



**MORNINGTON
PENINSULA**
Shire

ATTACHMENT BOOK 1

COUNCIL MEETING

WEDNESDAY, 14 AUGUST 2024

6:30 PM

**MUNICIPAL OFFICES
BESGROVE STREET, ROSEBUD**

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Planning Delegate Report - P23/0228



APPLICATION SUMMARY

Planner	Graham Scott
Date	28/05/2024
Application Number	P23/0228
Address	1-2 Marine Drive and 1/5 Nepean Highway SAFETY BEACH VIC 3936
Applicant	AA Holdings Pty Ltd C/- Insight Planning Consultants
Planning Scheme	Mornington Peninsula Planning Scheme
Zone & Overlays	GRZ1, DDO1, ESO25, VPO1
Public Notice	Yes
Objections	Yes 559 objections
Decision	Issue a Notice of Decision to grant a permit

PROPOSAL

Proposal	The application proposes the development of the site for a service station and convenience restaurant. Specifically, the key elements of the proposal include: - A service station comprising of: 12 bowsters - an ancillary convenience store of 259m² - signage. - A convenience restaurant comprising of: 59 seats - Drive-thru with noise tunnel. - Removal of small-scale vegetation
	The documents assessed were those advertised with the application, including: - Plans, BDAI Architecture, Rev B, 24/04/2023 - Landscape Plan, John Patrick, Rev B, 02/11/2022 - Acoustic Report, Enfield Acoustics, 22/04/2023 - Tree Assessment & Development Impact Report, Jarrod Miller Arboriculture, v.2, 18/11/2022 - Light Spill Report, Arup, 274753, 12/12/2022 - Preliminary Environmental Site Assessment, Kleinfelder, 20210559.001A, Rev.2, 26/10/2022 - Sustainability Management Plan, Frater Consulting Services, 24/04/2023 - Traffic Report, Trafix Group, G29423R-02B, 04/2023 - Revised Queuing Assessment, Trafix Group, G29423M-02B, 31/08/2023 - Road Safety Audit Report, Road Safety Audits Pty Ltd, 15203, 8/12/2023 - Convenience Restaurant Site Management Plan - Service Station Site Management Plan In addition to the application plans the applicant has submitted a without prejudice Site Plan which includes additional public

	infrastructure in the road reserve as referred to in the DTP conditions and within the foreshore as negotiated with Council officers.
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PERMIT TRIGGERS

	Clause	Trigger?	Rationale
Zone			
General Residential (GRZ1)	32.08-2	Yes	Use: A planning permit is required for Section 2 uses – Service Station and Convenience Restaurant.
	32.08-10	Yes	Buildings and/or works: A permit is required to construct a building or construct or carry out works for a use in Section 2 of Clause 32.08-2.
	32.08-3	No	Subdivision: The application does not include subdivision.
Overlays			
Environmental Significance (ESO25)	42.01-2 and	Yes	A planning permit is required to: - construct a building or construct or carry out works; and - to remove vegetation.
Vegetation Protection (VPO1)	42.02-2	Yes	A permit is required to remove vegetation.
Design and Development (DDO1)	43.02-2	Yes	A planning permit is required to construct a building or construct or carry out works.
Particular Provisions			
	52.05	Yes	A permit is required to construct or put up for display a sign in Section 2.
	52.29	Yes	A permit is required to create or alter access to a road in a Transport Zone 2.
	52.34-2	Yes	A permit is required to waive a requirement of Clause 52.34-5.

SUBJECT SITE

Site Conditions	
Lot:	The subject site is situated on the north-east side of the Marine Drive and Nepean Highway intersection. The site is an irregular shaped allotment which combines three properties comprising Nos. 1 and 2 Marine Drive, and 1/5 Nepean Highway; the combined lots comprise a total site area of 3,908 square metres.
Existing conditions:	No. 1 Marine Drive and 1/5 Nepean Highway are occupied by a BP service station and dwelling respectively, as well as associated buildings/structures. Whilst the service station exists predominantly within 1 Marine Drive, an accessway to the service station is situated at the front of 1/5 Nepean Highway. The service station currently operates 24 hours a day and includes an ancillary convenience shop and car wash. No. 2 Marine Drive was previously occupied by a double storey dwelling, but is now vacant, the former dwelling having been demolished between September and December 2019.

Topography:	The subject site is relatively flat, with a fall of approximately 0.5 metres from north-east to south-west.
Vegetation:	Scattered vegetation exists around the service station, and the remaining land is clear of any substantial vegetation. When reviewing aerial imagery, it appears that canopy trees and shrubs were removed from No. 2 Marine Drive prior to the demolition of the dwelling.
Vehicle access:	The site currently has three crossovers to Marine Drive, being one to the vacant lot and two to the service station. There is also a single crossover to Nepean Highway.
Street trees:	There are no street trees near the subject site.
Impacts on adjoining vegetation:	There are a number of small trees on the two abutting lots requiring protection.
Surrounding Land	
Abutting zone(s) / overlays	The abutting properties have the same controls as the subject site, except that the property to the south-east does not have the ESO25. Both Marine Drive and Nepean Highway are covered by the Transport Zone TRZ2.
General area	The subject site is situated at the interface of the Safety Beach township, with the land on the opposite side of Nepean Highway situated within the township of Dromana. The site is surrounded by land within the GRZ, which is used for both residential and non-residential uses, as well as land zoned as TRZ2, as well as the Public Park and Recreation Zone along the foreshore opposite the site. Approximately 650 metres south west of the site is the Large Township Activity Centre of Dromana.
North-east:	Immediately to the north-east at No. 3 Marine Drive exists a residential property containing a double-storey dwelling and associated outbuildings. The dwelling is setback approximately 8.2 metres from the front boundary and is built to the side common boundary with the subject site. Scattered vegetation exists within the rear area of secluded private open space and a first-floor covered deck exists at the front of the dwelling.
South-east:	Directly to the east and south-east of the site at 7–9 Nepean Highway is residential land, which was developed for twelve units under Planning Permit P14/2072. Units 1 and 2 are situated closest to the subject site, as well as a vegetated area of common property. These two dwellings (units 1 and 2) are both double-storey, with an area of secluded open space at the ground floor directly adjoining the subject site and habitable room windows orientated to face the subject site at both ground and first floor. The dwellings are set back a minimum of 1.97 metres from the common boundary with the subject site and the unit development has a front setback of 11 metres (measured to the front of unit 12) to Nepean Highway.
South:	South of the subject site (on the opposite side of Nepean Highway) is residential zoned land at 10 Nepean Highway. This property is used for the Dromana Early Learning Centre and Kindergarten. The building is set back approximately 15.5 metres from the front boundary, with a car parking area situated within the front setback.
North-West:	Opposite Marine Drive exists the Safety Beach/Dromana foreshore of Port Phillip Bay. This area includes scattered

	vegetation, an informal car parking area, a walking track and several beach boxes.
Site Context	
Cultural Heritage Management Plan (CHMP)	A CHMP is required and has been provided by the applicant.
Bushfire Prone Area:	No
Flood Prone Areas:	Yes
Restrictions and/or easements on title:	The certificate of title for the subject site includes the following restriction and/or easements: 1 Marine Drive has a drainage easement which has no assets in it, which is internal to the subject site only. Although 2 Marine Drive does not have any easements, it does have a sewer pipe which runs along the rear of the site and connects to the rear of the current service station in the middle of the subject site. There are not restrictions on 1/5 Marine Drive.
Permit/Site history	
	The subject site has been owned by the applicant since 1982. The following previous decisions are relevant to the subject site:
	A planning permit was issued in 1972 for an illuminated sign of top of the existing BP Service Station. The approved plans show the service station with an associated café.
4566	Permit issued 2 July 1982 to operate a take-away food shop in conjunction with an existing unused service station.
4600	Permit issued 23 July 1982 for the erection of a service station canopy.
4843	Permit issued 30 November 1982 to erect a pylon type advertising sign (Hectors Seafood Take Away Food).
8206	Permit issued 4 August 1986 for the storage and dispensing of LP Gas and an advertising price sign board.
10830	Permit issued 18 May 1988 for the construction of a color bonded shed.
15584	Permit issued 28 October 1991 for the refurbishment of the existing petrol-filling station. The endorsed plans for the is permit show the two existing units at 5 Nepean Highway, and at 1 Marine Drive the service station with car wash, pylon signs, a take-away food premises and associated landscaping.
6552	Permit 1 issued 11 November 1992 for the construction of a pole sign (M.I.D. sign) as part of the refurbishment of petrol filling station. The signs had an internally illuminated BP logo.
P2347/93	Permit issued 2 September 1993 for the replacement of the existing liquid petroleum gas storage tank and bowsters with an underground storage tank.
P.6/94	Permit for the brick veneering of two existing units.
P19/2462	Application for use and develop the land for a service station and convenience restaurant, remove vegetation, create and alter access to a road in RDZ1, construct signs and associated works was refused by Council and this was affirmed at the VCAT in <i>AA Holdings Pty Ltd v Mornington Peninsula SC</i> [2021] VCAT 1441 (30 November 2021).

Photo – 1970s



Photo 1991



Photo 2023



Aerial Photo showing subject site and objector sites - GIS [19 December 2022]



Subject Land: ★

N ▲

PUBLIC NOTIFICATION

The application was advertised by sending direct notice to adjoining and nearby properties and erecting three signs on the front boundaries of the subject site, with one sign facing Nepean Highway, one facing Marine Drive and one facing the road intersection.

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559 objections have been received to date. A summary of the objections and Council's response is detailed below.

- Impacts to traffic congestion.
- Insufficient parking.
- Overdevelopment of the subject site.
- Inappropriate uses.
- Impacts to local businesses.
- Impacts to public health.
- Inconsistent with the character of the area.
- Pedestrian safety.
- Impact to the foreshore from rubbish.
- Amenity impacts from noise, smells and light.
- Will attract antisocial behaviour.

Public Consultation

At the time of this report's preparation, a planning application conference (PAC) is due to be held on Thursday, 20 June 2024, to provide the community with an opportunity to ask questions about the application.

Section 52 Notifications

Person/body notified	Response	Officer Response
South-East Water	No objections, subject to conditions.	Adopted in full
Melbourne Water	Objected to having a gross pollution trap added to their drainage outfall pipe.	

REFERRALS

Referral	Type	Response	Officer Response
Department of Transport & Planning (DTP)	Section 55: Determining	No objections, subject to conditions.	Adopted in full
Development Engineering	Internal	No objections, subject to conditions.	Adopted in full
Traffic Engineering	Internal	No objections, subject to conditions.	Adopted in full
Environmental Health	Internal	No objections, subject to conditions.	Adopted in full
Urban Design	Internal	No objections, no conditions	
Vegetation officer	Internal	No objections, subject to conditions.	Adopted in full
Waste Engineer	Internal	Supported the location of bins on the foreshore.	
Coastal Planning	Internal	Supported proposed public infrastructure on the foreshore.	

ASSESSMENT

The relevant provisions of the Mornington Peninsula Planning Scheme listed in Appendix 1.

The previous application P19/2462 was refused by Council and this was affirmed at the VCAT in *AA Holdings Pty Ltd v Mornington Peninsula SC* [2021] VCAT 1441 (30 November 2021). The VCAT decision provided extensive commentary on the proposal, including the suitability of the proposed land use, operation of the proposed uses and the built form. Planning Permit Application P23/0228 is essentially a 'repeat' application which responds to the previous VCAT decision.

There are a series of well-established principles guiding the hearing of 'repeat appeals' where the VCAT is required to review an application similar to a proposal previously the subject of a VCAT decision. Broadly these principles provide that, where the VCAT has refused an earlier application but indicated a modified form of development or changes that might be acceptable and the repeat appeal constitutes a genuine attempt to address those issues, considerable weight should be given to the VCAT's decision on the earlier application. This is known as a 'correcting' repeat appeal.

When considering the fresh application, in addition to the weight afforded to the previous decision, the following relevant factors should be considered:

- Significant changes in the application itself.
- Changes in the circumstances of the land and its surrounds.
- Changes in planning policy.
- Changes in the interpretation of the facts or law relevant to the VCAT's consideration.

Whilst Council is not legally bound to restrict its consideration to matters that were considered previously unsatisfactory or of concern, and in fact is required to consider the new application afresh, the principles from previous VCAT decisions regarding repeat appeals are a good starting point for consideration of the relevant issues in order to narrow the scope of matters that are key and relevant for any particular 'repeat' application. This is particularly as there do not appear to be any significant changes in the circumstances of the site, planning policy and the interpretation of the facts or law relevant to consideration of the matter since the last consideration based on the repeat principles.

Previous VCAT decision

The Tribunal made positive findings on the application with respect to the appropriateness of the proposed uses having regard to its location at an intersection of arterial roads, and the attractive presentation and contemporary materials of the development. It also made several recommendations on matters to be addressed in a repeat application.

Comparison between the previous and current application

Whilst the proposal remains broadly similar to the previous application, the permit applicant has made changes which are summarised below:

- Reduced the size of the convenience store from 295 to 259 square metres (sqm) and the size of the convenience restaurant from 400 to 359 sqm.
- Reduced the number of seats in the convenience restaurant from 86 to 59 patrons.

- Reduced the number of bowsters from 16 to 12.
- Increased the width of the vehicle circulation isle between Marine Drive and the bowsters by 3 metres (m), from 6.6m to 9.6m.
- Removed egress to Marine Drive, including modifications to the traffic island in Marine Drive to prevent righthand turns.
- Increased the depth of a substantial part of the garden bed to Marine Drive from 1.3m to approx. 4.5m.
- Increased the setback to Marine Drive of the drive-through ordering stations by almost 2m.
- Reduced the setback of the acoustic tunnel to the south-east boundary by 1 metre from 2.9 – 4 metres, to 1.9 – 3 metres.

General Residential Zone (GRZ1)

Land use

While the subject site has an existing service station on the land at 1 Marine Drive and 1/5 Nepean Highway, it is proposed to extend the use to the land at 2 Marine Drive, which was previously used as a dwelling, by way of providing the use with vehicle access and loading facilities on that site. The use as a service station is a Section 2 use with the zone, with the requirement that the site must either:

- Adjoin a commercial zone or industrial zone.
- Adjoin, or have access to, a road in a Transport Zone 2 or a Transport Zone 3.

The site must also not exceed either:

- 3000 square metres.
- 3600 square metres if it adjoins on two boundaries a road in a Transport Zone 2 or a Transport Zone 3.

A service station is defined as land used to sell motor vehicle fuel from bowsters or charge electric vehicles. It may include the:

- a) selling of motor vehicle lubricants, accessories or parts;
- b) selling of food, drinks and other convenience goods;
- c) hiring of trailers;
- d) servicing or washing of motor vehicles; and
- e) installing of motor vehicle accessories or parts.

It is to be noted that while the application plans show the inclusion of a convenience store, this is not a separate use, being included in the above definition for a service station. This position was confirmed by the previous VCAT decision:

63 ... Just because the gross leasable floor area exceeds 240 m² does not make use for the convenience store a separate purpose, for the reasons we have already referred to. While floor area is sometimes a relevant indicator of separate purpose, it is not in this application, having regard to the size of the subject land and size of the various components.

The proposed use a convenience restaurant is also a section 2 use within the zone, subject to the provision that the site must adjoin, or have access to, a road in a Transport Zone 2 or

a Transport Zone 3. Consideration must also be given all of the matters in Clause 53.04 (Convenience Restaurant and Take-Away Food Premises).

Clause 64.01 (Land used for more than one use) states that if land is used for more than one use and one is not ancillary to the other, each use must comply with this scheme. In this instance one use is not ancillary to then other with each use being a separate use.

The issue of the land uses being separate uses was an issue that was addressed at length in the previous application P19/2462 and subsequent VCAT hearing. While the site location meets the criteria for both uses with respect to having access to and boundaries with a road in a Transport Zone 2, the size of the land at 3908 square metres, being greater than the allowable maximum size of 3600 square metres for a service station, was addressed by the VCAT, which found that the area used exclusively by the convenience restaurant was not to be used in the calculation of the size of the service station use [55] [60]. When this is done the area of the service station use is considerably less than 3600 square metres.

The appropriateness of the out of centre location of the combined proposed uses and non-residential uses in a residential zone were also addressed at length in the previous application. Notably, the VCAT commented on the fact that the planning scheme changed during the hearing with the removal of Clause 21.07-3 (Activity centres) and Clause 22.12 (Non-residential uses in residential zones) and replacement with Clause 11.03-1L-01 (Activity centres - Mornington Peninsula), with Clause 17.02-2S (Out-of-centre development) and Clause 13.07-1S (Land use compatibility remaining relevant).

Clause 22.12-3 had contained policy which included:

- Discourage proposals for out-of-centre commercial developments that undermine the activity centres policy at Clause 22.02.
- Strongly discourage free-standing out-of-centre service stations.
- Strongly discourage free-standing out-of-centre food and drink premises.

Clause 11.03-1L-01 (Activity centres - Mornington Peninsula), which is now the relevant policy, includes:

- Avoid locating retail, restricted retail, service station and office developments in out-of-centre residential, industrial and non-urban locations.

The VCAT stated that the changes in planning scheme from the use of the term 'strongly discourage' to 'avoid' was a softening of policy [88]. However, 'discourage means to 'dissuade/deter' while 'avoid' means 'stop', so that the change is instead a strengthening of policy. Notwithstanding the discussion around these terms, it is notable that the VCAT found that on the balance of policy, site context, site history and other objectives of the planning scheme, that:

91 ... in the circumstances of this proceeding, the proposal is an acceptable response to policy and does not warrant refusal of a permit on the grounds of policy. We have taken into account the following matters:

- a) A service station/convenience store has operated on a substantial part of the subject land for many decades.*
- b) A take away food premises operated for many years (but no longer operates) on part of the subject land.*
- c) Of the two parcels of residentially zoned land at 2 Marine Drive and 5 Nepean Highway that have been added to the existing service station land to form the*

subject land in this proceeding, the land at 5 Nepean Highway is already used in part for the existing service station.

- d) The proposed convenience store provides enhanced small-scale shopping opportunities (petrol and convenience goods) that would meet the local needs of residents and workers/visitors.*
- e) The scale and mix of development will not undermine the primacy of existing activity centres, including Dromana.*
- f) The proposal will not lead to a de facto commercial strip at the intersection of Marine Drive and the Nepean Highway.*
- g) The location of the subject land is not a residential hinterland location but is at an intersection of two major roads and close to freeway access to the Metropolitan area.*
- h) The proposal still requires a rigorous assessment under all relevant zone and overlays and particular provisions.*

94 In conclusion, we find the proposal satisfactorily responds to out of centre development policy and a permit should not be refused on the grounds of these policies.

Council accepts this position and notes that there have not been any significant changes with respect to the proposed use which would warrant a revaluation of the matter.

The appropriateness of the location of the site opposite the foreshore for the specific use as a convenience restaurant was also discussed at length in the previous application P19/2462 and subsequent VCAT hearing. On this issue the VCAT found that:

161 After considering the submissions and evidence in relation to impact on the foreshore, we would not have been persuaded that the proposed development will result in unreasonable adverse impacts on the foreshore area. The impacts identified by the respondents can and should be appropriately managed by the respective land use operators, site management plans, compliance with other legislative requirements and permit conditions relevant to the proposed development.

The current application includes operational Site Management Plans for both the Service Station and the Convenience Restaurant. The areas covered by these plans include:

- Surveillance
- Site Management
- Restaurant Management
- Staff Training
- Hours of Operation
- Deliveries and Waste Collection
- Signage
- Noise Management and Monitoring
- Complaints Management
- Litter and Waste Removal.

A specific concern with regards to the use which was raised in the previous application and continues to be raised in objections, is its proximity to the foreshore and the potential for litter

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from the convenience restaurant being discarded on or making its way onto the foreshore. An additional issue of pedestrian safety from the site to the foreshore has also been raised in objections.

It is noted that the development plans include four onsite bins, being one each near the convenience restaurant and the convenience store, and one each near where the onsite pedestrian paths reach the boundaries at Marine Drive and Nepean Highway. The Convenience Restaurant Site Management Plan also includes the following commitment:

- Regular litter patrols throughout each day are conducted both within the site itself and in public areas within 200m of the site. Staff on duty will collect and dispose of any rubbish that may have been discarded inappropriately by customers.

The owner of the childcare centre opposite the site at 10 Nepean Highway has also commented that beachgoers park on his site out of business hours, and is concerned that beachgoers parking on his site will also dump rubbish from the convenience restaurant in the car park at that site. The applicant made a commitment at the Planning Application Conference to include the collection of any associated rubbish dumped at the childcare centre car park a part of the daily litter patrols. This is addressed in proposed permit conditions.

A condition of approval will require that the uses, including daily litter patrols, operate in accordance with the Site Management Plans.

Associated with both the issue of pedestrian safety and the potential for littering to occur within the foreshore, the applicant has also agreed to the provision of a pedestrian crossing to Marine Drive with a connecting path and protecting bollards, as well as three picnic tables and two bins in the foreshore, as shown on the Without Prejudice Plan A. The requirement for a pedestrian crossing has been discussed with the DTP, who has included it in their conditions for approval. This public infrastructure was negotiated with the applicant in consultation with Council's Coastal Planners, Waste Engineers, and Traffic Engineers, who were all supportive of the negotiated outcome. Specifically, it is noted that the new bins are conveniently located for collection by Council waste contractors who already collect from bins at the nearby car park, and Council's Traffic Engineers were supportive of both the provision of the pedestrian crossing and the bollards, which will restrict informal parking on the foreshore within the immediate vicinity of the new path. The requirements for the provision of the public infrastructure will be added to the required engineering plans.

Council's Coastal Planners were also involved in investigating the potential for the provision of a gross pollutant trap to collect any rubbish which found its way into the local drainage system which discharges into the bay. However, Melbourne Water did not support the inclusion of such infrastructure being added to their drainage asset and the idea was subsequently abandoned.

The proposal's response to noise impacts to abutting residential uses include the provision of a noise tunnel for vehicles using the drive-thru and acoustic fences. The VCAT found that the use of the noise tunnel was an appropriate means of addressing noise impacts:

179 Nevertheless, we would have been satisfied that Mr Tardio has undertaken a detailed and now tested analysis of noise mitigation treatments as part of this proposal. We would have been satisfied that the more sensitive residential interfaces to the north and east have been appropriately treated using the noise tunnel.

The VCAT listed a number of conditions which were recommended by the acoustic expert at the hearing and stated that had it issued a permit it would have included the recommendations of the expert. The notations on the acoustic fence as shown on plans are in accordance with those recommendations. It is acknowledged that the setback of the acoustic tunnel to the south-east has been reduced by 1 metre from 2.9 – 4 metres, to 1.9 – 3 metres. This reduction is unlikely to increase any offsite impacts from noise and does not unreasonably impact on landscaping within the area.

The Service Station Site Management Plan includes the following operation hours:

- The use will operate 24 hours/day, 7 days/week;
- LPG Fuel deliveries 7am to 6pm (Monday to Saturday);
- Regular fuel deliveries 7am to 10pm (Monday to Sunday)
- Waste collection 7am and 6pm Monday – Saturday or otherwise to time limits specified in the planning permit and the relevant EPA noise control guidelines.

It further states that any waste collection and the loading and unloading of store delivery vehicles must occur within the designated loading dock.

It is noted the EPA doesn't regulate noise from kerbside waste collection services. The plan should therefore be amended to remove the words 'or otherwise to time limits specified in the planning permit and the relevant EPA noise control guidelines'. This would then limit the collection to 7am to 6pm, in which case all the times would then be consistent with the recommendations of the acoustic expert as supported by the VCAT. A waste collection control will also be added to the Convenience Restaurant Site Management Plan, which already has a control on deliveries consistent with the service station.

Both Site Management Plans make references to State Environment Protection Policy No. N-1, which has since been superseded by *EPA publication 1826.4, Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues (Noise Protocol)*. This will be addressed in permit conditions.

Noise impacts from the use of the three car parking spaces closest to 3 Marine Drive was raised as an issue in the previous VCAT hearing. This issue is responded to in the Service Station Site Management Plan, which further states that:

- The operator of the service station must co-operate with the operator of the convenience restaurant to ensure that the three car spaces nearest to the northern boundary are only used by staff between 10pm and 7am.
- Within 6 months of the commencement of the operation of the convenience restaurant, acoustic testing shall be carried out by a suitably qualified person to confirm compliance with the applicable environment protection regulations. This testing will include:
 - an assessment of noise generated by car doors and general patron movement at the site against the established sleep disturbance criteria; and
 - any recommend mitigation measures which may be necessary to minimise impacts.

For reasons of operational, safety and noise issues, it is Council's preference that these three spaces are to be nominated for staff use only. This, along with the commitment to do testing, will be further addressed in permit conditions.

The Convenience Restaurant Site Management Plan also includes a statement on page 2 that:

- The electronic customer ordering devices associated with the drive-through facility will not operate only after 10:00pm or before 6:00am. Signage will be erected at the entry of the drive-through facility directing customers to the pay window for "after hours" ordering.

The inclusion of the word 'only' does not make sense and should be removed. This is addressed in conditions.

The Management Plan further states that:

Unless otherwise approved in writing by the Responsible Authority, the restaurant drive-through will operate on a 24-hour basis throughout the year whereas the restaurant dining room will only operate from 6:00am to midnight (and until 1:00am during Peak Season).

"Peak Season" means the period from:

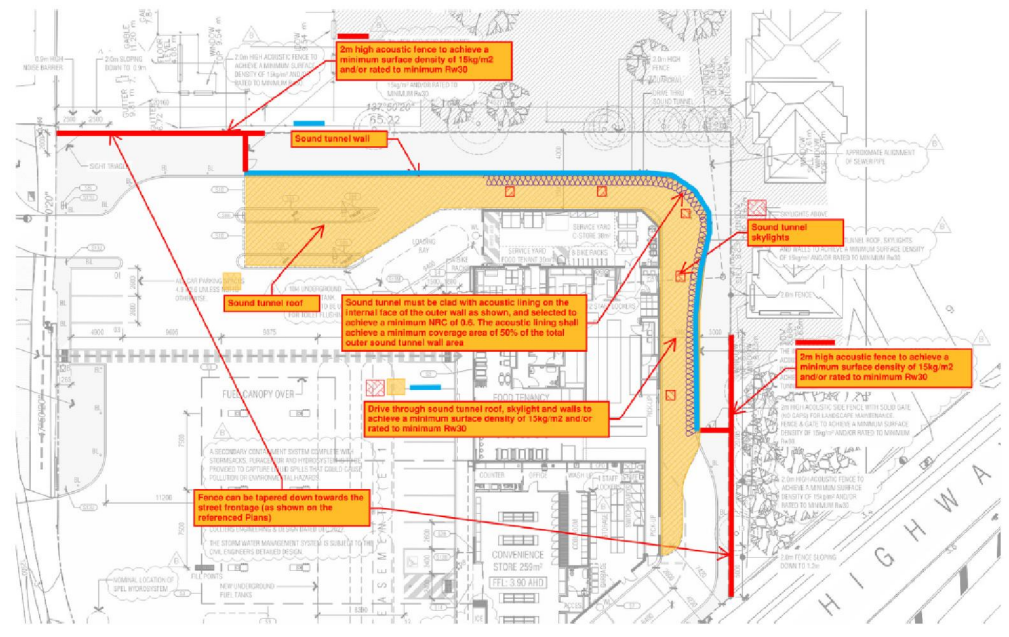
- o 1 December – 28 February (inclusive); and
- o from 11:59pm on the Thursday before Good Friday until 11:59pm on Easter Monday.

The hours are consistent with the hours considered by the VCAT, which indicated [174] that it supported the 24 hours use of the site and that had it decided to issue a permit it would have supported the recommendation of switching off the 24-hour drive-thru electronic customer ordering service between 10 pm to 6 am. However, it is noted that the electronic customer ordering devices are proposed to start being used at 6 am, while deliveries are not to occur before 7 am. It is further note that the Environment Protection Regulations 2021 describe the night period as being from 10 pm to 7 am. To reduce potential noise impact to the abutting residential uses it is proposed that the use of the electronic customer ordering devices be prohibited for the entirety of the night period. It is accepted that these restrictions will assist with mitigating offsite amenity impacts from noise, with any other noise to be subject to compliance with the requirements of *EPA publication 1826.4, Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues (Noise Protocol)*.

The submitted acoustic report contains an assessment of noise impacts from the following noise sources:

1. Fuel tanker delivery;
2. LPG pump;
3. Delivery vans;
4. Waste trucks;
5. Passenger vehicles;
6. Patron noise;
7. Customer ordering device (COD); and
8. Mechanical plant noise associated with the various uses.

a number of recommendations were subsequently made which are articulated on the following plan. All of these recommendations are shown on the development plans.



The acoustic report also states that the car parking spaces 1–3 should be designated and signed for staff use only (which has already been addressed in this report), and that the drive-thru waiting bays should be provided with signage to remind patrons to be mindful and respectful of adjacent neighbours. This is not on plans and will be addressed in conditions.

The Site and Floor Plan shows bollard lights and wall lights throughout the site and the application includes a Light Spill Report. The report acknowledges that a detailed lighting design has not yet been completed for the subject site and makes several recommendations, including a permit condition requiring assessment of the detailed lighting design against the recommendations of AS4282. A condition of approval will require a plan consistent with the recommendations of the report.

A further amenity concern is odour emissions. Odour is a key environmental issue set out in the *Environment Protection Act 2017*. Odour is also clearly defined as a form of pollution and offensive odour constitutes a harm in accordance with the EPA Act. Odour is also included in the environment reference standard (ERS) under section 93 of the Act. Under the Act, the risk of harm from odour that is offensive to the senses of human beings must be reduced as far as reasonably practicable, with the overall objective of an air environment that is free from offensive odours. A condition of approval will require that odour is controlled in accordance with the requirements of the *Environment Protection Act 2017* and that any complaints regarding odour should be assessed in accordance with the EPA Publication 1883, June 2022 – Guidance for assessing odour, with any offensive odours to be addressed to the satisfaction of the responsible authority.

Another potential offsite amenity issue is the impact to abutting residential properties from exhaust fumes extracted from the acoustic tunnel. Conditions have been proposed which address this issue.

Buildings and Works

The scale and form of the proposed development is very similar to the previous application.

The application was referred to Council's Urban Designer who accepted the comments of the VCAT, which stated that:

167 ... we accept the urban design assessment provided by Mr Czarny and his opinion that the predominately single storey form of the new buildings, with a slightly higher canopy form and stepped building setbacks to all boundaries, is appropriate to the scale and setting of surrounding built form and foreshore setting opposite.

The Urban Designer did however comment on potential conflicts between vehicles exiting the service station, vehicles exiting the drive-thru and pedestrians coming for the east on Nepean Highway who may decide to cut across the site at this point rather than walking down to the designated entry and crossing. This matter was further discussed with Council's Traffic Engineers who did not support an additional pedestrian crossing but instead recommended a speed hump for vehicles exiting the service station, to be located immediately to the east of car space 12. The applicant has agreed to this and it will be included in conditions for approval.

Clause 15.01-2L-02 (Environmentally sustainable development) requires that an application received after 23 August 2023 for a non-residential building with a gross floor area between 300sqm and 1000sqm, have consideration be given to a Sustainable Design Assessment (including an assessment using BESS and STORM/MUSIC or other methods). While this clause is not applicable as the application was received before 23 August 2023, it includes a Sustainability Management Plan (SMP) in response to Clause 15.01-2S (Building Design) which also meets the requirements of Clause 15.01-2L-02. The commitments of the SMP have been suitably shown and notated on the plans. Compliance with the ESD report will be included in permit conditions.

The application has not proposed to consolidate the lots or remove the obsolete drainage easement E-1. Council's Development Engineers have advised that they have no concerns with the proposed buildings and works over this easement. It is noted that the development proposes to develop in the location of the existing sewer pipe, which is not within an easement. This matter was referred to South East Water who requested a note on the permit advising the owner of responsibilities when structures/works are proposed to be built within 1.0 metre of a South East Water asset. This note has been included after the proposed conditions.

Vegetation Protection Overlay VPO1 (Township Vegetation)

The application proposes to remove all current vegetation on the site, all of which are recorded in the submitted arborist report as being low growing shrubs, grasses and succulents.

It is unclear if any of the six melaleuca trees required by permit 15584 issued in 1991 were planted (they were not evident in 2008). Nevertheless, as the service station has a residential component, the landscape plan could not be enforced between 2009 and 2020 in accordance with Clause 52.12, which between those years allowed removal of vegetation across all of the shire that was within 10m of a building used for accommodation which was constructed before 10 September 2009.

The submitted arborist report also provides information on potential impacts to neighbouring trees. The application was referred to Council's Senior Vegetation Officer, who had no concerns with the proposed vegetation removal or impacts to neighbouring trees, subject to conditions which have been included in conditions for approval.

Environmental Significance Overlay ESO25 (Port Phillip Coastal Area)

Design and Development Overlay DDO1 (Township Design)

One of the concerns which Council had with the previous proposal was the lack of meaningful setbacks and landscaping having regard to the site's coastal setting. While the VCAT did not have any concerns with the built form it did support Council's concerns regarding landscaping, stating on these matters:

162 The design response and low-rise (single storey) nature and location of built form associated with the proposal are appropriate and generally in keeping with the character of this area. In a general sense, the built form does not impose on the foreshore.

164 We do have some concerns about the proposed landscaping along Marine Drive.

165 We accept Mr Patrick's opinion that the additional planting proposed along the residential northern interface is an improvement to the current sparse landscape treatment to this interface. Nonetheless, the scale of proposed landscaping along Marine Drive is in our view minimal and requires reconsideration in any future application.

166 The reconsideration might include widening of the proposed landscape bed to enable some larger landscape species along this interface opposite the beach foreshore. We therefore agree with the Council that the site warrants some improved landscaped setting to this interface.

The current application has responded to this issue by increased the depth of a substantial part of the garden bed to Marine Drive from 1.3m to approx. 4.5m. This has enabled the planting of an additional two native trees at this interface, which has suitably addressed this concern.

Overall, the submitted landscape plan proposes 31 trees, nine of which are adjacent to the road boundaries and the remainder are adjacent to the residential boundaries. This is an appropriate landscape response which was supported by Council's Senior Vegetation Officer and is an improvement on the previously endorsed landscape plan for the site.

External environmental considerations relevant to the development of the site are potential flood and coastal inundation. The subject site is with a flood prone are. In response to the issue the floor level of the proposed building has been raised compared to the current service station by 0.9m to 3.9m AHD to satisfy requirements for getting a building permit. In regard to potential sea rise, it is noted that the subject site is well out of the area covered by the 0.8m sea level rise (which covers only the current beach area). As such there is no data to suggest that sea level rise is a relevant consideration for the subject site.

Internal environmental considerations include that the subject site has been a service station since at least the 1960s and therefore there could be existing environmental contamination. The application includes a Preliminary Environmental Site Assessment which is a minor revision of the report which was provided with the previous application and was at that time peer reviewed. In accordance with the recommendation of the peer review, the draft conditions for the previous VCAT hearing contained several conditions relating to environmental contamination. These conditions were not challenged by the applicant or

discussed in the VCAT decision. The conditions have been included in the current proposed conditions.

The previous application was also referred to the EPA, who had no objection but did provide some recommendations with respects to permit conditions and notes. These conditions have been included in the proposed conditions.

Particular Provisions

Clause 53.04 Convenience Restaurant and Take-Away Food Premises

This clause requires consideration to be given to issues which are included in all of the other sections of this report.

Clause 53.18 Stormwater Management in Urban Development

The requirements of this clause have been considered by Council's Development Engineers and is addressed in engineering conditions which have been adopted in this report.

Clause 52.05 Signage

Service station

The application proposes to retain the existing price sign (approved by permit 15584) and the MID sign (pylon sign approved by permit 16552) and provide new business identification on the building and a number of other small signs usual to the use as a service station. Each of the BP logo signs (one each on the south and the west elevations) and the BP shop sign on the west elevation are internally illuminated. Retrospective approval is also required for the electronic component of the MID sign. The electronic sign was referred to the DTP as it is within 60 metres of an arterial road declared under the *Road Management Act 2004*. The DTP did not raise any concerns with the sign.

Convenience restaurant

Four internally illuminated business identification signs are proposed for the convenience restaurant, three on the west elevation and one on the south-east elevation (facing Nepean Highway). It is noted that none of the business identification signs for the convenience restaurant provide any business information. A number of other signs associated with the drive-thru are also proposed.

It is accepted that the proposed signage is comparable to the current signage associated with the existing service station on the site and is proportional to the scale of the proposed building and the size of the site. Notwithstanding that the content of the convenience restaurant is not provided, it is further accepted that the proposed signage will not detrimentally impact on the surrounding area in terms of impacting on views or the streetscape.

Clause 52.34 Bicycle facilities

While the use as a service station does not have a statutory requirement for bicycle facilities the convenience restaurant generates a demand for five employee spaces and two customer spaces. The application proposes the provision of 12 spaces, comprising of four spaces for customers and eight spaces for staff, which is consistent with the ESD Report.

As there is a requirement for five staff spaces there is a statutory requirement for a shower. The application seeks a waiver of the shower/changeroom for staff, advising that the

operator of the convenience restaurant encourages its staff not to change on the site due to the general age of its employees. The rationale for waiving the shower requirement is accepted and the waiver is supported.

Clause 52.06 Car Parking

The use as a convenience restaurant has a statutory requirement of 0.3 spaces to each patron permitted. The plans provide for 59 seats, which is deemed to be the number of patrons and equates to a car parking demand of 17 spaces. There is no statutory car parking requirement for a service station, which must instead be to the satisfaction of the responsible authority. The development provides for 22 spaces, which leaves five spaces for the service station. In addition to the 22 spaces there are also the 12 fuelling spaces, where customers generally leave their cars when they enter the service station and convenience store to pay for the fuel, and an additional space dedicated to air/water filling.

The previous application had provided 25 spaces, with 86 seats in the convenience restaurant, which was a statutory requirement of 25 spaces, leaving no parking spaces for the service station use. The VCAT advised that had it approved the previous application it would have supported the proposed car parking provision. Compared to the previous proposal the new proposal now has an addition five spaces for the service station.

The application was referred to Council's Traffic Engineers who had no objection to the proposed car parking provision. This is a much better outcome than the previous application, and in the context of the previous comments from the VCAT is supported.

Vehicle access and circulation (Clause 53.04 - Convenience restaurant and take-away food premises)

The shortcomings of the previous proposal with respect to vehicle access and circulation was the primary reason for the VCAT refusing the previous application, stating:

98 There is little dispute that access and circulation is currently highly problematic.

99 We confirmed this state of affairs at our inspection on Saturday 30 October 2021 at around 4.30 pm to 5.30 pm. This was an off peak time of year but acknowledge it was a weekend day following an easing of pandemic travel restrictions. The time of day was nonetheless well past the busier time around the middle of the day.

100 Generally consistent with Mr Whitaker's video evidence at the hearing, there is insufficient space before the bowsters off Marine Drive to manage the volumes of vehicle and vehicles with trailers carrying boats and jet skis. We observed grid lock while vehicles propped in the Marine Drive entry point waiting for an available pump.

101 This meant vehicles turning left in off Marine Drive banked up and stopped the single lane through traffic. It also meant vehicles turning right in off Marine Drive propped at the median opening. If one or two vehicles propped or if one vehicle plus trailer propped, through traffic travelling north along Marine Drive would need to manoeuvre around the propped vehicles using the adjoining diminishing-width merging lane. If more than two vehicles propped or if two vehicles plus trailers propped, through traffic would be blocked.

102 The problematic arrangements were exacerbated by the bowser/pump locations. We observed many vehicles failing to find an available pump for the relevant side of the vehicle and proceeding to the end of the southern end of the bowsters and then turning back northwards to try and find a pump. The lack of space for these manoeuvres added to the grid lock as did the difficulties in exiting after refuelling from the bowsters at a non-preferred angle. A few vehicles attempted a left turn exit into Marine Drive but this only added to congestion and delays at the crossover.

103 The problematic arrangements also adversely affected tanker fuel deliveries. We observed the tanker propped in the Marine Drive median opening waiting to turn right into the service station. The volume of left turn in vehicles and vehicles with trailers and the lack of space in the accessway just inside the crossover prevented the tanker from being able to cross the southbound lane in Marine Drive and find sufficient space in the service station.

104 The tanker's turning circle also meant that it occupied the whole of the median opening and thus blocked the opening for right turn exit movements.

105 The tanker also needed to manoeuvre to the west side of the bowsters to reach the refuelling point near the Nepean Highway entry/exit point. That manoeuvre was affected by vehicles blocking the accessway when travelling around the bowsters to find a pump, to which we have referred.

106 The result was unacceptable delays for the tanker propped in Marine Drive, substantially blocking northbound through traffic. We observed the delay was over 300 seconds.

107 It suffices to state that, for the proposal to be acceptable from a traffic and circulation point of view, there would need to be a significant improvement on existing arrangements.

130 Having regard to the evidence, submissions and our inspection, we are not persuaded vehicle access to and from the subject land and circulation within the subject land is a better outcome or an improvement to the existing arrangements.

133 The propping problem observed with the fuel delivery tanker and potential conflict with other vehicles and trailers at times will be worse under the proposal because the fuel tanker will effectively need to prop closer to Marine Drive than is presently the case.

139 In Mr Maina's opinion, the amount of estimated vehicle movements in this location, without effective resolution of potential vehicle obstructions seeking to enter the site and improving internal traffic circulation, will lead to significant traffic conflict on and off the site in Marine Drive. We also agree with him that the internal width of the key access aisle providing access to the tanker fuelling location and nearby bowsters,

will be insufficient to accommodate effective two-way movements, potentially increasing traffic grid lock at this important location.

142 The Scheme seeks to ensure, amongst other matters, that new development is designed to a high standard, does not adversely affect the amenity of the locality, and achieves a satisfactory, efficient, and safe access for motorists entering and leaving the site. The application has not reached this standard in its design and does not provide an improved outcome in relation to traffic and vehicle movements.

143 After undertaking the task of balancing conflicting Scheme objectives, to which we will refer later in these reasons, the application's shortcomings in relation to traffic and circulation means that we cannot grant a permit. For completeness, we are unable to include conditions on a permit to rectify the shortcomings. The issues need reconsideration and in any future application. The reconsideration should include consultation with the road authorities.

In response to these concerns the changes (as listed earlier) to the current application compared to the previous application include:

- Removal egress to Marine Drive, including modifications to the traffic island in Marine Drive to prevent righthand turns.
- Increased of the width of the vehicle circulation isle between Marine Drive and the bowsters by 3 metres (m), from 6.6m to 9.6m.
- Increase of the setback to Marine Drive of the drive-thru ordering stations by almost 2m.

With the increase of the depth the garden bed to Marine Drive from 1.3m to approx. 4.5m as discussed previously to improve the landscape response to Marine Drive, the above changes have necessitated the following further changes:

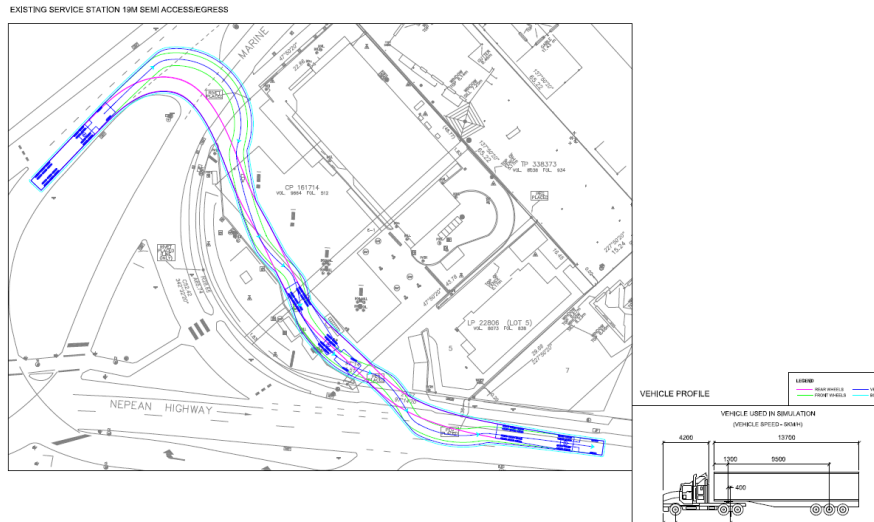
- Reduction of the number of bowsters from 16 to 12.
- Reduction of the size of the convenience store from 295 to 259 square metres (sqm) and the size of the convenience restaurant from 400 to 359 sqm.
- Reduction of the number of seats in the convenience restaurant from 86 to 59 patrons.
- Reduction of the setback of the acoustic tunnel to the south-east boundary by about 1m.

The crux of the matter resulting in the VCAT refusal was that having heard the evidence of the experts and observed the operation of the current service station, it was evident that the service station currently has significant access, circulation, exit and delivery issues which the previous design had not suitably addressed.

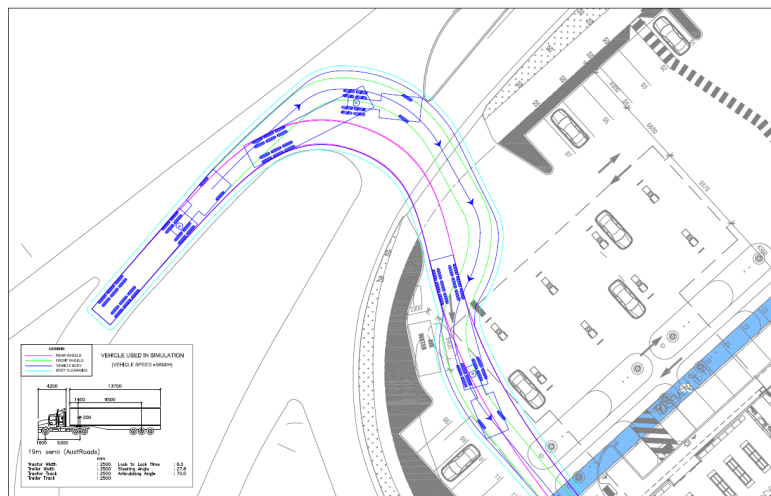
The VCAT had found that the service station currently has significant fuel delivery issues, with trucks having to wait until there is available room to enter the site, and that this

circumstance was replicated in the previous proposal as demonstrated below, with the additional issue that once onsite the trucks would block circulation around the site.

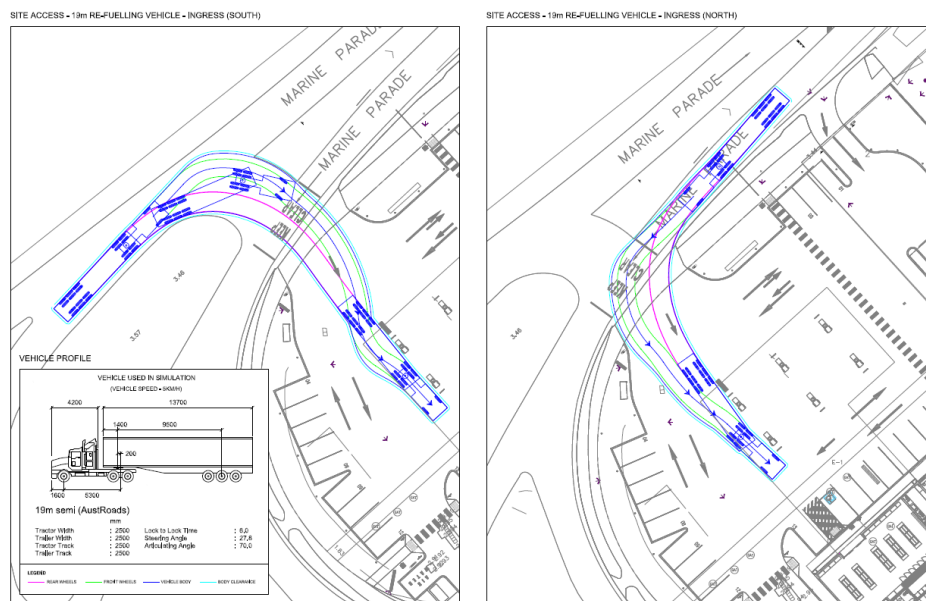
Fuel deliveries – current situation



Fuel deliveries – previous proposal



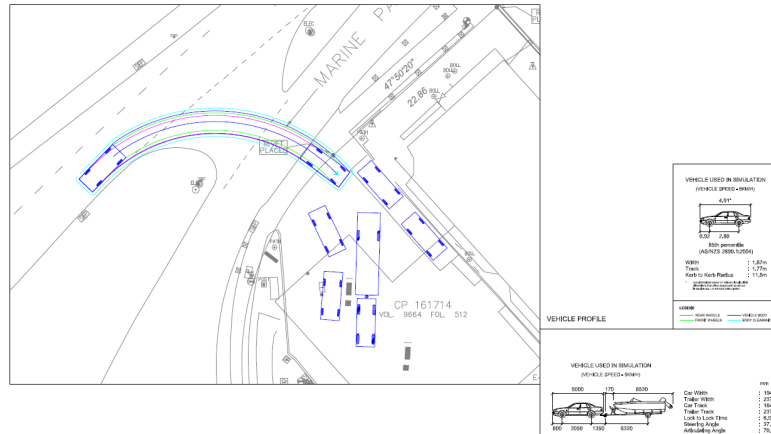
Fuel deliveries – current proposal



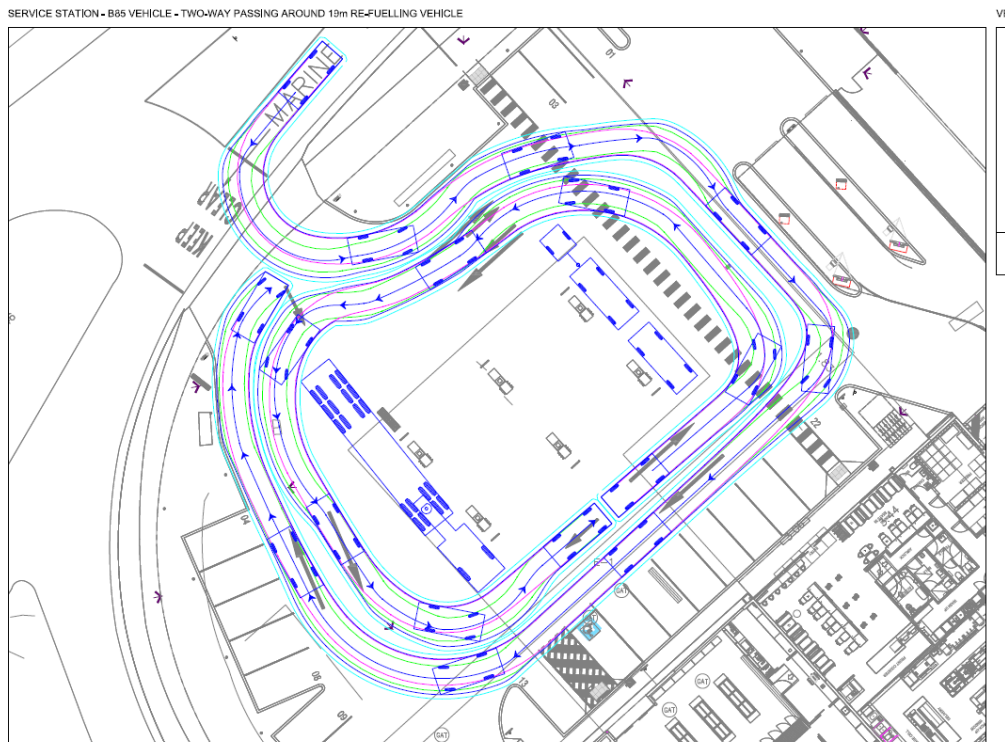
The new proposal has resolved this issue (see above) achieved by the loss of two bowsters and provision of circulation lanes to the south-west, which the truck can utilise rather than having to wait and block traffic on Marine Drive. It also no longer results in the blocking of the adjacent car parking spaces. It is noted that the truck is intended to park in the location of the two southernmost fuelling locations, which will therefore need to be vacant before the truck can enter the site. The applicant has advised that it is intended that that these spaces will be cordoned-off with cones before the anticipated time of the delivery. This operational requirement should be included in the Service Station Site Management Plan, which is addressed in recommended conditions. This is a significant improvement to both the current circumstance and the previous proposal and has been reviewed by Council's Traffic Engineers who are satisfied that the amended layout has suitably resolved this issue.

The issue of circulation within both the current service station and the previous proposal was not confined to fuel deliveries but was broadly problematic around the entire site, as demonstrated in the below images.

EXISTING SERVICE STATION CIRCULATION BLOCKED BY CAR WITH BOAT



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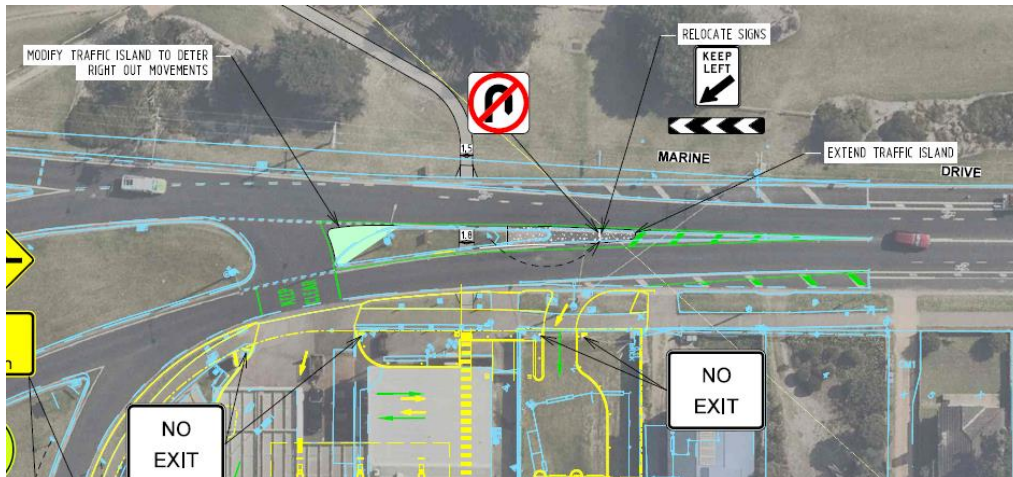


The above swept path diagrams demonstrate a significant improvement regarding access to the site and circulation within the site as compared to both the current circumstance and the previous proposal. These changes not only improve access to the fuel bowzers, but also improve access to the onsite car parking spaces as well as the convenience restaurant drive-thru. Specifically, it is noted that the layout of the current service station has a propensity to create a bottleneck at the entry to the site, which is no doubt contributing to the current significant queuing problem in Marine Drive. The provision in the new layout of wider and multiple circulation options including in both clockwise and anti-clockwise directions and improved opportunity to enter the site is expected to resolve this current problem.

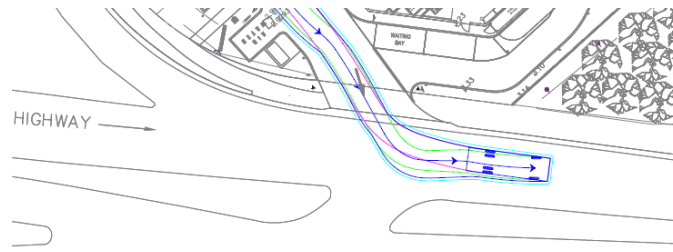
The traffic report submitted with the application provided data on traffic and queuing potential based on the number of bowzers, current and projected traffic numbers and vehicle types and current customer behaviours, which was provided to the DTP and Council's Traffic Engineers. Both the DTP and Council's Traffic Engineers are satisfied that based on the data provided, the proposed layout will adequately accommodate onsite the anticipated customer demand for bowzers without resulting in offsite queuing under reasonable circumstances. Specifically, it is considered that unlike the previous proposal, it is likely that the current proposal will significantly improve the current queuing problem and therefore will be a positive outcome for the site and the road network.

The VCAT had observed that vehicles currently exiting to Marine Drive are impacting vehicles entering the site, contributing to queuing issues on Marine Drive. The current application has responded to this issue by proposing the installation of no exit signs and

modifications to the traffic island in Marine Drive (see plan below) to prevent right turn exits from both crossovers to Marine Drive (noting that the alteration opposite the drive-thru entry was also required to prevent right turn entry into that driveway).



Council officers raised questions regarding consequences of increasing the volume of vehicles exiting to the Nepean Highway. Specifically, the issue is with respect to longer vehicle seeking to go to Marine Drive and the boat ramp. These vehicles may be using the existing exit to Marine Drive because of the lack of available room within the central median for longer vehicles to prop within the middle of Nepean Highway, in order to give way to vehicles turning right from Nepean Highway to Marine Drive (compare available room to length of a car in the image below).



The VCAT, the DTP, Council's Traffic Engineers, and the applicant, all acknowledge that there are current issues with exiting from the site, and all agree that the current circumstance of exiting to Marine Drive is unacceptable and needs to be resolved. The current application is the means by which to resolve this current problem. This, however, needs to be achieved without creating a new problem or inappropriately increasing another existing problem.

In discussions with the DTP, Council officers advised the DTP that they do not support the removal of the central median as this will likely have an inappropriate impact by directing traffic into the local road network. The DTP accepted this position and concluded that it was appropriate to restrict vehicles longer than 6m from turning right onto Nepean Highway via the provision of onsite signage and a Section 173 Agreement, including an

acknowledgement from the owner that should the location become a road safety blackspot at any time in the future, the Head, Transport for Victoria (DTP), may decide to modify the central median, including closing the median such that all right turn egress movements from the land are permanently removed. Council officers acknowledge that this will require vehicles longer than 6m to either do a U-Turn on Nepean Highway near the freeway, or alternatively use Dromana Parade if they are wishing to head to Marine Drive.

The applicant provided traffic data for 25 January 2022. This data shows that the periods of the day which experience the highest number of vehicles towing jetskis and boats/caravans correlates with the periods of the day which experience the lowest number of vehicles turning right at Marine Drive.

Hour Beginning	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	Average
Passenger Vehicles	71	95	116	110	104	117	99	91	103	94	93	94	99
	89%	91%	91%	90%	90%	91%	85%	89%	91%	95%	92%	97%	90.9%
Passenger Vehicles With Jetskis	6	5	8	6	7	10	10	4	6	2	5	1	6
	8%	5%	6%	5%	6%	8%	9%	4%	5%	2%	5%	1%	5.3%
Passenger Vehicles With Boat/Caravan	1	2	3	6	0	1	4	6	2	3	2	1	3
	1%	2%	2%	5%	0%	1%	3%	6%	2%	3%	2%	1%	2.4%
Trucks	2	2	1	0	4	1	3	1	2	0	1	1	2
	3%	2%	1%	0%	3%	1%	3%	1%	2%	0%	1%	1%	1.4%
Total	80	104	128	122	115	129	116	102	113	99	101	97	109
Hourly traffic volume recorded at Nepean Highway/Marine Parade intersection by SCATS, expressed as a percentage of the peak hour													

Hour Beginning	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	Average
Right Turn Exit to Marine Drive													
22 nd January, 2022	6%	1%	4%	1%	1%	2%	5%	3%	0%	1%	2%	5%	3%
23 rd January, 2022	2%	7%	3%	1%	3%	3%	2%	2%	3%	4%	2%	3%	3%
25 th January, 2022	3%	0%	0%	1%	2%	1%	3%	4%	4%	2%	1%	4%	2%
26 th January, 2022	10%	7%	8%	3%	7%	2%	2%	0%	7%	3%	4%	4%	5%

This suggests that currently there is not a significant number of long vehicles turning right onto Marine Drive and therefore the proposed removal of this exit combined with the restriction of right turn to Nepean Highway for vehicles longer than 6m is unlikely to result in a significant diversion of long vehicles to the local road network. Council officers agree that this is the most appropriate means of responding to the current unacceptable problems of existing right turns into Marine Drive, and any existing behaviours of long vehicles turning right onto Nepean Highway.

It is noted that the service station intends to have security cameras, which are a normal tool used at service stations to help address the issue of people not paying for fuel. Conditions of approval will require the installation of an additional camera that monitors and records vehicles exiting on to Nepean Highway and propping in the Nepean Highway central median when turning right exiting the site.

Council's Traffic Engineers raised concerns with truck access to the loading area, commenting that:

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It is noted however that the loading vehicle reverse over a line-marked pedestrian crossing when entering the dock. This presents a safety risk, as pedestrians using the crossing will rightfully assume that they have priority whilst the driver of the truck will be blindsided to the pedestrian crossing (passenger side) when beginning the reversing manoeuvre. It is recommended that the crossing be modified to avoid this potential conflict. It may also be possible to adjust the swept paths by creating a nose in area.

This issue was raised with the applicant who subsequently provided a swept path demonstrating the extent of modification required to address the issue. The change is satisfactory and will be addressed in permit conditions.

Council's Traffic Engineers also advised that the location of the ice box on the northern side of the crossing should be relocated as it will conceal pedestrians stepping onto the pavement. The applicant agreed with this concern, advising that it appears to be a second ice box drawn in error. It too will be addressed in conditions.

OBJECTOR ISSUES NOT ALREADY ADDRESSED

To date, 563 objections have been received. A list of issues raised by objectors was provided earlier in this report and many of the issues have been addressed throughout the report. A summary of the remaining issues and Council's response is detailed below:

Impacts to local businesses.

Beyond the discussion earlier relating to out-of-centre commercial development, whilst there may be overarching Council strategies to support local economies, the scale and origin of a business is not a planning consideration nor can economic competition in a free market be controlled through a planning permit.

Impacts to public health.

Council is not required to know which food premises is looking to occupy the convenience restaurant and the specific food served is therefore, not able to be assessed as part of Council's consideration.

Will attract antisocial behaviour.

Any issues related to crime or anti-social behaviour are speculative matters which are within the remit of the Victoria Police and are not planning considerations for use and development applications.

PERMIT CONDITIONS

For proposed permit conditions please see the recommendation of the Council Report dated 12 August 2024.

CONFLICT OF INTEREST DECLARATION

I have considered my professional duties and personal interests and declare that to the best of my knowledge no actual, potential or perceived conflict of interest exists in the assessment of this application.

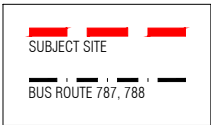
	
Graham Scott Principal Planner	David McPherson Team Leader
Delegate Approved:	Insert date

Appendix 1 – Planning Scheme Provisions

Municipal Planning Strategy
Clause 02.03-2 Environmental and landscape values
Clause 02.03-3 Environmental risks and amenity
Clause 02.03-5 Built environment and heritage
Clause 02.03-7 Transport
Clause 02.03-8 Infrastructure
Planning Policy Framework (PPF)
Clause 11.03–1L-01 Activity centres - Mornington Peninsula
Clause 11.03-5S Distinctive areas and landscapes <i>Mornington Peninsula Localised Planning Statement (Victorian Government, 2014)</i>
Clause 12.02-1S Protection of the marine and coastal environment
Clause 12.02-1L Protection of coastal areas – Mornington Peninsula
Clause 12.05-1S Environmentally sensitive areas
Clause 13.03-1S Floodplain management
Clause 13.05-1S Noise management
Clause 13.07-1S Land use compatibility
Clause 13.07-1L Land use compatibility - Mornington Peninsula
Clause 15.01-1L Urban Design
Clause 15.01-2S Building Design
Clause 15.01-2L-02 Environmentally sustainable development
Clause 15.01-5S Neighbourhood Character
Clause 15.03-2S Aboriginal cultural heritage
Clause 15.10-1S Urban Design
Clause 17.02-1S Business
Clause 17.02-2S Out-of-centre development
Clause 19.03-3S Integrated water management
Clause 19.03-3S integrated water management – Mornington Peninsula
Clause 19.03-5S Waste and resource recovery
Zone
General Residential Zone 1 (GRZ1)
Overlay/s
Design and Development Overlay, Schedule 1 (DDO1)
Environmental Significance Overlay, Schedule 25 (ESO25)
Vegetation Protection Overlay, Schedule 1 (VPO1)
Particular Provisions
Clause 52.05 Signage
Clause 52.06 Car Parking
Clause 52.29 Land Adjacent to the Principal Road Network
Clause 52.34 Bicycle facilities
Clause 53.04 Convenience Restaurant and Take-Away Food Premises

Clause 53.18 Stormwater Management in Urban Development
General Provisions
Clause 64.01 Land used for more than one use
Clause 65 Decision Guidelines
Clause 66 Referral and Notice Provisions
Operational Provisions
Clause 71.02 Operation of the Planning Policy Framework
Clause 73.03 Land use terms

7



BDAI
ARCHITECTURE
INTERIOR DESIGN
DESIGN MANAGEMENT
16 Stanley Street
Collingwood Vic 3066
T hello@bdaid.com.au
E bdaid.com.au
W bdaid.com.au



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Contractor shall verify all levels and dimensions on site prior to commencing any work or shop drawings. Use figured dimensions only. Do not scale drawings.



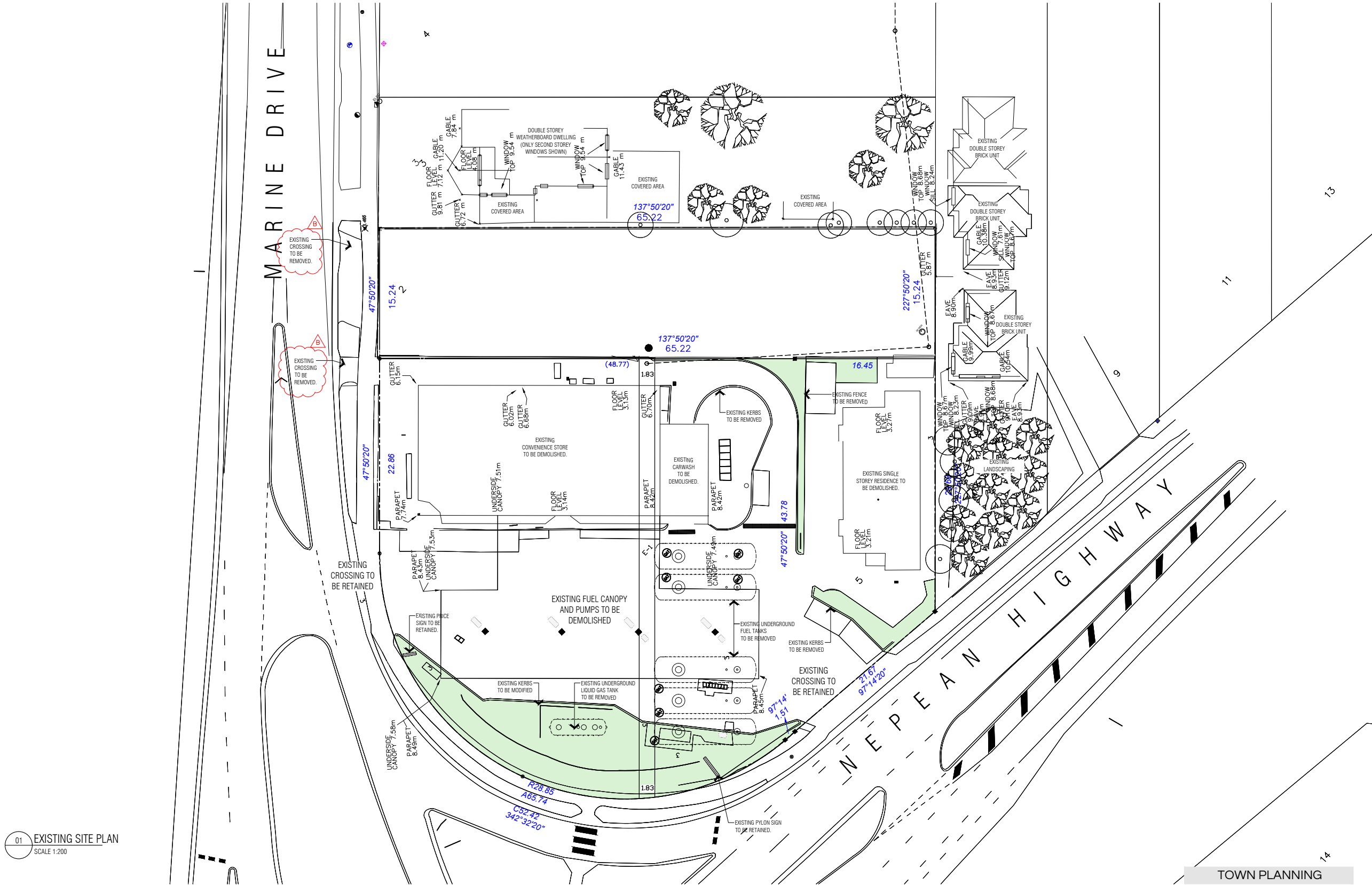
24.04.2023	TOWN PLANNING	B
15.11.2022	TOWN PLANNING	A
04.11.2022	PRELIMINARY ISSUE	P2
04.08.2022	PRELIMINARY ISSUE	P1
date	notes	rev

project
DROMANA SERVICE STATION
1 MARINE DRIVE
SAFETY BEACH, VIC. 3936
for A.A. HOLDINGS Pty. Ltd.
LEVEL 1, 40 JOHNSTON STREET, COLLINGWOOD, VIC. 3066
drawing
SITE ANALYSIS

PROJECT NO	22-165
DRAWN	MN
CHECKED	PC
scale	1:500 @ A1
drawing no	TP-01
revision	B

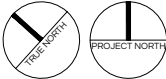
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01 EXISTING SITE PLAN
SCALE 1:200

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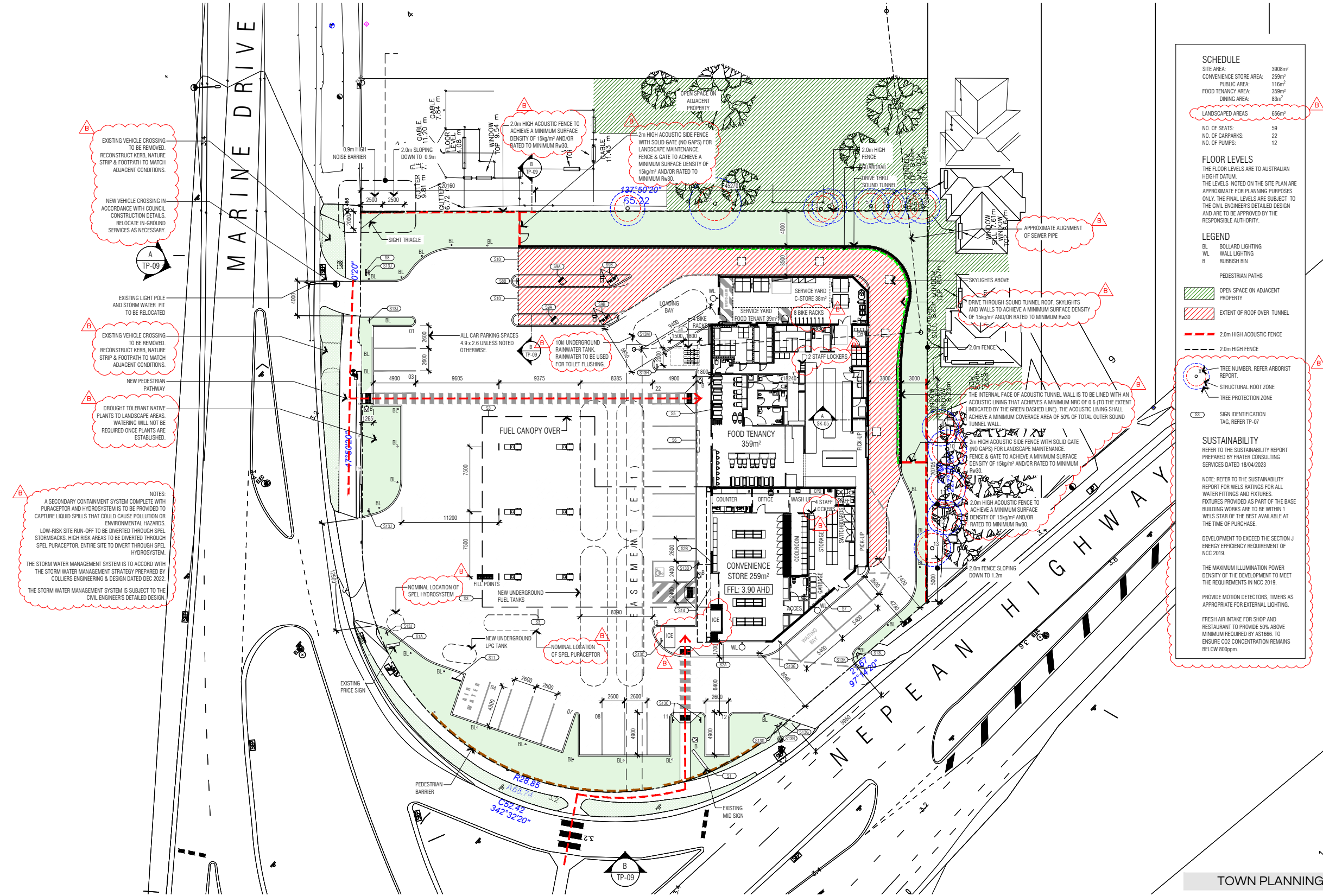
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04.08.2022	PRELIMINARY ISSUE	P1
date	notes	rev

project
DROMANA SERVICE STATION
1 MARINE DRIVE
SAFETY BEACH VIC. 3096
for A.A. HOLDINGS Pty. Ltd.
LEVEL 1, 40 JOHNSTON STREET, COLLINGWOOD, VIC. 3066
drawing
EXISTING CONDITIONS

PROJECT NO	22-165
DRAWN	MN
CHECKED	PC
scale	1:200 @ A1
drawing no	TP-02
revision	B

TOWN PLANNING

SYDNEY
BDAI
MELBOURNE



SCHEDULE

SITE AREA:	3908m²
CONVENIENCE STORE AREA:	259m²
FOOD TENANCY AREA:	359m²
DINING AREA:	83m²
LANDSCAPED AREAS:	656m²

NO. OF SEATS: 59
NO. OF CARPARKS: 22
NO. OF PUMPS: 12

FLOOR LEVELS

THE FLOOR LEVELS ARE TO AUSTRALIAN HEIGHT DATUM. THE LEVELS NOTED ON THE SITE PLAN ARE APPROXIMATE FOR PLANNING PURPOSES ONLY. THE FINAL LEVELS ARE SUBJECT TO THE CIVIL ENGINEER'S DETAILED DESIGN AND ARE TO BE APPROVED BY THE RESPONSIBLE AUTHORITY.

