathways/Public Reserves/Road Reserves/ Gardens) and the ongoing management of that land (vegetation & bushfire fuel management) has determined the suitability of the proposed development for approval, there is an obligation to consider the impact of any changes to future management of the Land and/or revegetation plans with respect to that area.

Note 1: Division 3 - Verge treatments of Shire of Capel Activities in Thoroughfares and Public Places and Trading Local Law 2016 provides a right for an owner or occupier of land which abuts a verge to install or maintain a 'permissible verge treatment' (i.e. lawn, garden, hard surface etc.). There is a requirement for the landowner to manage the vegetation within the Shire road reserve adjacent to the development site in a Low Threat State in accordance with the Exclusions listed in Section 2.2.3.2 of the AS3959 – 2018 (Refer to Photos 5g and 5h)

Note 2: This report has used the precautionary principle when assessing the vegetation. There is evidence of vegetation management in Area 1 (neighbouring residential properties/ limited access) – but it is unclear if the management of this vegetation in perpetuity aligns to the historical planning application & approval.

Note 3: This report has relied on the installation and maintenance of a minimum 3-metre-wide firebreak (Bare Earth) on the southern boundary of Lot 102 English View Drive, Gelorup (Figure 3.1 – Lot immediately North of the Development Site). The Proponent also owns this Lot and will establish an easement burdening Lot 102 to ensure the 3-metre-wide firebreak is maintained in a low threat state (no vegetation) all year round.

3 POTENTIAL BUSHFIRE IMPACT ASSESSMENT

3.1 Assessment Input

3.1.1 Fire Danger Index (FDI) Applied

AS 3959:2018 Table 2.1 specifies the fire danger index values to apply for different regions.

Table 3.1.1: Applied FDI Value

FDI VALUE			
Vegetation Areas	As per AS 3959:2018 Table 2.1	As per DFES for the Location	Value Applied
1-5	80	N/A	80

3.1.2 Vegetation Classification and Effective Slope

Classification: Bushfire prone vegetation identification and classification has been conducted in accordance with AS 3959:2018 s2.2.3 and the Visual Guide for Bushfire Risk Assessment in WA (DoP February 2016). When more than one vegetation type is present, each type is identified separately, and the applied classification considers the potential bushfire intensity and behaviour from the vegetation types present and ensures the worst-case scenario is accounted for – this may not be from the predominant vegetation type. The vegetation structure has been assessed as it will be in its mature state (rather than what might be observed on the day).

Effective Slope: Refers to the ground slope under each area of classified vegetation and is described in the direction relative to the view from the building or proposed development site. Effective slope is not the same as 'average slope', rather it is the slope which most significantly influences fire behaviour. This slope has a direct and significant influence on a bushfire's rate of spread and intensity.

Table 3.1.2: Vegetation classification and effective slope.

ALL VEGETATION WITHIN 150 METRES OF THE PROPOSED DEVELOPMENT				
Vegetation Area	Identified Vegetation Types [1] or Description if 'Excluded'	Applied Vegetation Classification [1]	Effective Slope (degrees)[2] (AS 3959:2018 Method 1)	
			Assessed	Applied Range
1	Low open forest A-04	Class A Forest	0	upslope or flat
2	Low open forest A-04	Class A Forest	0	upslope or flat
3	Sown pasture G-26	Class G Grassland	0	upslope or flat
4	Open scrub D-14	Class D Scrub	0	upslope or flat
5	Excluded – Managed Vegetation	Excluded as per Section 2.2.3.2 (f) Low Threat Vegetation	-	-

VEGETATION AREA 1	
AS 3959:2018 Vegetation Classification Applied:	Class A Forest
Vegetation Type Present:	Low open forest A-04
Description/Justification:	Low Eucalypt Forest (Semi Parkland Cleared) >12m in height with a limited grassy understory (>70% Canopy Cover).





Photo ID: 1a	Photo ID: 1b

VEGETATION AREA 1	
AS 3959:2018 Vegetation Classification Applied:	Class A Forest
Vegetation Type Present:	Low open forest A-04
Description/Justification:	Mixed Eucalypt Forest (Semi Parkland Cleared) >12m in height with a limited grass understory (>70% Canopy Cover). This report has used the precautionary principle when assessing the vegetation. There is evidence of vegetation management in Area 1 (neighbouring residential properties/ limited access)





Photo ID: 1c	Photo ID: 1d

VEGETATION AREA 2	
AS 3959:2018 Vegetation Classification Applied:	Class A Forest
Vegetation Type Present:	Low open forest A-04
Description/Justification:	Mixed Eucalypt Forest >15m in height with a limited grass (>70% Canopy Cover). Roadside screening vegetation (thin strips of bush in an unmanaged state)



Photo ID: 2a



Photo ID: 2b

VEGETATION AREA 3	
AS 3959:2018 Vegetation Classification Applied:	Class G Grassland
Vegetation Type Present:	Sown pasture G-26
Description/Justification:	Areas of remnant grassland (Paddock & bare sand) being managed in accordance with the Shire Bush Fire Mitigation Notice. (neighbouring blocks/ roadside vegetation).



Photo ID: 3a



Photo ID: 3b

VEGETATION AREA 3	
AS 3959:2018 Vegetation Classification Applied:	Class G Grassland
Vegetation Type Present:	Sown pasture G-26
Description/Justification:	Areas of remnant grassland (Paddock) being managed in accordance with the Shire Bush Fire Mitigation Notice. (neighbouring blocks/ roadside vegetation).



Photo ID: 3c



Photo ID: 3d

VEGETATION AREA 3	
AS 3959:2018 Vegetation Classification Applied:	Class G Grassland
Vegetation Type Present:	Sown pasture G-26
Description/Justification:	Semi Managed Grassland/ Gravelled Areas (Main Roads - Road Verge). This report has used the precautionary principle when assessing the vegetation (Worst Case Scenario is a Class G Grassland vegetation classification.



Photo ID: 3e



Photo ID: 3f

VEGETATION AREA 4	
AS 3959:2018 Vegetation Classification Applied:	Class D Scrub
Vegetation Type Present:	Open scrub D-14
Description/Justification:	Strips of Mixed Scrub and shrubland species (1-4 metres in height)



Photo ID: 4a



Photo ID: 4b

VEGETATION AREA 5	
AS 3959:2018 Vegetation Classification Applied:	Excluded as per Section 2.2.3.2 (f) Low Threat Vegetation
Vegetation Type Present:	Excluded – Low Threat Vegetation
Description/Justification:	Proposed Development site - Bare Sand /Managed Grassland in accordance with the AS3959 - 2018 Section 2.2.3.2 (f) Low Threat Vegetation.



Photo ID: 5a



Photo ID: 5b

VEGETATION AREA 5	
AS 3959:2018 Vegetation Classification Applied:	Excluded as per Section 2.2.3.2 (f) Low Threat Vegetation
Vegetation Type Present:	Excluded – Low Threat Vegetation
Description/Justification:	Existing Structures/Bare Sand/ Managed Grassland in accordance with the AS3959 - 2018 Section 2.2.3.2 (f) Low Threat Vegetation.



Photo ID: 5c



Photo ID: 5d

VEGETATION AREA 5	
AS 3959:2018 Vegetation Classification Applied:	Excluded as per Section 2.2.3.2 (f) Low Threat Vegetation
Vegetation Type Present:	Excluded – Low Threat Vegetation
Description/Justification:	Existing Structures/Reticulated Gardens/ Managed Grassland in accordance with the AS3959 - 2018 Section 2.2.3.2 (f) Low Threat Vegetation.





Photo ID: 5e	Photo ID: 5f

VEGETATION AREA 5	
AS 3959:2018 Vegetation Classification Applied:	Excluded as per Section 2.2.3.2 (f) Low Threat Vegetation
Vegetation Type Present:	Excluded – Low Threat Vegetation
Description/Justification:	Managed Grassland/Gravel Area (Shire Road Verge) in accordance with the AS3959 - 2018 Section 2.2.3.2 (f) Low Threat Vegetation.





Photo ID: 5g	Photo ID: 5h

Note: This assessment is reliant on the surrounding land (Area 5) being maintained in a low fuel condition in accordance with the AS3959 - 2018 Section 2.2.3.2 (f) Low Threat Vegetation reflecting the state of the vegetation at the time of the assessment. There are restrictions on accessing individual properties/ backyards to assess the status of vegetation (Managed/ unmanaged). Where applicable, the precautionary principle has been applied.

Figure 3.1

Topography & Classified Vegetation

Lot 100 on Plan 403593, Area : 12,842 sq m
79 Bussell Highway,
GELORUP 6230
SHIRE OF CAPEL

------ LEGEND ------

- Subject Site
- Other Lots
- Photo & Direction
- Hydrant

Proposed Building
- Shop / Retail
- Car Wash
- Roof
- Alfresco

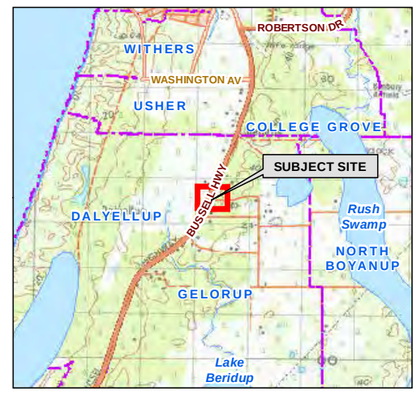
150m Vegetation Assessment Area
- 150m from Subject Site

Classified Vegetation
- Class (A) Forest
- Class (D) Scrub
- Class (G) Grassland
- Exclusion 2.2.3.2

Vegetation Management
- Verge Treatment Area
- Easement
- Vegetation Distance

0 20 40 60 80
Metres

------ LOCALITY ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2021

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Ian Ross 2/02/2023
Map updated by: Ian Ross 2/02/2023
A3 Scale 1:1,750

BUSHFIRE PRONE PLANNING

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Map Document Path / Name: K:\Projects\Jobs 2021\211035 - 79 Bussell Highway Gelorup (BMP)\Mapping\MXD\211035_Fig3-1_VEG_79 Bussell Highway Gelorup.mxd

3.2 Assessment Output

Understanding the Bushfire Assessment Results - Application of Bushfire Attack Levels (BAL)

In the planning environment, assessing the ability of a proposed development site to achieve BAL-29 or less is the objective (as one of the bushfire protection criteria being assessed). The 'development site' is defined by the LPS Amendment Regulations 2015 as "that part of a lot on which a building that is the subject of development stands or is to be constructed". Therefore, being able to show that a BAL rating of BAL-29 or lower is achievable for a proposed development site (i.e. the building footprint) is an acceptable outcome for that criteria, as established by the bushfire provisions, SPP 3.7 and the associated Guidelines.

3.2.1 Bushfire Attack Level Results – Table Format

Proposed Shop/ Retail Outlet				
BAL - Analysis and Determination				
Relevant Fire Danger Index (AS3959-2018 Table 2.1)				80
BAL Determination Method		Method 1 (as per AS 3959-2018 s2.2.6 and Table 2.4.3)		
Vegetation Area	Applied Vegetation Classification	Effective Slope Under the Classified Vegetation (degrees)	Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
1	Class A Forest	0	60	BAL-12.5
2	Class A Forest	0	72	BAL-12.5
3	Class G Grassland	0	25	BAL-12.5
4	Class D Scrub	0	>100	BAL-LOW
5	Exclusion AS3959-2018 2.2.3.2 (f)	-	-	BAL-LOW
		Indicative Bushfire Attack Level		**BAL-12.5**

Proposed Car Wash				
BAL - Analysis and Determination				
Relevant Fire Danger Index (AS3959-2018 Table 2.1)				80
BAL Determination Method		Method 1 (as per AS 3959-2018 s2.2.6 and Table 2.4.3)		
Vegetation Area	Applied Vegetation Classification	Effective Slope Under the Classified Vegetation (degrees)	Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
1	Class A Forest	0	28	BAL-29
2	Class A Forest	0	>100	BAL-LOW
3	Class G Grassland	0	18	BAL-12.5
4	Class D Scrub	0	>100	BAL-LOW
5	Exclusion AS3959-2018 2.2.3.2 (f)	-	-	BAL-LOW
		Indicative Bushfire Attack Level		**BAL-29**

Proposed Standard Bowsers/ Fuel Canopy				
BAL - Analysis and Determination				
Relevant Fire Danger Index (AS3959-2018 Table 2.1)				80
BAL Determination Method	Method 1 (as per AS 3959-2018 s2.2.6 and Table 2.4.3)			
Vegetation Area	Applied Vegetation Classification	Effective Slope Under the Classified Vegetation (degrees)	Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
1	Class A Forest	0	38	BAL-19
2	Class A Forest	0	71	BAL-12.5
3	Class G Grassland	0	15	BAL-19
4	Class D Scrub	0	>100	BAL-LOW
5	Exclusion AS3959-2018 2.2.3.2 (f)	-	-	BAL-LOW
			Indicative Bushfire Attack Level	**BAL-19**

Proposed Truck Bowsers/ Fuel Canopy				
BAL - Analysis and Determination				
Relevant Fire Danger Index (AS3959-2018 Table 2.1)				80
BAL Determination Method	Method 1 (as per AS 3959-2018 s2.2.6 and Table 2.4.3)			
Vegetation Area	Applied Vegetation Classification	Effective Slope Under the Classified Vegetation (degrees)	Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
1	Class A Forest	0	24	BAL-29
2	Class A Forest	0	93	BAL-12.5
3	Class G Grassland	0	9	BAL-29
4	Class D Scrub	0	>100	BAL-LOW
5	Exclusion AS3959-2018 2.2.3.2 (f)	-	-	BAL-LOW
			Indicative Bushfire Attack Level	**BAL-29**

3.2.2 Bushfire Attack Level Results - BAL Contour Map Format

INTERPRETATION OF THE BUSHFIRE ATTACK LEVEL (BAL) CONTOUR MAP

The contour map will present different coloured contour intervals extending from the areas of classified bushfire prone vegetation. These represent the different bushfire attack levels that will exist at varying distances away from the classified vegetation in the event of a bushfire in that vegetation. The areas of classified vegetation to be considered in developing the BAL contours, are those that will remain as the intended end state of the subject development once earthworks, clearing and/or landscaping and re-vegetation have been completed (or each stage completed). Each bushfire attack level corresponds to a set range of radiant heat flux that is generated by a bushfire. That range is defined by the AS 3959:2018 BAL determination methodology.

Construction of the BAL Contours

VEGETATION AREAS APPLIED TO THE DEVELOPMENT OF THE BAL CONTOUR MAP

All identified areas of classified vegetation have been applied with the following exceptions:

1. For Figure 3.2, all Grassland vegetation within the proposed development site is excluded and the BAL contours are constructed into the lot from any other classified vegetation.

This approach is applied to indicate the achievable bushfire attack levels within the specified lot and the resultant area of developable land (i.e. subject to BAL-29 or less). It is based on the following assumptions:

1. Any Grassland vegetation (inside the Lot) can potentially be managed by the landowner to meet asset protection zone standards and dimensions and corresponding to an indicated BAL; and
2. Each lot must be considered independent of what development may or may not take place on the adjoining lot.
3. This report has relied on the installation and maintenance of a minimum 3-metre-wide firebreak (no vegetation) on the southern boundary of Lot 102 English View Drive, Gelorup (Figure 3.1 – Lot immediately North of the Development Site). The Proponent also owns this Lot and will establish an easement burdening Lot 102 to ensure the 3-metre-wide firebreak is maintained in a low threat state (no vegetation) all year round.

VEGETATION SEPARATION DISTANCES APPLIED

Table 3.2.2: Vegetation separation distances applied to construct the BAL contours.

BAL CONTOUR MAP – APPLIED VEGETATION SEPARATION DISTANCES								
Derived from the Application of Method 1 BAL Determination Methodology (AS 3959:2018 Section 2, Table 2.5)[1]								
Vegetation Area	Vegetation Classification	Effective Slope (degree range)	BAL and Corresponding Separation Distance (m)					
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL12.5	BAL-LOW
1-2	Class A Forest	upslope or flat	<16	16-<21	21-<31	31-<42	42-<100	>100
3	Class G Grassland	upslope or flat	<6	6-<8	8-<12	12-<17	17-<50	>50
4	Class D Scrub	upslope or flat	<10	10-<13	13-<19	19-<27	27-<100	>100

Figure 3.2

BAL Contour Map

Lot 100 on Plan 403593, Area : 12,842 sq m
79 Bussell Highway,
GELORUP 6230
SHIRE OF CAPEL

BUSSELL HWY
ENGLISH VIEW
SORTRAS RISE
TIFFANY CTR
LORETTA AV
BUSSELL HWY

AREA 1
AREA 2
AREA 3
AREA 4
AREA 5

131 m
93 m
113 m
71 m
164 m
113 m
72 m
9 m
15 m
24 m
38 m
25 m
18 m
28 m
60 m

Fuel Canopy
Car Wash
Shop / Retail
Lot 100

------ LEGEND ------

- Subject Site
- Other Lots
- Hydrant

Asset Protection
- Indicative APZ

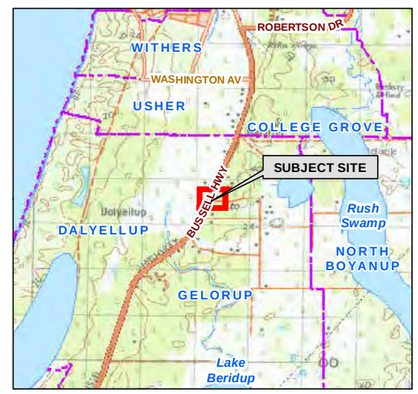
Proposed Building
- Shop / Retail
- Car Wash
- Roof
- Alfresco

100m Vegetation Assessment Area
- 100m from Subject Site

Indicative Bushfire Attack Levels
- BAL FZ
- BAL 40
- BAL 29
- BAL 19
- BAL 12.5
- Vegetation Areas
- Easement
- Vegetation Distance

0 20 40 60 80
Metres

------ LOCALITY ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2021

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Ian Ross 2/02/2023
Map updated by: Ian Ross 2/02/2023
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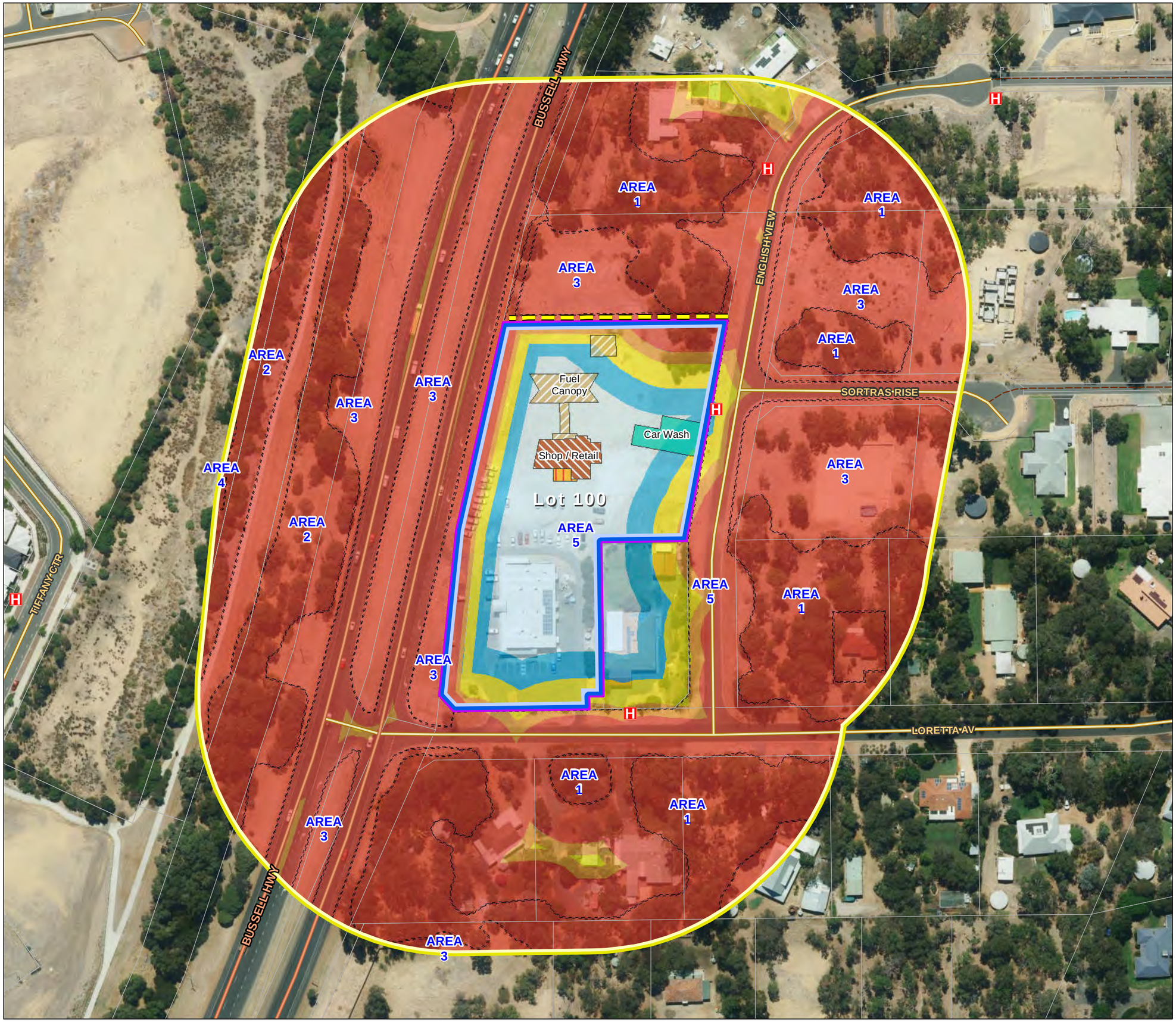
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Figure 3.2.1

BAL Contour Map

Lot 100 on Plan 403593, Area : 12,842 sq m
79 Bussell Highway,
GELORUP 6230
SHIRE OF CAPEL



------ LEGEND ------

- Subject Site
- Other Lots
- Hydrant

Asset Protection

- Indicative APZ

Proposed Building

- Shop / Retail
- Car Wash
- Roof
- Alfresco

100m Vegetation Assessment Area

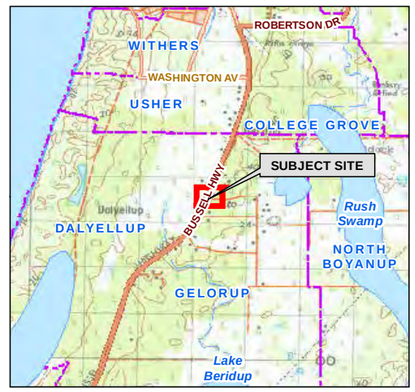
- 100m from Subject Site

Indicative Bushfire Attack Levels

- BAL FZ
- BAL 40
- BAL 29
- BAL 19
- BAL 12.5
- Vegetation Areas
- Easement

0 20 40 60 80
Metres

------ LOCALITY ------



Aerial Imagery : Landgate/SLIP
Image Date : Feb 2021

Coordinate System: GDA 1994 MGA Zone 50
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A3 Scale 1:1,500

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4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

In response to the Bushfire Management Plan requirements established by Appendix 5 of the Guidelines for Planning in Bushfire Prone Areas (WAPC v1.4), the following statements are made to assist in the understanding of whether the proposal is likely to be able to comply with the bushfire protection criteria now or in subsequent planning stages.

Bushfire Hazard Issues	
Onsite Vegetation	The key assumption used to facilitate the determining of Bushfire Attack Levels on the Proposed development site is that vegetation onsite is under the control of the landowner and therefore can be removed or modified to present a low bushfire threat *(Note: any proposed vegetation removal may be subject to local government approval, dependent on the lot's specific situation with respect to identified environmental protection areas and the lot size).* This assessment is reliant on the surrounding land (Area 5) being maintained in a low fuel condition in accordance with the AS3959 - 2018 Section 2.2.3.2 (f) Low Threat Vegetation and as per the Shire Bush Fire Mitigation Notice, reflecting the state of the vegetation at the time of the assessment. Any retained vegetation or proposed revegetation/ landscaping works will be managed in accordance with the technical requirements established by the Schedule 1: 'Standards for Asset Protection Zones (Guidelines).
Offsite Vegetation	Vegetation offsite is not within the control of the landowner and therefore the vegetation cannot be removed or modified. As a result, the BAL impact from these vegetation areas is unable to be reduced.
Topography and fire behaviour interactions.	The proposed development site is Flat.
Spatial Context - Broader Landscape Considerations	
Wider road network and access constraints	Lot 100 has access to Bussell Highway, English View and Loretta Avenue which provide options for travel in two different directions.
Proximity of settlements and emergency services	Gelorup Volunteer Bushfire Brigade is located approximately 1.6 km from site on Hasties Road within the Gelorup Locality. Bunbury Career Fire & Rescue Service is located in the City of Bunbury approximately 10 minutes from site. (Figure 1.3)
Bushfire prone vegetation types and extent	Significant extents of bushfire prone vegetation (Fragmented Forest & Scrub vegetation) is intermixed through rural and residential development in this area. (Figure 1.3)
Potential Bushfire Impacts	
Flame and radiant heat and ability to establish an APZ	Future development will implement a minimum of a BAL-29 dimensioned APZ (around buildings and required structures).
Embers/firebrands, smoke and fire-driven wind	These will be the potential impacts to the subject land. The appropriate management of the APZ's will mitigate the risk to what is considered an acceptable level.

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA ESTABLISHED BY THE GUIDELINES

For a development application to be considered compliant with SPP 3.7, it must satisfy (achieve) the intent of each of the elements of the bushfire protection criteria. These criteria are established by the *Guidelines for Planning in Bushfire Prone Areas WAPC v1.4*).

5.1 Summary of Assessment Against the Bushfire Protection Criteria

SUMMARISED OUTCOME OF THE ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA			
Element of the Bushfire Protection Criteria	Basis for the Proposal Achieving Full Compliance with SPP 3.7		
	Acceptable Solutions Met	Achieves the Intent of the Element	
	All applicable solutions are fully met	All applicable solutions are not fully met.	A performance principle-based solution is applied
1. Location	✓	-	-
2. Siting and Design of Development	✓	-	-
3. Vehicular Access	✓	-	-
4. Water	✓	-	-
Note: The development proposal has been assessed: 1. Against the requirements of the *Guidelines for Planning in Bushfire Prone Areas, WAPC v1.4 (Guidelines)*.			

5.2 Assessment Detail

Element 1: Location	
Intent: To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.	
Compliance: How the proposed development achieves the intent of Element 1:	By fully meeting all applicable acceptable solutions established by the bushfire protection criteria (Guidelines v1.4 WAPC)
ASSESSMENT (COMPLIANCE) STATEMENTS For each applicable acceptable solution, the following statements present the results of the assessment of the proposed development/use against the requirements established by the *Guidelines (WAPC v1.4)*	
Acceptable Solution: A1.1: Development Location	
<u>The proposed development achieves compliance by:</u> • By ensuring future building work on the lot can be located in an area that will be subject to potential radiant heat from a bushfire not exceeding 29 kW/m2 (i.e. a BAL rating of BAL-29 or less will apply). This can be achieved by using positioning, design and appropriate vegetation removal/modification; and • Managing the remaining bushfire risk to an acceptable level by the implementation and ongoing maintenance of all required bushfire protection measures, as identified within this Plan. These measures include the requirements for vegetation management, vehicular access and firefighting water supply. **The Hazard Within the Subject Land** The development site currently lies within a bushfire prone area as defined by the OBRM map of Bushfire Prone Areas. Within Lot 100 is a mix of Bare Sand /Managed Grassland in accordance with the AS3959 - 2018 Section 2.2.3.2 (f) Low Threat Vegetation & the Shire Bush Fire Mitigation Notice. **The Hazard Adjoining the Subject Land** Bushfire prone vegetation adjoining the existing subject land exists as vegetation classified as Class A – Forest, and Class G - Grassland. The undeveloped land (Shire Reserves & Neighbouring private properties) within the locality supports this vegetation. The topography is predominantly 'flat land' over large areas. The potential bushfire impact on persons and property within the site will be an increase the level of ember attack and potential for running fire on site in the event of a bushfire. This ember threat and subsequent running fire will be mitigated by the application of appropriate building design and the ongoing maintenance of the BAL-29 dimensioned APZ's, to ensure the buildings will not be impacted by consequential fire within combustible materials used, stored or accumulated within the APZ.	

Element 2: Siting and Design of Development	
Intent: To ensure that the siting and design of development (note: not building/construction design) minimises the level of bushfire impact.	
Compliance: How the proposed development achieves the intent of Element 2:	By fully meeting all applicable acceptable solutions established by the bushfire protection criteria (Guidelines v1.4 WAPC)

ASSESSMENT (COMPLIANCE) STATEMENTS

For each applicable acceptable solution, the following statements present the results of the assessment of the proposed development/use against the requirements established by the *Guidelines (WAPC v1.4)*

Acceptable Solution: A2.1: Asset Protection Zone

The proposed development achieves compliance by:

- Ensuring future building work on the lot can have established around it an APZ of the required dimensions (Figure 3.2) - to ensure that the potential radiant heat from a bushfire to impact future building/s, does not exceed 29 kW/m2 (i.e. a BAL rating of BAL-29 or less); The APZ/s can be established fully within the/each lot boundaries; and
- The landowner/s having the responsibility of continuing to manage the required APZ as low threat vegetation in a minimal fuel state, by maintaining the APZ to the required dimensions and standard (Figure 3.2), including compliance with the local government's annual firebreak notice. This assessment is reliant on the surrounding land (Area 5) being maintained in a low fuel condition in accordance with the AS3959 - 2018 Section 2.2.3.2 (f) Low Threat Vegetation and as per the Shire Bush Fire Mitigation Notice, reflecting the state of the vegetation at the time of the assessment.

APZ Management (Figure 3.2): All vegetation that will require modification/removal and future management is onsite and therefore under the control of the landowner. Retained vegetation will be managed in accordance with the technical requirements established by the Schedule 1: 'Standards for Asset Protection Zones (Guidelines).

THE APZ - DEVELOPMENT SITING AND DESIGN PLANNING REQUIREMENTS

The APZ should be contained solely within the boundaries of each lot, except in instances where the neighbouring lot(s) or adjacent public land will be managed in a low-fuel state on an ongoing basis, in perpetuity.

Where possible, planning for siting and design should incorporate elements that include non-vegetated areas (e.g. roads/parking/drainage) and/or formally managed areas of vegetation (public open space/recreation areas/ services installed in a common section of land), as either part of the required APZ dimensions or to additionally increase separation distances to provide greater protection. These elements create robust and easier managed asset protection zones.

Element 3: Vehicular Access	
Intent: To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.	
Compliance: How the proposed development achieves the intent of Element 3:	By fully meeting all applicable acceptable solutions established by the bushfire protection criteria (Guidelines v1.4 WAPC)
ASSESSMENT (COMPLIANCE) STATEMENTS For each applicable acceptable solution, the following statements present the results of the assessment of the proposed development/use against the requirements established by the *Guidelines (WAPC v1.4).*	
Acceptable Solution: A3.1: Public Roads	
The existing sealed bitumen road network available to the proposed development (Bussell Highway & English View) provides a suitable trafficable transport route. The creation of new internal roads throughout the site that will link into the existing public road network, will meet the construction technical requirements established by the Guidelines and/or the local government.	
Acceptable Solution: A3.2a: Multiple Access Routes	
The subject site currently has multiple access routes. Bussell highway provides access to the South and the development of a new crossover onto English View will provide secondary access/egress from the area. The proposed network as set out in Figure 1.0 (Site Plan) demonstrates compliance with this Acceptable Solution can be achieved as the proposed road layout will provide access in two different directions to at least two different destinations. The construction technical requirements established by the Guidelines and/or the local government can and will be complied with. These requirements are set out in Appendix 2.	
Acceptable Solution: A3.2b: Emergency Access Way	
N/a	
Acceptable Solution: A3.6: Private Driveways	
The creation of new internal roads throughout the site that will link into the existing public road network, will meet the construction technical requirements established by the Guidelines and/or the local government.	

Element 4: Water	
Intent: To ensure water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.	
Compliance: How the proposed development achieves the intent of Element 4:	By fully meeting all applicable acceptable solutions established by the bushfire protection criteria (Guidelines v1.4 WAPC)
ASSESSMENT (COMPLIANCE) STATEMENTS For each applicable acceptable solution, the following statements present the results of the assessment of the proposed development/use against the requirements established by the *Guidelines (WAPC v1.4).*	
Acceptable Solution: A4.2: Provision of water for firefighting purposes	
A reticulated water supply is available to the subject site. A hydrant was located on Loretta Avenue adjacent to Lot 100 Bussell Highway. The construction technical requirements established by the Guidelines and/or the local government can and will be complied with.	

5.3 Additional Bushfire Protection Measures to be Implemented

The following bushfire protection measures are recommended to be implemented and maintained. They are additional to, or a variation of, those established by the relevant acceptable solutions applied to the proposed development/use.

The intent of their application is to improve the bushfire performance of the proposed development/use and reduce residual risk levels to persons and property from a bushfire event.

The development of these additional and/or varied protection measures originates from five potential sources:

1. Out of the relevant merit-based assessment presented in this BMP;
2. Out of the relevant performance-based assessment presented in this BMP;
3. Out of the development of any other required bushfire planning documents. These include a Bushfire Emergency Plan and the Bushfire Risk Assessment and Management Report;
4. Out of any additional bushfire planning guidance documents or position statements issued by the WA Department of Planning, Lands and Heritage; or
5. As a recommendation from the bushfire consultant.

When relevant, the implementation responsibility for these additional protection measures will be stated in Section 6 of this BMP and included in other operational documents.

5.3.1 Additional Protection Measures to Improve Bushfire Performance

The following table summarises the additional bushfire protection measures that are required and/or recommended to be implemented.

SUMMARY OF ADDITIONAL BUSHFIRE PROTECTION MEASURES TO BE APPLIED					
No.	Description	Relevant Protection Principle		The Assessment or Document Establishing the Protection Measure	The Element and Associated Acceptable Solution(s) the Measure will Address
1	The proposed retail building, Car Wash and Fuel bowser canopies are not required to comply with the bushfire performance requirements established by the Building Code of Australia (NCC). However, as these buildings/ structures may be subject to ember attack during a bushfire event, it is recommended by Bushfire Prone Planning that the building be constructed to its assessed BAL rating (Figure 3.2).	Threat Reduction	N/A	A recommendation from the bushfire consultant.	Element 2
		Exposure Reduction	N/A		
		Vulnerability Reduction - Persons	N/A		
		Vulnerability Reduction – Buildings/Structures	Design and Construction (Materials)		

5.3.2 Additional Bushfire Protection Measures Established by the Risk Management Plan ('High Risk' Land Use)

The following bushfire protection measures are to be implemented and maintained. They are additional to those established by the relevant acceptable solutions applied to the proposed subdivision, development or use. The relevant acceptable solutions are those against which this planning proposal has been assessed in Section 5.3 of this Bushfire Management Plan.

Risk Treatment – Identification and Evaluation of Options				
RISK NO.	**BRIEF RISK DESCRIPTION**	**IDENTIFIED OPTION/S**	**MECHANISM OF PROPOSED RISK TREATMENT**	**EVALUATION OF TREATMENT (satisfies the objective-effective-practical-feasible-acceptable-affordable-sustainable-safe)**
1	Stored Materials	1. Non-essential flammable items will not be stored on site 2. All flammable items required to be stored on site must be located at a distance greater than 6 metres from any structures. 3. No flammable items are to be stored between the convenience store and fuel dispensers	change likelihood of event impact	Guidance notes are to be included in the Environmental Safety Management Plan.
2	Operations as Ignition Source	Monitor and review existing controls (risk treatment measures). No additional treatments required.	N/A	
3	Offsite vegetation	Risk treatment to be included in the Facility Environmental Safety Management Plan. Risk Treatment/s: 1. In a Bushfire event the Fuel vehicle to avoid the facility site until advised by the emergency services it is safe to drive to the facility and transfer fuel. 2. Fuel vehicle to remain as a minimum 1-kilometre distance from the bushfire event or as directed by the emergency services. 3. Public to remain away from the site until emergency services deem it safe to operate.	change likelihood of event impact	Removing vehicles and fuel load from the threat of ignition satisfies the objective and is a practical and safe option.
4	Onsite vegetation	Monitor and review existing controls (risk treatment measures). No additional treatments required.	change likelihood of event impact	Maintain onsite vegetation
5	Emergency Management	Identify and include addition procedures or procedural flow charts	change potential consequences	Update the facilities Environmental Safety Management Plan.
6	Firefighter capacity	Identify and include addition procedures or procedural flow charts	change potential consequences	Update the facilities Environmental Safety Management Plan.

6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE PROTECTION MEASURES

Table 6.1: BMP Implementation responsibilities prior to occupancy or building.

Landowner (Developer)	
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. This will be done pursuant to Section 70A *Transfer of Land Act 1893* as amended ('Factors affecting use and enjoyment of land, notification on title'). This is to give notice of the bushfire hazard and any restrictions and/or protective measures required to be maintained at the owner's cost. This condition ensures that: 1. Landowners/proponents are aware their lot is in a designated bushfire prone area and of their obligations to apply the stated bushfire risk management measures; and Potential purchasers are alerted to the Bushfire Management Plan so that future landowners/proponents can continue to apply the bushfire risk management measures that have been established in the Plan.
2	Post planning approval, the entity responsible for having the BMP prepared should ensure that anyone listed as having responsibility under the Plan has endorsed it and is provided with a copy for their information and informed that it contains their responsibilities. This includes the landowners/proponents, local government and any other authorities or referral agencies
3	Establish the Asset Protection Zone (APZ) on the lot to the dimensions and standard stated in this Bushfire Management Plan (Figure 3.2), the Bushfire Guidelines & Shire of Capel Firebreak notice.
4	Comply with the Local firebreak notice issued under s33 of the Bush Fires Act 1954.
5	The Proponent will install and maintain a minimum 3-metre-wide firebreak (no vegetation) on the southern boundary of Lot 102 English View Drive, Gelorup (Figure 3.1). The Proponent also owns this Lot and will establish an easement burdening Lot 102 to ensure the 3-metre-wide firebreak is maintained in a low threat state (no vegetation) all year round.
6	Install the vehicular access routes (Private Driveways/ Internal private roads) within the lot to the required surface condition and clearances as stated in the Bushfire Guidelines Version 1.4.
7	There is an obligation, created by this Bushfire Management Plan, for a Risk Management Plan to be developed and approved for the 'high risk' land use. BMP Section 5.3, Additional Measures Established by the Risk Management Plan must be complied with prior and during occupancy.
8	The proposed Retail Building, Car Wash and Fuel bowser Canopies are not required to comply with the bushfire performance requirements established by the Building Code of Australia (NCC). However, as these buildings/ structures may be subject to ember attack during a bushfire event, it is recommended that the building/s be constructed to their assessed BAL rating (Figure 3.2).
9	There is a requirement for the landowner to manage the vegetation within the Shire road reserve adjacent to the development site in a Low Threat State in accordance with the Exclusions listed in Section 2.2.3.2 of the AS3959.

Table 6.2: Ongoing management responsibilities for the Landowner/Occupier.

Landowner/Occupier - Ongoing	
No.	Ongoing Management Actions
1	Maintain an Asset Protection Zone (APZ - Figure 3.2) to the standards established by this Bushfire Management Plan and the Bushfire Guidelines.
2	Comply with the Local firebreak notice issued under s33 of the Bush Fires Act 1954. This may include specifications for asset protection zones that differ from the Guideline's APZ Standards, with the intent to better satisfy local conditions.
3	Ensure that any builders (of future structures on the lot) are aware of the existence of this Bushfire Management Plan and the responsibilities it contains regarding the application of construction standards corresponding to a determined BAL.
4	Ensure all future buildings the landowner has responsibility for, are designed and constructed in full compliance with: 1. the requirements of the WA Building Act 2011 and the bushfire provisions of the Building Code of Australia (BCA); and 2. with any identified additional requirements established by this BMP or the local government.
5	Maintain vehicular access routes (Private Driveways/ Internal private roads) within the lot to the required surface condition and clearances as stated in the Bushfire Guidelines Version 1.4.
6	The Risk Management Plan containing bushfire risk management measures for flammable onsite hazards and operations with the potential to ignite a bushfire, must be reviewed each year and relevant information updated. All required measures must continue to be complied with.
7	The Proponent will maintain a minimum 3-metre-wide firebreak (no vegetation) on the southern boundary of Lot 102 English View Drive, Gelorup (Figure 3.1 – Lot immediately North of the Development Site). The Proponent also owns this Lot and will establish an easement burdening Lot 102 to ensure the 3-metre-wide firebreak is maintained in a low threat state (no vegetation) all year round.
8	There is a requirement for the landowner to maintain the vegetation within the Shire road reserve adjacent to the development site in a Low Threat State in accordance with the Exclusions listed in Section 2.2.3.2 of the AS3959.

Table 6.3: Ongoing management responsibilities for the Local Government.

Local Government - Ongoing	
No.	Ongoing Management Actions
1	Monitor landowner compliance with the Bushfire Management Plan and Firebreak notice.
2	Where an area of land is vested in the control of the local government (Pathways/Public Reserves/Road Reserves/ Gardens) and the ongoing management of that land (vegetation & bushfire fuel management) has determined the suitability of the proposed development for approval, there is an obligation to consider the impact of any changes to future management of the Land and/or revegetation plans with respect to that area.

APPENDIX 1: TECHNICAL REQUIREMENTS FOR ONSITE VEGETATION MANAGEMENT

A1.1 Requirements Established by the Guidelines – Standards for Asset Protection Zones

(Source: Guidelines for Planning in Bushfire Prone Areas - WAPC 2021 v1.4 Appendix 4, Element 2, Schedule 1 and Explanatory Note E2)

DEFINING THE ASSET PROTECTION ZONE (APZ)

Description: An APZ is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level (by reducing fuel loads). The width of the required APZ varies with slope and vegetation and varies corresponding to the BAL rating determined for a building (lower BAL = greater dimensioned APZ).

For planning applications, the minimum sized acceptable APZ is that which is of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29). It will be site specific.

For subdivision planning, design elements and excluded/low threat vegetation adjacent to the lot(s) can be utilised to achieve the required vegetation separation distances and therefore reduce the required dimensions of the APZ within the lot(s).

Defendable Space: The APZ includes a defendable space which is an area adjoining the asset within which firefighting operations can be undertaken to defend the structure. Vegetation within the defendable space should be kept at an absolute minimum and the area should be free from combustible items and obstructions. The width of the defendable space is dependent on the space, which is available on the property, but as a minimum should be 3 metres.

Establishment: The APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity.

The APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context, but does not include grassland or vegetation on a neighbouring rural lot, farmland, wetland reserves and unmanaged public reserves.

[Note: Regardless of whether an Asset Protection Zone exists in accordance with the acceptable solutions and is appropriately maintained, fire fighters are not obliged to protect an asset if they think the separation distance between the dwelling and vegetation that can be involved in a bushfire, is unsafe.]

E2 Managing an Asset Protection Zone (APZ) to a low threat state

An APZ is a low fuel area maintained around a habitable building to increase the likelihood that it will survive a bushfire, by providing a defendable space and reducing the potential for direct flame contact, radiant heat exposure and ember attack.

Vegetation management within an APZ should provide defendable space and be maintained to a low threat state, in perpetuity, in accordance with the requirements outlined in Schedule 1.

The width of an APZ varies with slope and vegetation type, however it should only be as wide as needed to ensure the potential radiant heat impact of a bushfire does not exceed 29kW/m² (BAL-29), or 10kW/m² where a building is identified for use as an on-site shelter. An APZ is generally not required where a building or development site achieves 29kW/m² (BAL-29) or lower in its pre-development state (prior to any vegetation clearing or modification).

An APZ should include an area of defendable space immediately adjoining a building, that is kept free from combustible items and obstructions, within which firefighting operations can be undertaken to defend the structure. Where a lot contains a building envelope, it may not be necessary for the entire building envelope to achieve 29kW/m² (BAL-29) as this may result in significant unnecessary clearing. It is recommended that the BMP identifies that a sufficient APZ can be accommodated within the building envelope, with the development site and associated APZ to be determined at the development approval stage.

An APZ should be contained within the boundaries of the lot on which the building is situated, except in instances where it is demonstrated that the vegetation on the adjoining land is managed in a low threat state, as per cl. 2.2.3.2 of AS 3959, such as a road, managed park, rocky outcrop or a water body.

The siting of a habitable building and associated APZ should aim to minimise the clearing of vegetation. The BMP should demonstrate that the proposed APZ has minimised the unnecessary loss of vegetation or potential for conflict with landscape or environmental objectives; and complies with environmental approvals/exemptions (where necessary). A re-design or reduction in lot yield may be necessary to minimise the removal and modification of remnant vegetation.

It is recommended that development be located on flat areas or slopes less than 20 degrees (especially where classified vegetation is located downslope to a building) and away from ridge tops, crests or narrow gullies, as bushfire can spread rapidly in these areas. Circumstances where these locations may be suitable for development to occur include where the land is already cleared, and 29kW/m² (BAL-29) or lower can be achieved for the whole development site without the use of an APZ. To ensure soil stability within an APZ, vegetation removal on slopes exceeding 18 degrees is discouraged.

Figure 17: Topography considerations for building locations



(Source: Guidelines for Planning in Bushfire Prone Areas 2021, Appendix 4)

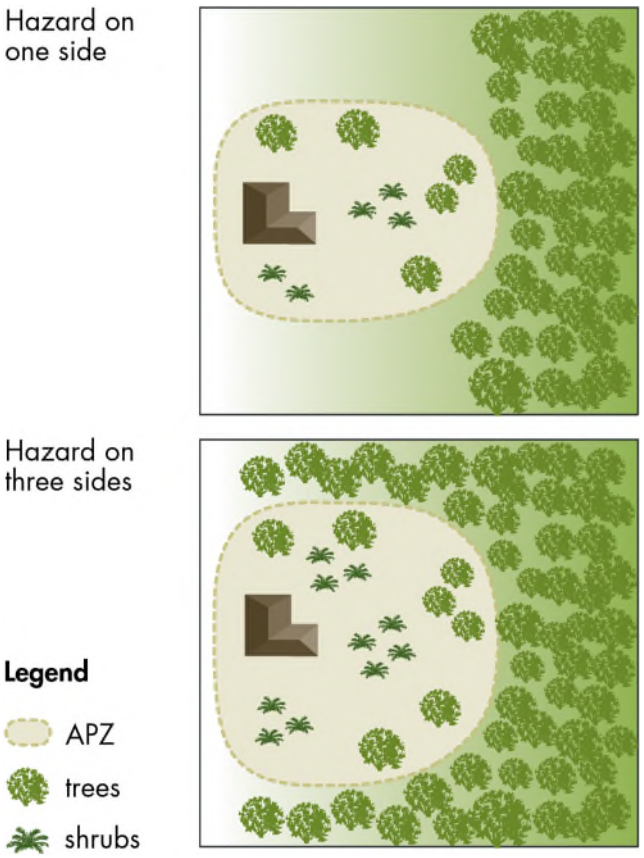
Fine fuel load should be maintained to less than two tonnes per hectare; however this is often a subjective assessment. Reducing fuel load levels does not necessarily require the removal of existing vegetation. A combination of methods can be utilised to reduce fuel load such as raking, weed removal, pruning, mulching and/or the removal of plant material.

A simple method to estimate fuel load is to roughly equate one tonne of fuel load per hectare as 100 grams per square metre. For example, two tonnes per hectare of leaf litter is roughly 200 grams of leaf litter per square metre and eight tonnes per hectare is roughly 800 grams. Eucalyptus leaf litter is approximately 100 grams per handful, so two handfuls of litter per square metre will roughly equate to two tonnes per hectare. Different types of fine fuel, like mulch or pine needles may be more or less than a handful, however the 100 grams per square metre rule of thumb can still be used.

The landowner or proponent is responsible for maintaining an APZ in accordance with Schedule 1 - Standards for Asset Protection Zones. Ongoing maintenance of an APZ is usually enforced through the local government firebreak notice issued under section 33 of the *Bushfires Act 1954*, and/or through a condition of a development approval, which requires the implementation of measures identified within a BMP.

A copy of the firebreak notice and Schedule 1 should be included in a BMP specifically as a how-to guide for the landowner, and to demonstrate to decision-makers that the measures outlined in the BMP to achieve the appropriate BAL rating through provision and ongoing management of an APZ, can be implemented.

Regardless of whether an Asset Protection Zone exists in accordance with the acceptable solutions and is appropriately maintained, it should be noted that fire fighters are not obliged to protect an asset if they think the separation distance between the dwelling and vegetation is unsafe.



(Source: Guidelines for Planning in Bushfire Prone Areas 2021, Appendix 4)

E2 Landscaping and design of an asset protection zone

Landscaping, design, and maintenance of an APZ in a bushfire prone area can significantly improve the bushfire resilience of a building. An APZ should not be seen as an area entirely cleared of vegetation, but as a strategically designed space that gives holistic consideration to how existing or proposed vegetation or non-combustible features interact with or affect the building's bushfire resilience.

A well designed APZ provides a greater level of vegetation management within the first few metres of a building with, for example, less vegetation or inclusion of non-combustible materials. The vegetation within the remainder of an APZ can increase further away from the building with carefully considered plant selection and landscaping techniques.

Strategic landscaping measures can be applied, such as replacing weeds with low flammability vegetation (refer to E2 Plant Flammability) to create horizontal and vertical separations between the retained vegetation. The accumulation of fine fuel load from different plants is an important consideration for ongoing maintenance in accordance with Schedule 1. For example, when planting ground covers under deciduous trees within an APZ, the total fine fuel load prescribed in Schedule 1 will include any dead plant material from ground covers and leaf litter from the trees.

Plant density and final structure and form of mature vegetation should be considered in the initial landscaping stages. For example, clumps of sapling shrubs planted at a density without consideration of future growth, may increase the bushfire risk as a clump will quickly grow to exceed 5m^2. It should be noted that in some cases, a single shrub in a mature state may be so dense as to fill a 5m^2 clump alone.

The location of plants within an APZ is a key design technique. Separation of garden beds with areas of low fuel or non-combustible material, will break up fuel continuity and reduce the likelihood of a bushfire running through an APZ and subjecting a dwelling to radiant heat or direct flame contact. It is important to note, where mature trees are separated from a building by six metres, but the canopy has grown to extend or overhang a building, maintenance and pruning to remove the overhanging branches should be undertaken without the entirety of the tree being removed.

Mulches used within the APZ should be non-combustible. The use of stone, gravel, rock and crushed mineral earth is encouraged. Wood mulch >6mm in thickness may be used, however it is recommended that it is used in garden beds or areas where the moisture level is higher by regular irrigation. These materials could be sourced from non-toxic construction and demolition waste giving the added benefit of reducing the environmental impact of any 'hard landscaping' actions.

Combustible objects, plants, garden supplies such as mulches, fences made from combustible material, should be avoided within 10 metres of a building. Vines or climbing plants on pergolas, posts or beams, should be located away from vulnerable parts of the building, such as windows and doors. Non-flammable features can be used to provide hazard separation from classified vegetation, such as tennis courts, pools, lawns and driveways or paths that use inorganic mulches (gravel or crushed rock). Consider locating firewood stacks away from trees and habitable buildings.

Incorporation of landscaping features, such as masonry feature walls can provide habitable buildings with barriers to wind, radiant heat and embers. These features can include noise walls or wind breaks. Use of Appendix F of AS 3959 for bushfire resistant timber selection within areas of 29kW/m^2 (BAL-29) or below, or the use of non-combustible fencing materials such as iron, brick, limestone, metal post and wire is encouraged.

In addition to regular maintenance of an APZ, further bushfire protection can be provided at any time

by: ensuring gutters are free from vegetation;

- installing gutter guards or plugs;
- regular cleaning of underfloor spaces, or enclosing them to prevent gaps;
- trimming and removing dead plants or leaf litter;
- pruning climbing vegetation (such as vines) on a trellis, to ensure it does not connect to a building, particularly near windows and doors;
- removing vegetation in close proximity to a water tank to ensure it is not touching the sides of a tank; and/or
- following the requirements of the relevant local government section 33 fire break notice, which may include additional provisions such as locating wood piles more than 10 metres from a building.

Preparation of a property prior to the bushfire season and/or in anticipation of a bushfire is beneficial even if your plan is to evacuate. As embers can travel up to several kilometres from a bushfire and fall into small spaces and crevices or land against the external walls of a building, best practice recommends that objects within the APZ are moved away from the building prior to any bushfire event. Objects may include, but are not limited to: • door mats;

- outdoor furniture;
- potted plants;
- shade sails or umbrellas;
- plastic garbage bins;
- firewood stacks;
- flammable sculptures; and/or
- playground equipment and children's toys.

E2 Plant flammability

There are certain plant characteristics that are known to influence flammability, such as moisture or oil content and the presence and type of bark. Plants with lower flammability properties may still burn during a bushfire event but may be more resistant to burning and some may regenerate faster post-bushfire.

There are many terms for plant flammability that should not be confused, including:

- Fire resistant – plant species that survive being burnt and will regrow after a bushfire and therefore may be highly flammable and inappropriate for a garden in areas of high bushfire risk.
- Fire retardant – plants that may not burn readily or may slow the passage of a bushfire.
- Fire wise – plants that have been identified and selected based on their flammability properties and linked to maintenance advice and planting location within a garden.

Although not a requirement of these Guidelines, local governments may develop their own list of fire wise or fire-retardant plant species that suit the environmental characteristics of an area. When developing a recommended plant species list, local governments should consult with ecologists, land care officers or environmental authorities to ensure the plants do not present a risk to endangered ecological communities, threatened, or endangered species or their habitat.

When selecting plants, private landholders and developers should aim for plants within the APZ that have the following characteristics:

- grow in a predicted structure, shape and height;
- are open and loose branching with leaves that are thinly spread;
- have a coarse texture and low surface-area-to-volume ratio;
- will not drop large amounts of leaves or limbs, that require regular maintenance;
- have wide, flat, and thick or succulent leaves;
- trees that have bark attached tightly to their trunk or have smooth bark;
- have low amounts of oils, waxes, and resins (which will often have a strong scent when crushed); do not produce or hold large amounts of fine dead material in their crowns; and/or will not become a weed in the area.

Refer to the WAPC Bushfire and Vegetation Fact Sheet for further information on clearing and vegetation management and APZ landscaping, design and plant selection reference material.

Schedule 1: Standards for APZ

Fences: 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).

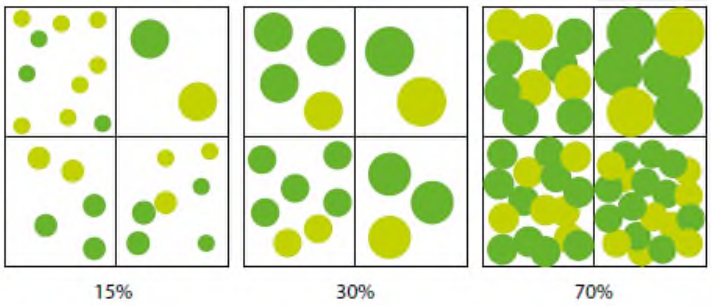
Fine Fuel Load (Combustible, dead vegetation matter <6 millimetres in thickness):

- Should be managed and removed on a regular basis to maintain a low threat state.
- Should be maintained at <2 tonnes per hectare (on average).
- 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.
- Branches at maturity should not touch or overhang a building or powerline.
- Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation.
- Canopy cover within the APZ should be <15 per cent of the total APZ area.
- 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.

Tree canopy cover – ranging from 15 to 70 per cent at maturity



(Source: Guidelines for Planning in Bushfire Prone Areas 2021, Appendix 4)

Shrub* and Scrub* (0.5 metres to 6 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.
- Should not be planted in clumps >5 square metres in area.
- 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 greater than >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.
- 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.
- 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.

LPG 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.
- The pressure relief valve should point away from the house.
- No flammable material within six metres from the front of the valve.
- 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*

A1.2 Requirements Established by the Local Government – the Firebreak Notice

The local government's current Firebreak Notice is available on their website, at their offices and is distributed as ratepayer's information. It must be complied with.

These requirements are established by the local government's Firebreak Notice created under s33 of the Bushfires Act 1954 and issued annually (potentially with revisions). The Firebreak Notice may include additional components directed at managing fuel loads, accessibility and general property management with respect to limiting potential bushfire impact.

If Asset Protection Zone (APZ) specifications are defined in the Firebreak Notice, these may differ from the Standards established by the Guideline's, with the intent to better satisfy local conditions. When these are more stringent than those created by the Guidelines, or less stringent and endorsed by the WAPC and DFES, they must be complied with.

The APZ dimensions to be physically established and maintained, will be based on which of the following establishes the larger APZ dimension:

- The dimensions corresponding to the determined BAL of a building (refer to Section 3.2 explanation of the 'planning' versus 'building' requirements and 'indicative' versus 'determined' BAL(s)); or
- The APZ dimensions established by the local government's Firebreak Notice.

A1.3 Requirements Recommended by DFES – Property Protection Checklists

Further guidance regarding ongoing/lasting property protection (from potential bushfire impact) is presented in the publication 'DFES – Fire Chat – Your Bushfire Protection Toolkit'. It is available from the Department of Fire and Emergency Services (DFES) website.

A1.4 Requirements Established by AS 3959:2018 – 'Minimal Fuel Condition'

This information is provided for reference purposes. This knowledge will assist the landowner to comply with Management Requirement No. 3 set out in the Guidance Panel at the start of this Appendix. It identifies what is required for an area of land to be excluded from classification as a potential bushfire threat.

"Australian Standard - AS 3959:2018 Section 2.2.3.2: Exclusions - Low threat vegetation and non-vegetated areas:

The Bushfire Attack Level shall be classified BAL-LOW where the vegetation is one or a combination of the following:

a) Vegetation of any type that is more than 100m from the site.

b) Single areas of vegetation less than 1ha in area and not within 100m of other areas of vegetation being classified vegetation.

c) Multiple area of vegetation less than 0.25ha in area and not within 20m of the site or each other or other areas of vegetation being classified vegetation.

d) Strips of vegetation less than 20m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20m 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,*** *(means insufficient fuel available to significantly increase the severity of a bushfire attack – for example, recognisable as short cropped grass to a nominal height of 100mm), 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 (single row of trees)."*

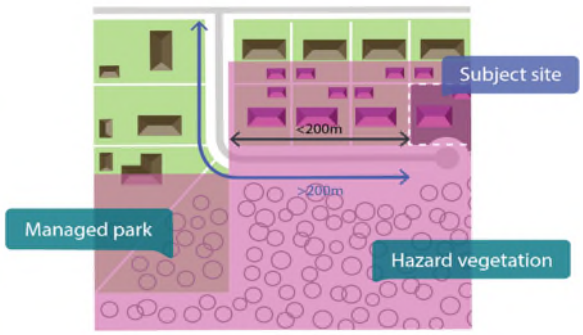
APPENDIX 2: TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS

Each local government may have their own standard technical requirements for emergency vehicular access, and they may vary from those stated in the Guidelines.

When required, these are stated in Section 5.1 of this bushfire management plan.

Requirements Established by the Guidelines – The Acceptable Solutions

(Source: Guidelines for Planning in Bushfire Prone Areas WAPC 2021 v1.4, Appendix 4)

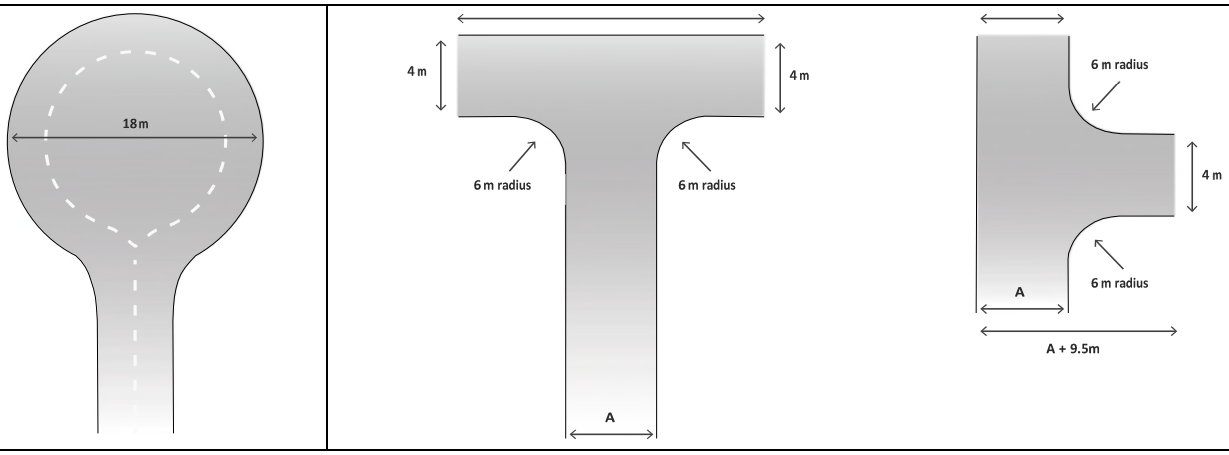
VEHICULAR ACCESS TECHNICAL REQUIREMENTS
Acceptable Solution 3.1: Public Roads *The minimum requirements under this acceptable solution are applicable to all proposed and existing public roads.* Public roads are to meet the minimum technical requirements in Table 6, Column 1. The trafficable (carriageway/pavement) width is to be in accordance with the relevant class of road in the Local Government Guidelines for Subdivisional Development (IPWEA Subdivision Guidelines), Liveable Neighbourhoods, Austroad standards and/or any applicable standards for the local government area.
Acceptable Solution 3.2a: Multiple Access Routes Public road access is to be provided in two different directions to at least two different suitable destinations with an all-weather surface (two-way access). If the public road access to the subject site is via a no-through road which cannot be avoided due to demonstrated site constraints, the road access is to be a maximum of 200 metres from the subject lot(s) boundary to an intersection where two-way access is provided. The no-through road may exceed 200 metres if it is demonstrated that an alternative access, including an emergency access way, cannot be provided due to site constraints and the following requirements are met: • the no-through road travels towards a suitable destination; and • the balance of the no-through road, that is greater than 200 metres from the subject site, is wholly within BAL-LOW, or is within a residential built-out area.