LEGEND

BL BOLLARD LIGHTING
WL WALL LIGHTING
B RUBBISH BIN

PEDESTRIAN PATHS

OPEN SPACE ON ADJACENT PROPERTY
EXTENT OF ROOF OVER TUNNEL

2.0m HIGH ACOUSTIC FENCE
2.0m HIGH FENCE

TREE NUMBER, REFER ARBORIST REPORT.
STRUCTURAL ROOT ZONE
TREE PROTECTION ZONE

SIGN IDENTIFICATION TAG, REFER TP-07

SUSTAINABILITY

REFER TO THE SUSTAINABILITY REPORT PREPARED BY FRATER CONSULTING SERVICES DATED 18/04/2023

NOTE: REFER TO THE SUSTAINABILITY REPORT FOR WELS RATINGS FOR ALL WATER FITTINGS AND FIXTURES. FIXTURES PROVIDED AS PART OF THE BASE BUILDING WORKS ARE TO BE WITHIN 1 WELS STAR OF THE BEST AVAILABLE AT THE TIME OF PURCHASE.

DEVELOPMENT TO EXCEED THE SECTION J ENERGY EFFICIENCY REQUIREMENT OF NCC 2019.

THE MAXIMUM ILLUMINATION POWER DENSITY OF THE DEVELOPMENT TO MEET THE REQUIREMENTS IN NCC 2019.

PROVIDE MOTION DETECTORS, TIMERS AS APPROPRIATE FOR EXTERNAL LIGHTING.

FRESH AIR INTAKE FOR SHOP AND RESTAURANT TO PROVIDE 50% ABOVE MINIMUM REQUIRED BY AS1666. TO ENSURE CO2 CONCENTRATION REMAINS BELOW 800ppm.

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27.09.2022	TRAFFIC ENG COMMENTS	P3
26.09.2022	PRELIMINARY ISSUE	P2
04.08.2022	PRELIMINARY ISSUE	P1
date	notes	rev

project
DROMANA SERVICE STATION
1 MARINE DRIVE
SAFETY BEACH VIC. 3836
for A.A. HOLDINGS Pty. Ltd.
LEVEL 1, 40 JOHNSTON STREET, COLLINGWOOD, VIC. 3066

drawing
PROPOSED SITE & FLOOR PLAN

PROJECT NO	22-165
DRAWN	MN
CHECKED	PC
scale	1:200 @ A1
drawing no	TP-03
revision	B

TOWN PLANNING

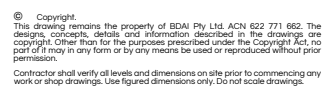




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E hello@bdai.com.au
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project

DROMANA SERVICE STATION

1 MARINE DRIVE
SAFETY BEACH, VIC. 3936
for A.A. HOLDINGS Pty. Ltd.
LEVEL 1, 40 JOHNSTON STREET, COLLINGWOOD, VIC. 3066

drawing

ROOF PLAN

PROJECT NO	22-165
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TP-04	B



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project
DROMANA SERVICE STATION
1 MARINE DRIVE
SAFETY BEACH VIC. 3936
for A.A. HOLDINGS Pty. Ltd.
LEVEL 1, 40 JOHNSTON STREET, COLLINGWOOD, VIC. 3066
drawing
ELEVATIONS

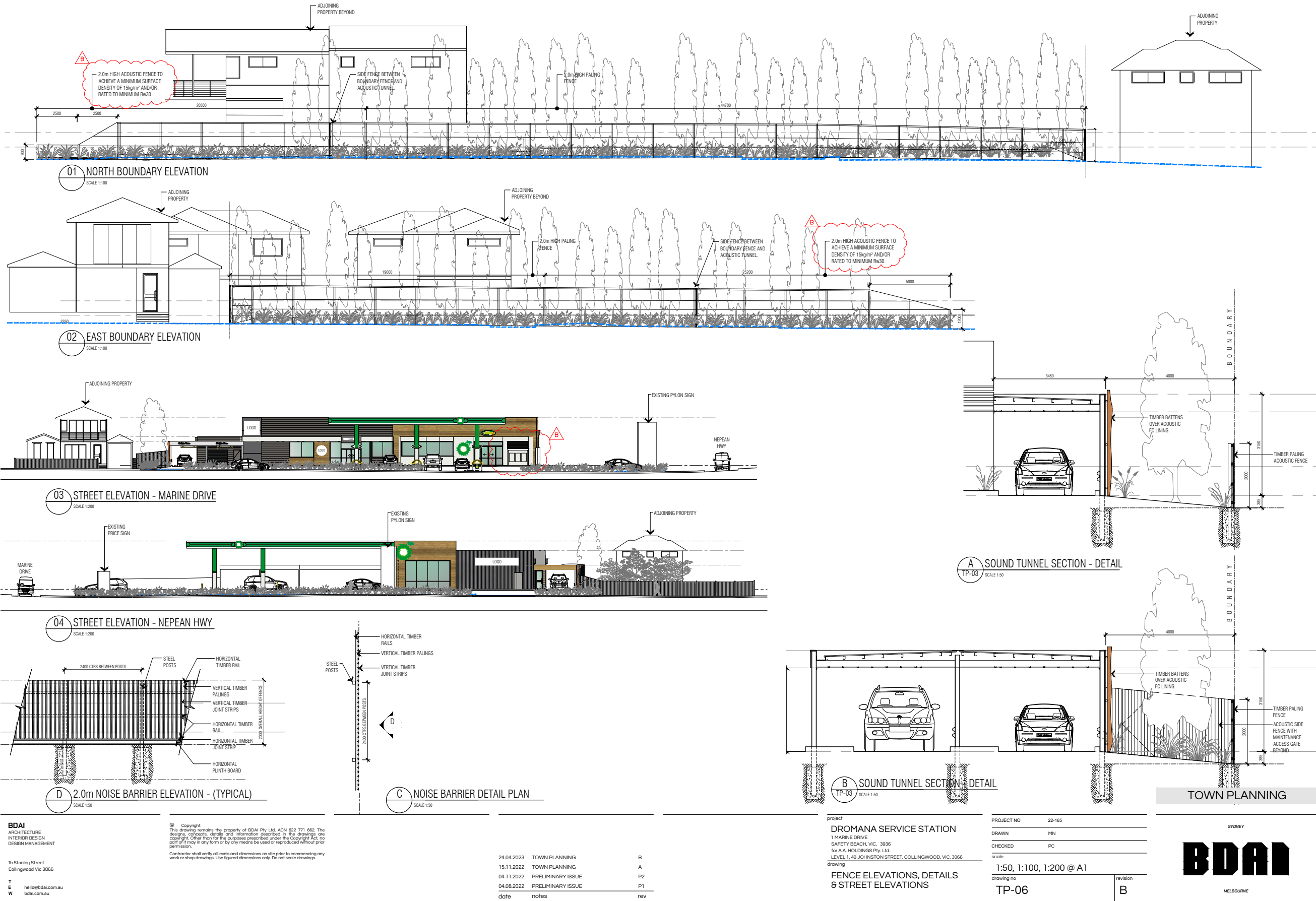
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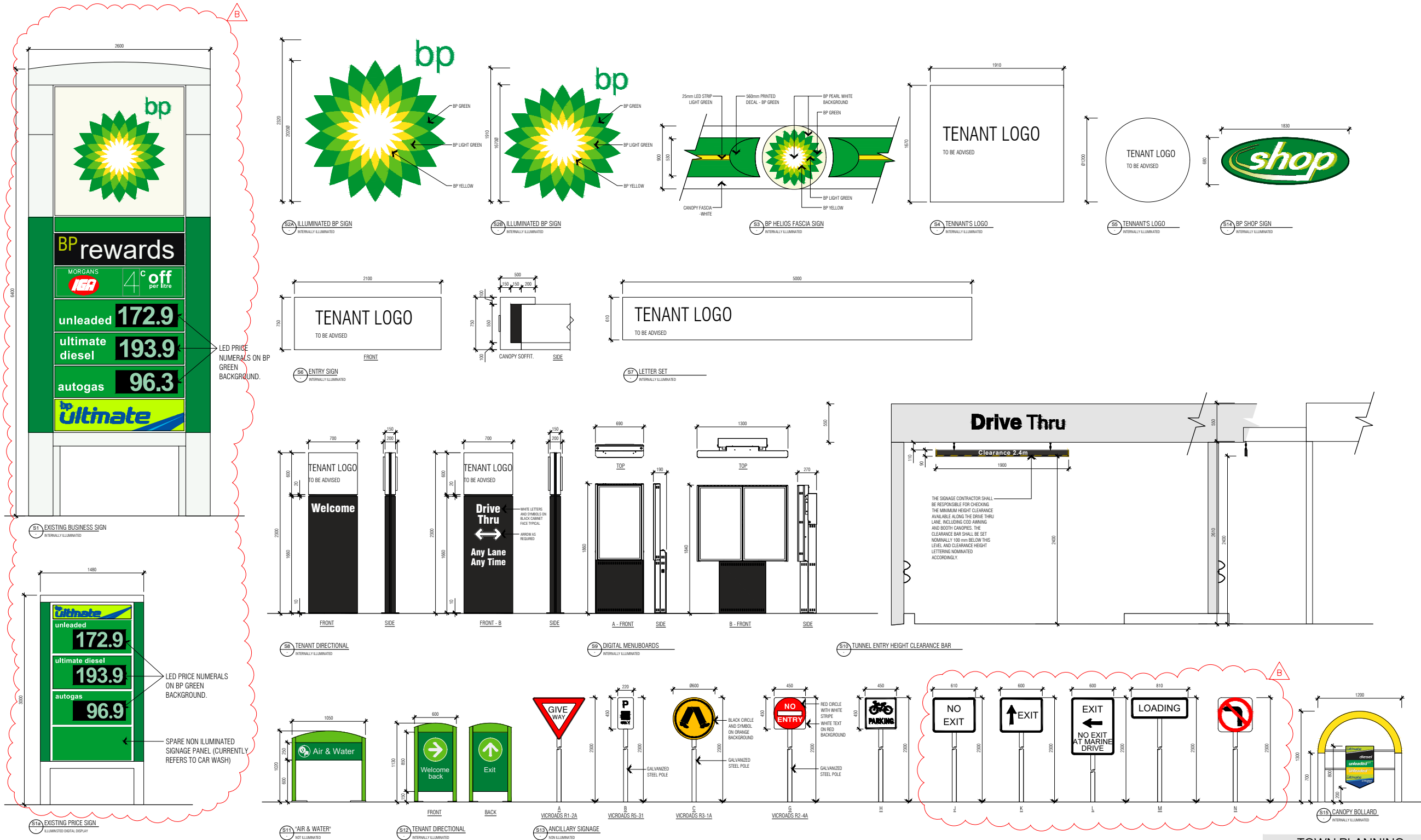
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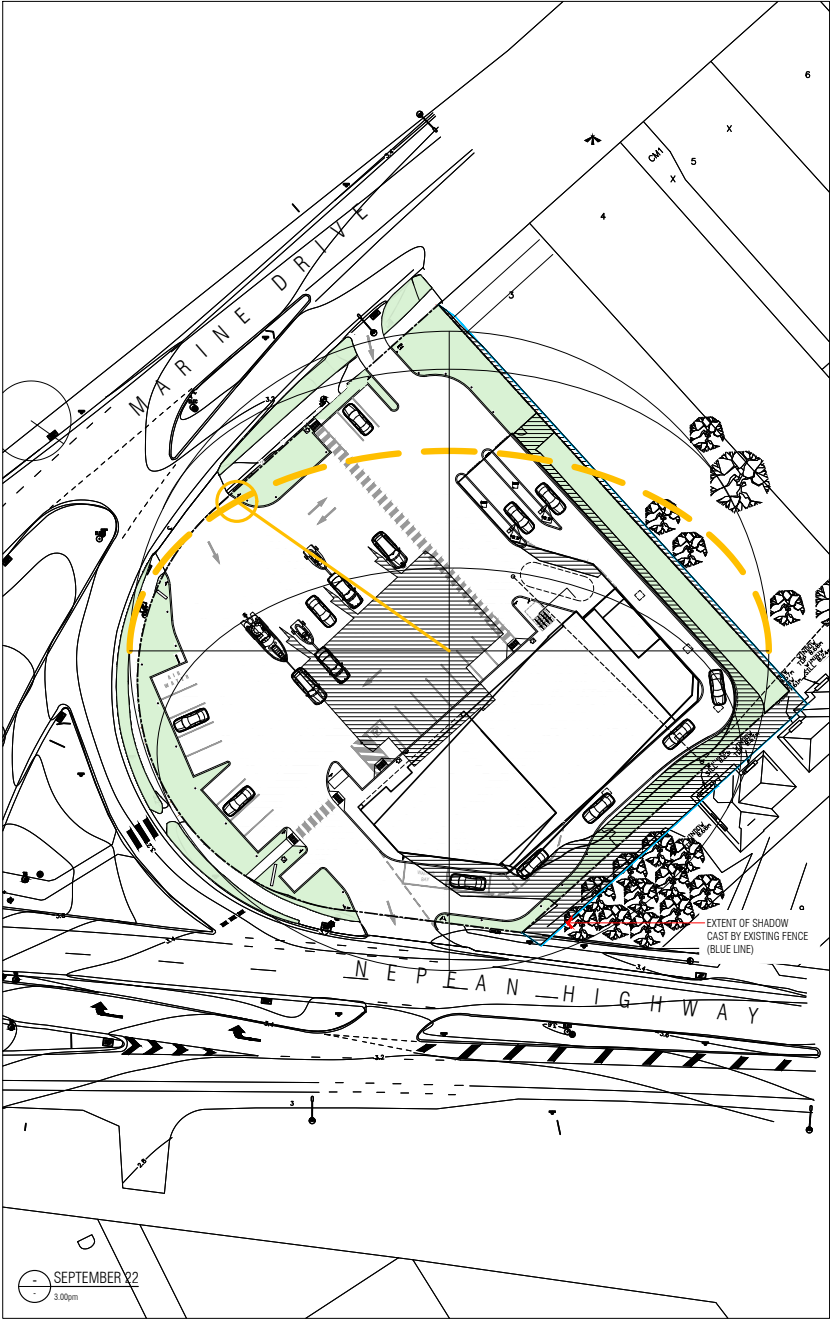
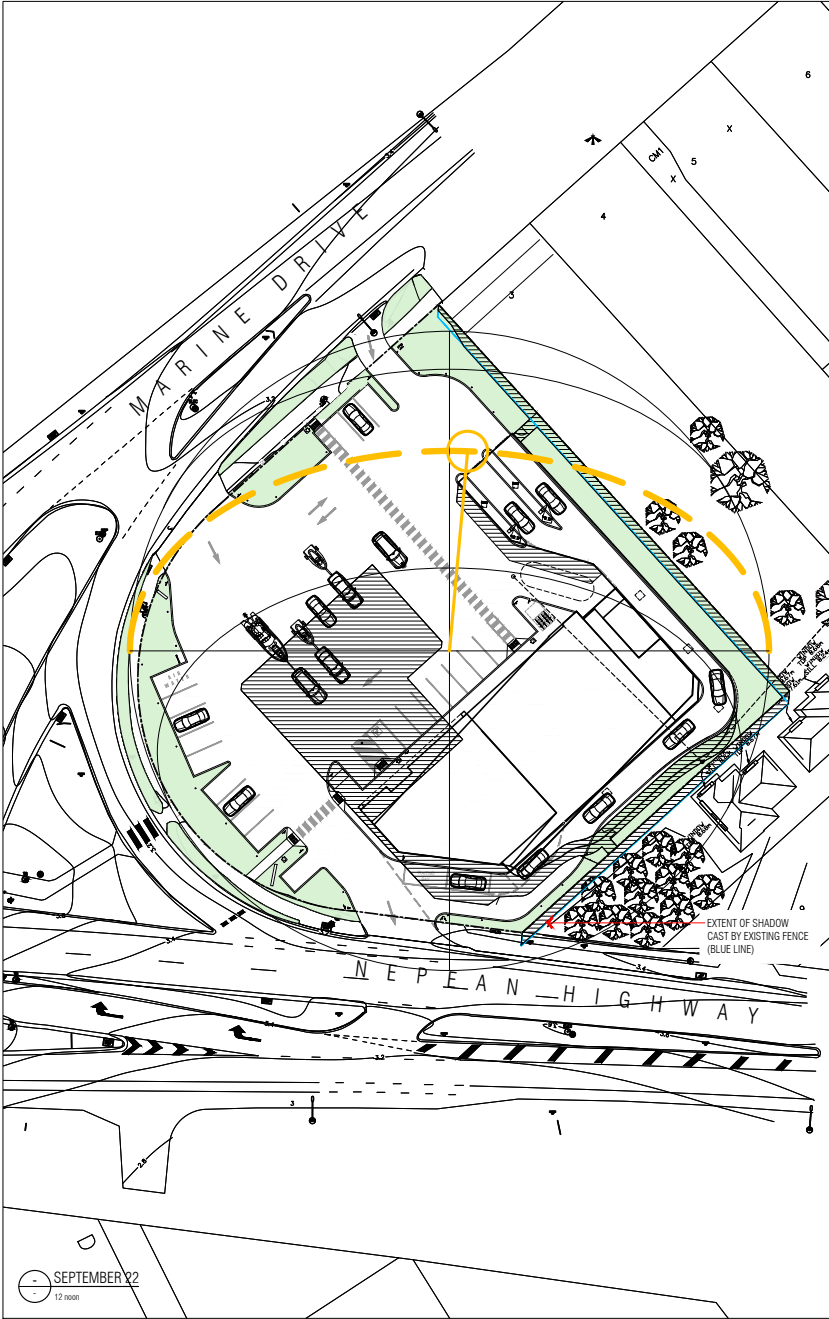
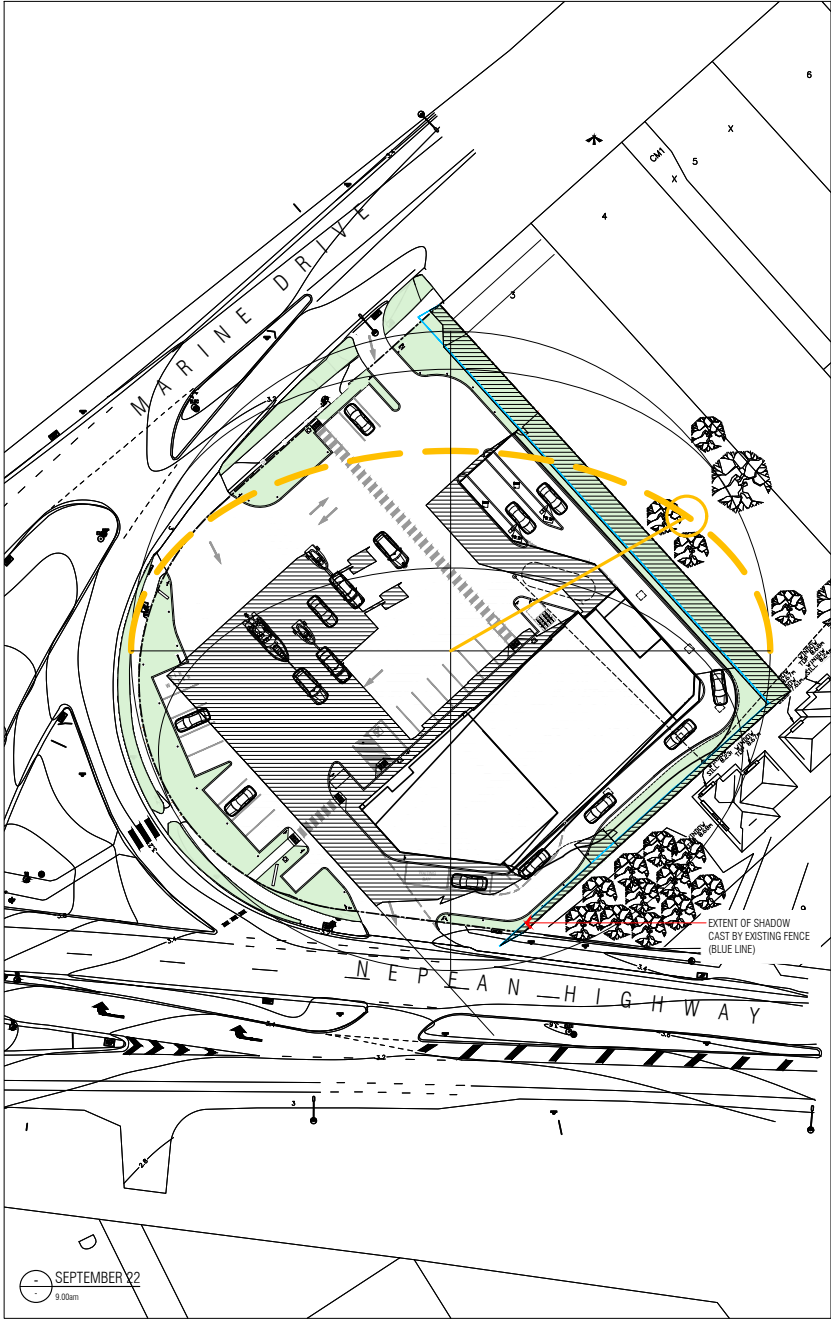
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project
DROMANA SERVICE STATION
1 MARINE DRIVE
SAFETY BEACH VIC. 3096
for A.A. HOLDINGS Pty. Ltd.
LEVEL 1, 40 JOHNSTON STREET, COLLINGWOOD, VIC. 3066
drawing
SIGNAGE DETAILS

PROJECT NO	22-165
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scale	1:25 @ A1
drawing no	TP-07
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TOWN PLANNING

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project
DROMANA SERVICE STATION
1 MARINE DRIVE
SAFETY BEACH VIC. 3936
for A.A. HOLDINGS Pty. Ltd.
LEVEL 1, 40 JOHNSTON STREET, COLLINGWOOD, VIC. 3066
drawing
SHADOW DIAGRAMS

PROJECT NO	22-165
DRAWN	MN
CHECKED	PC
scale	NTS
drawing no	TP-08
revision	B

TOWN PLANNING

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A VIEW A
TP-03



B VIEW B
TP-03

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project
DROMANA SERVICE STATION
1 MARINE DRIVE
SAFETY BEACH VIC. 3096
for A.A. HOLDINGS Pty. Ltd.
LEVEL 1, 40 JOHNSTON STREET, COLLINGWOOD, VIC. 3066
drawing
RENDERED VIEWS

PROJECT NO 22-165
DRAWN MN
CHECKED PC
scale
NTS
drawing no
TP-09

revision
B

TOWN PLANNING

SYDNEY

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MELBOURNE

Traffix Group

Traffic Engineering Assessment

Proposed Service Station & Convenience
Restaurant

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

Prepared for
AA Holdings Pty Ltd

April, 2023

G29423R-02B

Level 28, 459 Collins St
Melbourne Victoria 3000

T: 03 9822 2888
admin@traffixgroup.com.au

Traffix Group Pty Ltd
ABN: 32 100 481 570

traffixgroup.com.au

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

Document Control

Our Reference: G29423R-02B

Issue No.	Type	Date	Prepared By	Approved By
A	Draft RFI Response	20/04/2023	M. Woollard	C. Dunstan
B	RFI Response	24/04/2023	M. Woollard	C. Dunstan

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G29423R-02B

2

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

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Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

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Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

1. Introduction

Traffic Group has been engaged by AA Holdings Pty Ltd to undertake a traffic engineering assessment for the proposed service station & convenience restaurant at 1-2 Marine Drive & 5 Nepean Highway, Safety Beach.

The following report has been prepared in response to the Request for Information dated 20th February, 2023 issued by Council. The RFI requests some additional information with regards to traffic engineering matters and sets out two concerns regarding circulation through the site. The RFI items are listed below:

- a) *In accordance with the submitted Traffic Report either amend the plans to provide staff shower facilities or amend the application to include variation of bicycle facilities.*
- e) *The two existing crossovers to Marine Parade which are no longer proposed to be used to be notated as being removed.*
- g) *The signage plan to include the signs in the Functional Layout Plan.*
- h) *A plan showing the location of all proposed signs, including all proposed traffic signs.*
- k) *The Functional layout plans to provide details for informing drivers exiting the drive-thru that there is no exit to Marine Drive.*
- l) *Swept path diagrams for vehicles intending to head north-east on Marine Drive.*
 - *The removal of the Marine Drive vehicle exit has created new traffic concerns which have not been resolved by the modified design. Previously, vehicles including small trucks and cars with boats heading to the boat ramp, had been able to turn right (north-east) into Marine Drive where they could prop in the middle of Marine Drive adjacent to the median strip, before merging with traffic on Marine Drive. It is now proposed that this traffic turn right out of the service station into the busier intersection of Nepean Highway and Marine Drive, in a location where there is no longer sufficient room to prop in the medium strip, and at a point where vehicles will have to briefly enter the south-west bound lane of the Nepean Highway before entering into the north-east bound lane that merges with Marine Drive. The need to enter into the south-west bound lane of the Nepean Highway may not be evidently clear to drivers and could cause accidents. The submitted vehicle swept paths unrealistically only show boat owner heading east on Nepean Hwy, away from the boat ramp, rather than towards the boat ramp.*
 - *The proposal has not responded to paragraph 125 of the VCAT order, which states that: 'We also record that Ms Dunstan agreed that congestion around the drive-thru entry could be eased with more space for another queued vehicle at the ordering location, with a minor layout change.'*

The following traffic report has had regard to the above requests for information and the design concerns, with a summary of our responses at Section 5.

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

2. Proposal

Our assessment is based on the development plans prepared by McIntyre and Cross Architects (dated April, 2023). A copy of the relevant plans is attached at Appendix A.

The proposal is for a service station and convenience restaurant on the land to replace the existing service station. The service station proposal includes 6 fuel bowsers (12 refuelling points) and an ancillary convenience store with a total floor area of 259m².

The convenience restaurant proposal includes a floor area of 359m², accommodating up to 59 seats, and a drive-through facility.

Car Parking

A total of 22 car spaces are provided on the site, including 1 signed DDA car space. The proposal also includes a car space for the air and water station and two waiting bays for the convenience restaurant.

The statutory car parking requirement for the convenience restaurant is 17 car spaces. Accordingly, there are 5 car spaces available on the site, which can be used by staff of the service station and any customers who wish to access the convenience store only, or customers moving their car to free up a fill point while they pay for their fuel.

Vehicle Access

Vehicle access to the site is proposed as follows:

- Retention of the existing access to Marine Drive along the northern site boundary (12.6m wide) to be used for entry movements only.
- Retention of the existing access to Nepean Highway along the southern site boundary (9.3m wide) to be used for exit movements only.
- A new left-in only access from Marine Drive at the site's north-east boundary (4.0m wide).

The proposed drive-through for the convenience restaurant extends from the site's north-eastern corner around the periphery of the site to the Nepean Highway egress.

The drive-through includes two separate queuing lanes containing multiple order points, which then combine into a single lane past the separate pay and collection points. Two designated waiting bays for the drive-through are proposed beyond the second collection point.

Bicycle Parking

A total of 12 bicycle spaces are proposed, including 4 spaces located adjacent to the pedestrian entrance to the convenience restaurant and 8 spaces within the service yard for staff of the convenience restaurant.

Pedestrian Access

Pedestrian access through the carpark/accessways occurs via two pedestrian crossing locations, including a crossing which extends from Nepean Highway to the ancillary convenience store and a crossing that extends from Marine Drive to the convenience restaurant.

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

Service Station – Fuel Deliveries

LPG and fuel deliveries to the service station will be undertaken via a 19m long semi-trailer.

Deliveries of LPG occur once every 2.5-3 weeks (depending on the season) and fuel is delivered to the site once every 1-2 days (depending on the season). Fuel delivery vehicles are on-site for approximately 40 minutes for the LPG delivery and 20 minutes for fuel delivery. The service station operator will manage refuelling to occur outside of peak times to minimise the impact on the availability of refuelling points for customers.

The vehicle will access the site via the Marine Drive access, will prop adjacent to the southernmost fill points, and will exit the site to Nepean Highway.

While on the site, the 19m long truck will block one side of the southernmost fill points.

Further discussion of the fuel delivery arrangements is discussed at Section 4.8.

Convenience Restaurant and Ancillary Convenience Store

Deliveries to the convenience restaurant and ancillary convenience store will be undertaken by vehicles up to the 12.5m long Heavy Rigid Vehicle (specified under AS2890.2-2018). These deliveries use the on-site loading bay adjacent to the convenience restaurant drive-through.

The following sets out the anticipated frequency of deliveries to the site:

- 1 delivery per day for the convenience store plus 3 deliveries per week for milk, and
- 1 delivery per 1-2 days for the convenience restaurant.

The vehicle will access the site via the Marine Drive access and exit to Nepean Highway.

2.1. Previous Application

An application for a service station and convenience restaurant on the subject site was heard by VCAT in June, 2021. Traffix Group prepared a Traffic Report for the applicant in this matter.

This previous application was for a larger development with the following differences from a traffic engineering perspective:

- 2 additional fuel bowsers (4 additional fill points),
- a larger convenience store for the service station (+36m²),
- a larger convenience restaurant (+41m² and +27 seats),
- 3 fewer car spaces,
- vehicle entry and exit to Marine Drive (now entry only),
- less area provided behind the fuel bowsers to accommodate vehicles towing jet-skis/boats, and
- fuel delivery truck relying on closure of air and water station, 3 car spaces, one side of two fuel bowsers (2 fill points) and restricts the circulation along the accessway adjacent to the fuel truck.

A detailed comparison between the existing conditions, the application that was the subject of the previous VCAT hearing and the current proposal is provided at Section 4.10.

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

2.2. VCAT Decision

VCAT ultimately determined to affirm the Council's refusal of the application and no permit was issued.

The VCAT decision included detailed discussion of traffic issues associated with the existing operation of the site, as well as the proposed arrangements. The relevant discussions set out in the decision are summarised below.

Contextually, the Tribunal completed a site inspection on Saturday 30th October, 2021 at approximately 4:30pm-5:30pm. The Tribunal stated that the inspection day *"was an off peak time of year but acknowledge it was a weekend day following an easing of pandemic travel restrictions"*. The Tribunal undertook its site inspection while a fuel tanker was present on the site. Under the existing conditions, it is agreed that the fuel tanker disrupts traffic flow on the site and surrounding the site for the duration of the delivery time. It is an identified deficiency of the existing layout.

A video of traffic conditions was also supplied to the Tribunal by Mr Whitaker, which was taken between 10am-2pm on the 9th and 10th January, 2021, which was the January holiday period after the 2020 Covid-19 lockdowns.

A review of SCATS data for the 2021 year, now identifies that the 10am-2pm periods presented by Mr Whitaker represents the 2nd and 4th busiest 10am-2pm period of 2021. This is the extremity of traffic conditions, noting that the design volume is typically taken as the 30th busiest day.

The suitability of 'design days' is discussed further at Section 3.3 of this report, however, it is important to contextualise the following findings by the Tribunal concerning the existing operations of the site.

The relevant observations in the VCAT decision on the site's existing operation are reproduced below:

- 96 *There are two entry/exit points. The Marine Drive point is a right turn in through a break in the Marine Drive median and a left turn in off Marine Drive. The Marine Drive point is also a right and left turn exit to Marine Drive. The Nepean Highway point is a left turn in and a right and left turn exist.*
- 97 *The subject land is about 2 kilometres south-west of the popular Safety Beach boat ramp. Vehicles and attached motor boats and jet skis frequently refuel at the existing service station going to and from the boat ramp.*
- 98 *There is little dispute that access and circulation is currently highly problematic.*
- 99 *We confirmed this state of affairs at our inspection on Saturday 30 October 2021 at around 4.30 pm to 5.30 pm. This was an off peak time of year but acknowledge it was a weekend day following an easing of pandemic travel restrictions. The time of day was nonetheless well past the busier time around the middle of the day.*
- 100 *Generally consistent with Mr Whitaker's video evidence at the hearing, there is insufficient space before the bowlers off Marine Drive to manage the volumes of vehicle and vehicles with trailers carrying boats and jet skis. We observed grid lock while vehicles propped in the Marine Drive entry point waiting for an available pump.*
- 101 *This meant vehicles turning left in off Marine Drive banked up and stopped the single lane through traffic. It also meant vehicles turning right in off Marine Drive propped at*

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

the median opening. If one or two vehicles propped or if one vehicle plus trailer propped, through traffic travelling north along Marine Drive would need to manoeuvre around the propped vehicles using the adjoining diminishing-width merging lane. If more than two vehicles propped or if two vehicles plus trailers propped, through traffic would be blocked.

- 102 *The problematic arrangements were exacerbated by the bowser/pump locations. We observed many vehicles failing to find an available pump for the relevant side of the vehicle and proceeding to the end of the southern end of the bowsters and then turning back northwards to try and find a pump. The lack of space for these manoeuvres added to the grid lock as did the difficulties in exiting after refuelling from the bowsters at a non-preferred angle. A few vehicles attempted a left turn exit into Marine Drive but this only added to congestion and delays at the crossover.*
- 103 *The problematic arrangements also adversely affected tanker fuel deliveries. We observed the tanker propped in the Marine Drive median opening waiting to turn right into the service station. The volume of left turn in vehicles and vehicles with trailers and the lack of space in the accessway just inside the crossover prevented the tanker from being able to cross the southbound lane in Marine Drive and find sufficient space in the service station.*
- 104 *The tanker's turning circle also meant that it occupied the whole of the median opening and thus blocked the opening for right turn exit movements.*
- 105 *The tanker also needed to manoeuvre to the west side of the bowsters to reach the refuelling point near the Nepean Highway entry/exit point. That manoeuvre was affected by vehicles blocking the accessway when travelling around the bowers to find a pump, to which we have referred.*
- 106 *The result was unacceptable delays for the tanker propped in Marine Drive, substantially blocking northbound through traffic. We observed the delay was over 300 seconds.*
- 107 *It suffices to state that, for the proposal to be acceptable from a traffic and circulation point of view, there would need to be a significant improvement on existing arrangements.*

Ultimately, VCAT was not satisfied that the application made sufficient improvements to be approved in its current form. The following sets out the key findings (noting that the proposal before VCAT allowed an exit movement to Marine Drive, whereas this is prohibited in the current application which allows for entry only):

- 132 *The location of the new bowsters in respect to the main entry points to the site, particularly the nearest bowser to the southern access in Marine Drive, is in roughly the same position as present. The present bowser location is problematic for the reasons we saw at our inspection and to which we have referred.*
- 133 *The propping problem observed with the fuel delivery tanker and potential conflict with other vehicles and trailers at times will be worse under the proposal because the fuel tanker will effectively need to prop closer to Marine Drive than is presently the case.*
- 135 *The proposed circulation of vehicles on the site is problematic and unresolved.*

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- 136 *These 'circulating' movements will result in additional navigation complexity. They will lead to an unacceptable outcome of two-way vehicle flows relating to the two uses. There will be a high likelihood of internal traffic snarls. They will add to right turn exit movements to Marine Drive which are problematic given vehicle propping in the median when doing right turn entry movements and unreasonably add to congestion at this entry/exit point.*
- 138 *In short, the convenience restaurant will add to circulating complexities and congestion.*
- 139 *In Mr Maina's opinion, the amount of estimated vehicle movements in this location, without effective resolution of potential vehicle obstructions seeking to enter the site and improving internal traffic circulation, will lead to significant traffic conflict on and off the site in Marine Drive. We also agree with him that the internal width of the key access aisle providing access to the tanker fuelling location and nearby bowzers, will be insufficient to accommodate effective two-way movements, potentially increasing traffic grid lock at this important location.*
- 140 *Ms Dunstan, in her oral evidence, supported 'keep clear' road marking being added in the Marine Drive southbound lane opposite the southern crossover and the median opening. In her opinion, this would prevent blockage of the lane. While it may ease southbound lane blockages, it does not ease on-site congestion or northbound lane blockages.*
- 142 *The Scheme seeks to ensure, amongst other matters, that new development is designed to a high standard, does not adversely affect the amenity of the locality, and achieves a satisfactory, efficient, and safe access for motorists entering and leaving the site. The application has not reached this standard in its design and does not provide an improved outcome in relation to traffic and vehicle movements.*
- 143 *After undertaking the task of balancing conflicting Scheme objectives, to which we will refer later in these reasons, the application's shortcomings in relation to traffic and circulation means that we cannot grant a permit. For completeness, we are unable to include conditions on a permit to rectify the shortcomings. The issues need reconsideration and in any future application. The reconsideration should include consultation with the road authorities.*

A detailed comparison between the existing conditions, the application that was the subject of the previous VCAT hearing and the current proposal is provided at Section 4.10.

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3. Existing Conditions

3.1. Subject Site

The subject site is located on the east corner of Marine Drive and Nepean Highway, in Safety Beach. A locality plan, photograph of the site's frontage and aerial photograph are provided at Figure 1 to Figure 3, respectively.

The site is irregular in shape, with a total site area of 3,908m² and site frontages to Marine Drive and Nepean Highway.

The site is currently occupied by three parcels of land including:

- No.1 Marine Drive – currently occupied by an existing service station (BP) with ancillary convenience store and car wash. Vehicle access to the site is provided via three access points to Marine Drive and Nepean Highway including:
 - single width accessway to Marine Drive at the site's north boundary facilitating left-in entry and left-out exit movements,
 - double width accessway to Marine Drive at the site's north-west corner facilitating all entry and exit movements, and
 - double width accessway to Nepean Highway at the site's south-east corner facilitating left-in entry movement and right-out and left-out exit movements.
- No. 2 Marine Drive – currently vacant with no vehicle access.
- No. 5 Nepean Highway – currently occupied by a single storey dwelling. Vehicle access to the site is provided via an access point to the No.1 Marine Drive site.

No on-street car spaces are available along the site's frontages to Marine Drive and Nepean Highway due to 'No Stopping' restrictions.

The site is located within a General Residential Zone – Schedule 1 (GRZ1) under the Planning Scheme as presented at Figure 4. Land-use in the vicinity of the site is predominantly residential.

Significant key land uses in the nearby area include:

- **Safety Beach**, located directly opposite the site, with the boat ramp located to the north-west, and
- **Dromana Beach**, located south-west of the site.

3.1.1. Existing operation of Service Station

Under existing conditions, the site operates with a service station covering the majority of the site. The service station provides 4 bowsers (8 fill points), ancillary convenience store, car wash, air and water station and 5 car spaces on the site (not including the fill points).

The site operates with two access points, including a 12.6m wide crossover to Marine Drive (which allows for all movements) and a 9.3m wide crossover to Nepean Highway (which allows for all movements except for right-turn in movements). A third crossover is provided to the site, for access to a service yard at the rear of the site.

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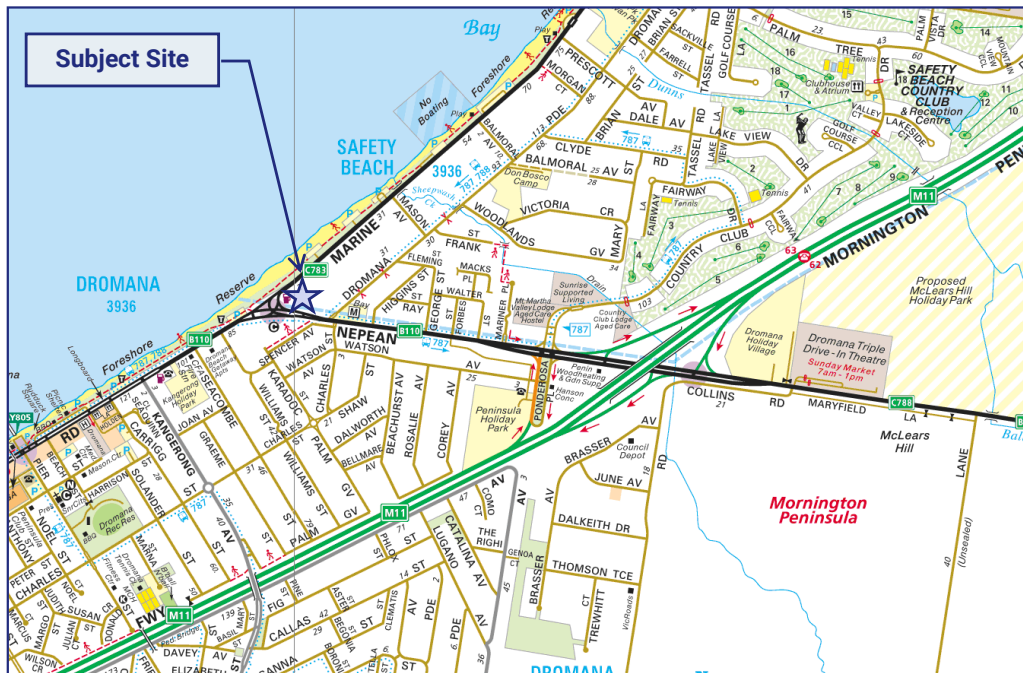


Figure 1: Locality Plan (Source: Melways)



Figure 2: Subject Site, view from Nepean Highway

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Figure 3: Aerial Photograph (Source: Nearmap)

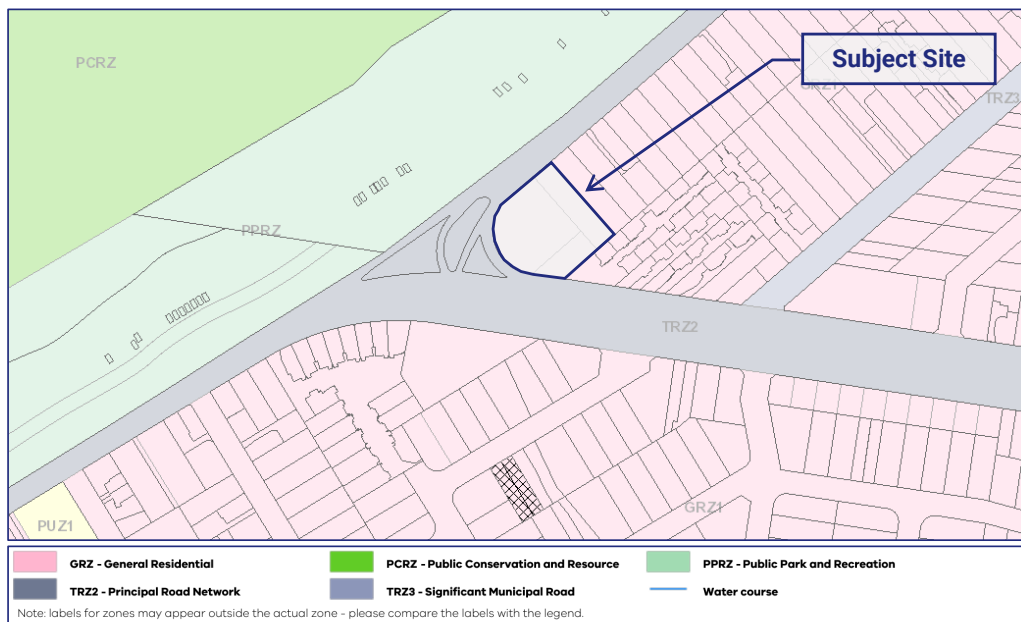


Figure 4: Land Use Zoning Map (Source: Planning Scheme Online)

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3.2. Road Network

Marine Drive is a Department of Transport and Planning (DTP) declared Arterial Road and a Transport Zone 2 under the Planning Scheme. Marine Drive is aligned in a north-east to south-west direction in the vicinity of the site.

To the north-east of the site, Marine Drive provides a traffic lane and dedicated bicycle lane in each direction with kerbside parking on both sides. On-street parking is generally unrestricted along both sides of Marine Drive.

Nepean Highway is a DTP declared Arterial Road and a Transport Zone 2 under the Planning Scheme. Nepean Highway is aligned in an east-west direction along the site's southern boundary.

In the vicinity of the site, Nepean Highway provides a traffic lane and dedicated bicycle lane in each direction. On-street car parking is not permitted along either side of Nepean Highway in the vicinity of the site.

In the vicinity of the site, a posted speed limit of 60km/h applies to Nepean Highway and to Marine Drive.

The intersection between Marine Drive and Nepean Highway is controlled by traffic signals. Photographs depicting the surrounding road network are presented in Figure 5 to Figure 8.



Figure 5: Marine Drive - view north-east from the site



Figure 6: Marine Drive - view south-west from the site



Figure 7: Nepean Highway - view east from the site



Figure 8: Nepean Highway - view west from the site

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3.3. Existing Traffic Conditions

Traffix Group has undertaken extensive surveys of the existing operation of the service station use and surrounding area, including the following:

- Detailed review of security camera video footage observing the existing operation of the service station on the following days between 7am-7pm:
 - Saturday 22nd January, 2022,
 - Sunday 23rd January, 2022,
 - Tuesday 25th January, 2022,
 - Wednesday 26th January, 2022 – Australia Day,
 - Saturday 29th January, 2022, and
 - Sunday 30th January, 2022.

These dates were chosen as being representative of busier times of the year and would potentially provide an appropriate 'design day or hour'.

The observation surveys also recorded the total number of vehicles entering the site and a breakdown of the types of vehicles (i.e. passenger car, passenger car with jet-ski, passenger car with boat, etc).

- Turning movement counts at both site access points were also undertaken for all survey days,
- Turning movement counts at both site access points at the following times (documented in the Traffix group evidence at the VCAT stage):
 - Saturday 27th March, 2021, between 10-2pm, and
 - Tuesday 30th March 2021, between 6am-10am and 3pm-7pm.
- Investigation of SCATS data from nearby Nepean Highway/Marine Drive signalised intersection to provide a profile of traffic volumes over the year and to determine how busy each of the above survey days are with respect to the rest of the year.

3.3.1. Review of SCATS Data

A review of SCATS traffic data has been used to determine a suitable 'design hour' to assess the development. This data has also been used to provide a context for each survey day of the existing service station.

SCATS traffic data is collected by the Department of Transport via detector loops at signalised intersections.

The SCATS data has been collected at the Nepean Highway/Marine Drive intersection adjacent to the site. Planning for service station uses recognises that there is a positive correlation between traffic accessing a service station use and the amount of traffic on the adjacent roads (i.e. passing trade). Consequently, the traffic volume profiles available from SCATS data can be used to establish an appropriate design hour for the service station.

The draft Transport Modelling Guidelines prepared by DoT suggest comparing the base traffic conditions against the 30th busiest peak hour for the year as an appropriate 'design period'. Accordingly, an appropriate design hour would be the 30th busiest day from the past

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12 months (1st July, 2021 to 30th June, 2022). We are satisfied that this is an appropriate period, as it comprises a summer holiday period and is relatively unaffected by the Covid-19 lockdown restrictions.

The following figure details where each of the surveyed days sit in relation to the remaining days of the past year. The table below also provides the number of vehicles entering the subject site during the service station peak hour.

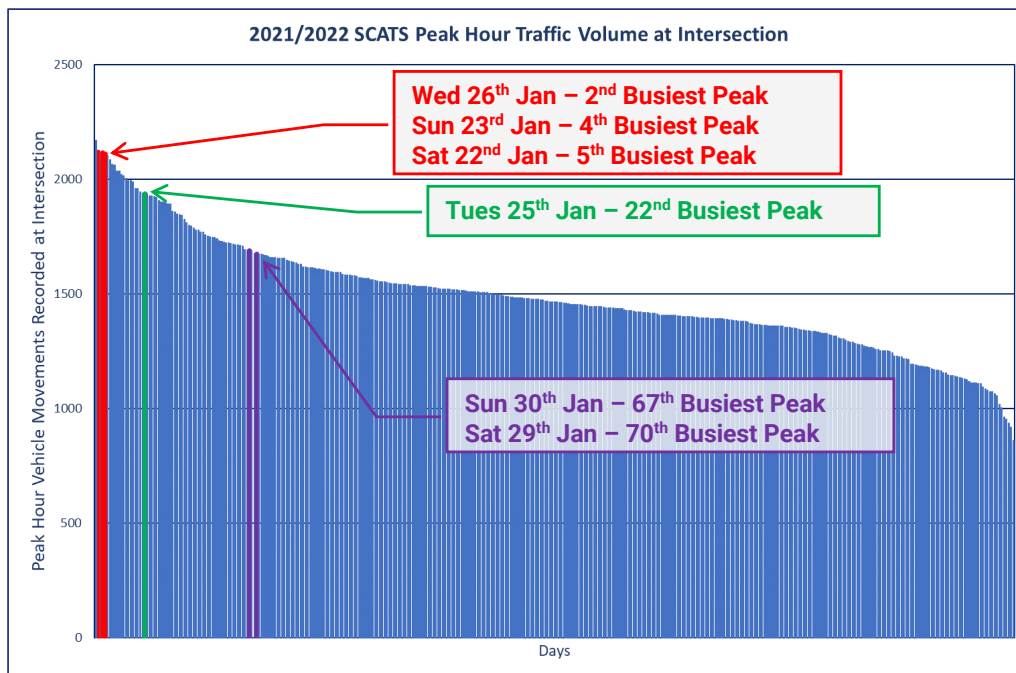


Figure 9: SCATS traffic data profile of daily peak hour

Table 1: Determination of Appropriate Design Day

Day	Service Station Peak Hour	No. Vehicles Entering Service Station	Road Network Peak Hour Ranking	Road Network Daily Ranking
Saturday 22nd January, 2022	11am-12noon	135 Vehicles	5 th Busiest Peak Hour	2 nd Busiest Day
Sunday 23rd January, 2022	12noon-1pm	144 Vehicles	4 th Busiest Peak Hour	4 th Busiest Day
Tuesday 25th January, 2022	12noon-1pm	129 Vehicles ^(Note 1)	22 nd Busiest Peak Hour	12 th Busiest Day

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Day	Service Station Peak Hour	No. Vehicles Entering Service Station	Road Network Peak Hour Ranking	Road Network Daily Ranking
Wednesday 26th January, 2022 – Australia Day	11am-12noon	151 Vehicles	2 nd Busiest Peak Hour	13 th Busiest Day
Saturday 29th January, 2022	12noon-1pm	124 Vehicles	70 th Busiest Peak Hour	73 rd Busiest Day
Sunday 30th January, 2022.	12noon-1pm	123 Vehicles	67 th Busiest Peak Hour	89 th Busiest Day
Note 1: Peak movements at the service station were recorded from 12noon-1pm, when 99% of the peak hour traffic was recorded by SCATS. Accordingly, we have conservatively assessed the peak network time occurs at the same time as the peak service station time for this day.				

Based on the above table, the 11am-12noon on 25th January, 2022 is an appropriate design hour for the analysis of the development as it represents the 22nd busiest peak hour for the past year (slightly higher than the 30th peak hour desired by the draft DoT Guidelines).

Comparison to 2021 Observations

The video evidence from Mr Whittaker put forward to VCAT during the hearing was collected between 10am-2pm on the 9th and 10th of January, 2021. These two days represent the 2nd and 4th highest 10am-2pm periods from 2021. For the reasons outlined above, these are not appropriate design periods.

By comparison, the 30th busiest 10am-2pm period (appropriate design period under draft DoT guidelines) during 2021 was 17% lower than the days selected by Mr Whittaker.

3.3.2. Traffic Counts at Existing Service Station

Turning movement counts were conducted at the site access points across each of the days set out in Table 1 above. The figures provided at Appendix B set out the total number of vehicles recorded entering the service station during each hour throughout the surveys and also provides a breakdown of vehicle types at various times across the day.

The charts also detail a general profile of SCATS data recorded at the Nepean Highway/Marine Drive intersection which demonstrates that there is a direct correlation between vehicle movements in the immediate area surrounding the site and vehicle access to the service station. i.e. peaks occur at the same time, and general profiles align.

The profile of vehicle movements across the 22nd and 23rd January, 2022 is steady throughout the mid-morning and middle of the day (i.e. between 9am-2pm hourly traffic movements of between 111 and 136 entering movements were recorded). There were only two hours that recorded volumes of over 136 entering movements (9am-10am on the 23rd when 140 entering movements were recorded and 12noon-1pm on the 23rd when 144 entering movements were recorded).

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The 23rd January, 2022 represents the 4th busiest day and the 12noon-1pm period represents the 4th busiest peak hour of the year based on the SCATS data recorded at the Nepean Highway/Marine Drive intersection. Accordingly, this level of usage of the service station represents an outlier and does not represent an appropriate design volume.

The vehicle movements recorded on the site over the 26th January, 2022 were lower than the 22nd and 23rd January, but included a spike in vehicle movements at 11am-12noon, where 151 entering movements were recorded. 11am-12noon on the 26th January, 2022 represented the 2nd busiest peak hour of the year and accordingly, this also represents an outlier in the data. Outside of this time a maximum of 124 entering movements were recorded for the site on the 26th January, 2022.

The hourly volumes of traffic entering the service station from the surveys conducted on the 25th January, 2022 were generally between 115 to 129 entering movements. The SCATS data recorded for this date indicates that the peak hour from this day was the 22nd highest peak hour for the year and the daily SCATS data recorded for this date was the 12th busiest day of the year.

Accordingly, we consider that the 25th January, 2022 is reflective of an appropriate day to undertake analysis of. Similarly, the maximum of 129 vehicles entering the service station is also an appropriate volume of traffic to adopt as a design volume for the existing operation of the service station. Of these 129 vehicles which entered the site, 19 did not use the fuel bowzers. These 19 vehicles either accessed the service station component of the site, the air and water station or the car wash. Accordingly, only 110 vehicles refuelled their vehicles (85% of vehicles).

The following section sets out the peak hour traffic volumes recorded for the 25th January, 2022.

3.3.3. Turning Movement Counts for 'design hour'

As previously set out, this assessment adopts the middle of the day on Tuesday 25th January, 2022 as the appropriate 'design hour'. The road network peak hour for this day occurred at 11:15am-12:15pm, while the service station peak hour was recorded at 12noon-1pm. Accordingly, the following figure adopts a combination of the road network and the site peak hour.

The data represents the 22nd busiest peak hour of the past year, slightly busier than the recommended 30th busiest peak hour set out in the draft transport modelling guidelines prepared by DoT. The turning movement count results for this 'design hour' is set out at Figure 10.

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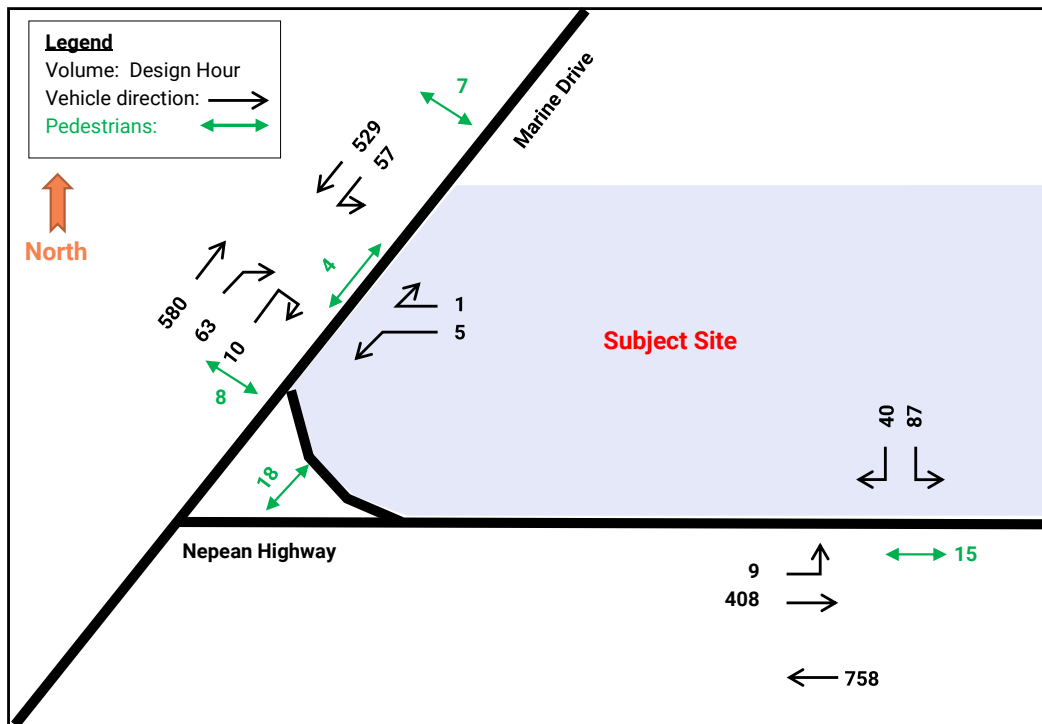


Figure 10: Existing Traffic Volumes - Site Access Points - Midday 25th January, 2022

The turning movement count represents the following distributions for approaching and departing vehicles, detailed in the following figure and the following dot points.

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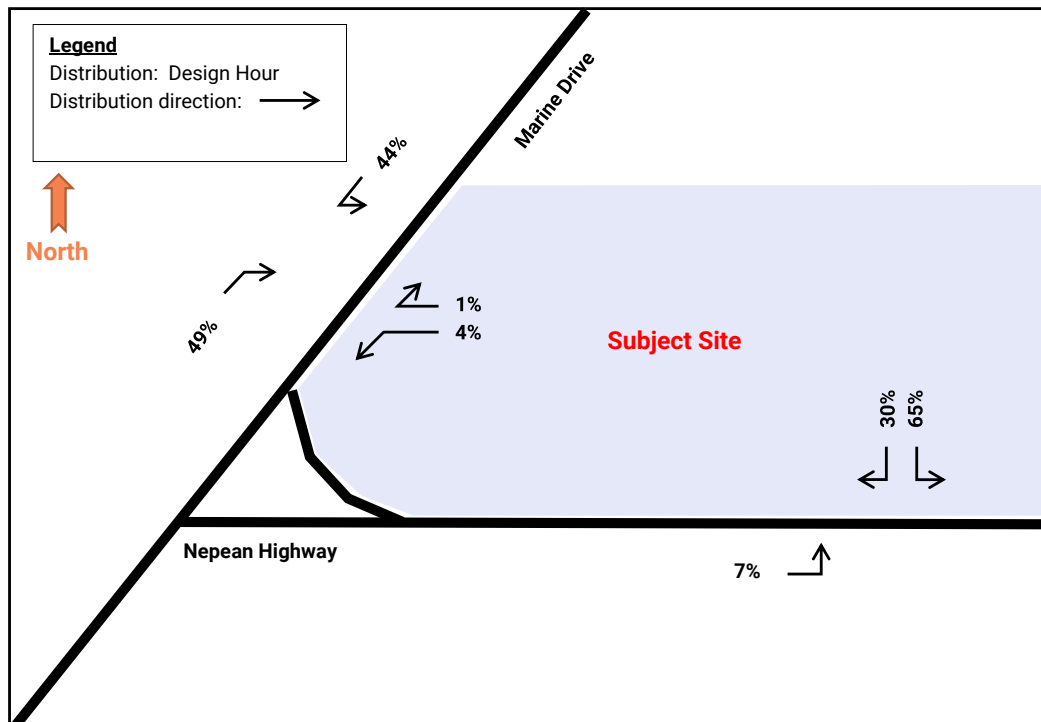


Figure 11: Existing Traffic Distribution – Midday 25th January, 2022

Entry Movements

- 49% accessing the site turning right-in from Marine Drive,
- 44% accessing the site turning left-in from Marine Drive, and
- 7% accessing the site turning left-in from Nepean Highway.

Exit Movements

- 65% exiting the site turning left-out to Nepean Highway,
- 30% exiting the site turning right-out to Nepean Highway,
- 1% exiting the site turning right-out to Marine Drive, and
- 4% exiting the site turning left-out to Marine Drive.

While the distributions are not uniform across the day, each of the days presents a similar average across the whole day and across the middle of the day.

Appendix C sets out the profile of the traffic distributions across each surveyed days with a summary below in the dot points and the figure following:

Entry Movements

- 50% accessing the site turning right-in from Marine Drive,
- 42% accessing the site turning left-in from Marine Drive, and

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- 8% accessing the site turning left-in from Nepean Highway.

Exit Movements

- 68% exiting the site turning left-out to Nepean Highway,
- 28% exiting the site turning right-out to Nepean Highway,
- 2% exiting the site turning right-out to Marine Drive, and
- 2% exiting the site turning left-out to Marine Drive.

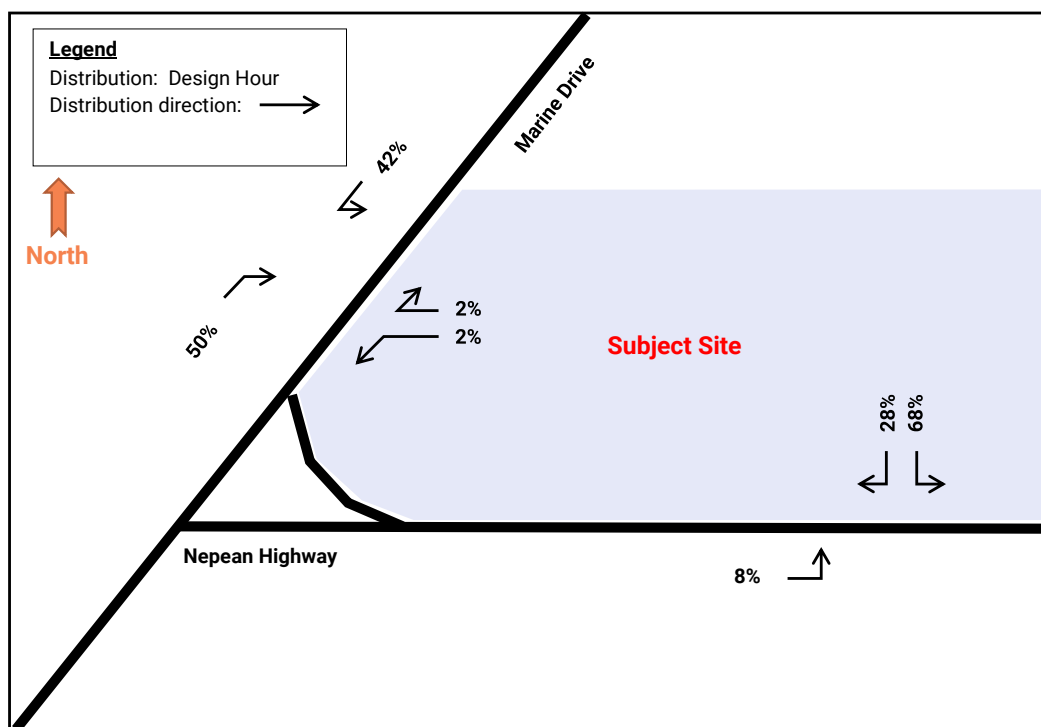


Figure 12: Existing Traffic Distribution – Normalised for all Survey Days

3.3.4. Vehicle Types Observed

During our review of security footage from the service station, the types of vehicles were recorded to establish the split of vehicles. The types of vehicles were split into the following categories:

- Passenger vehicles (includes large style 4WDs),
- Passenger vehicles, towing jet ski (or similar size trailer),
- Passenger vehicles, towing a boat (or caravan of similar size), and
- Trucks, including loading vehicles and fuel tankers.

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Across our review of the camera footage from 22nd, 23rd, 25th and 26th January, 2022¹, we observed the following general split of vehicles, which is detailed in the figures at Appendix B:

- 90-92% passenger vehicles,
- 4-8% passenger vehicles, towing a jet ski,
- 3-5% passenger vehicles, towing a boat, and
- < 1% trucks

Based on the above, our adopted split of vehicles is as follows:

- 90% passenger vehicles,
- 6% passenger vehicles, towing a jet ski,
- 4% passenger vehicles, towing a boat, and
- < 1% trucks – assumed to be loading vehicles and a negligible number of vehicles accessing the bowzers.

3.3.5. Review of Video Camera Footage

Traffic Group has undertaken extensive review of the on-site operation at critical time periods, including when queues extend beyond the site boundary. The general observations from our surveys are set out below:

- There is a direct impact from boats accessing the existing site causing internal operation issues and therefore impacting vehicles accessing the site and causing external queuing. When a boat accesses the existing site, the boat generally will extend into the access aisle, blocking other vehicles from proceeding past. If a vehicle towing a boat is refuelling in close proximity to the entrance to Marine Drive, it blocks other vehicles from proceeding into the site and causes external queues.

This is demonstrated in the swept paths attached at Appendix D. The swept paths attached at Appendix D detail some of the vehicle movements causing circulation issues on the site.

This is not necessarily the case for times when passenger vehicles towing jet skis are accessing the site, as the total length of the vehicles do not extend into the accessway blocking progression along the access aisle.

- At times of high numbers of passenger vehicles only accessing the site and fewer boats, the site operates well, with fewer instances of queues extending from the site.

For example, during our traffic surveys from March, 2021 in excess of 110 vehicles accessed the site in a one-hour period, but generated only a minor overflow to Marine Drive.

- The position of the fuel delivery vehicle when delivering fuel to the existing site severely disrupts the operation of the site. The vehicle props on the south-west side of the fuel bowzers and does not allow vehicles to proceed through the fuel bowzers to exit the site.

¹ We excluded the 29th and 30th of January, 2022 as the split for passenger vehicles was far higher than the remaining days, at approximately 96-97% and not an appropriate representation for the potential for passenger vehicles towing jet skis/boats.

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Instead, vehicles are required to reverse from their fill point to exit the site. This means that there is no ability for waiting vehicles to queue directly behind a vehicle at the bowser, causing vehicles to overflow onto Marine Drive.

This is demonstrated in the swept paths attached at Appendix D.

- The general access arrangements from the existing site are for vehicles to access from Marine Drive and exit to Nepean Highway. A small proportion of vehicles access the site in the opposite direction, causing internal circulation issues.

This is demonstrated in the swept paths attached at Appendix D.

Based on our observations, during key recreational times, the existing service station is not used efficiently. Vehicles commonly queue behind vehicles refuelling at bowsters close to the access to Marine Drive, rather than proceeding through the site to the end bowsters further away from Marine Drive. Once queued behind a vehicle at the bowster closest to Marine Drive, the entrance becomes blocked. It is clear that during times when vehicles extend onto Marine Drive, that there is still space on the site to queue behind bowsters further into the site. It is also difficult for drivers to see all the way through the site properly in order to choose a bowster to access.

This is not the case for non-recreational times including the PM peak hour, where vehicles tend to use the service station in a more efficient manner.

Each of the above circulation issues are existing issues for the existing services station layout and have been addressed by the development plans. This is discussed further at Section 4.10.

3.3.6. Vehicle Dwell Time

During our review of the camera footage from the security cameras on the site, we recorded how long vehicles stayed at the fuel bowsters. We recorded the dwell times of 142 vehicles over 3 x one-hour periods², including passenger vehicles and passenger vehicles towing boats/jet skis.

It was observed that all customers only refuelled their vehicles or their jet-ski/boat, not both. While it would be likely that there would be a demand for customers to refuel both their vehicles and jet-ski/boat, we are satisfied this would not significantly extend the dwell time for the vehicle on the site.

Based on our observations, vehicles stayed at the fuel pumps for on average 4 minutes, 44 seconds. It was observed that there was no significant difference between standard passenger vehicles and vehicles towing boats/jet-skis in terms of dwell times. The median time spent on the site was recorded as 4 minutes, 38 seconds.

The design and layout of the existing service station does not allow for vehicles to pull into a car space to proceed to the convenience store to pay for their fuel. There are no car spaces convenient to the convenience store to allow for this. If this were available, the time required to spend at the fuel bowster would be significantly reduced.

2 1pm-2pm on 25th January, 2022, 11am-12noon on 26th January, 2022 and 12noon-1pm on 23rd January, 2022

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3.4. Road Safety Review

A review of the State Road Accident Records (Crashstats) has been undertaken in the vicinity of the site for the past 5 years of available data (01/05/2015 to 31/04/2020)³. The review area is shown in Figure 13 and a summary of the crash history is provided in Table 2.

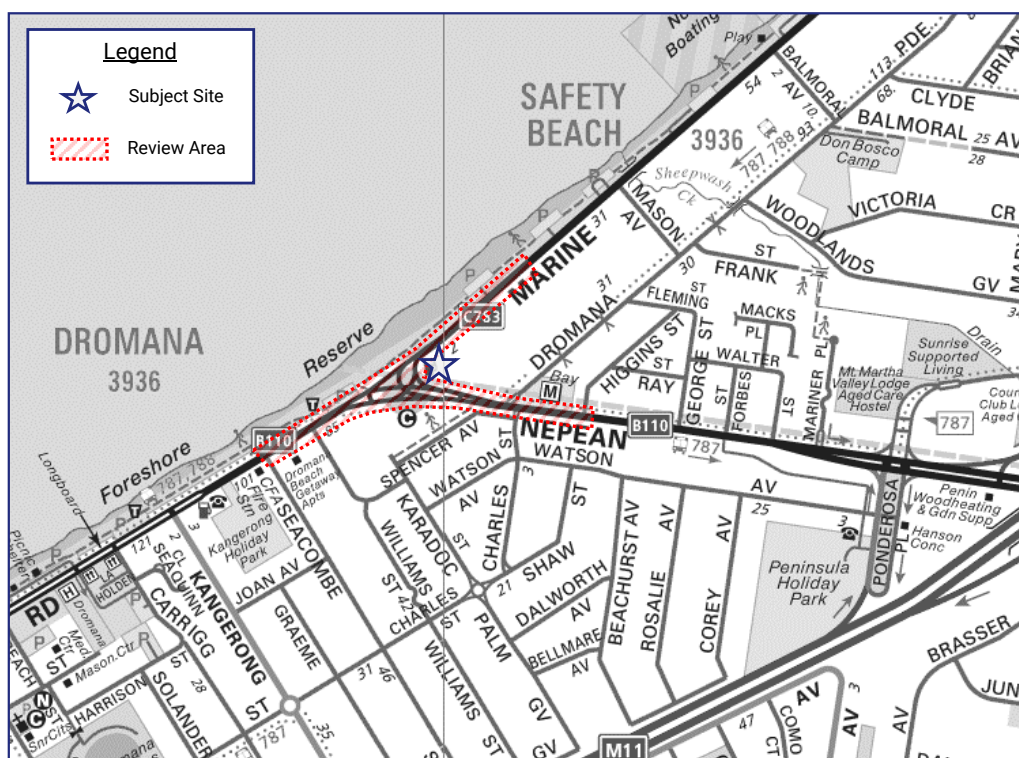


Figure 13: Crash History Investigation Area (Source: Melways)

Table 2: Casualty Crash History

Location	Date	Time	Severity	Conditions	DCA Code	Type
Bittern-Dromana Road at Nepean Highway	Thur 24/10/2019	15:03	OI	Day, Dry	121	Right through
	Wed 13/06/2018	13:30	SI	Day, Dry	113	Right near (intersections only)
Point Nepean Road at Williams Street	Tue 7/02/2017	14:10	OI	Day, Dry	183	Off left bend into object/parked vehicle

³ Casualty crash data is contained in the VicRoads' Crashstats Internet Database and includes all reported casualty crashes (i.e. injury crashes), which are classified into Fatal Injury, Serious Injury and Other Injury (i.e. minor injury) crashes. Property damage only or non-injury crashes are not included in the database.

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Location	Date	Time	Severity	Conditions	DCA Code	Type
Point Nepean Road 17m SW of Williams Street	Wed 14/10/2015	14:30	OI	Day, Dry	160	Vehicle collides with vehicle parked on left of road
Nepean Highway at Dromana Parade	Wed 15/04/2015	13:40	OI	Day, Dry	110	Cross traffic (intersections only)
	Sat 17/10/2015	12:20	OI	Day, Dry	110	Cross traffic (intersections only)
	Wed 30/03/2016	11:30	OI	Day, Dry	110	Cross traffic (intersections only)
	Thur 15/09/2016	11:00	OI	Day, Dry	110	Cross traffic (intersections only)
	Sun 4/02/2018	8:59	OI	Day, Dry	121 (B)	Right through
	Thur 2/01/2020	16:25	OI	Day, Dry	113	Right near (intersections only)
LEGEND: OI: Other Injury SI: Serious Injury F: Fatality (B): Bicyclist (M): Motorcyclist (P): Pedestrian (C): Bus/Coach (RT): Rigid Truck (ST): Semi-trailer						

The road safety review indicates that there have been 10 casualty crashes reported within the review area.

As Marine Drive and Nepean Highway are DoT declared Arterial Roads carrying high volumes of traffic, it is typically expected to have a higher level of casualty crashes due to a higher level of exposure.

Importantly, no casualty crashes occurred at the site access points.

Overall, we are satisfied that the casualty crashes recorded within the surrounding road network do not highlight any particular road safety issues that would significantly concern this development or its access arrangements.

3.5. Public Transport

Public transport access is not a significant consideration for a service station and convenience restaurant, which principally serves passing traffic on the road network.

The site has access to bus routes 787 and 788, with the nearest bus stop located 200m walking distance of the site.

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4. Traffic Engineering Assessment

4.1. Statutory Car Parking Assessment

The proposed development falls under the land-use categories of 'service station' and 'convenience restaurant' under Clause 73.03 of the Planning Scheme. The Planning Scheme sets out the parking requirements for new developments under Clause 52.06. The purpose of Clause 52.06 is:

- *To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

A 'service station' does not have a statutory car parking requirement under Clause 52.06-5. When a use is not listed under Clause 52.06-5, sufficient car parking must be provided to the satisfaction of the Responsible Authority.

Clause 73.03 of the Planning Scheme defines a 'service station' as follows:

Land used to sell motor vehicle fuel from bowsers, and lubricants. It may include the:

- a) selling of motor vehicle accessories or parts;*
- b) selling of food, drinks and other convenience goods;*
- c) hiring of trailers;*
- d) servicing or washing of motor vehicles; and*
- e) installing of motor vehicle accessories or parts.*

Accordingly, the service station and ancillary convenience store are the same use.

The development includes 12 refuelling points, and therefore 12 car spaces for the service station and ancillary convenience store. We are satisfied that adequate car parking is provided for the service station, which also includes access to a surplus of 5 standard car spaces above the convenience restaurant requirement under Clause 52.06-5.

The assessment of car parking requirements for the convenience restaurant is set out in Table 3.

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Table 3: Statutory Car Parking Assessment – Clause 52.06

Proposed Use	Patron No.	Statutory Parking Rate (Column A)	Car Parking Requirement ^(Note 1)	Car Parking Provision	Shortfall (-) /Surplus (+)
Convenience restaurant	59	0.3 spaces to each patron permitted	17	22 ^(Note 2)	+ 5
Note 1: Clause 52.06-5 specifies that where a car parking calculation results in a requirement that is not a whole number, the number of spaces should be rounded down to the nearest whole number.					
Note 2: Plus the queuing space within the drive-through and the 2 waiting bays located after the service windows.					