Acceptable Solution 3.2b: Emergency Access Way *Where it is demonstrated that A3.2a cannot be achieved due to site constraints, or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solution.* An emergency access way is to meet all the following requirements: • requirements in Table 6, Column 2; • provides a through connection to a public road; • be no more than 500 metres in length; and • must be signposted and if gated, gates must open the whole trafficable width and remain unlocked.

VEHICULAR ACCESS TECHNICAL REQUIREMENTS

Acceptable Solution 3.3: Through Roads

All public roads should be through-roads. No-through roads should be avoided and should only be considered as an acceptable solution where:

- it is demonstrated that no alternative road layout exists due to site constraints; and
- the no-through road is a maximum length of 200 metres to an intersection providing two-way access, unless it satisfies the exemption provisions in A3.2a of this table. A no-through road is to meet all the following requirements:
- requirements of a public road (Table 6, Column 1); and
- turn-around area as shown in Figure 24



Acceptable Solution 3.4a: Perimeter Roads

A perimeter road is a public road and should be provided for greenfield or infill development where 10 or more lots are being proposed (including as part of a staged subdivision) with the aim of:

- separating areas of classified vegetation under AS3959, which adjoin the subject site, from the proposed lot(s); and
- removing the need for battle-axe lots that back onto areas of classified vegetation.

A perimeter road is to meet the requirements contained in Table 6, Column 1. A perimeter road may not be required where:

- the adjoining classified vegetation is Class G Grassland;
- lots are zoned for rural living or equivalent;
- it is demonstrated that it cannot be provided due to site constraints; or
- all lots have frontage to an existing public road

Acceptable Solution 3.4b: Fire Service Access Route

Where proposed lots adjoin classified vegetation under AS3959, and a perimeter road is not required in accordance with A3.4a, a fire service access route can be considered as an acceptable solution to provide firefighter access, where access is not available, to the classified vegetation.

A fire service access route is to meet all the following requirements:

- requirements in Table 6, Column 3;
- be through-routes with no dead-ends;
- linked to the internal road system at regular intervals, every 500 metres; must be signposted;
- no further than 500 metres from a public road;
- if gated, gates must open the required horizontal clearance and can be locked by the local government and/or emergency services, if keys are provided for each gate; and
- turn-around areas designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 metres.

VEHICULAR ACCESS TECHNICAL REQUIREMENTS

Acceptable Solution 3.5: Battle-axe Access Legs

Where it is demonstrated that a battle-axe cannot be avoided due to site constraints, it can be considered as an acceptable solution.

There are no battle-axe technical requirements where the point the battle-axe access leg joins the effective area of the lot, is less than 50 metres from a public road in a reticulated area.

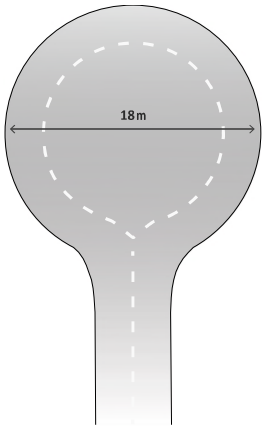
In circumstances where the above condition is not met, or the battle-axe is in a non-reticulated water area, the battle-axe is to meet all the following requirements:

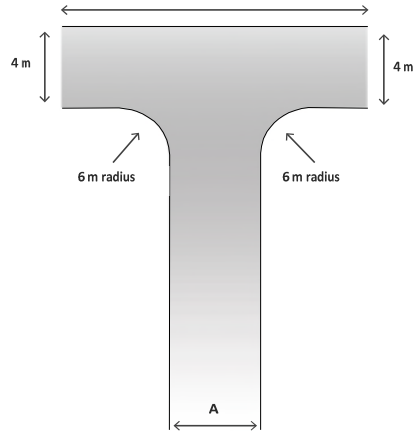
- requirements in Table 6, Column 4; and
- passing bays every 200 metres with a minimum length of 20 metres and a minimum additional trafficable width of two metres (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum six metres).

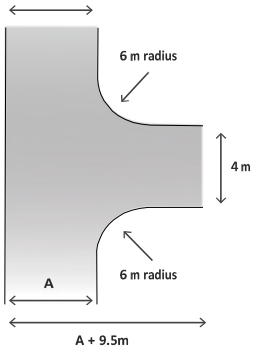
Acceptable Solution 3.6: Private Driveways

There are no private driveway technical requirements where the private driveway is:

- within a lot serviced by reticulated water;
- no greater than 70 metres in length between the most distant external part of the development site and the public road measured as a hose lay; and
- accessed by a public road where the road speed limit is not greater than 70 km/h. In circumstances where all of the above conditions are not met, or the private driveway is in a non-reticulated water area, the private driveway is to meet all the following require:
- requirements in Table 6, Column 4;
- passing bays every 200 metres with a minimum length of 20 metres and a minimum additional trafficable width of two metres (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum six metres); and
- turn-around area as shown in Figure 28 and within 30 metres of the habitable building.







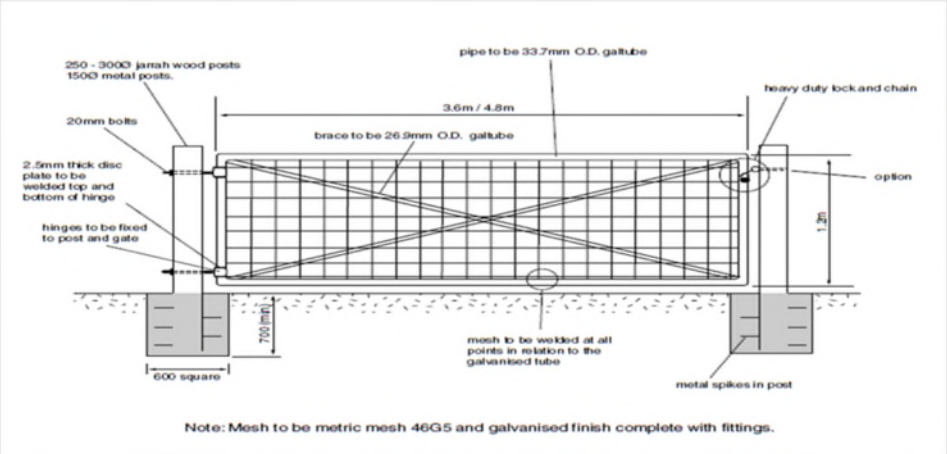
VEHICULAR ACCESS TECHNICAL REQUIREMENTS				
Technical Component	Vehicular Access Types			
	Public Roads	Emergency Access Way[1]	Fire Service Access Routes[1]	Battle-axe and Private Driveways[2]
Minimum trafficable surface (m)	In accordance with A3.1	6	6	4
Minimum Horizontal clearance (m)	N/A	6	6	6
Minimum 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		
Note[1]: To have crossfalls between 3 and 6%.				
Note[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.				
Note[3]: Dips must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle				

VEHICULAR ACCESS TECHNICAL REQUIREMENTS – GATES AND SIGNS EXAMPLES

Gates

Design and construction to be approved by local government.

- Minimum width 3.6m
- Emergency access way gates must not be locked.
- Fire service access route gates may be locked but only with a common key that is available to local fire service personnel.
- Bollards will be to the local government specifications



Signs

Design and construction to be approved by the local government.

- Minimum height above ground of 0.9m.
- Lettering height to be 100mm.
- To display the words (as appropriate) “Emergency Access Only” or “Fire Service Access – No Public Access”.
- Size 600mm x 400mm.
- Sign colour red, base (white) area is reflective background.
- Rounded corners, radius 20mm.
- White key-line 3mm wide, 3mm from outside edge.
- Suggested mounting hole 6mm diameter.



A1.5 Requirements Established by the Guidelines – Water Supply Dedicated for Bushfire Firefighting Purposes

(Source: Guidelines for Planning in Bushfire Prone Areas - WAPC 2021 v1.4 Appendix 4, Element 2, Schedule 1 and Explanatory Note E4)

E4 Use of Water Supply

Water supply for firefighting in the event of a bushfire can be provided on a lot for use by emergency services or for use by the landowner, if their Bushfire Survival Plan is to stay and defend their property. Water supply in the form of a dedicated standalone tank may be provided solely for use by emergency services, and/or a water supply may be provided for use by the landowner in the form of non-drinking water (garden or grey water for firefighting) or drinking water. It is important to note, that a combined tank of drinking water and water for firefighting purposes is not recommended. It is required to be separated in accordance with section 4.2.3 of AS/NZS 3500.1:2018. This requirement is necessary, as stagnant water may alter the quality of the drinking water and the emergency services, by law, may not be able to take water from the water supply to suppress a bushfire.

E4 Independent Water and Power Supply

Bushfires can directly impact a water service provider's equipment or pipes. As such, a reticulated water supply may not be reliable due to a reduction in water pressure or loss of supply. Where development is in a bushfire prone area (even if there is access to reticulated water), it is recommended that the landowner consider providing an additional water supply for use by emergency services.

Where a landowner intends on staying to defend their property during a bushfire event, as identified in their Bushfire Survival Plan, it is recommended that pumping equipment separate to the electricity network be provided. The pumping equipment could be a diesel or petrol-powered pump, or an electric pump if there is an onsite generator or backup power supply independent from electricity network grid.

It is recommended that combustion pumps should be a minimum 5hp or 3kW diesel or petrol powered pump and should be shielded against bushfire attack. Where an electric pump is used, a backup power supply independent from electricity network grid should be provided. A 3.7kw/12kw-h sized battery (14.8kw-h reserved solely for bushfire will power a 3.7kw system for 4 hours) with blackout protection or a generator should be provided.

E4 Strategic Water Supplies

Many local governments have a well-developed network of strategic water tanks for firefighting within their local government area. Given this, it is at the discretion of the local government to determine if the water supply within a locality, is sufficient to cater for an increasing population when a subdivision is proposed. Local governments are encouraged to work with their local emergency services to ensure the water needs for firefighting is understood.

Where a structure plan or subdivision proposes to create more than three but less than 24 lots, it is optional as to whether each lot is provided with a 10,000 litre tank or a strategic water tank is provided for the entire development. If 25 or more lots are proposed, then it is recommended that a 50,000 litre strategic water tank (for every 25 lots) is provided. For every lot additional to the 25, it is at the discretion of the local government whether they require an additional strategic water tank or for each lot to be provided with a 10,000 litre tank. For example, 37 proposed lots require two strategic water tanks, or a 10,000 litre tank on each lot, or a combination of both with a strategic water tank and 12 proposed lots with a 10,000 litre tank on each lot. Where the local government, following consultation with the local emergency services, is of the opinion that a strategic water tank is unnecessary, a 10,000 litre standalone tank per lot can be provided.

A strategic water tank should be located no more than 10 minutes from the subject site (20-minute turnaround time). The turnaround time is the time it takes from a lot to the water supply and return back to the lot, at legal road speeds. Where a strategic water tank has been provided at the subdivision stage and a development application is located within the 20-minute turnaround time of that (or another) strategic water source, then the decision-maker could remove the requirement for the provision of an additional water supply at the development application stage. Local government will need to consider whether the strategic water tank has the capacity to serve the lot identified in the development application i.e. what lots were identified at subdivision stage to be serviced by the strategic water tank. A landowner should enquire with their local government to determine whether a water supply on their lot will be required.

When there is fragmented ownership of a structure plan area, or when staging of a subdivision is to occur and the local government has determined that a strategic water tank is required, then the first stage should include arrangements for the installation of a water tank and the identification of land to be ceded to the local government authority (if applicable).

Where local planning scheme provisions provide for developer contributions for public infrastructure and the local government is supportive, then a cash-in lieu arrangement may be established for the provision of a strategic water tank.

Grouped dwellings may provide dedicated firefighting water supply in one standalone tank per lot or may provide one shared standalone tank with the accumulative amount of water needed, for the number of lots it will serve. For example, a development proposing three lots may either have three tanks of 10,000L (one per lot) or one tank with 30,000L (shared between three lots).

E4 Alternative Water Sources

A dam, river or other source may be considered a firefighting water source if it complies with DFES guidelines and it can be demonstrated that the water level will be maintained above the top of the highest fire brigade suction point in perpetuity, if it is expected that the water supply will be used by emergency services. Approval for the use of these types of water supplies are on a case-by-case basis and at the discretion of the decision maker, in consultation with emergency services and local government.

E4 Location of Water Tanks

A water tank should be located with consideration to surrounding vegetation and should avoid locations where the tank will be situated underneath existing vegetation or where vegetation will grow against or overhang the tank, as shown in Figure 30 below. Where a tank is located on the bushfire hazard side of a building, sufficient shielding for the protection of firefighters should be provided. In addition to the tank location, the fitting should be positioned and/or shielded from the bushfire hazard to allow access by emergency services. It is recommended that the fitting face away from the bushfire hazard and be within four metres of a hardstand area.

A good and bad example of landscaping around a water tank



(Source: Guidelines for Planning in Bushfire Prone Areas 2021, Appendix 4)

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/NZS3500.1:2018. 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.

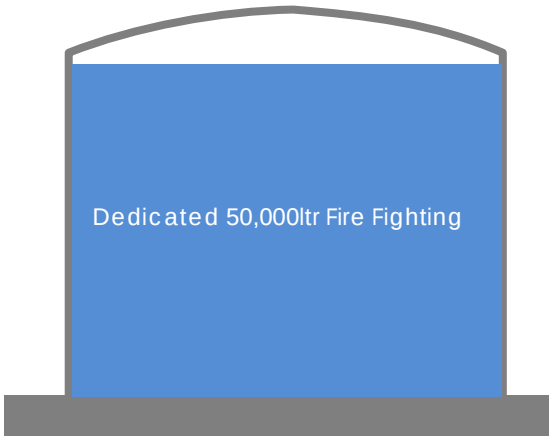
TECHNICAL REQUIREMENTS FOR STATIC WATER SUPPLY

(EXAMPLES ONLY – CHECK WITH LOCAL GOVERNMENT FOR VARIATIONS)

Example construction / coupling requirements from various sources including FESA (DFES) Operational Circular 07/2011 and Planning for Bushfire Protection Guidelines WAPC 2010]









Reticulated Areas

[Source: Guidelines for Planning in Bushfire Prone Areas WAPC 2021 v1.4, Appendix 4, Element 4]

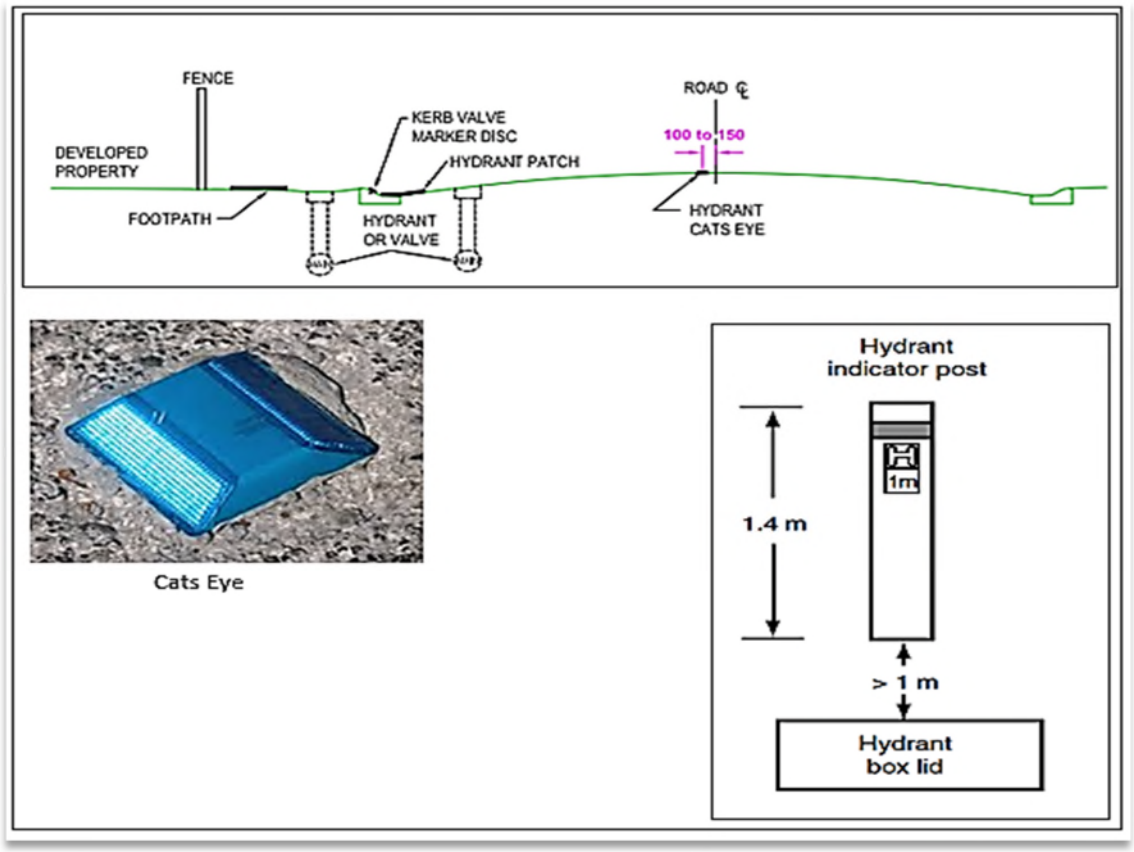
Where a reticulated water supply is existing or proposed, hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority.

The requirement is to supply a reticulated water supply and fire hydrants, in accordance with the technical requirements of the relevant water supply authority and DFES.

Key specifications in the most recent version/revision of the design standard include:

- ***Residential Standard*** – hydrants are to be located so that the maximum distance between the hydrants shall be no more than 200 metres.
- ***Commercial Standard*** – hydrants are to be located with a maximum of 100 metre spacing in Industrial and Commercial areas.
- ***Rural Residential Standard*** – where minimum site areas per dwelling is 10,000 m² (1ha), hydrants are to be located with a maximum 400m spacing. If the area is further subdivided to land parcels less than 1ha, then the residential standard (200m) is to be applied.

Figure A4.1: Hydrant Location and Identification Specifications



Response to the DFES Advice:

211035 - Lot 100 (79) Bussell Highway, Gelorup (BMP_DA)_v1.0

Property Details:	Lot 100 (79) Bussell Highway, Gelorup
Proposal Details:	Service station and Carwash
Our Reference:	(#211035) - Mick Whitelaw - 043 013 9645
Shire Reference:	(#PA80/2022) – Scott Price - 9727 0222
DFES Reference:	(#D26252) - 9395 9819 - Michael Ball
WAPC DAP:	(#DAP/22/02256) - 6551 9919 - daps@dplh.wa.gov.au - Ashlee Kelly
Client Details:	Aaron Bell - Aaron@ableplanning.com.au

DFES Issue #1.

Vegetation classification	The road reserve (verge) to Bussell Highway, Loretta Avenue and English View (Area 5) cannot be substantiated as excluded. The BMP notes that Area 5 is managed in accordance with the requirements of AS3959, or, is subject the Shire Bush Fire Mitigation Notice. DFES is not supportive of the use of fire mitigation notices as suitable exclusions as it is unclear if they operate throughout the year. Evidence to support the exclusion of road reserve as managed to low threat in accordance with AS3959 is required. Alternatively, the vegetation should be classified Class C Grassland as per AS3959, or the resultant BAL ratings may be inaccurate. The decision maker should confirm any management agreements with Main Roads WA (MRWA) and the Local Government to ensure that this area will be maintained to low threat in perpetuity, prior to any approvals being issued. While separation distances have not been provided for all buildings, it is likely that the classification of the surround verges would impact the BAL rating of the proposed Car Wash.
Bushfire Prone Planning (BPP) Response	The BMP has been updated with the following text: ***Shire of Capel:*** Where an area of land is vested in the control of the local government (Pathways/Public Reserves/Road Reserves/ Gardens) and the ongoing management of that land (vegetation & bushfire fuel management) has determined the suitability of the proposed development for approval, there is an obligation to consider the impact of any changes to future management of the Land and/or revegetation plans with respect to that area. There is a requirement for a written agreement to be entered into between the landowner and Shire of Capel regarding the management of the road reserve vegetation adjacent to the development site in a Low Threat State in accordance with the Exclusions listed in Section 2.2.3.2 of the AS3959 - 2018. ***Main Roads WA (MRWA):*** Where an area of land is vested in the control of the MRWA (Road Reserves/ Gardens) and the ongoing management of that land (vegetation & bushfire fuel management) has determined the suitability of the proposed development for approval, there is an obligation to consider the impact of any changes to future management of the Land and/or revegetation plans with respect to that area. There is a requirement for a written agreement to be entered into between the landowner and the MRWA regarding the management of the road reserve vegetation adjacent to the development site in a Low Threat State in accordance with the Exclusions listed in Section 2.2.3.2 of the AS3959 - 2018.

DFES Issue #2.

Vegetation classification	A BAL Contour Map is a scale map of the subject lot/s illustrating the potential radiant heat impacts and associated indicative BAL ratings in reference to any classified vegetation remaining within 100 metres of the assessment area after development is complete. A BAL Contour Map is required to be prepared in accordance with the methodology detailed in Appendix 3 of the Guidelines. The submitted BAL contour map does not assess vegetation in accordance with Appendix 3 of the guidelines, as vegetation within 100m of the external lot boundaries of the lot have not been assessed. An amended BAL contour map is required to address the above, ensuring that all vegetation within 100m of the external edge of the subject lot is assessed.
Bushfire Prone Planning (BPP) Response	The BMP Mapping has been updated in accordance with this Feedback.

DFES Issue #3.

Asset Protection Zones	The actual separation distances from all proposed buildings to the vegetation plots have not been included in the BMP. The actual separation distance should be provided to validate the BAL ratings for all proposed buildings.
Bushfire Prone Planning (BPP) Response	As Per SPP 3.7 "Any development application to which policy measure 6.2 applies is to be accompanied by the following information in accordance with the Guidelines: a) (i) a BAL Assessment...OR (ii) a BAL Contour Map...." A BAL Contour Map (Figure 3.2) is supplied with the BMP and Section 3.2 - Table 3.2.1 states the BAL ratings of the proposed structures.

DFES Issue #4.

Siting and Design	A1.1 & A2.1 – not demonstrated The BAL ratings cannot be validated for the reason(s) outlined in the above table. In addition, as the service station is a class of building not covered by AS3959:2018, it is suggested that the building be constructed to utilise all of the aspects of AS3959 that apply to the appropriate Bushfire Attack Level (BAL). This is consistent with Clause 78E(1) of Schedule 2 of the Planning and Development (Local Planning Schemes) Regulations 2015 which requires the local government to have regard to the bushfire construction requirements of the Building Code of Australia. In addition, Clause 5.8.3 of Applying SPP 3.7 in the Guidelines reads as follows: The bushfire construction provisions of the Building Code of Australia do not apply to Class 4 to Class 9 buildings. In these instances the applicant has the discretion to utilise any or all of the elements of AS3959 in the construction of the building that they deem appropriate. Although BAL construction standards do not guarantee the survival of the occupants or building, DFES does support the improved bushfire resilience provided by AS3959 construction.
Bushfire Prone Planning (BPP) Response	BAL ratings can be validated by A BAL Contour Map (Figure 3.2) is supplied with the BMP and Section 3.2 - Table 3.2.1 states the BAL ratings of the proposed structures. Refer to Section 5.3.1 – Additional protection measure to improve bushfire performance which details that: *"The proposed retail building is not required to comply with the bushfire performance requirements established by the Building Code of Australia (NCC). However, as the building may be subject to ember attack during a bushfire event, it is recommended by Bushfire Prone Planning that the building be constructed to its assessed BAL rating of BAL-12.5"*

Response to the DFES Advice (February 2023):

211035 - Lot 100 (79) Bussell Highway, Gelorup (BMP_DA)_v1.1

Limitations Notice:

1. *This is an overview only. It is intended to assist decision making and is not suitable to submit with a building or planning application.*

Property Details:	Lot 100 (79) Bussell Highway, Gelorup
Proposal Details:	Service station and Carwash
Our Reference:	#211035 (Mick Whitelaw - 043 013 9645)
Shire Reference:	(#PA80/2022) – Scott Price - 9727 0222
DFES Reference:	(#D26252) - 9395 9819. Michael Ball
WAPC DAP:	(#DAP/22/02256) - 6551 9919 - daps@dplh.wa.gov.au - Ashlee Kelly
Client Details:	Aaron Bell - Aaron@ableplanning.com.au

DFES Advice (2nd Round - Supplied 31/1/2023)

DFES Issue #1.

Vegetation classification	The road reserve (verge) to Bussell Highway, Loretta Avenue and English View (Area 5) cannot be substantiated as excluded. The BMP notes that Area 5 is managed in accordance with the requirements of AS3959, or, is subject the Shire Bush Fire Mitigation Notice. DFES is not supportive of the use of fire mitigation notices as suitable exclusions as it is unclear if they operate throughout the year. Evidence to support the exclusion of road reserve as managed to low threat in accordance with AS3959 is required. Alternatively, the vegetation should be classified Class C Grassland as per AS3959, or the resultant BAL ratings may be inaccurate. The decision maker should confirm any management agreements with Main Roads WA (MRWA) and the Local Government to ensure that this area will be maintained to low threat in perpetuity, prior to any approvals being issued. While separation distances have not been provided for all buildings, it is likely that the classification of the surround verges would impact the BAL rating of the proposed Car Wash. **Updated comments following resubmission:** DFES notes the practitioners' comments noting that a formal written agreement will be entered into with Main Roads WA, however reiterates that this agreement for the management of surrounding road reserves should be provided prior to any approval to ensure that management can be provided in perpetuity. Any approval of the development prior to the issue of required management agreements may result in the submitted BAL ratings being unachievable. Comments added to Page 10 of the updated BMP note that the report is reliant on the maintenance of a 3m wide firebreak on the southern boundary of the adjoining lot to the north (Lot 102 English View Drive) (not provided/required in the previous version of the BMP). DFES does not accept fire break notices on adjoining land as part of the vegetation management required to achieve an APZ or low-threat classification. Fire break notices may only apply for part of the year and may be varied from year to year by the responsible local government. The proponent is to provide a performance principle-

	based solution to achieve the required APZ should the APZ rely on the management of vegetation on adjoining land. This new issue must be addressed prior to the approval of the development or as above the submitted BAL ratings may be unachievable. Table 3.2.1 is discussed below. Modification to the BMP is required.
Bushfire Prone Planning (BPP) Response	The BMP (v1.2) has been updated *(Extra Photos 3e/3f and 5g/5h Included in Report)*. **1.** Regarding the Main Roads Road Reserve (Western Boundary of Lot 100) it has been re-classified as 'Class G Grassland' with a new description of: *"Semi Managed Grassland/ Gravelled Areas (Main Roads - Road Verge). This report has used the precautionary principle when assessing the vegetation (Worst Case Scenario is a Class G Grassland vegetation classification" (Refer to Photos 3e and 3f)"* **2.** Regarding the Shire of Capel Road Reserve (Eastern Boundary of Lot 100) additional text has been supplied (See below) *"Division 3 - Verge treatments of Shire of Capel Activities in Thoroughfares and Public Places and Trading Local Law 2016 provides a right for an owner or occupier of land which abuts a verge to install or maintain a 'permissible verge treatment' (i.e. lawn, garden, hard surface etc.). There is a requirement for the landowner to manage the vegetation within the Shire road reserve adjacent to the development site in a Low Threat State in accordance with the Exclusions listed in Section 2.2.3.2 of the AS3959 – 2018 (Refer to Photos 5g and 5h)"* **3.** Regarding the 3-metre-wide firebreak on the Southern boundary of Lot 102 English View Drive, Gelorup (Figure 3.1 – Lot immediately North of the Development Site) the revised text has been included (See below) *"This report has relied on the installation and maintenance of a minimum 3-metre-wide firebreak (Bare Earth) on the southern boundary of Lot 102 English View Drive, Gelorup (Figure 3.1 – Lot immediately North of the Development Site). The Proponent also owns this Lot and will establish an easement burdening Lot 102 to ensure the 3-metre-wide firebreak is maintained in a low threat state (no vegetation) all year round."*

DFES Issue #2.

Vegetation classification	A BAL Contour Map is a scale map of the subject lot/s illustrating the potential radiant heat impacts and associated indicative BAL ratings in reference to any classified vegetation remaining within 100 metres of the assessment area after development is complete. A BAL Contour Map is required to be prepared in accordance with the methodology detailed in Appendix 3 of the Guidelines. The submitted BAL contour map does not assess vegetation in accordance with Appendix 3 of the guidelines, as vegetation within 100m of the external lot boundaries of the lot have not been assessed. An amended BAL contour map is required to address the above, ensuring that all vegetation within 100m of the external edge of the subject lot is assessed. **Updated comments following resubmission:** DFES notes the updated plan and supports this modification. No further action required
Bushfire Prone Planning (BPP) Response	No Action/Changes required.

DFES Issue #3.

Asset Protection Zones	The actual separation distances from all proposed buildings to the vegetation plots have not been included in the BMP. The actual separation distance should be provided to validate the BAL ratings for all proposed buildings. **Updated comments following resubmission:** The comments provided regarding the BAL assessment and Table 3.2.1 are noted, however as previously stated, the assessment does not provide the actual separation distances for each building to each vegetation plot. Without this information, the resultant BAL ratings detailed in table 3 2.1 for other planned structures cannot be validated. It is paramount that this issue s addressed given the potential for the northern 'truck canopy to be located in BAL-40/BAL-FZ as the exclusion of the fire break on the adjoining lot is not supported. Modification to the BMP is required.
Bushfire Prone Planning (BPP) Response	The BMP (v1.2) has been updated. The actual separation distances from all proposed buildings to the vegetation plots have now been included in the BMP. The actual separation distances have been provided to validate the BAL ratings for all proposed buildings.

DFES Issue #4.

Siting and Design	A1.1 & A2.1 – not demonstrated The BAL ratings cannot be validated for the reason(s) outlined in the above table. In addition, as the service station is a class of building not covered by AS3959:2018, it is suggested that the building be constructed to utilise all of the aspects of AS3959 that apply to the appropriate Bushfire Attack Level (BAL). This is consistent with Clause 78E(1) of Schedule 2 of the Planning and Development (Local Planning Schemes) Regulations 2015 which requires the local government to have regard to the bushfire construction requirements of the Building Code of Australia. In addition, Clause 5.8.3 of Applying SPP 3.7 in the Guidelines reads as follows: The bushfire construction provisions of the Building Code of Australia do not apply to Class 4 to Class 9 buildings. In these instances the applicant has the discretion to utilise any or all of the elements of AS3959 in the construction of the building that they deem appropriate. Although BAL construction standards do not guarantee the survival of the occupants or building, DFES does support the improved bushfire resilience provided by AS3959 construction. **Updated comments following resubmission:** As above the BAL Rating for buildings other than the Shop/Retail outlet cannot be validated as the separation distance have not been provided. The additional table 5.3.1 is noted. Modification to the BMP is required.
Bushfire Prone Planning (BPP) Response	The BMP (v1.2) has been updated. The actual separation distances from all proposed buildings to the vegetation plots have now been included in the BMP. The actual separation distances have been provided to validate the BAL ratings for all proposed buildings. Table 5.3.1. has also been revised to include recommended construction requirements for other buildings / structures based on BAL ratings (as measured from vegetation).

Document Status: Client Review

Version	Prepared By	Reviewed By	Approved By	Date
DRAFT	P Nguyen	-	-	22/03/2022
A	P Nguyen	J Bridge	P Nguyen	04/04/2022
B	P Nguyen	-	P Nguyen	25/11/2022
C	P Nguyen	-	P Nguyen	02/02/2023

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Contents

1. Introduction and Background 1

1.1. Proponent 1

1.2. Site Location 1

1.3. Scope 2

1.4. Previous Planning 3

2. Development Proposal 4

2.1. Land Uses 4

2.2. Access Arrangement 4

2.3. Review of Access Arrangement 6

3. Existing Situation 10

3.1. Road Network 10

3.1.1. Layout and Hierarchy 10

3.1.2. Traffic Volumes – Bussell Highway 12

3.1.3. Traffic Volumes – Loretta Avenue 14

3.2. Changes to Surrounding Transport Networks 15

4. Transport Assessment 17

4.1. Assessment Parameters 17

4.2. Traffic Generation 17

4.2.1. Weekday 17

4.2.2. Weekend 18

4.3. Traffic Distribution 19

4.4. Traffic Impact 21

4.4.1. Mid-Block Capacity 21

4.4.2. Intersection Capacity 23

5. Road Safety 25

5.1. Crash History 25

6. Public Transport Access 26

7. Pedestrian / Cycle Access and Amenity 26
8. Parking Assessment 27
8.1. Car Parking 27
8.2. Parking Layout 27
9. Conclusions 28
Appendix A – SIDRA Intersection Analysis Results 29
Appendix B – Swept Paths 41

Figures

Figure 1: General Site Location 1
Figure 2: Aerial View of the Site (October 2022) 2
Figure 3: Approved Local Structure Plan 3
Figure 4: Proposed Site Layout and Access Arrangement 5
Figure 5: Pavement Widths 7
Figure 6: Road Reserve Widths 8
Figure 7: Existing Road Network Hierarchy 10
Figure 8: Existing Speed Limits 11
Figure 9: Bussell Highway - Average Weekday Traffic Counts 12
Figure 10: Bussell Highway - Average Weekend Traffic Counts 13
Figure 11: Loretta Avenue - Average Weekday Traffic Counts 14
Figure 12: Loretta Avenue - Average Weekend Traffic Counts 15
Figure 13: Bunbury Outer Ring Road Layout 16
Figure 14: Assignment of Peak Hour Site Traffic 20
Figure 15: Fluctuations in Traffic Volumes 21
Figure 16: Austroads Typical Mid-block Capacities for Urban Roads 22
Figure 17: Network Model Layout 23

Figure 18: Crash History January 2017 to December 2021 25

Tables

Table 1: Proposed Development Vehicle Trip Generation 17

Table 2: Peak Hour Directional Traffic Generation 17

Table 3: Resulting Mid-block Traffic Volumes 22

Table 4: Bussell Highway / Loretta Avenue - SIDRA Intersection Capacity Analysis Results Summary 24

Table 5: Car Parking Requirements (Q4) 27

1. Introduction and Background

1.1. Proponent

Shawmac Pty Ltd has been engaged by Able Planning on behalf of Vibe Petroleum to prepare a Transport Impact Assessment (TIA) for a proposed service station at 79 Bussell Highway in Gelorup.

1.2. Site Location

The general site location is shown in Figure 1. The local authority is the Shire of Capel.

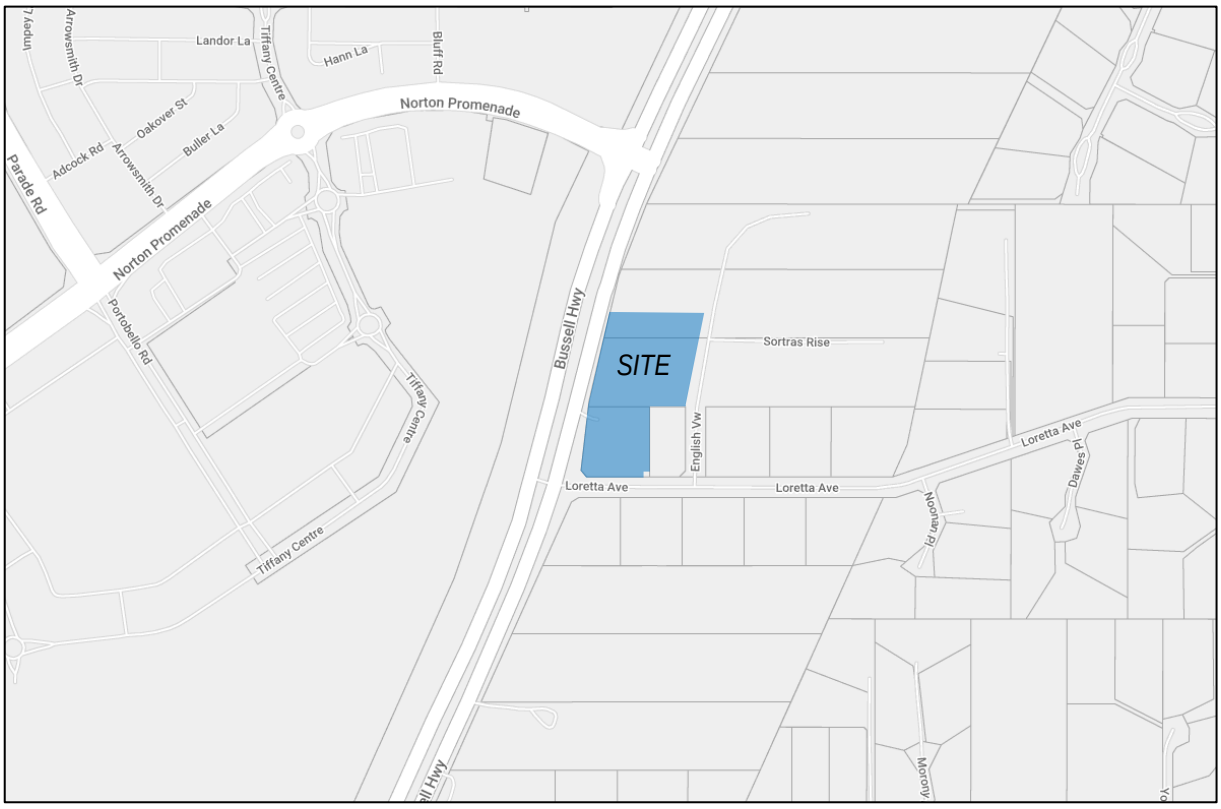


Figure 1: General Site Location

An aerial view of the existing site is shown in Figure 2.



Figure 2: Aerial View of the Site (October 2022)

1.3. Scope

This TIA has been prepared in accordance with the Western Australian Planning Commission's (WAPC) *Transport Impact Assessment Guidelines*. According to the TIA guidelines, the key objectives of a TIA are to:

- assess the proposed internal transport networks with respect to accessibility, circulation and safety for all modes, that is, vehicles, public transport, pedestrians and cyclists;
- assess the level of transport integration between the development and the surrounding land uses;
- determine the impacts of the traffic generated by the development on the surrounding land uses; and
- determine the impacts of the traffic generated by the development on the surrounding transport networks.

1.4. Previous Planning

A Local Structure Plan (LPS) covering the site was approved in 2015. The LSP is shown in Figure 3.

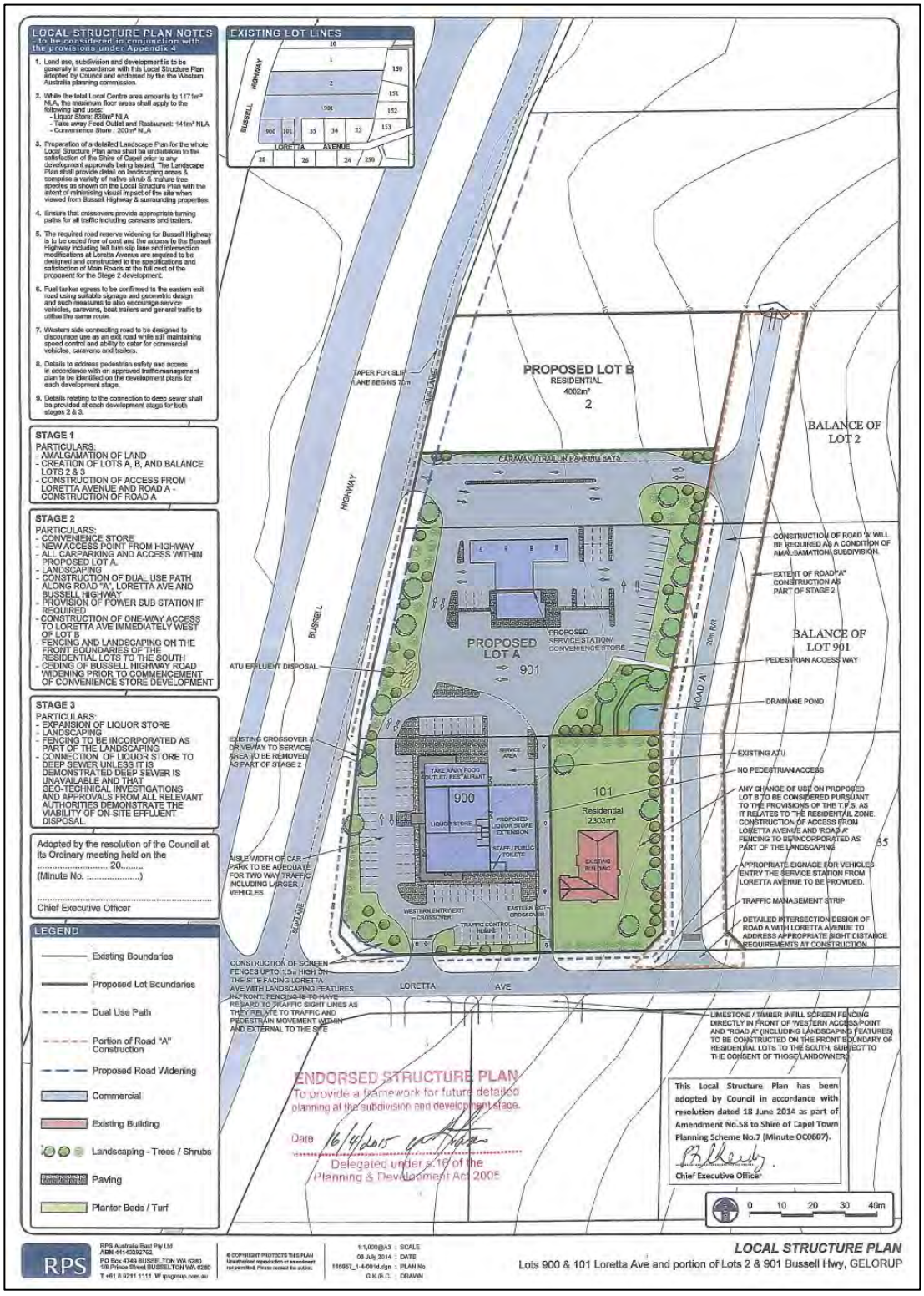


Figure 3: Approved Local Structure Plan

2. Development Proposal

2.1. Land Uses

The proposed development is a new service station comprising 8 light vehicle fuelling positions, 1 truck fuelling position a car wash with 4 wash bays, a convenience store and a café.

2.2. Access Arrangement

Vehicle access is proposed as follows:

- A left-in entry on Bussell Highway
- A full movement access on English View
- Two internal driveway connections to the existing BWS liquor store and café on the southern portion of the site which provide access to Loretta Avenue. The existing access to this development on Bussell Highway will be removed and the internal layout modified to suite.

The access arrangement is consistent with the approved Local Structure Plan.

Preliminary discussions were held between the client and Main Roads WA in previous years and it is understood that the following modifications would also be required as part of the development.

- Construction of a left turn lane on Bussell Highway into the proposed service station.
- Upgrading the existing left-turn lane into Loretta Avenue to a channelised left turn lane.
- Widening of the Bussell Highway road reserve to accommodate the above upgrades.
- New traffic islands at the Bussell Highway / Lorretta Avenue intersection including an island for the channelised left turn, a splitter island on Loretta Avenue and a seagull island along Bussell Highway.
- New pavement markings to suit the above modifications.

The proposed site layout and vehicle access arrangement is shown in Figure 4. The preliminary design of the Bussell Highway and Loretta Avenue upgrades have been included as previously provided by Main Roads WA (shown in red).

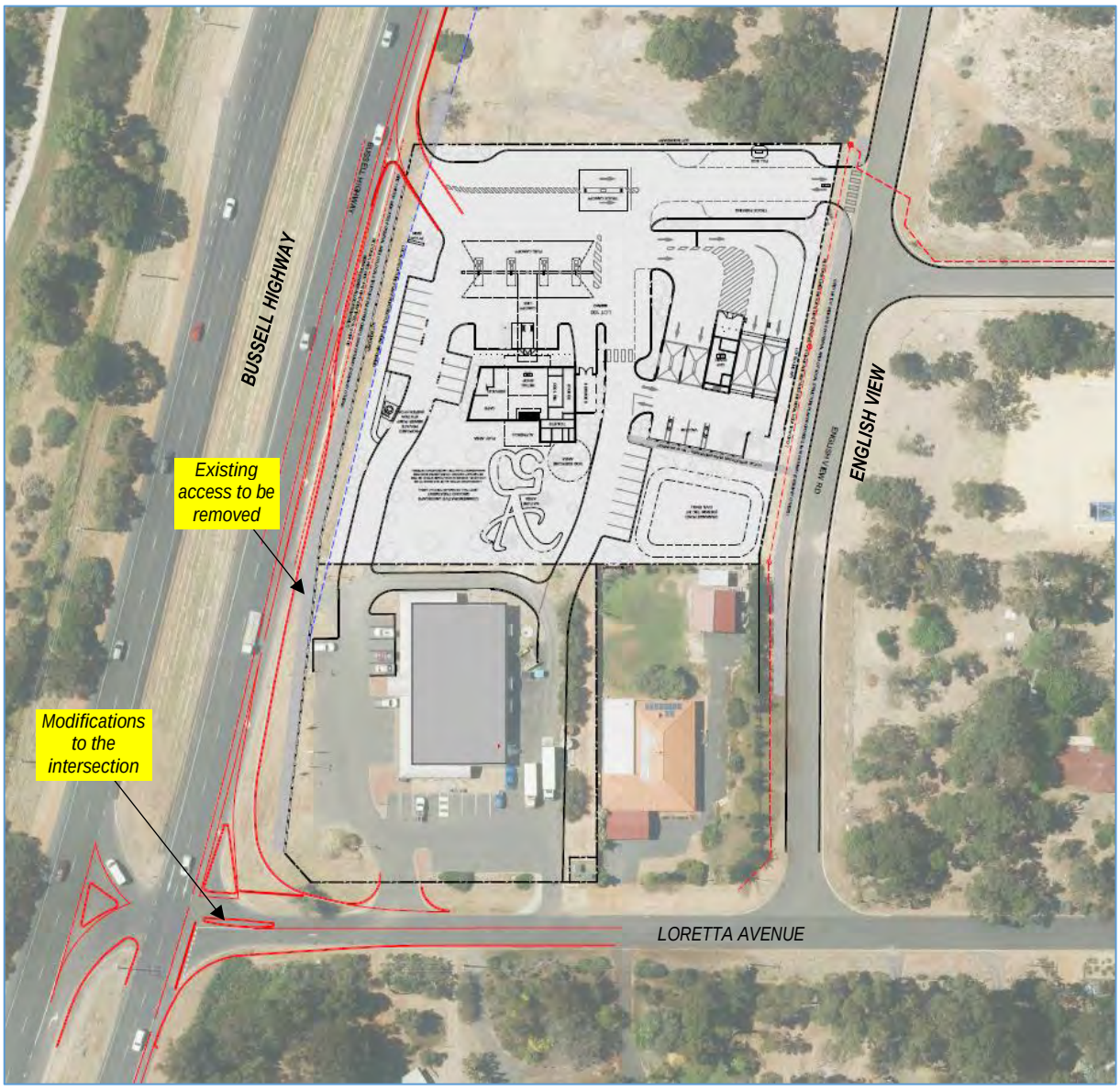


Figure 4: Proposed Site Layout and Access Arrangement

2.3. Review of Access Arrangement

It is understood that the Regional JDAP has raised concerns regarding the appropriateness of directing trucks onto the local road network of English View and Loretta Avenue, the potential conflict with residential traffic, pedestrians and cyclists and the traffic implications for development of the balance of the subject land.

The following is noted with regards the proposed access layout:

- Bussell Highway is a Primary Distributor Road and a state controlled road under the jurisdiction of Main Roads WA. The provision of access to Primary Distributor Roads is subject to the provisions of WAPC Development Control Policy 5.1 (DC5.1) which aims to restrict and rationalise access to key regional roads. Specifically, the following development requirements are outlined in DC5.1:
    - *In considering applications for access on regional roads, the effects of the proposals on traffic flow and road safety will be the primary consideration. The more important the regional road, the greater the importance attached to these factors. In general, the Commission will seek to minimise the creation of new driveways on regional roads and rationalise existing access arrangements.*
    - *Where regional roads are constructed or planned to freeway standards, no access to frontage development is permitted. On regional roads not constructed or planned to freeway standards, there is a general presumption on traffic and safety grounds against the creation of new driveways or increased use of existing accesses to these roads. Where alternative access is or could be made available from side or rear streets or from rights of way, no access shall be permitted to the regional road unless special circumstances apply.*
    - *An arrangement whereby adjoining owners enter into cross-easement agreements to provide reciprocal rights of access across adjacent lots may be required as a means of rationalising access to the regional road.*

  The proposed arrangement is consistent with the intent of DC5.1 by proposing access to side or rear streets and by minimising the creation of new access to Bussell Highway.
- The proposed access arrangement is consistent with the approved Local Structure Plan (shown previously in Figure 3) which includes an entry only to Bussell Highway, closure of the existing driveway on Bussell Highway and access on Road A / English View and on Loretta Avenue via the adjacent commercial site. Note 6 on the approved Local Structure Plan states "*Fuel tanker egress to be confirmed to the eastern exit road using suitable signage and geometric design and such measures to also encourage service vehicles, caravans, boat trailers and general traffic to use the same route*".
- Main Roads WA requirements include a left-turn deceleration lane for vehicles turning from Bussell Highway onto Loretta Avenue. The required length of this lane extends across the majority of the Bussell Highway frontage and so is not possible to provide additional access to the highway without accessing

Lorretta Avenue or English View Road.

- English View Road and Loretta Avenue have been constructed to a higher standard than a typical residential access road. Both roads have a 7.4m wide pavement and are within a 20m road reserve. Most other access roads in the area have a 5.5m to 6m wide pavement and are within a 13 to 15m road reserve. The pavement widths and road reserve widths are shown in Figure 5 and Figure 6.



Figure 5: Pavement Widths



Figure 6: Road Reserve Widths

- The largest vehicle proposed to access the site is a 19m semi-trailer which is an as-of-right vehicle that is permitted to travel on all roads where geometry permits.
- It is understood that the adjacent section of English View Road has been constructed with:
    - a structural pavement design (i.e. including subgrade, sub-base, base-course, primer and asphalt seal) that has been designed to withstand the screwing and general movements of larger vehicles;
    - semi-mountable kerbing to prevent damage the pavement edge and prevent vehicles parking on the verge of the subject lot (whereas elsewhere the kerbing becomes mountable kerb only); and
    - an asphalt surface that lessens tyre noise and attenuates general vehicle noise better than other pavement seals.
- With regards to pedestrian and cyclist safety, a 2.1m shared path is proposed along the adjacent sections of Bussell Highway, English View Road and Lorretta Avenue. The site plan indicates that zebra crossing pavement markings are proposed across the new crossover on English View Road and the Bussell Highway entry where the majority of heavy vehicles are likely to enter and exit. Similar markings could be implemented at the Loretta Avenue crossovers.
- The approved structure plan and local planning scheme provisions limit the potential uses and floor areas over the balance of the site. If the adjacent sites were developed for commercial use, they would likely be relatively small-scale uses generating mainly light vehicle traffic and minimal heavy vehicle movements, if any.
- Service stations rely on pass-by traffic and so the likely traffic volumes and composition depends on the traffic passing by the site. The latest traffic volumes along Bussell Highway indicate that the current heavy vehicle proportion is approximately 16.5%. The Bunbury Outer Ring Road (BORR) is currently being constructed and will ultimately draw a significant proportion of traffic, including heavy vehicle traffic, away from Bussell Highway and the local road network. Therefore, the heavy vehicle traffic generation potential of the site may reduce over time.
- With regards to the internal layout, the truck fuel bowser was amended from the previous layout and the internal layout adjusted to address comments from Main Roads WA and the Shire of Capel relating to appropriate stacking distance and potential queuing. It is understood that the Shire of Capel and Main Roads WA did not raise any further concerns with the proposal.
- If adjoining Lot 102 (also owned by Vibe Petroleum) is to be developed for a low-key commercial purpose (such as a medical centre, consulting rooms etc.) that are approvable in the applied Residential zone, it would be possible to modify the existing access layout and establish registered easements providing reciprocal rights of access across Lots 100 and 102 as a means of sharing existing crossovers and rationalising access to the regional road and local roads, even with further development.

3. Existing Situation

3.1. Road Network

3.1.1. Layout and Hierarchy

The layout and hierarchy of the existing local road network according to the Main Roads WA *Road Information Mapping System* is shown in Figure 7.

As shown, Bussell Highway is a Primarily Distributor Road which is controlled by Main Roads WA. In the vicinity of the site, Bussell Highway is constructed as a four-lane, dual carriageway road with a wide median.

Loretta Avenue and English View are both two-lane access roads which are managed by the Shire of Capel.

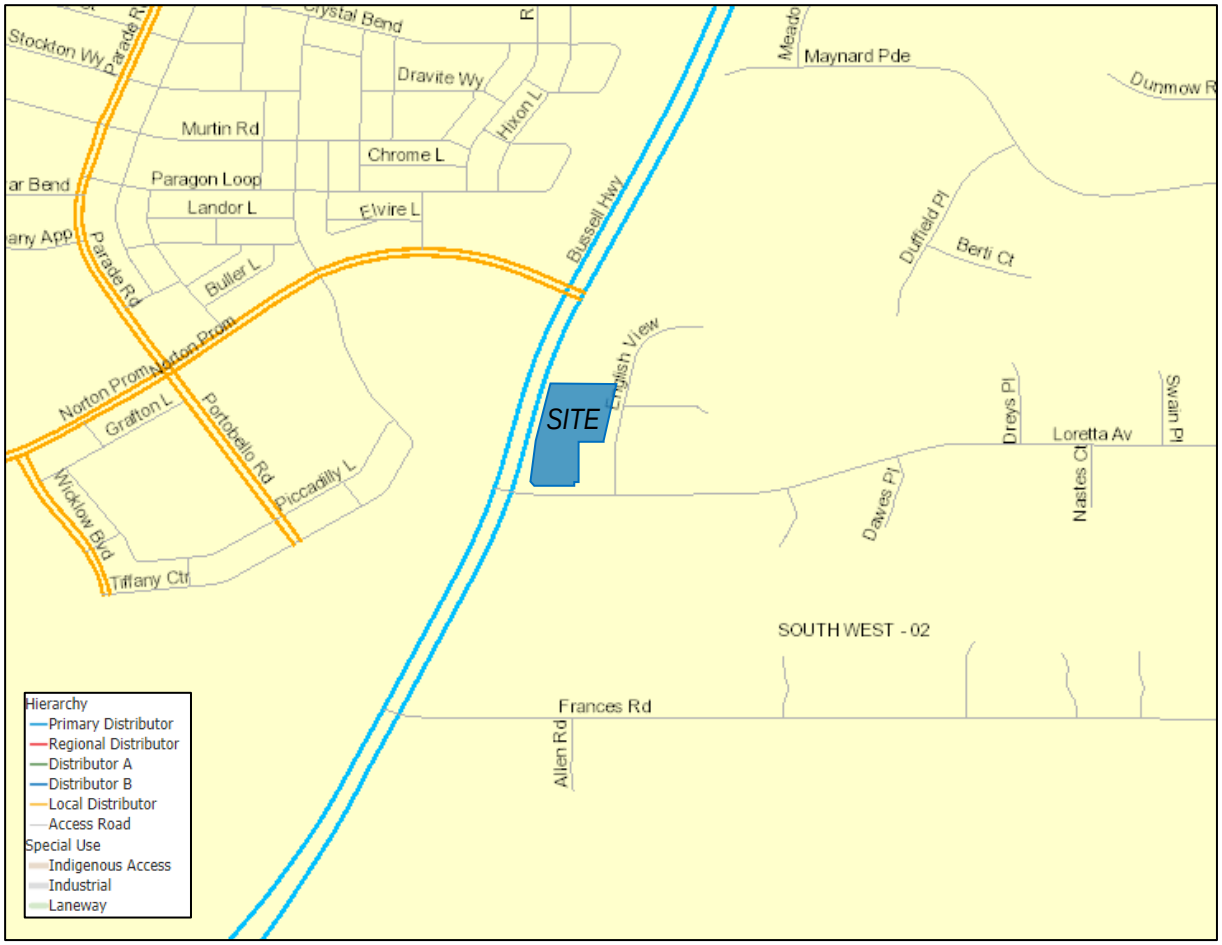


Figure 7: Existing Road Network Hierarchy

The existing speed limits are shown in Figure 8.

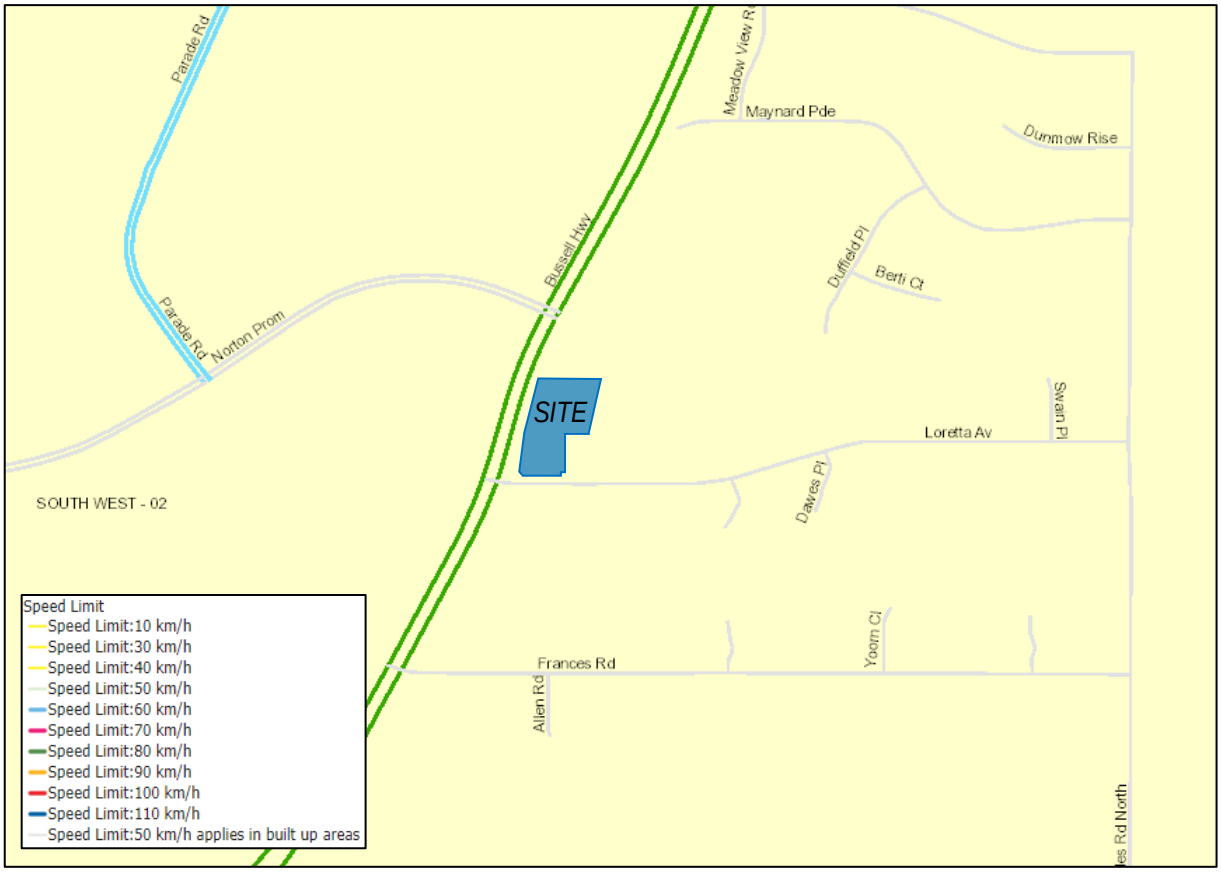


Figure 8: Existing Speed Limits

No speed limit is shown for English View and so it is assumed that the default speed limit of 50km/h applies.