The proposed development provides 22 formal car spaces on the site, accordingly the proposed development meets the car parking requirement under Clause 52.06-5.

Disabled Parking

Clause 52.06-9 states that:

The car parking requirement specified in Table 1 includes disabled car parking spaces. The proportion of spaces to be allocated as disabled spaces must be in accordance with Australian Standard AS2890.6-2009 (disabled) and the Building Code of Australia.

One disabled car space is required under the NCC in relation to the commercial car parking. The plans detail one car space signed for disabled use. The shared area for the DDA car space is located in between two car spaces and therefore, there are two car spaces which are DDA accessible.

4.2. Empirical Car Parking Demand Assessment

The service station includes 12 car refuelling points, which effectively equates to the provision of 12 car spaces on-site for the service station and ancillary convenience store.

In practice, drivers will park at the refuelling points when they fill up and typically leave their parked vehicles at the refuelling points when they enter the convenience store to pay for their fuel and any other items sold at the convenience store.

Ultimately, service stations are businesses of convenience; if a driver sees that a service station is busy, they are likely to continue driving to the next service station or refuel at another time. There is an additional service station on Nepean Highway, approximately 1.6km south of the site, as well as further fuel stations in the wider area. On this basis, overflow parking impacts from the development are highly unlikely.

There is likely to be minor additional car parking demands for staff of the service station/convenience store. However, there is an overprovision of car parking for the convenience restaurant which can be used as staff car parking for the service station, the occasional customer who wishes to only access the convenience store or a customer to move from the fill point to a car space prior to paying for fuel. There are 5 spaces which could be used for this purpose.

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Furthermore, the service station and the convenience restaurant demands are not expected to overlap, and accordingly, there would generally be more than 5 spaces available for additional demands by the service station.

Accordingly, we are satisfied that the proposed development provides sufficient formal (22 spaces) and informal (12 refuelling spaces) parking to meet the overall peak demands and ensures that there are no detrimental impacts to the surrounding road network.

The provision of car parking complies with the requirements of Clause 52.06-5 and accordingly, the provision of car parking satisfies the purpose of Clause 52.06 of the Planning Scheme.

4.3. Bicycle Parking Provision

Clause 52.34 of the Planning Scheme specifies bicycle parking requirements for new developments and changes in use. There is no requirement to provide bicycle parking under Clause 52.34 of the Planning Scheme for a 'service station'.

The table below details the statutory bicycle parking requirement of the convenience restaurant component of the development.

Table 4: Statutory Bicycle Parking Assessment – Clause 52.34

Proposed Use	Size	Bicycle Parking Rate		No. of Bicycle Spaces Required
		Employee	Customer	
Convenience restaurant	115m ² (Note1)	1 per 25m ² of floor area available to the public	2 spaces	5 employee 2 customer
Total				7 spaces

Note: Area available to the public includes dining area and toilet facilities.

The proposed development provides 12 bicycle spaces on the site, including 4 spaces located adjacent to the convenience restaurant and 8 spaces within the service yard for the convenience restaurant.

Accordingly, the development exceeds the minimum bicycle parking requirements of Clause 52.34.

The secure bicycle parking spaces will be provided via 'Ned Kelly' hanging wall mounted bicycle rails and horizontal floor mounted bicycle rails. The spaces specified on the plans satisfy the specifications of the Bicycle Victoria *Bicycle Parking Handbook*, AS2890.3-2015 and are satisfactory. The provision of 4 x horizontal bicycle spaces satisfies the minimum 20% requirement of bicycle spaces being in the form of horizontal rails under Clause 2.1 (e) of AS2890.3-2015.

In addition to staff bicycle parking requirements, end of trip facilities are required as follows Clause 52.34:

If 5 or more employee bicycle spaces are required, 1 shower for the first 5 employee bicycle spaces, plus 1 to each 10 employee bicycle spaces thereafter. 1 change room or direct access to a communal change room to each shower. The change room may be a combined shower and change room.

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The proposed development has a statutory requirement to provide 5 employee spaces, accordingly the proposed development is required to provide 1 shower/change room.

A waiver of the staff/changeroom for staff is required as no shower/changeroom is proposed for the development. We are satisfied that a waiver is acceptable in this case, as we understand the operator of the convenience restaurant encourages its staff not to change on the site. This is due to the general age of its employees.

Furthermore, we note that this type of use encourages local employment and the general length of bicycle trips would not necessitate the need for shower/changing.

Based on the above, we are satisfied with the provision and design of bicycle parking in this development and the waiver of the shower/changeroom facility.

4.4. Review of Car Parking Layout and Access Arrangements

A total of 22 car spaces are provided within an at-grade carpark. Vehicle access to the site is provided via Marine Drive and Nepean Highway.

We have provided design advice to the project architect to achieve a satisfactory carpark layout.

The proposed parking layout has been assessed under the following guidelines:

- Clause 52.06-9 of the Planning Scheme (Design standards for car parking),
- AS2890.1-2004 – Part 1: Off-Street Car Parking, where relevant,
- AS2890.2-2018 – Part 2: Off-Street Commercial Vehicle Facilities, where relevant, and
- AS2890.6-2009 – Part 6: Off-Street Parking for People with Disabilities

The key elements of the design include:

Clause 52.06-9 Design Standard 1 – Accessways

- Vehicle access to the site is provided via the following ingress and egress points:
 - The main vehicle ingress to the site is provided via a 12.6m wide accessway to Marine Drive in excess of the requirements of Clause 52.06-9 (Design Standard 1) and AS2890.1-2004 for a one-lane, one-way accessway.
 - The secondary vehicle ingress to the site is provided via a 4m wide accessway to Marine Drive in excess of the requirements of Clause 52.06-9 (Design Standard 1) and AS2890.1-2004 for a one-lane, one-way accessway.
 - Vehicle egress from the site is provided via a 9.6m wide accessway to Nepean Highway in excess of the requirements of Clause 52.06-9 (Design Standard 1) and AS2890.1-2004 for a one-lane, one-way accessway.
- All two-way accessways throughout the site are a minimum of 6.1m wide in accordance with the requirements of Clause 52.06-9 (Design Standard 1) and AS2890.1-2004 for a two-lane, two-way accessway.

This includes retaining a two-lane wide clear accessway past the rear of a vehicle towing a small trailer (including towing a jet ski) in the northernmost fill point.

Accordingly, two-way movements are accommodated around the periphery of the fuel bowzers under almost all conditions. This is discussed further at Section 4.5.

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- The drive-through for the convenience restaurant is provided at a minimum width of 3.6m between walls in accordance with the requirements of Clause 52.06-9 (Design Standard 1) and AS2890.1-2004 for a one-lane, one-way accessway. Localised widening of the drive-through is provided at the 90 degree bend to accommodate the turning profile of the B99 design car.

Swept path assessments for the B99 design car from AS2890.1-2004 have been completed for the convenience restaurant drive-through and are attached at Appendix E.

- All vehicles will be able to enter and exit the site in a forwards direction in accordance with Clause 52.06-9 (Design Standard 1).
- Swept path assessments for the B99 design car from AS2890.1-2004 have been completed for access to all fuel pumps and the convenience restaurant drive-through.
- Swept paths demonstrating the typical circulation arrangements for fuel pumps for a range of vehicles are attached at Appendix E.
- A minimum headroom clearance of 5.5m is provided underneath the canopies for the car refuelling areas. This is suitable to accommodate the highest vehicle expected at the site.
- A minimum headroom clearance of 2.4m is provided within the drive-through, exceeding both the requirements of AS2890.1-2004 and Clause 52.06-9 of the Planning Scheme.

Clause 52.06-9 Design Standard 2 – Car parking spaces

- Car space dimensions accord with Clause 52.06-9 (Design Standard 2) with minimum dimensions provided at 4.9m long x 2.6m wide, accessed via a minimum 6.4m wide access aisle.
- The proposal includes one DDA car space which is designed in accordance with the requirements of Clause 52.06-9 and AS2860.6-2009.

Clause 52.06-9 Design Standard 3 – Gradients

- The site is generally flat and grades accord with Clause 52.06-9 (Design Standard 3) and AS2890.2-2018 for the relevant vehicle types.

Based on the above, we are satisfied that the layout of the proposed parking spaces as detailed in the plans at Appendix A is satisfactory and that the access arrangements for the development are acceptable and accord with the relevant requirements of the Planning Scheme and the Australian Standards.

A Traffic Management Plan has also been prepared, which details the on and off-site signage to control vehicle movements into and throughout the site. This is attached at Appendix F.

4.5. Design of Petrol Bowsers

The proposal includes a total of 6 fuel bowsers on the site (12 fill points). Each of the bowsers can accommodate a standard passenger vehicle towing a 8.5m boat or caravan. The swept paths detailing access for these types of vehicles is attached at Appendix E.

While a passenger vehicle with a boat is refuelling, the vehicle would either occupy the front and rear fill point (i.e. occupying two fill points), or they would occupy the rear fill point only and the boat would occupy some of the access aisle behind the bowsers. Under this scenario, one lane for two-way traffic would still be maintained, ensuring circulation through

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the site is maintained to an appropriate level. This is demonstrated in the swept paths attached at Appendix E.

While a passenger vehicle is towing a jet-ski, the vehicle would only occupy one fill point at a time. When a jet ski is present at one of the bowsters, the rear vehicle in a pair of bowsters would occupy some of the access aisle behind, but the access aisle would still maintain a two-lane/two-way accessway. This will maintain appropriate circulation through the site.

Two-way vehicles movements are also maintained behind the bowsters when a vehicle is queues behind a vehicle refuelling in the rear bowsters. This is demonstrated in the swept paths attached at Appendix E.

4.6. Drive-through Facility

The proposed convenience restaurant includes a drive-through which can accommodate up to 18 vehicles from the Marine Drive left-in access to the end of the collection point without obstructing the service station accessway, blocking on-site car parking or extending past the property boundary.

The drive-through can accommodate the following queuing vehicles:

- Two separate lanes for ordering which can accommodate up to 7 vehicles,
- Approximately 65m long single queuing lane which can accommodate up to 9 vehicles, and
- Two designated waiting bays beyond the collection point.

The RTA Guide to Traffic Generating Developments (2002) (RTA Guide) sets out traffic generation rates based on survey data collected in New South Wales for a range of land uses and recommends a queue capacity of 12 vehicles for McDonalds and 8 vehicles for KFC.

The proposed drive-through can accommodate up to 18 vehicles, exceeding the recommended queue length of 12 vehicles for a McDonalds restaurant. Accordingly, we are satisfied that the proposed drive-through will accommodate the expected queues and vehicles will not overflow into the common accessway, block car spaces or extend beyond the site boundary.

4.7. Land Adjacent to The Principal Road Network

Clause 52.29 applies to land adjacent to a Transport Zone 2, or a Public Acquisition Overlay.

The purpose of this clause is to:

- *To ensure appropriate access to identified roads.*
- *To ensure appropriate subdivision of land adjacent to identified roads.*

A permit is required to:

- *Create or alter access to:*
 - *A road in a Transport Zone 2.*
 - *Land in a Public Acquisition Overlay if a transport manager (other than a municipal council) is the acquiring authority and the acquisition is for the purpose of a road.*
- *Subdivide land adjacent to:*

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- A road in a Transport Zone 2.
- Land in a Public Acquisition Overlay if a transport manager (other than a municipal council) is the acquiring authority and the acquisition is for the purpose of a road.

Both Marine Drive and Nepean Highway are in a Transport Zone 2. The proposal includes an additional access point to Marine Drive as well as the alteration to the nature of the existing two access points of the site.

Accordingly, a permit is required.

4.7.1. Decision Guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider:

- The Municipal Planning Strategy and the Planning Policy Framework.
- The views of the relevant road authority.
- The effect of the proposal on the operation of the road and on public safety.
- Any policy made by the relevant road authority pursuant to Schedule 2, Clause 3 of the Road Management Act 2004 regarding access between a controlled access road and adjacent land.

4.7.2. Assessment

The vehicle access arrangements to the development remain consistent with the previous proposal on the site, which was the subject of the VCAT hearing, except that under the current proposal, no egress is permitted to Marine Drive.

The Department of Transport had no objection to the previous scheme, subject to conditions. We consider the current proposal to be an improvement on the VCAT scheme and therefore, DoT would likely be satisfied that the proposal is acceptable subject to the same conditions.

A Traffic Management Plan has been prepared by Traffix Group and is attached at Appendix F. The Traffic Management Plan includes alterations to the central median on Marine Drive, including:

- An extension to the median to the north-east and No U-turn signage to ensure only left-turn entry movements occur to the east-most access point.
- An alteration to the south-west end of the median to discourage right-turn movements out of the site.

The plan includes 'Keep Clear' line marking over the south-bound traffic lane along Marine Drive directly in front of the site access to ensure that vehicles do not stop over the south-bound lane.

A 'No Left-Turn' sign is provided at the Nepean Highway egress to ensure no entry movements occur at this site access. This is in accordance with the draft conditions issued by DoT for the purpose of the previous hearing.

The plan also details appropriate internal signage to ensure vehicles do not exit the site to Marine Drive.

We are satisfied that the vehicle access arrangements achieve the objectives of Clause 52.29.

Traffix Group

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4.8. Fuel Deliveries, Loading and Waste Collection

4.8.1. Fuel Deliveries

We have been informed by the applicant that fuel deliveries will occur on the site via a 19m long semi-trailer for both LPG and fuel deliveries.

Deliveries of LPG occur once every 2.5-3 weeks (depending on the season) and fuel is delivered to the site once every 1-2 days (depending on the season). The vehicles are on-site for approximately 40 minutes for the LPG delivery and 20 minutes for fuel delivery. The service station operator will manage refuelling to occur outside of peak times to minimise the impact on the site operation.

It is proposed that the 19m semi-trailer will access the site from the Marine Drive access point at the site's west corner. The vehicle will then prop adjacent to the southernmost fill points to refill the station. While on the site, the fuel delivery vehicle will only block two fill points, leaving 10 available. Two-way access will be retained around the periphery of the fuel vehicle, no car spaces will be blocked and the access into and out of the site will remain clear.

This is demonstrated on the plan at Figure 14 where the vehicle will be instructed to prop. This location has been determined based on the swept paths that we have undertaken through the site for this vehicle and to ensure that the vehicle is propped well clear of the property boundary as to not compromise the safety of the access to Marine Drive. These swept paths are attached at Appendix E.

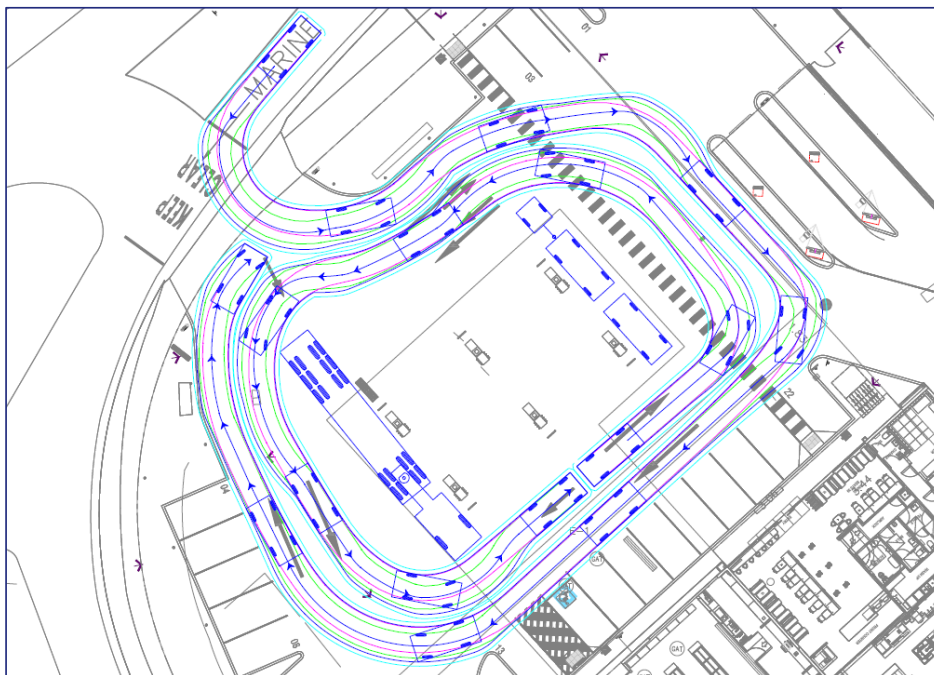


Figure 14: Location of Propped Fuel Tanker

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We are satisfied that the propping location demonstrated above is acceptable for the following reasons:

- The vehicle will be well clear of the access to Marine Drive ensuring access to the site is unobstructed. Further, two-way movements between the rear of the vehicle and the property boundary are maintained while the vehicle is propped in this location. These movements are demonstrated by the swept paths attached at Appendix E.
- Shutting down one side of two bowzers is a common occurrence at service stations during fuel deliveries. Shutting down 2 of the 12 fill points for a short amount of time is of little consequence to the operation of the site. In practice, the service station operator will manage refuelling to occur outside of peak times to minimise the impact on the availability of refuelling points for customers.

Based on the above, we consider the refuelling arrangement to be acceptable from a traffic engineering perspective and a significant improvement to the operation of the site when compared to the existing operation of the site, where vehicle movements throughout the site are significantly compromised when the fuel tanker is present on the site.

4.8.2. Loading for Convenience Restaurant and Convenience Store

Clause 65.01 of the Planning Scheme specifies that:

Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

Deliveries to the convenience restaurant and ancillary convenience store occur using vehicles up to the 12.5m long Heavy Rigid Vehicle (specified under AS2890.2-2018). All deliveries to the site occur within the on-site loading bay adjacent to the drive-through for the convenience restaurant.

The following sets out the expected frequency of deliveries to the site:

- 1 delivery per day for the convenience store plus 3 deliveries per week for milk, and
- 1 delivery per 1-2 days for the convenience restaurant.

The vehicle will access the site via the Marine Drive access and exit to Nepean Highway. Swept paths demonstrating the 12.5m long HRV accessing the loading bay are attached at Appendix E.

Based on the above, we are satisfied that the on-site loading considerations for the site are acceptable and a significant improvement when compared with the existing use of the site, which does not include a designated loading area which is fully clear of circulating vehicles.

4.8.3. Waste Collection

Waste will be stored within the back of house areas of the convenience restaurant and convenience store. Waste will be collected from the on-site loading bay by vehicles generally 8.8m long. The waste vehicle will not exceed the length of the 12.5m long HRV which is the largest loading vehicle which can be accommodated within the loading bay.

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We are satisfied that waste collection can occur on-site appropriately.

4.9. Traffic Impacts

4.9.1. Traffic Generation

The traffic surveys undertaken by my office presented at Section 3.3 established that the middle of the day on the 25th January, 2022 is the most appropriate hour for the traffic analysis.

This period represented the 22nd busiest peak hour of the past year, and this day represented the 12th busiest day of the year. This was based on our analysis of the SCATS data for the nearby intersection as well as the traffic surveys of the access points.

This assessment period represents a typical day during the summer school holiday period, but is not a period which would be considered an outlier such as the other days which we surveyed being the 22nd, 23rd and 26th of January, which represented the 2nd, 4th and 5th busiest peak hours of the year, respectively.

It is noted that the draft transport modelling guidelines prepared by DoT suggest comparing the base traffic conditions against the 30th busiest peak hour for the year. Accordingly, the use of the 22nd busiest peak hour of the year is appropriate for design purposes and is conservative.

The following assessment considers this critical time period. It is acknowledged that the convenience restaurant's peak hour is generally considered to be later in the day, more in line with dinner. However, for the purpose of conducting a conservative assessment, we have assumed that the convenience restaurant peak coincides with the design peak hour of the service station.

Service Station Traffic Generation

The subject site is currently occupied by the following uses:

- a service station operating as 'BP Dromana' with 4 fuel bowzers (8 refuelling points),
- ancillary convenience store with a total floor area of approximately 433m², and
- an automated car wash facility offering wash, wax and dry services.

The survey of the site recorded a total of 258 vehicle movements two-way (129 vehicles generating an entry and exit movement) during the design hour on 25th January, 2022.

The proposed service station includes 6 fuel bowzers (12 refuelling points) and an ancillary convenience store with total floor area of 259m². The proposal represents an increase in 4 refuelling points.

Our assessment assumes that the service station demands will increase by 20%. This represents an appropriate increase as the service station will cater for drivers, who will see the service station as more convenient to access given the additional bowzers and re-orientation of the bowzers to a more efficient alignment.

The increase in bowzers does not necessarily induce a proportional increase to the amount of traffic to the site on a per bowser basis. This occurs as service stations rely principally on passing trade and the traffic volume on the nearby road network does not change due to additional bowzers.

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We acknowledge that a proportional increase to the amount of traffic generated by the development is the assumption that Traffix Group presented at the VCAT hearing. However, this was to ensure that a highly conservative assessment was undertaken of the site access points, rather than the on-site operation. The following assessment focusses on an assessment of the on-site operation, as opposed to the site access points which are proposed to only allow entry from Marine Drive and only exit to Nepean Highway.

Based on the above, the traffic generation for the proposed service station expansion is expected to be in the order of 310 vehicle movements at the critical design time (155 vehicles entering and 155 vehicles exiting).

Convenience Restaurant

The *RTA Guide* provides the following traffic generation rates for two different convenience restaurant outlets:

- McDonalds: evening peak hour rate of 180 vehicles per hour, and
- KFC: evening peak hour rate of 100 vehicles per hour.

For the purpose of undertaking a conservative assessment, we have adopted the higher peak hour rate surveyed for a McDonalds food outlet. Accordingly, the proposed convenience restaurant is expected to generate in the order of 180 vehicle movements per hour.

Linked Trips and Multi-purpose Trip Discount

It is important to differentiate the characteristics of trips generated by the proposed development. There are 3 distinct trip types:

- 'Primary Trips' – where a trip is generated with the destination as the primary purpose for the trip (i.e. a new trip specifically to access the service station/convenience restaurant)
- 'Link-diverted Trips' – where a driver changes their route to visit the service station/convenience restaurant (i.e. changing their route home from work to visit the service station/convenience restaurant).
- 'Non-link-diverted Trips' – where the driver was already travelling past the service station/convenience restaurant while undertaking another trip and stops at the service station/convenience restaurant (i.e. passing trade).

The key distinction is that Primary and Link-Diverted trips generally represent new trips on the external road network. Non-Link Diverted trips are already on the road network and their impact only needs to be considered as to how they access the subject site as they are not 'new trips'.

Service stations are by nature typically a convenience service, in that drivers will buy fuel on the way to another destination (such as travelling home from work). Drivers rarely go out of their way to drive to a service station, but rather just choose one that suits their route to their final destination. As such, most traffic accessing any service station is a result of diverted trips from passing traffic, rather than new trips on the road network.

In our experience, 80% of the vehicle trips generated by service stations are passing trade.

Convenience restaurants also draw a significant proportion of their traffic from pass-by traffic. We have adopted a rate of 35% passing trade for vehicle trips generated by the

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convenience restaurant, based on the rate for McDonalds specified in the RTA Guide. This rate of passing trade is consistent with undiverted drop-in trips for 'fast food outlets' as specified within the Austroads Guide.

Additionally, it is expected that a proportion of the traffic generated by the site will be multi-purpose trips where drivers visit both the service station and the convenience restaurant.

The *RTA Guide* outlines a discount of between 15-25% for commercial premises with multiple uses (outlined in the shopping centre section of the retail uses traffic generation guide). To undertaking a conservative assessment, we have adopted a discount rate of 15% for the convenience restaurant only.

Projected Traffic Volumes

Based on the preceding, the proposed development is expected to generate a total of 463 vehicle trips during the critical design peak hour to and from the site.

Of the total 463 vehicle trips generated by the site in the design peak hour:

- 258 trips are already generated by the site under existing conditions,
- 52 additional trips will be generated by the additional refuelling points, including:
 - 10 new trips, and
 - 42 passing trade trips,
- 153 vehicle trips for the convenience restaurant, including:
 - 99 new trips, and
 - 54 passing trade trips.

A summary of the overall traffic generation for the proposed development is provided in Table 5.

Table 5: Projected Future Traffic Generation

Proposed Use	Vehicle Trips (vph)	New trips (vph)	Passing Trade (vph)
Service Station Existing Traffic ^(Note 1)	258	-	-
Service Station Expansion Traffic	52	10	42
Convenience Restaurant	153 ^(Note 2)	100	53
Total	463	110	95 ^(Note 3)
Note 1: Traffic already recorded at the site and on the road network.			
Note 2: Including 15% discount for convenience restaurant based on multi-purpose trips.			
Note 3: These trips are already present on the road network and will be diverted off their primary through route along Marine Drive and Nepean Highway.			

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4.9.2. Traffic Distribution

We have adopted the following traffic distribution for the proposed development during the design peak hour based on the traffic distribution observed of the existing operation of the site, reported at Section 3.3.3:

Entry Movements

- 58% of traffic will enter the site via a right turn from Marine Drive from the west
- 42% of traffic will enter the site via a left turn from Marine Drive and split between the two access points as follows:
 - 20% of traffic entering the site from the north will turn left from Marine Drive into the one-way accessway
 - 22% of traffic entering the site from the north will turn left from Marine Drive via the two-way accessway

As no entry is permitted from Nepean Highway under proposed conditions, the traffic which accessed the site via this access point under existing conditions has been assumed to access the site via a right turn into the Marine Drive access.

Exit Movements

- 68% of traffic will exit the site to the east, turning left into Nepean Highway
- 32% of traffic will exit the site to the west, turning right into Nepean Highway

As no exit is permitted to Marine Drive under proposed conditions, the traffic which exited the site to Marine Drive under existing conditions has been assumed to egress the site via a right turn to Nepean Highway.

The traffic distribution is illustrated in Figure 15 and the expected peak hour traffic generation for the proposed development is illustrated in Figure 16.

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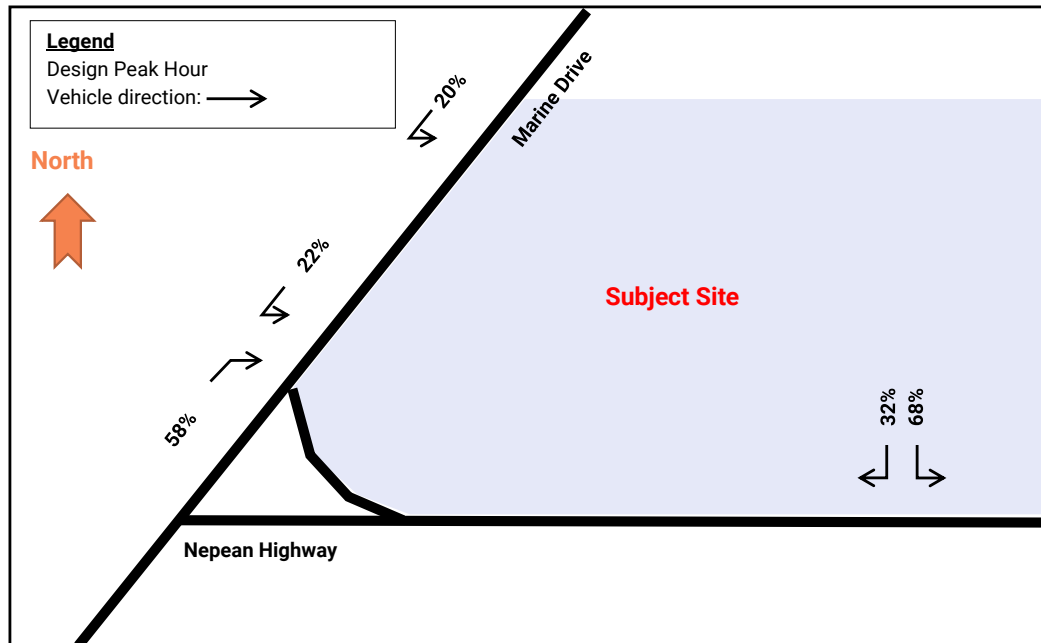


Figure 15: Traffic Distribution – Site Access Points

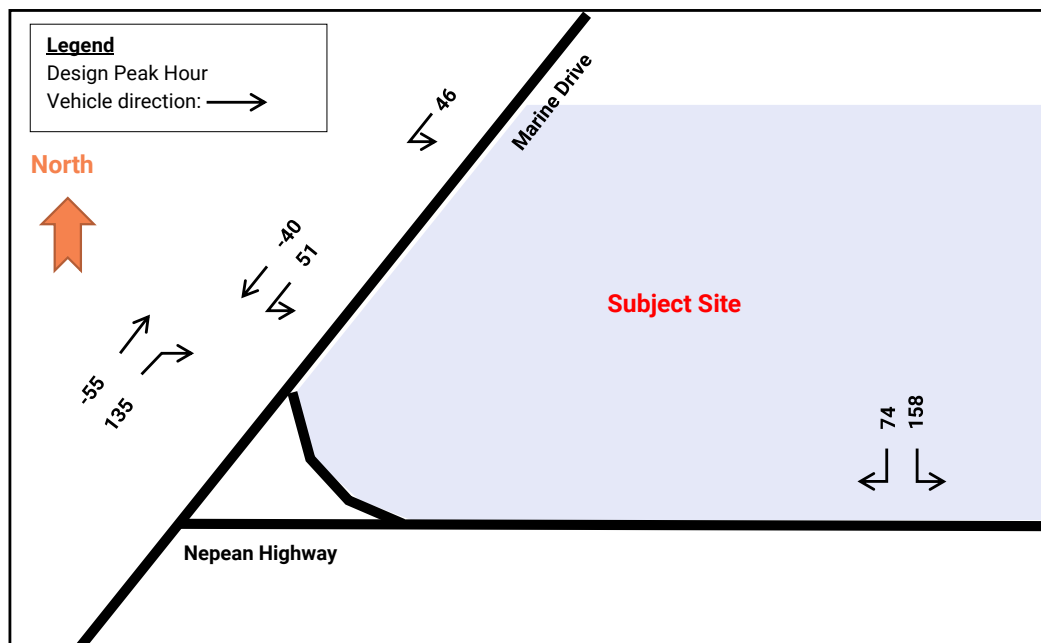


Figure 16: Expected Design Peak Hour Traffic Generation

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The traffic generated by the site detailed above has been added to the traffic recorded during the surveys presented at Figure 10 and presented below at Figure 17.

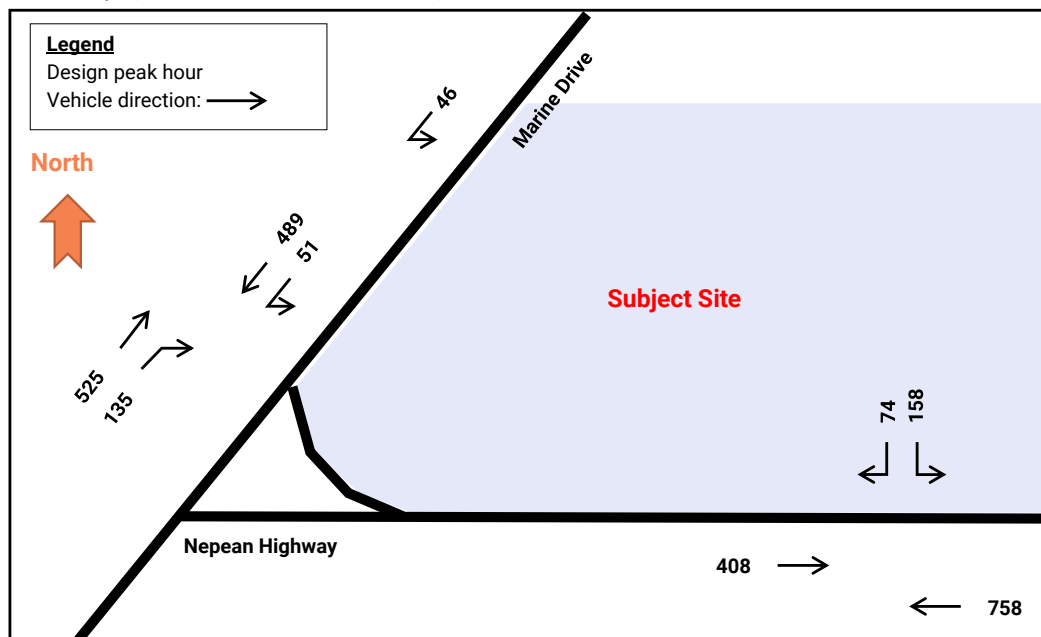


Figure 17: Post-development Traffic Volume (Design Hour)

4.9.3. Traffic Analysis

SIDRA 9.0 has been used to assess the performance of the main access to Marine Drive and the site access to Nepean Highway.

This analysis allows estimation of key operating parameters such as intersection Degree of Saturation (DoS), 95th percentile queue and Level of Service (LoS), which are described below:

- **Degree of Saturation (DoS)** – measure of intersection performance expressed as a ratio of demand/capacity. A DOS greater than 0.95 is generally regarded as unsatisfactory for a signalised intersection (including roundabouts), while a DOS greater than 0.90 is generally regarded as unsatisfactory for an unsignalized intersection. This is shown in the table below.
- **95th Percentile Queue** – this is the length of queue in vehicles or meters which is exceeded only 5% of the time over the analysis period (i.e. a peak hour).
- **Level of Service (LoS)** – the level of service is based on the Degree of Saturation in this analysis.

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Table 6: Description of Intersection Performance Levels

Level of Service		Intersection Degree of Saturation	
		Unsignalised Intersection	Signalised Intersection
A	Excellent	≤ 0.60	≤ 0.60
B	Very Good	$0.60 - 0.70$	$0.60 - 0.70$
C	Good	$0.70 - 0.80$	$0.70 - 0.90$
D	Acceptable	$0.80 - 0.90$	$0.90 - 0.95$
E	Poor	$0.90 - 1.00$	$0.95 - 1.00$
F	Very Poor	≥ 1.0	≥ 1.0

We have modelled the access to Nepean Highway as a network with storage space provided within the median of Nepean Highway allowing for one vehicle to store. The access from Marine Drive has been modelled as a standard T-intersection, as this access is entry only. The SIDRA layout of each site access is presented in the figures below. It is a diagrammatic model only and is not to scale.

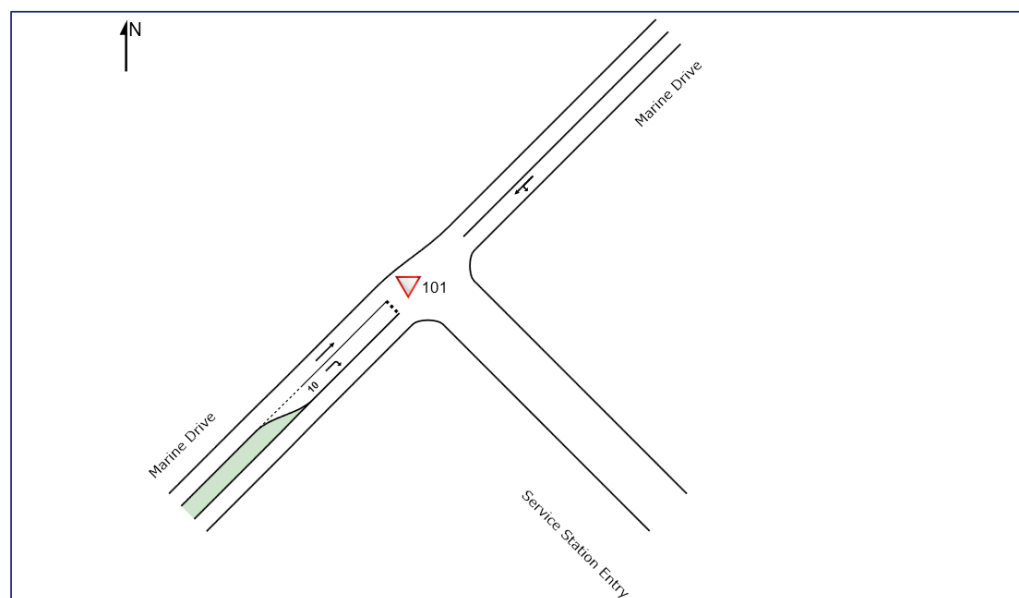


Figure 18: SIDRA – Marine Drive Access Point

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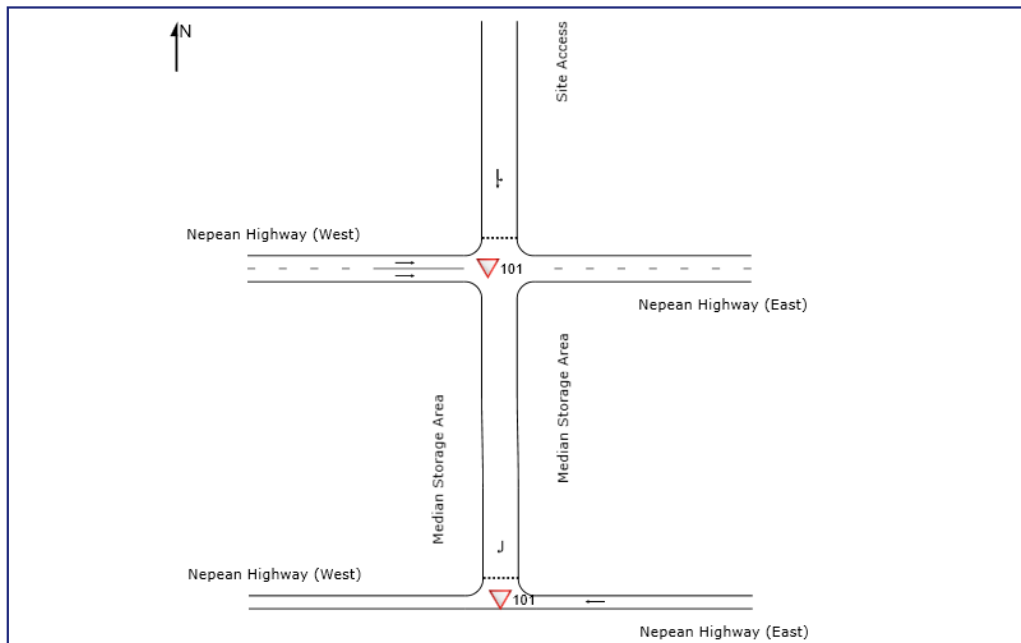


Figure 19: SIDRA Network Layout – Nepean Highway Access Point

The detailed SIDRA results are provided at Appendix G.

The results of the analysis illustrate that under post-development conditions, both site access points will operate at LOS A (Excellent) during the design peak hour on all approaches.

This assessment assumes that there is no on-site capacity issues which would block access into the site. i.e. it is simply an assessment of the capacity of the access points and Marine Drive/Nepean Highway to accommodate the required cross traffic movements.

In order to address the potential for queuing impacts to be caused by the on-site operations, the following assessment undertakes a capacity analysis for the development.

4.9.4. Service Station Capacity Analysis

The following capacity analysis undertakes an assessment of the capacity of the fuel bowers to accommodate the level of traffic expected to be generated by the site. The capacity analysis is based on the following assumptions:

- The design hour for analysis is used for the capacity analysis, assuming a total of 155 vehicles are expected to enter the site, including 132 vehicles for refuelling purposes (85%),
- Based on our surveys of the existing use of the site, the following breakdown of vehicles is expected:
 - 90% passenger vehicles – 135 vehicles
 - 5% passenger vehicles, towing a jet ski – 7 vehicles
 - 4% passenger vehicles, towing a boat – 6 vehicles

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1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

- 1% trucks – 2 vehicles
- Each vehicle (regardless of type) spends 4 minutes, 45 seconds refuelling their vehicle, including their time to arrive, refuel, pay for fuel, return to vehicle and leave.

This is considered conservative, as there is an over-provision of car parking for the site and therefore once a customer has finished refuelling their vehicle, they can shift their car to a free car space to free up a bowser while they pay for their fuel. This was not possible under the existing operation of the site. Therefore, it is likely that under the proposed conditions the average time spent at the bowser would be reduced.
- It is likely that some customers would wish to visit the convenience restaurant following refuelling their vehicle. However, it is assumed that in these types of cases, the customer would proceed into a car space after refuelling, rather than occupy a space at the bowser. Or alternately they would proceed to the drive-through.

This is likely to be the case for customers of the convenience store as well, due to the additional provision of car parking on the site.

We have used multi-channel queueing theory to determine queueing generated for the service station. The results of the assessment are summarised below:

- The average queue for access to the bowsers across the design hour will be 11 vehicles. This represents 11 of the 12 fill points being occupied and no vehicles behind the bowsers.

The 11 vehicles would represent 9-10 passenger vehicles and 1-2 passenger vehicles towing either a boat or a jet-ski. The vehicle towing a boat, may occupy 2 of the fill points (i.e. all 12 fill points would be occupied).
- The 98th percentile queue for access to the bowsers across the design hour will be 16 vehicles. This represents all of the fill points being occupied with a queue behind 4 of the 6 rear bowsers.

This scenario will occur for 2% of the design hour. i.e. for 98% of the peak hour, the queue will be less than what this scenario represents. Accommodating the 98th percentile queue on the site achieves the requirements of the Australian Standards with respect to mechanical car parking installations. We are satisfied that while not technically applicable to a service station, accommodating this level of queueing on the site is an appropriate traffic engineering outcome, given the abuttal to arterial roads.

The 16 vehicles would represent 14 passenger vehicles and 2 passenger vehicles towing either a boat or a jet-ski. The vehicle towing a boat, may occupy 2 of the fill points, or would extend into the access aisle behind the rear bowser.

The images below demonstrate the average operation of the service station as well as the 98th percentile queue. The images below indicate that under the two scenarios, appropriate circulation is maintained around the bowsers and the queues will not interrupt vehicle movements throughout the service station.

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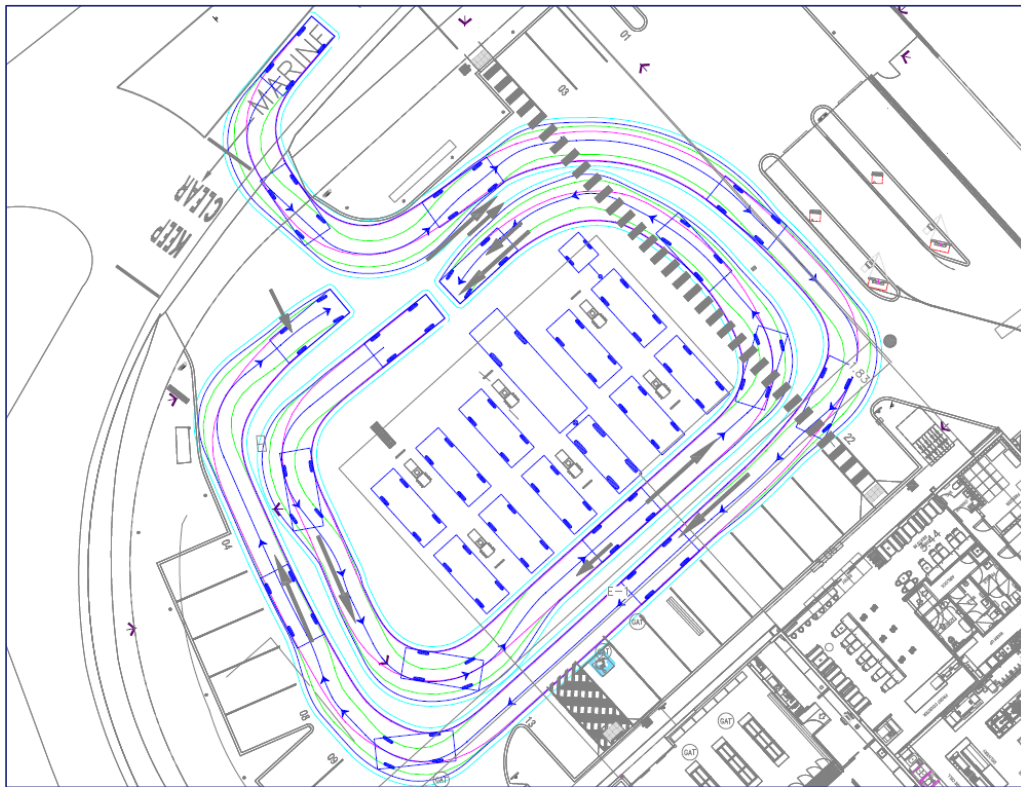


Figure 20: Demonstration of Average Queue

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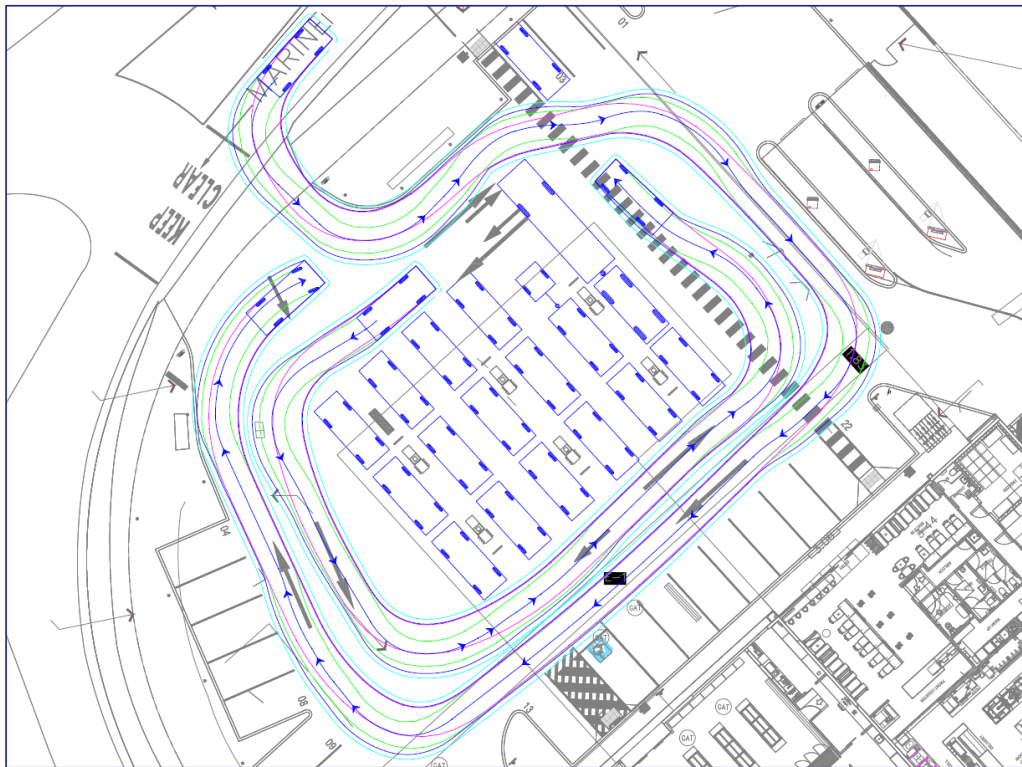


Figure 21: Demonstration of 98th Percentile Queue

Accordingly, we are satisfied that the level of traffic expected to be generated by the service station can appropriately be accommodated on the site at peak times, whilst accommodating appropriate vehicle circulation.

4.10. Summary of Service Station Improvements

The following table sets out the observations of the key criticisms of the Tribunal's decision regarding the existing operation of the service station, as well as the operation of the proposal which was the subject of the VCAT decision. The table then states how the current proposal has addressed each of the issues.

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Table 7: Comparison of Existing Conditions and Proposed Conditions

Tribunal Comment	Existing Conditions	VCAT Proposal	Current Proposal
100 <i>there is insufficient space before the bowsters off Marine Drive to manage the volumes of vehicle and vehicles with trailers carrying boats and jet skis. We observed grid lock while vehicles propped in the Marine Drive entry point waiting for an available pump.</i>	Agreed, the existing operation of the site is inefficient. There are a number of reasons why this is the case, but in the case discussed by the Tribunal, if a vehicle queues behind the first bowser the site access is effectively blocked, particularly if that vehicle is towing a boat or jet ski.	This was not the case under the proposal presented at VCAT, as there is no single bowser that was required to be clear in order to allow access to subsequent bowsters.	This is not the case under the current proposal, as there is no single bowser that is required to be clear in order to allow access to subsequent bowsters. Even if one of the rear bowsters has a vehicle queued behind it (including a vehicle towing a boat etc), access to the other bowsters is not impacted due to the orientation of the bowsters perpendicular to access alignment.
102 <i>We observed many vehicles failing to find an available pump for the relevant side of the vehicle and proceeding to the end of the southern end of the bowsters and then turning back northwards to try and find a pump. The lack of space for these manoeuvres added to the grid lock as did the difficulties in exiting after refuelling from the bowsters at a non-preferred angle.</i>	Agreed, this is chiefly due to the lack of visibility through the site, particularly if there are vehicles queued.	This was not the case under the proposal presented at VCAT, as a vehicle entering the site will have a full view of all of the bowsters available within the site and can choose an appropriate fuel point to access.	This is not the case under the current proposal, as a vehicle entering the site will have a full view of all of the bowsters available within the site and can choose an appropriate fuel point to access.
103 <i>The problematic arrangements also adversely affected tanker fuel deliveries. We observed the tanker propped in the Marine Drive median opening waiting to turn right into the service station</i>	Agreed, if the entrance was blocked, the fuel tanker would not be able to enter the site. We also observed that some vehicles parked informally	This was not the case under the proposal presented at VCAT, as two fill points and the air and water space would be shut down prior to the access of the fuel tanker.	This is not the case under the existing proposal, as the two fill points will be shut down prior to the access of the fuel tanker.

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1-2 Marine Drive & 5 Nepean Highway, Safety
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Tribunal Comment	Existing Conditions	VCAT Proposal	Current Proposal
	along the southern boundary, where the fuel tanker required to prop.	Fuel deliveries would have also been undertaken during off-peak times.	Fuel deliveries will also be undertaken during off-peak times.
132 The location of the new bowzers in respect to the main entry points to the site, particularly the nearest bowser to the southern access in Marine Drive, is in roughly the same position as present. The present bowser location is problematic for the reasons we saw at our inspection and to which we have referred	-	The location of the closest fuel bowser to the property boundary is 3.5m further away from the property boundary when compared with the existing conditions. While this is not a significant difference in isolation, the orientation of the fuel bowzers at 90 degrees to the accessway allows for an approaching driver to view all fuel bowzers and chose a bowser to queue behind. This is a significant improvement when compared to the existing conditions, where views through the site were compromised by queueing vehicles. The combination of pushing the bowzers further into the site and re-orientating the bowzers will ensure that the issues identified by the Tribunal during its site inspection will not occur under the proposed arrangement.	
133 The propping problem observed with the fuel delivery tanker and potential conflict with other vehicles and trailers at times will be worse under the proposal because the fuel tanker will effectively need to prop closer to Marine Drive than is presently the case	-	The proposal presented at VCAT required the following to manage the fuel tanker on the site: • 2 fill points to be closed down, • air and water station closed down, • 3 car spaces blocked, and • vehicle circulation along southern boundary blocked.	The current proposal only requires 2 fill points to be closed while the fuel vehicle is on the site. Two-lane, two-way access will be maintained around the fuel bowzers. No car spaces will be blocked. We are satisfied that the impact of accommodating the fuel bowser on the site under the proposed conditions represents a significant

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Tribunal Comment	Existing Conditions	VCAT Proposal	Current Proposal
			improvement when compared to the existing conditions and the VCAT scheme.
135 The proposed circulation of vehicles on the site is problematic and unresolved. 136 These 'circulating' movements will result in additional navigation complexity. They will lead to an unacceptable outcome of two-way vehicle flows relating to the two uses. There will be a high likelihood of internal traffic snarls. They will add to right turn exit movements to Marine Drive which are problematic given vehicle propping in the median when doing right turn entry movements and unreasonably add to congestion at this entry/exit point.	-	The VCAT proposal allowed for exit movements to occur to Marine Drive. This had the potential to cause internal conflicts which could have caused delays to occur on the site. This is particularly the case when vehicles would attempt to turn right from the site onto Marine Drive, while another vehicles was attempting to turn into the site.	The proposed access arrangements include vehicle access to the site from Marine Drive and vehicle egress to Nepean Highway. Accordingly, no vehicles will be turning out of the site to Marine Drive while other vehicles are attempting to turn into the site. This change to the proposed access arrangements will remove a significant amount of potential conflict points within the site and represents a significant improvement to on-site circulation.
139 We also agree with him that the internal width of the key access aisle providing access to the tanker fuelling location and nearby bowsers, will be insufficient to accommodate effective two-way movements, potentially increasing traffic grid lock at this important location.	-	As discussed above, the presence of the fuel tanker on the site results in compromised use of the site from a traffic circulation perspective.	As discussed above, the presence of the fuel tanker on the site will only require to shutting down of two fill points. Two-way movements will be maintained around the fuel tanker, ensuring disruption to circulation is not compromised.

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The following table considers more specific vehicle circulation scenarios in the context of the existing layout, VCAT proposed arrangements and the current proposal. The review of these scenarios indicate that the proposed arrangements result in a superior outcome.

Table 8: Review of Traffic Circulation Scenario

Circulation Scenario	Existing Arrangements	VCAT Arrangements	Proposed Arrangements
When the fuel tanker is on the site refuelling the station.	All vehicles required to reverse from the bowzers to exit the site, as they cannot proceed through the bowzers.	- Two fill points closed - Air and water closed 3 car spaces inaccessible - No circulation possible through western accessway - Vehicle propped 2.8m from property boundary	- Two fill points closed - Air and water relocated and remains open - All car spaces accessible - Two-way access maintained through western accessway - Vehicle propped 7.3m from property boundary
When vehicles towing jet skis are refuelling in rear bowzers.	Depending on where vehicle is refuelling, circulation behind would be compromised. If this occurred close to Marine Drive, the site access would be blocked.	- One-lane accessway for two-way movements maintained behind. - Car spaces directly behind bowzers not accessible.	- Two-lane accessway for two-way movements maintained. - All car spaces accessible, as no car spaces located behind bowzers.
When vehicles towing boats are refuelling in rear bowzers.	Depending on where vehicle is refuelling, circulation behind would be compromised. If this occurred close to Marine Drive, the site access would be blocked.	If a passenger vehicle towing a boat it would block vehicle movements when refuelling in 4 of the 8 rear fill points.	Vehicles towing boats will not result in any blocking of accessways. Depending on the location of the vehicle, single-lane or two-lane access would be maintained behind the vehicle.

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1-2 Marine Drive & 5 Nepean Highway, Safety
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5. Response to Request for Information

The following table sets out our response to each of the RFI items set out by Council in its letter dated 20th February, 2023.

Council RFI Items	Response
a) <i>In accordance with the submitted Traffic Report either amend the plans to provide staff shower facilities or amend the application to include variation of bicycle facilities.</i>	We re-iterate that the waiver of the staff/changeroom in association with the convenience restaurant is required due to the general age of its employees and the operator's policy to not encourage its staff to change/shower on the site. In any case, we note that this type of use encourages local employment and the general length of bicycle trips would not necessitate the need for shower/changing. We are satisfied that this is a reasonable justification for the waiver and the non-provision of a changing facility is of little consequence to the operation of the site.
e) <i>The two existing crossovers to Marine Parade which are no longer proposed to be used to be notated as being removed.</i>	These are now noted on the plans as being removed.
g) <i>The signage plan to include the signs in the Functional Layout Plan.</i>	The plans have been updated to detail the proposed signage from our traffic management plan attached at Appendix F.
h) <i>A plan showing the location of all proposed signs, including all proposed traffic signs.</i>	The plans have been updated to detail the proposed signage from our traffic management plan attached at Appendix F.
k) <i>The Functional layout plans to provide details for informing drivers exiting the drive-thru that there is no exit to Marine Drive.</i>	The functional layout plan provided at Appendix F has been updated to include a sign at the exit from the drive-through which states 'No Exit to Marine Drive'
l) <i>Swept path diagrams for vehicles intending to head north-east on Marine Drive.</i>	Swept path diagrams have been provided at Appendix E demonstrating an 8.8m MRV and a B99 design car towing a boat turning right out of the site access point onto Nepean Highway. A more detailed discussion regarding these swept paths is provided below.

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

Council Design Concern

The removal of the Marine Drive vehicle exit has created new traffic concerns which have not been resolved by the modified design. Previously, vehicles including small trucks and cars with boats heading to the boat ramp, had been able to turn right (north-east) into Marine Drive where they could prop in the middle of Marine Drive adjacent to the median strip, before merging with traffic on Marine Drive. It is now proposed that this traffic turn right out of the service station into the busier intersection of Nepean Highway and Marine Drive, in a location where there is no longer sufficient room to prop in the median strip, and at a point where vehicles will have to briefly enter the south-west bound lane of the Nepean Highway before entering into the north-east bound lane that merges with Marine Drive. The need to enter into the south-west bound lane of the Nepean Highway may not be evidently clear to drivers and could cause accidents. The submitted vehicle swept paths unrealistically only show boat owner heading east on Nepean Hwy, away from the boat ramp, rather than towards the boat ramp.

Traffic Response

Council's design concern states that; *Previously, vehicles including small trucks and cars with boats heading to the boat ramp, had been able to turn right (north-east) into Marine Drive.* Whilst under existing conditions vehicles could undertake this movement, our survey data indicates that in our design hour presented at Figure 10 only 1 vehicle turned right from the site into Marine Drive.

Accordingly, whilst this movement is available to drivers, there is very little demand for this movement. This is most likely due to the level of congestion which can occur at times at this exit under existing conditions. In contrast, our surveys indicate that during the peak hour, 40 vehicles (28% of exit movements) currently turn right from the site into Nepean Highway. Accordingly, the proposed vehicle access arrangements of the site do not fundamentally alter the path of vehicles through the site. i.e. almost all vehicles enter the site from Marine Drive and exit to Nepean Highway already.

The design concern also indicates that there is insufficient space within the Nepean Highway median to accommodate a propped vehicle. This is not the case. The median will accommodate propped vehicles up to a length of approximately 5-5.5m, which is the length of a large passenger car. Whilst larger vehicles cannot prop within the median, we are satisfied that this does not cause a traffic hazard for these vehicles or passing traffic. Vehicles of this nature are already undertaking this movement under existing conditions and there is no casualty crash history that suggests that this is an existing issue in this location. It is also worth noting that under existing conditions, a vehicle towing a boat would not be able to prop clear of passing traffic within the median on Marine Drive either.

As detailed above in our response to Council's RFI item 'I' above, additional swept path diagrams have been prepared which demonstrate the vehicle movements that Council has requested. We are satisfied that these swept paths detail a safe and convenient right turn movement for cars towing boats.

Council Design Concern

The proposal has not responded to paragraph 125 of the VCAT order, which states that: 'We also record that Ms Dunstan agreed that congestion around the drive-thru entry could be eased with more space for another queued vehicle at the ordering location, with a minor layout change.'

Traffic Response

The development plans attached at Appendix A have made the recommended alterations to the drive through arrangement to maximise the number of vehicles which can be accommodated prior to the ordering point. This has been done by relocating the ordering equipment further into the site. This will minimise any potential delays to vehicles entering the site from marine Parade. We are satisfied that the current plans adequately respond to Paragraph 125 of the VCAT Decision.

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
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6. Conclusions

Having undertaken a detailed traffic engineering assessment for the proposed service station and convenience restaurant development at 1-2 Marine Drive & 5 Nepean Highway, Safety Beach, we are of the opinion that:

- a) the proposed convenience restaurant has a statutory car parking requirement of 17 car spaces under Clause 52.06-5. The provision of 22 car spaces on the site exceeds this requirement, and allows for an overflow of 5 car spaces to be used by staff of the service station, customers of the convenience store only, and customers of the service station who wish to free up space at the bowser when paying for their fuel,
- b) the proposed service station does not have a statutory car parking requirement under Clause 52.06-5 and accordingly, car parking must be provided to the satisfaction of the Responsible Authority. The provision of 12 spaces at the refuelling points is appropriate for the service station and for the site locality,
- c) the over-provision of car parking on the site provides an additional 5 car spaces to be used by staff of the service station, customers of only the convenience store, and customers of the service station who wish to free up space at the bowser when paying for their fuel,
- d) the bicycle parking provision satisfies the minimum requirements set out at Clause 52.34 of the Planning Scheme and a waiver of one shower/changeroom for the proposed development is acceptable given the nature of the proposed use and site location,
- e) the proposed car parking layout and access arrangements accord with the requirements of the Planning Scheme, AS2890.1:2004, AS2890.2-2018 and AS2890.6:2009 (where relevant) and current practice,
- f) the vehicle access arrangements to the site are appropriate and will facilitate appropriate vehicle movements to and from the site,
- g) the location set aside for the refuelling vehicle to prop within the site is appropriate and will not have a detrimental impact to the operation or safety of vehicle movements on the site or external to the site,
- h) loading and waste collection for the convenience restaurant and service station can be undertaken onsite via the dedicated loading bay and is appropriate,
- i) the level of traffic generated as a result of this proposal can be adequately accommodated by the road network, will largely comprise of passing traffic being diverted into the site rather than newly generated trips and will not have a detrimental impact on the operation or safety of Marine Drive and Nepean Highway,
- j) the level of traffic can be accommodated by the number of bowsers proposed to be provided on the site, with an appropriate amount of queuing space provided at each bowser,
- k) the allowances for vehicle circulation on the site will be appropriate and represents a significant improvement to the existing operation of the site, and
- l) there are no traffic engineering reasons why a planning permit for the proposed service station and convenience restaurant at 1-2 Marine Drive & 5 Nepean Highway, Safety Beach, should not be issued, subject to appropriate conditions.

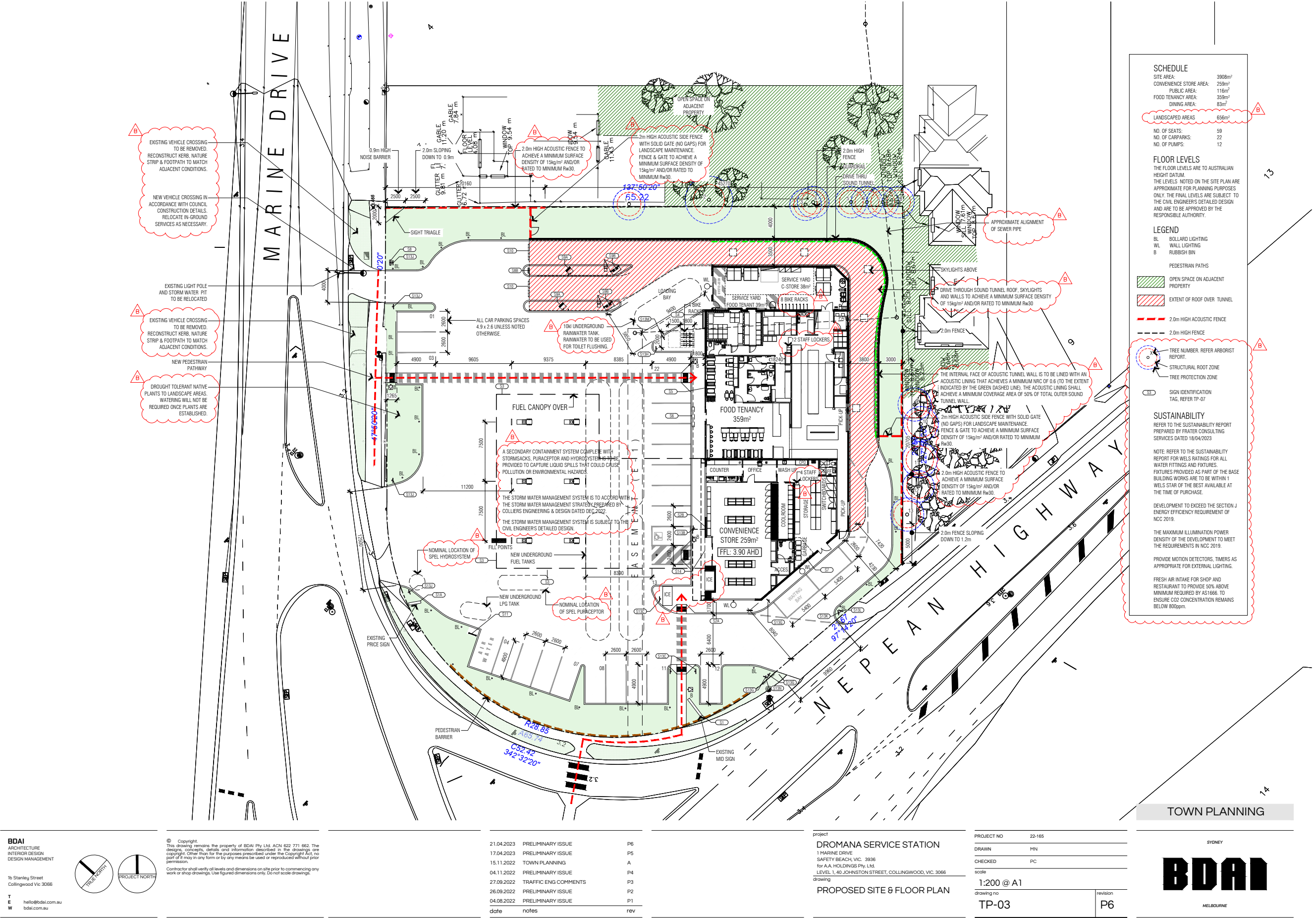


Appendix A

Development Plans

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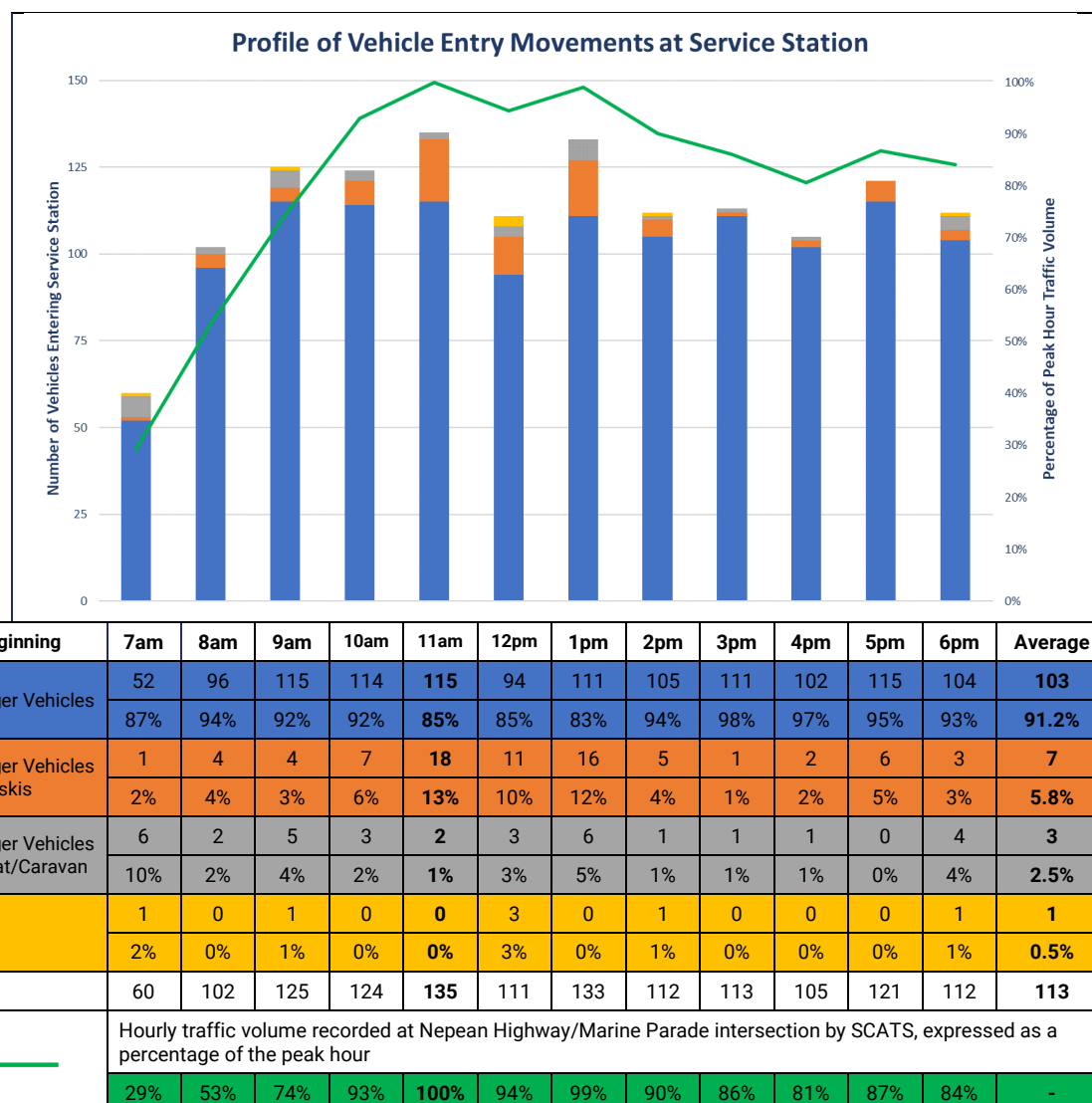
Appendix B

Profile of Vehicle Movements at Service Station

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

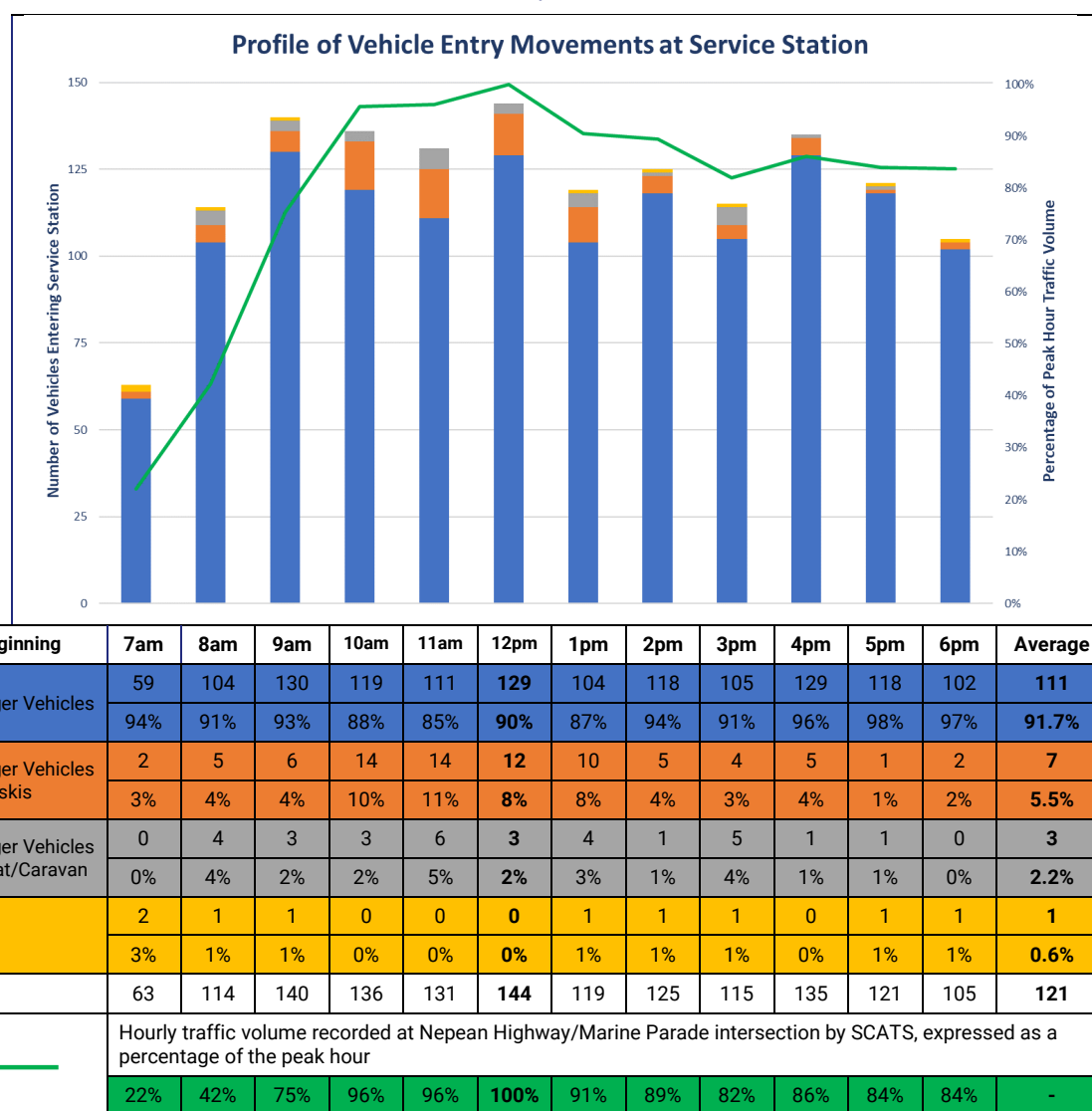
Table B1: Vehicle Movements at Service Station 22nd January, 2022



Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

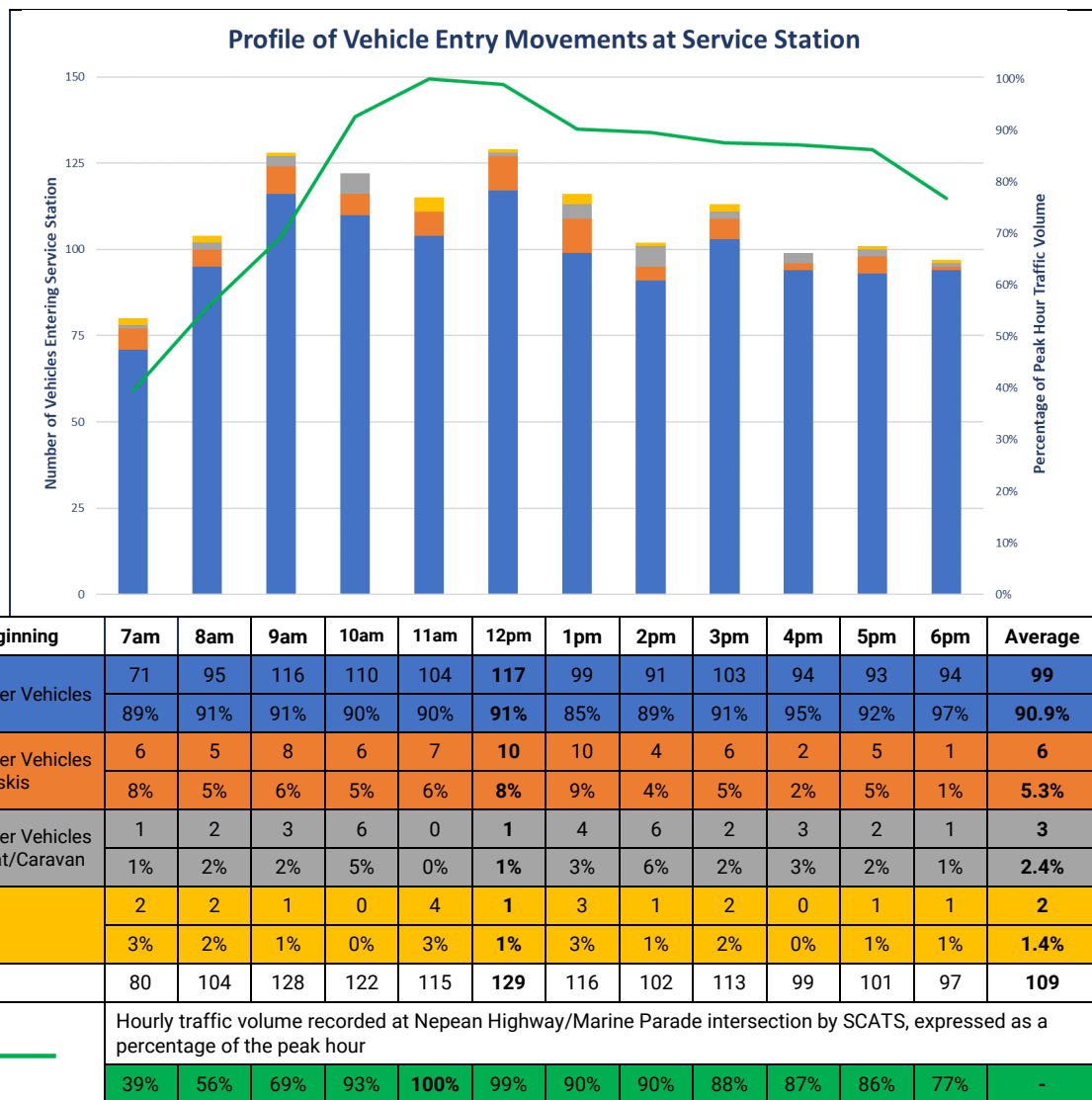
Table B2: Vehicle Movements at Service Station 23rd January, 2022



Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

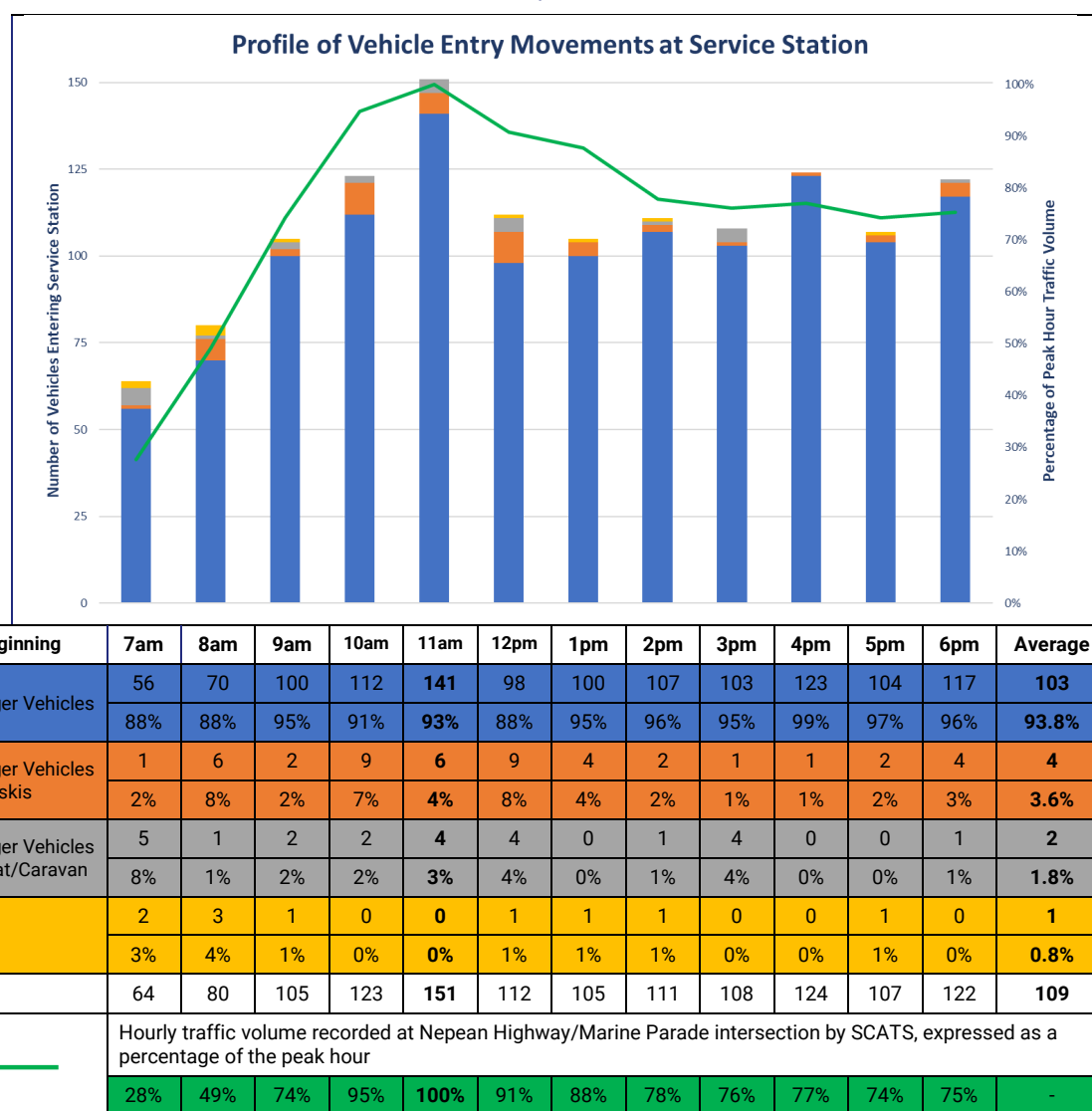
Table B3: Vehicle Movements at Service Station 25th January, 2022



Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

Table B4: Vehicle Movements at Service Station 26th January, 2022





Appendix C

Distribution of Vehicle Movements at Service Station

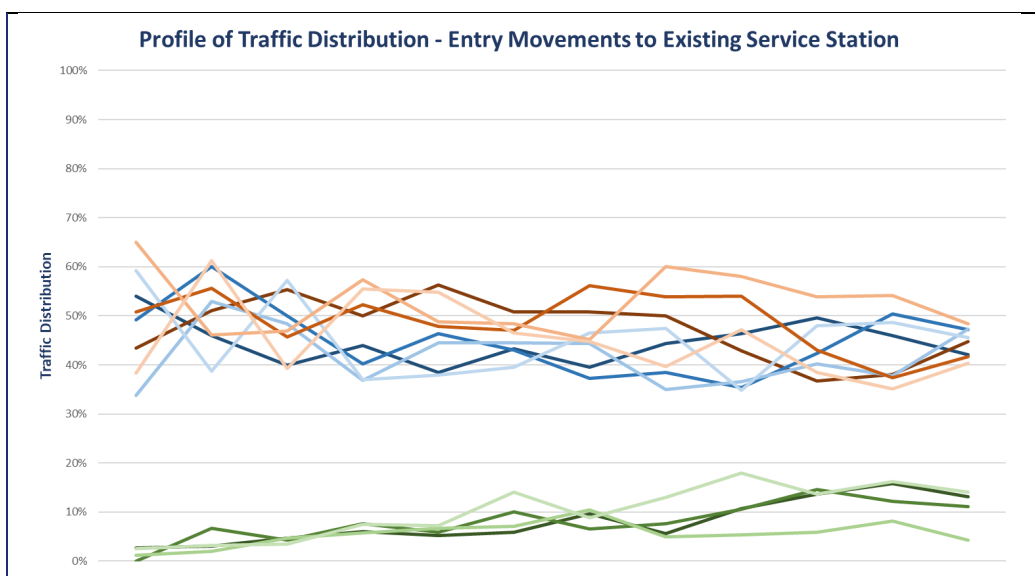
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Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

Table C1: Traffic Distribution at Service Station – Entry Movements

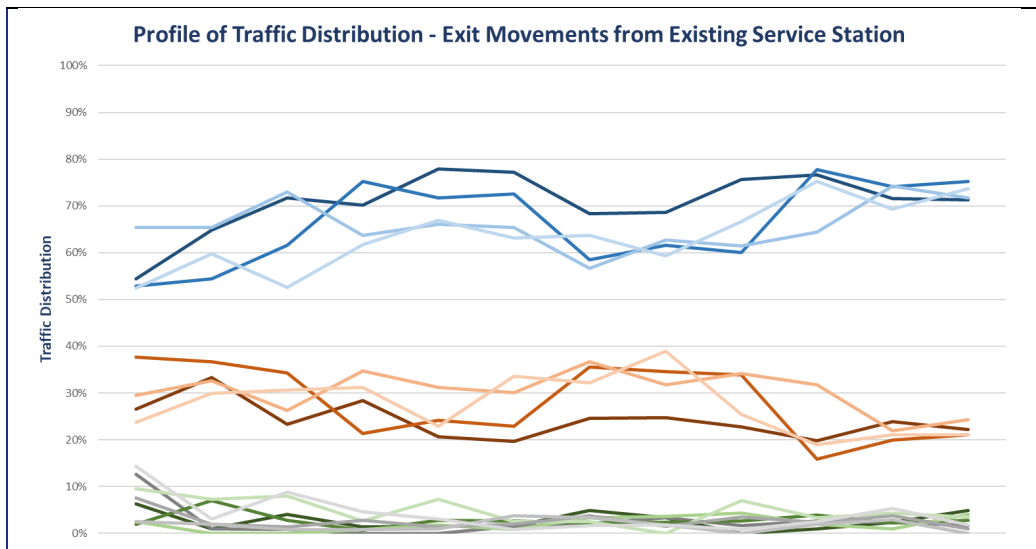


Hour Beginning	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	Average
Left Turn Entry from Marine Drive													
22 nd January, 2022	54%	46%	40%	44%	39%	43%	40%	44%	46%	50%	46%	42%	44%
23 rd January, 2022	49%	60%	50%	40%	46%	43%	37%	38%	35%	42%	50%	47%	44%
25 th January, 2022	34%	53%	48%	37%	45%	45%	44%	35%	37%	40%	38%	47%	42%
26 th January, 2022	59%	39%	57%	37%	38%	39%	46%	47%	35%	48%	49%	46%	45%
Right Turn Entry from Marine Drive													
22 nd January, 2022	43%	51%	55%	50%	56%	51%	51%	50%	43%	37%	38%	45%	48%
23 rd January, 2022	51%	56%	46%	52%	48%	47%	56%	54%	54%	43%	37%	42%	48%
25 th January, 2022	65%	46%	47%	57%	49%	48%	45%	60%	58%	54%	54%	48%	52%
26 th January, 2022	38%	61%	39%	55%	55%	46%	45%	40%	47%	38%	35%	40%	45%
Left Turn Entry from Nepean Highway													
22 nd January, 2022	3%	3%	5%	6%	5%	6%	10%	6%	11%	14%	16%	13%	8%
23 rd January, 2022	0%	7%	4%	8%	6%	10%	7%	8%	11%	15%	12%	11%	8%
25 th January, 2022	1%	2%	5%	6%	7%	7%	10%	5%	5%	6%	8%	4%	6%
26 th January, 2022	2%	3%	3%	8%	7%	14%	9%	13%	18%	14%	16%	14%	10%

Traffic Engineering Assessment

1-2 Marine Drive & 5 Nepean Highway, Safety
Beach

Table C2: Traffic Distribution at Service Station – Exit Movements



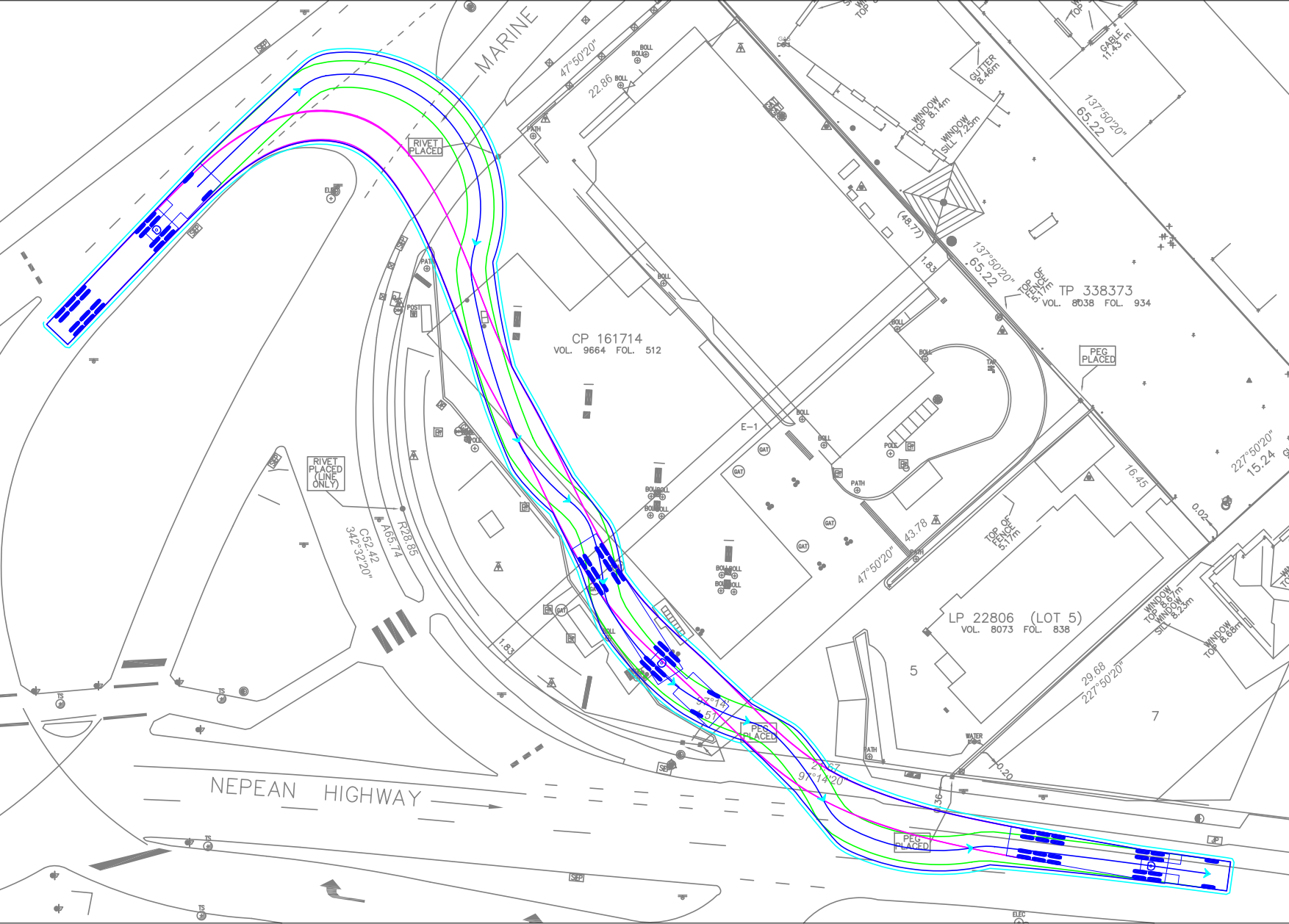
Hour Beginning	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	Average
Left Turn Exit to Nepean Highway													
22 nd January, 2022	54%	65%	72%	70%	78%	77%	68%	69%	76%	77%	72%	71%	71%
23 rd January, 2022	53%	54%	62%	75%	72%	73%	59%	62%	60%	78%	74%	75%	67%
25 th January, 2022	65%	65%	73%	64%	66%	65%	57%	63%	61%	64%	74%	72%	66%
26 th January, 2022	52%	60%	53%	62%	67%	63%	64%	59%	67%	75%	69%	74%	64%
Right Turn Exit to Nepean Highway													
22 nd January, 2022	27%	33%	23%	28%	21%	20%	25%	25%	23%	20%	24%	22%	24%
23 rd January, 2022	38%	37%	34%	21%	24%	23%	36%	35%	34%	16%	20%	21%	27%
25 th January, 2022	29%	33%	26%	35%	31%	30%	37%	32%	34%	32%	22%	24%	31%
26 th January, 2022	24%	30%	31%	31%	23%	34%	32%	39%	25%	19%	21%	21%	28%
Right Turn Exit to Marine Drive													
22 nd January, 2022	6%	1%	4%	1%	1%	2%	5%	3%	0%	1%	2%	5%	3%
23 rd January, 2022	2%	7%	3%	1%	3%	3%	2%	2%	3%	4%	2%	3%	3%
25 th January, 2022	3%	0%	0%	1%	2%	1%	3%	4%	4%	2%	1%	4%	2%
26 th January, 2022	10%	7%	8%	3%	7%	2%	2%	0%	7%	3%	4%	4%	5%
Left Turn Exit to Marine Drive													
22 nd January, 2022	13%	1%	1%	0%	0%	2%	2%	3%	2%	3%	2%	2%	2%
23 rd January, 2022	8%	2%	1%	3%	1%	2%	4%	2%	3%	2%	4%	1%	2%
25 th January, 2022	3%	2%	1%	1%	1%	4%	3%	2%	0%	2%	3%	0%	2%
26 th January, 2022	14%	3%	9%	5%	3%	1%	2%	2%	1%	2%	5%	2%	4%



Appendix D

Swept Path Diagrams (Existing Conditions)

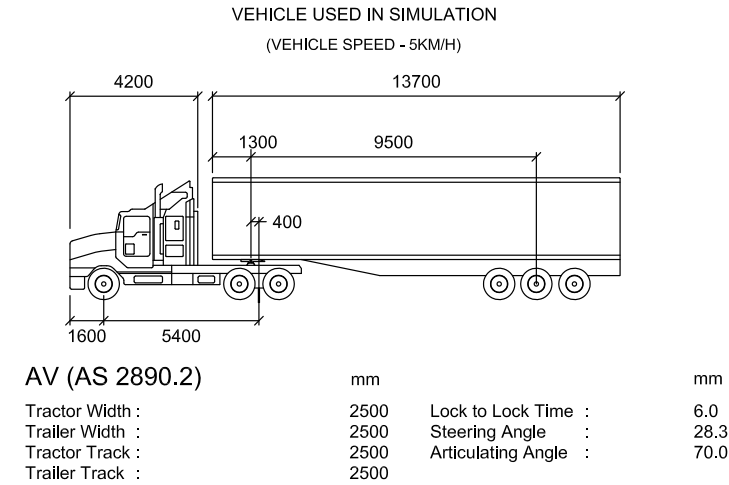
EXISTING SERVICE STATION 19M SEMI ACCESS/EGRESS



VEHICLE PROFILE

LEGEND

REAR WHEELS	VEHICLE BODY
FRONT WHEELS	BODY CLEARANCE



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	29/09/2022	EXISTING PLANS	K. EWE	C. DUNSTAN

1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH
EXISTING ARRANGEMENTS

GENERAL NOTES:
BASE INFORMATION FROM:
"21-040-TP-03.dwg"
DRAWINGS BY: BD Architecture & Interiors,
dated 27/09/2022

FILE NAME: G29423-02
SHEET NO.: 01



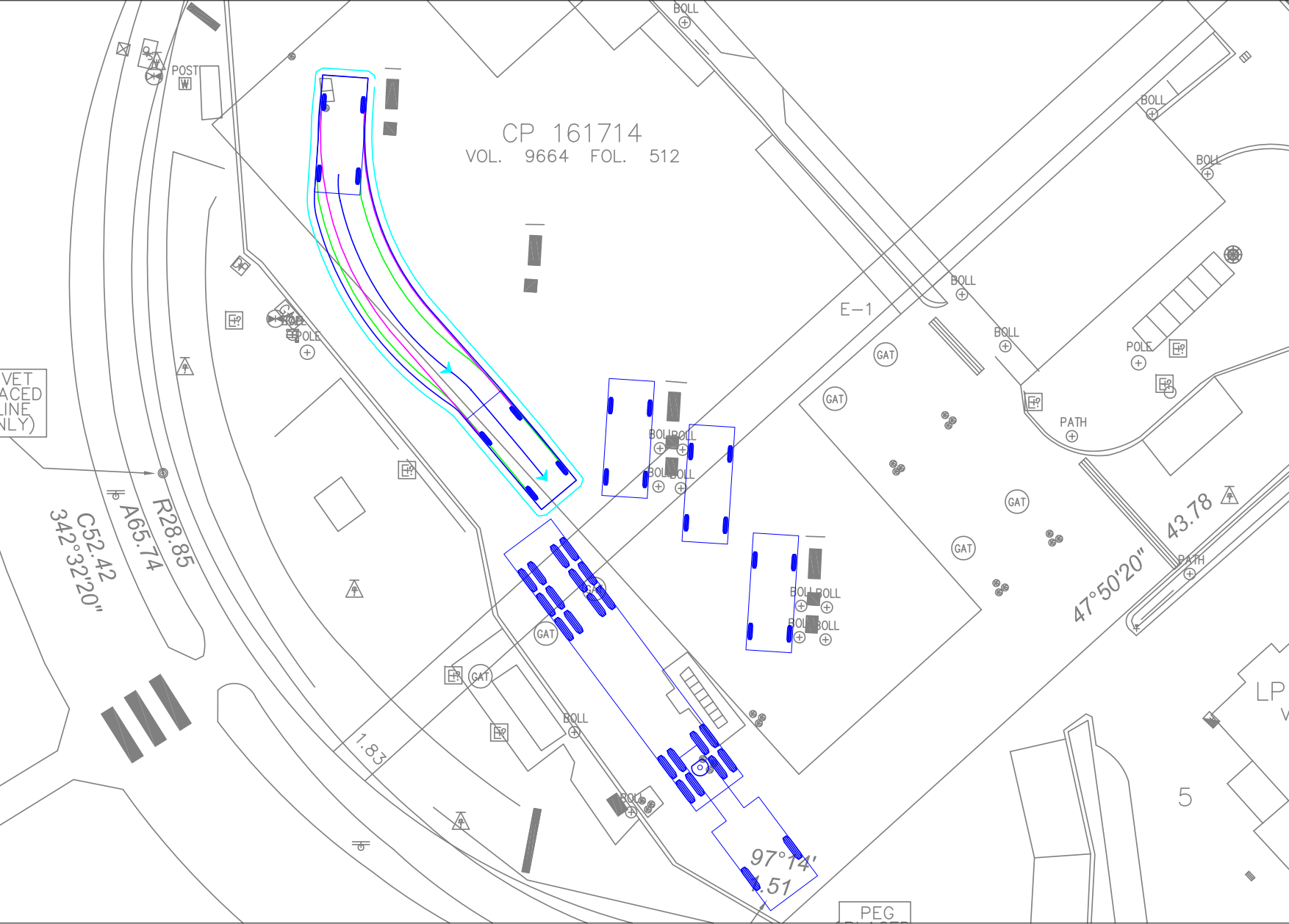
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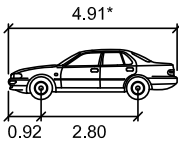
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EXISTING SERVICE STATION CIRCULATION BLOCKED BY 19M SEMI



VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



85th percentile
(AS/NZS 2890.1:2004)

Width : 1.87m
Track : 1.77m
Kerb to Kerb Radius : 11.5m

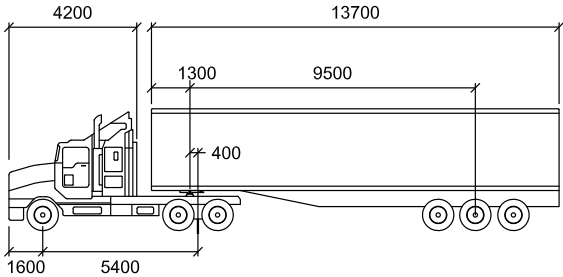
* actual template based on relevant longitudinal dimensions that affect swept path* as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

REAR WHEELS VEHICLE BODY
FRONT WHEELS BODY CLEARANCE

VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



AV (AS 2890.2)	mm	mm	
Tractor Width :	2500	Lock to Lock Time :	6.0
Trailer Width :	2500	Steering Angle :	28.3
Tractor Track :	2500	Articulating Angle :	70.0
Trailer Track :	2500		

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	29/09/2022	EXISTING PLANS	K. EWE	C. DUNSTAN

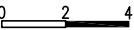
1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH
EXISTING ARRANGEMENTS

GENERAL NOTES:
BASE INFORMATION FROM:
"21-040-TP-03.dwg"
DRAWINGS BY: BD Architecture & Interiors,
dated 27/09/2022

FILE NAME: G29423-02
SHEET NO.: 02

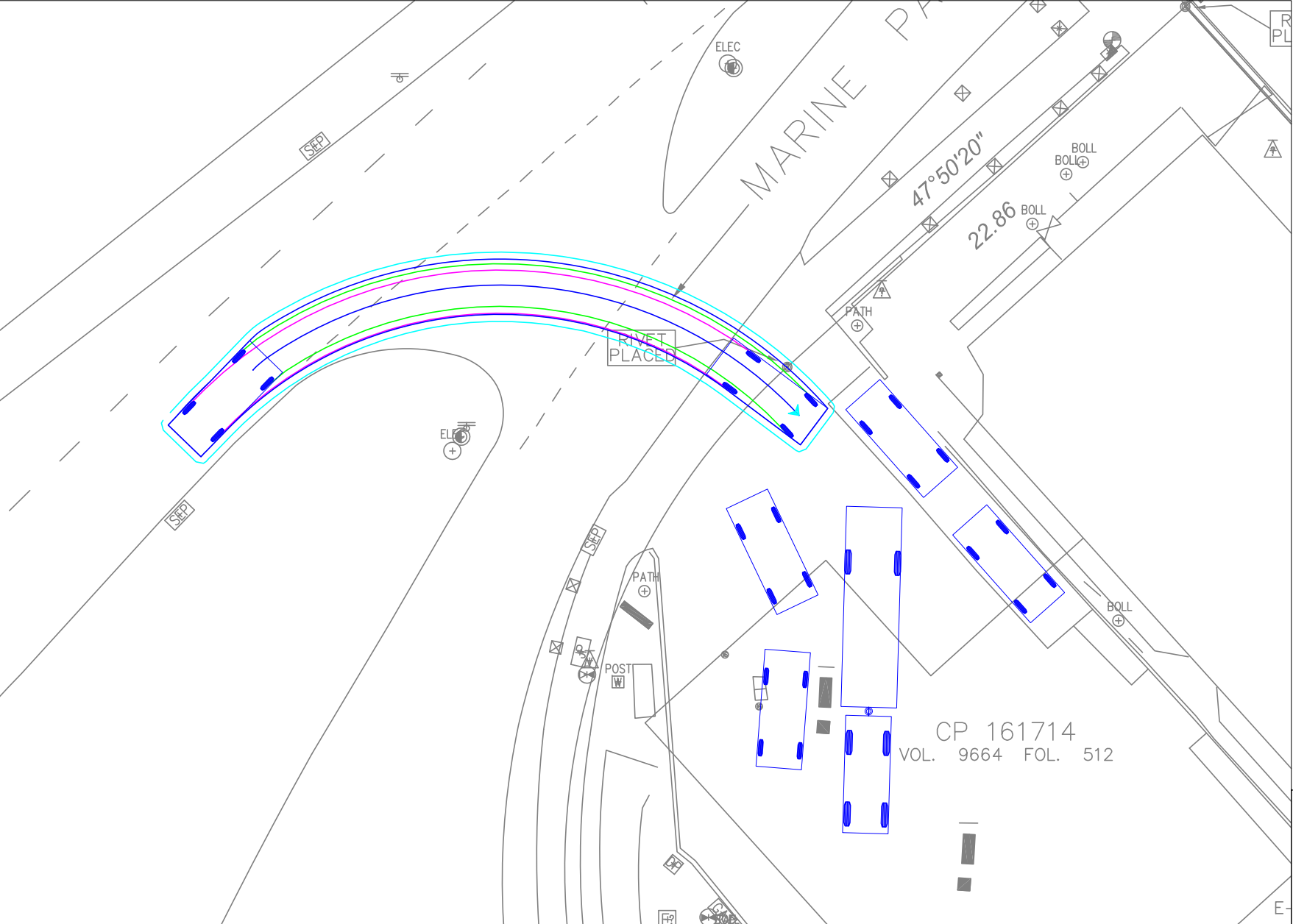


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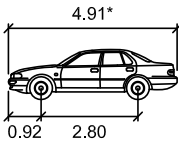


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EXISTING SERVICE STATION CIRCULATION BLOCKED BY CAR WITH BOAT



VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



85th percentile
(AS/NZS 2890.1:2004)

Width : 1.87m
Track : 1.77m
Kerb to Kerb Radius : 11.5m

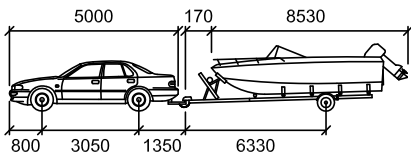
* actual template based on relevant longitudinal dimensions that affect swept path* as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

REAR WHEELS VEHICLE BODY
FRONT WHEELS BODY CLEARANCE

VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



99% CAR & BOAT

mm
Car Width : 1940
Trailer Width : 2370
Car Track : 1840
Trailer Track : 2370
Lock to Lock Time : 6.0
Steering Angle : 37.5
Articulating Angle : 70.0

REV DATE NOTES DESIGNED BY CHECKED BY
A 29/09/2022 EXISTING PLANS K. EWE C. DUNSTAN

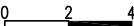
1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH
EXISTING ARRANGEMENTS

GENERAL NOTES:
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FILE NAME: G29423-02
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SCALE:
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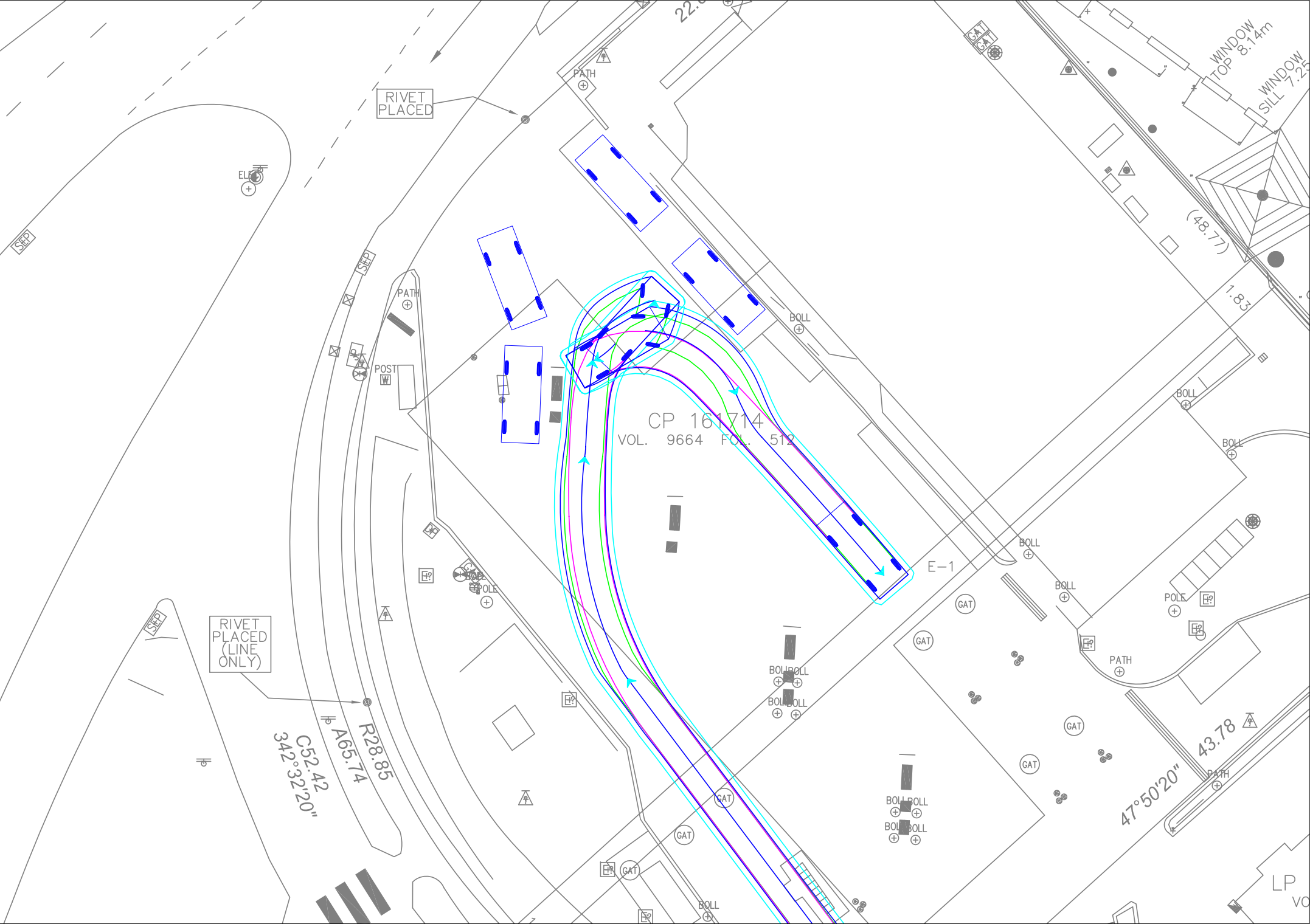


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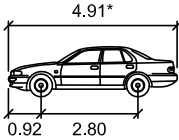
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EXISTING SERVICE STATION CIRCULATION BY VEHICLE ACCESSING FROM NEPEAN HIGHWAY



VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



85th percentile
(AS/NZS 2890.1:2004)

Width : 1.87m
Track : 1.77m
Kerb to Kerb Radius : 11.5m

* actual template based on relevant longitudinal dimensions that affect swept path* as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	29/09/2022	EXISTING PLANS	K. EWE	C. DUNSTAN

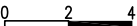
**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
EXISTING ARRANGEMENTS

GENERAL NOTES:
BASE INFORMATION FROM:
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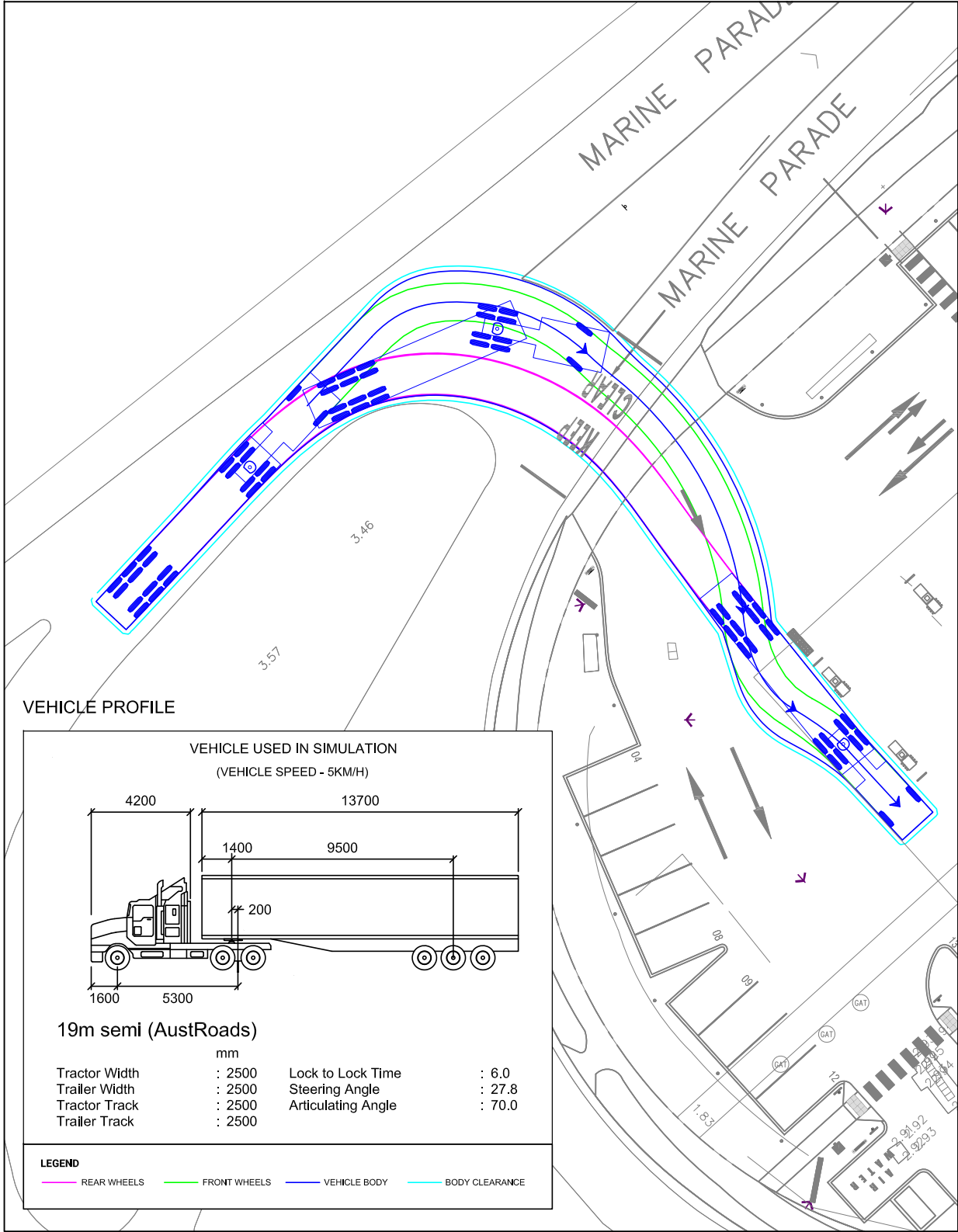
Appendix E

Swept Path Diagrams (Proposal)

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G29423R-02B

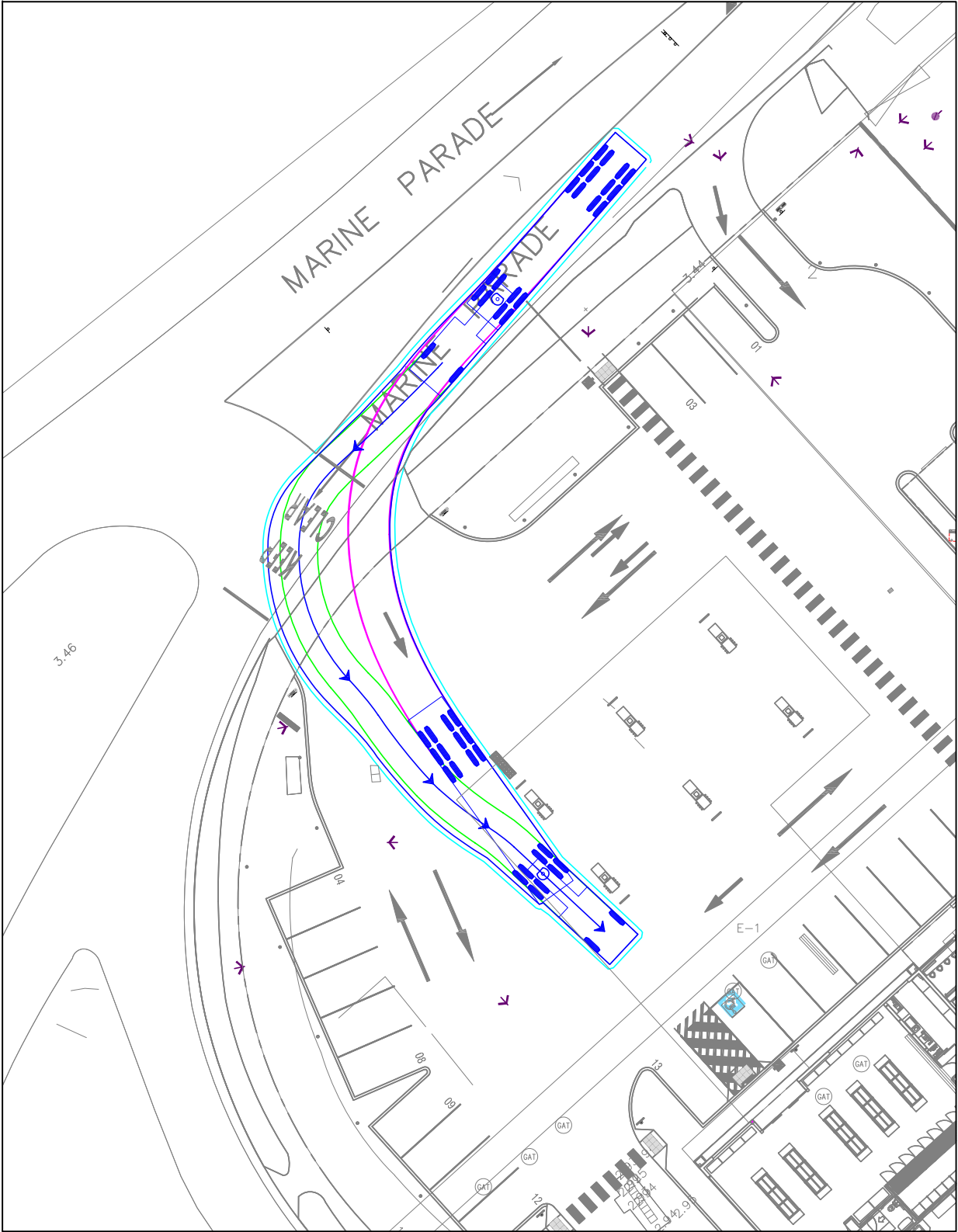
SITE ACCESS - 19m RE-FUELLING VEHICLE - INGRESS (SOUTH)



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**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

SITE ACCESS - 19m RE-FUELLING VEHICLE - INGRESS (NORTH)



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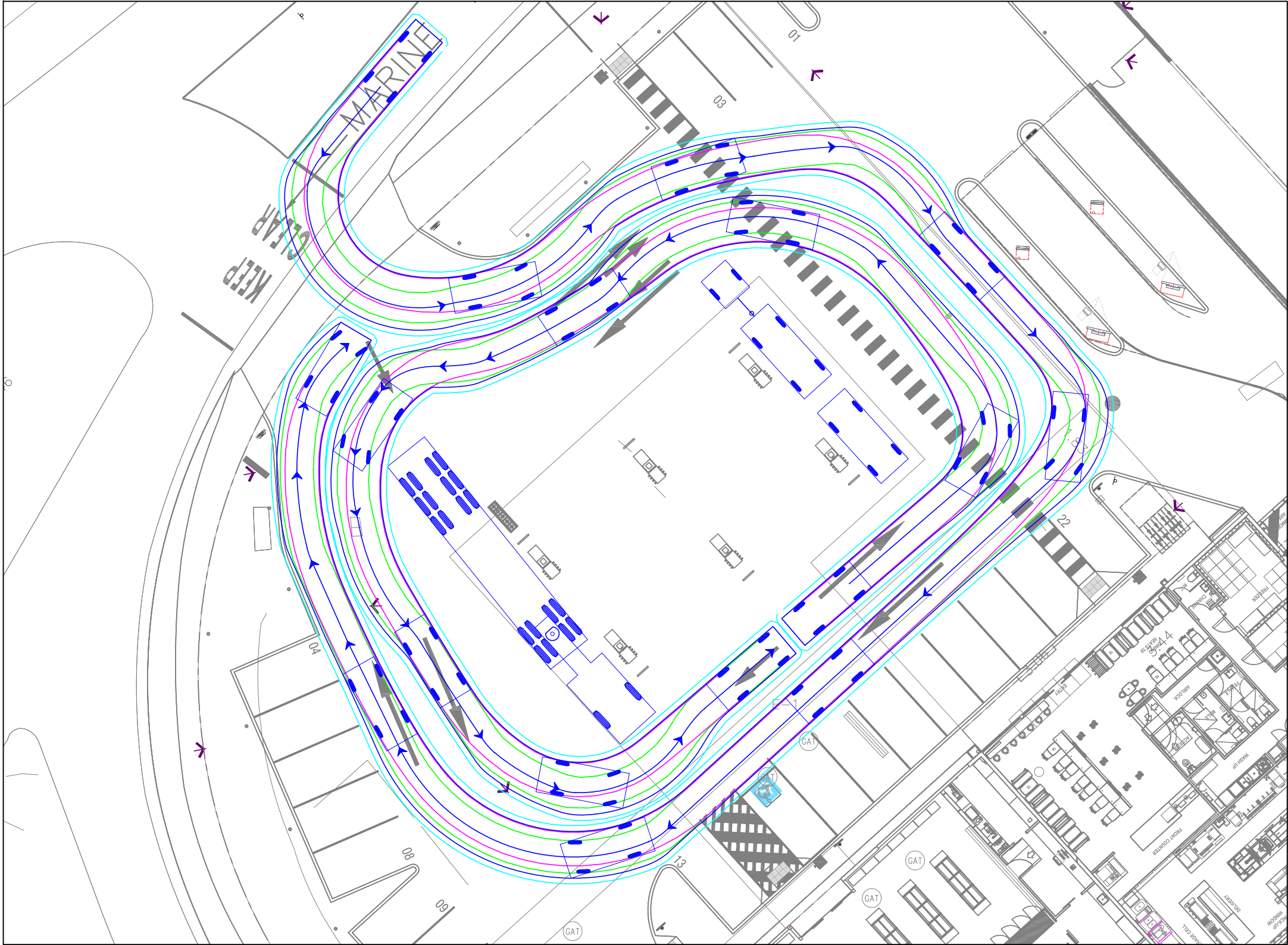
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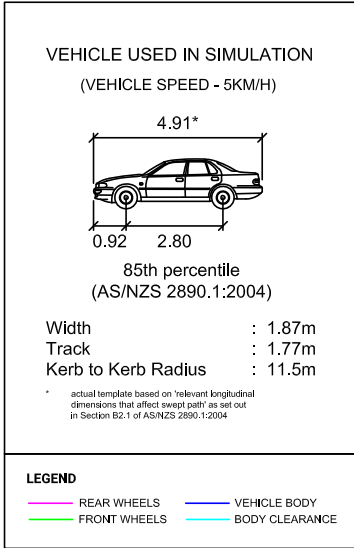
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SERVICE STATION - B85 VEHICLE - TWO-WAY PASSING AROUND 19m RE-FUELLING VEHICLE



VEHICLE PROFILE



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**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

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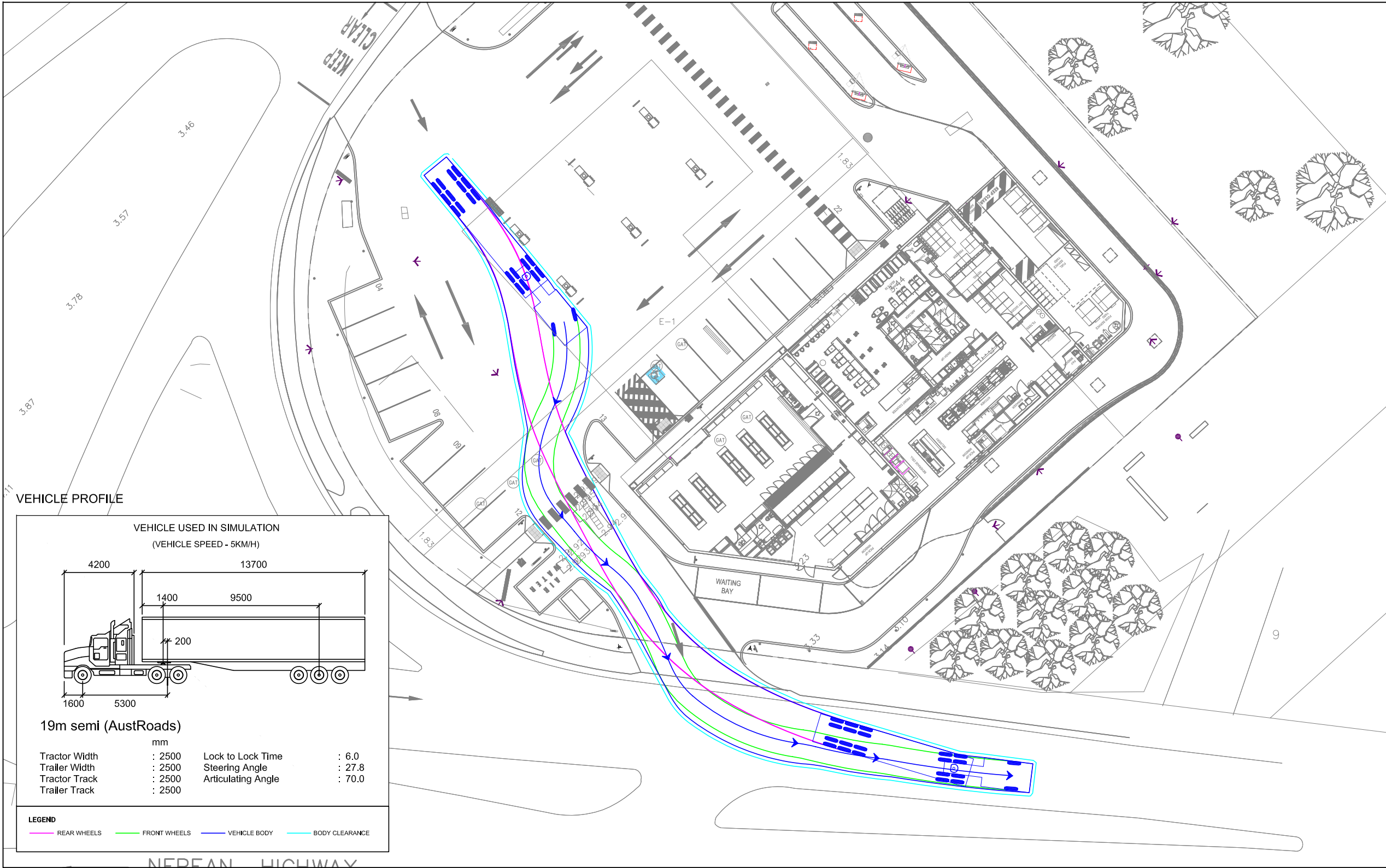
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SITE ACCESS - 19m RE-FUELLING VEHICLE - EGRESS



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**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
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FILE NAME: G29423-01
SHEET NO.: 03



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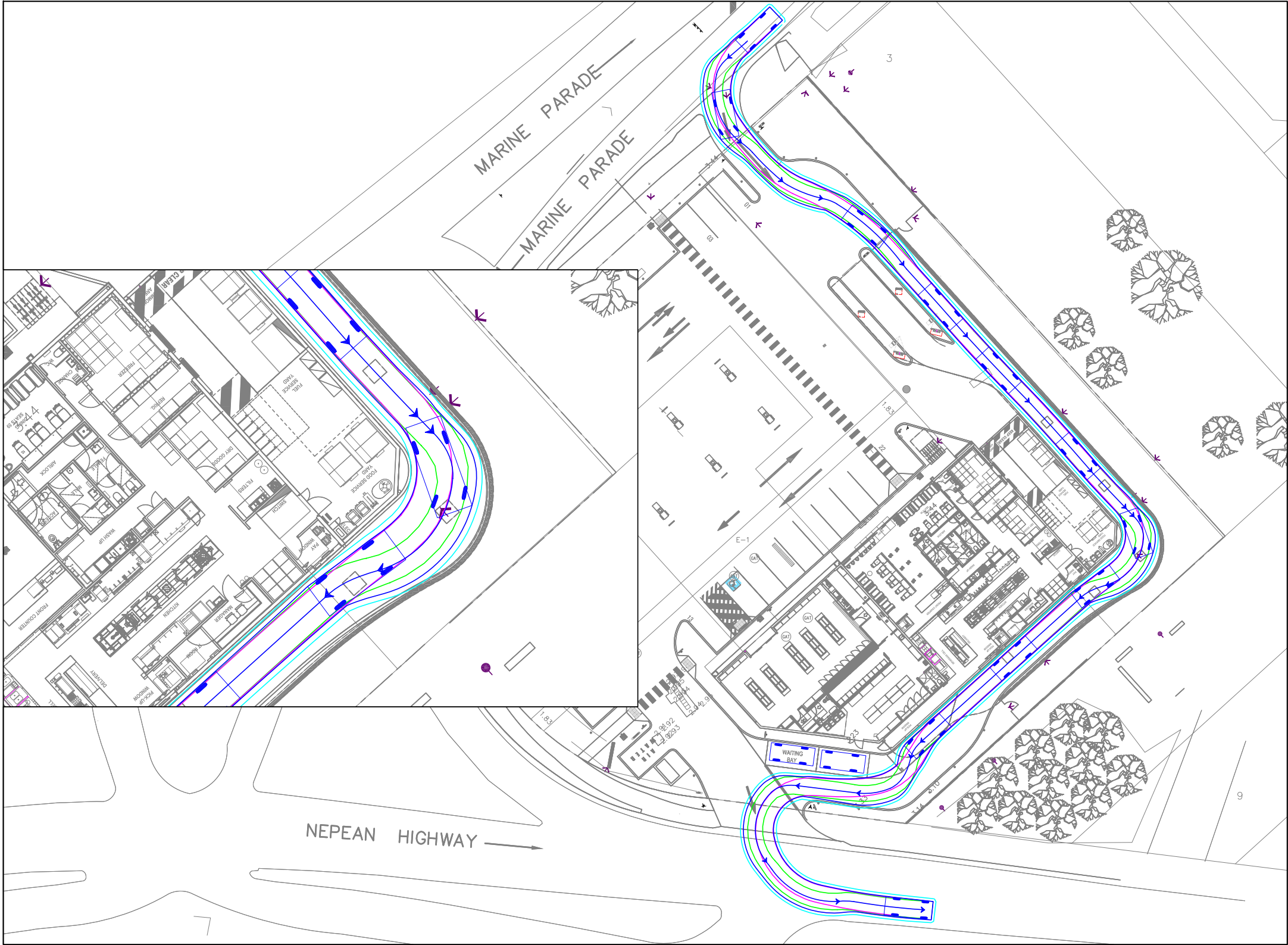
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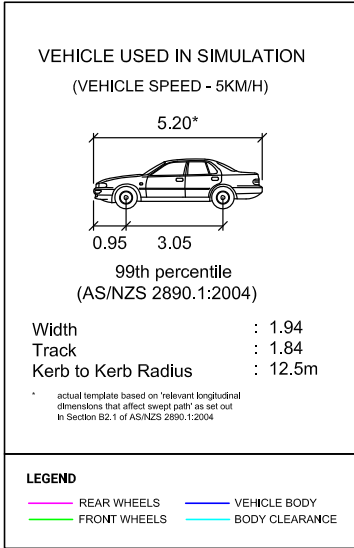
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CONVENIENCE RESTAURANT - B99 VEHICLE - CIRCULATION



VEHICLE PROFILE



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**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

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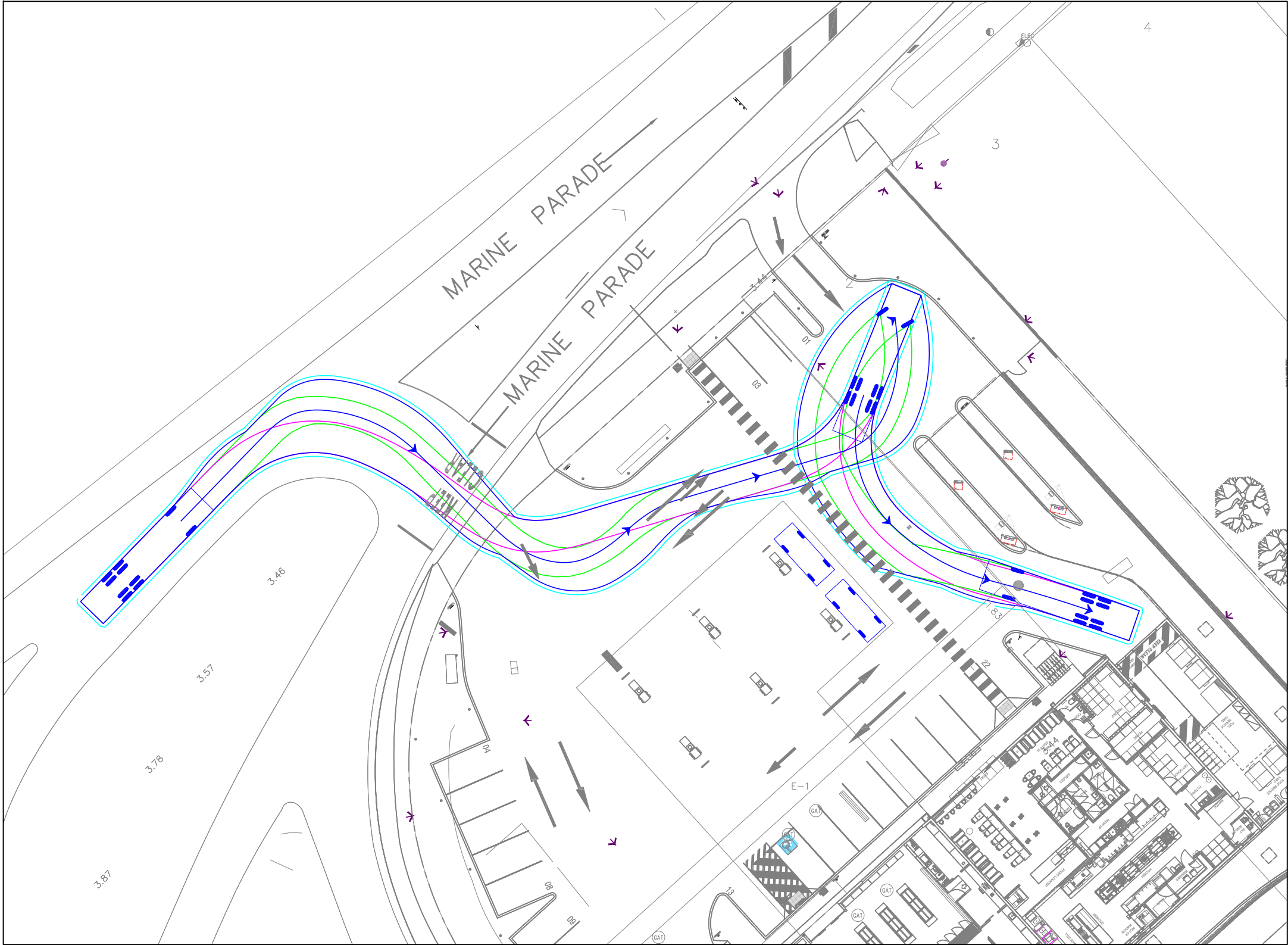
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LOADING BAY - 12.5m HRV - INGRESS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

HRV (AS 2890.2) mm

Width	:	2500
Track	:	2500
Lock to Lock Time	:	6.0
Steering Angle	:	35.2

LEGEND

REAR WHEELS	VEHICLE BODY
FRONT WHEELS	BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
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B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
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FILE NAME: G29423-01
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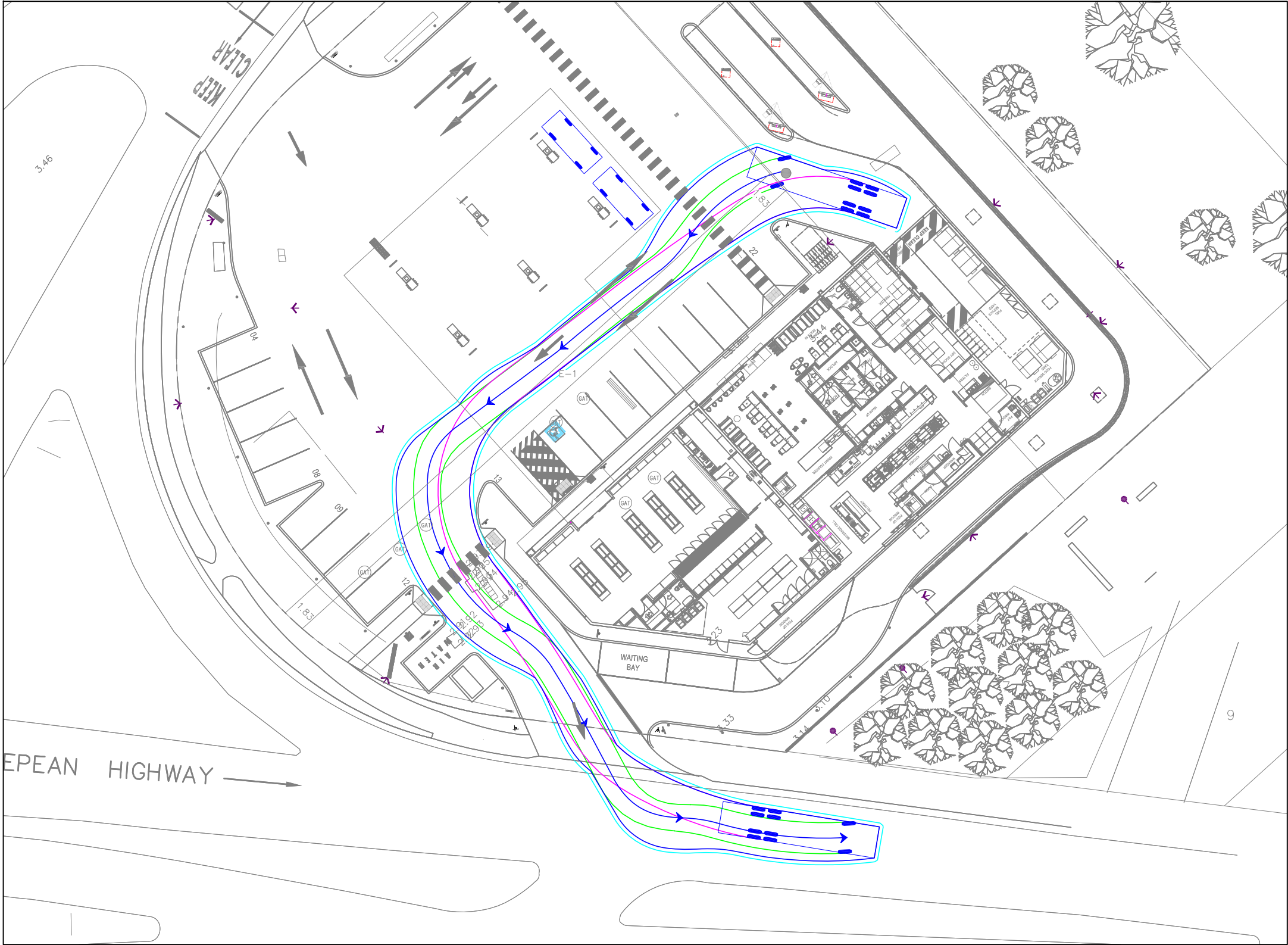
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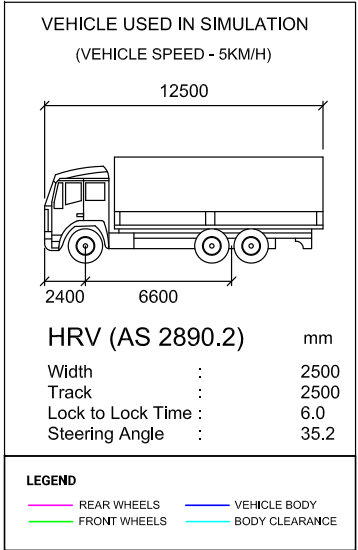
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LOADING BAY - 12.5m HRV - EGRESS



VEHICLE PROFILE



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B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
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FILE NAME: G29423-01
SHEET NO.: 06

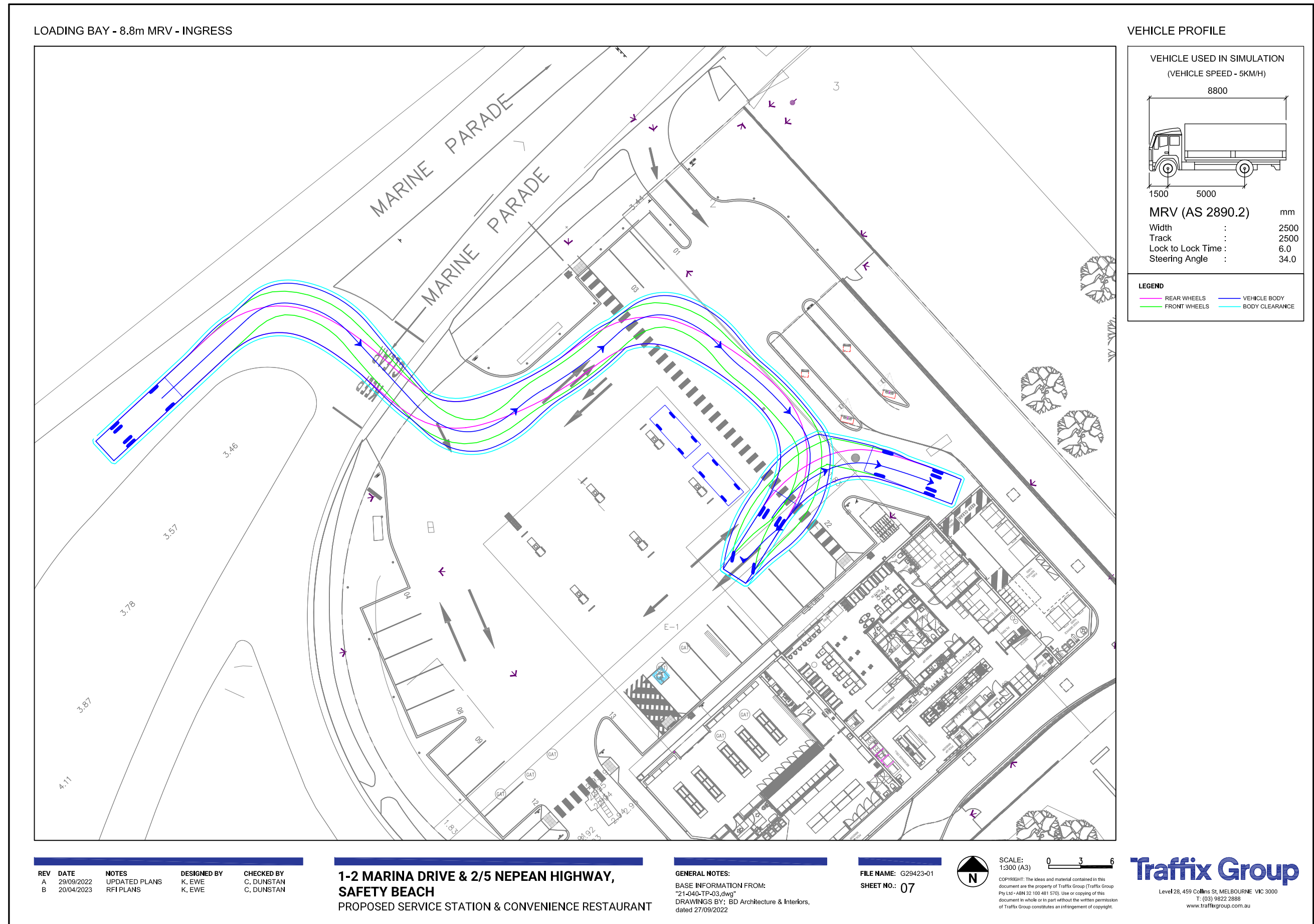


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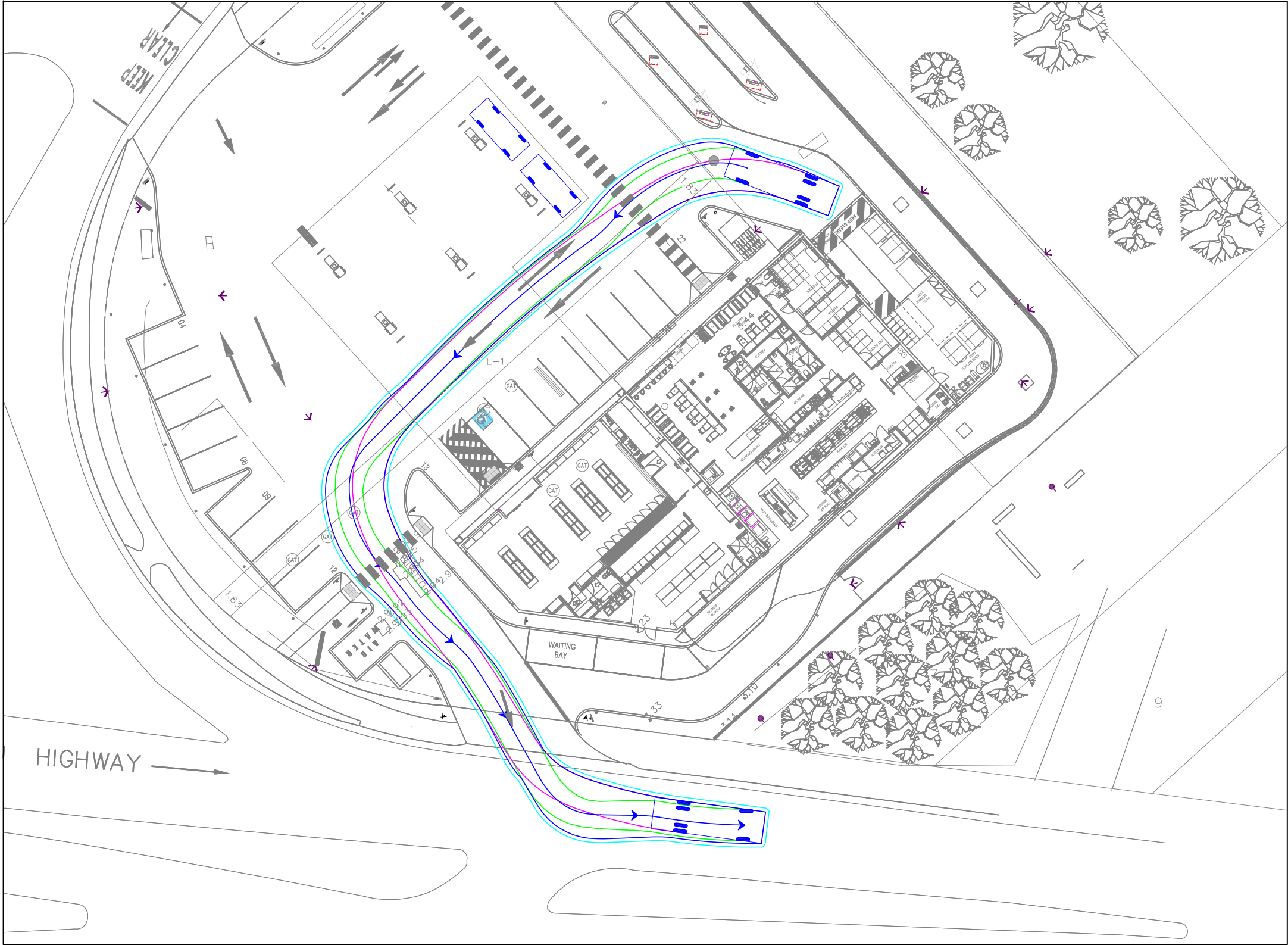
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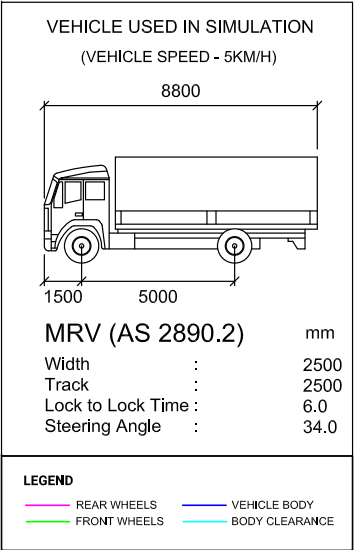
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LOADING BAY - 8.8m MRV - EGRESS



VEHICLE PROFILE



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B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
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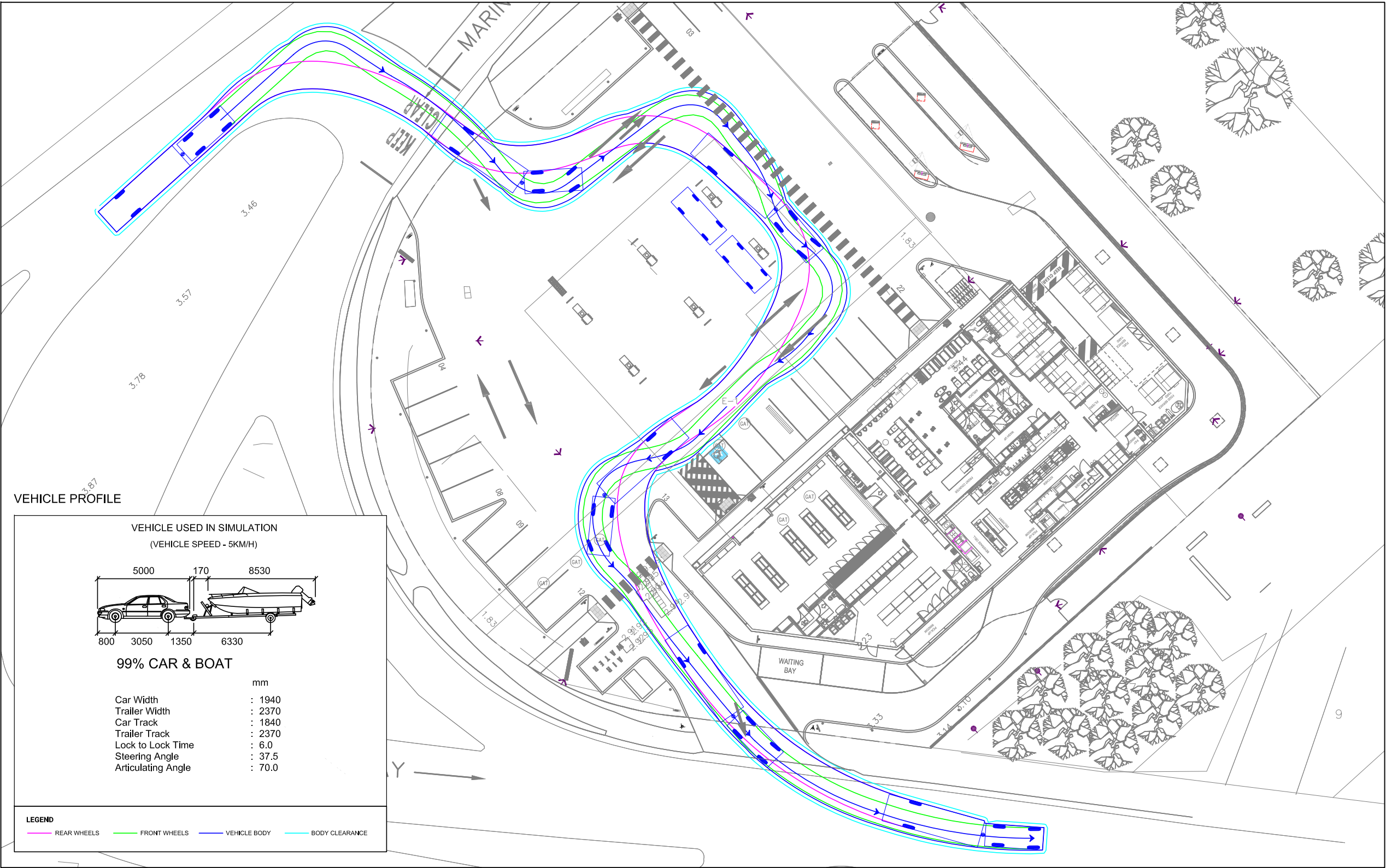