3.1.2. Traffic Volumes – Bussell Highway

The latest traffic counts for Bussell Highway were obtained from the Main Roads WA *Traffic Map* as shown in Figure 9 and Figure 10. As shown, the daily traffic volume is higher on the weekday but the mid-day peak hour on the weekend is higher than both peak hours on the weekdays.

mainroads WESTERN AUSTRALIA

SITE 15074

Hourly Volume

Bussell Hwy (H043)

North of Hasties Rd (SLK 7.30)

2021/22

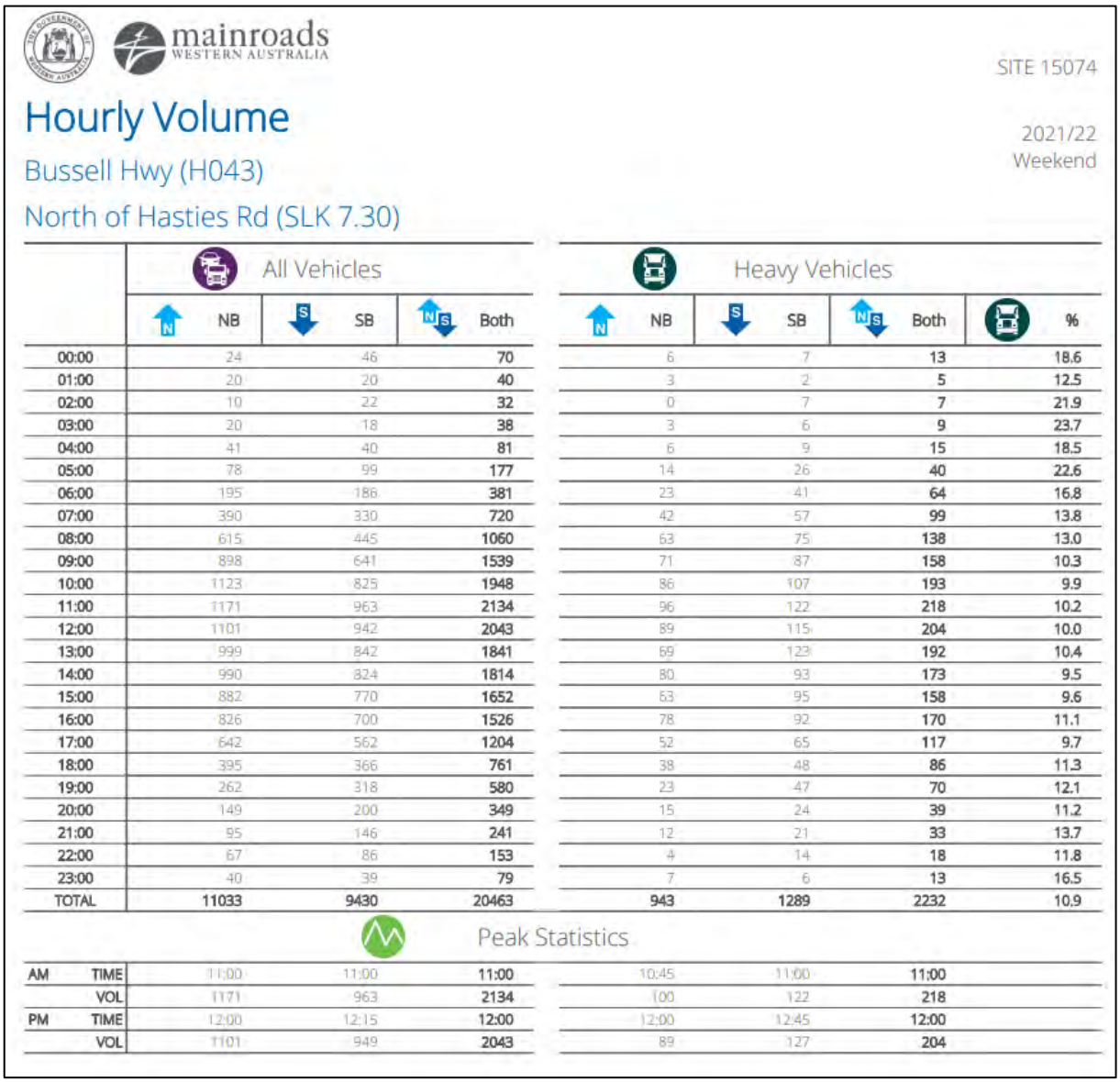
Monday to Friday

	All Vehicles			Heavy Vehicles			
	NB	SB	Both	NB	SB	Both	%
00:00	17	22	39	5	7	12	30.8
01:00	14	18	32	5	7	12	37.5
02:00	27	24	51	6	10	16	31.4
03:00	39	26	65	9	10	19	29.2
04:00	111	82	193	22	24	46	23.8
05:00	287	239	526	47	75	122	23.2
06:00	508	427	935	73	138	211	22.6
07:00	999	579	1578	120	162	282	17.9
08:00	1154	630	1784	135	159	294	16.5
09:00	842	603	1445	107	148	255	17.6
10:00	890	632	1522	127	141	268	17.6
11:00	847	792	1639	120	155	275	16.8
12:00	741	896	1637	106	159	265	16.2
13:00	693	927	1620	119	155	274	16.9
14:00	749	980	1729	131	162	293	16.9
15:00	803	1259	2062	125	196	321	15.6
16:00	781	1132	1913	108	166	274	14.3
17:00	652	1134	1786	81	161	242	13.5
18:00	407	615	1022	47	81	128	12.5
19:00	209	409	618	25	55	80	12.9
20:00	115	288	403	13	37	50	12.4
21:00	71	184	255	9	25	34	13.3
22:00	44	89	133	5	15	20	15.0
23:00	23	48	71	5	8	13	18.3
TOTAL	11023	12035	23058	1550	2256	3806	16.5

Peak Statistics

AM	TIME	07:30	11:45	07:45	07:45	07:45	07:45
	VOL	1251	878	1872	139	167	306
PM	TIME	14:45	15:15	15:15	14:00	15:00	15:00
	VOL	814	1261	2072	131	196	321

Figure 9: Bussell Highway - Average Weekday Traffic Counts



mainroads WESTERN AUSTRALIA

SITE 15074

Hourly Volume

Bussell Hwy (H043)

North of Hasties Rd (SLK 7.30)

2021/22
Weekend

	All Vehicles			Heavy Vehicles			
	NB	SB	Both	NB	SB	Both	%
00:00	24	46	70	6	7	13	18.6
01:00	20	20	40	3	2	5	12.5
02:00	10	22	32	0	7	7	21.9
03:00	20	18	38	3	6	9	23.7
04:00	41	40	81	6	9	15	18.5
05:00	78	99	177	14	26	40	22.6
06:00	195	186	381	23	41	64	16.8
07:00	390	330	720	42	57	99	13.8
08:00	615	445	1060	63	75	138	13.0
09:00	898	641	1539	71	87	158	10.3
10:00	1123	825	1948	86	107	193	9.9
11:00	1171	963	2134	96	122	218	10.2
12:00	1101	942	2043	89	115	204	10.0
13:00	999	842	1841	69	123	192	10.4
14:00	990	824	1814	80	93	173	9.5
15:00	882	770	1652	63	95	158	9.6
16:00	826	700	1526	78	92	170	11.1
17:00	642	562	1204	52	65	117	9.7
18:00	395	366	761	38	48	86	11.3
19:00	262	318	580	23	47	70	12.1
20:00	149	200	349	15	24	39	11.2
21:00	95	146	241	12	21	33	13.7
22:00	67	86	153	4	14	18	11.8
23:00	40	39	79	7	6	13	16.5
TOTAL	11033	9430	20463	943	1289	2232	10.9

Peak Statistics

AM	TIME	11:00	11:00	11:00	10:45	11:00	11:00
	VOL	1171	963	2134	100	122	218
PM	TIME	12:00	12:15	12:00	12:00	12:45	12:00
	VOL	1101	949	2043	89	127	204

Figure 10: Bussell Highway - Average Weekend Traffic Counts

3.1.3. Traffic Volumes – Loretta Avenue

The latest traffic counts for Loretta Avenue were also obtained from the Main Roads WA *Traffic Map* as shown in Figure 11 and Figure 12. As shown, the daily traffic and peak hour traffic volume is higher on the weekday than on the weekend.

mainroads WESTERN AUSTRALIA

SITE 53660

Hourly Volume

Loretta Av (2060071)

East of Bussell Hwy (SLK 0.05)

2022/23
Monday to Friday

	All Vehicles			Heavy Vehicles			
	EB	WB	Both	EB	WB	Both	%
00:00	0	1	1	0	0	0	0.0
01:00	0	1	1	0	0	0	0.0
02:00	0	0	0	0	0	0	0.0
03:00	0	0	0	0	0	0	0.0
04:00	2	2	4	1	0	1	25.0
05:00	15	7	22	7	2	9	40.9
06:00	3	12	15	2	2	4	26.7
07:00	9	23	32	4	3	7	21.9
08:00	15	34	49	4	4	8	16.3
09:00	16	18	34	5	3	8	23.5
10:00	16	21	37	5	4	9	24.3
11:00	22	25	47	8	2	10	21.3
12:00	23	27	50	7	2	9	18.0
13:00	20	29	49	6	2	8	16.3
14:00	28	45	73	10	4	14	19.2
15:00	44	50	94	13	4	17	18.1
16:00	47	71	118	15	5	20	16.9
17:00	41	61	102	11	5	16	15.7
18:00	21	29	50	4	3	7	14.0
19:00	11	9	20	2	0	2	10.0
20:00	6	4	10	1	0	1	10.0
21:00	5	2	7	1	0	1	14.3
22:00	2	1	3	0	0	0	0.0
23:00	0	0	0	0	0	0	0.0
TOTAL	346	472	818	106	45	151	18.5

Peak Statistics

AM	TIME	11:15	07:30	07:45	04:30	07:30	10:30
	VOL	23	42	54	8	5	10
PM	TIME	16:30	16:15	16:15	15:30	17:45	15:30
	VOL	48	72	119	16	5	21

Figure 11: Loretta Avenue - Average Weekday Traffic Counts

mainroads WESTERN AUSTRALIA

SITE 53660

Hourly Volume

Loretta Av (2060071)

East of Bussell Hwy (SLK 0.05)

2022/23
Weekend

	All Vehicles			Heavy Vehicles			
	EB	WB	Both	EB	WB	Both	%
00:00	1	1	2	0	0	0	0.0
01:00	1	2	3	0	0	0	0.0
02:00	1	1	2	0	0	0	0.0
03:00	0	1	1	0	0	0	0.0
04:00	1	1	2	0	0	0	0.0
05:00	1	2	3	0	1	1	33.3
06:00	1	2	3	0	0	0	0.0
07:00	4	9	13	1	1	2	15.4
08:00	8	18	26	4	2	6	23.1
09:00	13	23	36	3	1	4	11.1
10:00	24	27	51	7	2	9	17.6
11:00	27	38	65	7	2	9	13.8
12:00	30	32	62	8	2	10	16.1
13:00	28	34	62	7	1	8	12.9
14:00	31	39	70	7	3	10	14.3
15:00	25	31	56	8	1	9	16.1
16:00	28	32	60	5	2	7	11.7
17:00	32	31	63	6	1	7	11.1
18:00	20	19	39	5	1	6	15.4
19:00	9	7	16	2	1	3	18.8
20:00	4	6	10	1	0	1	10.0
21:00	8	5	13	0	0	0	0.0
22:00	1	4	5	0	0	0	0.0
23:00	2	3	5	0	0	0	0.0
TOTAL	300	368	668	71	21	92	13.8

Peak Statistics

AM	TIME	11:30	11:30	11:30	11:15	07:30	11:15
	VOL	35	42	77	9	3	12
PM	TIME	17:15	14:00	14:00	14:30	13:45	14:15
	VOL	33	39	70	9	4	12

Figure 12: Loretta Avenue - Average Weekend Traffic Counts

3.2. Changes to Surrounding Transport Networks

The most significant change to the surrounding road network is the proposed Bunbury Outer Ring Road (BORR) which is a 27km section of highway that will bypass Australind, Bunbury and Dalyellup. The BORR will remove a significant number of trucks from local roads which will improve safety and congestion. It is expected to redirect between 10,000 and 15,000 vehicles per day from Bussell Highway and the local road network. Construction of the BORR commenced in February 2021 and expected to be completed in 2024.

The layout of the BORR is shown in Figure 13.



Figure 13: Bunbury Outer Ring Road Layout

4. Transport Assessment

4.1. Assessment Parameters

Transport Impact Assessments generally include consideration of two development horizons including:

- The year that the development is completed and operational which is currently estimated to be 2023.
- 10 years after opening which would be 2033.

As service stations rely on pass-by traffic, the critical peak hours for assessment would be the peak hours on the road network which would be the afternoon peak hour on a weekday (3 to 4pm) and the mid-day peak hour on a weekend (11am to 12pm).

4.2. Traffic Generation

4.2.1. Weekday

The volume of traffic generated by the development on a weekday has been estimated using standard vehicle trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation*.

The estimated trip generation is calculated in Table 1.

Table 1: Proposed Development Vehicle Trip Generation

Land Use	Units	Quantity	Generation Rate			Number of Trips		
			Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak
Service Station with Convenience Store and Car Wash	Fuelling Positions	9	152.84	11.84	13.86	1376	107	125
Café (High Turnover / Sit Down Restaurant)	Seats	68	4.83	0.47	0.41	328	32	28
					Total	1704	139	153

Table 2 shows the split of inbound and outbound development traffic during the peak hours.

Table 2: Peak Hour Directional Traffic Generation

Land Use	AM Peak				PM Peak			
	% In	% Out	Trips In	Trips Out	% In	% Out	Trips In	Trips Out
Service Station with Convenience Store and Car Wash	51%	49%	55	52	51%	49%	64	61
Café (High Turnover / Sit Down Restaurant)	52%	48%	17	15	57%	43%	16	12
Total			72	67			80	73

ITE suggests that approximately 56% of service station (with convenience stores) vehicle trips are “pass-by” trips which are trips that are already on the road network that would divert to the site and then continue on. This proportion is likely to be higher considering the relatively remote location of the site.

Similarly, approximately 43% of café vehicle trips are pass by trips already on the road network. In this instance, the proportion may be even higher considering many café customers will also be fuel station customers. Regardless a 43% reduction has been applied conservatively.

The net increase in traffic on the adjacent road network resulting from the development is therefore approximately 792 vehicles per day, 65 vehicles during the morning peak hour and 71 vehicles during the afternoon peak hour.

According to the WAPC TIA guidelines, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact and is generally accepted as being acceptable without requiring detailed capacity analysis.

The estimated 65 to 71 additional peak hour vehicles around the middle to upper end of this range and so the development traffic is considered to have a moderate impact on the road network.

4.2.2. Weekend

There is limited information on weekend trip generation rates for service stations. As service stations rely on pass-by traffic, it is assumed that difference in weekday and weekend traffic generation is proportional to the difference in weekday and weekend traffic on the adjacent road network. The weekend daily traffic volume on Bussell Highway is approximately 90% of the weekday daily traffic and the weekend mid-day peak hour traffic volume is approximately 103% of the weekday PM peak hour traffic.

On this basis, the weekend traffic generation of the proposed service station is estimated to be 1,533 vehicles per day and 158 vehicles during the mid-day peak hour (83 in / 75 out).

With pass-by trips excluded, the net increase in weekend traffic generation is estimated to be 713 vehicles per day and 73 vehicles during the mid-day peak hour.

4.3. Traffic Distribution

It is assumed that development traffic would be distributed as follows:

- 90% to/from Bussell Highway
- 5% to/from English View
- 5% to/from Loretta Avenue

The north/south split of traffic along Bussell Highway has been derived from intersection counts at the nearby Bussell Highway / Frances Road intersection which is approximately 85% north / 15% south during the morning peak and 92% north / 8% south during the afternoon peak. It is assumed that the distribution during the weekend peak is the same as the weekday PM peak.

All vehicles entering from the north along Bussell Highway are assumed to use the northern entrance. For vehicles entering from the south via Loretta Avenue, 75% are assumed to enter the site via the Loretta Avenue crossovers and 25% are assumed to continue on and enter via English View.

It is assumed that most refuelling trucks and larger vehicles would leave via the English View crossover due to the orientation of the truck bowser. The remainder of the development traffic are most likely to return to Bussell Highway via the Loretta Avenue crossovers as most vehicles will be oriented in this direction when leaving the bowsers and car was bays and this would be the shortest and most direct route to Bussell Highway. On this basis, exiting traffic is split 25% via the English View crossover and 75% via the Loretta Avenue crossover.`

The development traffic has been assigned to the road network based on the above distribution as shown in Figure 14. It was also assumed that all development traffic would use the Lorretta Avenue access other than inbound left-turns from the north.

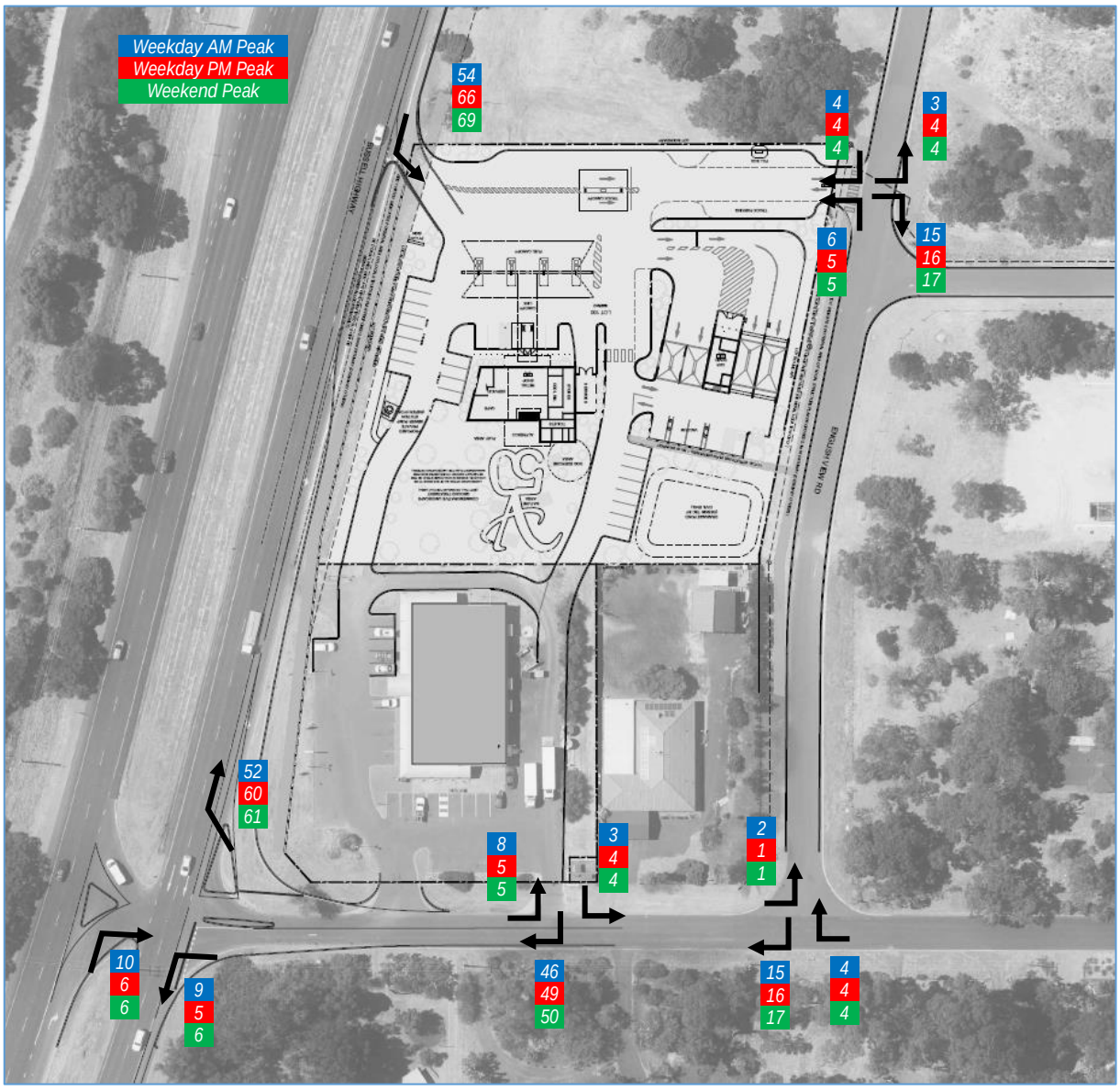


Figure 14: Assignment of Peak Hour Site Traffic

4.4. Traffic Impact

4.4.1. Mid-Block Capacity

The base traffic flows for Bussell Highway were obtained from Main Roads WA *Traffic Map*. Historical traffic counts along Bussell Highway indicate that traffic volumes have increased by approximately 3% per year as shown in Figure 15.

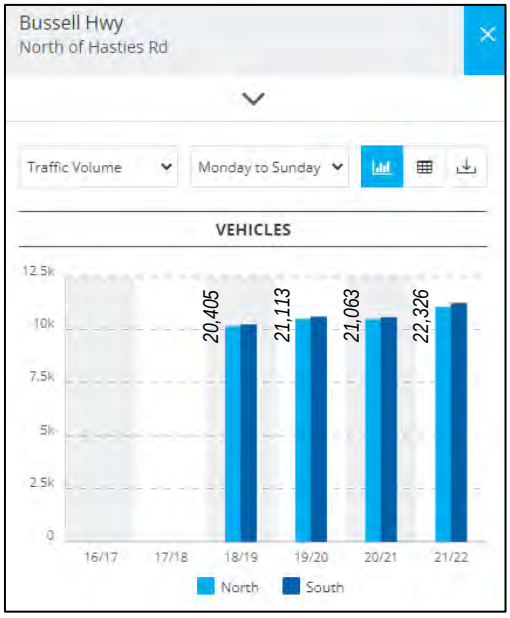


Figure 15: Fluctuations in Traffic Volumes

On this basis, the background traffic flows along Bussell Highway have been factored up by 3% per year to account for ongoing development in the area up to the two development horizons (2023 and 2033).

The resulting traffic along the adjacent road network is summarised in Table 3. For Bussell Highway, only the net increase in traffic has been added as a large proportion of development trips will be pass by traffic already on the road network.

Table 3: Resulting Mid-block Traffic Volumes

Road	Time Period	Service Station Traffic	Existing Traffic Volume	2023 Base Traffic Volume	2023 Traffic Volume with Development	2033 Base Traffic Volume	2033 Traffic Volume with Development
Bussell Highway	Weekday Daily	+792	23,058	24,462	25,254	32,875	33,667
	Weekday AM Peak	+65	1,784	1,893	1,958	2,544	2,609
	Weekday PM Peak	+71	2,062	2,188	2,259	2,940	3,005
	Weekend Daily	+713	20,463	21,709	22,422	29,175	29,888
	Weekend Midday Peak	+73	2,134	2,264	2,337	3,043	3,116
Loretta Avenue	Weekday Daily	+1,619	818	818	2,437	818	2,437
	Weekday AM Peak	+132	49	49	181	49	181
	Weekday PM Peak	+145	118	118	263	118	263
	Weekend Daily	+1,456	668	668	2,124	668	2,124
	Weekend Midday Peak	+150	70	70	220	70	220

According to Liveable Neighbourhoods, the target daily traffic volume is 20,000 to 35,000vpd for a four-lane primary distributor road and 3,000vpd for an access road. The above daily traffic volumes are within the target daily traffic volumes for the category of each road.

The typical hourly mid-block capacities for urban roads (per traffic lane) according to Austroads *Guide to Traffic Management Part 3: Traffic Studies and Analysis* are detailed in Figure 16.

Table 5.1: Typical mid-block capacities for urban roads with interrupted flow

Type of lane	One-way mid-block capacity (pc/h)
Median or inner lane	
Divided road	1000
Undivided road	900
Middle lane (of a 3 lane carriageway)	
Divided road	900
Undivided road	1000
Kerb lane	
Adjacent to parking lane	900
Occasional parked vehicles	600
Clearway conditions	900

Source: Table 5.1 in Austroads (2013).

Figure 16: Austroads Typical Mid-block Capacities for Urban Roads

The above peak hour traffic volumes are also within the hourly lane capacity of each road. It is noted that this is a very conservative assessment is it is likely that traffic volumes will initially drop significantly after the BORR is constructed.

The base traffic volumes along English View are not known but it is reasonable to assume that they would be much lower than the existing volumes along Loretta Avenue. Therefore, the post-development traffic flows along English View will remain well within the typical thresholds for an Access Road and are not considered to impact the traffic amenity of this road to an unacceptable level.

As mentioned previously, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact. The estimated increase in peak hour traffic along English View resulting from the proposed development is in the order of 21 to 21 vehicles which is at the lower end of the above range and is therefore expected to have a low impact.

4.4.2. Intersection Capacity

The peak hour capacity of the Bussell Highway / Loretta Avenue intersection has been analysed in SIDRA Intersection 9.1 in accordance with Main Roads WA's *Operational Modelling Guidelines*. The site was modelled as a network to account for the staged right turns. The layout was modelled with a channelised left turn lane as advised by Main Roads WA. The modelled layout is shown in Figure 17.

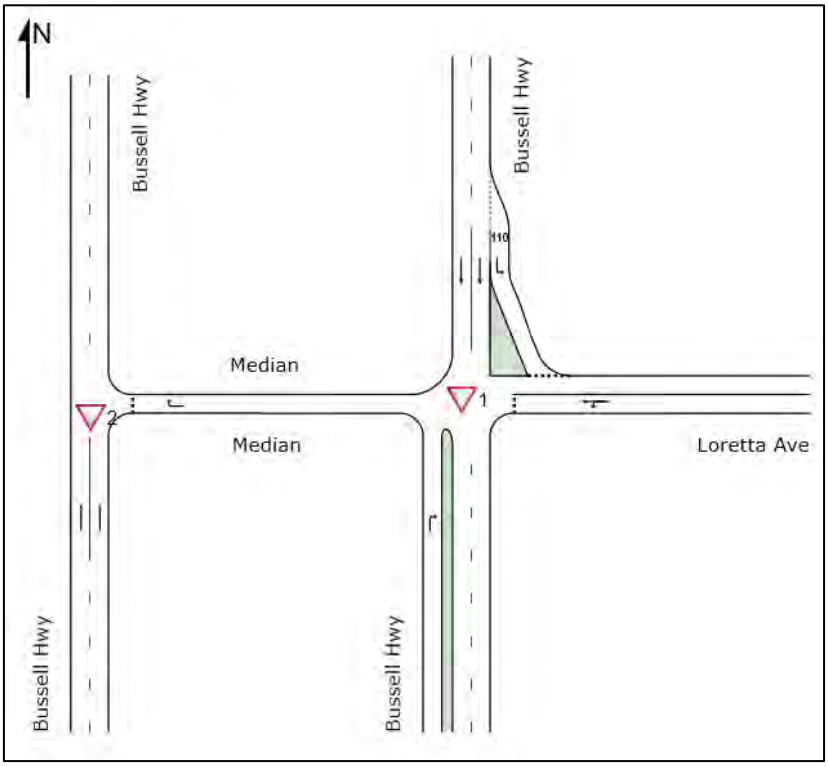


Figure 17: Network Model Layout

The results of the assessment are attached as Appendix A and summarised in Table 4.

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Table 4: Bussell Highway / Loretta Avenue - SIDRA Intersection Capacity Analysis Results Summary

Scenario	DOS	Average Delay	Worst Delay	Maximum Queue	Average LOS	Worst LOS
2023 Weekday AM Peak – without development	0.334	0.3s	10.9s	0.4m	A	B
2023 Weekday AM Peak – with development	0.334	0.7s	11.0s	1.0m	A/B	B
2023 Weekday PM Peak – without development	0.373	0.7s	23.2s	1.5m	B	C
2023 Weekday PM Peak – with development	0.373	1.2s	23.6s	3.3m	B	C
2023 Weekend Peak – without development	0.332	0.4s	14.8s	0.6m	A/B	B
2023 Weekend Peak – with development	0.332	0.8s	15.0s	1.6m	A/B	C
2033 Weekday AM Peak – without development	0.449	0.3s	13.7s	0.4s	A/B	B
2033 Weekday AM Peak – with development	0.449	0.7s	14.0s	1.3m	A/B	B
2033 Weekday PM Peak – without development	0.502	1.0s	57.7s	3.2m	C/D	F
2033 Weekday PM Peak – with development	0.637	2.0s	59.6s	7.5m	C/D	F
2033 Weekend Peak – without development	0.446	0.4s	23.7s	0.8m	B	C
2033 Weekend Peak – with development	0.446	0.8s	24.2s	2.5m	B	C

The results shows that the Bussell Highway / Loretta Avenue intersection will operate within capacity for all 2023 scenarios. All measures of intersection performance (degree of saturation, average delay, queueing and level of service) are well within acceptable thresholds.

The 2033 scenario operates mostly within capacity except for the weekday PM peak hour during which the right turn from Bussell Highway is predicted to operate at Level of Service F mainly due to the high volume of southbound traffic during this peak hour. The operation of this movement is considered to be acceptable based on the following:

- As most development is located towards the north, a relatively low number of vehicles is expected to turn right into Loretta Avenue from the south and so very few vehicles will be impacted.
- The operation of this movement is similar both with and without the development traffic. The site traffic only increases the average delay of this movement by 2 seconds.
- The assessment has not considered the likely significant decrease in traffic (especially heavy vehicle traffic) that will result from the completion of the BORR. The actual performance is likely to be much better than indicated by the model.

It is also noted that the volume of traffic turning left from Bussell Highway into Loretta Avenue may reduce due to the proposed left-in access for the service station to the north.

On this basis, the traffic generated by the proposed can be accommodated within the capacity of the existing road network.

5. Road Safety

5.1. Crash History

The crash history of the adjacent road network was obtained from the MRWA Reporting Centre. The search included English View, Loretta Avenue between Bussell Highway and English View and Bussell Highway between Norton Promenade and Frances Road.

A summary of the recorded incidents over the five-year period ending December 2021 is shown in Figure 18.