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SERVICE STATION - B99 VEHICLE & BOAT - CIRCULATION (1)



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B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
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FILE NAME: G29423-01
SHEET NO.: 09



SCALE:
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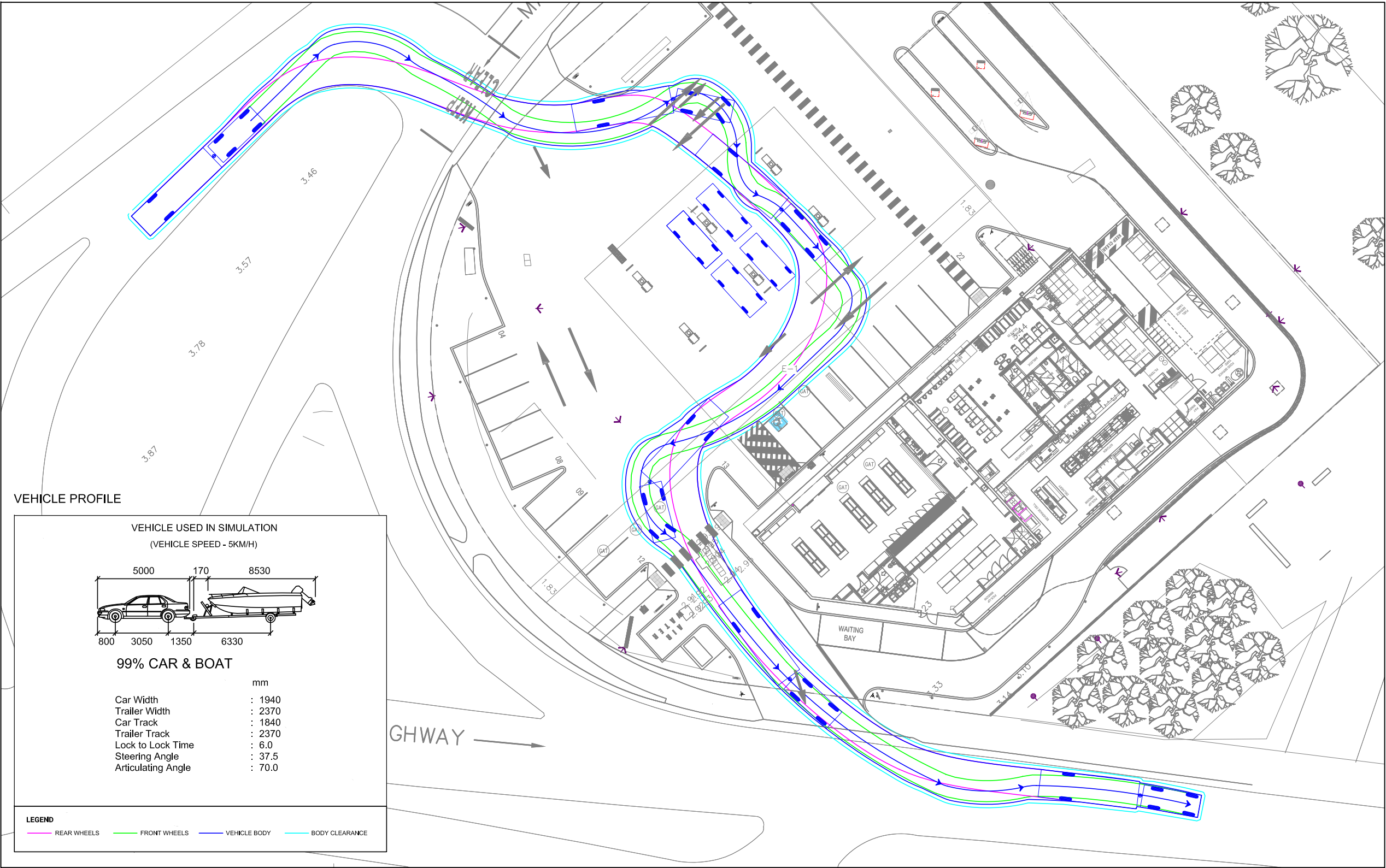
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SERVICE STATION - B99 VEHICLE & BOAT - CIRCULATION (2)



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
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B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
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FILE NAME: G29423-01
SHEET NO.: 10



SCALE:
1:300 (A3)

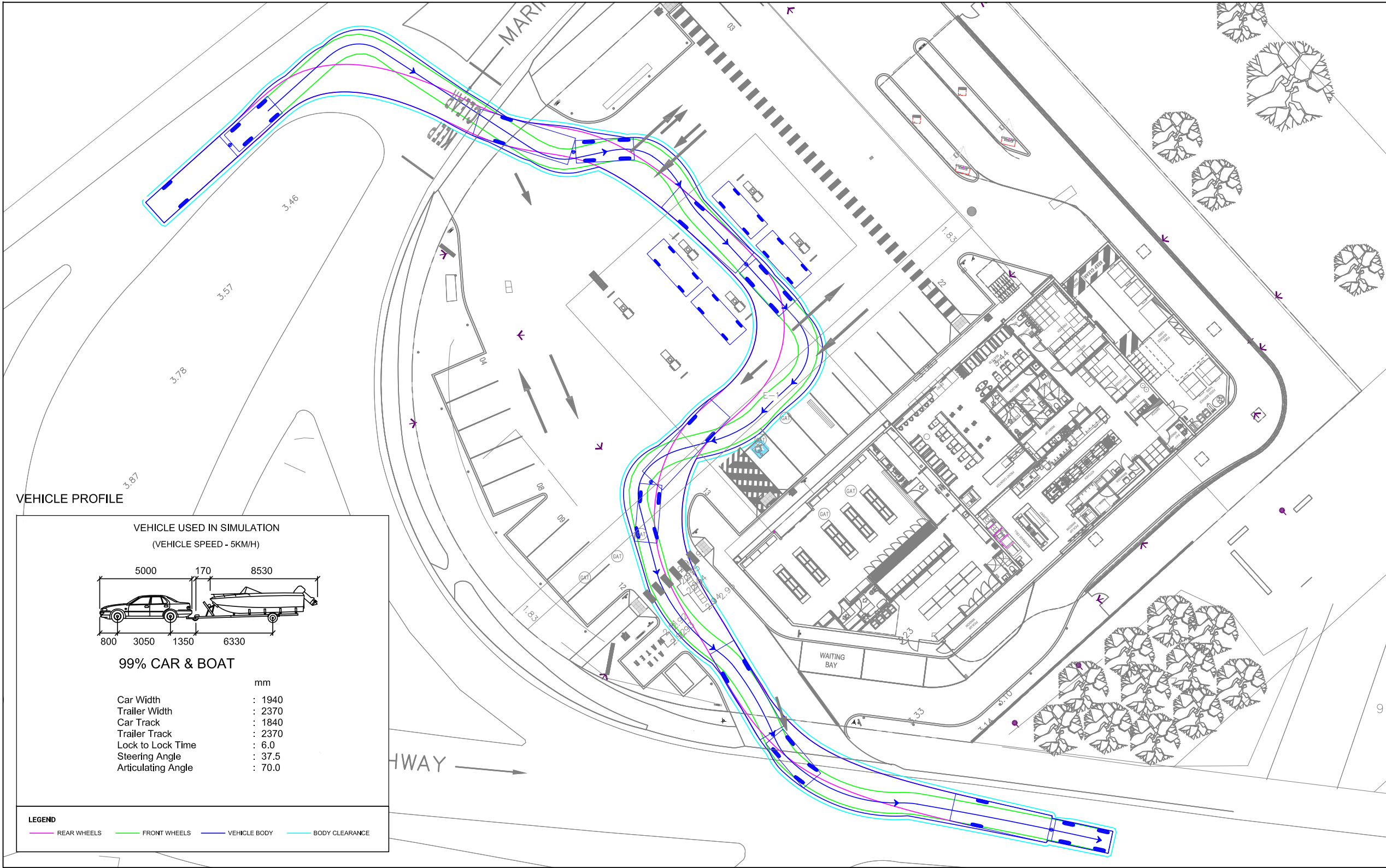
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SERVICE STATION - B99 VEHICLE & BOAT - CIRCULATION (3)



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
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B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
BASE INFORMATION FROM:
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FILE NAME: G29423-01
SHEET NO.: 11



SCALE:
1:300 (A3)

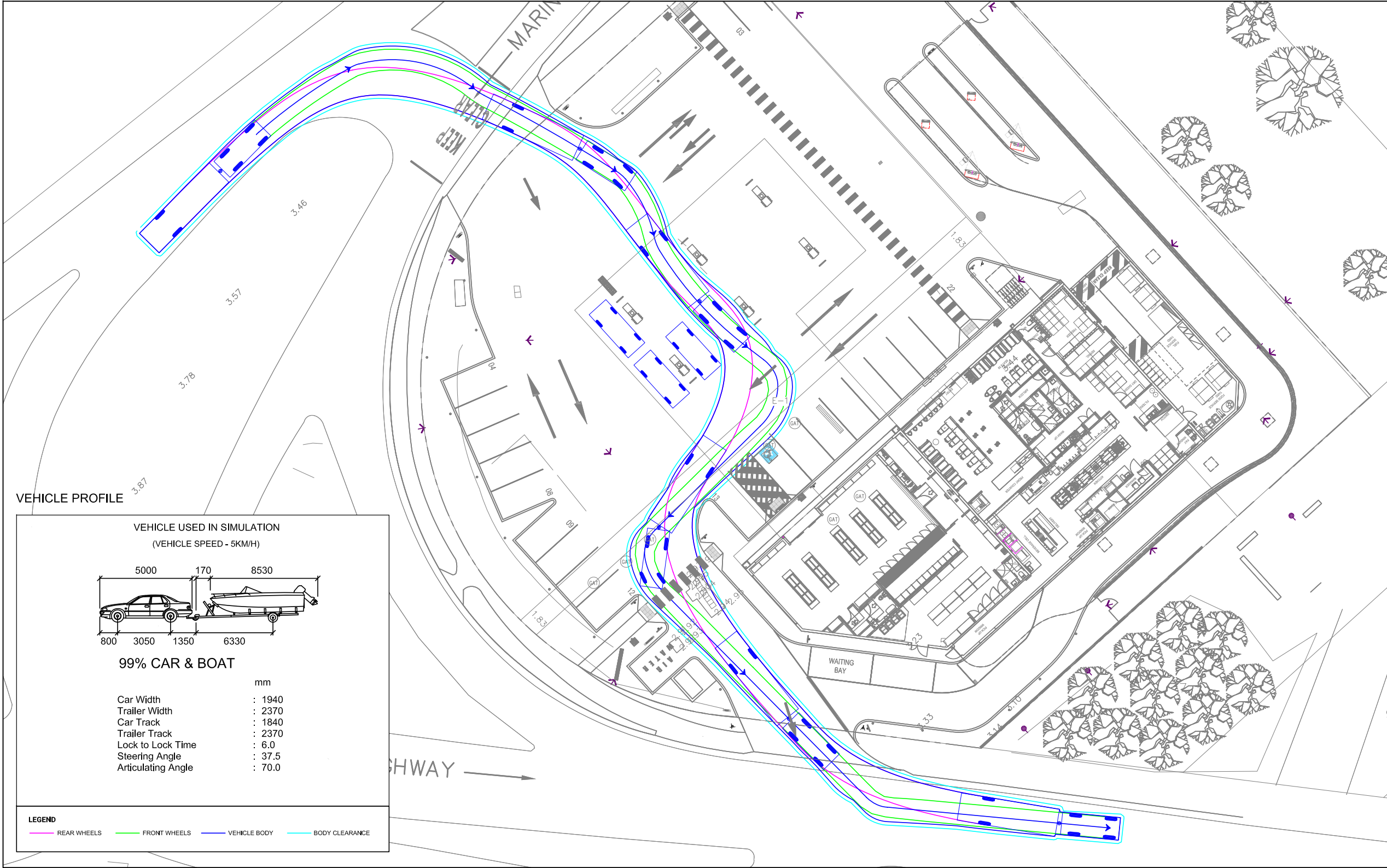
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SERVICE STATION - B99 VEHICLE & BOAT - CIRCULATION (4)



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
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**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
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FILE NAME: G29423-01
SHEET NO.: 12



SCALE:
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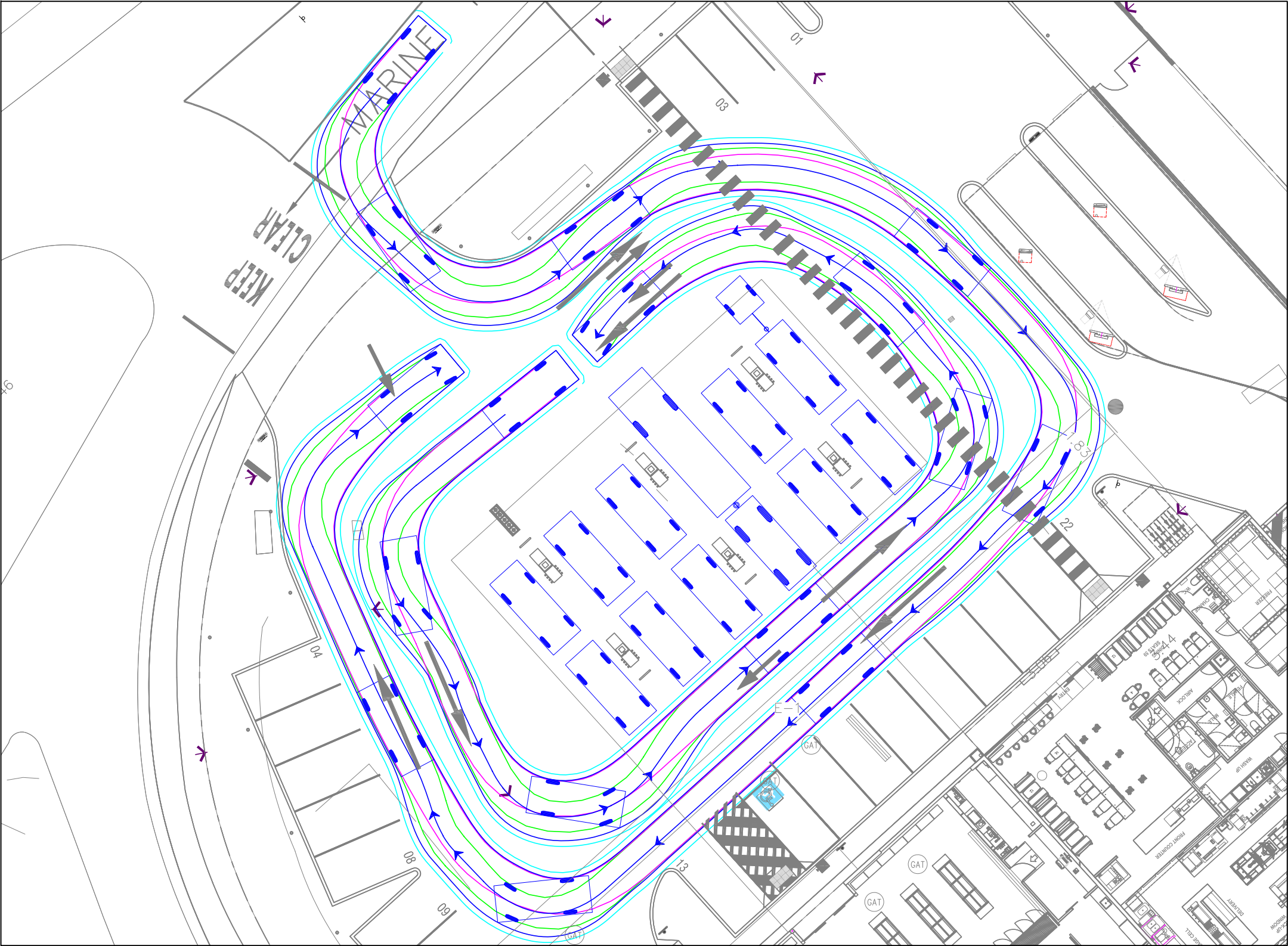
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SERVICE STATION - B99 VEHICLE - TWO-WAY PASSING - AVERAGE QUEUE REPRESENTATION



VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

5.20*

0.95 3.05

99th percentile
(AS/NZS 2890.1:2004)

Width : 1.94
Track : 1.84
Kerb to Kerb Radius : 12.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

REAR WHEELS (red line)
FRONT WHEELS (green line)
VEHICLE BODY (blue line)
BODY CLEARANCE (cyan line)

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	29/09/2022	UPDATED PLANS	K. EWE	C. DUNSTAN
B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
BASE INFORMATION FROM:
"21-040-TP-03.dwg"
DRAWINGS BY: BD Architecture & Interiors,
dated 27/09/2022

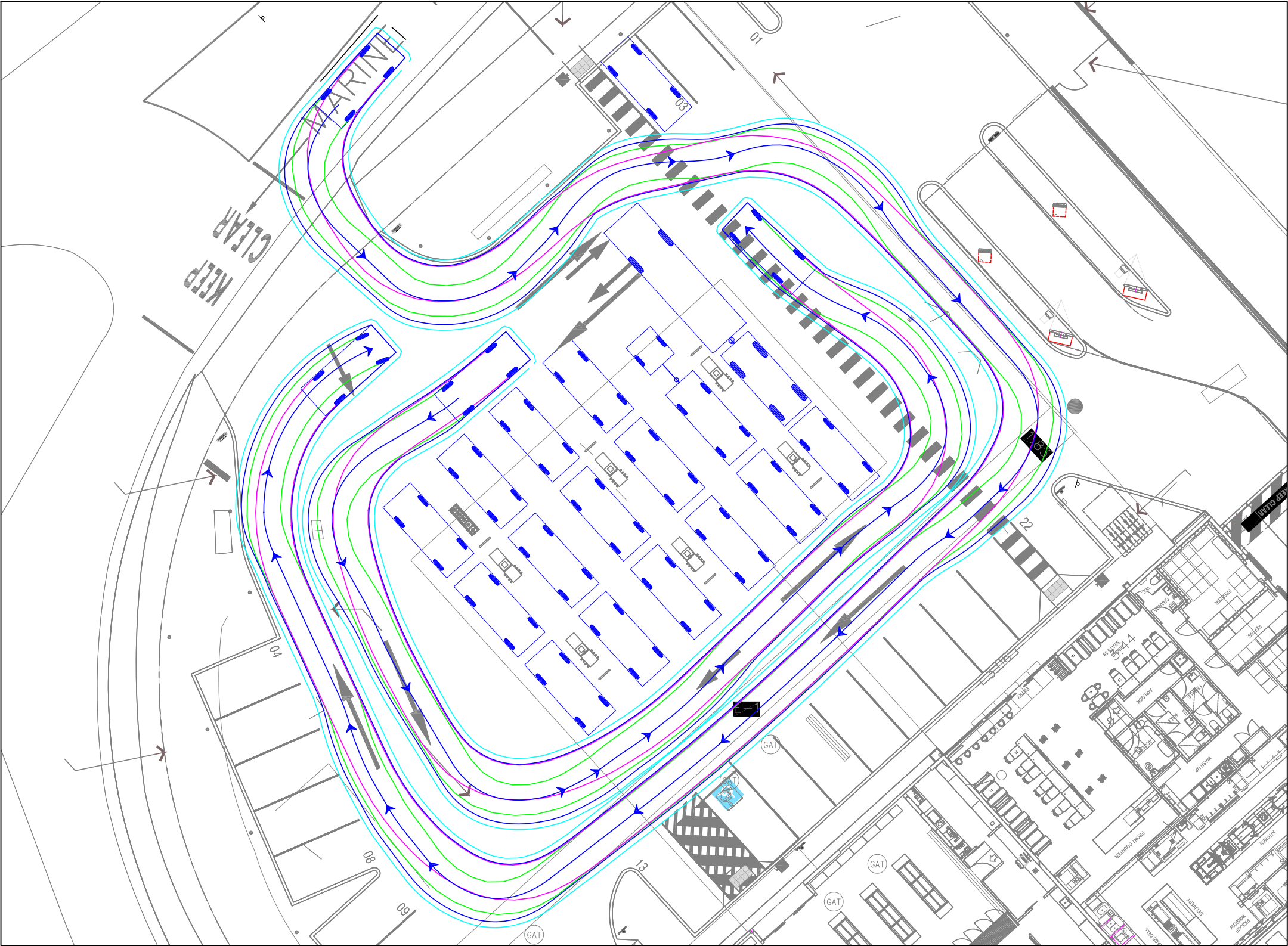
FILE NAME: G29423-01
SHEET NO.: 13



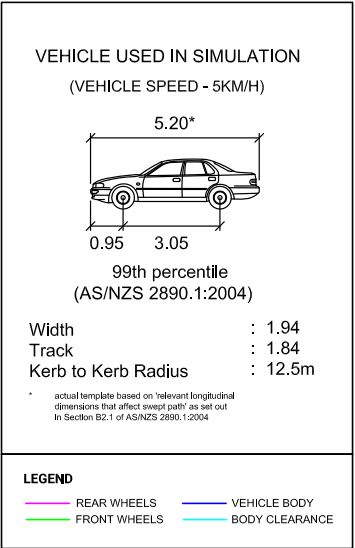
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SERVICE STATION - B99 VEHICLE - CIRCULATION - 98th PERCENTILE QUEUE REPRESENTATION



VEHICLE PROFILE



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	29/09/2022	UPDATED PLANS	K. EWE	C. DUNSTAN
B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
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DRAWINGS BY: BD Architecture & Interiors,
dated 27/09/2022

FILE NAME: G29423-01
SHEET NO.: 14



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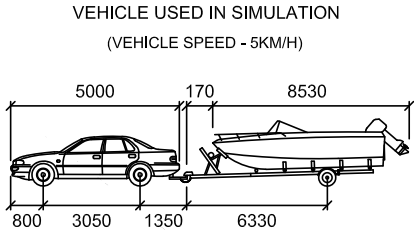
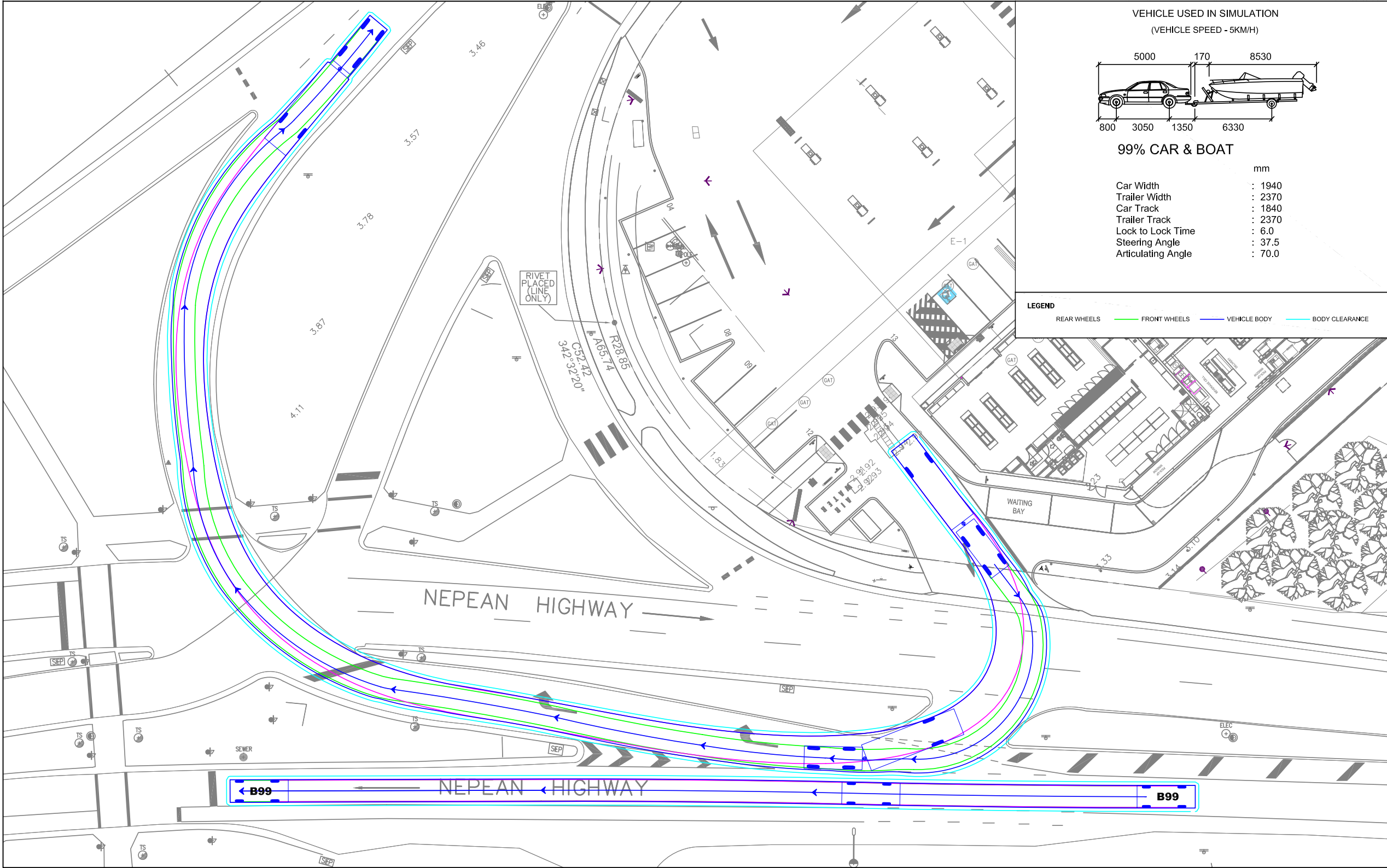
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SERVICE STATION - B99 VEHICLE & BOAT - EGRESS

VEHICLE PROFILE



99% CAR & BOAT

	mm
Car Width	: 1940
Trailer Width	: 2370
Car Track	: 1840
Trailer Track	: 2370
Lock to Lock Time	: 6.0
Steering Angle	: 37.5
Articulating Angle	: 70.0

LEGEND

REAR WHEELS FRONT WHEELS VEHICLE BODY BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	29/09/2022	UPDATED PLANS	K. EWE	C. DUNSTAN
B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
BASE INFORMATION FROM:
"21-040-TP-03.dwg"
DRAWINGS BY: BD Architecture & Interiors,
dated 27/09/2022

FILE NAME: G29423-01
SHEET NO.: 15

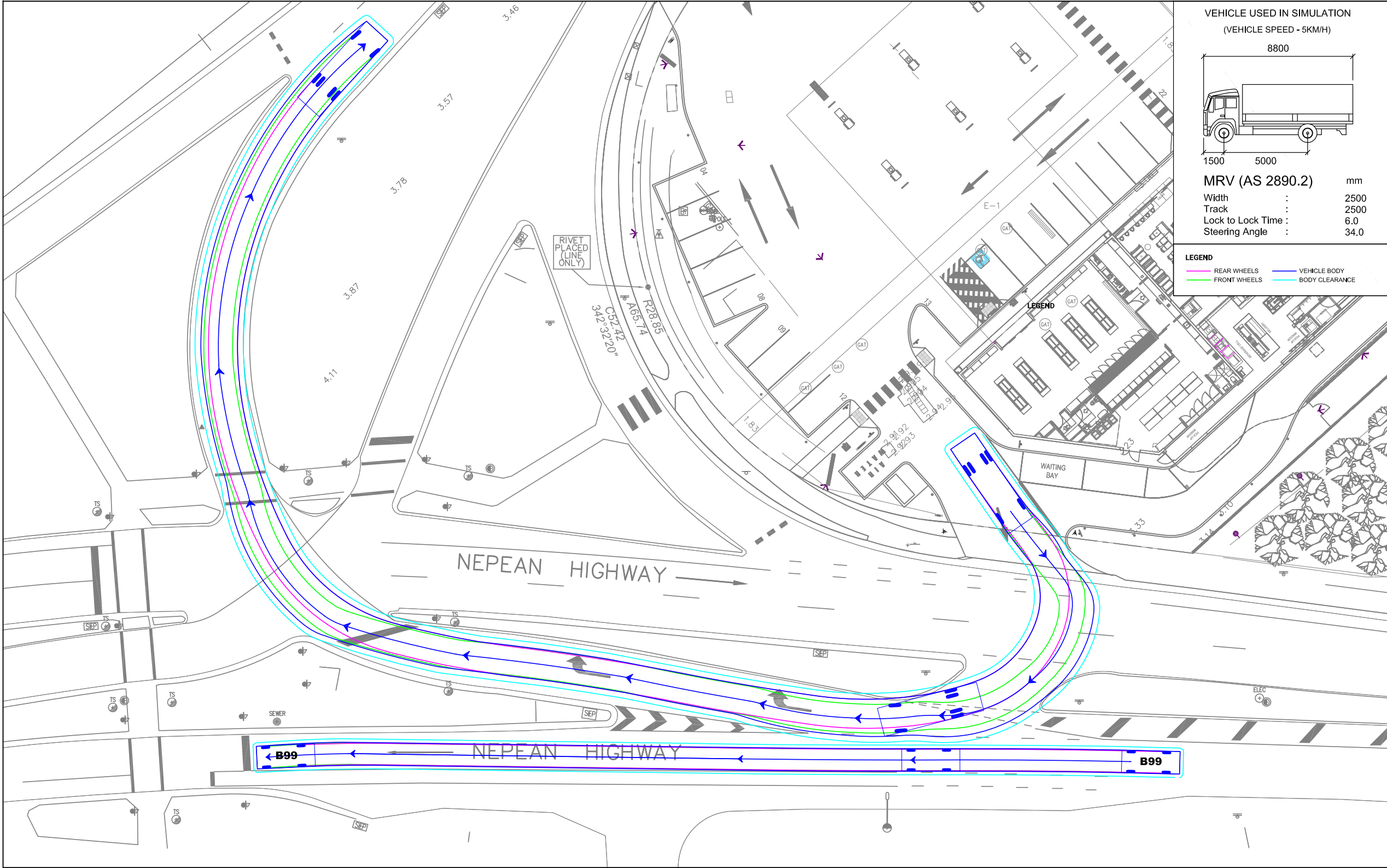


SCALE:
1:300 (A3)
0 3 6
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SERVICE STATION - 8.8M MRV - EGRESS

VEHICLE PROFILE



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	29/09/2022	UPDATED PLANS	K. EWE	C. DUNSTAN
B	20/04/2023	RFI PLANS	K. EWE	C. DUNSTAN

**1-2 MARINA DRIVE & 2/5 NEPEAN HIGHWAY,
SAFETY BEACH**
PROPOSED SERVICE STATION & CONVENIENCE RESTAURANT

GENERAL NOTES:
BASE INFORMATION FROM:
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DRAWINGS BY: BD Architecture & Interiors,
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SHEET NO.: 16



SCALE:
1:300 (A3)

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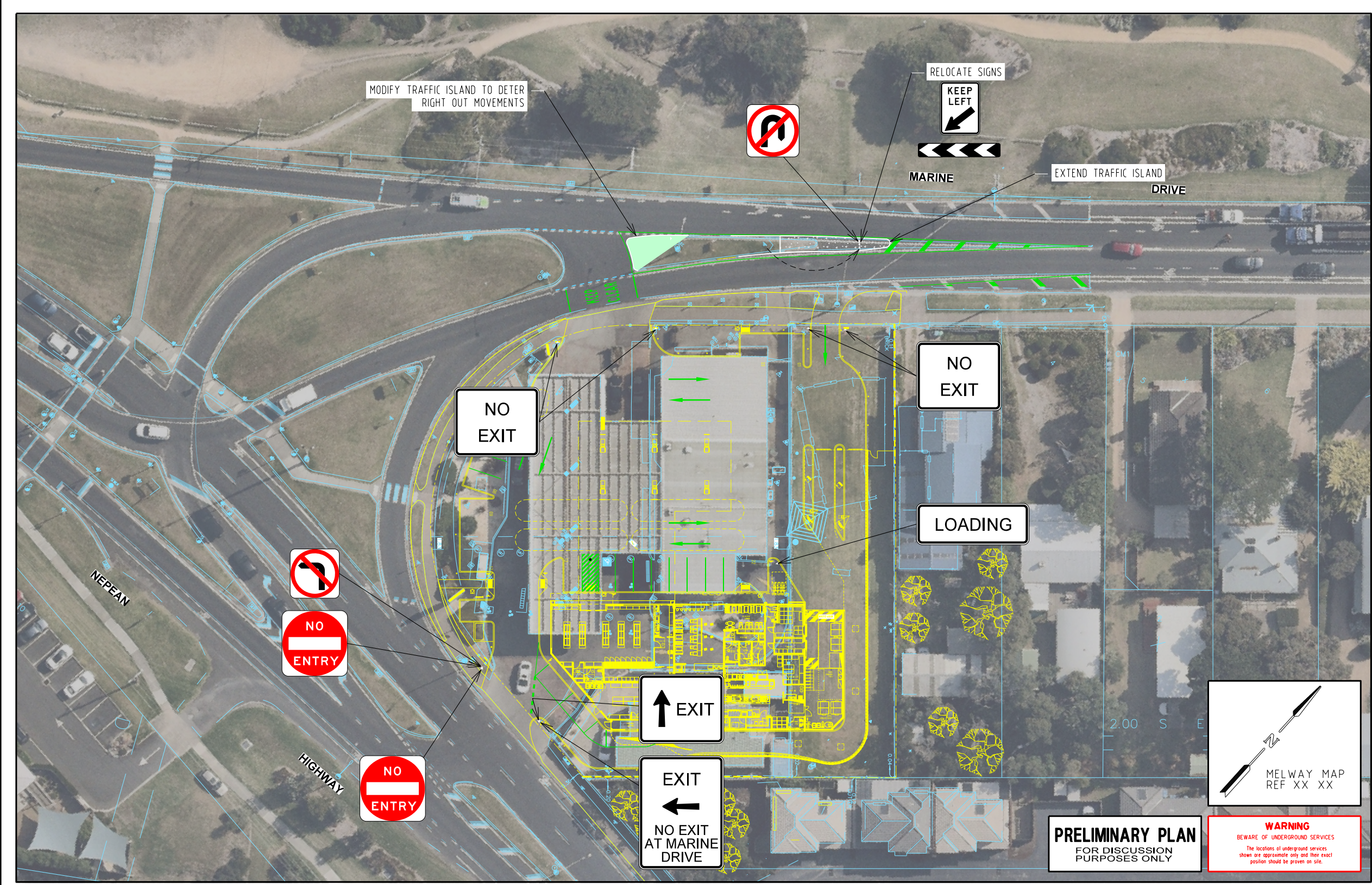


Appendix F

Traffic Management Plan

Traffix Group

G29423R-02B



DATE: 20/04/2023
MODEL: G29423-01-01
FILE: \\nas002\group\synergy\Projects\GRP2\GRP2423103-Drawings\G29423-01-00.dgn

ISSUE	ISSUE DESCRIPTION	ISSUE DATE
A	INITIAL ISSUE	30 SEP 2022
B	UPDATED ISSUE	20 APR 2023

GENERAL NOTES
1. BASE INFORMATION FROM FEATURE SURVEY (6627 SC2 DWG) / AERIAL PHOTOGRAPH (SOURCE NEARMAP SEP 2022)
2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL
3. MAIN ROAD - MARINE DRIVE AND NEPEAN HIGHWAY (SPEED ZONE 60km/h)

DESIGNED
S. O'KEEFE 30 SEP 2022
(CHECKED/APPROVED)
M. WOOLLARD 30 SEP 2022
FILE NAME
G29423-01-00.dgn

Traffix Group
Level 28, 459 Collins Street
Melbourne, Victoria 3000
+61 3 9822 2888
www.traffixgroup.com.au

**1 MARINE DRIVE
SAFETY BEACH
MORNINGTON PEN
FUNCTIONAL LAYOUT PLAN**
SCALE 1: (A3) 0 2.5 5 7.5 10
SHEET No. 1/1 DWG No. G29423-01-01



Appendix G

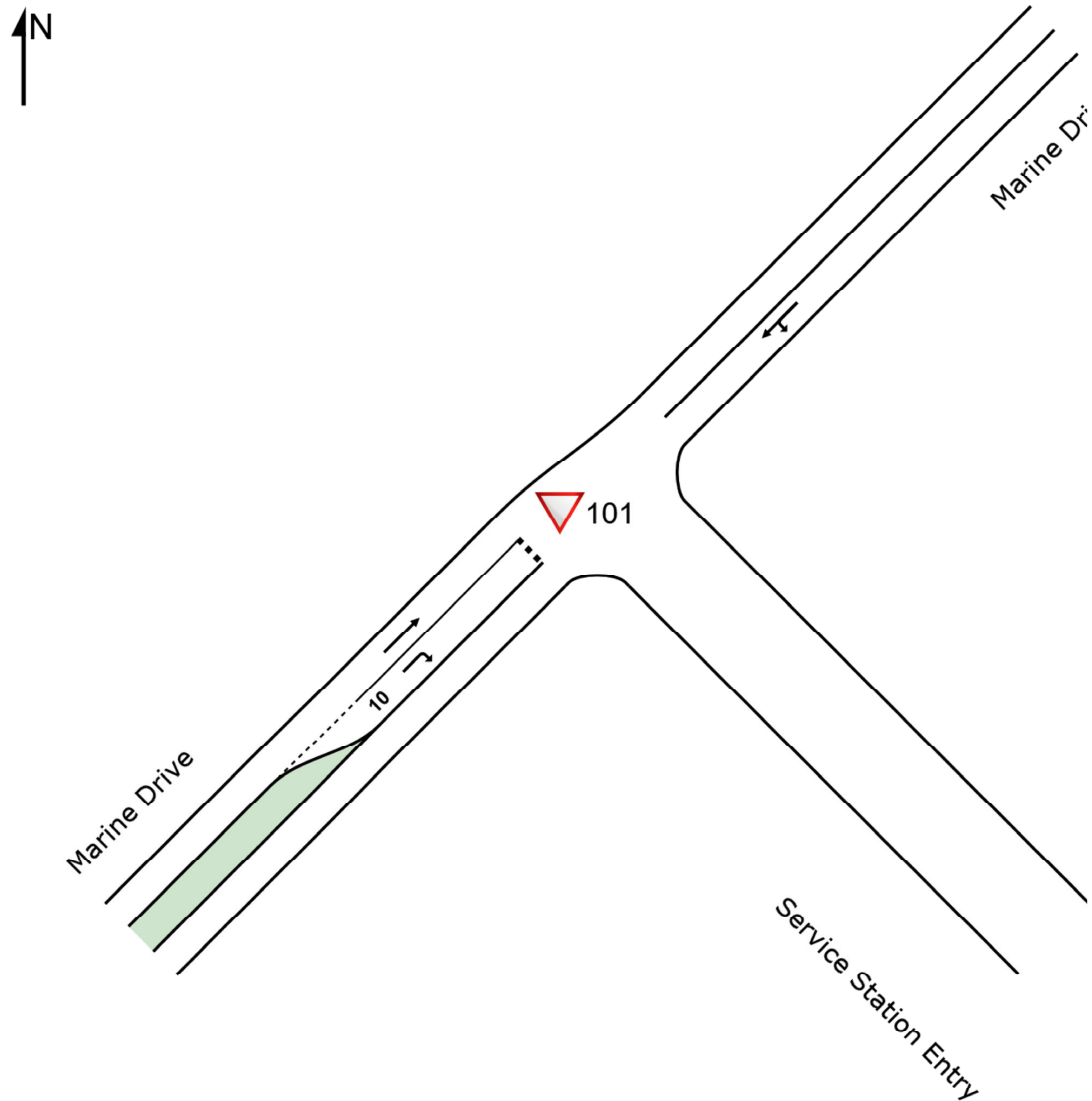
SIDRA Outputs (Post-Development Conditions)

SITE LAYOUT

▽ Site: 101 [Marine Drive Access- Post Development (Site Folder: Marine Drive Access)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: \\tfxsrv02\Group\Synergy\Projects\GRP2\GRP29423\07-Analysis\SIDRA\2022 Sidra\2021 Marine Drive-Site Access (SIDRA Default Gap Acceptance).sip9

MOVEMENT SUMMARY

▽ Site: 101 [Marine Drive Access- Post Development (Site Folder: Marine Drive Access)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
NorthEast: Marine Drive														
24	L2	45	0.0	47	0.0	0.293	5.6	LOS A	0.0	0.0	0.00	0.53	0.00	54.4
25	T1	496	0.0	522	0.0	0.293	4.3	LOS A	0.0	0.0	0.00	0.53	0.00	54.7
Approach		541	0.0	569	0.0	0.293	4.4	LOS A	0.0	0.0	0.00	0.53	0.00	54.7
SouthWest: Marine Drive														
31	T1	519	0.0	546	0.0	0.280	4.3	LOS A	0.0	0.0	0.00	0.52	0.00	54.8
32	R2	147	0.0	155	0.0	0.279	10.5	LOS A	0.9	6.3	0.59	0.85	0.65	49.6
Approach		666	0.0	701	0.0	0.280	5.7	LOS A	0.9	6.3	0.13	0.60	0.14	53.5
All Vehicles		1207	0.0	1271	0.0	0.293	5.1	LOS A	0.9	6.3	0.07	0.57	0.08	54.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on degree of saturation per movement.

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

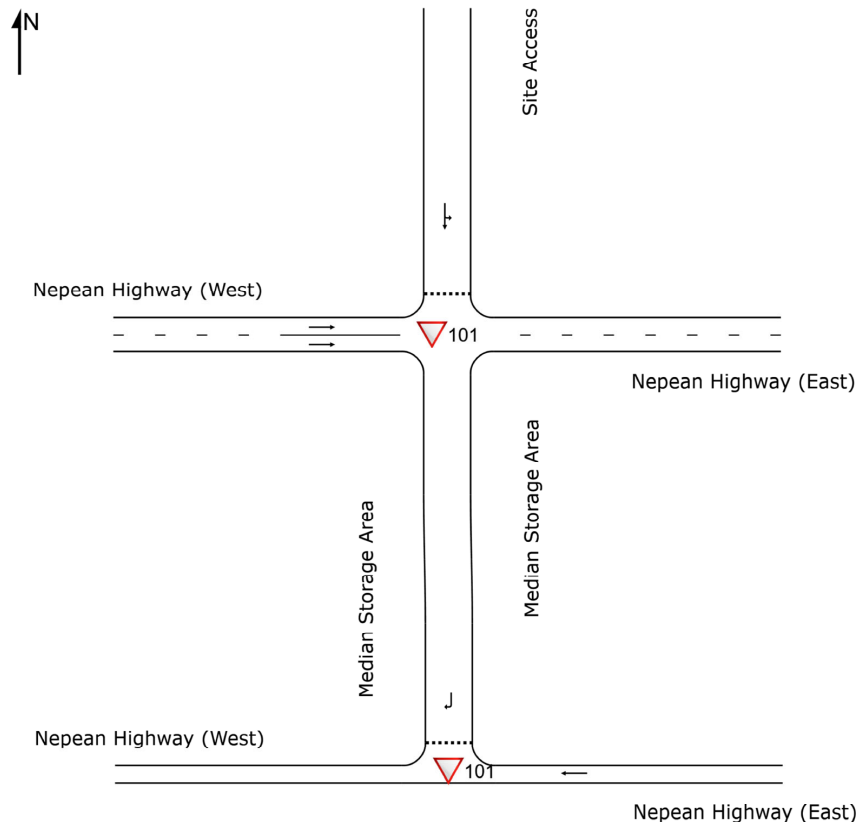
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NETWORK LAYOUT

■ Network: N101 [Nepean Highway Access - Post-Development (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽101	NA	Nepean Hwy - Eastbound Post-Development
▽101	NA	Nepean Hwy - Westbound Post-Development

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MOVEMENT SUMMARY

Site: 101 [Nepean Hwy - Eastbound Post-Development (Site Folder: Nepean Highway Egress)]

Network: N101 [Nepean Highway Access - Post-Development (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV %	[Total HV] veh/h	%	v/c	sec		[Veh. veh]	[Dist m]				km/h
North: Site Access														
7	L2	166	0.0	166	0.0	0.192	3.5	LOS A	0.8	5.7	0.35	0.57	0.35	51.7
8	T1	72	0.0	72	0.0	0.192	3.3	LOS A	0.8	5.7	0.35	0.57	0.35	22.4
Approach		238	0.0	238	0.0	0.192	3.4	LOS A	0.8	5.7	0.35	0.57	0.35	50.0
West: Nepean Highway (West)														
11	T1	433	0.0	433	0.0	0.111	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		433	0.0	433	0.0	0.111	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles		671	0.0	671	0.0	0.192	1.2	LOS A	0.8	5.7	0.12	0.20	0.12	58.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on degree of saturation per movement.

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▼ Site: 101 [Nepean Hwy - Westbound Post-Development (Site Folder: Nepean Highway Egress)]

■ Network: N101 [Nepean Highway Access - Post-Development (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total HV veh/h]	[%]				[Veh. veh]	[Dist m]				
East: Nepean Highway (East)														
5	T1	795	0.0	795	0.0	0.408	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		795	0.0	795	0.0	0.408	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
North: Median Storage Area														
9	R2	72	0.0	72	0.0	0.112	5.8	LOS A	0.3	2.4	0.59	0.81	0.59	47.1
Approach		72	0.0	72	0.0	0.112	5.8	LOS A	0.3	2.4	0.59	0.81	0.59	47.1
All Vehicles		866	0.0	866	0.0	0.408	0.6	LOS A	0.3	2.4	0.05	0.07	0.05	59.0

Site Level of Service (LOS) Method: Degree of Saturation (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on degree of saturation per movement.

Minor Road Approach LOS values are based on worst degree of saturation for any vehicle movement.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Revised Queuing Assessment **Traffix Group**

To:	Ms. Monica Ceckiewicz (Insight Planning Consultants)	From:	Matthew Woollard (Traffix Group)
Our Ref:	G29423M-02B	Date:	31 st August, 2023
1-2 Marine Drive & 5 Nepean Highway, Safety Beach Proposed Service Station and Convenience Restaurant			

Introduction

The following sets out our revised queueing assessment in response to Council's Traffic Engineering comments, set out in the email from Council dated 24th July, 2023.

The assessment below should be read in conjunction with the traffic report prepared by our office, G29423R-01B (April, 2023). This report will be referred to as 'the Traffic Report' from hereafter.

Original Queueing Assessment Summary

Section 4.9.4 within the Traffic Report sets out our assessment of the capacity of the fuel bowsters to accommodate the level of traffic expected. The calculations were based on the following assumptions:

- The design hour for the service station component of the development based on the traffic volume from 12noon-1pm on Tuesday 25th January, 2022, which represents the 22nd busiest peak hour of the 12 months between 1st July, 2021 to 30th June, 2022. We considered this to be the 'design hour'. A total of 129 vehicles were recorded accessing the site during this hour. i.e. total movements of 258 movements (129 entry and 129 exit).
- It is expected that this traffic will grow by 20% to 310 vehicle movements (155 entry and 155 exit movements) due to the increase in the number of fuel pumps on the site.
- Of the 155 vehicles accessing the service station, it was estimated that 85% accessed the site for refuelling purposes, with the remainder accessing the site for shopping, water/air, or the car wash. This assumption was not based on any surveyed information.
- Each vehicle spends on average 4 minutes, 45 seconds refuelling their vehicle, including their time to arrive, refuel, pay for fuel, return to vehicle and leave.

A summary of the queuing/demand assessment which was reported in the Traffic Report is provided below:

- The average demand for the bowsters during the design hour was 11 vehicles, inclusive of 9-10 passenger vehicles and 1-2 passenger vehicles towing a boat or a jet ski. The vehicle towing a boat, may occupy 2 of the fill points (i.e. all 12 fill points would be occupied).
- The 98th percentile demand for access to the bowsters across the design hour will be 16 vehicles. This represents all of the fill points being occupied with a queue behind 4 of the 6 rear bowsters. The 16 vehicles would represent 14 passenger vehicles and 2 passenger vehicles towing either a boat or a jet-ski. The vehicle towing a boat, may occupy 2 of the fill points, or would extend into the access aisle behind the rear bowser.

Revised Queuing Assessment



Each of these queue types would be accommodated fully within the site, with space around the fuel bowzers and queuing vehicles for additional vehicles to circulate through the site, as demonstrated in Figures 20 and 21 in Section 4.9.4 of the Traffic Report.

We note that this analysis was based on very conservative assumptions as further discussed in the updated analysis following the Council's comments presented below.

Council Correspondence

The following comments from Council were received in an email dated 24th July, 2023:

It was noted that your assessment included the following:

- *The TIA touches on the potential queueing impacts at the fuel bowzers at Section 4.9.4.*
- *It suggests that there will be an inbound traffic volume during the design hour of 155 vehicles per hour, of which 132 vehicles will enter for refuelling purposes. This relates to service station traffic only (i.e. not convenience restaurant traffic).*
- *The TIA then gives a breakdown for the composition of 150 vehicles entering the site based on the traffic generation surveys undertaken to support the revised application – it is unclear what this 150vph volume represents.*
- *It is understood that the refuelling volume represents the existing design hour refuelling volume plus an additional 20% to allow for the additional bowzers, i.e. (110+22) 132 vph.*
- *The average dwell time of 4 minutes 45 seconds from the traffic generation surveys undertaken to support the revised application is cited to support 'multi-channel queueing theory' that determines an average queue length of 11 vehicles and 98th percentile queue length of 16 vehicles.*
- *The composition of vehicles is then based on the above mentioned surveys.*

Council's engineers commented that:

- *This analysis is a critical part of the TIA that is not adequately explained.*
- *Based on the average dwell time, a fuel bowser could accommodate (3600/285) 12.6 vehicles per hour. Based on there being 12 bowzers at the site, the total number of vehicles that the service station could accommodate in any hour would be (12 x 12.6) 151 vehicles.*
- *This service rate assumes that a bowser is instantly occupied once the previous vehicle departs, which does not appear practical for the front bowzers (as an inbound vehicle cannot access the front bowser whilst another vehicle is still refuelling at the rear bowser).*
- *Given the above, we consider it has not been adequately demonstrated how an arrival rate of 132 vehicles per hour and an idealistic service rate of 151 vehicles per hour yields an average queue length of 11 vehicles and 98th percentile queue length of 16 vehicles.*
- *Further information should be provided regarding:*
 - *The type of queueing model that has been used;*
 - *The distribution of arrivals (i.e. random or uniform arrivals);*



G29423M-02B

02

Revised Queuing Assessment



- The configuration used in the queueing model (i.e. do the 12 bowsters represent 12 independent servers or 6 channels, each of which provides 2 bowsters in sequence).
- How does the model account for vacant front bowsters whilst the rear bowsters are occupied?
- The average and 98th percentile queues are critical to the assessment of the application.
- Increases in these queueing volumes would impact on the circulation swept paths presented in the report, which could cause access to the drive-thru to be blocked more frequently or have greater impacts on traffic at Marine Drive.
- It is therefore recommended that this information be provided to justify impact of the development and suitability of the layout.

Updated Queuing Assessment

Following the receipt of the above comments from the Council, we undertook additional traffic surveys to interrogate the robustness of the assumptions guiding the original queueing assessment.

We remain satisfied with all but one of the assumptions which we adopted within our original analysis.

The assumption that 85% of the vehicles accessing the site was overly conservative, and therefore the level of traffic accessing the site for the purposes of refuelling was unnecessarily high.

Our surveys undertook a review of the level of traffic accommodated by each of the fuel pumps on the site under the current arrangements and the results of these surveys indicates that the percentage of vehicles which accessed the site for the purpose of refuelling ranged from 59%-71%, not the 85% figure as estimated previously.

The results of the surveys are presented below and cover the times from the busiest periods previously presented within the Traffic Report at Section 3.3 and at Appendix B.

Table 1: Survey of Vehicles Accessing Fuel Bowsters

Day and Time	No. of Vehicles Entering Site	No. of Vehicles Accessing Fuel Bowsters	Percentage of Total Vehicles Entering Site
Saturday 22 nd January, 2022 11am-12noon	135 vehicles	80 vehicles	59%
Sunday 23 rd January, 2022 12noon-1pm	144 vehicles	89 vehicles	62%
Tuesday 25 th January, 2022 12noon-1pm	129 vehicles	91 vehicles	71%
Wednesday 26 th January, 2022 11am-12noon	151 vehicles	90 vehicles	60%



G29423M-02B

Revised Queuing Assessment



The survey time in bold above represents the ‘design hour’ chosen for our analysis. It also represents the highest number of vehicles (and percentage of vehicles) accessing the site for the purposes of refuelling. Accordingly, we consider 71% an appropriate split of vehicles accessing the service station for purpose of refuelling.

We have also been provided with sales data associated with another service station with convenience store component. We were provided with the sales data over a one-year period, which confirmed 70% is an appropriate figure to adopt in this regard.

Continuing to adopt a total traffic generation of 155 (20% increase on 129 vehicles), and adopting 71% of vehicles accessing the fuel bowzers, results in a total of 110 vehicles requiring access to the fuel bowzers.

Repeating the queuing/demand analysis using the same queuing/demand method as the original analysis, the following demands result:

- The average demand for the bowzers during the design hour was 8 vehicles, inclusive of 7 passenger vehicles and 1 passenger vehicle towing a boat or a jet ski. The vehicle towing a boat, may occupy 2 of the fill points (i.e. 9 of the fill points would be occupied).
- The 98th percentile demand for the bowzers during the design hour will be 13 vehicles, including 11 passenger vehicles and 2 passenger vehicles towing either a boat or a jet-ski. This represents all of the fill points being occupied with a queue behind 1 of the 6 rear bowzers. The vehicle towing a boat, may occupy 2 of the fill points (i.e. a queue would form behind 2 of the 6 bowzers, or would extend into the access aisle behind the rear bowser.

Accordingly, based on the above analysis which includes a more realistic traffic generation, far less queuing would occur on the site than originally identified.

Figures 20 and 21 in Section 4.9.4 of the Traffic Report detail the vehicle circulation around the site under the abovementioned circumstances.

Response to Specific Queries from the Council

The following table sets out our responses to the Council’s concerns regarding the queuing assessment in the context of the revised analysis which is reported above.

Table 2: Response to Council

Council Comment	Traffix Response
• The TIA touches on the potential queueing impacts at the fuel bowzers at Section 4.9.4. • It suggests that there will be an inbound traffic volume during the design hour of 155 vehicles per hour, of which 132 vehicles will enter for refuelling purposes. This relates to service station traffic only (i.e. not convenience restaurant traffic).	Based on the additional surveys undertaken by Traffix Group, the expected number of vehicles accessing the Bowzers will be 110, rather than 132 as previously indicated.



G29423M-02B

Revised Queuing Assessment



Council Comment	Traffix Response
The TIA then gives a breakdown for the composition of 150 vehicles entering the site based on the traffic generation surveys undertaken to support the revised application – it is unclear what this 150vph volume represents.	The 110 vehicles accessing the site for the purpose of refuelling will comprise of: 99 x passenger vehicles 6 x passenger vehicles towing a jet ski 4 x passenger vehicles towing a boat 1 x truck
It is understood that the refuelling volume represents the existing design hour refuelling volume plus an additional 20% to allow for the additional bowzers, i.e. (110+22) 132 vph.	As set out above, this figure has been revised to 110 vehicles accessing the fuel bowzers to refuel vehicles. i.e. 91 vehicles currently refuelling plus 19 additional vehicles for the expansion (20% increase).
- The average dwell time of 4 minutes 45 seconds from the traffic generation surveys undertaken to support the revised application is cited to support 'multi-channel queueing theory' that determines an average queue length of 11 vehicles and 98th percentile queue length of 16 vehicles. - The composition of vehicles is then based on the above mentioned surveys.	We remain satisfied that the average dwell time is acceptable for use within the analysis. However, the revised predicted result in an average demand of 8 vehicles and 98th percentile demand of 13 vehicles.
Council's engineers commented that: - This analysis is a critical part of the TIA that is not adequately explained. - Based on the average dwell time, a fuel bowser could accommodate (3600/285) 12.6 vehicles per hour. Based on there being 12 bowzers at the site, the total number of vehicles that the service station could accommodate in any hour would be (12 x 12.6) 151 vehicles.	These assumptions are correct.
- This service rate assumes that a bowser is instantly occupied once the previous vehicle departs, which does not appear practical for the front bowzers (as an inbound vehicle cannot access the front bowser whilst another vehicle is still refuelling at the rear bowser). - Given the above, we consider it has not been adequately demonstrated how an arrival rate of 132 vehicles per hour and an idealistic service rate of 151 vehicles per hour yields an average queue length of 11 vehicles and 98th percentile queue length of 16 vehicles.	We acknowledge that a small amount of capacity reduction could occur as a result of the fuel pumps being in series. However, this potential reduction in capacity is expected to be low. When a front fuel pump becomes available, but the rear pump is occupied and therefore the front pump cannot be readily accessed, the front pump would only sit idle for a short period of time before it would be accessed. When a driver arrives at the service station, they will be presented with all the fuel pumps in front of them and they can gauge where the customers are placed with their fuel



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05

Revised Queuing Assessment



Council Comment	Traffix Response
- Further information should be provided regarding: - The type of queueing model that has been used; - The distribution of arrivals (i.e. random or uniform arrivals); - The configuration used in the queueing model (i.e. do the 12 bowsters represent 12 independent servers or 6 channels, each of which provides 2 bowsters in sequence). - How does the model account for vacant front bowsters whilst the rear bowsters are occupied? - The average and 98th percentile queues are critical to the assessment of the application. - Increases in these queueing volumes would impact on the circulation swept paths presented in the report, which could cause access to the drive-thru to be blocked more frequently or have greater impacts on traffic at Marine Drive. - It is therefore recommended that this information be provided to justify impact of the development and suitability of the layout.	purchasing before choosing which pump to access. For example if the front pump is occupied by driver 1 who is actively pumping fuel, driver 2 would pull into the rear pump and use the rear pump. However, if the front pump is occupied by driver 1 who is returning from paying, driver 2 would pull in and wait for driver 1 to leave before driver 2 proceeds to the front pump. This creates efficiencies in the system which would ensure that the pumps can be optimally used. As another example, if all pumps are occupied except for the front pump of a tandem pair, a driver would queue behind the tandem pair which has the front pump clear. Then when the rear pump becomes free, the front pump could be occupied straight away by the waiting vehicle, with the rear pump also becoming available. Alternatively, a vehicle could circulate the fuel canopy and reverse into the front fuel pump if available. There is sufficient space within the circulation aisles for this movement to occur and there is sufficient space behind the rear pumps for vehicles to reverse out to exit the site, rather than needing to pass through the front fuel pump space. The queuing method used includes the assumption of randomised arrival patterns (Poisson distribution) and the use of 12 servers. As discussed above, the minor inefficiencies brought about by the front pumps not being readily accessible for a small amount of time would make little difference to the overall efficiency of the system as a whole. Furthermore, in response to this specific issue, we would like to point out that the system can accommodate up to 16 vehicles within the canopy area clear of circulating traffic. Accordingly, if up to 16 vehicles are accessing the site (very unlikely given this would represent 3 vehicles higher than the likely 98th percentile queue), the circulation aisles on the site will still be kept sufficiently clear and vehicles can continue to circulate the site effectively.



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Traffix Group

The Council also had some comments relating to some design aspects of the proposal, which are responded to as follows:

It is noted however that the loading vehicle reverse over a line-marked pedestrian crossing when entering the dock. This presents a safety risk, as pedestrians using the crossing will rightfully assume that they have priority whilst the driver of the truck will be blindsided to the pedestrian crossing (passenger side) when beginning the reversing manoeuvre.

Traffix Response

Council Comment

Traffic Response

Council Comment

Technical drawing of a road intersection showing a speed hump. The drawing includes dimensions for the speed hump (1700mm high, 6400mm long), lane widths (3.5m, 3.0m, 3.0m), and a 20-degree angle. A red oval highlights the speed hump location with the text "Speed hump here?".

We agree that this would be an appropriate outcome and should be provided within the plans.



Revised Queuing Assessment

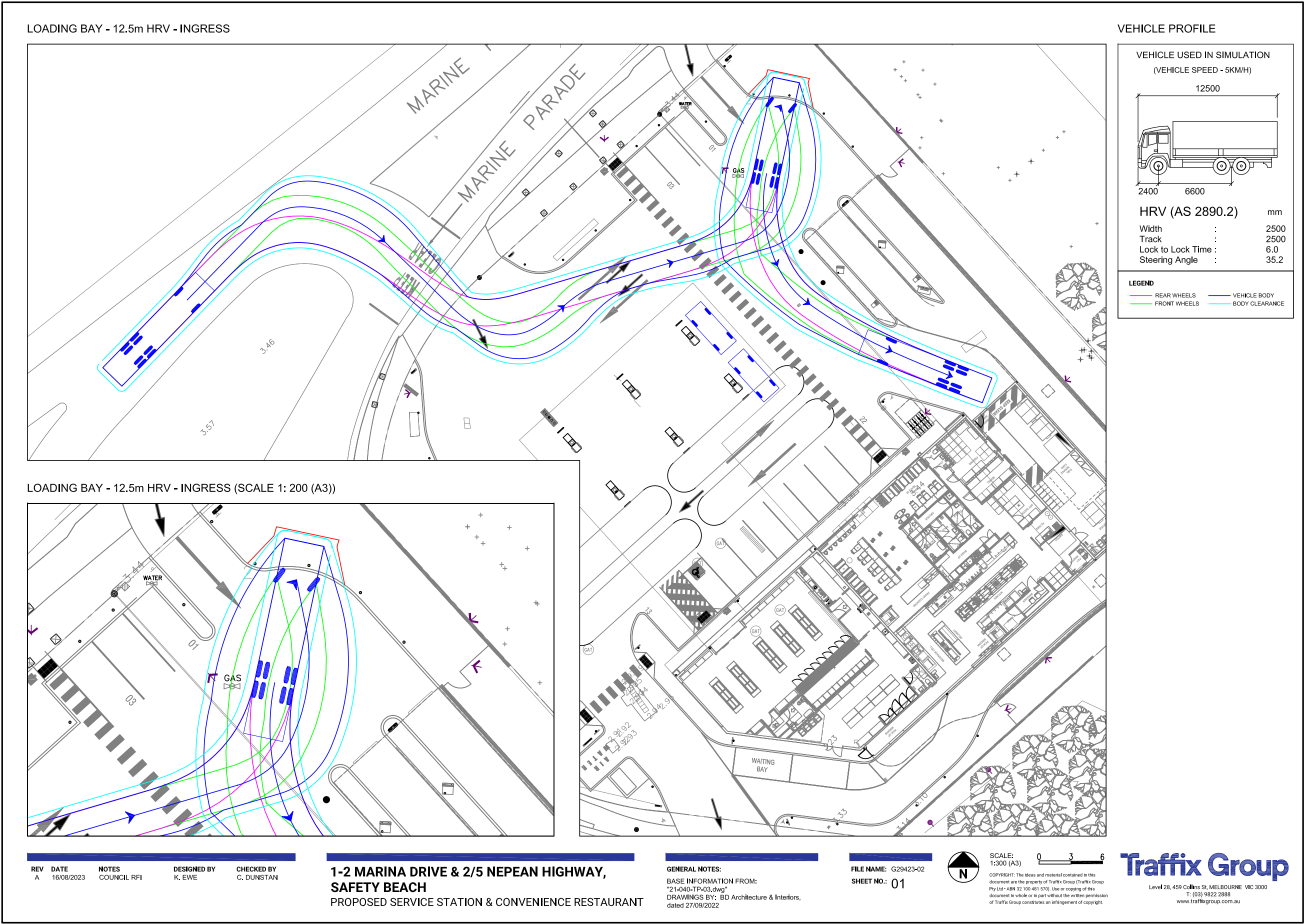
Traffix Group

Appendix A

Swept Path and Kerb Re-Alignment



G29423M-02B



OVER 25 YEARS OF EXCELLENCE



Road Safety Audit Report



Location: **Marine Drive & Nepean Highway, Safety Beach**
Project: **BP Service Station Redevelopment**
Audit Stage: **Preliminary Design**
Client: **Insight Planning**

Report Issue Date: 8 December 2023

RSA Reference: 15203



Road Safety Audits

8/79 Manningham Rd
Bulleen, Victoria 3105
ABN 96 647 479 016
www.rsaudits.com.au

Contact

Raj Muthusamy
0417 310 907
rajm@rsaudits.com.au

Specialised
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Independent

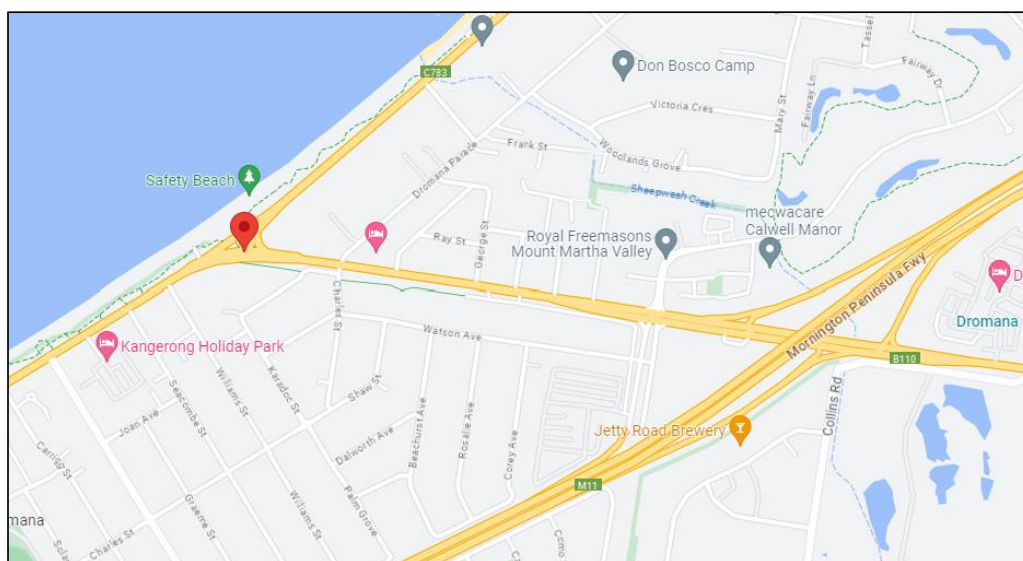


Road Safety Audits

Road Safety Audit Report

Marine Drive & Nepean Highway, Safety Beach Insight Planning

RSA Reference: 15203



Google Maps

Document Record

Revision	Delivered	Road Safety Auditors	Contact
A	8 December 2023	Raj Muthusamy Peter Harris	Raj Muthusamy



Road Safety Audits
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PROJECT BACKGROUND

INTRODUCTION

This is a preliminary design stage road safety audit of the proposed redevelopment of the BP service station at the intersection of Marine Drive & Nepean Highway, Safety Beach.

The scope of this audit also includes assessment of the existing conditions at the subject location and intersection, with the primary aim being identification of any road safety issues that could arise as a result of the proposed redevelopment of the service station.

The audit has been undertaken by Road Safety Audits, commissioned by Insight Planning.

It has been carried out in accordance with "Austroads Guide to Road Safety, Part 6 Road Safety Audit 2022" guidelines.

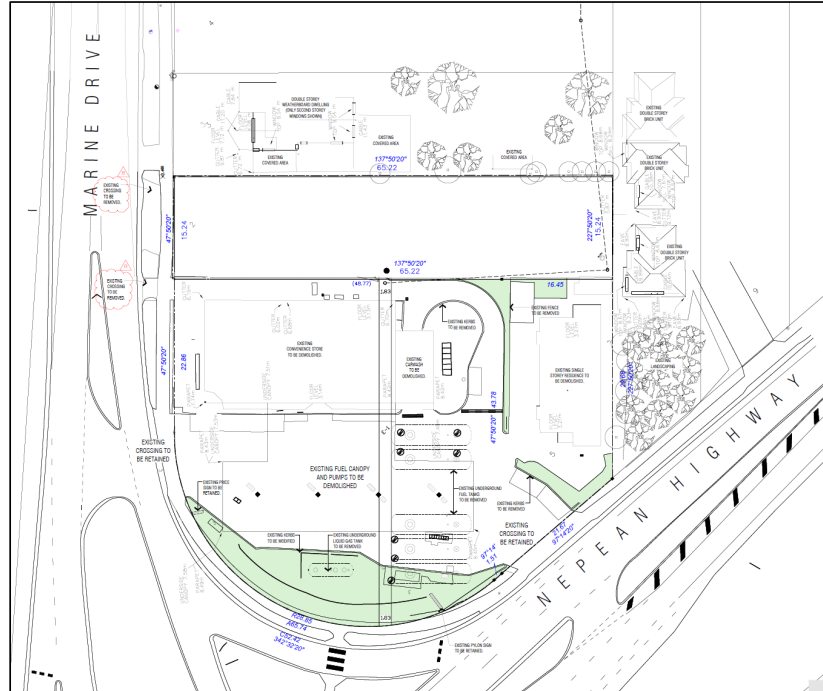
PROJECT

The proposed redevelopment essentially involves adding a convenience restaurant on the land whilst retaining the service station at 1 Marine Drive in Safety Beach. The traffic engineering assessment report (Ref: G29423R-02B) prepared by Traffic Group provides more details in relation to the extent and details of the development, and therefore not described again in this report.

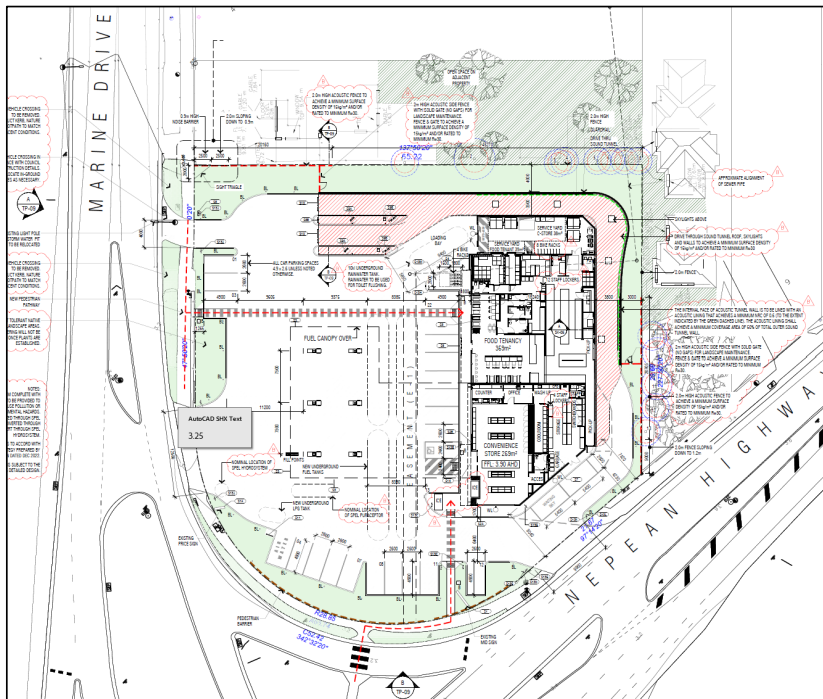
The drawings in the following page supplied by the client, summarises the extent of redevelopment compared to the current conditions at the service station.



Existing Layout



Proposed Layout





LOCATION AND ROAD CONDITIONS

The service station is located at the north eastern corner of the intersection at Nepean Highway and Marine Drive. It is located at a relatively complex signalised intersection facilitating traffic movements between the two road as well as access/egress movements at the service station.



Image extracted from the Traffic Group Traffic Impact Assessment Report

Peak traffic flows can be expected in the summer months given the roads and subject intersection being within a coastal tourist area. The audit team notes the details of the traffic analysis in the Traffic Group Traffic Impact Assessment Report.

The posted speed limit on both roads is 60km/h and during peak summer periods, the audit team is aware that actual operating speeds on both roads are significantly lower than the posted limit due the level of traffic congestion and queuing through the subject intersection.

Pedestrian activity was not observed during the site inspection but given the audit teams' familiarity with the site, pedestrian movements between the foreshore and the service station is common. Pedestrian desire lines are supported by existing controlled crossings and zebra crossings at the intersection as can be seen in the image above.

Both Nepean Highway and Marine Drive are arterial roads and fall under the responsibility of Department of Transport and Planning (DTP).

The series of photographs in the following pages show the existing conditions along both roads in the vicinity of the service station.



Road Safety Audits



Nepean Highway northbound approach to service station



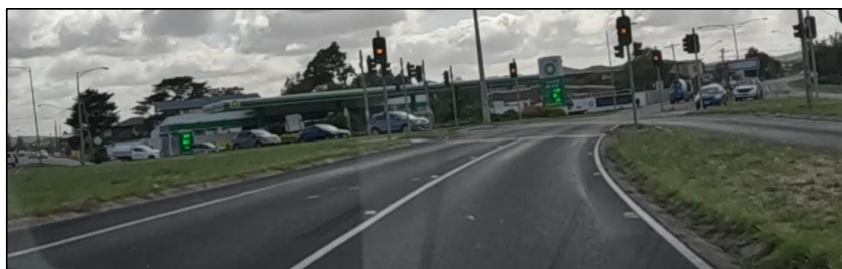
Nepean Highway northbound approach to signalised intersection



Merge from Nepean Highway to Point Nepean Road (westbound)



Eastbound on Pt Nepean Road approaching signalised intersection



From Point Nepean Road into Nepean Highway southbound



Southbound on Nepean Highway looking towards service station access/egress



Right turn lane from Nepean Highway into Marine Drive eastbound



Marine Drive eastbound looking towards the median opening to the service station on the right



Road Safety Audits



Marine Drive westbound looking towards service station



Marine Drive westbound near the station





Pt Nepean Road into Marine Drive eastbound (3 photos)

PROJECT-SPECIFIC AUDIT FOCUS

The audit has contemplated a range of criteria / issues associated with the project, including but not limited to the following:

Specific

- Sight distance (Safe Intersection Sight Distance - SISD) to vehicles exiting the service station for drivers on the left turn slip lane from Marine Drive into Nepean Highway southbound.
- Sight distance f(SISD) for northbound and south bound drivers on Nepean Highway to sight a vehicle exiting the service station to turn left or to access the median opening to then turn right.
- Sight distance at the proposed left and right turn entry into the service station from Marine Drive.

General

- Road/intersection readability
- Traffic and pedestrian signal, zebra crossing visibility from the approaches
- Traffic and pedestrian signal functionality
- Pedestrian crossing facilities and connecting paths
- Turn controls and potential conflict points
- Sight distance
- Intersection lighting
- Horizontal and vertical alignment factors
- Roadside hazards
- Signs and line marking
- Surfaces and pavement

The audit team was requested to specifically assess and comment on the road safety risks associated with the increased number of right turn movements out of the service station into the median break to then turn right into the northbound carriageway on Nepean Highway.



COMMENCEMENT MEETING

A commencing meeting with the client was held on 1 December 2023. The audit team was provided with an overview of the redevelopment and proposed changes to the existing layout within the station and access/egress arrangement. The audit team was also made aware of the VCAT hearing findings and the objection to the redevelopment by DTP.

CONSTRAINTS AND EXCLUSIONS

- This audit does not cover safety issues that may currently exist or be generated within the service station compound as a result of the proposed redevelopment.

CONDUCT OF THE SITE INSPECTION

A site visit was carried out on 6 December 2023. The weather was dry and sunny during the inspection. Traffic volume was moderate and roadworks activity was occurring on Point Nepean Road at the time of inspection.

DOCUMENTATION PROVIDED FOR THE AUDIT

The following documents were provided by the client to facilitate the audit:

- Layout drawing showing existing conditions (BDAI drawing number TP-02 Rev B) and the proposed site floor plan (BDAI drawing number TP-03 Rev B);
- Copy of the planning permit application dated 20 February 2023 (Mornington Peninsula Shire);
- Traffic Group Traffic Engineering Assessment dated April 2023 (Ref: G29423R-02B);
- Copy of a letter dated 1 November 2023 from DTP to Mornington Shire Council, objecting to the proposed redevelopment;

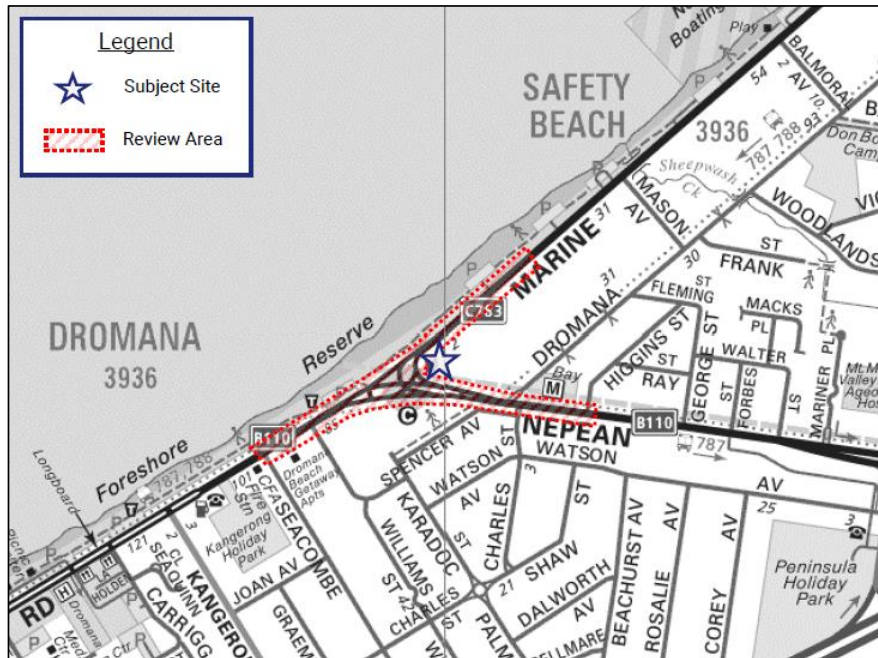
Previous road safety audits:

- Nil.



CRASH HISTORY

The casualty crash data summarised for the most recent 5 year period by Traffix Group in their report shows 10 crashes within the investigation area (map showing the investigation area is extracted from the Traffix Group report).



It is noted that there are no casualty crashes recorded at any of the existing access/egress points at the service station.

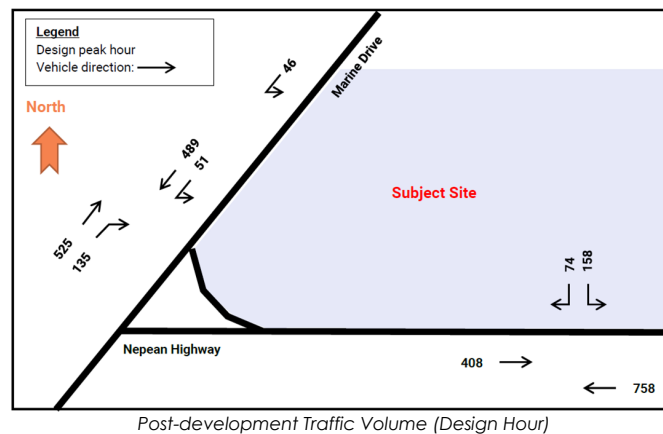
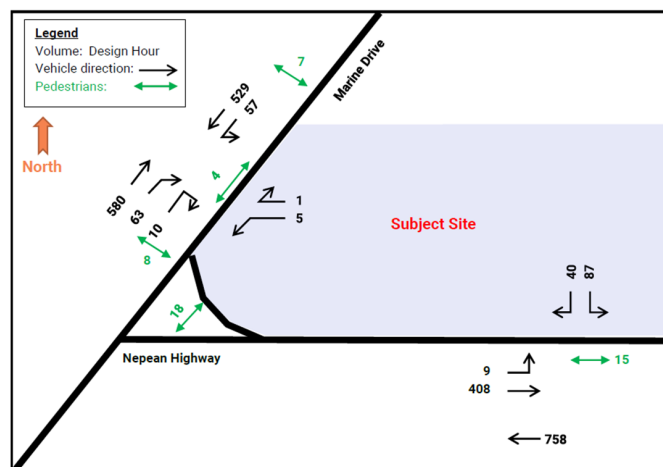


OBSERVATIONS/ASSESSMENT COMMENTS

The following are specific comments on site assessments made by the audit team but did not consider them to be road safety issues and therefore not listed in the road safety audit findings table. The purpose of their inclusion is to demonstrate to the responsible authority that the audit team did not miss considering or assessing issues that may be of interest or relevance for the proposed redevelopment.

1. Right turn out from Service Station into Nepean Highway northbound

The traffic analysis by Traffix Group shows the existing and predicted traffic movements to and from the service station post redevelopment for the same seasonal peak period as summarised below:





The analysis shows there is an increase of 34 vehicles turning right out of the service centre post redevelopment for the design hour. This increase in the number of vehicles turning right is not expected to result in any significant change in the risk profile at this location for the reasons listed/discussed in the points below:

- The right turning vehicle can store in the median break and can therefore cross one direction of traffic flow at a time. The median can store one vehicle and the other vehicles wanting to turn right out would queue within the service station and not interfere with traffic flow on Nepean Highway;



Median opening and clear sight lines for southbound drivers on Nepean Highway to the egress driveway

- Availability of more than adequate Safe Intersection Sight Distance (SISD) for operating speeds significantly in excess of the posted 60km/h speed limit, in both directions on Nepean Highway approaching the service station egress where drivers may be turning right out;



Clear sight lines for northbound drivers on Nepean Highway approaching the median opening



- Average delay predicted during the 22nd busiest peak (Tuesday 25th Jan) by SIDRA analysis in the median storage for a vehicle exiting the service station to then turn right into Nepean Highway northbound lane is 5.8 seconds. This small waiting time is not expected to frustrate drivers to the extent that they may resort to accepting inappropriate gaps in traffic;
- Traffic operating speeds during the seasonal peak periods is typically significantly lower than the posted speed limit along Nepean Highway, Pt Nepean Road and Marine Drive. Hence, should there be a conflict involving a vehicle turning right out of the service station, impact speeds are expected to be well below safe system threshold.

The audit team recognises that the increase in the volume of right turners out of the service station increases the frequency for potential conflicts. However, given the availability of more than adequate SSD in both directions on Nepean Highway, ability to store in the median opening, gaps in traffic flow created by the operation of the traffic signals, low operating speeds along Nepean Highway during the seasonal peak periods at the time when a significant proportion of the predicted increase in the right turn out movements will be experienced, presents a very low risk for casualty crashes.

A possible measure that could be considered as a balancing measure due to the expected increase in the number of right turners out of the service station is to paint 'Keep Clear' markings at the median opening (on Nepean Highway northbound carriageway) so that vehicles queued on Nepean Highway during the red signal phase do not queue across the median opening preventing right turners to enter Nepean Highway.

2. Right turn into the Service Station from Marine Drive

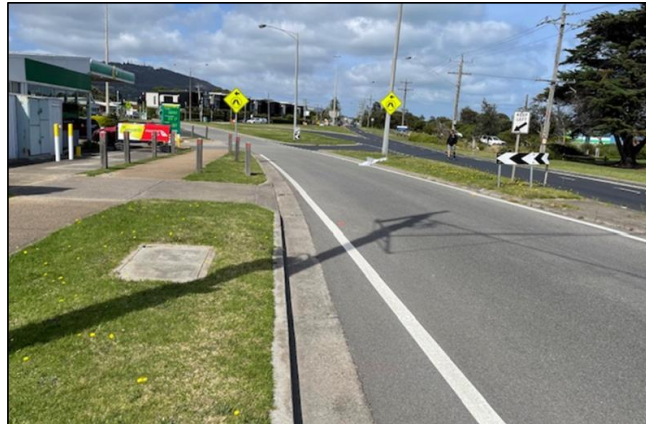
- a. There is potential for right turners from Pt Nepean Road into Marine Drive to be obstructed by right turning vehicles into the service station. This is not considered to be a road safety issue given the availability of more than adequate Stopping Sight Distance (SSD) for drivers from Pt Nepean Road to sight stationary vehicles ahead. This can be an intersection capacity issue and it is expected that the traffic impact assessment by Traffix Group has investigated the impacts of such events during the peak period adopted for the analysis.



If necessary, given the available width in the median, it may be possible to create a sheltered right turn storage lane.



- b. SISD for westbound drivers on Marine drive approaching the median opening is more than adequate for the posted 60km/h and significantly higher operating speeds. Again, no safety concerns are raised in relation to the right movements into the service station.



Again, if queue lengths at the intersection are expected to extend past the median opening for the right turn, **consideration can be given to painting 'Keep Clear' markings at the median opening.**



AUDIT FINDINGS AND RECOMMENDATIONS

The audit team considered the traffic impact assessment report including the SIDRA analysis, the existing and proposed conditions at the service station in the context of the existing roads and expected interactions and potential road safety issues that could result in the projected increase in traffic movements generated by the redevelopment.

Issue	Recommendation
1. Sight Distance Sight distance to the existing zebra crossing at the left turn slip lane from Marine Drive to Nepean Highway southbound is currently restricted by dense vegetation on the northern side of the service station boundary.	During the proposed redevelopment, ensure that existing vegetation is cleared and lower height vegetation (not higher than 1m) is planted to ensure adequate sight lines are available for drivers approaching the zebra crossing.
	
Risk Rating (Austroads GRS6) Risk Rating = Unlikely (3-7Y) + Moderate = Medium FSI = Fatal or serious injury / exceeds safe system crash outcome threshold Comment Important	Risk Rating After Treatment Risk Rating: Rare (>7Y) + Moderate = Low Safe System Treatment Alignment Supporting: Improved safety + no change re: future SS treatment
Insight Planning Response Issue: ☐ Accept / ☐ Reject	Status: ☐ Open / ☐ Closed Treatment: ☐ Accept / ☐ Reject



	Issue	Recommendation
2.	Left Turn Lane operating speeds The existing design layout of the left turn slip lane from Marine Drive into Nepean Highway is inconsistent with current Austroads Guide for slip lanes, where the alignment of the slip lane would be straighter and would intersect the main carriageway at an angle no gentler than 70 degrees. The existing alignment of the slip lane can result in higher operating speeds as well as a skewed prop angle at the Give Way.	It is recognised that the existing layout of the left turn slip lane is not due to the proposed service centre redevelopment. However, to reduced operating speeds (especially during off peak periods), it is suggested that a speed cushion be installed in advance of the zebra crossing. This measure will not only reduce operating speeds on approach to the crossing, it will also reduce speeds on approach to the Give Way. A speed cushion is suggested instead of a raised crossing as a raised crossing is likely to require more significant drainage works and installation of side entry pits on the low side.
	Risk Rating (Austroads GRS6) Risk Rating = Unlikely (3-7Y) + Moderate = Medium FSI = Fatal or serious injury / exceeds safe system crash outcome threshold	Risk Rating After Treatment Risk Rating: Rare (>7Y) + Minor = Negligible
	Comment Important	Safe System Treatment Alignment Primary: practically eliminates exceeding crash limits
	Insight Planning Response	Status: ☐ Open / ☐ Closed
	Issue: ☐ Accept / ☐ Reject	Treatment: ☐ Accept / ☐ Reject



Road Safety Audits

Issue	Recommendation
3. Zebra Crossing Location The existing zebra crossing is located midway along the left turn slip lane. This creates a 'dog leg' in the alignment/continuity of the zebra crossing to the proposed zebra crossing within the service station. Given the issues raised in audit points 1 & 2, the audit team considers that it would be appropriate for the design team to investigate options to realign the existing zebra crossing as part of the redevelopment to better match with proposed zebra crossing within the service centre.	Consider realigning the existing pedestrian path to a point further west towards the end of slip lane at the Give Way to a relocated zebra crossing. This measure would result in better connectivity for pedestrians. More importantly, it will locate the crossing further away from the curve at a point where drivers would be slowing. The installation of a speed cushion on approach to the zebra crossing is still recommended (red rectangle) as this will self-reinforce the low operating speed.
Risk Rating (Austroads GR56) Risk Rating = Unlikely (3-7Y) + Moderate = Medium FSI = Fatal or serious injury / exceeds safe system crash outcome threshold Comment Important Insight Planning Response Issue: ☐ Accept / ☐ Reject	Risk Rating After Treatment Risk Rating: Rare (>7Y) + Minor = Negligible Safe System Treatment Alignment Primary: practically eliminates exceeding crash limits Status: ☐ Open / ☐ Closed Treatment: ☐ Accept / ☐ Reject



Road Safety Audits

	Issue	Recommendation
4.	Sight Lines from slip lane to drivers exiting the service centre In addition to the vegetation discussed in audit point 1, the existing fuel price signage display obstructs sight lines for drivers on the left turn slip lane approaching the exit from the service station. Drivers on the slip lane are typically more focussed on looking to their right to find a suitable gap to turn left into Nepean Highway southbound and hence the obstructed sight lines increases the potential for conflict between left turners and traffic exiting the service station.	In addition to removing and replacing the vegetation to lower height shrubs as suggested in audit point 1, the fuel price display sign should be relocated to a suitable location that does not restrict sight lines for drivers on the slip lane approaching the service station exit. The suggestion to relocate the zebra crossing and the installation of the speed cushion close to the end of the slip lane (audit point 3) would further minimise potential for conflict.
		
	Risk Rating (Austroads GRS6) Risk Rating = Unlikely (3-7Y) + Moderate = Medium FSI = Fatal or serious injury / exceeds safe system crash outcome threshold	Risk Rating After Treatment Risk Rating: Rare (>7Y) + Moderate = Low
	Comment Important	Safe System Treatment Alignment Primary: practically eliminates exceeding crash limits
	Insight Planning Response	Status: ☐ Open / ☐ Closed
	Issue: ☐ Accept / ☐ Reject	Treatment: ☐ Accept / ☐ Reject



	Issue	Recommendation
5.	Sight Lines for Drivers exiting the service station Drivers exiting the service station will have inadequate minimum gap sight distance MGSD due the obstruction caused by the vegetation and the fuel price display sign.	Refer to suggested actions in audit point 4.
		
	Risk Rating (Austroads GRS6) Risk Rating = Unlikely (3-7Y) + Moderate = Medium FSI = Fatal or serious injury / exceeds safe system crash outcome threshold	Risk Rating After Treatment Risk Rating: Rare (>7Y) + Moderate = Low
	Comment Important	Safe System Treatment Alignment Supporting: Improved safety + no change re: future SS treatment
	Insight Planning Response	Status: ☐ Open / ☐ Closed
	Issue: ☐ Accept / ☐ Reject	Treatment: ☐ Accept / ☐ Reject



Road Safety Audits

FINALISATION

CONCLUDING STATEMENT

Based on the audit findings, the audit team considers that the proposed development is not expected to significantly alter the existing risk profile at the subject location, subject to the suggested treatments measures in this report being considered and adopted.

- The audit has attempted to balance the safety needs of all road users within the site/design constraints. As per Austroads guidelines, the recommendations provided have attempted to be realistic, feasible, and commensurate with the risk posed.
- The audit attempts to raise all potential safety risks, however at times this is not possible due to a limited knowledge of the site and the design.
- Agreement to the issues and/or suggestions does not necessarily eliminate risk.
- The project team should incorporate audit findings into the broader design process and ask the audit team further questions where necessary.

Peter Harris

Senior Road Safety Auditor / Level III (NSW)
CPEng, NER, RPEQ, VPE, BE (Civil), BB (Bus. Admin.)

Raj Muthusamy

Senior Road Safety Auditor / Level III (NSW)
CPEng, RPEQ, NER, BE (Civil)

RESPONDING TO THE ROAD SAFETY AUDIT

The audit findings should be carefully considered in combination with the knowledge and insight from the responding entity (client) and other stakeholders. The responding entity does not have to agree to the audit findings; however, a written response should be made to the audit findings raised. When responding to the audit, the responding entity is encouraged to focus on the 'audit finding', not the 'recommendations'. This is due to various options usually being available and Road Safety Audits having limited knowledge of the project background and constraints.

Road Safety Audits does not change the substance of the audit findings, or sign off on the responses from the responding entity. However, the client is encouraged to provide the responses to RSA to check that each audit point has been fully understood.



ROAD SAFETY AUDIT BACKGROUND

ROAD SAFETY AUDIT: OVERVIEW

A road safety audit is an independent examination of a design or condition to evaluate potential safety issues for all road user types. It is carried out by a team of suitably qualified people, typically comprising at least one engineer, and can provide recommendations for consideration by the client. It combines the experience of the individual team members with contemporary evidence-based knowledge on road crash types and countermeasures. It uses the principles of Austroads Guide to Road Safety Part 6: Road Safety Audit 2022 and DOT (VicRoads) / Austroads guidelines and standards as references where relevant. A road safety audit is not a checklist or a check of compliance to standards.

ROAD SAFETY AUDIT TEAM AND QUALITY ASSURANCE

The road safety audit was carried out by Raj Muthusamy and Peter Harris. Raj Muthusamy and Peter Harris both carry out road safety audits full-time in various states of Australia and have extensive experience in all stages of road safety audits, leading or participating in several hundred audits and risk assessments every year.

Road Safety Audits is accredited for the conduct of road safety audits under VicRoads' professional services register. Raj Muthusamy and Peter Harris are accredited Senior Road Safety Auditors under VicRoads pre-qualified senior road safety audit scheme.

Road Safety Audits' quality assurance process encompasses three key areas:

- Staff: Utilising highly experienced road safety practitioners
- Staff: Customising the audit team for the project to inject the necessary skill-set.
- Processes: Utilise customised checklists designed for niche areas in traffic engineering and road design such as safety barriers, public transport hubs, CBD / inner-urban, and cyclists.
- Training: Regular in-house and external training.
- Review: Up to four-layer review: 1. On-site auditor evaluation; 2. Media and data review; 3. Specialist auditor input; and 4. Blinded reviews.



AUDIT TYPE

A functional design or preliminary design stage road safety audit tends to examine the broad design for more fundamental issues that can't be changed later by minor signs or linemarking changes. This includes intersection layouts and types, horizontal and vertical alignments, access points, and all road user groups.

SCOPE: GENERAL

Road Safety Audits utilises a high experience base and focus on high-level fundamental safety issues affecting road safety, based on likely road user behaviour and expectations.

Checking compliance to road design guidelines is incorporated within the audit but forms a secondary consideration. "A Road Safety Audit is not a check of compliance to standards. Rather than checking for compliance, a road safety audit is checking fitness for purpose: will the road or treatment work safely for its expected road users?" (AGRS RSA 2022).

The scope is generally limited to the safety effects of the proposed changes, and does not look beyond the limits of works to try to improve substandard conditions outside of the general scope of the works.

Where suggestions are provided, they are made from a safety perspective only, and are made in the absence of full project knowledge and design constraints. Road Safety Audits can provide a detailed risk assessment / issue evaluation report upon request.

Generally, a road safety audit only raises issues and does not discuss design elements if they are not safety issues. i.e. if a topic (such as 'drainage') is not mentioned, then it means that there are no issues of concern on that topic.

SCOPE: SAFE SYSTEM

Austrroads guidelines encourage practitioners to adopt safe system principles within design and within road safety audits. Safe system (roads) calls for a design to not allow serious injury and fatalities to occur for the expected road users and the typical crash types expected for that design type. This design-objective is considered within this road safety audit and is detailed in the Risk Ratings section. However, a road safety audit by definition is not a 'Safe System Assessment'.

REFERENCES

Relevant guidelines, standards, codes, road rules, and policy documents, including:

- Austrroads Guide to Road Safety Part 6 – Road Safety Audit – 2022
- State-specific road safety audit guides where applicable (e.g. NSW *Guidelines for Road Safety Audit Practices*)
- Austrroads Guide to Road Design Series (AGRD)
- Austrroads Guide to Traffic Management Series (AGTM)
- Austrroads Guide to Road Safety Series (AGRS)
- Miscellaneous Austrroads Publications relating to road trauma, crash causality and statistics, traffic engineering treatments and Safe System
- State road authority supplements to above documents
- State road authority technical publications including standard drawings, road design notes and other publications
- Other industry knowledge as disseminated through industry conferences, seminars, workshops via organisations including Austrroads, ITE, ACRS, AITPM, TMAA and IRF



RISK RATINGS

Austrroads Road Safety Audit Part 6 suggests that the organisation responding to the audit uses the following risk assessment method as a tool to give an indication of risk. Road Safety Audits will typically offer its own evaluation of risk for the responder to use as a guide.

Figure 10.2: Austrroads RSA risk matrix

			Severity*				
			Insignificant	Minor	Moderate	Serious	Fatal
			Property damage	Minor first aid	Major first aid and/or presents to hospital (not admitted)	Admitted to hospital	Death within 30 days of the crash
Likelihood (includes exposure)	Almost Certain	One per quarter	Medium	High	High	Extreme (FSI)	Extreme (FSI)
	Likely	Quarter to 1-year	Medium	Medium	High	Extreme (FSI)	Extreme (FSI)
	Possible	1 to 3 Years	Low	Medium	High	High (FSI)	Extreme (FSI)
	Unlikely	3 to 7 Years	Negligible	Low	Medium	High (FSI)	Extreme (FSI)
	Rare	7 years +	Negligible	Negligible	Low	Medium (FSI)	High (FSI)

*see Severity Guidance Sheet

Safe System crash outcome threshold

Figure 10.3: The severity guidance sheet – to be used with the risk matrix (Figure 10.2)

		Crash Speed (km/h)										
		< 10	10	20	30	40	50	60	70	80	90	100
Crash Type	Pedestrian (vs HV)	Minor Injury Moderate Injury Serious Injury Fatal										
	Cyclist (vs HV)											
	Motorcyclists (vs HV)											
	Pedestrian (vs car)											
	Cyclist (vs car)											
	Pole/tree Impact (car)											
	Motorcyclists (vs car)											
	Side Impact (HV vs car)											
	Side Impact (car vs car)											
	Head On (HV vs car)											
	Head On (car vs car)											

"The corresponding priorities for mitigation are categorised as:

- Negligible – no action required
- Low – should be corrected or the risk reduced if the treatment cost is low
- Medium – should be corrected or the risk significantly reduced, if the treatment cost is moderate, but not high
- High – should be corrected or the risk significantly reduced, even if the treatment cost is high
- Extreme – must be corrected regardless of cost.

No definitive guidance can be given as to the respective monetary values of the terms 'low', 'moderate' or 'high' regarding treatment costs, but it is expected that consideration against the total project cost would be an important factor when categorising mitigation of each risk." (AGRS-RSA2022)

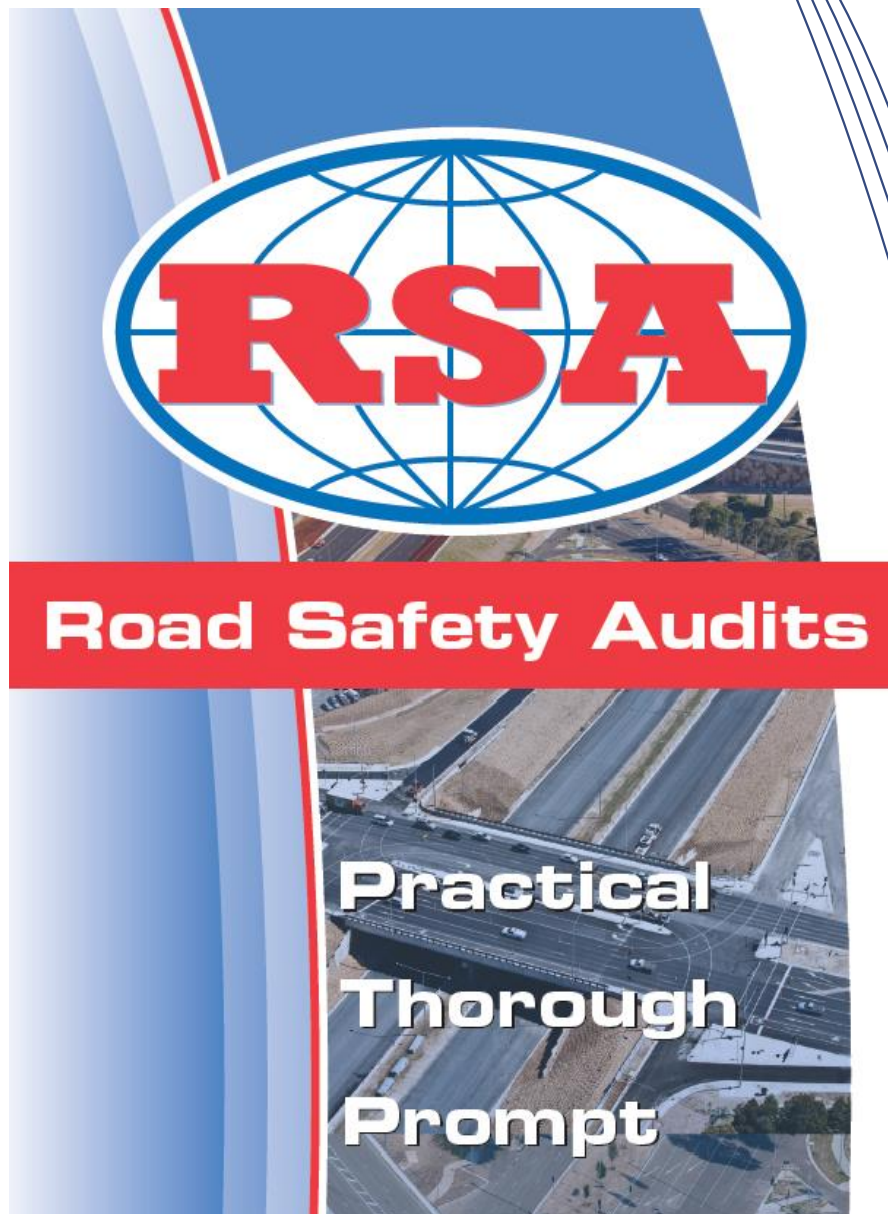


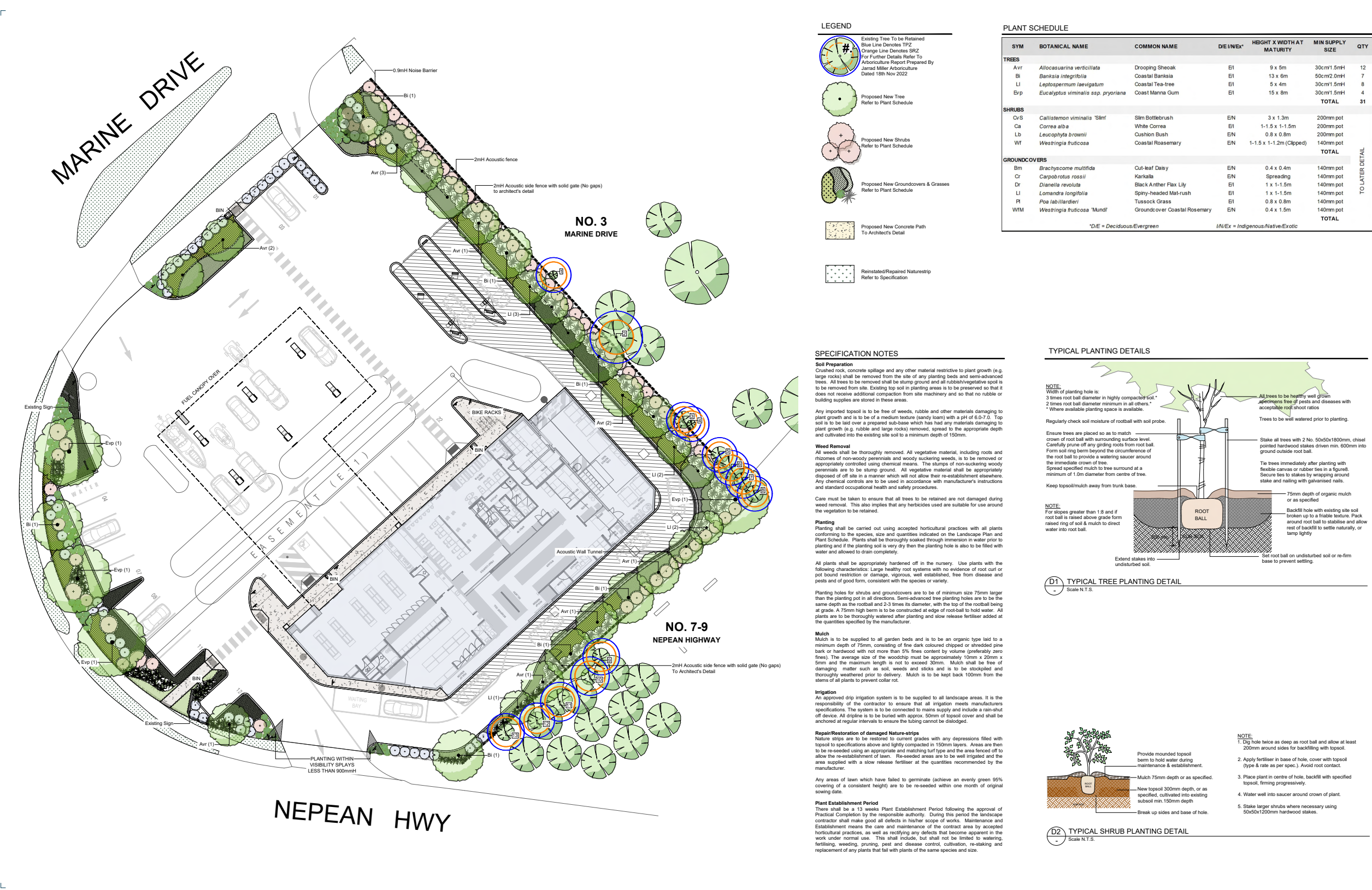
Furthermore, suggested recommendations are given a safe system treatment ranking as follows:

Primary Treatment	Road planning, design and management considerations that practically eliminate the potential of fatal and serious injuries occurring in association with the foreseeable crash types
Supporting (step towards)	- Road planning, design and management considerations that improve the overall level of safety associated with foreseeable crash types, but not expected to virtually eliminate the potential of fatal and serious injuries occurring - Improves the ability for a Primary Treatment to be implemented in the future
Supporting Treatment	- Road planning, design and management considerations that improve the overall level of safety associated with foreseeable crash types, but not expected to virtually eliminate the potential of fatal and serious injuries occurring - Does not change the ability for a Primary Treatment to be implemented in the future
Non-Safe System Treatment	- Road planning, design and management considerations that are not expected to achieve an overall improvement in the level of safety associated with foreseeable crash types occurring - Reduces the ability for a primary treatment to be implemented in the future

A risk cannot always be assigned to an issue when there is a highly indirect relationship between the issue 'leading to a crash'. However, the issue may still be *important* for the design, the project, general safety and amenity. Other common language used and its meaning are as follows:

- 'Urgent': Needs immediate attention / changes as per RSA suggestion or similar.
- 'Recommend' / 'Serious' / 'Important': Must be robustly reviewed. Most likely requires a change to avoid a high-risk road environment for one or more user groups.
- 'Should' / 'Suggest' / 'Significant': Based on the view of the RSA team the suggestion should be done, but it concedes that there could be reasons why inaction or alternative action is equally correct. Must be robustly reviewed by contractor and where relevant key traffic engineering project stakeholders.
- 'Review' / 'Consider': RSA is raising an observation but has no *strong* opinion on need for changes due to limitations in knowledge on the site / design / constraints.
- 'Minor': Typically, a low road-safety consequence / compliance issues (to guidelines or plans) / administrative controls. Unlikely to increase risk of crash.
- 'Note': Little or no road safety significance. Typically added to give a complete picture of the design, site, context, analysis, auditors understanding.





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JOHN PATRICK
LANDSCAPE ARCHITECTS PTY LTD
324 Victoria Street,
Richmond, VIC 3121
T +61 3 9429 4855
F +61 3 9429 8211
admin@johnpatrick.com.au
www.johnpatrick.com.au

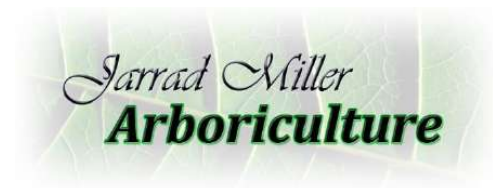
REVISION	DATE	BY
A Issued For Town Planning	02.11.2022	SA
B Issued For Town Planning	26.04.2023	SA

CLIENT
**Andrianopoulos
Nominees Pty Ltd**
PROJECT
DROMANA SERVICE STATION
1 Marine Drive & 2 / 5 Nepean Highway,
Safety Beach



SCALE	1:200 @A1
DATE	SEP 2022
DRAWN	SA
CHECKED	JP
JOB NO	22-445
DWG NO	L-TP01
CAD FILE	22-445-L-[B].dwg

18 November 2022



0401 172 184

jararbor@gmail.com

Tree Assessment & Development Impact Report

1 Marine Drive / 2 Marine Drive / 5 Nepean Highway
Safety Beach, Vic

Version 2



Report Reference # 20070 SAF

Commissioned By Monica Ceckiewicz
Insight Planning
Consultants

Consulting Arborist Jarrad Miller *dip. arb*

Tree Assessment & Development Impact Report (Marine Drive, Safety Beach)

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Executive Summary

The existing BP service station is proposed to be demolished with a new service station and restaurant constructed across three properties – 1 Marine Drive, 2 Marine Drive and 5 Nepean Highway.

1 Marine Drive

The site at 1 Marine Drive is currently used as a service station with no trees of any note located on the property. There are two main landscaped garden beds within the site featuring low growing shrubs, grasses and succulents.

The vegetation is not botanically significant or ecologically important. It does not merit design concessions or construction restraints to accommodate its retention and should be considered for removal if it impedes the development in any way.

2 Marine Drive

The site at 2 Marine Drive is a vacant lot with no vegetation other than grass and weeds.

5 Nepean Highway

The site at 5 Nepean Highway is occupied by buildings and paved with concrete. There was no vegetation within the site worthy of assessment.

3 Marine Drive

The proposed driveway will not encroach on the TPZ of any trees at 3 Marine Drive.

It is recommended that tree protection fencing is installed prior to the commencement of works on-site to ensure that the protection areas are completely isolated from construction activity and soil disturbance.

7 - 9 Nepean Highway

A copse of scattered Swamp Paperbarks are growing in a mulched garden bed at 7-9 Nepean Highway. Five specimens in periphery to the boundary were assessed individually.

There is a concrete retaining wall below the existing boundary fence and an abrupt change in levels between the two properties. It is expected that root development has been restricted to the property in origin where conditions are a lot more favourable.

No part of the canopies overhang the boundary and the existing fence will provide sufficient protection for these trees throughout the development phase.

1. Introduction

1.1. Background

The existing BP service station is proposed to be demolished with a new service station and restaurant constructed across three properties – 1 Marine Drive, 2 Marine Drive and 5 Nepean Highway.

1.2. Report Objectives

- 1.2.1. Assess all vegetation within the subject properties and peripheral trees on the adjoining properties at 3 Marine Drive and 7-9 Nepean Highway.
- 1.2.2. Provide details on the species, origin, age, dimensions, condition, useful life expectancy and arboricultural value for each assessed tree.
- 1.2.3. Determine the tree protection zone (TPZ) and structural root zone (SRZ) for each tree and assess the impact on off-site trees from the proposed development.
- 1.2.4. Recommend strategies to minimise the impact on off-site trees from the proposed development.

1.3. Assessment Methodology

The sites were assessed by Jarrad Miller on 30/03/2020 and each tree was assigned an identification number ranging from **1 - 13**.

DBH (diameter at breast height) was determined by measuring the circumference of the tree stem(s) and dividing by Pi (π). Stem diameter was recorded as close as possible to 1.4 metres above ground level, however tree form ultimately dictated where the measurements were taken to ensure an accurate representation of DBH.

Trees with an estimated height greater than 4m were measured with a TruPulse 200 Range Finder and rounded to the nearest metre. The canopy spread for each tree was estimated and observed on the widest axis.

Tree assessments were limited to superficial observations from the ground only and based on the consulting arborist's training, research and anecdotal experience. The identification of tree species was limited to seasonal features available at the time of assessment.

Trees **1 - 8** were viewed from the fence line of the subject property. A thorough, panoramic assessment was not conducted and the DBH was estimated for these trees.

Tree protection zones (TPZ) and structural root zones (SRZ) were calculated as per Australian Standards – Protection of trees on development sites (AS 4970-2009).

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1.4. Statutory Controls

1.4.1. Municipality

The subject sites are covered by the **Mornington Peninsula Shire**.

1.4.2. Zone

The properties are included in a General Residential Zone – Schedule 1 (**GRZ1**).

1.4.3. Bushfire Provisions

The properties are not in a designated bushfire prone area. No special bushfire construction requirements apply. Planning provisions may apply.

1.4.4. Areas of Aboriginal Cultural Heritage Sensitivity

All or part of the properties are an 'area of cultural heritage sensitivity'.

1.4.5. Local Planning Overlays

The properties are subject to the following overlay(s):

- **Design and Development Overlay (DDO)**
Design and Development Overlay – Schedule 1 (**DDO1**)
- **Environmental Significance Overlay (ESO)**
Environmental Significance Overlay – Schedule 25 (**ESO25**)
- **Vegetation Protection Overlay (VPO)**
Vegetation Protection Overlay – Schedule 1 (**VPO1**)

2. Site Maps

2.1. Aerial Map



Figure 2.1. Aerial imagery of the subject properties (Landchecker, 2020) with approximate title boundaries in yellow (J. Miller)

2.2. Site Plan with Tree Numbers

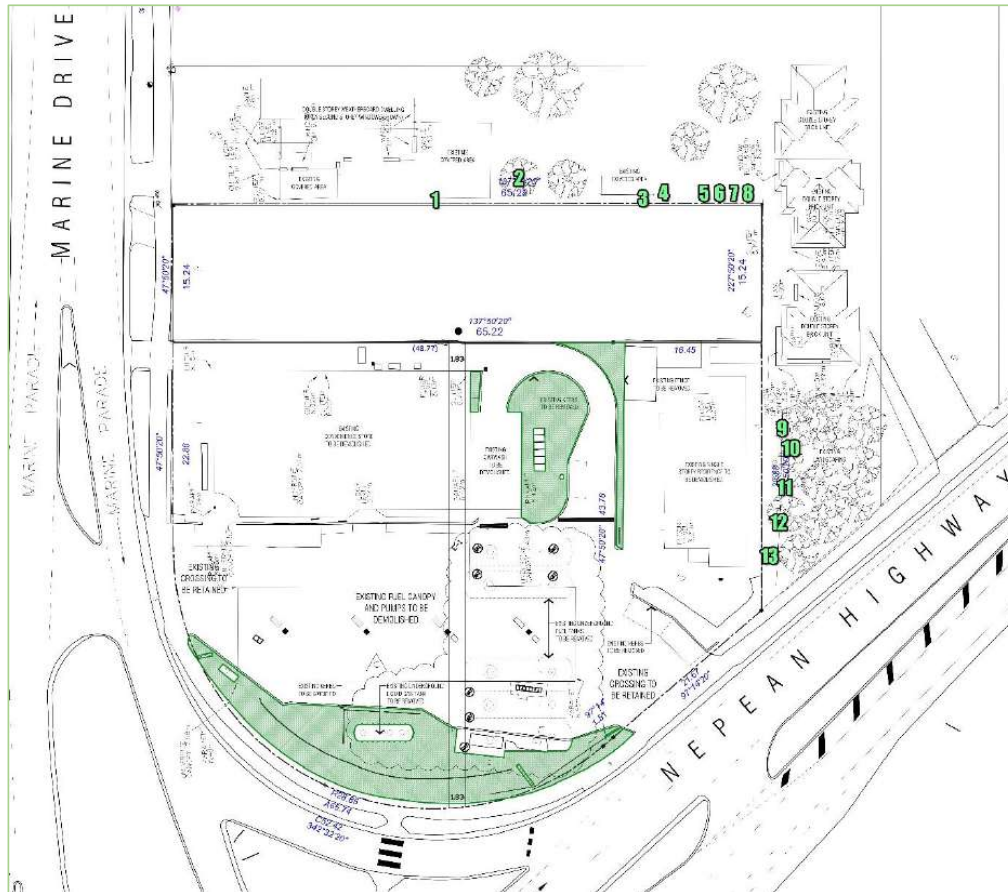


Figure 2.2. Existing site plan (Peninsula Survey Group, 2019) with tree numbers (J. Miller)

Note

Green shading denotes vegetated areas where individual assessments were *not* carried out

3. Vegetation Assessments

3.1. 1 Marine Drive

The site at 1 Marine Drive is currently used as a service station with no trees of any note located on the property. There are two main landscaped garden beds within the site (one adjacent to the Nepean Highway slip lane and an island bed in the car wash drive through) featuring low growing shrubs, grasses and succulents.

Botanical Name	Common Name	Origin	Vegetation Type
<i>Abelia x grandiflora</i>	Glossy Abelia	Exotic	Clumping shrub
<i>Agave attenuata</i>	Foxtail Agave	Exotic	Succulent
<i>Coleonema pulchellum</i>	Golden Diosma	Exotic	Low hedging plant
<i>Cordyline australis 'Purpurea'</i>	Purple Cabbage Palm	Exotic	Tree-like grass
<i>Dietes sp.</i>	Iris	Exotic	Exotic grass
<i>Juniperus cv.</i>	Juniper Cultivar	Exotic	Low growing conifer
<i>Lomandra sp.</i>	Lomandra	Native	Native grass
<i>Metrosideros excelsa</i>	New Zealand Christmas Tree	Exotic	Garden shrub
<i>Pennisetum setaceum 'Rubrum'</i>	Fountain Grass	Exotic	Exotic grass
<i>Phoenix roebelenii</i>	Pygmy Date Palm	Exotic	Dwarf palm
<i>Phormium tenax</i>	New Zealand Flax	Exotic	Exotic grass
<i>Viburnum tinus</i>	Viburnum	Exotic	Garden shrub
<i>Westringia fruticosa</i>	Coast Rosemary	Native	Low hedging plant
<i>Yucca sp.</i>	Yucca	Exotic	Tree-like succulent

Table 3.1. Species recorded throughout the subject site



Figure 3.2. Landscaped garden adjacent to the Nepean Highway slip lane (south west of site)

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3.1. 1 Marine Drive (continued)



Figure 3.3. Landscaped garden adjacent to the Nepean Highway slip lane (south west of site)



Figure 3.4. Island garden bed in the car wash drive through (south east of site)

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3.2. 2 Marine Drive

The site at 2 Marine Drive is a vacant lot with no vegetation other than grass and weeds.



Figure 3.5. Vacant lot at 2 Marine Drive

3.3. 5 Nepean Highway

The site at 5 Nepean Highway is occupied by buildings and paved with concrete. There was no vegetation within the site worthy of assessment.



Figure 3.6. 5 Nepean Highway as viewed from the existing entrance

4. Off-Site Trees

4.1. 3 Marine Drive

Eight trees were assessed on the south western boundary of 3 Marine Drive.

#	Botanical Name	Common Name	Origin	DBH (cm)	Height (m)	Arb. Value
1	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	8	4	Low
2	<i>Ficus carica</i>	Common Fig	Exotic	25	4	Low
3	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	13	6	Low
4	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	10	4	Low
5	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	8, 9	5	Low
6	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	10	5	Low
7	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	7	4	Low
8	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	13	4	Low

Table 4.1. Trees assessed at 3 Marine Drive



Figure 4.2. Trees assessed at 3 Marine Drive

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4.2. 7-9 Nepean Highway

A copse of scattered Swamp Paperbarks are growing in a mulched garden bed at 7-9 Nepean Highway. Five specimens in periphery to the boundary were assessed individually.

#	Botanical Name	Common Name	Origin	DBH (cm)	Height (m)	Arb. Value
9	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	8, 11, 11	3	Low
10	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	4, 4, 8, 10, 12	4	Low
11	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	11, 15	3	Low
12	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	8, 10	3	Low
13	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	2, 3, 10, 14	4	Low

Table 4.3. Trees assessed at 7-9 Nepean Highway

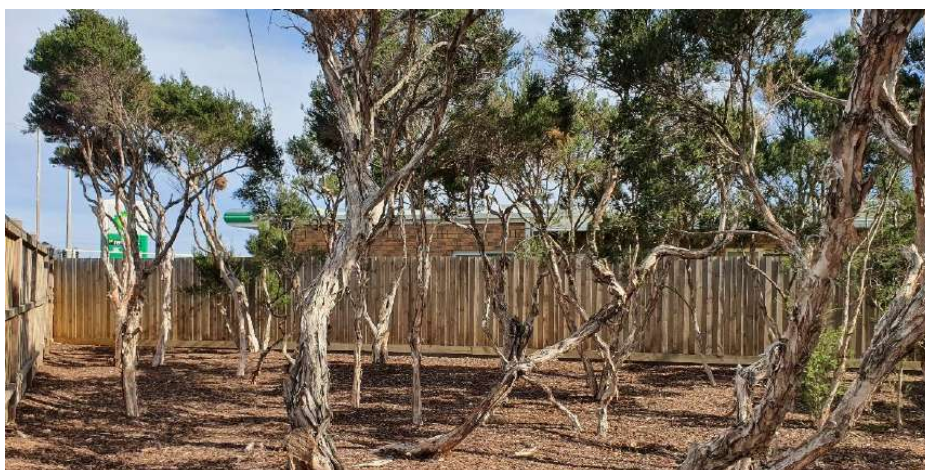


Figure 4.4. Copse of Swamp Paperbarks at 7-9 Nepean Highway



Figure 4.5. Trees 9 - 13

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5. Tree Protection Zones

5.1. Preamble

Trees generally grow according to a genetic blueprint, however each individual specimen adapts their roots and canopy to specific site conditions over many years. A sudden change in a trees environment or physical injury may lead to a decline in health, pre-mature death and/or structural failure in some cases. To ensure the continued viability of retained and off-site trees; their trunks, branches and roots must be isolated from any potentially damaging works. This can be achieved by determining and establishing tree protection zones.

5.2. Definitions

5.2.1. Tree Protection Zone (TPZ)

A circular area radiating from the tree trunk set aside for the protection of a tree's roots and canopy where it is potentially subject to damage by development.

5.2.2. Structural Root Zone (SRZ)

The SRZ is usually only calculated when an encroachment of a TPZ is proposed. It is usually a smaller area than the TPZ and only considers structural roots required for the trees stability in the ground.

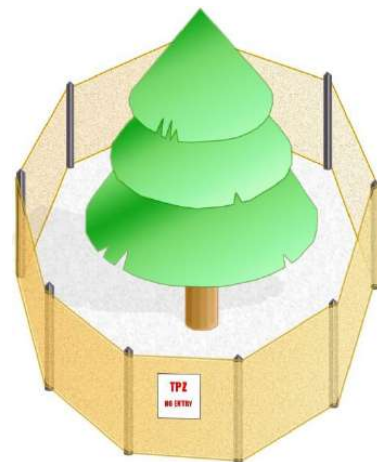


Figure 5.1. Illustrative example of a tree protection zone with barrier fencing

5.3. TPZ / SRZ Dimensions

TPZ and SRZ dimensions are based on trunk measurements recorded on-site and were calculated as per Australian Standards – Protection of Trees on Development Sites (AS 4970-2009).

See Appendix D. TPZ / SRZ Dimensions, page 27.

5.4. Management of the TPZ

A tree protection program requires a commitment from everyone involved in the development process and a clear understanding of this report. The full extent of each TPZ should be fenced off and isolated from the construction process, unless specified within this report.

See Appendix E. Tree Protection Plan, pages 28 - 30.

5.5. TPZ Encroachments

5.5.1. Encroachment

An encroachment of a TPZ is any portion that will be constructed within, subject to soil level changes and/or cannot be fenced off during the construction phase. TPZ encroachments are calculated as a percentage of area.

5.5.2. Minor Encroachment

Australian Standards (AS 4970) defines a *minor encroachment* as up to 10% of the total area of the TPZ with no encroachment of the SRZ. A minor encroachment is not likely to impact on the tree's long-term health or stability and further investigation is not required.

5.5.3. Major Encroachment

Australian Standards (AS 4970) defines a *major encroachment* as greater than 10% of the total area of the TPZ and/or inside the SRZ. Where a major TPZ encroachment of a retained or off-site tree is proposed, the consulting arborist must demonstrate that the affected tree(s) is likely to be tolerant of the encroachment. Mitigating factors may include:

- Site factors (existing buildings, retaining walls, etc.).
- Tree characteristics (species, age, condition, etc.).
- Sensitive construction methods (above ground construction, use of permeable materials, etc.).
- Findings of root exploratory excavation (i.e. minimal or no roots found at the point of impact).
- Recommended strategies to offset root loss (mulching, irrigation, etc.).

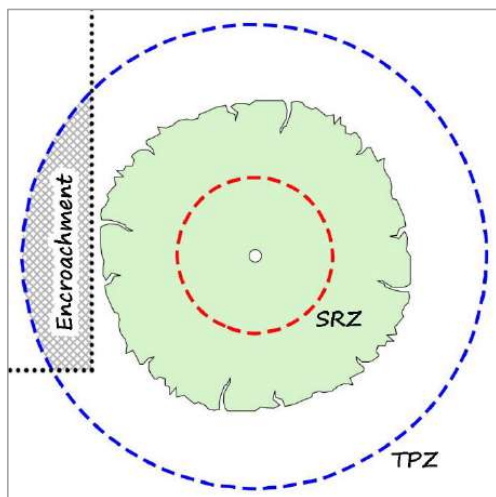


Figure 5.2. Example of a minor encroachment
(<10% of area and outside the SRZ)

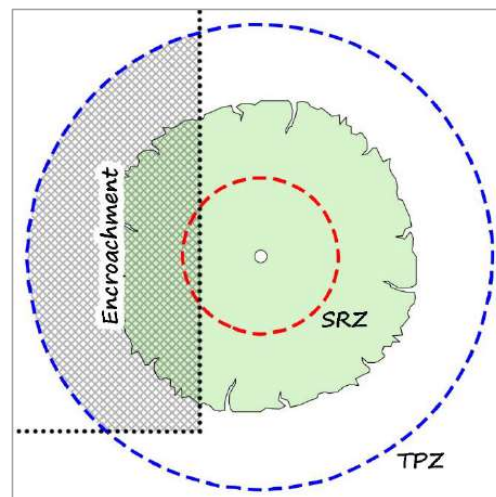


Figure 5.3. Example of a major encroachment
(>10% of area and/or inside the SRZ)

6. Development Impact Assessment

6.1. Tree Protection Zone Plan & Summary

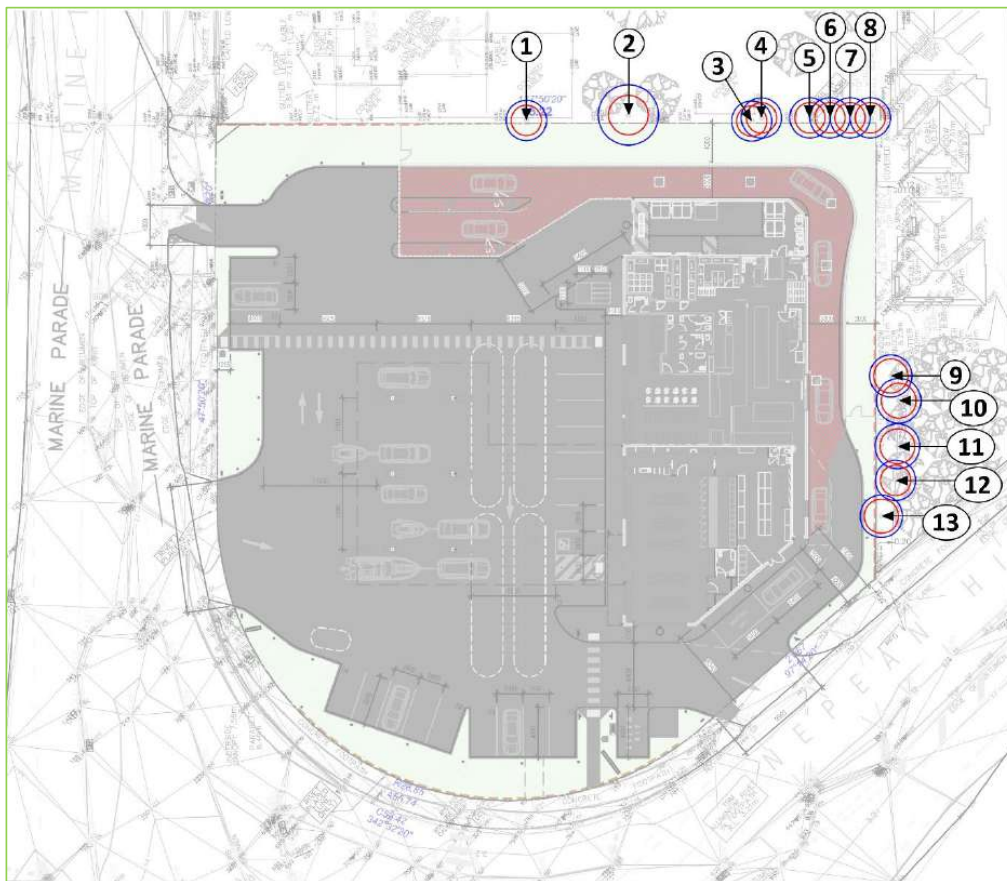


Figure 6.1. Proposed site plan (BDAI Architecture, 2022) with tree protection zones (TPZ) in blue and structural root zones (SRZ) in red (J. Miller).

6.2. Landscaping within 1 Marine Drive

The vegetation within landscaped garden beds is not botanically significant or ecologically important. It does not merit design concessions or construction restraints to accommodate its retention and should be considered for removal if it impedes the development in any way.

The vegetation generally presents in good condition and retaining selected specimens where it is practical to do so will complement new landscaping. The plants are not expected to have extensive root systems and protection to the extent of canopy is all that would be required.

6.3. Trees located at 3 Marine Drive

The proposed driveway will not encroach on the TPZ of any trees at 3 Marine Drive.

It is recommended that tree protection fencing is installed prior to the commencement of works on-site to ensure that the protection areas are completely isolated from construction activity and soil disturbance. The construction of a boundary fence within TPZs should be carried out in accordance with the guidelines outlined in Appendix E.I. (see page 29).

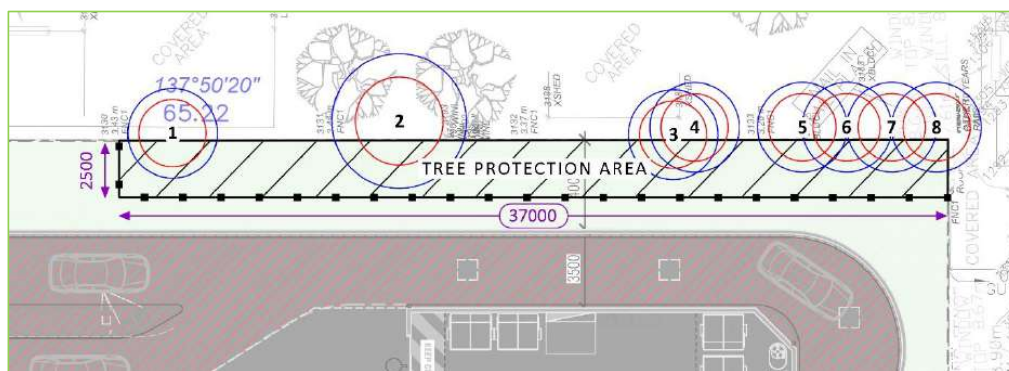


Figure 6.2. Recommended tree protection area

6.4. Trees located at 7-9 Nepean Highway

The TPZ and SRZ of trees 9 – 13 were calculated and drawn to scale; however, they are not considered to be relevant due to existing site conditions. There is a concrete retaining wall below the existing boundary fence and an abrupt change in levels between the two properties. It is expected that root development has been restricted to the property of origin where conditions are a lot more favourable. The trees are currently growing in a mulched garden and it is extremely unlikely that they would invest energy into developing roots below the retaining wall and into 5 Nepean Hwy where poor conditions would yield a low return of moisture and nutrients.

No part of the canopies overhang the boundary and the existing fence will provide sufficient protection for these trees throughout the development phase. Construction/replacement of a new boundary fence within TPZs should be carried out in accordance with the guidelines outlined in Appendix E.I. (see page 29).

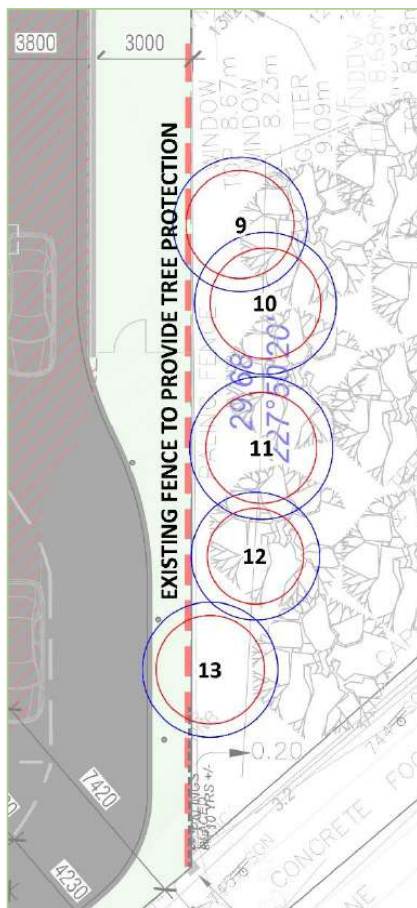


Figure 6.3. TPZ/SRZs of trees 9 – 13



Figure 6.4. Existing concrete surface abutting trees 9 - 13

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7. References

BDAI Architecture (2022). *Proposed Site & Floor Plan*. Revision: P3. Drawing No: TP-03. Project No: 21-040. Drawn: MN. Date: 27.09.2022.

Landchecker (2020). *Aerial Imagery*. Available at: <https://landchecker.com.au/> [Accessed 24 Mar 2020].

Matheny, N. and Clark, J. (1998). *Trees and development*. Champaign, IL: International Society of Arboriculture.

Peninsula Survey Group (2019). *Site Context Plan*. Version 2. Sheet 1 of 1. Ref. 6627/SC. Survey by: MQ/KQ (17/04/2019). Drawn by: MQ (26/04/2019).

Planning Property Report (2020). Department of Environment, Land, Water and Planning. Available at: <http://services.land.vic.gov.au/landchannel/download/1-Marine-Drive-Safety-Beach-Vicplan-Planning-Property-Report.pdf> [Accessed 24 Mar 2020].

Planning Property Report (2020). Department of Environment, Land, Water and Planning. Available at: <http://services.land.vic.gov.au/landchannel/download/2-Marine-Drive-Safety-Beach-Vicplan-Planning-Property-Report.pdf> [Accessed 24 Mar 2020].

Planning Property Report (2020). Department of Environment, Land, Water and Planning. Available at: <http://services.land.vic.gov.au/landchannel/download/1-5-Nepean-Highway-Safety-Beach-Vicplan-Planning-Property-Report.pdf> [Accessed 24 Mar 2020].

Planning Property Report (2020). Department of Environment, Land, Water and Planning. Available at: <http://services.land.vic.gov.au/landchannel/download/2-5-Nepean-Highway-Safety-Beach-Vicplan-Planning-Property-Report.pdf> [Accessed 24 Mar 2020].

Standards Australia (2007). *Pruning of amenity trees, AS 4373:2007*.

Standards Australia (2009). *Protection of trees on development sites, AS 4970:2009*.

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Appendix A. Recorded Tree Data

#	Botanical Name	Common Name	Origin	Age	DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Arb. Value
1	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	8	4 x 1	Fair	Fair	5 - 10	Low
2	<i>Ficus carica</i>	Common Fig	Exotic	Semi-Mature	25	4 x 4	Fair-Poor	Fair	5 - 10	Low
3	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	13	6 x 2	Poor	Fair	< 5	Low
4	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	10	4 x 1	Fair	Fair	10 - 20	Low
5	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	8, 9 (12)	5 x 2	Fair-Poor	Fair	5 - 10	Low
6	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	10	5 x 3	Fair-Poor	Fair	5 - 10	Low
7	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	7	4 x 2	Fair	Fair	10 - 20	Low
8	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	13	4 x 2	Dead	Fair	0	Low
9	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	8, 11, 11 (17)	3 x 2	Fair	Fair	10 - 20	Low
10	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	4, 4, 8, 10, 12 (18)	4 x 2	Fair	Fair	10 - 20	Low
11	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	11, 15 (19)	3 x 3	Fair	Fair-Poor	5 - 10	Low
12	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	8, 10 (13)	3 x 2	Fair	Fair-Poor	5 - 10	Low
13	<i>Melaleuca ericifolia</i>	Swamp Paperbark	Indigenous	Semi-Mature	2, 3, 10, 14 (18)	4 x 2	Fair	Fair	10 - 20	Low

Table A.A. Recorded tree data

DBH = Diameter @ Breast Height

H x S = Height x Spread

ULE = Useful Life Expectancy

The combined DBH as per AS 4970 for trees with multiple stems is provided in brackets

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Appendix B. Photographic Catalogue



Figure B.A. Tree 1 (Swamp Paperbark)



Figure B.B. Tree 2 (Common Fig)



Figure B.C. Trees 3 and 4 (Swamp Paperbarks)

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Appendix B. Photographic Catalogue (continued)



Figure B.D. Trees 5 - 8 (Swamp Paperbarks)



Figure B.E. Tree 9 (Swamp Paperbark)



Figure B.F. Tree 10 (Swamp Paperbark)

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Appendix B. Photographic Catalogue (continued)



Figure B.G. Tree 11 (Swamp Paperbark)



Figure B.H. Tree 12 (Swamp Paperbark)



Figure B.I. Tree 13 (Swamp Paperbark)

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Appendix C. Tree Descriptors

C.A. Botanical Name

The botanical name or binominal name of a plant, consists of the *genus* name followed by the *species* name.

Genus is the classificational term used for grouping one or a number of closely related species, all of which share the generic name.

Species is the basic unit in the classification of plants. A species is the specific type of plant within the larger grouping of a genus.

C.B. Common Name

The colloquial and informal name of a plant.

C.C. Origin

The naturally occurring origin of a plant.

Indigenous	The plant occurs naturally within the localized environment.
Vic Native	The plant occurs naturally within Victoria, outside of the localized environment.
Native	The plant occurs naturally within Australia, outside of Victoria.
Exotic	The plant occurs naturally outside of Australia.

C.D. Age

The general age of a plant, as determined by the consulting arborist.

Juvenile	The plant has been recently planted and is still establishing in the current environment.
Semi- Mature	The plant is established in its current environment and is actively growing.
Mature	The plant has reached the expected size for the species and location.
Senescent	The plant is over-mature and is in decline.
Dead	The plant is dead and can no longer respond to changes in its environment.

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C.E. Health

The general health and vigour of the plant, as determined by the arborist.

Very Good	The plant is exemplary of the species and performing to its full potential.
Good	Foliage of plant is entire, with good colour, very little sign of pathogens and of good density. Growth indicators are good i.e. Extension growth of twigs and wound wood development. Minimal or no canopy die back (deadwood).
Fair	The plant is showing one or more of the following symptoms; < 25% dead wood, minor canopy die back, foliage generally with good colour though some imperfections may be present. Minor pathogen damage present, with growth indicators such as leaf size, canopy density and twig extension growth typical for the species in this location.
Fair - Poor	Tree presents a combination of characteristics of both <i>Fair</i> and <i>Poor</i> .
Poor	Tree is showing one or more of the following symptoms of tree decline; > 25% deadwood, canopy die back is observable, discoloured or distorted leaves. Pathogens present, stress symptoms are observable as reduced leaf size, extension growth and canopy density.
Very Poor	Tree is in severe decline; > 55% deadwood, very little foliage, possibly epicormic shoots, minimal extension growth.
Dead	The plant is dead and can no longer respond to changes in its environment.

C.F. Structure

The structural integrity of the plant, as determined by the arborist.

Good	Trunk and scaffold branches show good taper and attachment with minor or no structural defects. Tree is a good example of the species with a well-developed form showing no obvious root problems or pests and diseases.
Fair	Tree shows some minor structural defects or minor damage to trunk e.g. bark missing, there could be cavities present. Minimal damage to structural roots. Tree could be seen as typical for this species.
Fair - Poor	Tree presents a combination of characteristics of both <i>Fair</i> and <i>Poor</i> .
Poor	There are major structural defects, damage to trunk or bark missing. Co-dominant stems could be present or poor structure with likely points of failure. Girdling or damaged roots obvious. Tree is structurally problematic.
Hazardous	Tree has a high likelihood of failure within the short term.

C.G. Arboricultural Value (Value)

The arboricultural value of the plant, as determined by the arborist.

High	The tree can be described by one or more of the following statements; <i>The tree is rare, ecologically important or botanically significant.</i> <i>The tree is associated with historical, commemorative or sentimental values.</i> <i>The tree is a prominent feature of the site and is visually remarkable.</i>
Moderate	The tree does not fulfil the criteria for <i>high</i> or <i>low</i> arboricultural value and can be described by <u>all</u> of the following statements; <i>The tree is a desirable species for the area and/or fulfills a useful purpose.</i> <i>The tree is established in an appropriate location.</i> <i>The tree is in reasonable health/vigour and of sound structure.</i>
Low	The tree does not fulfil the criteria for <i>high</i> significance and can be described by one or more of the following statements; <i>The tree could be replaced within ten years with an advanced nursery specimen.</i> <i>The tree is an undesirable and/or weed species in the area.</i> <i>The tree is a common species to the area and its removal would have a minimal, negligible or positive impact on the immediate and greater landscape.</i> <i>The tree is in an inappropriate location, or requires onerous management to merit its inclusion within the landscape.</i> <i>The tree is creating a nuisance or impacting on a fixed asset.</i> <i>The tree is dead, declining or adversely affected by pest/disease.</i> <i>The tree has developed a defective form or structural fault(s) that cannot be rectified by cost proportionate and industry accepted methods.</i> <i>The risk presented by the tree exceeds the benefit that the tree provides.</i>

C.H. Useful Life Expectancy

The extent of time that the plant is expected to make a positive contribution to the landscape on the assumption that the tree and its environment are perpetually unaltered by human interference, as determined by the arborist. Based on the concept created by Jeremy Barrell (*Barrell Tree Care, 2000*).

0 Years	Trees that are dead, in severe decline, hazardous, impacting a fixed asset, presenting an obstruction, posing weed potential or a combination of these characteristics. Should be considered for immediate removal.
< 5 Years	Trees that will require removal in the next 5 years for any of the reasons listed above.
5 – 10 Years	Trees that appear to be retainable for the next 5 – 10 years.
10 – 20 Years	Trees that appear to be retainable for the next 10 – 20 years.
20 – 30 Years	Trees that appear to be retainable for the next 20 – 30 years.
30 + Years	Trees that appear to be retainable for more than 30 years.

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Appendix D. TPZ / SRZ Dimensions

The TPZ and SRZ dimensions for all assessed trees were calculated as per Australian Standards – Protection of trees on development sites (AS 4970-2009) and are to be applied as radius from the center of the trunk at ground level.

Tree #	TPZ (mm)	SRZ (mm)
1	2000	1500
2	3000	1961
3	2000	1500
4	2000	1500
5	2000	1500
6	2000	1500
7	2000	1500
8	2000	1500
9	2099	1687
10	2213	1725
11	2232	1732
12	2000	1500
13	2109	1691

Table D.A. TPZ / SRZ dimensions

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Appendix E. Tree Protection Plan

E.A. Awareness of the Tree Protection Program

All personnel involved in the development process **must** attend an induction that conveys the importance of the tree protection program and the recommendations of this report.

Each induction **must** be recorded and stored appropriately.

E.B. Tree Removals

A reputable and insured contractor should be engaged to undertake the tree removals.

Tree removal methods **must not** impact on retained or off-site trees.

Stump removal methods **must not** impact on the existing roots of off-site trees.

E.C. Tree Pruning

The pruning of any tree under protection may occur on a requisite basis only.

The tree(s) **must** be pruned by a suitably qualified and experienced arborist and adhere to Australian Standards – Pruning of Amenity Trees (AS 4373:2007).

Pruning of trees located off-site **must** be undertaken in consultation with the tree's owner or custodian.

E.D. Tree Protection Fencing

Tree protection fencing **must** be installed to the full extent of the recommended TPZ(s) prior to any works occurring within the site.

The tree protection fencing **must** be a minimum of 1.5 metres high above ground level and be constructed of prefabricated wire mesh (or similar) with a high visibility plastic tape at the top or high visibility barricade mesh supported by a straining wire.

The tree protection fencing **must** be supported by steel fence posts or similar driven into the ground to create a fixed position. Fence posts and supports **must** have a diameter greater than 20mm and be located clear of roots.

Once erected, the tree protection fencing **must** be maintained in good condition.

E.E. Variations to the Tree Protection Fencing

It not practical or necessary to install tree protection fencing on adjoining properties. Only portions of a TPZ that occupy the subject property require protection.

The extent and specifications of tree protection fencing on public land (such as the road reserve) should be discussed with the relevant authority prior to installation.

Where an endorsed encroachment of a TPZ will occur, the tree protection fencing may be reduced by the minimum extent necessary to facilitate construction.

E.F. Tree Protection Fencing Signage

Explanatory signs **must** be displayed on tree protection fencing that clearly indicate that access is prohibited.

Signs **must** be displayed on each TPZ or at intervals not exceeding five metres.

Signs **must** remain legible and visible throughout the construction phase.

E.G. TPZ Restrictions

Access to a TPZ by personnel, vehicles or plant is prohibited, unless specified within this report.

The base area of the TPZ(s) **must not** be altered by cut, fill, trenching, fertilizers or liquid chemical overland flow, unless specified within this report.

Building materials and waste **must not** be stored within a TPZ.

E.H. Installation of Underground Services

Installation of underground services should be avoided or minimised within a TPZ where practical.

If the installation of underground services within a TPZ cannot be avoided, trench excavation **must** occur under the direct supervision of a suitably experienced and qualified arborist (minimum AQF level 5) and adhere to the following conditions:

- Tree protection fencing **must not** be reduced or dismantled to facilitate access prior to the supervising arborist arriving at the site and **must** be immediately re-instated once the trench has been backfilled.
- Excavation may occur by hand digging, air-spade, hydro excavation or hydraulic excavator (<= 3 tonne unless sufficient ground protection is provided).
- Care **must** be taken to retain all roots within the trench equal to or greater than 30mm in diameter unless authorised by the supervising arborist.
- Works **must** cease immediately if directed by the supervising arborist and alternative methods investigated.

E.I. Construction of Boundary Fences

Construction of boundary fences should be scheduled before or after the construction phase when tree protection fencing is not in place. Relevant TPZs **must** be marked on the ground with paint (or similar) to identify where sensitive construction measures are required.

Vehicles or machinery **must not** access a TPZ at any time.

The existing soil level within a TPZ **must not** be altered by cut or fill (*excluding post holes, see below*).

Post holes within a TPZ **must** be carefully excavated with hand tools and relocated as necessary to avoid severance of or injury to roots exceeding 30mm in diameter.

No part of the fence may be attached to a tree's trunk or branches. Voids left in the fence to accommodate a tree **must** consider the future growth of the tree.

Pruning of a tree to facilitate construction of a fence should be avoided if it is practical to do so. If pruning is required, refer to *E.C. Tree Pruning (page 28)*.

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E.J. Tree Roots Located Outside of TPZs

If tree roots are encountered outside of a TPZ, they should be protected where practical.

If the removal of a tree root outside of a TPZ is required, it **must** be severed cleanly with a sharp, disinfected hand saw.

Tree roots located outside of a TPZ **must not** be pulled, ripped, torn or smashed.

E.K. Reporting

Any physical damage to the trees under protection **must** be immediately reported to the project arborist and the determining authority. This may include physical damage to branches, trunks or roots.