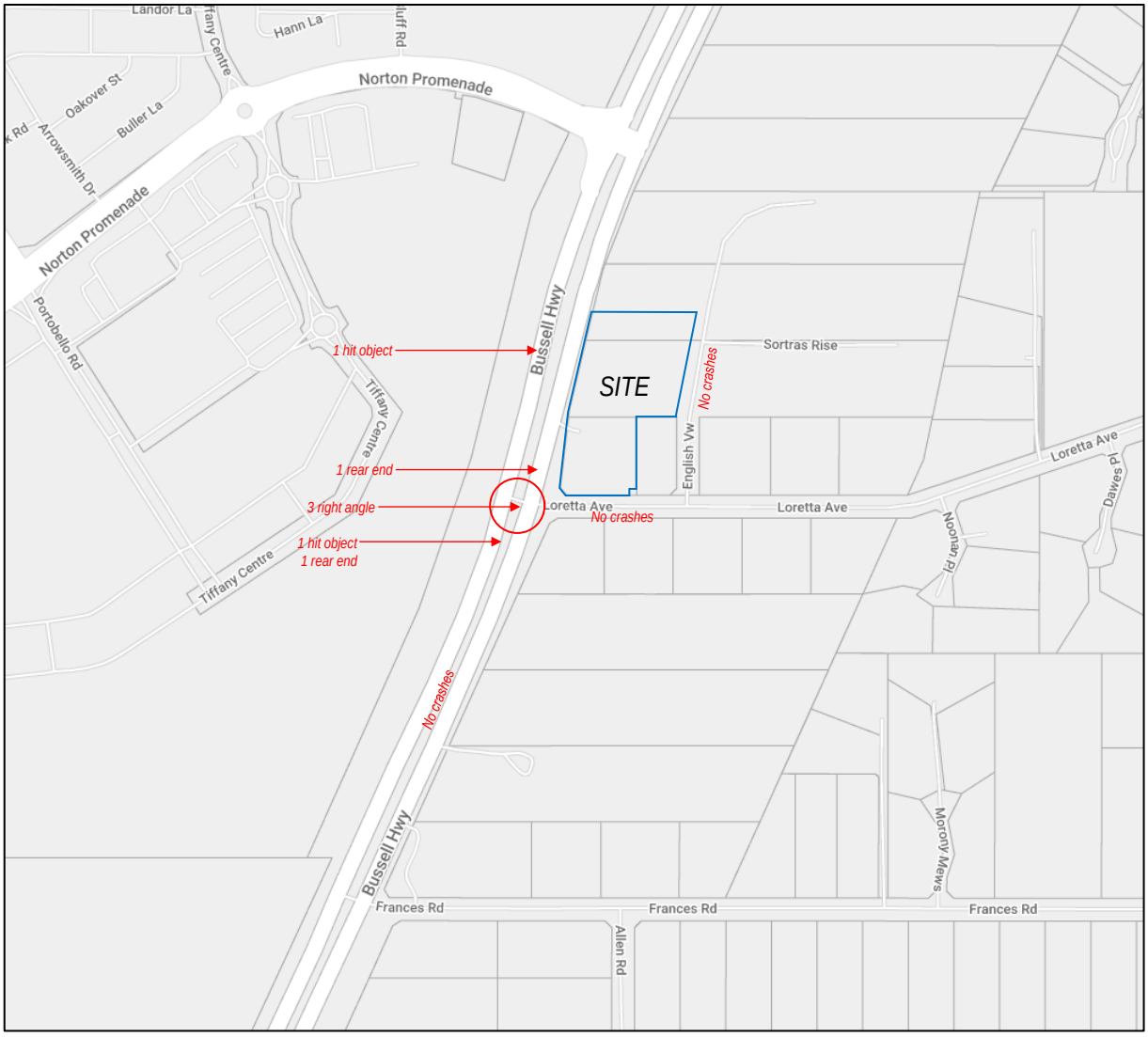


Figure 18: Crash History January 2017 to December 2021

As shown, the occurrence of crashes on the adjacent road network is relatively low compared to the traffic volumes and do not indicate any significant safety issue.

6. Public Transport Access

There are no existing public transport services within walking distance of the site. Public transport coverage is typically lower in regional areas and there is a higher reliance on private vehicle travel.

The proposed use will rely mostly on car travel and so additional public transport services are not warranted by the development.

7. Pedestrian / Cycle Access and Amenity

The only existing path infrastructure near the site is a path along the western side of Bussell Highway.

As above, the proposed use will rely mostly on car travel and so additional pedestrian and cycle infrastructure is warranted by the development.

8. Parking Assessment

8.1. Car Parking

The minimum car parking requirements for developments within the Shire of Capel are outlined in the Shire's Local Planning Scheme (LPS7). There is no ratio listed for a car wash and so the provision is calculated based on the number of employees which is the only likely parking demand

The parking requirements for the development are calculated in Table 5.

Table 5: Car Parking Requirements (Q4)

Land Use	Unit	Requirement	Quantum	Required Bays
Service Station	Employee	1 bay per employee	4	4
Café	Seats	1 bay for every 4 seats	68	17
Car Wash	Employee	1 bay per employee	2	2
Total Required				23

As shown, the development requires 23 bays.

The development plans indicate that 30 bays will be provided which exceeds the calculated requirements.

8.2. Parking Layout

A swept path analysis has been undertaken to ensure that the proposed access and internal site layout is adequate for the largest vehicle proposed to access the site which is expected to be a 19.0m semi-trailer.

A swept path has also been undertaken for a service / delivery vehicle which will need to access the service bay adjoining the main building. This has been undertaken using the Australian Standard 8.8m Medium Rigid Vehicle which is a typical sized service vehicle.

The swept path sketches are attached as Appendix B. These demonstrate that the site layout is adequate for the proposed vehicles.

9. Conclusions

The Transport Impact Assessment for the proposed service station at 79 Bussell Highway in Gelorup concluded the following:

- The proposed access arrangement is consistent with the approved Local Structure Plan, WAPC Development Control Policy 5.1 and is considered to be appropriate with regards to impact on the adjacent local road network.
- On a weekday, the development is estimated to generate 1,704 daily vehicle trips, including 139 trips during the morning peak hour and 153 trips during the afternoon peak hour. With pass by trips excluded, the net increase in traffic generation on a weekday is 792 vehicles per day, 65 vehicles during the morning peak hour and 71 vehicles during the afternoon peak hour.
- On a weekend day, the development is estimated to generate 1,533 daily vehicle trips, including 158 trips during the midday peak hour. With pass by trips excluded, the net increase in traffic generation on a weekend day is 713 vehicles per day and 73 vehicles during the midday peak hour.
- The expected post-development, mid-block traffic volumes are within the existing lane capacity of the road network.
- A peak hour capacity analysis of the Bussell Highway / Loretta Avenue intersection indicates that there will be sufficient capacity to accommodate the development traffic at opening and in the longer term scenario.
- Under the 2033 scenario, the right turn from Bussell Highway is predicted to operate at Level of Service F mainly due to the high volume of southbound traffic during this peak hour. The operation of this movement is considered to be acceptable as only a low number of vehicles will be impacted by this movement and there is little difference between the operation with and without the proposed development. It is also noted that the capacity analysis did not account for the likely significant drop in traffic volumes along Bussell Highway once the Bunbury Outer Ring Road is opened.
- The crash history of the adjacent road network did not identify any major safety issue.
- The demand for public transport use, walking and cycling is expected to be low and the provision of additional services or path infrastructure is not warranted by the development.
- 23 car parking bays are required to satisfy the minimum requirements of the City's Local Planning Scheme. The proposed 30 bays satisfies the minimum requirements.
- A swept path analysis has demonstrated that the site layout is adequate for the proposed vehicles.

Appendix A – SIDRA Intersection Analysis Results

MOVEMENT SUMMARY

Site: 1 [Weekday AM Peak - Stage 1 (Site Folder: 2023 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday AM Peak (Network Folder: 2023 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h]	Demand Flows [HV] %	Arrival Flows [Total veh/h]	Arrival Flows [HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh]	Aver. Back Of Queue [Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	2	0.0	2	0.0	0.003	10.9	LOS B	0.0	0.0	0.57	0.66	0.57	50.8
Approach			2	0.0	2	0.0	0.003	10.9	NA	0.0	0.0	0.57	0.66	0.57	50.8
East: Loretta Ave															
1	L2	All MCs	5	0.0	5	0.0	0.033	5.8	LOS A	0.1	0.4	0.51	0.77	0.51	49.8
2	T1	All MCs	29	0.0	29	0.0	0.033	10.5	LOS B	0.1	0.4	0.51	0.77	0.51	39.5
Approach			34	0.0	34	0.0	0.033	9.8	LOS A	0.1	0.4	0.51	0.77	0.51	41.7
North: Bussell Hwy															
4	L2	All MCs	13	0.0	13	0.0	0.006	7.3	LOS A	0.0	0.1	0.02	0.60	0.02	53.8
5	T1	All MCs	669	25.3	669	25.3	0.198	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			682	24.8	682	24.8	0.198	0.2	LOS A	0.0	0.1	0.00	0.01	0.00	79.1
All Vehicles			718	23.5	718	23.5	0.198	0.7	NA	0.1	0.4	0.03	0.05	0.03	77.1

MOVEMENT SUMMARY

Site: 2 [Weekday AM Peak - Stage 2 (Site Folder: 2023 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday AM Peak (Network Folder: 2023 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h]	Demand Flows [HV] %	Arrival Flows [Total veh/h]	Arrival Flows [HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh]	Aver. Back Of Queue [Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1224	11.7	1224	11.7	0.334	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			1224	11.7	1224	11.7	0.334	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.7
East: Median															
3	R2	All MCs	29	0.0	29	0.0	0.022	1.4	LOS A	0.0	0.2	0.46	0.41	0.46	45.3
Approach			29	0.0	29	0.0	0.022	1.4	LOS A	0.0	0.2	0.46	0.41	0.46	45.3
All Vehicles			1253	11.4	1253	11.4	0.334	0.1	NA	0.0	0.2	0.01	0.01	0.01	79.0

MOVEMENT SUMMARY

Site: 1 [Weekday PM Peak - Stage 1 (Site Folder: 2023 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday PM Peak (Network Folder: 2023 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h]	HV [ ] %	Arrival Flows [Total veh/h]	HV [ ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh]	Aver. Back Of Queue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	4	0.0	4	0.0	0.019	23.2	LOS C	0.0	0.2	0.86	0.95	0.86	43.4
Approach			4	0.0	4	0.0	0.019	23.2	NA	0.0	0.2	0.86	0.95	0.86	43.4
East: Loretta Ave															
1	L2	All MCs	6	0.0	6	0.0	0.154	8.1	LOS A	0.2	1.5	0.78	0.95	0.78	46.3
2	T1	All MCs	65	0.0	65	0.0	0.154	16.1	LOS C	0.2	1.5	0.78	0.95	0.78	35.3
Approach			71	0.0	71	0.0	0.154	15.5	LOS C	0.2	1.5	0.78	0.95	0.78	36.6
North: Bussell Hwy															
4	L2	All MCs	43	0.0	43	0.0	0.020	7.3	LOS A	0.0	0.3	0.03	0.60	0.03	53.8
5	T1	All MCs	1336	15.6	1336	15.6	0.373	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			1379	15.1	1379	15.1	0.373	0.3	LOS A	0.0	0.3	0.00	0.02	0.00	78.5
All Vehicles			1454	14.3	1454	14.3	0.373	1.1	NA	0.2	1.5	0.04	0.07	0.04	75.9

MOVEMENT SUMMARY

Site: 2 [Weekday PM Peak - Stage 2 (Site Folder: 2023 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday PM Peak (Network Folder: 2023 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h]	HV [ ] %	Arrival Flows [Total veh/h]	HV [ ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh]	Aver. Back Of Queue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	852	15.6	852	15.6	0.238	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			852	15.6	852	15.6	0.238	0.0	NA	0.0	0.0	0.00	0.00	0.00	79.8
East: Median															
3	R2	All MCs	65	0.0	65	0.0	0.040	0.8	LOS A	0.0	0.3	0.37	0.30	0.37	45.9
Approach			65	0.0	65	0.0	0.040	0.8	LOS A	0.0	0.3	0.37	0.30	0.37	45.9
All Vehicles			917	14.5	917	14.5	0.238	0.1	NA	0.0	0.3	0.03	0.02	0.03	77.6

MOVEMENT SUMMARY

▽ Site: 1 [Weekend Midday Peak - Stage 1 (Site Folder: 2023 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekend Midday Peak (Network Folder: 2023 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	2	0.0	2	0.0	0.005	14.8	LOS B	0.0	0.0	0.73	0.77	0.73	48.2
Approach			2	0.0	2	0.0	0.005	14.8	NA	0.0	0.0	0.73	0.77	0.73	48.2
East: Loretta Ave															
1	L2	All MCs	3	0.0	3	0.0	0.055	6.7	LOS A	0.1	0.6	0.63	0.88	0.63	48.4
2	T1	All MCs	36	0.0	36	0.0	0.055	12.4	LOS B	0.1	0.6	0.63	0.88	0.63	37.8
Approach			39	0.0	39	0.0	0.055	12.0	LOS B	0.1	0.6	0.63	0.88	0.63	39.0
North: Bussell Hwy															
4	L2	All MCs	29	0.0	29	0.0	0.014	7.3	LOS A	0.0	0.2	0.02	0.60	0.02	53.8
5	T1	All MCs	1021	12.6	1021	12.6	0.280	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			1050	12.3	1050	12.3	0.280	0.3	LOS A	0.0	0.2	0.00	0.02	0.00	78.7
All Vehicles			1091	11.8	1091	11.8	0.280	0.7	NA	0.1	0.6	0.02	0.05	0.02	77.1

MOVEMENT SUMMARY

▽ Site: 2 [Weekend Midday Peak - Stage 2 (Site Folder: 2023 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekend Midday Peak (Network Folder: 2023 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1242	8.2	1242	8.2	0.332	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			1242	8.2	1242	8.2	0.332	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.8
East: Median															
3	R2	All MCs	36	0.0	36	0.0	0.028	1.4	LOS A	0.0	0.2	0.47	0.42	0.47	45.3
Approach			36	0.0	36	0.0	0.028	1.4	LOS A	0.0	0.2	0.47	0.42	0.47	45.3
All Vehicles			1278	8.0	1278	8.0	0.332	0.1	NA	0.0	0.2	0.01	0.01	0.01	78.8

MOVEMENT SUMMARY

Site: 1 [Weekday AM Peak - Stage 1 (Site Folder: 2023 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday AM Peak (Network Folder: 2023 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	12	0.0	12	0.0	0.019	11.0	LOS B	0.0	0.2	0.57	0.74	0.57	50.7
Approach			12	0.0	12	0.0	0.019	11.0	NA	0.0	0.2	0.57	0.74	0.57	50.7
East: Loretta Ave															
1	L2	All MCs	14	0.0	14	0.0	0.094	5.9	LOS A	0.1	1.0	0.53	0.82	0.53	49.7
2	T1	All MCs	81	0.0	81	0.0	0.094	10.7	LOS B	0.1	1.0	0.53	0.82	0.53	39.4
Approach			95	0.0	95	0.0	0.094	10.0	LOS A	0.1	1.0	0.53	0.82	0.53	41.6
North: Bussell Hwy															
4	L2	All MCs	13	0.0	13	0.0	0.006	7.3	LOS A	0.0	0.1	0.05	0.59	0.05	53.7
5	T1	All MCs	669	25.3	669	25.3	0.198	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			682	24.8	682	24.8	0.198	0.2	LOS A	0.0	0.1	0.00	0.01	0.00	79.1
All Vehicles			789	21.4	789	21.4	0.198	1.5	NA	0.1	1.0	0.07	0.12	0.07	73.6

MOVEMENT SUMMARY

Site: 2 [Weekday AM Peak - Stage 2 (Site Folder: 2023 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday AM Peak (Network Folder: 2023 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1224	11.7	1224	11.7	0.334	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			1224	11.7	1224	11.7	0.334	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.7
East: Median															
3	R2	All MCs	81	0.0	81	0.0	0.062	1.5	LOS A	0.1	0.5	0.48	0.46	0.48	45.3
Approach			81	0.0	81	0.0	0.062	1.5	LOS A	0.1	0.5	0.48	0.46	0.48	45.3
All Vehicles			1305	11.0	1305	11.0	0.334	0.2	NA	0.1	0.5	0.03	0.03	0.03	77.7

MOVEMENT SUMMARY

▽ Site: 1 [Weekday PM Peak - Stage 1 (Site Folder: 2023 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday PM Peak (Network Folder: 2023 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	10	0.0	10	0.0	0.048	23.6	LOS C	0.1	0.4	0.86	0.95	0.86	43.2
Approach			10	0.0	10	0.0	0.048	23.6	NA	0.1	0.4	0.86	0.95	0.86	43.2
East: Loretta Ave															
1	L2	All MCs	11	0.0	11	0.0	0.298	9.2	LOS A	0.5	3.3	0.81	1.00	0.96	45.4
2	T1	All MCs	125	0.0	125	0.0	0.298	17.6	LOS C	0.5	3.3	0.81	1.00	0.96	34.3
Approach			136	0.0	136	0.0	0.298	16.9	LOS C	0.5	3.3	0.81	1.00	0.96	35.6
North: Bussell Hwy															
4	L2	All MCs	43	0.0	43	0.0	0.020	7.3	LOS A	0.0	0.3	0.05	0.59	0.05	53.7
5	T1	All MCs	1336	15.6	1336	15.6	0.373	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			1379	15.1	1379	15.1	0.373	0.3	LOS A	0.0	0.3	0.00	0.02	0.00	78.5
All Vehicles			1525	13.6	1525	13.6	0.373	1.9	NA	0.5	3.3	0.08	0.11	0.09	73.6

MOVEMENT SUMMARY

▽ Site: 2 [Weekday PM Peak - Stage 2 (Site Folder: 2023 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday PM Peak (Network Folder: 2023 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	852	15.6	852	15.6	0.238	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			852	15.6	852	15.6	0.238	0.0	NA	0.0	0.0	0.00	0.00	0.00	79.8
East: Median															
3	R2	All MCs	125	0.0	125	0.0	0.077	0.9	LOS A	0.1	0.6	0.37	0.32	0.37	45.9
Approach			125	0.0	125	0.0	0.077	0.9	LOS A	0.1	0.6	0.37	0.32	0.37	45.9
All Vehicles			977	13.6	977	13.6	0.238	0.2	NA	0.1	0.6	0.05	0.04	0.05	75.8

MOVEMENT SUMMARY

Site: 1 [Weekend Midday Peak - Stage 1 (Site Folder: 2023 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekend Midday Peak (Network Folder: 2023 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	8	0.0	8	0.0	0.021	15.0	LOS C	0.0	0.2	0.73	0.86	0.73	48.1
Approach			8	0.0	8	0.0	0.021	15.0	NA	0.0	0.2	0.73	0.86	0.73	48.1
East: Loretta Ave															
1	L2	All MCs	9	0.0	9	0.0	0.149	6.8	LOS A	0.2	1.6	0.65	0.93	0.65	48.2
2	T1	All MCs	97	0.0	97	0.0	0.149	12.8	LOS B	0.2	1.6	0.65	0.93	0.65	37.6
Approach			106	0.0	106	0.0	0.149	12.3	LOS B	0.2	1.6	0.65	0.93	0.65	38.9
North: Bussell Hwy															
4	L2	All MCs	29	0.0	29	0.0	0.014	7.3	LOS A	0.0	0.2	0.04	0.59	0.04	53.8
5	T1	All MCs	1021	12.6	1021	12.6	0.280	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			1050	12.3	1050	12.3	0.280	0.3	LOS A	0.0	0.2	0.00	0.02	0.00	78.7
All Vehicles			1164	11.1	1164	11.1	0.280	1.5	NA	0.2	1.6	0.07	0.10	0.07	74.4

MOVEMENT SUMMARY

Site: 2 [Weekend Midday Peak - Stage 2 (Site Folder: 2023 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekend Midday Peak (Network Folder: 2023 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1242	8.2	1242	8.2	0.332	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			1242	8.2	1242	8.2	0.332	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.8
East: Median															
3	R2	All MCs	97	0.0	97	0.0	0.075	1.5	LOS A	0.1	0.6	0.48	0.47	0.48	45.2
Approach			97	0.0	97	0.0	0.075	1.5	LOS A	0.1	0.6	0.48	0.47	0.48	45.2
All Vehicles			1339	7.6	1339	7.6	0.332	0.2	NA	0.1	0.6	0.03	0.03	0.03	77.4

MOVEMENT SUMMARY

Site: 1 [Weekday AM Peak - Stage 1 (Site Folder: 2033 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday AM Peak (Network Folder: 2033 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	2	0.0	2	0.0	0.005	13.7	LOS B	0.0	0.0	0.70	0.74	0.70	48.9
Approach			2	0.0	2	0.0	0.005	13.7	NA	0.0	0.0	0.70	0.74	0.70	48.9
East: Loretta Ave															
1	L2	All MCs	5	0.0	5	0.0	0.043	6.5	LOS A	0.1	0.4	0.59	0.84	0.59	49.0
2	T1	All MCs	29	0.0	29	0.0	0.043	11.9	LOS B	0.1	0.4	0.59	0.84	0.59	38.5
Approach			34	0.0	34	0.0	0.043	11.1	LOS B	0.1	0.4	0.59	0.84	0.59	40.7
North: Bussell Hwy															
4	L2	All MCs	13	0.0	13	0.0	0.006	7.3	LOS A	0.0	0.1	0.02	0.60	0.02	53.8
5	T1	All MCs	899	25.3	899	25.3	0.266	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			912	24.9	912	24.9	0.266	0.2	LOS A	0.0	0.1	0.00	0.01	0.00	79.2
All Vehicles			948	23.9	948	23.9	0.266	0.6	NA	0.1	0.4	0.02	0.04	0.02	77.6

MOVEMENT SUMMARY

Site: 2 [Weekday AM Peak - Stage 2 (Site Folder: 2033 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday AM Peak (Network Folder: 2033 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1645	11.7	1645	11.7	0.449	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach			1645	11.7	1645	11.7	0.449	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.6
East: Median															
3	R2	All MCs	29	0.0	29	0.0	0.031	2.5	LOS A	0.0	0.2	0.62	0.62	0.62	44.2
Approach			29	0.0	29	0.0	0.031	2.5	LOS A	0.0	0.2	0.62	0.62	0.62	44.2
All Vehicles			1674	11.5	1674	11.5	0.449	0.2	NA	0.0	0.2	0.01	0.01	0.01	79.0

MOVEMENT SUMMARY

▽ Site: 1 [Weekday PM Peak - Stage 1 (Site Folder: 2033 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday PM Peak (Network Folder: 2033 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	4	0.0	4	0.0	0.060	57.7	LOS F	0.1	0.5	0.96	0.98	0.96	30.8
Approach			4	0.0	4	0.0	0.060	57.7	NA	0.1	0.5	0.96	0.98	0.96	30.8
East: Loretta Ave															
1	L2	All MCs	6	0.0	6	0.0	0.328	13.9	LOS B	0.5	3.2	0.92	1.02	1.07	39.8
2	T1	All MCs	65	0.0	65	0.0	0.328	29.6	LOS D	0.5	3.2	0.92	1.02	1.07	28.4
Approach			71	0.0	71	0.0	0.328	28.3	LOS D	0.5	3.2	0.92	1.02	1.07	29.7
North: Bussell Hwy															
4	L2	All MCs	43	0.0	43	0.0	0.020	7.3	LOS A	0.0	0.3	0.03	0.60	0.03	53.8
5	T1	All MCs	1795	15.5	1795	15.5	0.502	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			1838	15.2	1838	15.2	0.502	0.3	LOS A	0.0	0.3	0.00	0.01	0.00	78.6
All Vehicles			1913	14.6	1913	14.6	0.502	1.5	NA	0.5	3.2	0.04	0.05	0.04	75.7

MOVEMENT SUMMARY

▽ Site: 2 [Weekday PM Peak - Stage 2 (Site Folder: 2033 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday PM Peak (Network Folder: 2033 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1145	15.5	1145	15.5	0.320	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			1145	15.5	1145	15.5	0.320	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.8
East: Median															
3	R2	All MCs	65	0.0	65	0.0	0.048	1.3	LOS A	0.1	0.4	0.45	0.42	0.45	45.4
Approach			65	0.0	65	0.0	0.048	1.3	LOS A	0.1	0.4	0.45	0.42	0.45	45.4
All Vehicles			1210	14.7	1210	14.7	0.320	0.1	NA	0.1	0.4	0.02	0.02	0.02	78.0

MOVEMENT SUMMARY

▽ Site: 1 [Weekend Midday Peak - Stage 1 (Site Folder: 2033 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekend Midday Peak (Network Folder: 2033 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	2	0.0	2	0.0	0.010	23.7	LOS C	0.0	0.1	0.86	0.92	0.86	43.2
Approach			2	0.0	2	0.0	0.010	23.7	NA	0.0	0.1	0.86	0.92	0.86	43.2
East: Loretta Ave															
1	L2	All MCs	3	0.0	3	0.0	0.086	8.0	LOS A	0.1	0.8	0.77	0.95	0.77	46.3
2	T1	All MCs	36	0.0	36	0.0	0.086	16.0	LOS C	0.1	0.8	0.77	0.95	0.77	35.3
Approach			39	0.0	39	0.0	0.086	15.4	LOS C	0.1	0.8	0.77	0.95	0.77	36.5
North: Bussell Hwy															
4	L2	All MCs	29	0.0	29	0.0	0.014	7.3	LOS A	0.0	0.2	0.02	0.60	0.02	53.8
5	T1	All MCs	1373	12.7	1373	12.7	0.377	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			1402	12.4	1402	12.4	0.377	0.2	LOS A	0.0	0.2	0.00	0.01	0.00	78.9
All Vehicles			1443	12.1	1443	12.1	0.377	0.7	NA	0.1	0.8	0.02	0.04	0.02	77.5

MOVEMENT SUMMARY

▽ Site: 2 [Weekend Midday Peak - Stage 2 (Site Folder: 2033 without development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekend Midday Peak (Network Folder: 2033 without development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1670	8.2	1670	8.2	0.446	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach			1670	8.2	1670	8.2	0.446	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.6
East: Median															
3	R2	All MCs	36	0.0	36	0.0	0.039	2.5	LOS A	0.0	0.3	0.62	0.62	0.62	44.2
Approach			36	0.0	36	0.0	0.039	2.5	LOS A	0.0	0.3	0.62	0.62	0.62	44.2
All Vehicles			1706	8.0	1706	8.0	0.446	0.2	NA	0.0	0.3	0.01	0.01	0.01	78.9

MOVEMENT SUMMARY

▽ Site: 1 [Weekday AM Peak - Stage 1 (Site Folder: 2033 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday AM Peak (Network Folder: 2033 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	12	0.0	12	0.0	0.028	14.0	LOS B	0.0	0.3	0.70	0.85	0.70	48.7
Approach			12	0.0	12	0.0	0.028	14.0	NA	0.0	0.3	0.70	0.85	0.70	48.7
East: Loretta Ave															
1	L2	All MCs	14	0.0	14	0.0	0.121	6.6	LOS A	0.2	1.3	0.61	0.90	0.61	48.8
2	T1	All MCs	81	0.0	81	0.0	0.121	12.2	LOS B	0.2	1.3	0.61	0.90	0.61	38.3
Approach			95	0.0	95	0.0	0.121	11.3	LOS B	0.2	1.3	0.61	0.90	0.61	40.5
North: Bussell Hwy															
4	L2	All MCs	13	0.0	13	0.0	0.006	7.3	LOS A	0.0	0.1	0.05	0.59	0.05	53.7
5	T1	All MCs	899	25.3	899	25.3	0.266	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			912	24.9	912	24.9	0.266	0.2	LOS A	0.0	0.1	0.00	0.01	0.00	79.2
All Vehicles			1019	22.3	1019	22.3	0.266	1.4	NA	0.2	1.3	0.07	0.10	0.07	74.6

MOVEMENT SUMMARY

▽ Site: 2 [Weekday AM Peak - Stage 2 (Site Folder: 2033 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday AM Peak (Network Folder: 2033 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1645	11.7	1645	11.7	0.449	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach			1645	11.7	1645	11.7	0.449	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.6
East: Median															
3	R2	All MCs	81	0.0	81	0.0	0.087	2.6	LOS A	0.1	0.6	0.63	0.63	0.63	44.1
Approach			81	0.0	81	0.0	0.087	2.6	LOS A	0.1	0.6	0.63	0.63	0.63	44.1
All Vehicles			1726	11.1	1726	11.1	0.449	0.2	NA	0.1	0.6	0.03	0.03	0.03	78.0

MOVEMENT SUMMARY

▽ Site: 1 [Weekday PM Peak - Stage 1 (Site Folder: 2033 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday PM Peak (Network Folder: 2033 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	10	0.0	10	0.0	0.151	59.6	LOS F	0.2	1.2	0.96	0.99	0.97	30.3
Approach			10	0.0	10	0.0	0.151	59.6	NA	0.2	1.2	0.96	0.99	0.97	30.3
East: Loretta Ave															
1	L2	All MCs	11	0.0	11	0.0	0.637	22.5	LOS C	1.1	7.5	0.95	1.14	1.49	36.1
2	T1	All MCs	125	0.0	125	0.0	0.637	39.1	LOS E	1.1	7.5	0.95	1.14	1.49	24.8
Approach			136	0.0	136	0.0	0.637	37.7	LOS E	1.1	7.5	0.95	1.14	1.49	26.0
North: Bussell Hwy															
4	L2	All MCs	43	0.0	43	0.0	0.020	7.3	LOS A	0.0	0.3	0.05	0.59	0.05	53.7
5	T1	All MCs	1795	15.5	1795	15.5	0.502	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			1838	15.2	1838	15.2	0.502	0.3	LOS A	0.0	0.3	0.00	0.01	0.00	78.6
All Vehicles			1984	14.1	1984	14.1	0.637	3.2	NA	1.1	7.5	0.07	0.10	0.11	72.3

MOVEMENT SUMMARY

▽ Site: 2 [Weekday PM Peak - Stage 2 (Site Folder: 2033 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekday PM Peak (Network Folder: 2033 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1145	15.5	1145	15.5	0.320	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			1145	15.5	1145	15.5	0.320	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.8
East: Median															
3	R2	All MCs	125	0.0	125	0.0	0.093	1.4	LOS A	0.1	0.7	0.46	0.46	0.46	45.3
Approach			125	0.0	125	0.0	0.093	1.4	LOS A	0.1	0.7	0.46	0.46	0.46	45.3
All Vehicles			1270	14.0	1270	14.0	0.320	0.2	NA	0.1	0.7	0.05	0.05	0.05	76.5

MOVEMENT SUMMARY

Site: 1 [Weekend Midday Peak - Stage 1 (Site Folder: 2033 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Network: N101 [Weekend Midday Peak (Network Folder: 2033 with development)]

NA
Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
12	R2	All MCs	8	0.0	8	0.0	0.040	24.2	LOS C	0.0	0.3	0.87	0.95	0.87	42.9
Approach			8	0.0	8	0.0	0.040	24.2	NA	0.0	0.3	0.87	0.95	0.87	42.9
East: Loretta Ave															
1	L2	All MCs	12	0.0	12	0.0	0.240	8.8	LOS A	0.4	2.5	0.80	0.98	0.88	45.8
2	T1	All MCs	97	0.0	97	0.0	0.240	17.2	LOS C	0.4	2.5	0.80	0.98	0.88	34.8
Approach			109	0.0	109	0.0	0.240	16.3	LOS C	0.4	2.5	0.80	0.98	0.88	36.5
North: Bussell Hwy															
4	L2	All MCs	29	0.0	29	0.0	0.014	7.3	LOS A	0.0	0.2	0.04	0.59	0.04	53.8
5	T1	All MCs	1373	12.7	1373	12.7	0.377	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			1402	12.4	1402	12.4	0.377	0.2	LOS A	0.0	0.2	0.00	0.01	0.00	78.9
All Vehicles			1519	11.5	1519	11.5	0.377	1.5	NA	0.4	2.5	0.06	0.09	0.07	74.9

MOVEMENT SUMMARY

Site: 2 [Weekend Midday Peak - Stage 2 (Site Folder: 2033 with development)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

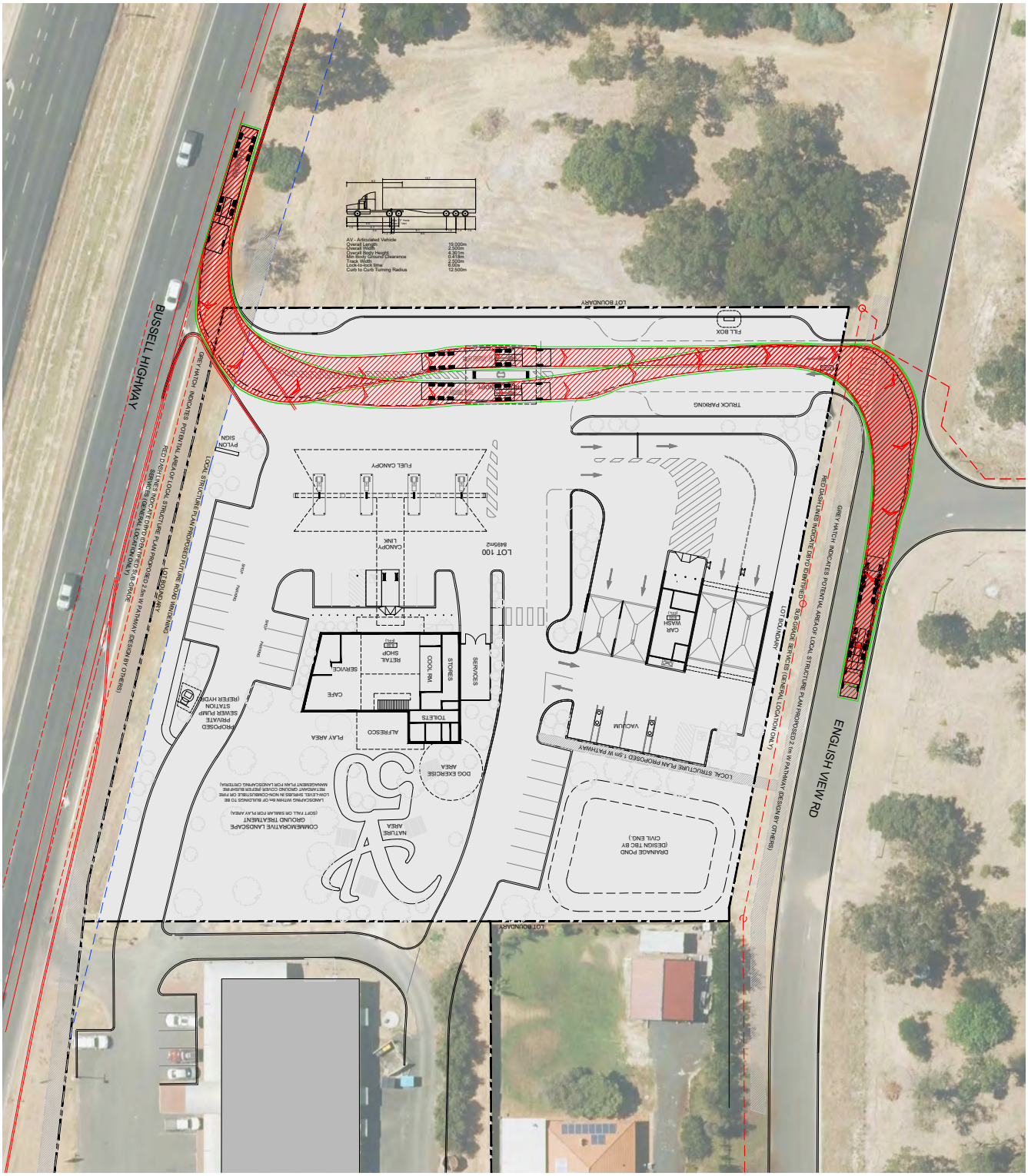
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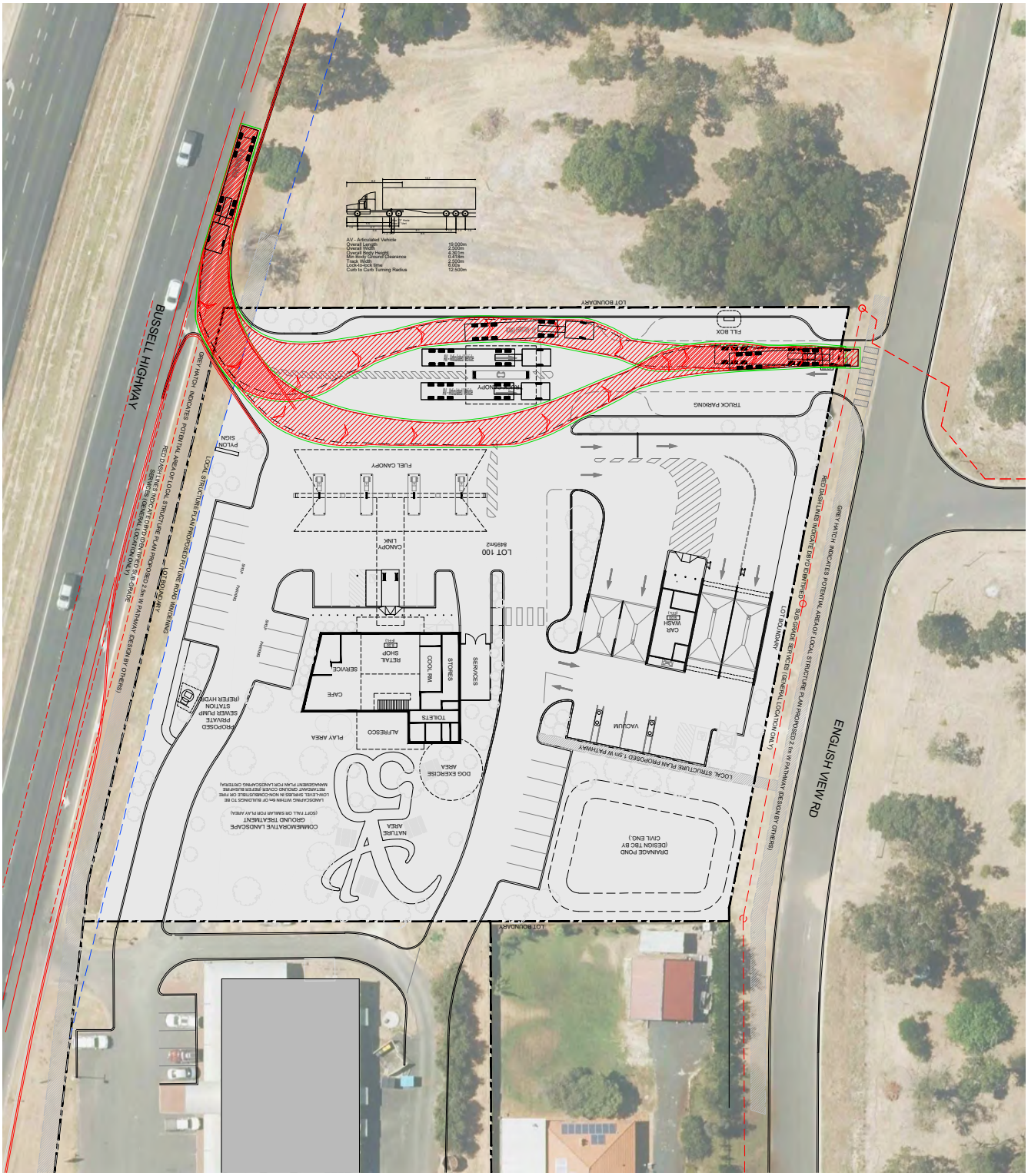
NA
Site Category: NA
Give-Way (Two-Way)

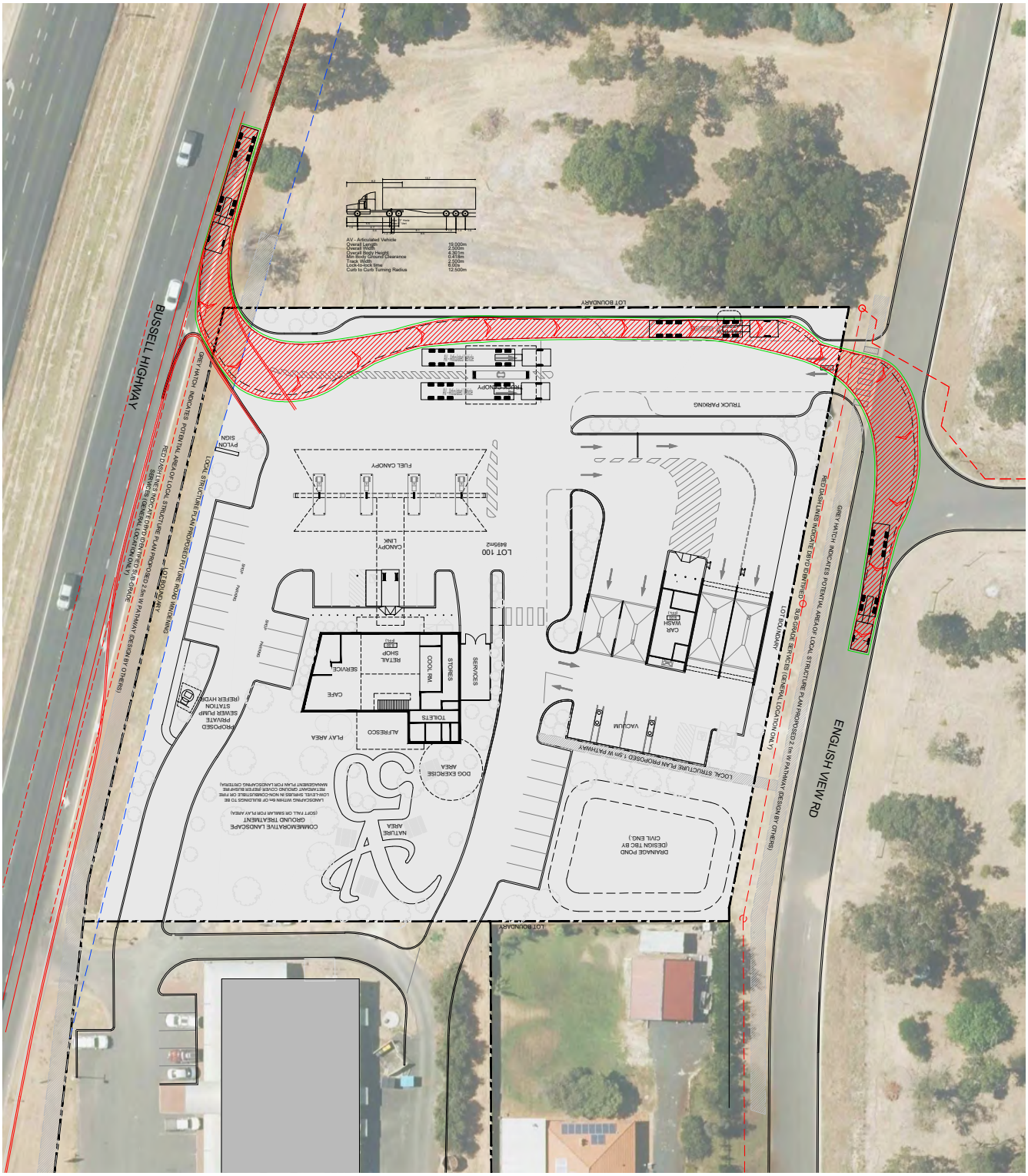
Vehicle Movement Performance

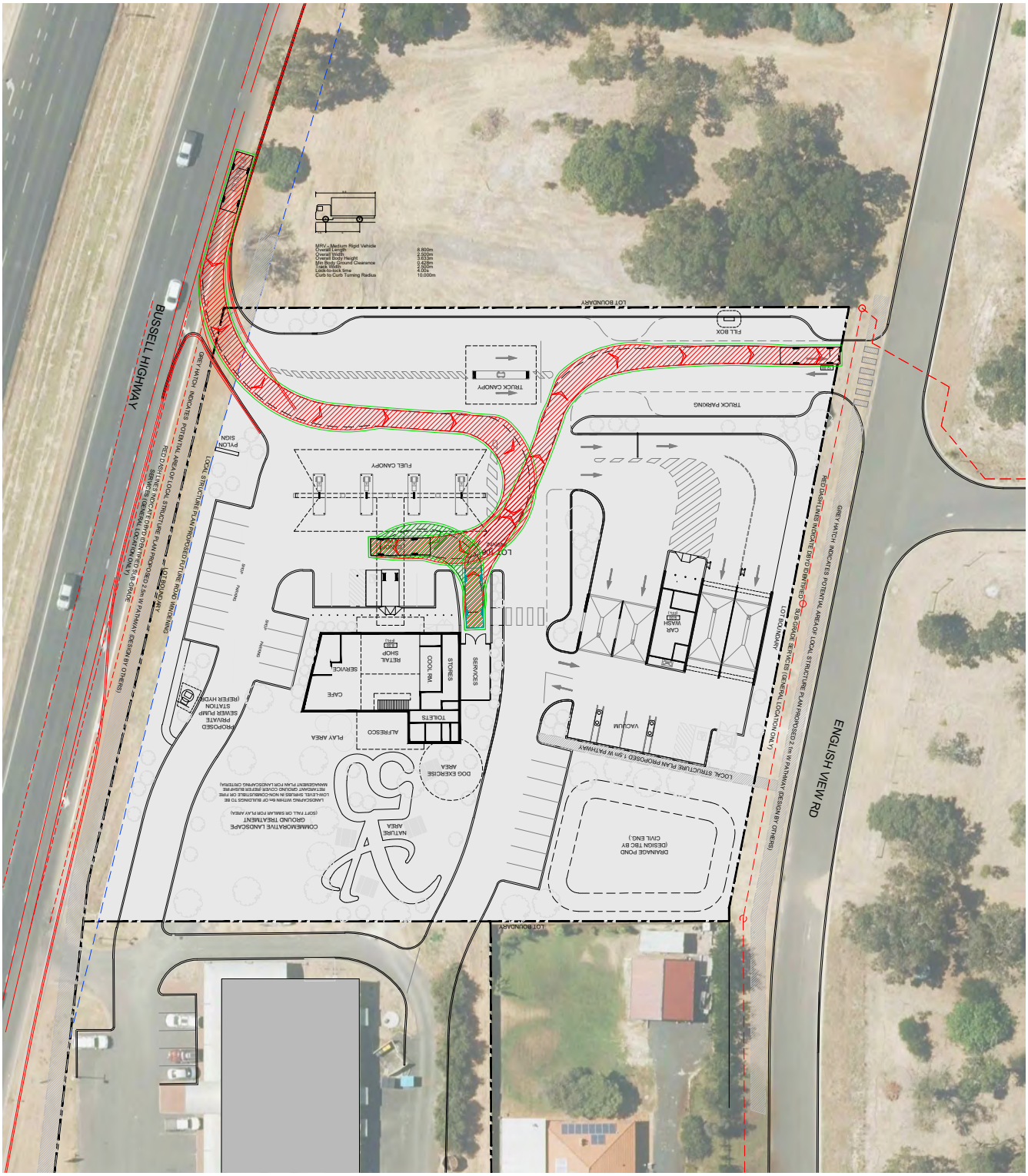
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bussell Hwy															
11	T1	All MCs	1670	8.2	1670	8.2	0.446	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach			1670	8.2	1670	8.2	0.446	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.6
East: Median															
3	R2	All MCs	97	0.0	97	0.0	0.104	2.6	LOS A	0.1	0.8	0.64	0.64	0.64	44.1
Approach			97	0.0	97	0.0	0.104	2.6	LOS A	0.1	0.8	0.64	0.64	0.64	44.1
All Vehicles			1767	7.8	1767	7.8	0.446	0.3	NA	0.1	0.8	0.03	0.03	0.03	77.7

Appendix B – Swept Paths


BUSSELL HIGHWAY
ENGLISH VIEW RD
AV - Articulated Vehicle
Overall Length 19.000m
Overall Width 2.500m
Overall Body Height 4.300m
Min Body Ground Clearance 0.400m
Track Width 2.500m
Lock-to-lock time 6.00s
Kerb to Kerb Turning Radius 12.500m
LOT BOUNDARY
FILL BOX
TRUCK PARKING
FUEL CANOPY
CANOPY LINK
LOT 100
8450m2
CAR WASH
VACUUM
RETAIL SHOP
COOL RM
STORES
SERVICE
SERVICES
CAFE
TOILETS
ALFRESCO
PLAY AREA
DOG EXERCISE AREA
NATURE AREA
COMMEMORATIVE LANDSCAPE
GROUND TREATMENT
(SOFT FALL OR SEALER FOR PLAY AREA)
LANDSCAPING WITHIN 6m OF BUILDINGS TO BE
LOW-LEVEL SHRUBS & NON-COMBUSTIBLE OR FIRE
RETARDANT GROUND COVER (REFER ELEVATED
MANAGEMENT PLAN FOR LANDSCAPING CRITERIA)
PROPOSED
PRIVATE
SEWER PUMP
STATION
(REFER HYDEA)
PYLON
SIGN
DRAINAGE POND
(DESIGN TBC BY
CIVIL ENG.)
LOCAL STRUCTURE PLAN PROPOSED 1.5m W PATHWAY
GREY / WATCH - INDICATES POTENTIAL AREA OF LOCAL STRUCTURE PLAN PROPOSED FUTURE ROAD WIDENING
RED DASH LINES INDICATE TBD DEVELOPED
SITE GRADE SERVICES (GENERAL LOCATION ONLY)
LOT BOUNDARY
LOCAL STRUCTURE PLAN PROPOSED 2.5m W PATHWAY (DESIGN BY OTHERS)
BRIDGE (GENERAL LOCATION ONLY)


BUSSELL HIGHWAY
ENGLISH VIEW RD
LOT BOUNDARY
TRUCK PARKING
FUEL CANOPY
CANOPY LINK
LOT 100
8450m2
CAFE
RETAIL SHOP
COOL RM
STORES
SERVICES
SERVICE
TOILETS
ALFRESCO
PLAY AREA
DOG EXERCISE AREA
NATURE AREA
VACUUM
CAR WASH
DRAINAGE POND
(DESIGN TBC BY CIVIL ENG.)
PYLON SIGN
FILL BOX
PROPOSED PRIVATE SEWER PUMP STATION (REFER HYDRO)
COMMEMORATIVE LANDSCAPE
GROUND TREATMENT
(SOFT FALL OR SEALER FOR PLAY AREA)
LANDSCAPING WITHIN 6m OF BUILDINGS TO BE LOW-LEVEL SHRUBS IN NON-COMBUSTIBLE OR FIRE RESISTANT GROUND COVER (REFER ELEVATIONS FOR MANAGEMENT PLAN FOR LANDSCAPING CRITERIA)
GREY HATCH INDICATES POTENTIAL AREA OF LOCAL STRUCTURE PLAN PROPOSED FUTURE ROAD WIDENING
RED DASHED LINES INDICATE TOP OF BATTER
LOCAL STRUCTURE PLAN PROPOSED 2.5m W PATHWAY (DESIGN BY OTHERS)
RED DASHED LINES INDICATE TOP OF BATTER
SLK GRADE SEPARATION (GENERAL LOCATION ONLY)
LOCAL STRUCTURE PLAN PROPOSED 1.5m W PATHWAY
AV - Articulated Vehicle
Overall Length 19.000m
Overall Width 2.500m
Overall Body Height 4.300m
Min Body Ground Clearance 0.400m
Track Width 2.500m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 12.500m


BUSSELL HIGHWAY
ENGLISH VIEW RD
LOT BOUNDARY
TRUCK PARKING
FUEL CANOPY
CANOPY LINK
LOT 100
8450m2
CAFE
RETAIL SHOP
COOL RM
STORES
SERVICES
SERVICE
TOILETS
ALFRESCO
PLAY AREA
DOG EXERCISE AREA
NATURE AREA
COMMEMORATIVE LANDSCAPE
GROUND TREATMENT
(SOFT FALL OR SEALER FOR PLAY AREA)
PROPOSED PRIVATE SEWER PUMP STATION
(REFER HYDRO)
PYLON SIGN
CAR WASH BAY
VACUUM
DRAINAGE POND
(DESIGN TBC BY CIVIL ENG.)
LOCAL STRUCTURE PLAN PROPOSED 1.5m W PATHWAY
GREY HATCH INDICATES POTENTIAL AREA OF LOCAL STRUCTURE PLAN PROPOSED 2.1m W PATHWAY (DESIGN BY OTHERS)
RED DASH LINES INDICATE TOP OF EMBANKMENT
SLK GRADE SEPARATION (GENERAL LOCATION ONLY)
AV - Articulated Vehicle
Overall Length 19.000m
Overall Width 2.500m
Overall Body Height 4.30.1m
Min Body Ground Clearance 0.400m
Track Width 2.500m
Lock-to-lock time 8.00s
Curb to Curb Turning Radius 12.500m

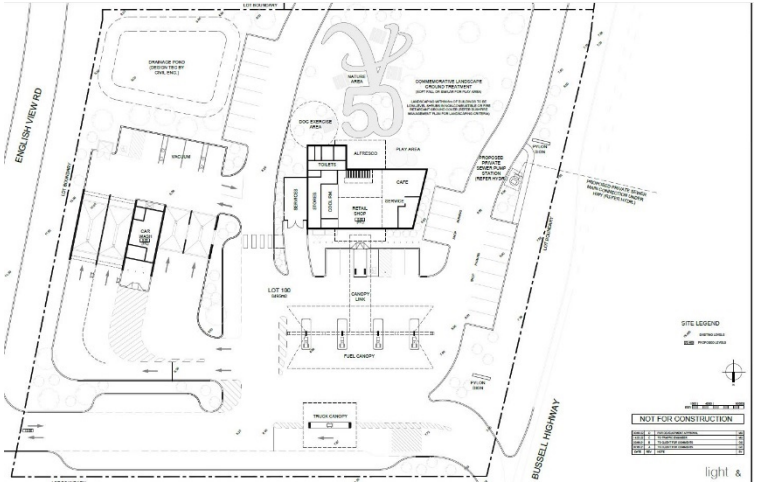

BUSSELL HIGHWAY
ENGLISH VIEW RD
LOT BOUNDARY
TRUCK PARKING
TRUCK CANOPY
FUEL CANOPY
FILL BOX
PYLON SIGN
CAFE
RETAIL SHOP
COOL RM
STORES
SERVICES
TOILETS
ALFRESCO
PLAY AREA
DOG EXERCISE AREA
NATURE AREA
VACUUM
CAR WASH
DRAINAGE POND
(DESIGN TBC BY CIVIL ENG.)
PROPOSED PRIVATE SEWER PUMP STATION
(REFER HYDRO)
COMMEMORATIVE LANDSCAPE
GROUND TREATMENT
(SOFT FALL OR SEALER FOR PLAY AREA)
LOCAL STRUCTURE PLAN PROPOSED 1.5m W PATHWAY
LOCAL STRUCTURE PLAN PROPOSED 2.5m W PATHWAY (DESIGN BY OTHERS)
GREY HATCH INDICATES POTENTIAL AREA OF LOCAL STRUCTURE PLAN PROPOSED 2.1m W PATHWAY (DESIGN BY OTHERS)
RED DASHED LINES INDICATE TBD UNDERGROUND SERVICES (GENERAL LOCATION ONLY)
GREY HATCH INDICATES POTENTIAL AREA OF LOCAL STRUCTURE PLAN PROPOSED FUTURE ROAD WIDENING
RED DASHED LINES INDICATE TBD UNDERGROUND SERVICES (GENERAL LOCATION ONLY)
MRV - Medium Rigid Vehicle
Overall Length 8.800m
Overall Width 2.500m
Overall Body Height 3.633m
Min Body Ground Clearance 0.428m
Track 2.500m
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 10.000m

SCHEDULE OF SUBMISSIONS
DAP - PROPOSED SERVICE STATION / CONVENIENCE STORE / CARWASH
LOT 100 (79) BUSSELL HIGHWAY GELORUP

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
1. ICR122899 Water Corp	**Re: Lot 100, 79 Bussell Hwy, Gelorup - Service Station & Carwash** Thank you for your letter dated 20 May 2022. The applicant has request that the wastewater service be connected to the sewerage scheme via a private pumping arrangement, the Water Corporation has agreed in principal to this however the applicant is reminded that their Engineering Consultant will need to submit design plans in accordance with Corporations Developers Manual. This proposal will require approval by our Building Services section prior to the commencement of works. Infrastructure Contributions and fees will be required to be paid prior to approval being issued. For further information about building applications, please follow this link: https://www.watercorporation.com.au/Developing-and-building/Building/Lodging-a-building- application The information provided above is subject to review and may change. If the proposal has not proceeded within six months, it is recommended that the developer contacts us to confirm whether or not the above information is still valid. Should you have any queries, please do not hesitate to contact the Enquiries Officer.	**OFFICER COMMENTS:** Noted. Any recommendation for approval is to include a condition pertaining to the specific requirements (Prior to the lodgement of a building permit, the applicant is to provide a suitable wastewater service connection plan, to the satisfaction of the Shire on the advice of the Water Corporation).
2. ICR122992 Dept of Water & Environmental Regulation	Thank you for providing the above proposal for the Department of Water and Environmental Regulation (Department) to consider. This proposal occurs to the north of an existing commercial building (currently occupied by a liquor store, with the former café being vacant for several years now) (Screenshots 1 – 3). The Department has identified that the proposal has the potential for impact on the environment and water resource values. Key issues and recommendations are provided below and these matters should be addressed:	**OFFICER COMMENTS:** Noted. Appropriate advice notes accompany any Officer's recommendation for approval.

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	Issue 1: Public Drinking Water Source area (stormwater and groundwater management) • **Advice 1**: The following is advised: ○ The Stormwater/Groundwater management plan, when prepared, should be referred to the Department for review ○ An advice note be included stating: ▪ "The proposed development should be consistent with the following documents, as practical and appropriate to the site situation: • *Decision process for stormwater management in WA* (DWER 2017) • *Stormwater Management Manual for Western Australia* (DoW 2004–2007) • WQPN 56 - *Tanks for fuel and chemical storage near sensitive water resources* (Dec 2018) • WQPN 49 - *Service stations* (Sept 2013) • WQPN 10 - *Contaminant spills — emergency response plan* (May 2020)" **Issue 2**: Acid sulphate soils • **Advice 2**: An advice note be included stating: ○ "**Advice**: Acid sulfate soils (ASS) risk mapping indicates that the site is located within an area identified as representing a high to moderate risk of ASS occurring within 3 metres of the natural soil surface at and beyond the western portion of the subject land. Please refer to Department of Water and Environmental Regulation's (DWER) acid sulfate soil guidelines for information to assist with the management of ground and/or groundwater disturbing works: https://www.der.wa.gov.au/your-environment/acid-sulfate-soils/69-acidsulfatesoils-guidelines." **Issue 3**: The proposed clearing of native vegetation may be subject to the *Environmental Protection Act 1986* (EP Act) • **Advice 3**: The following is advised: ○ Clearing associated with the buildings: The proponent is to obtain Developmental Approval prior to clearing to ensure the clearing is exempt under the EP Act, and clearing to be in accordance with the Shire's Firebreak and Fuel Hazard Reduction notice. ○ Clearing associated with sewerage connection: A clearing permit is required unless the water mains/sewage infrastructure mains is considered to comprise a structure.	

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	○ If further clarification is required please contact DWER's Native Vegetation Regulation section by email (admin.nvp@dwer.wa.gov.au) or by telephone (6364 7098) **Issue 4**: Water supply for landscaped/verge areas • **Advice 4**: In the event the take of groundwater is proposed for the irrigation of the landscaped/verge areas, the proponent is advised to contact DWER's Bunbury water licensing section on 9726 4111 to discuss licensing requirements under the *Rights in Water and Irrigation Act 1914* **Issue 5**: Potential for dewatering • **Advice 5**: The proponent be advised to contact DWER on 9726 4111 for a licence to dewater under the RIWI Act if the proposed activity is to exceed the threshold specified at: https://www.water.wa.gov.au/licensing/water-licensing/exemptions Where the Department has a statutory role, planning applications should be considered prior to the Department issuing any relevant permits, licenses and/or approvals. More detail pertaining to the above issues are provided in Table 1 below. In the event there are modifications to the proposal that may have implications on aspects of environment and/or water management, the Department should be notified to enable the implications to be assessed. Should you require any further information on the comments please contact the undersigned.	

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	 1. Location Map  2. Site Plan	

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	 3. Proposed Landuse and Imagery  4. Easement for Drainage  5. Possible Clearing for Sewage Connection Works	

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
3. ICR122650	Thank you for the notice in the post regarding the above Development Approval. As a home and land owner on English View I would like to express some concerns with this proposed new development. We are asking the Question, do we need another service station and commercial outlet on the same side of the highway when we have one 500meters up the road and another service station now opened on the Western side of the Bussell Highway in Dalyellup. With the proposed by pass and outer ring road it would be prudent to think the traffic will be less on the Bussell Highway and as such not enough traffic to warrant another Service Station. Our first concern is the use of the scheme water supply to support this new project. At present we live near the top of the hill and water pressure is not great but sustainable. We believe if this development was to proceed this would most certainly have a negative effect on our water pressure no matter what type of water storage they propose to use. The proposed sewerage connection under the Bussell Highway and connection to the existing Dalyellup Sewerage scheme will most certainly be problematic and high maintenance. The existing block and commercial buildings are subject to extreme flooding during moderate rainfall with additional run off now likely on the highway, despite the proposed drainage pond on the highest side of the block.	**OFFICER COMMENTS:** The use is able to be entertained under the Local Structure Plan and Shire's Scheme. The decision to propose such a development is not one of the Shire's. The financial viability of such a project is not specifically a planning concern. As per the advice of DWER, requirements will be made through the form of an advice note for the applicant to lodge a stormwater/groundwater management plan for their review and approval. The proponent has previously approached Main Roads Western Australia to gain approval for the installation of a private pressure sewer main across Bussell Highway to service the proposed development. Where the installation of such private infrastructure is supported, the proponent is required to enter into a Deed of Access Agreement with the Commissioner of Main Roads Western Australia. A stormwater management plan will need to be submitted and assessed by the Shire prior to the commencement of the development.

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	The proposed closure of Loretta Avenue is another concern to us as we do not believe there is enough room between the existing traffic lights at Dalyellup for the proposed slip lane. During busy times on the highway traffic is often backed up a considerable way on both sides of the highway and this will cause more delays and frustration trying to enter or exit the highway. With the revised option they are requesting we drive through the Truck Bay and filling station to gain access onto English View road. This is not acceptable to us as we both often cycle to work and surrounding areas. We have no safe pedestrian or cycle access to the highway. In conclusion we are not opposed to the proposed development but would like a considerate approach on the points raised especially the closure of Loretta Avenue. Thank you again for giving us this opportunity to express our concerns;	Main Roads Western Australia has supported the configuration and road layout for access and egress to the site. The detailed engineering drawings for the carriageway modifications has been reviewed and supported by MRWA. The access arrangement as per the Local Structure Plan has been incorporated into the design (walkways flanking the site).
4. ICR122715	We received the proposed JDAP Service Station/ Convenience Store/Car Wash Lot 100 (79) Bussell Highway documents. In response to the plans and information, we have quite a few objections to the plans. 1) Why would a fuel company want to build another complex when there is already two Service Stations within a 1km radius and the Bunbury Bypass is going to miss Dalyellup anyway? 2) Loretta Avenue is already a dangerous intersection also with massive waiting times to exit onto Bussell Highway. People who use Loretta Ave heading west towards Bussell Highway come over the hill down to the intersection are at times doing 70/80kmh giving people coming out of English Way and people trying to get out of numbers 2,3,4,6,8 and impatient patrons from BWS is a dangerous and frightening experience. Speed reducing islands need to be built on Loretta Ave.	**OFFICER COMMENTS:** Refer to the response to Submission 3. This is a decision that the applicant believes is financially viable. The Shire's position on this matter should not be to question this decision. MRWA has suggested a number of modifications to the carriageway of Bussell Highway, and modifications to the intersection of Bussell Hwy and Loretta Avenue. These have been incorporated into the latest set of plans and considered supported by MRWA.

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	3) The impact of lighting from 24hr service is also a major concern for close surrounding dwellings, also noise and smell contamination. Yes it is already too noisy, so no we don't need anymore thank you. 4) The proposed left only entry from Bussell Highway into the new complex will be closer to the traffic lights?? this will have the effect of driver frustration which could cause accidents. How do you think prime movers and road trains are going to impact Loretta Ave? very dangerous plan. Loretta Ave intersection from English Way is far too tight and Loretta Ave onto Bussell Highway has flood drainage problems for years and has not been fixed, BWS car park is a flood problem every time it rains. 5) Devaluation of surrounding private dwellings is also a concern. If the proposal goes ahead and any of the mentioned concerns eventuates, It is the rights of the effected surrounding occupants to seek legal action against the fuel company, ABLE and the Capel Shire. We look forward to your response to our concerns	A condition of planning approval should be imposed to require outdoor lighting to be installed in accordance with AS 4282-1997. Driver frustration is not a relevant planning consideration. The Shire has utilised the technical expertise of MRWA for the assessment of traffic and road network configuration. The accessibility configuration has been deemed acceptable through the external referral process. Furthermore, a detailed stormwater management plan would be required by the Shire prior to commencement of any development, should the RJDAP approve the development. These plans will be assessed by the Shire's Projects, Engineering, and Assets. Devaluation of property is not a relevant planning consideration for the purpose of the assessment.
5. ICR122745	Thank you for the letter and plans for the above mentioned development. We do have some concerns and questions regarding this, especially with our property being the nearest and most affected property to the proposed site. 1. Noise and congestion - when we purchased our property we were told that English View was going to be constructed, but this was only to be used to access the other residential blocks that were being developed. At no time was there any mention of it being used for a service station & carwash business. This is going to direct so much traffic close to our house and into Loretta Avenue making it noisier and more congested getting in and out of our property not to mention Loretta Avenue. These are small, quiet residential roads not really suitable for commercial traffic. Whilst we do hear noise from the Bussell Highway, we are set that much further back from the Highway and have the BWS in front of us plus our fencing which blocks a lot of it out. Whereas this traffic being diverted into	**OFFICER COMMENTS:** The applicant's updated Environmental Noise Assessment (ENA) states that the development is more than capable of complying with the *Environmental Protection (Noise) Regulations 1997,* and suggested certain measures to be implemented to ensure compliance. However, the Responsible Authority Report details similar concerns to that of the submitter, as the ENA fails to address nuisance factors that are not applicable under the Regulations. With relation

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	Loretta Avenue through English View is going to be passing right next to our house to the side and front. Why can the access roads not be directly on to the Bussell Highway or to the front of the current commercial buildings?	to traffic, the impacts on residential amenity cannot be accurately assessed until the applicant's Traffic Impact Assessment accounts for vehicular movement to and from site via English View. It would be of the opinion of the Shire that similar concerns are expressed until an acceptable level of traffic using the local road network to access site is demonstrated. **Updated Comment:** **These concerns are considered to be addressed through the imposition of planning conditions that limit operation hours for multiple elements of the development.**
	2. Privacy - will we be offered higher colourbond fencing to completely surround our property to help with noise and privacy? As we were told initially we could only have this to the two sides that back onto commercial lots and only up to 1.8m high which is what we have done, but if we have to have all this extra commercial traffic and businesses operating night and day, will this be something that is offered to us?	Visual privacy from a non-residential land use is not a consideration in the applicable planning framework for the development. However, the neighbour may opt to discuss appropriate boundary fence options with the landowner to satisfy their concerns. The Shire would be supportive of an alternative height if agreed to by both parties as part of any potential approval.
	3. Lighting and fumes - will there be flood lights shining into our property all night? Will there be fumes from the fuel? What will be done to prevent this?	A condition of planning approval would be imposed to require outdoor lighting to be installed in accordance with AS 4282-1997. Furthermore, the applicant would be required to provide a Hydrocarbon management plan to the Shire for review, and will detail management of fumes.
	4. Devaluation of our property - if we get our property valued as it is now and another valuation based on if this development is completed and if it devalues our	Devaluation of property is not a relevant planning consideration for the purpose of the assessment.

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	property, will we be compensated for this? In addition will our property insurance be affected being next to a fuel station? We will appreciate your feedback on our concerns and look forward to hearing from you.	
6. ICR122744	We are writing to strongly oppose the proposed Service Station/Convenience Store/Carwash including private wastewater pump station on Lot 100 (79) Bussell Highway Gelorup. As a resident that will be close to this I believe this will effect my living and lifestyle, bringing additional traffic, noise and the potential for legionnaires disease to the area. With a 24hr car wash and vacuum station I believe that I will be impacted thought the evening due to the addition noise and light this will bring. The bottom of our road will be lit up at all hours shining unnecessary light towards bedrooms of our residence. With young kids in school how are they supposed to rest sufficiently if there is potentially people using these facility's at all house of the night? It shows on the plans that there will be a drainage pond. With a high potential to have stagnant waste water sitting in it, how will the risk of legionnaires disease or mosquitos be managed? Will this also bring a smell into the suburb? Not to mention the unsightly look of a waste water pond in an attractive suburb! Why would this application even be considered when within a 600m radius there is already 2 service stations in the area. This will make 3 within the 600m area. Have the owners of the standing service stations been made aware of this proposal, I would like to think they get to have a say in this also? With the Outer Ring Road going ahead there is no need for an additional service station. Build it coming off there instead to attract southbound traffic.	**OFFICER COMMENTS:** The impacts from traffic and noise to adjoining resident's amenity is discussed in the report. A condition of any potential future planning approval would be imposed to require outdoor lighting to be installed in accordance with AS 4282-1997. This has been applied throughout a number of sites which transition between commercial and residential functions. An advice note should accompany any potential future approval stating that the stormwater management plan is to detail mosquito breeding control measures where stormwater infrastructure is likely to result in standing water that will provide breeding habitat. This element of the development will need to be satisfactory in order for the Shire to support the stormwater management plan. Refer to the response to Submission 3. This is a decision that the applicant believes is financially viable. The Shire's position on this matter should not be to question this decision. It is not within the Shire's ability to refuse acceptance of a development application simply because it may not be seen as a profitable location.

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	Is there going to be additional roads back onto the Bussell Highway? Looking at the plans there will be heavy vehicles using English View Road as a thoroughfare, this not only poses a danger with additional traffic to a once quite area, but will be a large noise impact with trucks using air brakes in the area and additional vehicles using the roads close to my house.	The use of English View was consistent with the approved Local Structure Plan, which was designed to enable traffic flow between the site and English View. However, as per the Responsible Authority Report, the Shire cannot gauge whether acceptable levels of traffic are being redirected to the local road system due to the absence of crucial information in the applicants Traffic Impact Assessment. **Updated Comment:** **The updated TIA outlines an acceptable level of traffic to the local road network. It is also considered that any condition restricting operation hours will further alleviate concerns.**
	What about the endangered possums in the area. How will they be effected with the additional traffic and noise in the area. Will this reduce their habitat that is already being impacted due to urban sprawl?	The lot is vacant and does not contain any area identified specifically as possum habitat. The planning framework does not account for any potential loss of wildlife by virtue of being struck by traffic offsite.
	We bought this block and built our forever house because it is an area with light traffic that typically only locals use and has a gorgeous outlook with the Dalyellup lights at night. We believe this is a poor attempt in trying to fill some vacant land, save the $3.3 million for something worthwhile.	Noted.
7. ICR122746	I am one of the residents living close to the proposed service station development at Lot 100 #79 Bussel Highway - Gelorup. I am the owner of 13 English View Gelorup. I noted from the documentation provided that traffic, especially heavy vehicles will enter the servo from the Bussel Highway side, and must then exit via English view, and Loretta Ave to get back onto the Bussel highway. My concerns are:	**OFFICER COMMENTS:**

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	1. English view and Loretta Ave was definitely not designed and constructed to cater for larger volumes of heavy vehicle traffic. Both English view and Loretta ave are only standard 7.0m wide streets.	The use of English View was consistent with the approved Local Structure Plan, which was designed to enable traffic flow between the site and English View. However, as per the Responsible Authority Report, the Shire cannot gauge whether acceptable levels of traffic are being redirected to the local road system due to the absence of crucial information in the applicants Traffic Impact Assessment. **Updated Comment:** **The updated TIA outlines an acceptable level of traffic to the local road network. It is also considered that any condition restricting operation hours will further alleviate concerns.**
	2. Entering / crossing the Bussel Highway early mornings, late afternoons and weekends/ holidays are already extremely difficult and dangerous.	MRWA are satisfied with the level of traffic and modifications made to the carriageway to accommodate/control traffic.
	3. The plans and description are not clear on where light vehicle traffic are supposed to exit the proposed development to get back onto the Bussell highway. If the exit point is going to be constructed through the existing carpark at BWS, it will compromise the ability of vehicles entering Bussell Highway from Loretta Ave even more. Once again, I am stating that English view were not designed and constructed to cater for large numbers of vehicle traffic.	Noted. Should the JDAP be of the opinion that line marking or signage measures should be imposed to control traffic movement throughout site, this can be a consideration for a planning condition for any potential approval.
	4. Will the developer/ property owner be responsible for the Maintenance of the surrounding streets if it is damaged by increased traffic from this proposed development.	This is a cost covered by the Shire for maintaining and upkeeping the local road network.
	I am not opposing the Development but am concerned about the design and am requesting that traffic movement and safety, and the design and construction of the surrounding street must be considered when the Shire are assessing this development application. Thanks for the opportunity to comment on this proposed development.	

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	Please feel free to contact me for any further discussion of the abovementioned	
8. ICR122820	We write with significant concerns regarding the application to the shire for development approval for a service station, convenience store and carwash at Lot 100 (no. 79) Bussell Highway in Gelorup. Shire reference number PA80/2022. Our concerns are detailed below: 1. This part of Gelorup is a quiet residential area. There is currently minimal traffic up Loretta Avenue, English View and Sortras Rise. Whilst there is some existing commercial building at the proposed lot, it is occupied by a BWS Liquor Store, which does not attract much patronage, and a cafe that has been closed for many years. This development would see a drastic increase in the number of vehicles travelling in this part of Gelorup, changing the beautiful community feel that exists presently. There are also an increasing number of families with young children moving to this part of Gelorup, with a large number of residential homes being constructed on the vacant plots along those three roads. 2. The developers state in their proposal that that there are "pre-existing noise impacts to surrounding residential properties" already, and so the increased noise does not matter. We disagree with this very strongly. There is an astronomical difference between the noise associated with existing traffic on Bussell Highway and the noise associated with a busy petrol station/car wash/store that plans to service larger rigid truck and semi-trailers. It is also reasonable to anticipate that traffic on that section of the Bussell Hwy will in fact reduce once the Bunbury Outer Ring Road (BORR) has been completed. They have made little no attempt to consider the noise impacts of their proposal on surrounding residents.	**OFFICER COMMENTS:** Noted. The applicant's updated Environmental Noise Assessment (ENA) states that the development is more than capable of complying with the *Environmental Protection (Noise) Regulations 1997,* and suggested certain measures to be implemented to ensure compliance. However, the Responsible Authority Report details similar concerns to that of the submitter, as the ENA fails to address nuisance factors that are not applicable under the Regulations. With relation to traffic, the impacts on residential amenity cannot be accurately assessed until the applicant's Traffic Impact Assessment accounts for vehicular movement to and from site via English View. It would be of the opinion of the Shire that similar concerns are expressed until an acceptable level of traffic using the local road network to access site is demonstrated. **Updated Comment:**

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
		These concerns are considered to be addressed through the imposition of planning conditions that limit operation hours for multiple elements of the development. This will further reduce local traffic figures which would otherwise be experienced in late evening periods.
	3. The service station is intended to operate 24 hours a day. Currently, the liquor store closes at reasonable hours and after that point the only traffic entering these residential roads is local traffic. They propose disruption to the residential area 24 hours a day, 7 days a week.	The Shire acknowledges the sensitivities around the location of a 24-hour Service Station nearby residential land uses. Noise and nuisances captured outside of the Noise Regulations are an unresolved issue which have not been addressed in the applicant's Environmental Noise Assessment. Activities associated with a 24-hour operation have potential to cause amenity impacts when mitigation measures are not proposed by operators (limiting access to outside areas in evening periods etc). The proposal does not adequately address the Regional Joint Development Assessment Panels concerns expressed when the item was deferred on 4 November 2022. **Updated Comment:** **These concerns are considered to be addressed through the imposition of planning conditions that limit operation hours for multiple elements of the development.**
	4. We do not believe that a service station could reasonably be included in "other comparable uses within a Local Centre" as the developers are trying to suggest. They are trying to ascertain that this is "indisputable", however we disagree. A service station is considerably more disruptive to local residents than the other existing permitted uses of the site.	The use of a Service Station/Convenience Store has been designated a 'preferred use' to the site under the Local Structure Plan. The suitability however is subject to the assessment of several criteria.

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	5. They question the need (and state there is "simply no logic") for the development of a dual use path along Bussell Highway and Loretta Avenue, as they state there is already a path on the other side of the highway and there are no existing footpaths on Loretta Ave, English View or Sortras Rise currently. Our children walk down these roads every day to go to school. We would be very, very concerned for their safety if they had to navigate these roads with a marked increase in traffic and no safe/separate path to use. Should the development proceed, construction of shared use paths is absolutely essential for the safety and well being of the local community. Pedestrian safety and access must and should be considered, not shirked by developers looking to save some money. As mentioned previously, more and more families are moving to the area, with a subsequent rise in young children walking/riding/scootering on these local residential roads.	The Local Structure Plan requires that a 2.1m wide pathway is to be developed around the site. This was incorporated in the latest set of development plans and has accounted for the need for localised pedestrian network consideration.
	6. There is very little detail on what landscaping and beatification will be done to the area to offset the concrete/hardstand treatments being proposed.	A detailed landscaping plan would be requested to be submitted and approved by the Shire prior to the lodgement of a Building Permit, should approval be granted.
	7. The Environmental Protection Authority has not been involved to endorse the development. Surely this is standard practice now.	The item has been assessed against the EPA guidelines for land use separation guidelines.
	8. There is little to no benefit to the community to have another service/petrol station in the immediate area. There are already two service stations within a 1km radius. One is located literally 850m up the road on the same side of Bussel Highway (Ampol Foodary) and the other 1km away on the other side of the highway in Dalyellup (Liberty Oil). Both of these service stations already have truck fueling facilities inbuilt, so we find it hard to see the justification for an additional one. This is particularly relevant given the potential for traffic to reduce once the BORR is completed. Thank you for the opportunity to comment on the potential development. Please do not hesitate to contact us.	Refer to the response to Submission 3. This is a decision that the applicant believes is financially viable. The Shire's position on this matter should not be to question this decision. It is not within the Shire's ability to refuse acceptance of a development application simply because it may not be seen as a profitable location.
9 ICR122878	I am writing in objection to the application to Council to approve the building of a 24hr service Station, Convenience Store and Car wash on Lot I 00(79) Bussell Highway.	**OFFICER COMMENTS:**

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	I am the owner of ********** which is immediately across the road from this proposed development. I already have Council approval to construct a dwelling on this block, have had approval for my driveway entry off English View and have fenced the property according to these plans. My objection to this development is based on the following points	
	I. There is already an Ampol Service Station 600m North of this proposal on the same side of the road, And a new service station has just opened on the edge of the Dalyellup Shopping complex in equal distance on the other side of the road. These adequately service local needs, and one would expect a reduction in thoroughfare traffic with the completion of the Bunbury Outer Ring Road.	Refer to the response to Submission 3. This is a decision that the applicant believes is financially viable. The Shire's position on this matter should not be to question this decision. It is not within the Shire's ability to refuse acceptance of a development application simply because it may not be seen as a profitable location.
	2. There is no entry access to this development for Northbound traffic other than to turn right at Loretta Avenue and lek into English View. There is proposed entry and exit into this development off English View and the proposal suggests that fuel tankers will use these exits and signage will encourage service vehicles, caravans, boat trailers and general traffic to use this eastern exit *road.* This is a residential street designed for residential traffic and not intended for commercial use. I suggest a full traffic study needs to occur as this greatly impacts the safety of myself, my children and the other residents of Sortras rise.	The use of English View was consistent with the approved Local Structure Plan, which was designed to enable traffic flow between the site and English View. However, as per the Responsible Authority Report, the Shire cannot gauge whether acceptable levels of traffic are being redirected to the local road system due to the absence of crucial information in the applicants Traffic Impact Assessment. **Updated Comment:** **The updated TIA outlines an acceptable level of traffic to the local road network. It is also considered that any condition restricting operation hours will further alleviate concerns.**
	3. Noise impacts in this area are expected to be reduced significantly with the diversion of large volumes of traffic onto the Bunbury)' Outer Ring Road. A development "modelled on a modern highway roadhouse template" that encourages towing vehicles and larger rigid trucks, and semi- trailers is not desirable adjacent to residential homes. There would be increased noise from	The Shire acknowledges the sensitivities around the location of a 24-hour Service Station nearby residential land uses. Noise and nuisances captured outside of the Noise Regulations are an unresolved issue which have not been addressed in the applicant's Environmental

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	breaking and acceleration of cars and trucks, this accompanied with the noise of vacuums and car washing facilities operating day and night would greatly impact on the residential homes nearby. By their own admission, the developers say "the carwash bays are closer to residential dwellings, its noise is much less than truck air brakes", yet they are exiting those same trucks into the residential area on English View. How is this lessening the noise impacts. Prior to approval full noise surveys and modelling needs to occur to establish compliance with the Noise Abatement Regulations.	Noise Assessment. Activities associated with a 24-hour operation have potential to cause amenity impacts when mitigation measures are not proposed by operators (limiting access to outside areas in evening periods etc). The proposal does not adequately address the Regional Joint Development Assessment Panels concerns expressed when the item was deferred on 4 November 2022. **Updated Comment:** **These concerns are considered to be addressed through the imposition of planning conditions that limit operation hours for multiple elements of the development.**
	4. The Lighting, even though it is to be directed downward, will still provide light scatter and pollution to adjoining neighbors on a level far greater than normal street lighting. Before approval a full lighting pollution study needs to be conducted.	A condition of planning approval would be imposed on any approval to require outdoor lighting to be installed in accordance with AS 4282-1997.
	5. Water will be serviced by the Water Corporation reticulated water supply on Loretta Avenue and English View. My property is serviced by the same water line, how will this affect my supply and water pressured	As per the advice of DWER, requirements would be made through the form of an advice note for the applicant to lodge a stormwater/groundwater management plan for their review and approval.
	6. Water laying around in Carwash bays, in grated soak wells and in the drainage pond along with increased lighting and humidity are going to attract mosquitos and increase numbers in the area. Mosquitoes spread Ross River virus and a number of other infectious diseases. Drift studies also need to be conducted to determine the risk of spread of airborne contaminants e.g. Legionnaires.	Noted. An advice note would be imposed on any potential approvalstating that the stormwater management plan is to detail mosquito breeding control measures where stormwater infrastructure is likely to result in standing water that will provide breeding habitat. This element of the development will need to be satisfactory in order for the Shire to support the stormwater management plan. However, this aspect can also be brought to the attention of the Shire's

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	7. The developer acknowledges that there will be a need for a modern security system to protect staff and customers. That suggests that they acknowledge that crime levels will increase in the area. What does this mean for nearby properties in terms of risk and danger of theft and violence? In summary I do not feel that a 24 Hour Service Station and supposedly "incidental" carwash and café are defined as a "compatible use within a Local Centre" and the application should be rejected. In my view these types of facilities belong in industrial areas and on freeways. At the very least further impact studies need to be completed. The developers claim that this operation "comfortably falls under the ambit of freeway service center given the volume of traffic" is unfounded. Approval should be based on projected traffic volumes following the opening of the Bunbury Outer Ring Road not simply on current or past numbers.	Environmental Health Officers when inspection/review occurs. Violence and theft is not a relevant planning consideration.
Main Roads Western Australia	**Latest Referral Comment:** I refer to your request below regarding the further TIA information and amended development proposal for the above development. As previously discussed, Main Roads supports the use and retention of the English View access in its current configuration, given the access restrictions and constraints applicable to the Bussell Highway frontage and the need to manage traffic demands into and out from the existing crossovers on Loretta Avenue, Ideally, the crossover nearest to the junction should be removed for proximity reasons to minimise the potential for traffic conflict to occur within the approach to the major junction, however, Main Roads will monitor the operational and safety performance of the crossover in question. Given the above, Main Roads supports the Applicant's statements made in response to the JDAP concerns raised regarding the potential amenity impacts associated with the English View access and for the status quo to be maintained. Main Roads has had some difficulty in reviewing the amendments to BMP, however, it appears that the Applicant is not relying on the Bussell Hwy road verge to be maintained to a specific standard anymore and additional hazard controls are being	**OFFICER COMMENTS:** Noted.

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	introduced to the property to the north, which is also owned by the same landowner, to manage bushfire risk. Main Roads has reviewed the TIA and notes that the applicant has elected to still not to undertake a count of actual turning volumes at the junction to better inform their traffic analysis and is still relying on traffic data from the nearby Bussell Hwy / Francis Road junction for traffic analysis purposes. Main Roads has undertaken an informal AM count of the junction to compare the volumes with the turning volumes referenced in the TIA and also the approach volumes available for the Bussell Hwy / Loretta Avenue. The AM traffic counts indicated higher traffic volumes for the junction, noting that the data available on Main Roads' Traffic Map is seasonally adjusted and could be lower than actual traffic volumes. The AM counts were, however, lower than the turning volumes assigned and estimated for the Bussell Hwy / Francis Road junction. The SIDRA analysis in the TIA has adopted an assessment/forecast traffic growth rate of 3% (linear) per annum for Bussell Hwy volumes and suggests that the right turn movement at the intersection from the northbound lane on Bussell Hwy will operate at a LOS F for the 2033 assessment year in the PM, however, acknowledge that traffic is anticipated to reduce post opening of the BORR and it is therefore difficult to estimate with sufficient certainty what the immediate reduction in traffic volumes are going to be post opening of the BORR. Main Roads supports this view in general and further notes that with the planned redevelopment of the Road House at Stratham, this Road House development is likely to retain and attract significant passing-by/commuter traffic in the PM peak. As previously advised, the proponent is required to construct, to Main Roads specifications, the proposed left turn deceleration lane and 'left in' access/driveway into the development site and upgrade the intersection of Lorretta Ave and Bussell Hwy, including splitter islands and treatments, and lighting to improve the function and safety of the intersection to cater for the anticipated traffic demands that would be generated by the development. The following conditions are recommended - 1) If required, the proponent is to enter a Deed of Access Agreement with Main Roads, to the requirements and satisfaction of Main Roads, for the proposed waste water service installation within the Bussell Highway road reserve.	

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION
	2) Prior to commencement of development, the intersection of Lorretta Avenue and Bussell Highway is to be upgraded to the specifications of Main Roads, generally in accordance with the Main Roads preliminary access concept referenced in the Shawmac Traffic Impact Assessment document, dated 2nd February 2023 (Ref: 2202018-TIA-001), including, but not limited, to provision of a splitter islands and seagull island treatment, at the full cost of the proponent. 3) Prior to commencement of development, the proposed new left in accessway/driveway, including the internal site access geometry and location of the truck canopy/fuel bowser location, and slip lane on Bussell Highway is to be designed, approved and constructed to the specifications of Main Roads and satisfaction of the Shire. The proposed new left turn in access/driveway shall be designed generally in accordance with the Main Roads preliminary access concept referenced in the Shawmac Traffic Impact Assessment document, dated 2nd February 2023 (Ref: 2202018-TIA-001) and constructed at the full cost of the proponent. The approved design shall include, but not be limited to, provision of street lighting, drainage and kerbing. 4) Prior to commencement of development, the existing left turn access/driveway to the property (from the existing extended left turn slip lane at Lorretta Avenue) shall be decommissioned, the existing slip lane modified and the road verge reinstated to the specifications of Main Roads and the satisfaction of the Shire, at the full cost of the proponent. 5) Prior to commencement of development, road reserve widening for Bussell Highway and land requirements for the Loretta Ave intersection works is to be set aside in accordance with a Main Roads approved civil engineering design, and is required to be ceded to the Crown free of cost for the purpose of road widening. 6) Prior to commencement of development, the applicant is to demonstrate compliance with Main Roads Policy and Guidelines for Advertising Signs. Detailed designs for the proposed road and access/ driveway works are to be submitted and approved by Main Roads prior to any construction being commenced. Please do not hesitate to contact me should you require any further assistance in the matter.	

Department of Fire and Emergency Services	   Our Ref: D26252 Your Ref: PA80/2022 Scott Price Shire of Capel info@capel.wa.gov.au Dear Mr Price **RE: HIGH RISK LAND USE - LOT 100, 79 BUSSELL HIGHWAY, GELORUP – SERVICE STATION AND CARWASH - DEVELOPMENT APPLICATION – RESPONSE TO UPDATED BMP RECEIVED 10 FEBRUARY 2022** I refer to your email dated 10 February 2023 regarding the submission of an amended Bushfire Management Plan (BMP) (Version 1.2), prepared by Bushfire Prone Planning and dated 3 February 2023, for the above development application. This advice relates only to *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) and the *Guidelines for Planning in Bushfire Prone Areas* (Guidelines). It is the responsibility of the proponent to ensure the proposal complies with relevant planning policies and building regulations where necessary. This advice does not exempt the applicant/proponent from obtaining approvals that apply to the proposal including planning, building, health or any other approvals required by a relevant authority under written laws. **Assessment** • The referral has included an updated BMP (referenced above), which provides a response to the original concerns raised by DFES on 3 November 2022, and the updated response provided by DFES on 20 December 2022. • DFES notes the updated separation distances for all buildings on site and supports this change. • Previous advice provided to the City of Capel listed as 'comment only' is still applicable. Other recommendations which are not included in this advice letter have been met by the proponent to the satisfaction of DFES. **1. Policy Measure 6.5 a) (ii) Preparation of a BAL contour map** **Issue** / **Assessment** / **Action** **Vegetation classification** / **Updated comments following third submission:** DFES notes the additional classified Class G Grassland area to Bussell Highway and supports this classification. The BMP has been updated to note that agreements are required regarding the management of local road reserves. The decision maker should be satisfied that a legally binding and enforceable mechanism is available and that applicable legal agreements/easements are established / The decision maker to be satisfied with the vegetation exclusions and vegetation management proposed. DFES Land Use Planning | 20 Stockton Bend Cockburn Central WA 6164 | PO Box P1174 Perth WA 6844 Tel (08) 9395 9703 | advice@dfes.wa.gov.au | www.dfes.wa.gov.au ABN 39 563 851 304	**OFFICER COMMENTS:** Noted.

	prior to approval being issued to ensure the management of vegetation in perpetuity. If agreements cannot be reached with the required parties, the submitted BAL ratings may not be accurate. DFES does not accept firebreaks as a mechanism for exclusion of vegetation under AS3959. It is noted that the adjoining lot mentioned in the BMP (Lot 102 English View Drive) is not subject to this application, and therefore should not be referenced in conditions relating to this development.	
BAL inputs	**Updated comments following third submission:** DFES notes the updated diagram (Figure 3.1) provides setbacks for all proposed buildings on site from each vegetation plot, and the updated BAL results provided in section 3.2.1.	Comment only

2. **Policy Measure 6.5 c) Compliance with the Bushfire Protection Criteria**

Element	Assessment	Action
Location, and Siting & Design	**A1.1 & A2.1 – demonstrated, subject to appropriate agreements** As referenced above, the BAL ratings are reliant upon management of vegetation on land outside the development site. Where appropriate agreements can be secured and implemented then compliance with A1.1 and A2.1 would be achieved. In the absence of appropriate agreements being secured and implemented, the BAL ratings may be incorrect and therefore compliance with A1.2 and A2.1 would not be demonstrated.	The decision maker to be satisfied with the vegetation exclusions and vegetation management proposed.

Recommendation – compliance with acceptable solutions achieved, subject to appropriate agreements

The development application and the BMP have adequately identified issues arising from the bushfire risk assessment and considered how compliance with the bushfire protection criteria can be achieved. As set out above and recognised within the BMP, this is reliant on agreements being secured in relation to management of vegetation around the site. These agreements should be in place prior to approval of the application and the BMP should be updated to acknowledge the agreements.

As this planning decision is to be made by a Joint Development Assessment Panel, please forward notification of the decision to DFES for our records.

SUBMITTER	SUMMARY OF SUBMISSION	COMMENTS / RECOMMENDATION