Any noticeable change in the appearance of the trees under protection **must** be immediately reported to the project arborist and the determining authority. This may include dieback, discolouration, defoliation or wilting of foliage, excessive exudation of fluids, pest infestation, branch shed, root plate movement or a noticeable trunk lean.

Any confusion or uncertainty about the trees under protection or the protection program itself should be referred to the project arborist without hesitation.

E.L. Removal of Tree Protection Fencing

Upon completion of the construction phase, the tree protection fencing may be dismantled and removed from site.

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Appendix F. Assumptions & Limitations

Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant / appraiser can neither guarantee nor be responsible for the accuracy of the information provided by others.

Possession of this report or a copy thereof does not imply right of publication or use for any purpose by other than the person to whom it is addressed, without the prior expressed written or verbal consent.

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1 & 2 MARINE DRIVE AND 5 NEPEAN HIGHWAY, SAFETY BEACH

Acoustic Report

Prepared For

C/- INSIGHT PLANNING CONSULTANTS PTY LTD

DOC. REF: V468-03-P ACOUSTIC REPORT (R0)
22 APRIL 2023

Enfield Acoustics Pty Ltd
ABN 15 628 634 391
Ph: +61 3 9111 0090
PO Box 920
North Melbourne, VIC 3051



Project	1 & 2 Marine Drive and 5 Nepean Highway, Safety Beach
Subject	Acoustic Report
Client	c/- Insight Planning Consultants Pty Ltd
Document Reference	V468-03-P Acoustic Report (r0).docx
Date of Issue	22 April 2023

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1 Introduction and Scope

Enfield Acoustics has been engaged by the Applicant c/- Insight Planning Consultants to assess potential noise impacts relating to the proposed development at 1 & 2 Marine Drive and 5 Nepean Highway, Safety Beach.

The Subject Land is to be developed for the following uses:

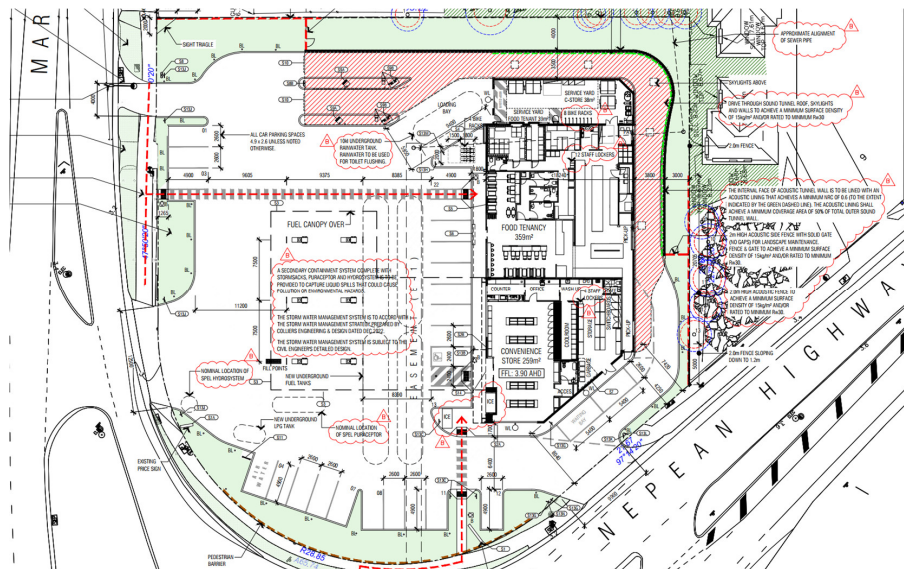
- Service station and kiosk (existing use)
- Drive through restaurant

Our office had supported a previous application on the Subject Land and prepared a statement of evidence (Evidence) for VCAT proceeding P1738/2020 (Doc Ref: V468-01-L Statement of Evidence, dated 21 June 2021) which was based on plans dated 20 April 2021. Another acoustic consultant, Marshall Day Acoustics, drafted an acoustic report in support of the previous application, of which technical data has been derived from.

Following the proceedings, a VCAT order was issued by the Tribunal to not to grant a permit, primarily based on grounds which were not related to acoustics, but rather traffic concerns. It is understood that this amended application has been prepared to resolve traffic issues raised and we note that this does not result in any substantive changes to the acoustic impacts.

The noise modelling and results have been updated to consider the current application plans for completeness. Our office has also reviewed the comments within the VCAT decision, which will be discussed in the sections to follow.

A site plan of the amended proposal is shown below.



This report has been prepared in reference to Plans prepared by BDAI dated 21 April 2023.

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2 Site Context

Enfield Acoustics visited the Subject Land on 24 February 2021 to survey nearby sensitive uses, which were identified as follows:

Tag	Location of Sensitive Use	Direction	
R1	3 Marine Drive	Northeast	Double-storey dwelling
R2	2/7 Nepean Highway	Southeast	Double-storey dwelling
R3	1/7 Nepean Highway	Southeast	Double-storey dwelling

Refer to the site map below for locations of nearby sensitive uses.



Given that the sensitive uses identified above are the closest to the Subject Land, it is intrinsic that compliance at these locations would also result in compliance at all other possible sensitive uses proximate the Subject Land.

Our assessment also considers noise impacts to the upper-levels of the identified sensitive uses, noting that this would be representative of 'worst-case' impacts.

Long-term unattended noise monitoring was previously conducted by Marshall Day Acoustics (MDA Doc Ref: Lt 001 R01 20190991 dated 21 February 2020) for the Subject Land. We assess that the location of monitoring is considered conservative and as such, appropriate to adopt in our assessment for the derivation of noise limits.

The results of the unattended noise monitoring conducted by MDA is reproduced below:

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Table 15: Average measured background levels, dB LA90

Date	Day	Period	
		Evening	Night
Friday 18 October 2019	56	53	52
Saturday 19 October 2019	54	50	52
Sunday 20 October 2019	-	47	38
Monday 21 October 2019	44	41	36
Tuesday 22 October 2019	44	42	39
Wednesday 23 October 2019	45	43	38
Thursday 24 October 2019	49	47	48
Friday 25 October 2019	48	44	52
Saturday 26 October 2019	60	53	52
Sunday 27 October 2019	-	48	38
Monday 28 October 2019	44	42	38
Tuesday 29 October 2019	46	-	-
Lowest average, dB LA90	44	41	36

3 Policy Requirements

3.1 Noise Protocol

Noise from any commercial and/or industrial use must comply with the EP Regulations 2021 and *Publication 1826: Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues* (Noise Protocol).

Zoning levels and resulting noise limits at identified sensitive uses have been calculated in accordance with the methodologies under the Noise Protocol, as follows:

Period	Zoning Level	Background Noise Level	Noise Limit
'Day' Period 7am to 6pm (Monday to Saturday)	53 dB(A)	44 dB(A) 'Neutral'	53 dB(A)
'Evening' Period 6pm to 10pm (Monday to Saturday) 7am to 10pm (Sundays)	47 dB(A)	41 dB(A) 'Neutral'	47 dB(A)
'Night' Period 10pm to 7am (All days)	42 dB(A)	36 dB(A) 'Neutral'	42 dB(A)



In our experience, sensitive uses located close to arterial roads are likely to be classified as 'Neutral' or 'High', and are unlikely to be classified as 'Low'. Based on the background noise levels measured by MDA and in accordance with the Noise Protocol methodology, the classification of the ambient environment is 'Neutral'.

To this end, the noise limits are taken to be the zoning level over all periods.

The Noise Protocol considers 30-minute average energy noise emissions, meaning that the relevant assessment metric being considered is $L_{Aeq-30min}$, dB(A).

3.2 Sleep Disturbance

Given that operation could occur during the 'Night' period and noise emissions could be transient, it is appropriate that sleep disturbance impacts are also considered in our assessment.

No specific policy exists in assessing noise impacts from service stations, however 'Sleep Disturbance' criteria derived from the NSW Road Traffic Policy can be used as a method of assessing the likelihood of noise impacts for short duration or transient events.

The Sleep Disturbance assessment trigger of L_{max} 65dB(A) outside habitable room windows is often used to determine if transient noise emissions are likely to cause adverse impacts during the most sensitive 'Night' period (10pm to 7am). However, for very infrequent events of 1-2 during the 'Night' period, it is generally accepted that outdoor noise levels of up to 80dB(A), L_{max} do not impact on health and wellbeing.

4 Assessment

4.1 Noise Sources

Potential noise sources from the proposal include:

1. Fuel tanker delivery;
2. LPG pump
3. Delivery vans
4. Waste trucks
5. Passenger vehicles
6. Patron noise;
7. Customer ordering device (COD); and
8. Mechanical plant noise associated with the various uses.

It is noted that noise emissions from passenger vehicle movements are not subject to Noise Protocol assessment (not a scheduled noise source). Regardless, our assessment will include noise from passenger vehicles in our assessment for completeness.

In our experience, service stations emit relatively low noise levels. This is intrinsic given:

- Fuel stations are commonly located at residential interfaces
- Complaints from such sites are not common

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- Domestic boundary fences are commonly sited

Observations from other similar service stations indicate that noise emissions from petrol bowsers and air compressors (from tyre pressure gauges) are barely audible at adjoining residential properties. Further, their infrequent use during the sensitive hours of the 'Night' period infers that the risk of adverse noise impacts from these sources is low.

With regards to fuel deliveries, unleaded and diesel fuel deliveries do not typically emit appreciable levels of noise where they are gravity fed (i.e. truck engines are turned off during filling). LPG however, is typically pumped into storage tanks using the trucks onboard pumps which can generate appreciable levels of noise.

4.2 Noise Modelling

The following Sound Power Levels (SWL) used in our assessment are summarised as follows:

Noise Source	Assumptions	Sound Power Level
Fuel tanker delivery	Up to 1 delivery truck per 30 min	106 dB(A) $L_{\max}$ -passby
LPG pump	Continuous over 30 minutes	92 dB(A) $L_{\text{eq-30min}}$
Drive through loudspeaker	Up to 20 customers per 30min (peak day/evening dual COD use), reducing by 50% during the night hours	81 dB(A) $L_{\text{eq-30min}}$
Waste truck	Up to 1 waste collection vehicle per 30 min	101 dB(A) $L_{\max}$ -passby
Waste collection	Up to 1 waste collection per 30 min	96 dB(A) $L_{\text{eq-30min}}$
Medium sized delivery vans	Up to 1 van per 30 min	96 dB(A) $L_{\max}$ -passby
Medium sized AC condenser	Continuous over 30 minutes	72 dB(A) $L_{\text{eq-30min}}$
Passenger vehicle passby	According to travel paths of drive-through	90 dB(A) $L_{\max}$ -passby
Car door slams	Occurring at carpark bays closest to identified sensitive uses	98 dB(A) $L_{\max}$
Loud conversations (patron noise)	Occurring at northern carpark bay and drive-through waiting bay	98 dB(A) $L_{\max}$
Passenger vehicles (mildly accelerating)	Located at various locations across carpark	85 dB(A) $L_{\max}$ -passby

Based on the assumptions above, 3D noise computational model has been generated using the software package CadnaA. The model considers acoustic propagation factors including attenuation from screening and buildings. The propagation distances here are too short that weather effects do not require consideration.

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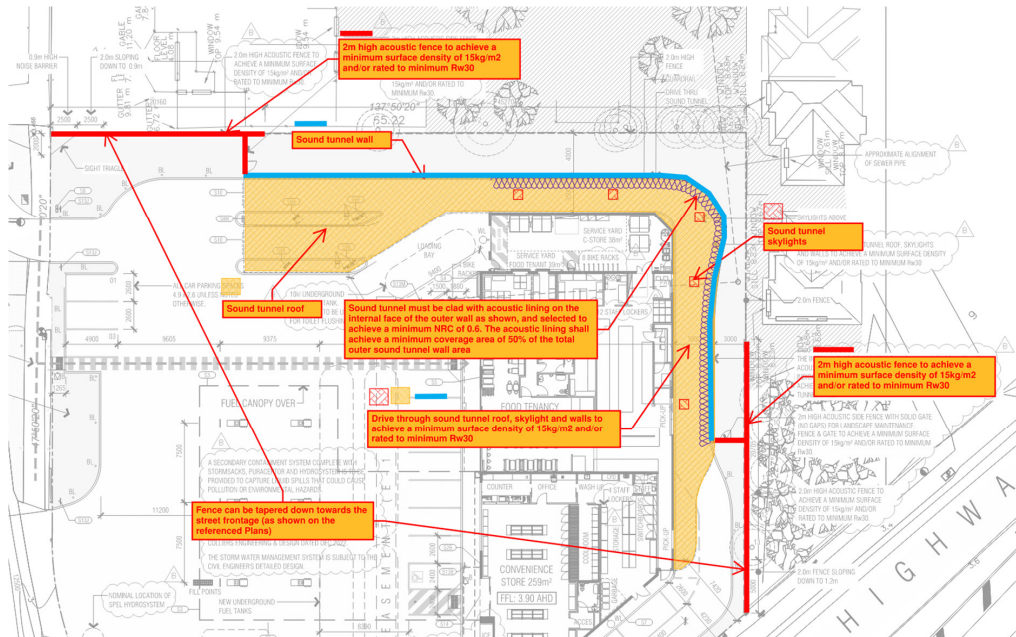
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4.3 Recommendations

To assist in mitigating noise impacts from the proposal, a series of acoustic treatment and/or controls have been developed together with the Applicant and reproduced here for clarity:

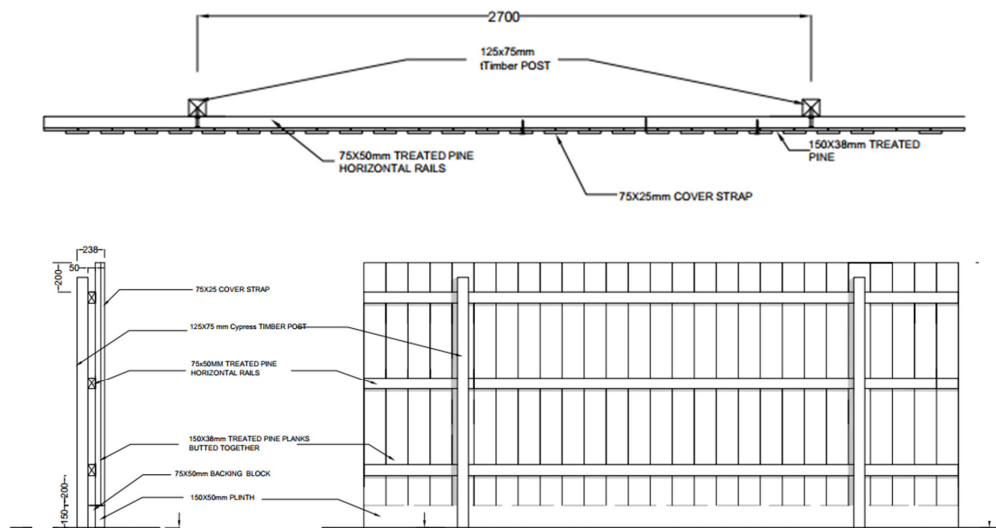


Enfield Acoustics confirms that the above acoustic mitigation has been coordinated on the Plans.

All acoustic screening elements shall be constructed as follows:

1. Using fibre cement sheeting, treated timber, concrete, transparent acrylic panels, glass, profiled sheet cladding or any cladding material as long the selected material (or combined skins) has a mass of at least 15kg/m^2 and/or achieving a minimum acoustic performance of R_w30 ;
2. Screening shall have no gaps or holes in it, or the likelihood of such occurring through natural causes or deformations, thus allowing noise to pass through;
3. Boundary fencing and abutting landscaping must be designed and built in an acceptable manner so that noise will not pass underneath it;
4. Any butt joints shall be sealed with a fire-rated weather proof mastic or an overlapping piece of material meeting the mass requirements of 15kg/m^2 (minimum 35mm each side of the butt joint); and
5. Where multiple cladding layers are used (e.g. FC sheeting over timber paling fence), joints in the cladding materials shall not coincide.

An example detail for an acoustic-grade timber paling fence is shown below:



The following controls to hours are also recommended as part of the Application:

Noise Source	Recommended Hours
Waste collection	'Day' period only 7am to 6pm (Monday to Saturday)
LPG fuel deliveries	Day' period only 7am to 6pm (Monday to Saturday)
Regular fuel and store deliveries	'Day' and 'Evening' only 7am to 10pm (Monday to Sunday)

4.4 Results of Assessment

Inclusive of the proposed treatment and/or controls shown in Section 4.3, the results of our modelling indicate that the Subject Land can comply with the requirements of the Noise Protocol and accepted sleep disturbance thresholds.

A summary of our results is presented below.

Noise Protocol Assessment

Inclusive of the restriction to hours above, worst-case noise levels have been modelled as follows:

Location	Effective Noise Level, 'Day' Period [^] L _{Aeq}	Effective Noise Level, 'Evening' Period [^] L _{Aeq}	Effective Noise Level, 'Night' Period L _{Aeq} ?
R1	53 dB(A)	47 dB(A)	40 dB(A)
R2	39 dB(A)	34 dB(A)	29 dB(A)
R3	41 dB(A)	39 dB(A)	36 dB(A)
Noise Protocol Limit	53 dB(A)	47 dB(A)	42 dB(A)
Compliance?	✓	✓	✓
Notes:	[^] A tonal adjustment of +2dB has been applied to the results for the Day/Evening when deliveries or waste collection would occur		

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It is noted that actual margins of compliance are likely to be greater than predicted above given that all activities are assumed to occur within the same 30-minute period in our model. In reality, this is an unlikely scenario given deliveries and waste collection are likely to occur at different times (e.g. not coinciding with each other).

Sleep Disturbance Assessment

Item	R1	R2	R3
COD	46 dB(A)	43 dB(A)	38 dB(A)
Car door slams	61 dB(A)	45 dB(A)	43 dB(A)
Passenger vehicle passbys	59 dB(A)	43 dB(A)	52 dB(A)
Conversation noise	60 dB(A)	45 dB(A)	50 dB(A)
Sleep Disturbance Threshold	65 dB(A)	65 dB(A)	65 dB(A)
Compliance?	✓	✓	✓

Noise modelling maps are presented in Appendix A.

Based on the results of the noise modelling, we are satisfied that the proposal will not result in adverse noise impacts, noting that extensive levels of acoustic treatment is proposed as part of the Application.

There is also opportunity to turn off the COD during the sensitive 'Night' hours should there be a requirement for further mitigation, however the modelling suggests that this is not required. Further, the volumes of COD's can be lowered should there be complaints and/or non-compliance in the future.

4.5 VCAT Decision Comments

We refer to the VCAT Decision (VCAT Ref: P1738/2020) in this section as it provides some relevant context given we do not consider the amended application to be a material change with regard to noise impacts.

-
- 174 AA Holdings accepted Mr Tardio's recommendations to reduce the convenience restaurant operating hours during the off season, together with switching off the 24-hour drive-thru electronic customer ordering service between 10 pm to 6 am. Ms Jordan also supported these recommendations. If we had decided to grant a permit, we would have supported the conditions and recommendations.
- 176 The reduced operating hours for the convenience restaurant during the off season are also a positive element to assist in noise attenuation from this building. We agree with Ms Jordan and Ms Peterson that this action will result in fewer patrons being present on the site at night during these periods. This would assist in lowering the level of patron noise emanating from the site at these times.



While our assessment indicates that this is not strictly required from a compliance perspective, the reduction of operation hours and the COD between 10pm to 6am would help minimise noise impacts at all identified sensitive uses.

It is recommended that this is reflected in the Site Management Plan (SMP), providing that this does not impede on the Applicant's operations.

177 Other noise mitigation measures also could be considered. AA Holdings tendered a draft Site Management Plan. It could be improved by independent testing and analysis. It could also be improved by inclusion of an assessment of impact from car doors and general patron movement and any mitigating measures. We encourage this work as part of any new application.

It is noted that the impact from car door slams and patron noise was already assessed in the Statement of Evidence prepared by our office. The above impacts are also assessed in this report (Refer to Section 4.2 for a list of noise sources assessed). With regard to independent testing, we note that measurements undertaken by our office indicates consistent test data for these sources when compared to the levels provided in the MDA report.

A comparison of the adopted Sound Power Levels (SWL) between MDA and Enfield was provided in the Evidence, noting that source noise levels were generally within a reasonable tolerance. The exception is with noise from passenger vehicles where it was noted that the MDA data was reflective of anti-social and aggressive driving behaviour, which is unlikely to occur in practice (at least frequently).

178 In relation to draft permit conditions, we record that Mr Tardio did not oppose conditions requiring the specification of the minimum mass of the acoustic fence, acoustic ratings of the walls and roof of the customer ordering device point, the use of three car spaces nearest the northern boundary for staff only after hours, fuel deliveries restricted to evenings, and low flow LPG pump and a noise complaints recording system in a site management plan.

With regards to the specification of acoustic screening, the required annotations on the Plans are provided in Section 4.3 of this report.

It is recommended that the controls for staff car parking, fuel deliveries and noise complaints recording system is reflected on the SMP.



4.6 Site Management Plan (SMP)

The following shall be incorporated into the SMP:

Item	Type of use	Restrictions/Controls
Permitted Hours for Waste Collection and Deliveries	LPG Fuel Deliveries	Between 7am to 6pm (Monday to Saturday) only
	Waste Collection	Between 7am to 6pm (Monday to Saturday) only
	Regular fuel (gravity fed) and store deliveries	Between 7am to 10pm (Monday to Sunday) only
Staff Carparking	Northern 3 Bays	Bays 01 to 03 shall be designated for staff use only. Signage should be displayed to notify patrons of this designation
Reduced Hours for Drive-through (off season)	COD	Where the use of the drive-through is expected to be limited during the night hours (e.g. during off season), the electronic COD's shall be switched off between 10pm to 6am. All orders shall be made manually through the drive-through windows.
Signage	Waiting Bay COD areas	Signage shall be posted within these areas to remind patrons to be mindful and respectful of adjacent neighbours

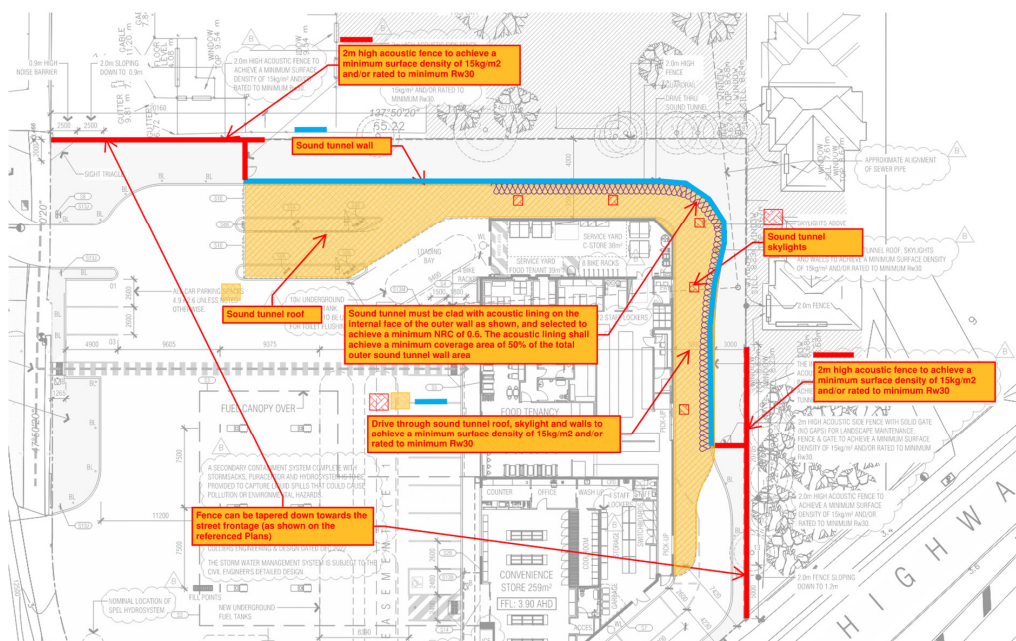


5 Conclusion

Enfield Acoustics is satisfied that the proposal will not result in adverse noise impacts and a permit can be issued, noting that extensive acoustic treatment has been proposed for the development.

The following is a summary of our recommendations for the proposal:

Acoustic Treatment



1 & 2 Marine Drive and 5 Nepean Highway, Safety
Beach
Acoustic Report

V468-03-P Acoustic Report (r0).docx

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Site Management Plan

Item	Type of use	Restrictions/Controls
Permitted Hours for Waste Collection and Deliveries	LPG Fuel Deliveries	Between 7am to 6pm (Monday to Saturday) only
	Waste Collection	Between 7am to 6pm (Monday to Saturday) only
	Regular fuel (gravity fed) and store deliveries	Between 7am to 10pm (Monday to Sunday) only
Staff Carparking	Northern 3 Bays	Bays 01 to 03 shall be designated for staff use only. Signage should be displayed to notify patrons of this designation
Reduced Hours for Drive-through (off season)	COD	Where the use of the drive-through is expected to be limited during the night hours (e.g. during off season), the electronic COD's shall be switched off between 10pm to 6am. All orders shall be made manually through the drive-through windows.
Signage	Waiting Bay COD areas	Signage shall be posted within these areas to remind patrons to be mindful and respectful of adjacent neighbours

Inclusive of the recommendations above, we are satisfied that the risk of adverse noise impacts from the proposal can be mitigated to comply with the Noise Protocol and Sleep Disturbance Thresholds. We assess that the referenced Plans are not materially different with regards to noise impacts to that assessed in the previous application by our office, noting that the refusal to grant a permit was not related to acoustic impacts.

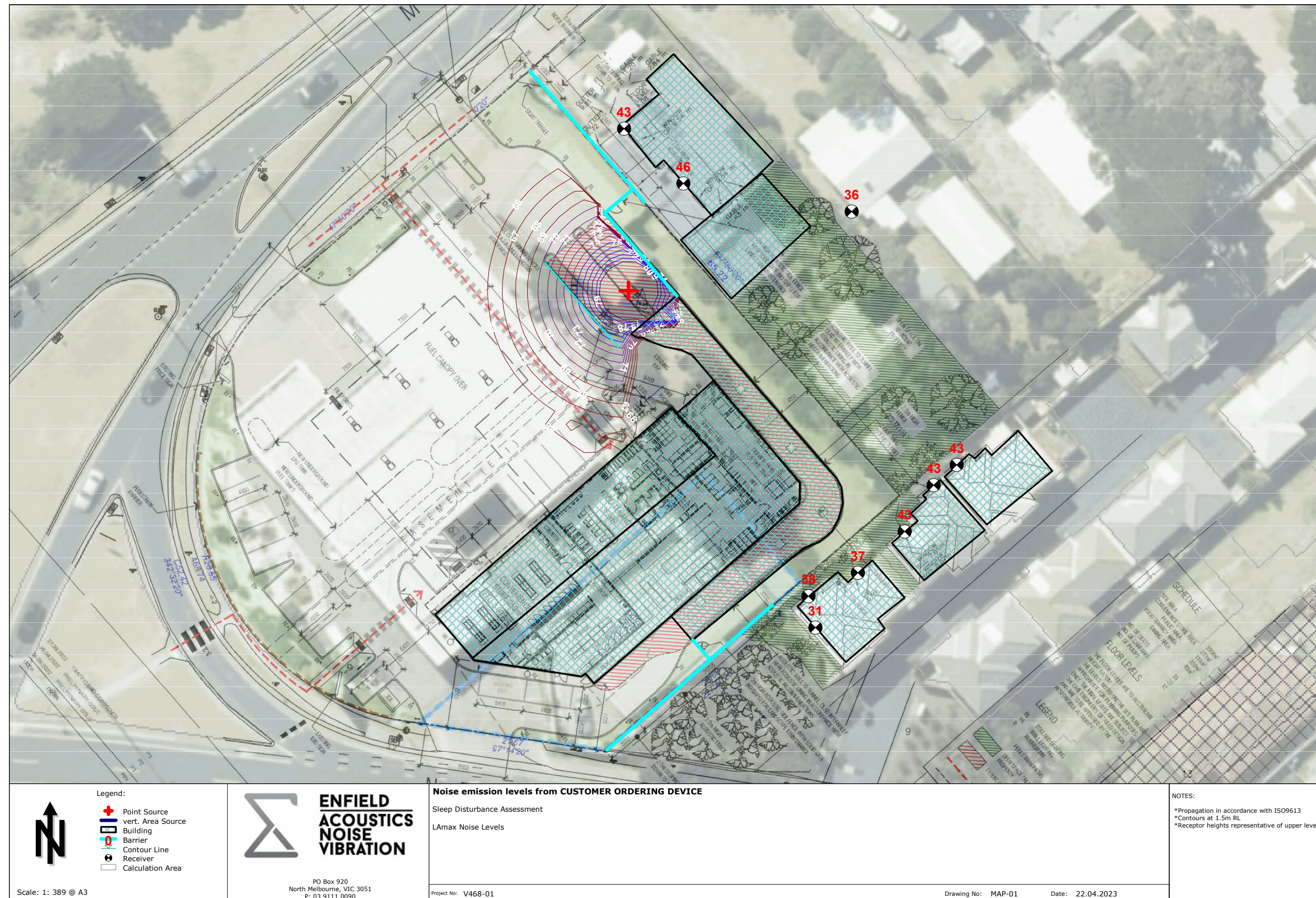


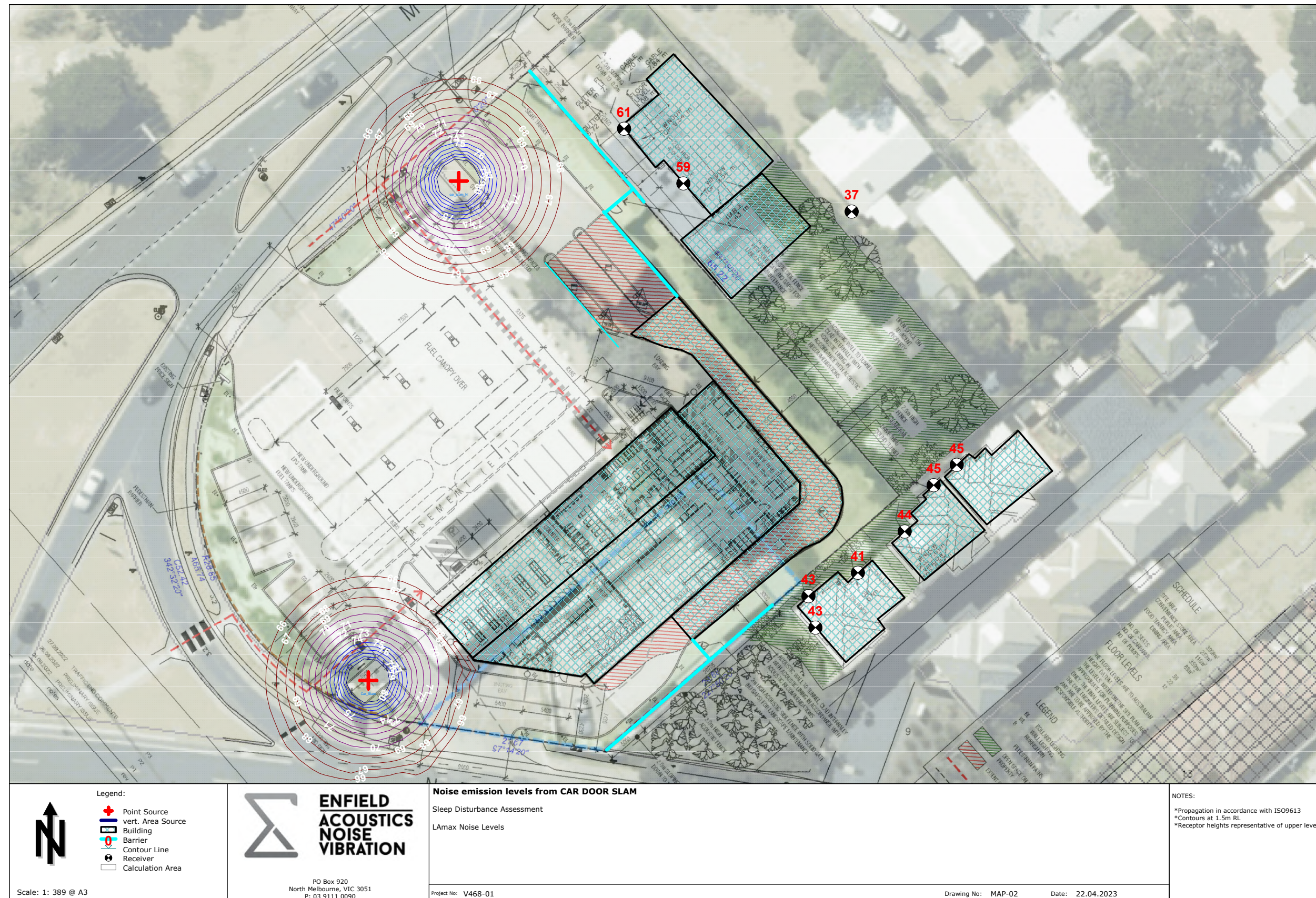
Appendix A: Noise Modelling Maps

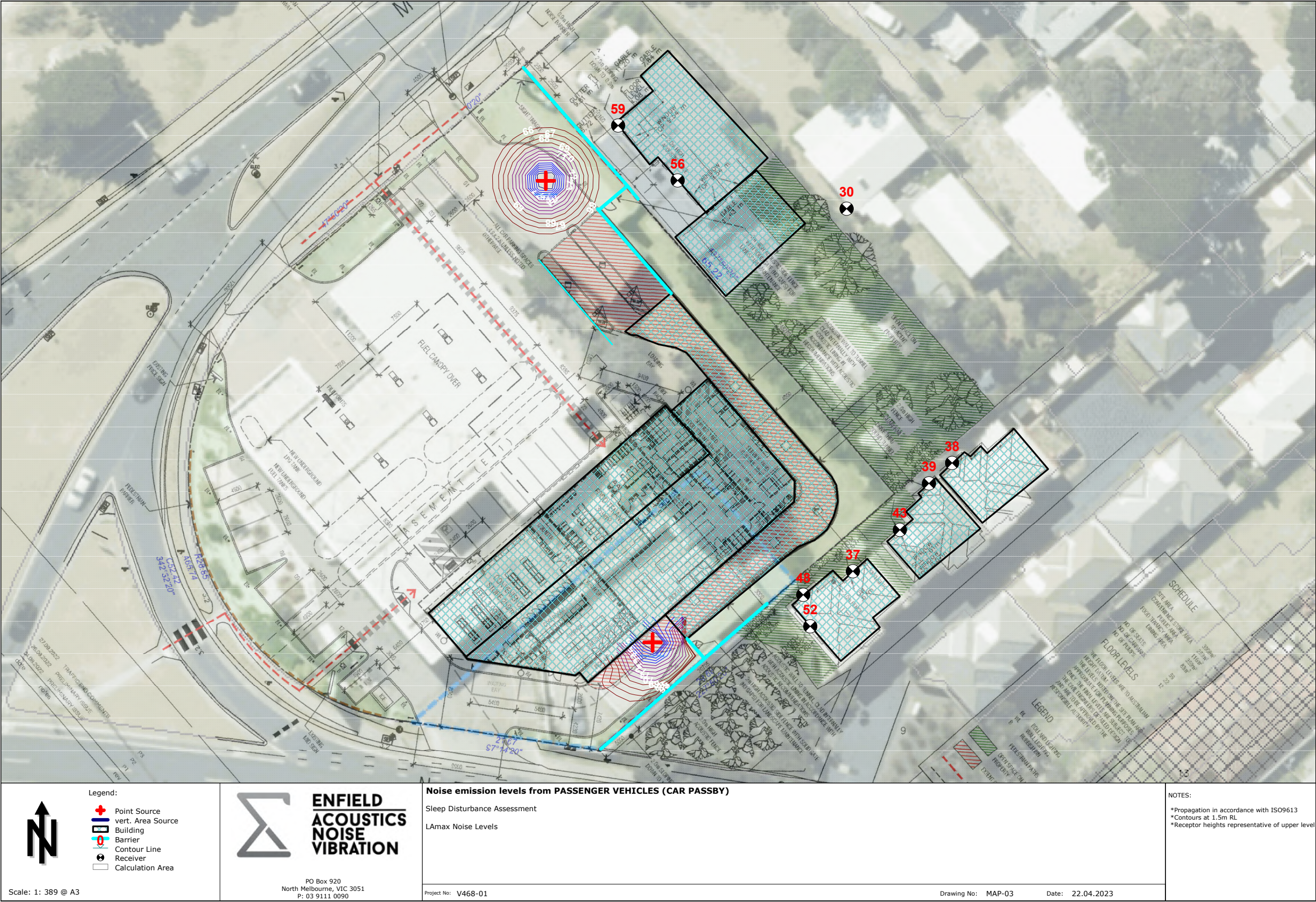
1 & 2 Marine Drive and 5 Nepean Highway, Safety
Beach
Acoustic Report

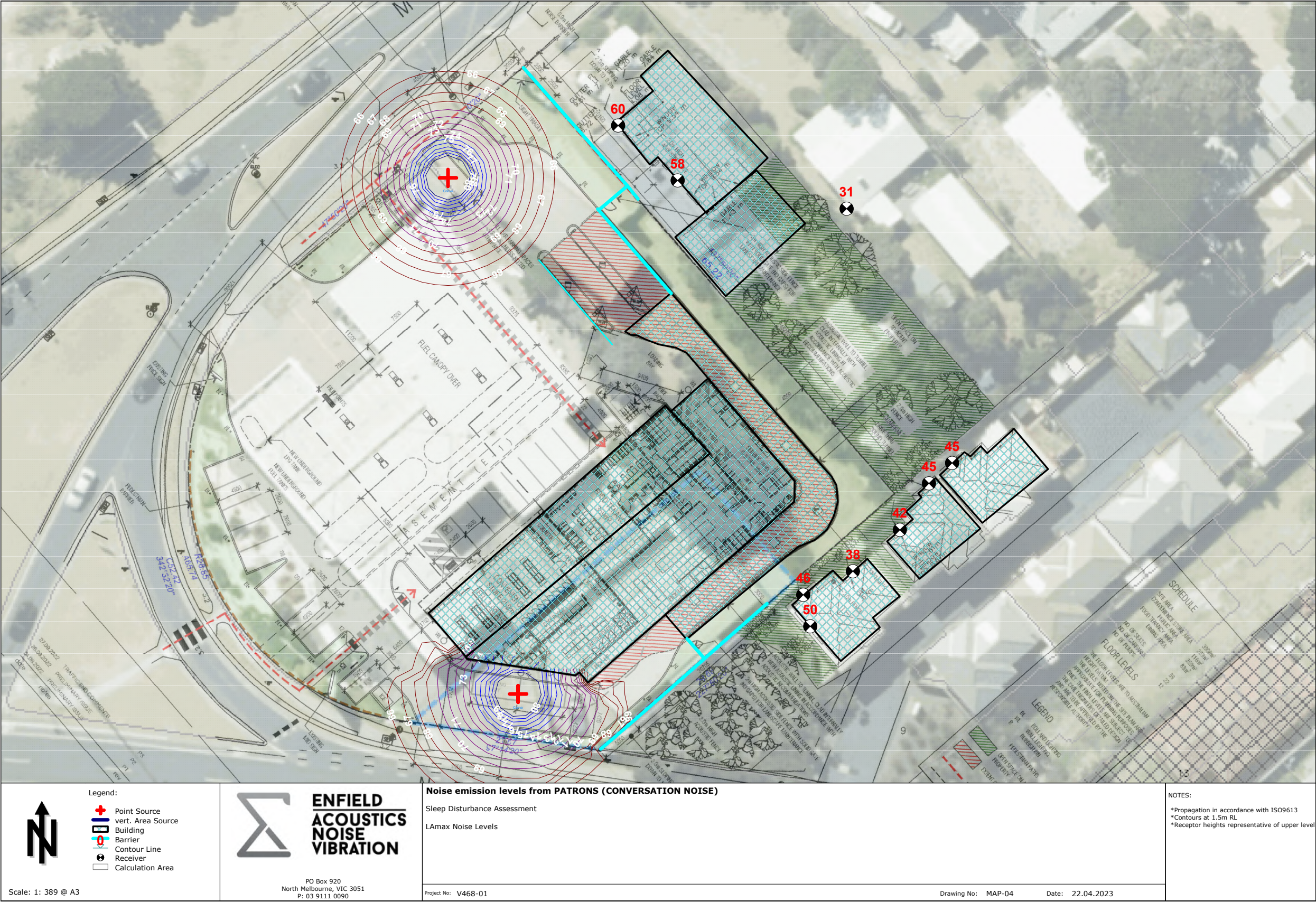
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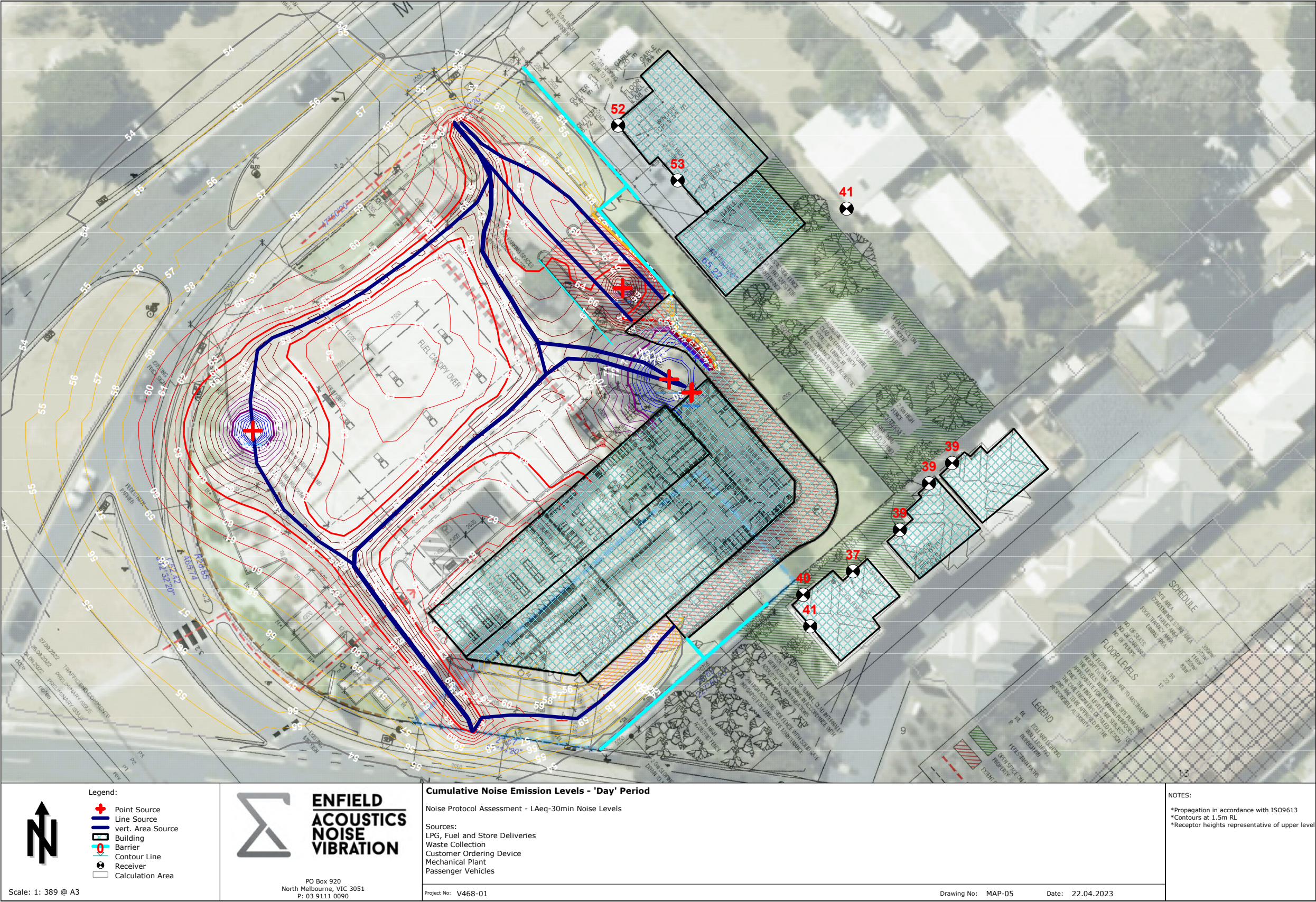
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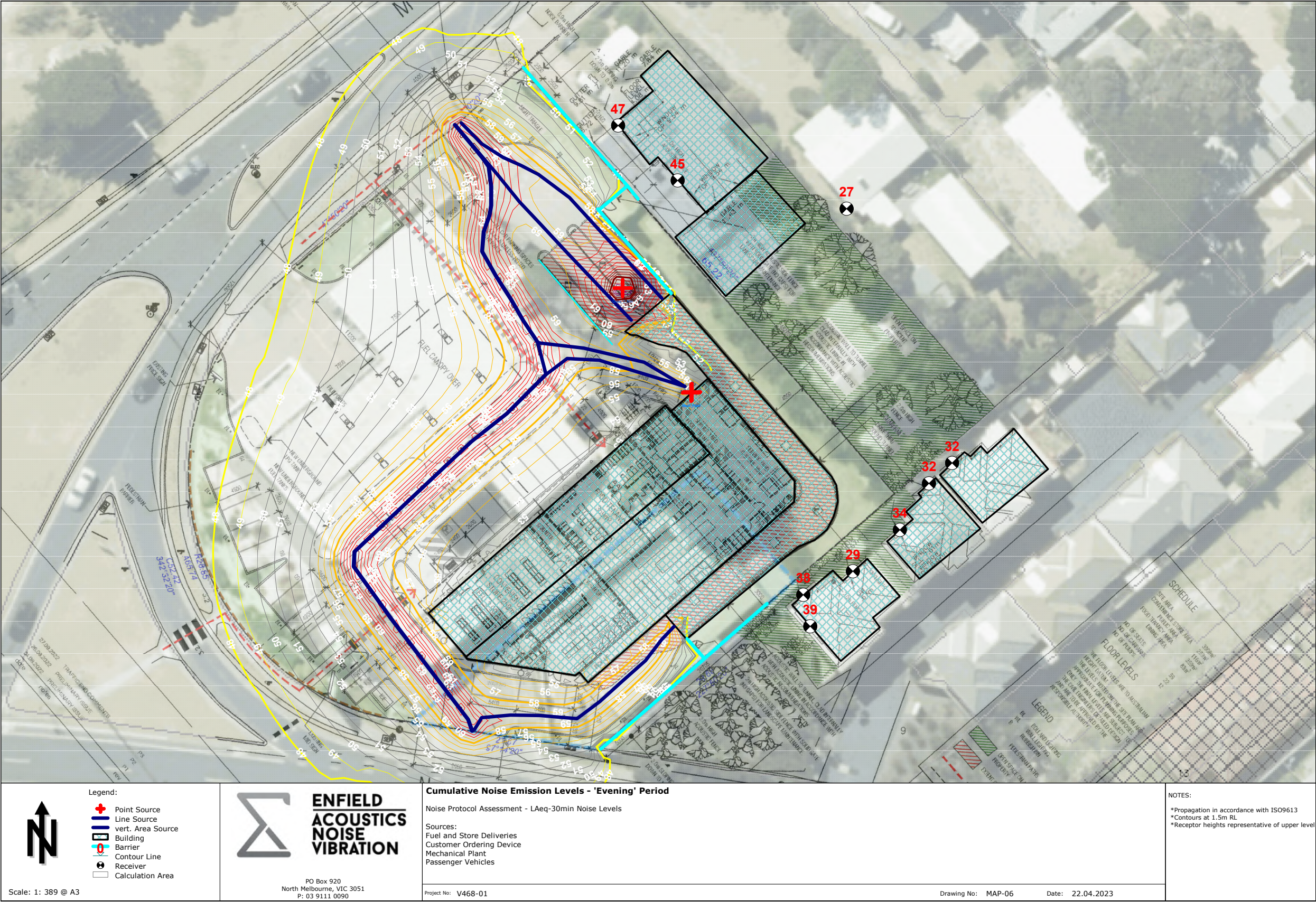


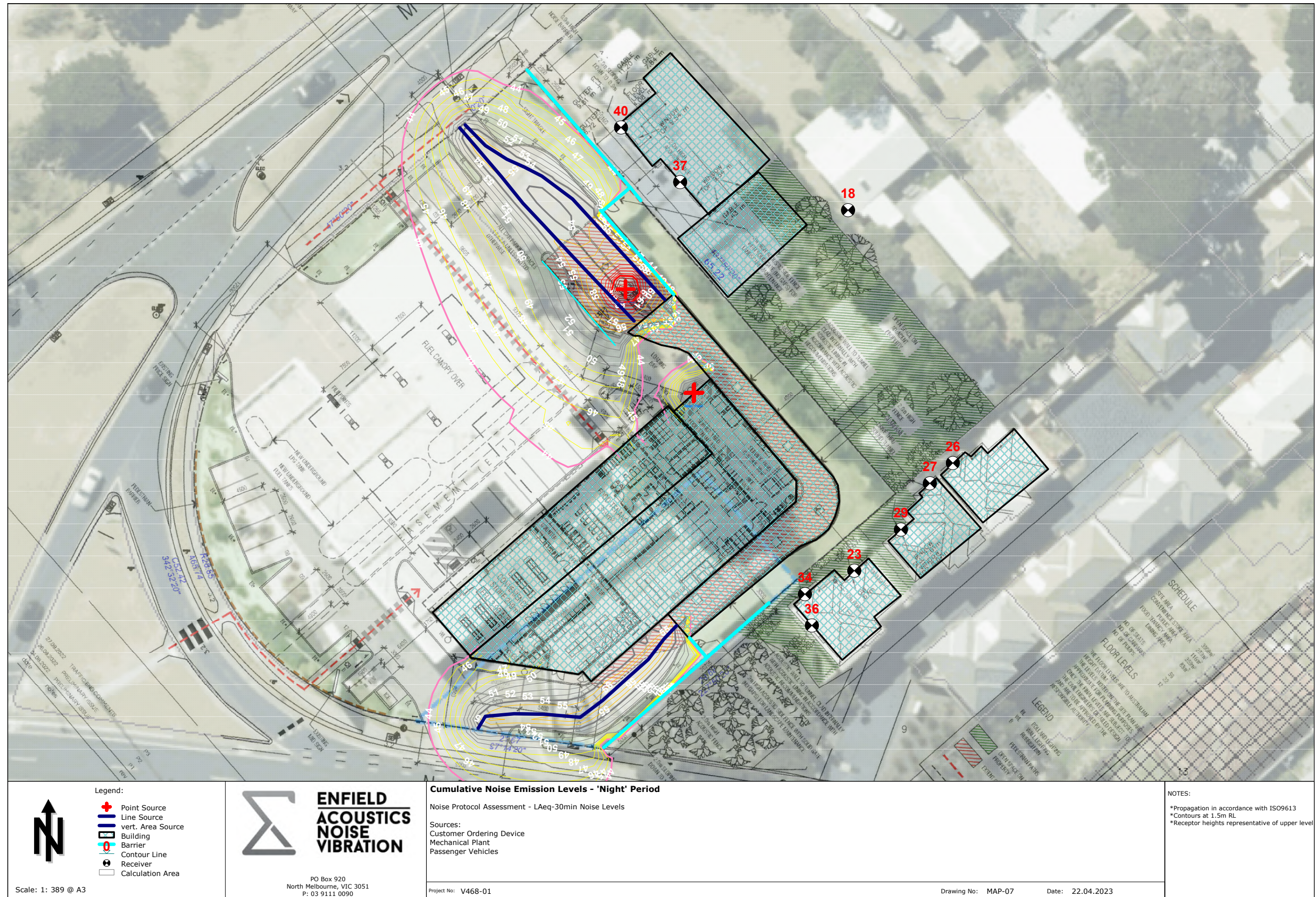












Service Station Site Management Plan
Land: 1-2 Marine Drive and 5 Nepean Highway, Safety Beach

INTRODUCTION

This Site Management Plan (**Plan**) has been prepared by AA Holdings Pty Ltd (**AA Holdings**) to outline management practices for the service station at the Land.

The areas covered by this Plan include:

1. **Surveillance**
2. **Site Management**
3. **Staff Training**
4. **Hours of Operation**
5. **Deliveries and Waste Collection**
6. **Signage**
7. **Noise Management and Monitoring**
8. **Complaints Management**

AA Holdings acknowledges:

- the need to ensure the safety and security of the customers and staff of the service station; and
- the need to protect and enhance the amenity of the surrounding community.

AA Holdings aims to achieve this through the management measures described in detail below.

Compliance with this Site Management Plan will be required of the operator of the service station.

1. SURVEILLANCE

CCTV security cameras will be positioned to the satisfaction of the Responsible Authority, both within the service station building and its surrounds. The CCTV system will be in operation 24 hours a day, 7 days a week and will be monitored by staff of the service station or remotely by management or contracted security services.

Video footage will be retained for a minimum period of 31 days, to allow for efficient security reviews. Footage may be retained for longer periods for further review or for use in staff training.

Car park and external lighting surrounding the service station itself is to be installed and baffled in accordance with the recommendations of the Arup Light Spill Report to ensure no unreasonable off-site amenity impacts and maintained to the satisfaction of the Responsible Authority.

Car park and external lighting will ensure:

- the safe and orderly arrival and departure of patrons; and
- legibility for patrons of the service station and patrons of the adjoining convenience restaurant overnight; and

- visibility to all areas of the site and avoid opportunities for loitering.

The landscaped areas between the drive-through tunnel and the boundary will be fenced-off and secured to prevent access by the public and avoid opportunities for loitering. Secure access will be available for authorised personnel (via lockable gates) to allow for regular pruning and maintenance of vegetation, removal of rubbish and maintenance/repair of acoustic fencing (as required).

The 24-hour operation of the service station will allow for passive surveillance of the site and surrounding area overnight.

2. SITE MANAGEMENT

Plant and equipment, drainage systems and other equipment associated with the operation of the service station will operate in accordance with all permit conditions and other regulations and requirements and shall not affect the amenity of the area by way of noise, vibrations, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water or waste products. Plant shall be installed, controlled and managed to comply with the relevant noise regulations, including State Environment Protection Policy No. N-1.

Ventilation and other equipment will be inspected at regular intervals by suitably qualified technicians to ensure noise, odour and other emissions are being effectively controlled.

The service station operator will maintain a logbook recording any incidents of concern, including:

- vandalism including damage to or destruction of property or vegetation;
- on-site graffiti; and
- complaints in relation to the operation of the service station (including complaints about noise, odour or other emissions) or behaviour of the staff or patrons of the service station.

The service station operator must provide a 24-hour phone number to allow direct communication with a representative of the service station.

The service station operator's record will include the response or action taken to address the incident, the time taken for any repair, replanting or removal of offending material and any mitigation measures put in place to avoid or minimise the risk of a repeat incident.

The frequency of incidents, together with the respective responses, will be considered as part of the operator's internal performance reviews to ensure the maintenance of acceptable standards. The logbook maintained by the service station operator will also be available for inspection by the Responsible Authority upon request.

3. STAFF TRAINING

The safety of the staff and customers of the service station is paramount in its operation. The operator will provide training to all staff upon their initial employment orientation and ongoing throughout their employment in the areas of:

- customer satisfaction;
- handling complaints from customers, neighbours and other members of the public;
- ensuring the needs of customers and staff with disabilities or other special needs are met;
- managing difficult customers and other anti-social behaviour at the service station site; and
- unlawful behaviour such as theft, or disruptive incidents.

Staff training will be held on a regular basis to reinforce safety and security procedures for the service station. Employees will be encouraged to report any suspicious activity of persons in and around the area to the duty manager, AA Holdings and/or the local police.

Every manager appointed by the operator to manage the premises must be fully briefed on the contents and operation of this Plan and any planning permission in force for the site, in addition to any accredited fire and first aid training and the like.

If matters escalate beyond the control of the manager on duty or are of sufficient concern, it will be standard procedure for the manager to call the police to provide further assistance.

4. HOURS OF OPERATION

The service station will operate 24 hours/day, 7 days/week.

5. DELIVERIES AND WASTE COLLECTION

To ensure noise from the service station does not unreasonably affect the amenity of the surrounding area, the following applies unless otherwise agreed in writing by the Responsible Authority:

- LPG Fuel deliveries may only occur between 7am to 6pm (Monday to Saturday);
- regular fuel (gravity fed) deliveries may only occur between 7am to 10pm (Monday to Sunday);
- the loading and unloading of store delivery vehicles may only occur between 7am to 10pm (Monday to Sunday); and
- waste collection must be restricted to non-peak periods between 7am and 6pm Monday – Saturday or otherwise to time limits specified in the planning permit and the relevant EPA noise control guidelines.

Any waste collection and the loading and unloading of store delivery vehicles must occur within the designated loading dock.

6. SIGNAGE

The operator of the business shall erect signage at the entry doors to the service station requesting that patrons of the service station move around the site quietly and respect the local neighbourhood during the late evening and early morning hours.

Signage within the site will notify customers the CCTV security cameras are operating around the site.

Signage within the site will detail how customers and neighbours may provide feedback and/or comments.

7. NOISE MANAGEMENT AND MONITORING

The operator of the service station must co-operate with the operator of the convenience restaurant to ensure that the three car spaces nearest to the northern boundary are only used by staff between 10pm and 7am.

Within 6 months of the commencement of the operation of the convenience restaurant, acoustic testing shall be carried out by a suitably qualified person to confirm compliance with the applicable environment protection regulations. This testing will include:

- an assessment of noise generated by car doors and general patron movement at the site against the established sleep disturbance criteria; and
- any recommend mitigation measures which may be necessary to minimise impacts.

The service station operator must co-operate with the operator of the convenience restaurant to ensure any recommended mitigation measures are implemented to the satisfaction of the Responsible Authority.

8. COMPLAINTS MANAGEMENT

Feedback with regard to the operation of the service station will be welcomed and customers are encouraged to speak with management about any concerns.

The service station telephone number is to be provided on the signs to be erected at the service station building. Complaints received, along with measures taken to address them, shall be recorded in the logbook and dealt with in accordance with any other internal process of the operator.

In circumstances where a complaint is not able to be resolved immediately, contact details of the complainant will be requested and the operator will use best endeavours to:

- address the complaint within a 24-hour period (where practically and physically possible), or otherwise as soon as possible; and
- notify the complainant of the resolution or the progress towards, and likely timing for, a resolution.

AA Holdings is committed to facilitating on-going consultation with adjoining and nearby residents, Mornington Peninsula Shire Council and the police (as required) to assist in creating a safe and well-managed facility.

For all incidents that necessitate action by an emergency service, fire brigade, police or where maintenance is required to be called in:

- the incident must be recorded in the logbook;
- a full incident report must be completed; and
- the duty manager must be informed.

All staff must be briefed on this Plan generally and the complaints process in particular, before commencing work.

CONCLUSION

The standard operating procedures in this Plan have been specifically developed to support workplace safety, prevent crime and to respond to any public order incidents that may occur at the service station site.

AA Holdings will require that any operator of the service station prepare and comply with a site management plan generally in accordance with this Plan.

The site management plan must be reviewed periodically, in consultation with the Responsible Authority.

Convenience Restaurant Site Management Plan
Land: 1-2 Marine Drive and 5 Nepean Highway, Safety Beach

INTRODUCTION

This Site Management Plan (**Plan**) has been prepared by AA Holdings Pty Ltd (**AA Holdings**) to outline management practices for the proposed convenience restaurant site.

The areas covered by this Plan include:

1. **Surveillance**
2. **Site Management**
3. **Restaurant Management**
4. **Hours of operation**
5. **Signage**
6. **Noise Management and Monitoring**
7. **Complaints Management**
8. **Litter and Waste Removal**

AA Holdings acknowledges:

- the need to ensure the safety and security of the customers and staff of the convenience restaurant; and
- the need to protect and enhance the amenity of the surrounding community.

AA Holdings aims to achieve this through the management measures described in detail below.

Compliance with this Plan will be required of any future licensee of the convenience restaurant.

1. SURVEILLANCE

CCTV security cameras will be positioned to the satisfaction of the Responsible Authority, both within the convenience restaurant building and its surrounds (including the drive-through tunnel). The CCTV system will be in operation 24 hours a day, 7 days a week and will be monitored by staff of the convenience restaurant or remotely by management or contracted security services.

Video footage will be retained for a minimum period of 31 days, to allow for efficient security reviews. Footage may be retained for longer periods for further review or for use in staff training.

Car park and external lighting surrounding the convenience restaurant itself is to be installed and baffled in accordance with the recommendations of the Arup Light Spill Report to ensure no unreasonable off-site amenity impacts and maintained to the satisfaction of the Responsible Authority.

Car park and external lighting will remain on for as long as is required to ensure:

- the safe and orderly arrival and departure of patrons while the dining room is open and indoor ordering is available; and
- legibility for patrons of the drive-through and patrons of the adjoining service station overnight; and

- visibility to all areas of the site and avoid opportunities for loitering.

The landscaped areas between the drive-through tunnel and the boundary will be fenced-off and secured to prevent access by the public and avoid opportunities for loitering. Secure access will be available for authorised personnel (via lockable gates) to allow for regular pruning and maintenance of vegetation, removal of rubbish and maintenance/repair of acoustic fencing (as required).

The 24-hour operation of the drive-through facility will allow for passive surveillance of the site and surrounding area when the dining room is closed overnight.

2. SITE MANAGEMENT

Deliveries will only occur between 7:00am and 10:00pm (Monday to Sunday) unless otherwise agreed in writing by the Responsible Authority.

Plant and equipment, drainage systems and other equipment associated with the operation of the convenience restaurant will operate in accordance with all permit conditions and other regulations and requirements and shall not affect the amenity of the area by way of noise, vibrations, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water or waste products. Plant shall be installed, controlled and managed to comply with the relevant noise regulations, including State Environment Protection Policy No. N-1.

Ventilation and other equipment will be inspected at regular intervals by suitably qualified technicians to ensure noise, odour and other emissions are being effectively controlled.

The electronic customer ordering devices associated with the drive-through facility will not operate only after 10:00pm or before 6:00am. Signage will be erected at the entry of the drive-through facility directing customers to the pay window for "after hours" ordering.

The convenience restaurant licensee will maintain a logbook recording any incidents of concern, including:

- vandalism including damage to or destruction of property or vegetation;
- on-site graffiti; and
- complaints in relation to the operation of the convenience restaurant (including complaints about noise, odour or other emissions) or behaviour of the staff or patrons of the convenience restaurant.

The licensee must establish and maintain an on-line portal for members of the surrounding community to record any complaints. This portal must provide a 24-hour phone number to allow direct communication with a representative of the licensee.

The licensee's record will include the response or action taken to address the incident, the time taken for any repair, replanting or removal of offending material and any mitigation measures put in place to avoid or minimise the risk of a repeat incident.

The frequency of incidents, together with the respective responses, will be considered as part of the licensee's internal performance reviews to ensure the maintenance of acceptable standards. The logbook maintained by the licensee will also be available for inspection by AA Holdings or the Responsible Authority upon request.

3. RESTAURANT MANAGEMENT

The safety of the staff and customers of the convenience restaurant is paramount in its operation. The licensee will provide training to all staff upon their initial employment orientation and ongoing throughout their employment in the areas of:

- customer satisfaction;

- handling complaints from customers, neighbours and other members of the public;
- ensuring the needs of customers and staff with disabilities or other special needs are met;
- managing difficult customers and other anti-social behaviour at the convenience restaurant site; and
- unlawful behaviour such as theft, or disruptive incidents.

Staff training will be held on a regular basis to reinforce safety and security procedures for the restaurant. Employees will be encouraged to report any suspicious activity of persons in and around the area to the Duty Manager and/or the local police.

Every manager appointed by the licensee to manage the premises must be fully briefed on the contents and operation of this Plan and any planning permission in force for the site, in addition to any accredited fire and first aid training and the like.

If matters escalate beyond the control of the manager on duty or are of sufficient concern, it will be standard procedure for the manager to call the police to provide further assistance.

4. HOURS OF OPERATION

Unless otherwise approved in writing by the Responsible Authority, the restaurant drive-through will operate on a 24-hour basis throughout the year whereas the restaurant dining room will only operate from 6:00am to midnight (and until 1:00am during Peak Season).

"Peak Season" means the period from:

- 1 December – 28 February (inclusive); and
- from 11:59pm on the Thursday before Good Friday until 11:59pm on Easter Monday.

Although the drive-through facility will service customers 24 hours/day, the electronic customer ordering devices at the entry to the drive-through will be switched off from 10pm until 6am to reduce the acoustic impact on neighbouring properties. Between 10pm and 6am, all drive-through orders will be placed at the pay window inside the drive-through tunnel.

When the restaurant dining room is closed, indoor ordering will not be available, the doors of the restaurant will be locked and patron access to the convenience restaurant building will not be permitted except in the case of emergency.

5. SIGNAGE

The operator of the business shall erect signage at the convenience restaurant exit points requesting that people leaving the convenience restaurant do so quietly and respect the local neighbourhood during the late evening and early morning hours. Similar signage will be displayed at the entry and exit to the drive-through.

Signage within the site will notify customers the CCTV security cameras are operating around the site.

Signage will be provided throughout the site, clearly detailing areas that are restricted to staff use only, to prevent customers from gathering in areas that are not appropriate.

Signage within the site will detail how customers and neighbours may provide feedback and/or comments.

6. NOISE MANAGEMENT AND MONITORING

The operator of the convenience restaurant must ensure that:

- between 10pm and 7am, the three car spaces nearest to the northern boundary are only used by staff;
- deliveries only occur between the hours of 7am to 10pm (Monday to Sunday), unless otherwise agreed in writing by the Responsible Authority;
- the loading and unloading of deliveries must only occur within the designated loading dock; and
- any complaints about noise associated with the operation of the convenience restaurant are recorded and managed in accordance with the Complaints Management process in this Plan.

Within 6 months of the commencement of the operation of the convenience restaurant, acoustic testing shall be carried out by a suitably qualified person to confirm compliance with the applicable environment protection regulations. This testing should include:

- an assessment of noise generated by car doors and general patron movement at the site against the established sleep disturbance criteria; and
- any recommend mitigation measures which may be necessary to minimise impacts.

The operator must ensure that any recommended mitigation measures are implemented to the satisfaction of the Responsible Authority.

7. COMPLAINTS MANAGEMENT

Feedback with regard to the operation of the restaurant will be welcomed and customers are encouraged to speak with management about any concerns.

The restaurant telephone number is to be provided on the signs to be erected at the restaurant building and drive-through exit points. Complaints received, along with measures taken to address them, shall be recorded in the logbook and dealt with in accordance with any other internal process of the licensee.

In circumstances where a complaint is not able to be resolved immediately, contact details of the complainant will be requested and the licensee will use best endeavours to:

- address the complaint within a 24-hour period (where practically and physically possible), or otherwise as soon as possible; and
- notify the complainant of the resolution or the progress towards, and likely timing for, a resolution.

AA Holdings and the licensee of the convenience restaurant are committed to facilitating on-going consultation with adjoining and nearby residents, Mornington Peninsula Shire Council and the police (as required) to assist in creating a safe and well-managed facility.

For all incidents that necessitate action by an emergency service, fire brigade, police or where maintenance is required to be called in after-hours (i.e. when the restaurant dining room is closed):

- the incident must be recorded in the logbook;
- a full incident report must be completed; and
- the duty manager must be informed.

All staff must be briefed on this Plan generally and the complaints process in particular, before commencing work.

8. LITTER AND WASTE REMOVAL

Regular litter patrols throughout each day are conducted both within the site itself and in public areas within 200m of the site. Staff on duty will collect and dispose of any rubbish that may have been discarded inappropriately by customers.

In order to limit disturbance to patrons and the amenity of the surrounding area, waste collection will occur within the designated loading dock and will be restricted to non-peak periods during daytime hours or otherwise to time limits specified in the planning permit and the relevant EPA noise control guidelines.

CONCLUSION

The standard operating procedures in this Plan have been specifically developed to support workplace safety, prevent crime and to respond to any public order incidents that may occur at the convenience restaurant site.

AA Holdings will require, as a condition of licence, any future licensee of the convenience restaurant to prepare and comply with a site management plan generally in accordance with this Plan (with any adaptations necessary to meet the specific requirements, practices and/or policies of the licensee).

The site management plan must be reviewed periodically, in consultation with the Responsible Authority.

Sustainability Management Plan

1 Marine Drive, Safety
Beach VIC

24/04/2023



Framer
Consulting
Services Pty Ltd

(03) 8691 6928
admin@fraterconsultingservices.com.au
fraterconsultingservices.com.au





Sustainability Management Plan (SMP) Proposed Commercial Development

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Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

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FRATER

DOCUMENT VERSION

Version	Date	Changelog	Author	Review
0	18/04/23	Issued for Client Review	ZT	LA
1	24/04/23	Updated as per latest plan and WSUD	ZT	LA

Page 3

Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

INITIATIVES TO BE MARKED ON DRAWINGS

Water & Stormwater Management

- ☐ Mark-up showing roof catchment area to be diverted to the Rainwater tank – If required, the use of charged pipe system will be explicitly acknowledged on the drawings and charged pipes will not be running underneath the building footprint.
- ☐ Mark-up/note showing the low-risk site area runoff to be diverted to the proposed SPEL® Stormsack, high-risk site area runoff to SPEL® Puraceptor and the entire site to divert to the SPEL Hydrosystem®
- ☐ Location of the proposed SPEL stormsacks®, SPEL puraceptor® and Hydrosystem®
- ☐ Note showing use of native or drought tolerant species for landscaped area. Watering will not be required after an initial period when plants are getting established.
- ☐ Note showing WELS rating for water fittings/fixtures (refer to report) – Fixtures (e.g. dishwasher) provided as part of base building work have to be chosen within one WELS star of best available at the time of purchase.

Energy Efficiency

- ☐ Note showing commitment to exceeding section J energy efficiency requirement of NCC 2019
- ☐ Note showing the maximum illumination power density (W/m²) of the development meet the requirements in NCC 2019
- ☐ Lighting sensors for external lighting (motion detectors, timers etc.)
- ☐ 3kW Solar PV on the roof of the development

Indoor Environment Quality

- ☐ Note showing commitment to Outside Air Fan in the shop and restaurant providing O/A rates 50% above minimum from AS1668 AND O/A provision to ensure CO2 concentration remains below 800ppm
- ☐ Improved horizontal fixed shading

Transport

- ☐ Bike space location for employees in the development (12 for the development) +
- ☐ Minimum of 12 lockers for the development

Urban Ecology

- ☐ Show extent of vegetated areas around the site (includes lawn)

INTRODUCTION

Frater Consulting Services have been engaged to undertake a Sustainability Management Plan for the proposed commercial development located at 1 Marine Drive, Safety Beach. This has been prepared to address the Mornington Peninsula Shire's sustainability requirements especially Clause 15.01-2S of the local planning policy.

Within Clause 15.01-2S, Mornington Peninsula Shire has identified the following key categories to be addressed

- Energy Performance;
- Water Resources;
- Stormwater Management;
- Indoor Environment Quality;
- Building Materials;
- Construction, Building & Waste Management;
- Transport; and
- Urban Ecology / Innovation.

The site has been assessed using the BESS tool. BESS was developed by association of councils led by Merri-bek City Council. This tool assesses the energy and water efficiency, thermal comfort and overall environmental sustainability performance of new buildings or alterations. It was created to demonstrate how new development can meet sustainability requirements as part of a planning permit application for the participating council.

Each target area within the BESS tool generally receives a score of between 1% and 100%. A minimum score of 50% is required for the energy, water, stormwater and IEQ areas. An overall score of 50% represents 'Best Practice' while a score over 70% represent 'Excellence'. The result of the BESS assessment is included as Appendix E.

The Model for Urban Stormwater Improvement Conceptualisation (MUSIC) tool which addresses stormwater quality considerations has been used for the development to ensure that stormwater management best practice requirements have been achieved.

The Stormwater Management Strategy Report is prepared by Colliers and included as Appendix A.



Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

SITE DESCRIPTION

The proposed site is located at 1 Marine Drive, Safety Beach. The 3,908m² site is currently occupied by the existing fuel station and convenience store which are proposed to be demolished prior to the construction of the development. It is located approximately 83kms south-east of the Melbourne CBD.

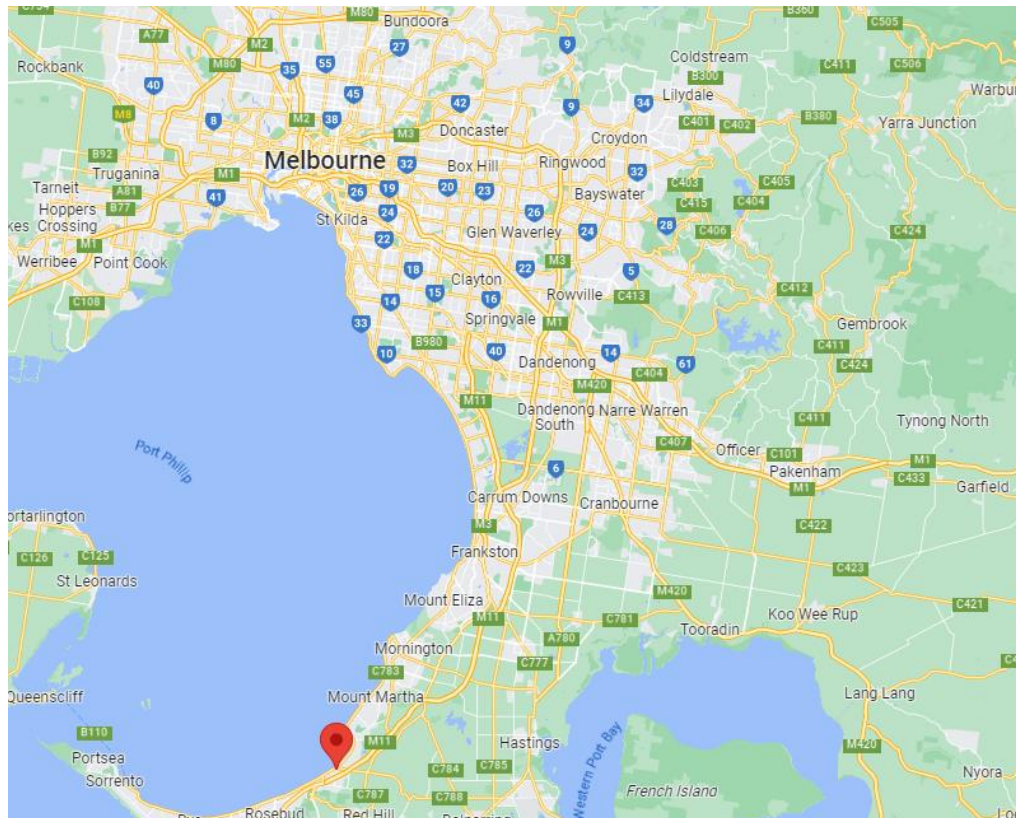


Figure 1: Location of the proposed development in Safety Beach with relation to Melbourne CBD (Source: Google Maps)

PROPOSED DEVELOPMENT

The proposal consists of development of the site into a food tenancy, a convenience store and a fuel station. The area of the site is approximately 3,908m². The development will be provided with 22 car parks and driveways opening on Marine Drive and Nepean Highway.

Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

ENERGY EFFICIENCY

Energy and its key elements should be integrated into the design of the proposed development. These elements contribute to reducing greenhouse gas emissions by utilising energy efficient appliances, energy conservation measures and renewable energy.

Energy Efficiency

Prior to the building construction stage of the project, a section J (NCC 2019) DTS assessment will occur with the following commitments:

- 10% improvement on floor and ceiling insulation level requirement from NCC 2019;
- Wall and glazing performance to be in line with DTS requirements – Preliminary Façade Calculator is included in Appendix D;
- Heating/cooling system to be chosen within one star of the best available product in the range at the time of purchase or COP/EER 85% or better than most efficient equivalent capacity unit available if no star rating is available; and
- Water heating system to be chosen within one star of the best available product in the range at the time of purchase or 85% or better than most efficient equivalent capacity unit available if no star rating is available.

Alternatively, prior to the building construction stage of the project, energy modelling will occur with the aim of exceeding requirement of NCC 2019, using an NCC JV3 modelling process. This will be achieved through the use of high-performance building fabric and glazing, low energy lighting and building services. **The reference building model will include the minimum improvement committed above for floor and ceiling.** This method will allow for flexibility in for glazing performance.

Heating and Cooling Systems

To reduce the energy consumption heating and cooling will be provided by energy efficient air conditioners (chosen within one star of the best available product in the range at the time of purchase or COP/EER 85% or better than most efficient equivalent capacity unit available if no star rating is available).

Hot Water Heating

Hot water will be provided with gas units chosen as 6 Star minimum or within one star of the best available whichever is greater. Efficiency will be chosen 85% or better than most efficient equivalent capacity unit available if no star rating is available.

Lighting

The maximum illumination power density (W/m^2) of the development will meet NCC 2019 requirements in by the use of LED throughout the development.



Lighting Sensors

Common areas and transient spaces will be controlled using occupancy sensor and/or daylight sensors. Ventilation in these areas will be controlled using timers and other sensors.

Solar PV System

A 3kW solar photovoltaic for renewable energy generation will be installed on the roof of the development. This will off-set a portion of greenhouse gas emissions and energy use for the project (lighting, pumps etc.).

WATER EFFICIENCY & STORMWATER MANAGEMENT

Water saving-use and reuse and its key elements should be integrated into the design of the proposed development. These principles contribute to reducing the water demand in addition to promoting water reuse. Stormwater management and its key elements should be integrated into the design of the proposed development. These principles contribute to ensuring natural systems are protected and enhanced whilst promoting on-site retention and aims to reduce runoff or peak flows.

Water Efficient Fittings

The development will include efficient fittings and fixtures to reduce the volume of mains water used in the development. The following WELS star ratings will be specified;

- Toilets – 4 Star;
- Taps (bathroom and kitchen) – 5 Star; and
- Showerhead if provided – 4 Star with aeration device (6.0-7.5L/min)
- Dishwasher – 5 Star.

Stormwater Treatment – SPEL® Hydrosystem / SPEL Stormsack/SPEL Puraceptor

The low-risk commercial buildings roof catchment area, open space and paved roads will be diverted to a SPEL® Stormsack installed on all grated pits and SEPs. The SPEL® Stormsack will filter coarse pollutant from the low-risk area runoff and act a primary treatment.

The high-risk site area runoff around the fuel station will be diverted to a SPEL® Puraceptor. The SPEL® Puraceptor will filter the general hydrocarbon runoff and protect emergency spills.

The entire site area runoff (all roof areas, overflow from the puraceptor and stormsack) will be diverted to a SPEL Hydrosystem. This will treat the stormwater runoff from the site by filtering coarse and fine pollutants before releasing the outflows to the legal point of discharge on site. Please refer to Appendix B for more information on this treatment device.

This treatment measures along with rainwater retention will significantly reduce stormwater pollution from the site. Please refer to Appendix A for the MUSIC assessment by SPEL.

Stormwater Proprietary Product Maintenance

A maintenance contract with the manufacturer or suitably qualified company will be required to be implemented to ensure that the proprietary products installed for stormwater treatment are regularly maintained.

Water Efficient Appliances

All appliances provided in the development as part of the base building work (e.g. dishwasher) will be chosen within one WELS star of the best available.

Water Efficient Landscaping

Native or drought-tolerant plants will be implemented for the landscaped areas on site. Use of water or irrigation will not be required after an initial period when plants are getting established.

INDOOR ENVIRONMENT QUALITY

Indoor Environment Quality and its key elements should be integrated into the design of the proposed development. These elements play a significant role in the health, wellbeing and satisfaction of the development occupants. Facilitating a good (IEQ) design provides a naturally comfortable indoor environment and less dependence on building services such as, artificial lighting, mechanical ventilation and heating and cooling device.

Volatile Organic Compounds

All paints, adhesives and sealants and flooring will have low VOC content. Alternatively, products will be selected with no VOCs. Paints such as eColour, or equivalent should be considered. Please refer to Appendix D for VOC limits.

Formaldehyde Minimisation

All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better. Alternatively, products will be specified with no Formaldehyde. Products such as ecological panel – 100% post-consumer recycled wood (or similar) will be considered for use within the development. Please refer to Appendix D for formaldehyde limits.

Daylight Levels

Daylight inputs through windows/openings for the shop/restaurant spaces will be enhanced with the use of light internal colours, allowing better internal reflection of daylight. The shop and restaurant will have large glazing to allow for good daylight penetration. The development will achieve good daylight amenities (beyond compliance with the SDAPP guidelines).

Please refer to appendix C for daylight Hand Calculation showing compliance with best practice requirements.

Mechanical Ventilation – Improved Outside Air Rates

All shop and restaurant spaces will be provided with O/A fans which will commit to provide 50% increase on O/A provision from AS1668.

Additionally, O/A will be provided to ensure that CO₂ concentration in the rooms remains below 800ppm.

Thermal Comfort - Shading

Fixed vertical shading or external adjustable shading are not considered appropriate for this type of development as it will restrict the use of the space for restaurants and convenience store and it is not adequate for entry points and display glazing.

Proposed horizontal projection with a minimum width of 45% of height from the bottom windowsill to the bottom of the eave (1.8m eaves) will be provided on north-west facing glazing for the food tenancy. The roof canopy to the convenience store is deemed as the

most appropriate shading type as it restricts the daylight access into the space.
Additional shading is not required.

Based on the proposed canopy and eaves for food tenancy glazing, 50% has been entered under BESS - IEQ 3.4.

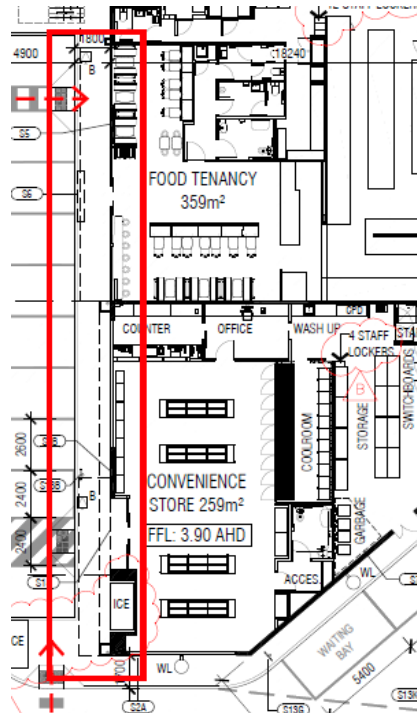


Figure 2: Horizontal shading to windows (red)

Acoustic Insulation

Each unit will be designed to meet the NCC requirement for acoustic insulation to minimise noise levels and noise transfer within and between buildings.

CONSTRUCTION, BUILDING & WASTE MANAGEMENT

Building Management and its key elements will be integrated into the design of the proposed development. These principles contribute to ensuring efficient and effective on-going building performance. Waste management and its key elements will be integrated into the design of the proposed development. These principles contribute to ensuring minimal waste is transported to landfill by means of disposal, recycling and on-site waste storage and/or collection methods.

Metering and Monitoring

The development/Each tenancy will be separately metered for potable water and energy. Effective metering ensures that residents/tenants are responsible for their consumption and they can reduce their consumption.

Construction Waste Management

A waste management plan will be introduced to all on-site staff at a site orientation session to ensure that the waste generated on site is minimised and disposed of correctly. A minimum 80% of all construction waste generated on site will be reused or recycled.

Construction Environmental Management

The builder will identify environmental risks related to construction and include management strategies such as maintaining effective erosion and sediment control measures during construction and operation and ensure that appropriate staging of earthworks (e.g. avoid bare earthworks in high risk areas of the site during dominant rainfall period).

Operational Waste

A dedicated storage area will be provided on ground floor. The storage area will be sufficiently sized to accommodate the general and recycling waste. Recycling facilities will be as conveniently accessible as the general waste facilities.

Universal Access

The development will be designed for universal access in accordance with AS1428.2 to allow persons with limited mobility to enter and use the premises.



FRATER

TRANSPORT

Bicycle Parking & End-Of-Trip Facilities

Employees will be able to store their bicycle within the development. A minimum of 12 spaces (at least 50% above the planning scheme requirements) will be provided.

A minimum of 12 lockers will be provided for the development.

BUILDING MATERIALS

Materials selection should be integrated into the design of the proposed development. The criteria for appropriate materials used are based on economic and environmental cost.

Timber

All timber used in the development will be Forest Stewardship Council (FSC) or Program for the Endorsement of Forest Certification (PEFC) certified, or recycled / reused.

Flooring

Wherever possible, flooring will be selected from products/materials certified under any of the following:

- Carpet Institute of Australia Limited, Environmental Certification Scheme (ECS) v1.2;
- Global GreenTag - <https://www.globalgreentag.com/>; and/or
- Good Environmental Choice (GECA).

Joinery

Where possible, joinery will be manufactured from materials/products certified under any of the following:

- Global GreenTag - <https://www.globalgreentag.com/>; and/or
- Good Environmental Choice (GECA); and/or

Steel

Wherever possible, steel for the development will be sourced from a Responsible Steel Maker¹. Reinforcing steel for the project will be manufactured using energy reducing processes commonly used by large manufacturers such as Bluescope or OneSteel.

¹ A Responsible Steel Maker must have facilities with a currently valid and certified ISO 14001 Environmental Management System (EMS) in place, and be a member of the World Steel Association's (WSA) Climate Action Program (CAP).



URBAN ECOLOGY

In highly urbanised environments, such as metropolitan Melbourne, it is important to recognise the importance of maintaining and increasing the health of our urban ecosystems to improve living conditions not only for the fauna but also ourselves. We can improve our urban ecosystem through the incorporation of vegetation through landscaping for both new and existing developments.

Landscaping

The landscaping onsite will provide the occupants with a pleasant surrounding environment. The design will incorporate a mix of native species to help maintain local biodiversity.

Insulant ODP

All thermal insulation used in the development will not contain any ozone-depleting substances and will not use any in its manufacturing.



IMPLEMENTATION & MONITORING

The proposed development will meet the best practice requirement of the Mornington Peninsula Shire through the different initiatives describe in this report such as thermally efficient building envelope, efficient air conditioning and hot water system and sustainable materials. An appropriate implementation and monitoring of the initiatives outlined within this report will be required.

Implementation of the ESD initiatives outlined in this report requires the following processes:

- Full integration with architectural plans and specifications
- Full integration with building services design drawings and specifications
- Endorsement of the ESD Report with town planning drawings
- ESD initiatives to be included in plans and specifications for building approval

Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

APPENDIX A – WSUD REPORT / MUSIC ASSESSMENT

New development must comply with the best practice performance targets for suspended solids, total phosphorous and total nitrogen, as set out in the Urban Stormwater Best Practice Environmental Management Guidelines, Victoria Stormwater Committee 1999. Currently, these water quality performance targets require:

- Suspended Solids - 80% retention of typical urban annual load.
- Total Nitrogen - 45% retention of typical urban annual load.
- Total Phosphorus - 45% retention of typical urban annual load.
- Litter - 70% reduction of typical urban annual load.

The MUSIC tool, an industry accepted tool, was used to assess the development and ensure that the best practice targets described above are met. A minimum compliance score of 100% is required to achieve for the development.

Please refer to the below MUSIC Results and SWMS Report prepared by Colliers for details.

Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

Stormwater Results

The initiatives and areas described above have been applied to the MUSIC tool by **Colliers** and **SPEL**, the proposed development has achieved the following results:



Figure 14, MUSIC Model Configuration

Treatment Train Effectiveness - LPoD			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.95	1.95	0
Total Suspended Solids (kg/yr)	368	47.6	87.1
Total Phosphorus (kg/yr)	0.77	0.293	61.9
Total Nitrogen (kg/yr)	5.52	2.21	59.9
Gross Pollutants (kg/yr)	70.4	0.201	99.7



1, 2 Marine Dr & 5 Nepean Dr, Safety Beach

Insight Planning Consultants Pty Ltd

Stormwater Management Strategy

Report Revision B

Report Date: December 2022

Accelerating success.

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Report Contact:

Name: Nicholas Matamala
Position: Water & Environment (Engineer)
Phone: (03) 9562 7424

Document Control

Report Version

Version	Date	Details	Prepared	Checked	Approved	Signed
A	Nov 2022	Issued for Approval	A. Dowler	J. Barker	J. Barker	J. Barker
B	Dec 2022	Issued for Approval	A. Dowler	N. Matamala	J. Barker	J. Barker

EXECUTIVE SUMMARY

Colliers Engineering & Design have been engaged by Insight Planning Consultants Pty Ltd to prepare a Stormwater Management Strategy (SWMS) in support of a development application to Mornington Peninsula Shire Council over land located at 1, 2 Marine Drive and 5 Nepean Dr, Safety Beach. This development application seeks a planning permit for a redevelopment of the Site for a service station and convenience restaurant.

The site covers an area of 0.393 ha and is consistent with an urban commercial land use with most of the site consisting of impervious surfaces. The site is accessed by both Marine and Nepean Dr along the northern and southern boundary and is bounded by private allotments to the east. Under existing topography, the Site has an internal catchment conveying overland flows to the western portion of the Site from the north-east boundary.

Discussions with Council indicates the intended outfall location for the Site at the northwest corner of the Site, into a Council pit located along Marine Dr. Where both minor and major flows are to be conveyed via the Site's internal drainage and road network towards the legal point of discharge. As the site is to be developed into a service station, the underground drainage network will need to cater for the 10% AEP storm event, while flows greater than the 10% AEP and up to and including the 1% AEP event are to be conveyed through the Site utilising the road network.

An on-site detention system has been sized for the Site with a storage volume of 10.4 m³, which will be incorporated in the form of upsized pipes near the outfall of the Site. This system is sized to restrict developed flows for the 1% AEP to that of pre-developed conditions.

Environmental best management practices are proposed for treatment of stormwater flowing from the site. The stormwater treatment strategy for the site will include collection of runoffs from the assigned low risk drainage areas being directed to SPEL Stormsacks integrated into the pits. The collection of runoff and emergency spill control within the assigned high-risk areas will be achieved by a SPEL Purceptor providing hydrocarbon management. Ultimately, end of line treatment ensuring BPEMG targets will be met by the installation of a SPEL Hydrosystem.

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1. INTRODUCTION

Colliers Engineering & Design was engaged to formulate a Stormwater Management Strategy for a parcel of land (referred to within this document as “the Site”) located at 1, 2 Marine Dr and 5 Nepean Dr, Safety Beach, VIC, 3936, Australia, south east of Melbourne in the municipality of Mornington Peninsula Shire Council.

The plan will outline any potential stormwater quantity and quality measures required within the Site to comply with Melbourne Water and Council requirements. We propose to develop a stormwater strategy that reflects the demands and needs of the Site and its surrounding parcels that contribute to the same catchment.

1.1 Scope of the Plan

The Site is located in Safety Beach, where the perimeter of the Site is bounded by Marine Dr and Nepean Hwy to the north, south, and west. It has an area of 0.393 hectares (ha). Refer to Figure 1.

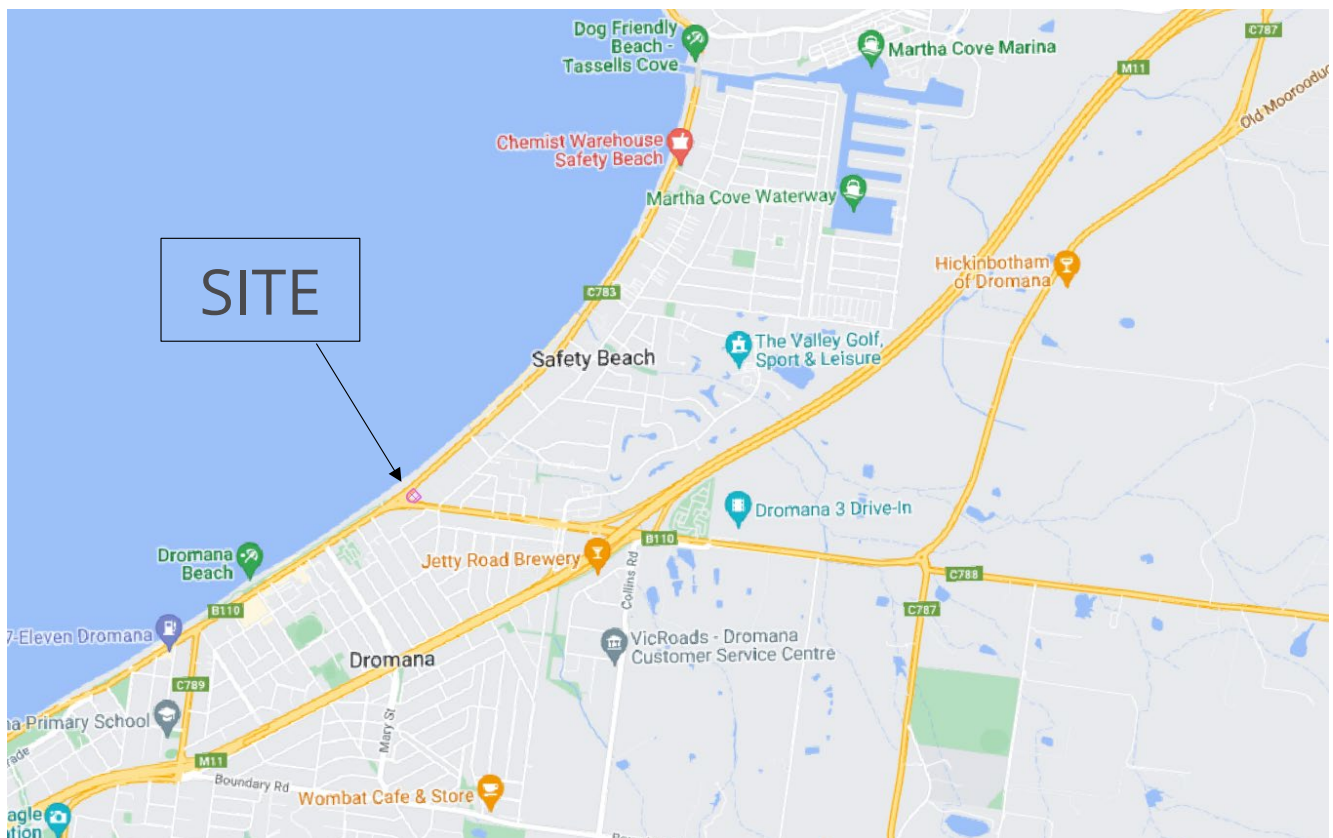


Figure 1. Site Locality

The Site in existing conditions contains one large building which covers most of the central and southwestern section of the Site, with a smaller building on the southeast side. Natural topography data indicates a relatively flat existing surface with approximately less than one meter of fall across the Site to the south-west, see Figure 4. The low point of the Site is located on the western portion of the Site with an elevation of approximately 3 m AHD, refer to Figure 2.



Figure 2. The Site

The Site does not reside within a Precinct Structure Plan (PSP) or a Melbourne Water Drainage Scheme.

1.2 Assumptions and Constraints

The Site is to comply with Mornington Peninsula Shire Council requirements. Based on the current draft plan the Site, currently being used as a Service Station, is to be upgraded and expanded upon, see Figure 3.



Mornington Peninsula Shire Council, as the responsible drainage Authority, has adopted guidelines setting out drainage design rules and conditions for developments within the municipality.

Council permit conditions require adherence to Clause 53.18 of the Victorian Planning Provisions, which sets out stormwater management objectives that developments must meet. Developments are to achieve 'best practice' through a series of treatments to remove gross pollutants, sediment, nitrogen, and phosphorus before they reach waterways.

3. MELBOURNE WATER REQUIREMENTS

Waterway Values outlined in Melbourne Waters Healthy Waterways Strategy have been a pivotal focus throughout this strategy. The values presented in the strategy are categorised into four groups:

- Environmentally – Providing habitats for plants and animals and sustaining the regions native biodiversity
- Social – To meet with friends and family, exercise, connect with nature and outdoor activities
- Cultural – Create and look back on memories, ancestral history
- Economic – Provision of drinking water, irrigation for crops and hospitality purposes

To best assess and track the maintenance of these values there are a further nine key values which include:

- Amenity – Pleasantness of waterways and ability to provide restorative landscape
- Community Connection – Waterways connecting the community with nature
- Recreation - Providing a setting for active and passive recreational activities
- Birds – All types of bird species, waterbirds, raptors, and bush birds
- Fish – Freshwater and estuarine species
- Frogs – Native amphibians
- Macroinvertebrates – Small but visible animals without a skeleton
- Platypus – Iconic aquatic mammal
- Vegetation – Trees, shrubs, grasses, bulrushes

In addition to the above values any other species in the area also represent an integral part of the ecosystem in which waterway management will address accordingly.

4. SITE CHARACTERISTICS

The Site has one internal catchment falling towards the south-west. Calculations within this report are based on the assumption that all flows will discharge to the Council designated Legal Point of Discharge (LPOD).

There is a 0.21 ha external catchment earmarked to be conveyed through the Site from the north-east, see Figure 4.



Figure 4. Flow Direction

5. STORMWATER QUANTITY

5.1. Pre-Developed / Existing Conditions

The existing Site is considered relatively impermeable due to road reserves and buildings covering much of the Site. A Service Station is currently occupying the Site under existing conditions. Table 1 shows the land use breakdown in pre-existing conditions. Land-use fraction imperviousness values have been based on Melbourne Water MUSIC Guidelines (2018).



Figure 5. Existing Conditions

Table 1. Pre-Developed Catchment Break-Up

Land Use	Fraction Impervious	Area (ha)
Rural	0.10	0.118
Roads	1.00	0.151
Buildings	1.00	0.123
Total	0.73	0.392

Using a time in pipe calculation to determine the Time of Concentration (TC) for each storm event, the following pre-developed peak flow rates were determined using the Rational Method.

Table 2. Existing Peak Flow Rates

Pre-Developed Catchment Modelling						
AEP	Area Ha	Cy	Tc min	I mm/hr	ΣAe Ha	Q m ³ /s
63.20%	0.392	0.543	13.1	36.76	0.213	0.02
50%	0.392	0.577	12.5	41.82	0.227	0.03
20%	0.392	0.645	10.9	59.17	0.253	0.04
10%	0.392	0.679	10.0	72.14	0.266	0.05
5%	0.392	0.713	9.4	85.90	0.280	0.07
2%	0.392	0.781	8.6	105.50	0.306	0.09
1%	0.392	0.815	8.1	121.45	0.320	0.11

5.2. Developed Conditions

The Site is to be developed into a service station. The developed conditions Layout Plan is represented in Figure 6. This proposed development will increase the imperviousness of the Site resulting in higher (site derived) peak flow rates and stormwater pollutant loads.



Figure 6. Developed Conditions

Fraction Impervious levels for each land-use type have been determined from Melbourne Water MUSIC Guidelines (2018), with the associated land-use break-up summarized in Table 3.

Table 3. Post-Developed Catchment Break-Up

Land Use	Fraction Impervious	Area (ha)
Roads	1.00	0.173
Open Space	0.10	0.066
Buildings	1.00	0.154
Total	0.85	0.392

A Time in Pipe calculation was used to determine the TC with the following table outlining the expectant flow rates from the Site into the existing drainage for post-developed conditions:

Table 4. Developed Peak Flow Rates

Post-Developed Catchment Modelling						
AEP	Area Ha	Cy	Tc min	I mm/hr	ΣAe Ha	Q m ³ /s
63.20%	0.392	0.621	5.5	54.16	0.244	0.04
50%	0.392	0.660	5.5	59.85	0.259	0.04
20%	0.392	0.738	5.5	78.38	0.290	0.06
10%	0.392	0.777	5.5	91.57	0.305	0.08
5%	0.392	0.816	5.5	104.78	0.320	0.09
2%	0.392	0.893	5.5	122.86	0.350	0.12
1%	0.392	0.932	5.5	137.17	0.366	0.14

5.3. On-Site Detention

The need for any on-site detention (OSD) system will need to be considered, in order to protect the downstream receiving environment from increased developed flows, thus increasing the likelihood of flooding. The OSD system has been sized using Boyd's Method.

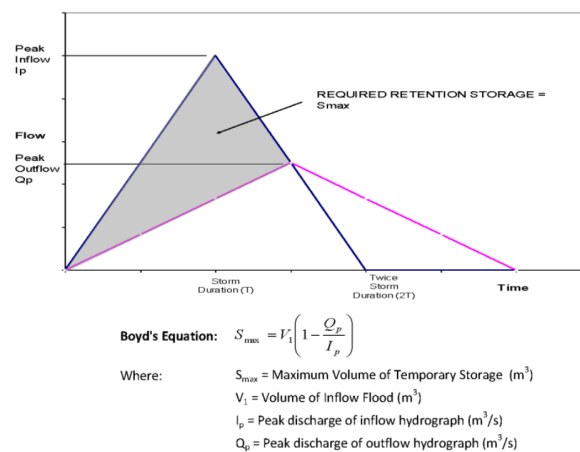


Figure 7. Boyd's Method for Detention Sizing

1% AEP developed flows were restricted to that of pre-developed conditions.

Table 5 highlights the volumes required to detain flows to pre-developed conditions with full calculations highlighted in Appendix A.

Table 5. Detention Parameters

Restricted Outflows	0.11 m ³ /s
Peak Inflows	0.14 m ³ /s
Storage Volume Required	10.4 m ³

In order to detain 1% AEP developed flows back to existing levels, a storage volume of 10.4 m³ will be required for the Site. Colliers Engineering & Design proposes that this storage be utilised in the internal drainage network, where the specific pipes connecting to the approved legal point of discharge be oversized to cater for this addition capacity. The exact configuration and size of the pipes will be determined during the detailed design of this development.

5.4. Approved Point of Discharge

Discussions with Council indicate the current Approved Point of Discharge (APD) for the Site, is the Council pit near the low point of the property alongside Marine Dr, see Figure 8.

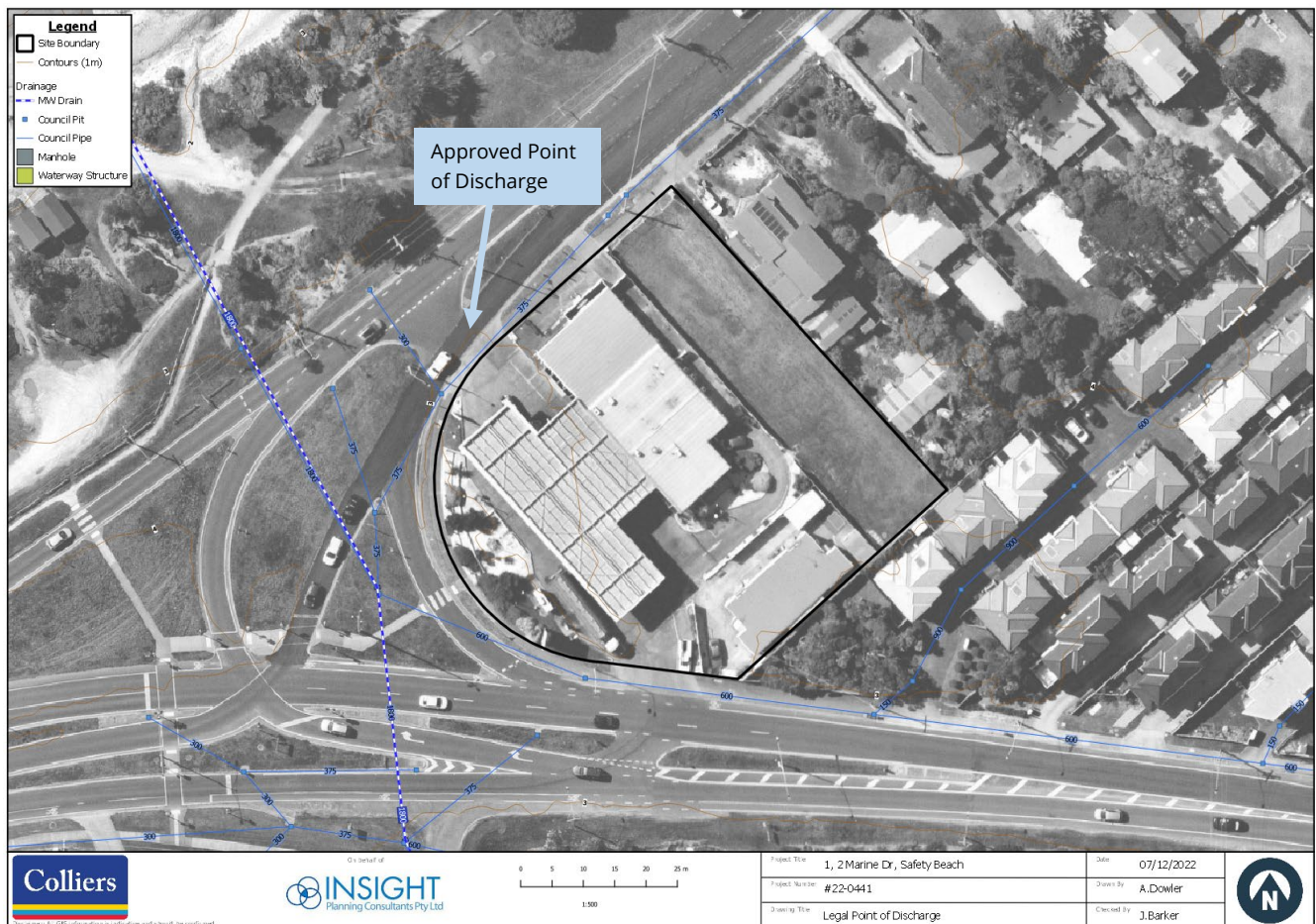


Figure 8. Legal Point of Discharge

5.5. Minor Flows

Internal underground drainage will be designed in accordance with Council and Melbourne Water standards, which is to capture and convey up to and including the 10% AEP storm event.



Figure 9. Minor Flows

5.6. External Catchment

Similar to existing conditions, the external catchment will remain consistent under developed conditions, see Figure 4.

5.7. Overland Flows

Flows greater than the 10% AEP and up to and including the 1% AEP design event are to be conveyed through the Site utilising the road network as urbanised floodways. The road reserves will be designed in order to convey these flows whilst ensuring DEWLP's floodway safety criteria ($D_{max} \leq 0.3$ m, $V_{max} \leq 2.0$ m/s and $VD_{max} \leq 0.3$ m²/s). Figure 10 highlights the proposed overland flows that will impact on the Site.

Figure 10 highlights the proposed overland flows that will impact on the Site. Overland flows will be directed into the Site pits which will direct flows towards the legal point of discharge.



Figure 10. Overland Flows

6. STORMWATER QUALITY

To satisfy the environmental values expected a series of treatments throughout the wider catchment area. It is expected that these assets would be designed to ensure they satisfy best practice targets set out in the Best Practice Environmental Management Guidelines (BPEMG), which are:

- 45% reduction in Total Nitrogen (TN) from typical urban loads;
- 45% reduction in Total Phosphorus (TP) from typical urban loads;
- 80% reduction in Total Suspended Solids (TSS) from typical urban loads; and
- 70% reduction in Litter from typical urban loads.

As the Site is a service station, in addition to providing treatment to BPEMG there is a requirement to provide hydrocarbon treatment. Treatment requirements are for general runoff of high-risk areas, such as refuelling areas, but also emergency spill control.

6.1. Hydrocarbon Management

In order to provide treatment for hydrocarbon from general runoff and protection from spills, it is proposed that the Site drainage be split into two areas, deemed low and high risk. Low risk areas are general commercial areas requiring standard stormwater quality treatment. High risk areas require specific hydrocarbon separation from runoff and containment for emergency spills.



Figure 11 highlights the separated drainage network, splitting off the high-risk areas prior to connecting to the remaining drainage network. The high-risk area will be treated for general hydrocarbon runoff and protected from emergency spills by a SPEL Purceptor (P.040.8). The Purceptor will provide a treatment flow rate of 40 L/s and a spill containment of 8000 L. The contributing catchment has been sized to limit flows with the drainage network to 40 L/s for the 10% AEP event.

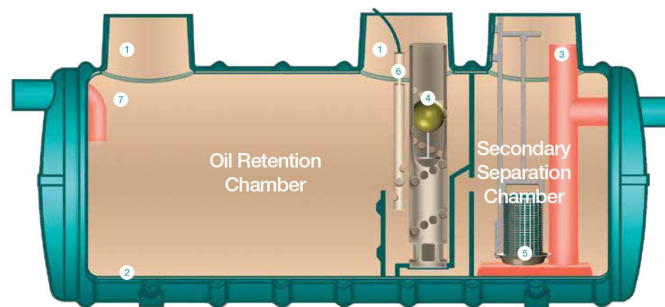


Figure 12. SPEL Puraceptor

6.2. MUSIC Modelling

In order to determine the required levels of water quality treatment for the Site a MUSIC model was created. Using Melbourne Water's *MUSIC Guidelines (2018)*, the Site falls within the "Koo Wee Rup" Rainfall distribution as shown in Figure 13.

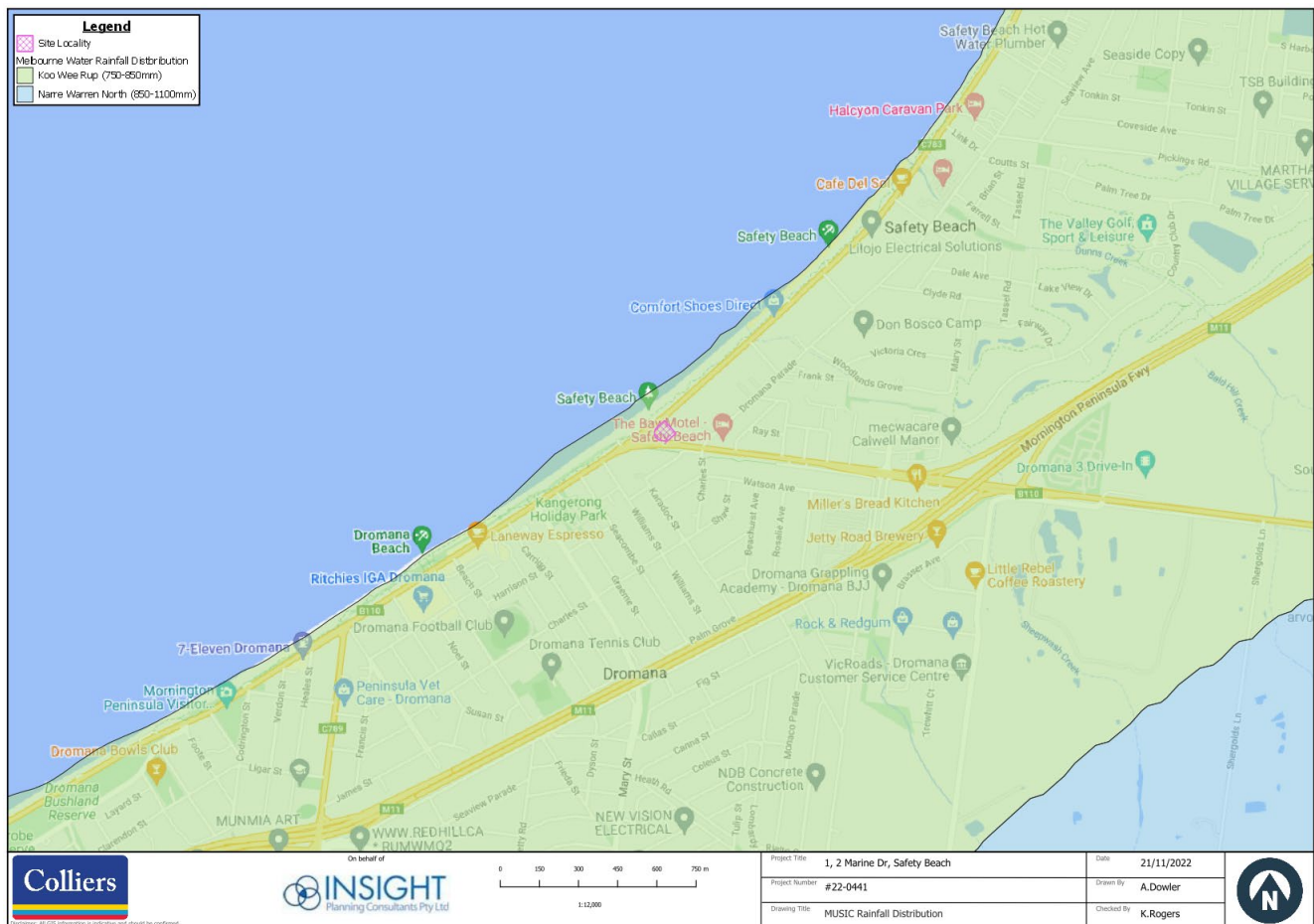


Figure 13. Melbourne Water's MUSIC Guideline Rainfall Distribution Definition for The Site

Table 6. MUSIC Model Parameters

Rainfall Parameters		Runoff Parameters	
Rainfall Station	086314 - KOO	Soil Storage Capacity	120mm
Date	1971 - 1980	Initial Storage	25mm
Time Step	6 Minutes	Field Capacity	50mm

The Site has been broken down in various catchments in order to represent the various land-uses, as represented in Table 8. Pollutant concentration data has been adjusted in accordance with MUSIC Guidelines (2018), see Table 7.

Table 7. Pollutant Concentration Data

Pollutant	Surface Type	Storm Flow		Base Flow	
		Mean (log mg/L)	SD (log mg/L)	Mean (log mg/L)	SD (log mg/L)
SS	Roof	1.301	0.333	n/a	n/a
	Road & Paved	2.431	0.333	n/a	n/a
	Non-Roof & Paved	1.900	0.333	0.960	0.401
TP	Roof	-0.866	0.242	n/a	n/a
	Road & Paved	-0.301	0.242	n/a	n/a
	Non-Roof & Paved	-0.700	0.242	-0.731	0.360
TN	Roof	0.301	0.205	n/a	n/a
	Road & Paved	0.342	0.205	n/a	n/a
	Non-Roof & Paved	0.243	0.182	0.455	0.363

Table 8. MUSIC Model Catchment Details

Land Use	Fraction Impervious	Area (ha)
Roads	1.00	0.114
Buildings	1.00	0.101
High Risk Area	1.00	0.054
Open Space	0.10	0.124

Water quality objectives will be achieved on Site using a combined stormwater management approach, incorporating a variety of mechanical methodologies. There is to be decentralised stormwater treatment through the Site coupled with end of line.

High risk areas will be treated via a SPEL Puraceptor (P.040.8) prior to discharge towards the LPoD. Given the Site is intended for commercial use with a high probability of Gross Pollutants, SPEL Stormsacks will be incorporated into the design of all pits which collect runoff from the low-risk drainage areas. End of line treatment will also be provided using a SPEL Hydrosystem (SHS.400/1), prior to discharging to the LPoD. Maintenance of all stormwater quality systems will be undertaken by the owner of the Site and enforced under a Section 173.

The MUSIC model configuration for the Site can be seen in Figure 14. The full development was modelled in MUSIC to ensure Best Practise is being achieved where the model configuration and overall performance of the system is shown in Figure 14 and Figure 15.



Figure 14. MUSIC Model Configuration

Treatment Train Effectiveness - LPoD			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.95	1.95	0
Total Suspended Solids (kg/yr)	368	47.6	87.1
Total Phosphorus (kg/yr)	0.77	0.293	61.9
Total Nitrogen (kg/yr)	5.52	2.21	59.9
Gross Pollutants (kg/yr)	70.4	0.201	99.7

Figure 15. MUSIC Model Treatment Train Effectiveness

The MUSIC nodes for the SPEL Stormsacks, SPEL Purceptor, and SPEL Hydrosystem used in the modelling have been provided by the manufacturer and haven't been altered. The treatment properties of these nodes have been detailed in Table 9.

Table 9. Properties of SPEL Unit MUSIC Nodes

	Stormstacks (600 x 900 mm)	Puraceptor (P.040.8.C1)	Hydrosystem (SHS.400/1)
High Flow By-pass	0.110 m³/s	0.040 m³/s	0.072 m³/s
Flow	0%	0%	0%
Gross Pollutants	100%	100%	100%
Total Phosphorus	28%	11%	66%
Total Nitrogen	45%	23%	43%
Total Suspended Solids	61%	87%	85%
Petroleum Hydrocarbon	n/a	99.99%	n/a

7. SUMMARY

Colliers Engineering & Design was engaged to undertake an Stormwater Management Strategy for 1, 2 Marine Dr and 5 Nepean Dr, Safety Beach, VIC, 3936, Australia, ensuring that the development adheres to the expectations of Mornington Peninsula Shire Council and other regulatory guidelines from a more holistic perspective.

The Site has a total area of 0.393 ha and is relatively impervious as it is currently being used as a service station with multiple buildings. The Site is to be redeveloped with both an upgrade and expansion of the existing service station.

An on-site detention system has been sized for the Site with a storage volume of 10.4 m³, which will be incorporated in the form of upsized pipes near the outfall of the Site. This system is sized to restrict developed flows for the 1% AEP to that of pre-developed conditions.

The stormwater treatment strategy for the Site will include collection of runoffs from the assigned low risk drainage areas being directed to SPEL Stormsacks integrated into the pits. The collection of runoff and emergency spill control within the assigned high-risk areas will be achieved by a SPEL Puraceptor providing hydrocarbon management. Ultimately, end of line treatment ensuring BPMEG targets will be met by the installation of a SPEL Hydrosystem.

The minor drainage system will be designed to convey the 10% AEP event safely below ground. Flows from storm events exceeding the 10% AEP event, and up to the 1% AEP storm event will utilise proposed roads, and underground drainage to transfer larger events to the scheme outlet.



Figure 16. SWMS Concept

8. REFERENCES

- *Australian Rainfall and Runoff 2016*
- Melbourne Water (2018), *MUSIC Guidelines: Recommended Input Parameters and Modelling Approaches for MUSIC Users*
- Victorian Stormwater Committee (1999), *Urban Stormwater Best Practice Environmental Management Guidelines*
- Growth Areas Authority (2011), *Engineering Design and Construction Manual for Subdivision in Growth Areas*
- Melbourne Water (2013), *Waterway Corridors – Guidelines for greenfield development areas within Port Phillip and Westernport Region*
- DEWLP (2019), *Guidelines for Development in Flood Affected Areas*

APPENDICES

[Appendix A](#)

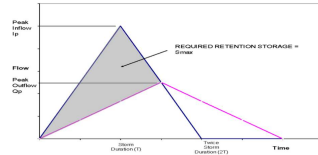
[Calculations](#)



Project Name: 1,2 Marine Drive and 5 Nepean Dr, Safety Beach
Project No.: 22-0441
Author: Amy Dowler
Date: 07/10/2022

Description Retarding Basin

Definitions



Boyd's Equation: $S_{max} = V_1 \left(1 - \frac{Q_p}{I_p} \right)$
Where:
 S_{max} = Maximum Volume of Temporary Storage (m³)
 V_1 = Volume of Inflow Flood (m³)
 I_p = Peak discharge of inflow hydrograph (m³/s)
 Q_p = Peak discharge of outflow hydrograph (m³/s)

Input

Pre-Developed Catchment Modelling						
AEP	Area Ha	Cy	Tc min	I mm/hr	$\sum Ae$ Ha	Q m³/s
63.20%	0.392	0.543	13.14	36.76	0.213	0.02
50%	0.392	0.577	12.48	41.82	0.227	0.03
20%	0.392	0.645	10.86	59.17	0.253	0.04
10%	0.392	0.679	10.03	72.14	0.266	0.05
5%	0.392	0.713	9.35	85.90	0.280	0.07
2%	0.392	0.781	8.62	105.50	0.306	0.09
1%	0.392	0.815	8.14	121.45	0.320	0.11

Post-Developed Catchment Modelling						
AEP	Area Ha	Cy	Tc min	I mm/hr	$\sum Ae$ Ha	Q m³/s
63.20%	0.392	0.621	5.50	54.16	0.244	0.04
50%	0.392	0.660	5.50	59.85	0.259	0.04
20%	0.392	0.738	5.50	78.38	0.290	0.06
10%	0.392	0.777	5.50	91.57	0.305	0.08
5%	0.392	0.816	5.50	104.78	0.320	0.09
2%	0.392	0.893	5.50	122.86	0.350	0.12
1%	0.392	0.932	5.50	137.17	0.366	0.14

Storage	AEP	1%
Release	AEP	1%

Discharge 0.11 m³/s

Storage Calculation

Volume Required 10.4 m³ Okay

Dur (mins)	I (mm/hr)	C	A	Ae	I_p (m³/s)	Q_p (m³/s)	V_1 (m³)	S_{max} (m³)	Check
3.00	154.39	0.93	0.392	0.366	0.157	0.11	28.2	8.8	More Storage
4.00	146.99	0.932	0.392	0.366	0.149	0.11	35.8	9.9	More Storage
5.00	140.37	0.932	0.392	0.366	0.143	0.11	42.8	10.4	Okay

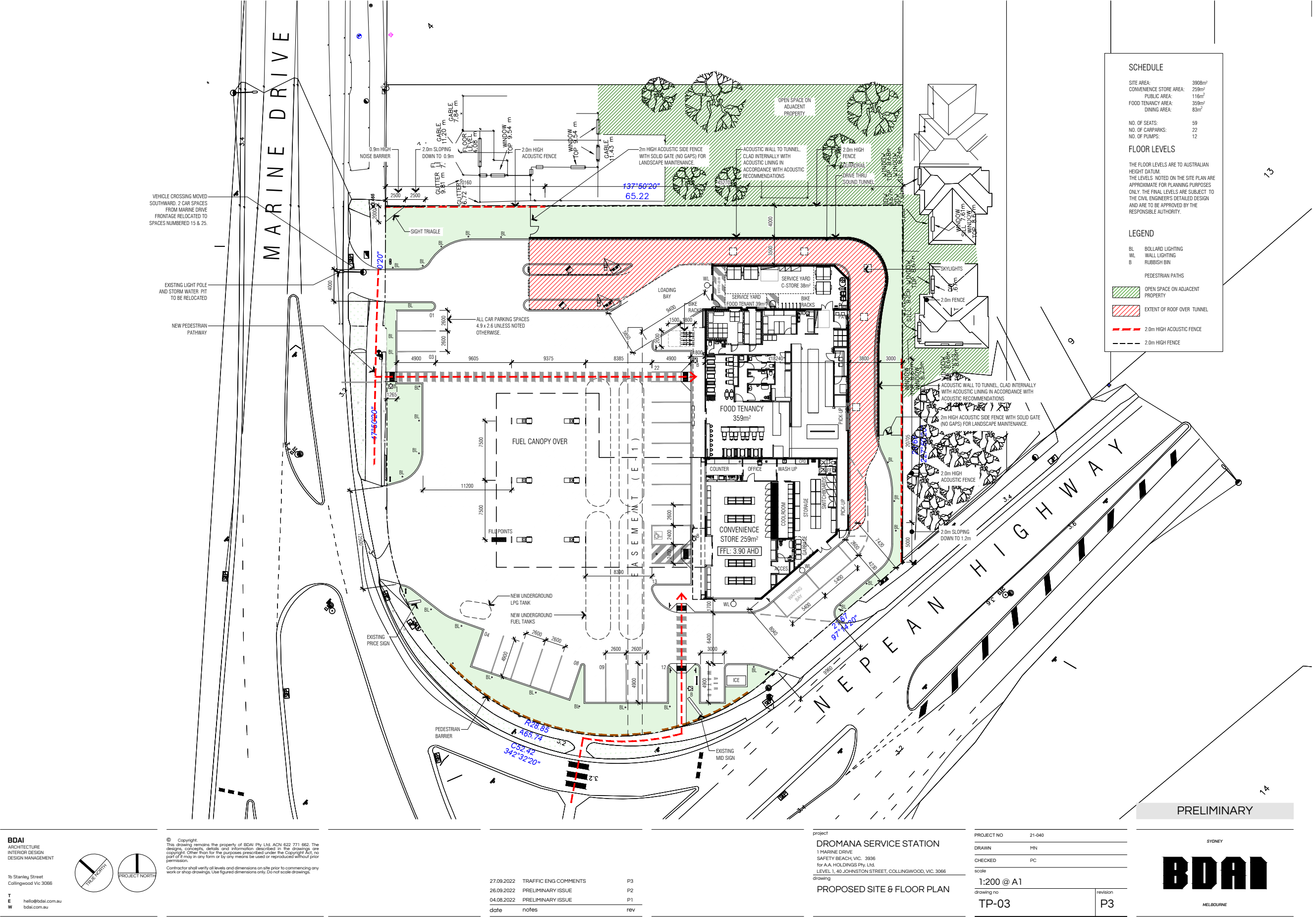


Appendix B

SWMS Concept



[Appendix C](#) [Development Plan](#)





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we are
enterprising.

We maximise the potential of property to
accelerate the success of our clients and
our people.

Our expert advice to property occupiers, owners and investors
leads the industry into the future. We invest in relationships to
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exceptional results. What's more, our global reach maximizes
the potential of property, wherever our clients do business.

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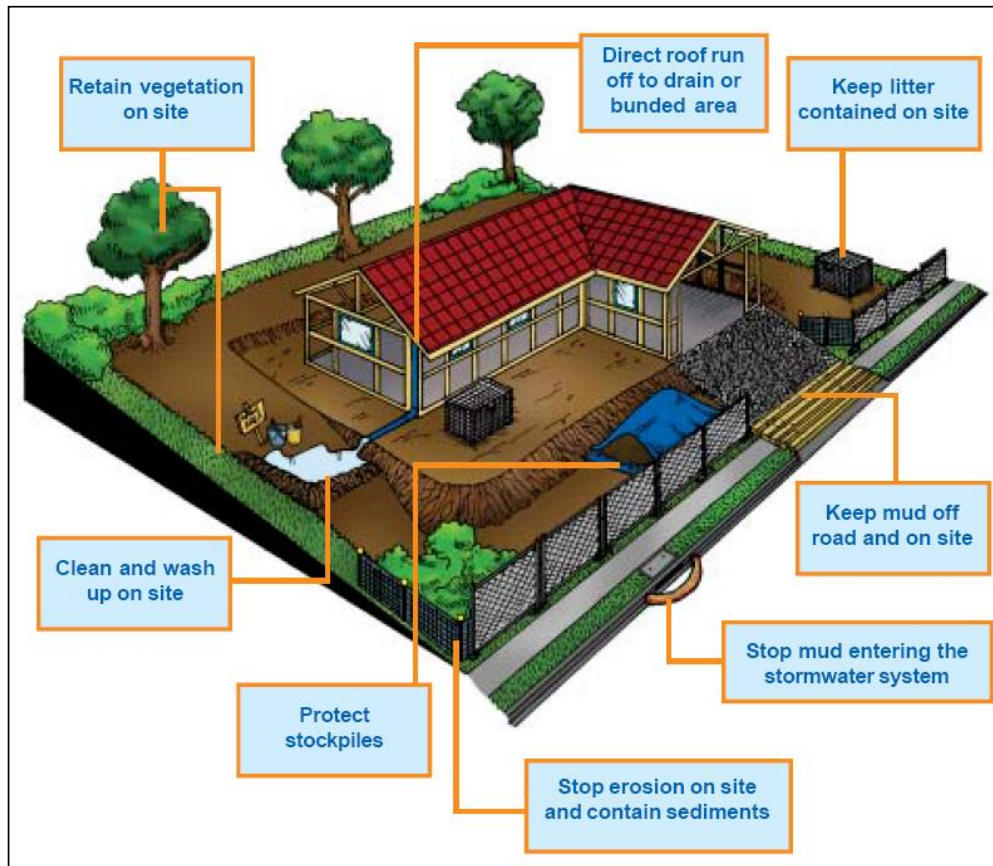


Accelerating success.



Stormwater Management at Construction Site

To manage stormwater management in the construction stage, measures will be put in place to minimise the likelihood of contaminating stormwater. This will mean ensuring buffer strips are in place, sediment traps are installed, and the site will be kept clean from any loose rubbish. The builder will follow the process outlined in “Keeping Our Stormwater Clean – A Builder’s Guide” by Melbourne Water.



Copies of “Keeping Our Stormwater Clean – A Builder’s Guide” booklet can be obtained from Melbourne Water by ringing on 131 722 or can be downloaded from the following website.

<https://www.clearwatervic.com.au/resource-library/guidelines-and-strategy/keeping-our-stormwater-clean-a-builders-guide.php>

Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

APPENDIX B – SPEL® HYDROSYSTEM – SPEL®
STORMSACK - SPEL® PURACEPTOR



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Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

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The Technology

A specialist rainwater filter, designed for installation within load bearing shafts and chambers of concrete or plastic construction. The pre fitted plastic housing is safe and easy to fit at site.

The Hydrosystem 1000 Filter uses an up-flow process. This means there is a minimal head drop between the inlet and the outlet. The cleaned water is of an outstanding water quality. The rainwater is treated within the unit by the following processes: sedimentation, filtration, adsorption and precipitation.

The initial treatment steps take place in the Dynamic Separator, where sedimentation of solid particles occurs within a radial flow regime, characterised by secondary flows.

A settling funnel to the silt trap chamber entrance ensures sediments are not remobilised. Above the separator are the filter inserts, covering the entire diameter of the unit's housing, where the second treatment step takes place.

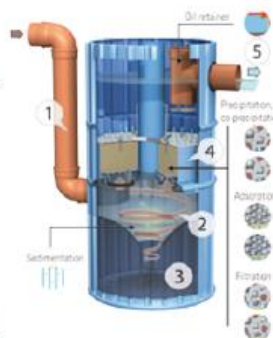
Water flows upwards through the removable filter element. As a result of both the upward flow within the filter element and the fact that the filter remains saturated, the rate of filter clogging by solids is both very limited and slow.

The filter inserts are easy to exchange.



How it works

1. The stormwater from the drained area is fed into the inlet, which is at the lower end of the shaft. A deflector plate sets up a radial flow.
2. Here, sedimentation of particles, especially the sand fraction and above, takes place in the hydrodynamic separator. This is due to turbulent secondary flows within a radial laminar flow regime.
3. The settleable solids are collected via an opening in the silt trap chamber. This chamber is evacuated periodically, via the by-pass central tube at intervals.
4. Four filter elements are located within the filter shaft. As waters flow upwards the finer particles are filtered out, whilst the dissolved pollutants are precipitated and absorbed. The filter is easily backwashed, and if completely clogged or exhausted, is easily replaced.
5. Clean water above the filter elements passes to discharge via an oil trap assembly. In the event of major spill, free floating oils etc are retained here. Normal concentrations of dissolved oils are retained within the filter elements.



Technical Data

Stormwater filter complying with DIN 1989-2. Connections: DN 200; the various types of filter elements have different material structures.

Housing material: Polyethylene
Housing weight: 68 kg
Total weight: 220 to 350 kg
depending on filter type

Packing unit SPEL Hydrosystem 1000: Pallet: 1 piece

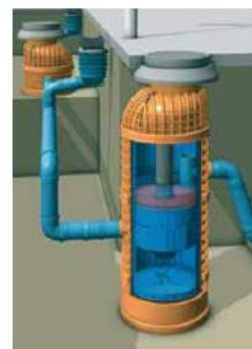
Accessories 1

SPELFilter element
Weight per filter element:
34 kg (roof / traffic)



Accessories 2

SPELFilter element
Weight per filter element:
54 kg (heavy traffic)
66 kg (metal)



Example: Installation in a shaft made of plastic



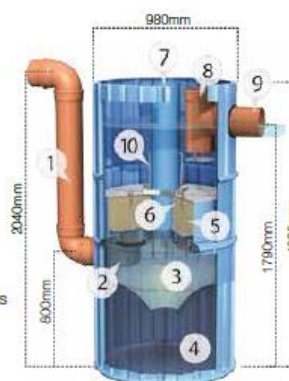


Example:

The SPEL Hydrosystem 1000 traffic installed in a concrete shaft DN1000.

Product structure:

1. Stormwater inlet (DN 200)
2. Deflector plate
3. Hydrodynamic separator
4. Silt trap
5. Filter element
6. Extraction aid for filter element
7. Overflow and suction pipe
8. Oil trap
9. Outlet stormwater storage, soakaway system or surface waters
10. Buoyancy restraint for filter elements



The SPEL Hydrosystem is available with various filter types, depending on the usage of the connected area. The Roof type is used for roof areas that do not have a significant proportion of uncoated metals; the Metal type is employed for metal roof areas, and the Traffic type is used for slightly polluted traffic areas.

The Heavy Traffic type is employed for heavily polluted traffic areas and has been granted general technical approval (Z-84.2-4) by the German Institute for Structural Engineering (DIBt). The maximum areas that may be drained depend on the nature of the surfaces. These are given in the following table.

Type	Nature of the surface to be drained	Weight of filter element / piece	Total Weight
Heavy traffic with technical approval (Z-84.2-4)	Highly polluted traffic areas (car parks in front of supermarkets, main roads, HGV access roads)	54kg	300kg
Traffic	Slightly polluted traffic areas (side streets, staff car parks, yards)	34kg	220kg
Roof	Roofs without a significant proportion of uncoated metals (< 50m²)	34kg	220kg
Metal	Roofs made of uncoated metals (copper, zinc, lead)	66kg	350kg

Parameter	Unit	Non Metal Roof		Copper Roof		Zinc Roof		Parking lot, residential street		Main road Distributor		1 Aims of LAWA	2 Drinking Water	3 Seepage	4 SPEL Hydrosystem
		from	to	from	to	from	to	from	to	from	to	permissible limit	permissible limit	control value	aim
Phsico-chemical parameters															
electrical conductivity	[µS/cm]	25	270	25	270	25	270	50	2400	110	2400	–	2500	–	< 1500
pH value	[–]	4.7	6.8	4.7	6.8	4.7	6.8	6.4	7.9	6.4	7.9	–	6.5 – 9.5	–	7.0 – 9.5
Nutrients															
phosphorous (P _{org})	[mg/l]	0.06	0.50	0.06	0.50	0.06	0.50	0.09	0.30	0.23	0.34	–	–	–	0.20
ammonium (NH ₄)	[mg/l]	0.1	6.2	0.1	6.2	0.1	6.2	0.0	0.9	0.5	2.3	–	0.5	–	0.3
nitrate (NO ₃)	[mg/l]	0.1	4.7	0.1	4.7	0.1	4.7	0.0	16.0	0.0	16.0	–	50.0	–	–
Heavy Metals															
cadmium (Cd)	[µg/l]	0.2	2.5	0.2	1.0	0.5	2.0	0.2	1.7	0.3	13.0	1.0	5.0	5.0	< 1.0
zinc (Zn)	[µg/l]	24	4,880	24	877	1,731	43,674	15	1,420	120	2,000	500	–	500	< 500
copper (Cu)	[µg/l]	6	3,416	2,200	6,500	11	950	21	140	97	104	20	2000	50	< 50
lead (Pb)	[µg/l]	2	493	2	493	4	302	98	170	11	525	50	10	25	< 25
nickel (Ni)	[µg/l]	2	7	2	7	2	7	4	70	4	70	50	20	50	< 20
chromium (Cr)	[µg/l]	2	6	2	6	2	6	6	50	6	50	50	50	50	< 50
Organic Substances															
polynuclear aromatic hydrocarbons (PAH)	[µg/l]	0.4	0.6	0.4	0.6	0.4	0.6	0.2	17.1	0.2	17.1	–	0.1	0.2	< 0.2
petroleum derived hydrocarbons (MHW)	[mg/l]	0.1	3.1	0.1	3.1	0.1	3.1	0.1	6.5	0.1	6.5	–	–	0.2	< 0.2

1 Aims of the German working group on water issues of the Federal States and the Federal Government (LAWA) for surface water, usage as potable water (1996).
2 Permissible of the German Drinking Water Ordinance (2001). 3 Control value for seepage of the German Federal Soil Protection Act an Ordinance (1999) according to § 8 1.2. 4 The aims of the system refer to average annual loads.



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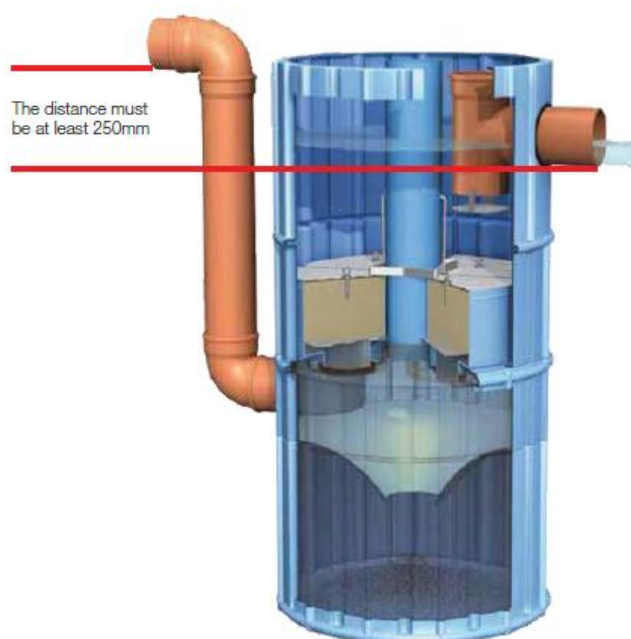
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Installation

CAUTION! Important information, please observe.



The following is to be checked before installation:

The filter must be installed with a so-called fall. This means that the incoming pipe (stormwater inlet) is led downwards just ahead of the shaft and can be connected to the lower connection as described.

The difference in invert between the incoming pipe and the outlet to discharge must be at least 250mm.





VICTORIA & TASMANIA OFFICE

PO Box 292
North Geelong BC VIC 3215
191 Station Street
Corio VIC 3214

Phone: + 61 3 5274 1336
Fax: +61 3 5274 9966

DESIGN OFFICES

New South Wales	61 2 8838 1055
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Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au



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Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

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ER

Stormwater Treatment

An all too common issue with today's highly impervious landscape is how to meet stormwater regulations with limited budgets and tight space constraints.

SPEL StormSack filtration solutions are highly engineered water quality devices that are deployed directly in the stormwater system to capture contaminants close the surface for ease of maintenance. Easily retrofitted into new or existing structures, SPEL StormSack filtration technology is a decentralized approach to stormwater treatment that essentially repurposes traditional site infrastructure and customizes it to meet specific site water quality goals. In this way, it satisfies important objectives of today's LID (Low Impact Development) criteria.

From an operations perspective, catch basins with SPEL StormSack filters are also easier and quicker to clean out because pollutants are trapped just under the grate.

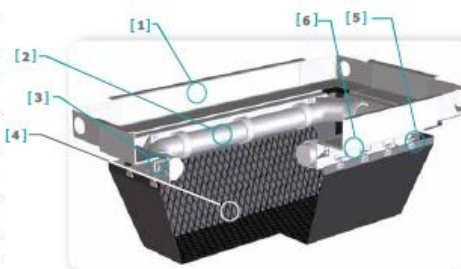
StormSack

The SPEL StormSack is specifically designed for the capture of gross pollutants: sediment, litter, and oil and grease. Ideally suited for municipal storm drain retrofits, the SPEL StormSack's unique design allows maintenance to be performed using conventional vacuum suction equipment.



Application	Regulatory Issue	Target Pollutants
Council Storm Drain Retrofits	At-source litter capture	Sediment, Litter, O&G
Commercial/Retail/Residential	Stormwater Compliance	Sediment, Litter, O&G
Litter Prone Urban Areas	Cost effective litter control	Litter > 5 mm
Scrap Metal/Solid Waste/Oil Storage/Etc	Industrial Multi-Sector General Permit	Gross Pollutants, O&G
Part of Treatment Train	Council Stormwater Quality Improvement Targets	Sediment, Litter, O&G
Construction Sediment/Erosion	Sediment Control Plan	Sediment/Erosion Control

Features	
1.	Durable, aluminum frame construction
2.	Integral oil boom effectively captures oil and grease from spills
3.	Patented dovetailed flange – allows 12cm of length/width field adjustment
4.	Polypropylene netting protects sack from suction hose during maintenance
5.	Steel clip with locking tab holds replaceable filter sack in place
6.	Baffled bypass traps floatables



Standard SPEL StormSack to suit Pit Sizes
450x450mm
600x600mm
900x600mm
900x900mm

Custom sizes (i.e. 1200x900mm) can be manufactured on short lead times



Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
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Specifications & Details

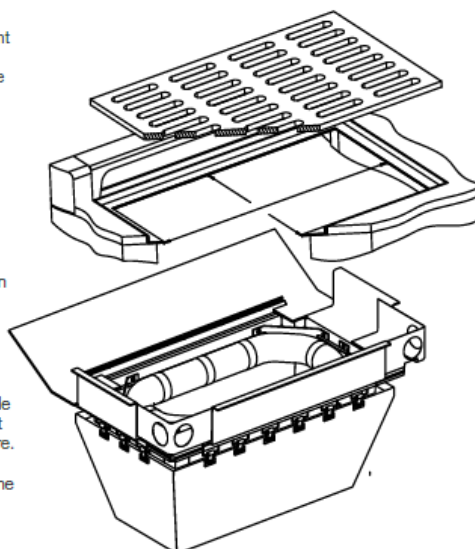
General Description

This technology is a post developed stormwater treatment system. The SPEL StormSack provides effective filtration of solid pollutants and debris typical of urban runoff, while utilising the existing or new storm drain infrastructure. The StormSack is designed to rest on the flanges of conventional catch basin frames and is engineered for most hydraulic and cold climate conditions.

Installation And Maintenance

Installation procedures shall include removing the storm grate, cleaning the ledge of debris and solids, measuring catch basin clear opening and adjusting flanges to rest on grate support ledge. Install SPEL StormSack with splash guard under curb opening so the adjustable flanges are resting on the grate support ledge. Install corner filler pieces. Reinstall storm grate directly on support flanges [rise shall be no more than 1/8 inch (3 mm)].

Maintenance: Typically the SPEL StormSack is serviceable from the street level, and therefore maintenance does not require confined space entry into the catch basin structure. The unit is designed to be maintained in place with a vacuum hose attached to a sweeper or a vactor truck. The oil boom is also designed to easily be replaced from the street level. Use only SPEL replaceable parts.



Products

Material and Design

- A. Adjustable Flange and Deflector: Aluminum Alloy 6063-T6
- B. Splash Guard: neoprene rubber
- C. Stormsack: woven polypropylene geotextile with US Mesh 20
- D. Corner Filler: Aluminum Alloy 5052-H32
- E. Lifting Tabs: Aluminum Alloy 5052-H32
- F. Replaceable Oil Boom: polypropylene 3 inch (76 mm) diameter
- G. Mesh Liner: HDPE, diamond configuration
- H. Support Hardware: CRES 300 Series

Typical Performance Characteristics

- A. Debris capacity: 8.5cu. ft. (0.24 m³)
- B. Filtered flow rate: 7.3 cfs (207 lps)
- C. Primary baffled bypass flow rate: 4.2cfs (119 lps)
- D. Secondary bypass flow rate: 0.4 cfs (10 lps)
- E. Total bypass flow rate: 4.6 cfs (130 lps)
- F. Oil boom sorption capacity: 376 oz (11 L)

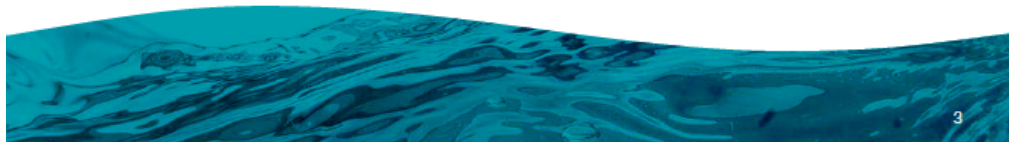
Recommended minimum clearance from bottom of SPEL StormSack to inside bottom of vault is 2 inches (50 mm)
Typical frame adjustability range of 5 inches (127 mm) in each direction.

Benefits

- Low cost gross pollutant capture
- Quick & easy installation
- Simple maintenance
- At source capture
- Adjusts to custom pit sizes

Field Performance

The SPEL Stormsack was introduced to the Australian market in 2012 and field testing is underway at several locations in South-east Queensland. Laboratory testing has shown capture of 99.99% of gross pollutants up to the bypass flow rate.* Further results will be provided as they become available.





SPEL Puraceptor

Oil water separation & high risk hydrocarbon capture



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Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
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APPLICATIONS

- Power stations, substations and switchyards
- Mining and heavy vehicle
- Windfarms
- Waste transfer depots
- Service stations and re-fuelling areas
- Asphalt plants

Guaranteed hydrocarbon spill capture in all flow and spill conditions.

SPEL Puraceptor is a full retention separator that treats all flows. It is to be sized to contain more than the anticipated maximum oil spillage — enabling it to be fully operational in treating stormwater runoff at all times.

It has two chambers, a coalescer and an automatic closure device specifically designed to contain major oil spills, thereby making it suitable for high-risk applications. It achieves a water discharge quality of less than 5ppm of oils and hydrocarbons, complying with European Standard BS EN 858.1. 2006.

Treatable flow rates range from 2LPS to 200LPS. Pipe sizes range from 100mm to 450mm (larger sizes on request).

Tested Treatment Efficiencies*

Pollutant	Efficiency
Gross Pollutants (GP)	100%
Total Suspended Solids (TSS)	87%
Total Phosphorus (TP)	11%
Total Nitrogen (TN)	23%
Petroleum Hydrocarbon	99.99%
Spill capture (Site specific volume)	100%

*Contact Spel to confirm approved performance for the project LGA



2 SPEL Puraceptor

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281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
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Stormwater Treatment

SPEL PURACEPTOR Class 1 stormwater treatment separators cater for potential hazards to the environment including sites where there is a risk of oil and fuel spills.

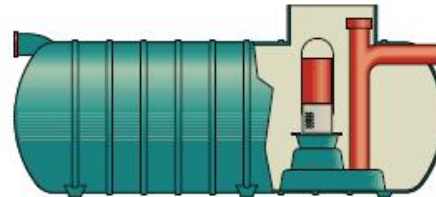
Oils and all petroleum hydrocarbons are treated to the highest discharge quality exceeding EPA standards ensuring it safe for stormwater discharge. Major Oil spills from a petrol tanker or a transformer rupture are captured and contained preventing any stormwater discharge.

- Independently tested (laboratory) and certified to discharge < 1.86ppm petroleum hydrocarbons (TPH), from 5,000ppm Ingress
- Independently field tested to discharge 'no detection' from >33,000.0ppm

The results obtained at HR Wallingford, U.K. are certified to European Standard EN BS858.1 (2006) and are in line with the designed performance criteria for high performance and long service life between maintenance periods, achieving results averaging between 0.1 - 1.86mg/L.

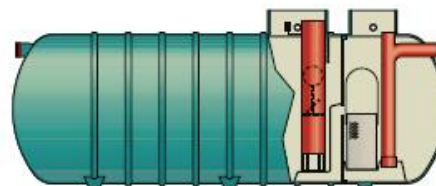


FEATURES



Single Chamber

- Medium risk oil/fuel storage and handling areas.
- Service stations with full canopy protection.
- Commercial vehicle/plant maintenance yards and contaminated industrial areas.



Two Chamber

- High risk oil/fuel storage and handling areas where maximum protection is required.
- Suitable for service stations exposed to rainfall runoff.
- Continues to treat stormwater even after the maximum designed spill has occurred.
- Heavily contaminated industrial areas, power/sub stations, fire training grounds, railway maintenance and fuelling depots.
- The second chamber provides protection to the coalescer foam inserts from silt and fuel/oil contamination, resulting in less frequent maintenance and easier cleaning of the coalescer foam inserts.
- A large silt capacity is incorporated in the first chamber greatly reduces the frequency of tank cleaning on highly polluted sites.

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281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
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HOW IT WORKS

SPEL Puraceptor is a FULL RETENTION separator that treats all flows and is sized to contain more than the anticipated maximum oil spillage enabling it to be fully operational at all times.

It has two chambers, a coalescer and is fitted with an automatic closure device specifically designed to contain major oil spills thereby making it suitable for high risk applications.

It achieves a water discharge quality of less than 5ppm of oils and hydrocarbons complying to European Standard BS EN 858.1. 2006. Treatable flow rates range from 2LPS to 200LPS. Pipe sizes range from 100mm to 450mm (larger sizes and flows on request).

1. AUTOMATIC CLOSURE DEVICE

The AUTOMATIC CLOSURE DEVICE (A.C.D.) is a precisely engineered device comprising a water-buoyant ball that is sensitive to any change in the water density as a consequence of light liquids build up, thereby automatically activating a process of depressing the A.C.D. to SHUT OFF the separator, preventing pollutants from discharging to drains and waterways.

2. FULL RETENTION

All liquid is treated. There is no by-pass operation.

3. COALESCER EQUIPPED

Provides a coalescing process for the separation of smaller globular of light liquid pollutants to reduce the light liquid content in the outlet to 5mg/litre or less.

4. INLET DIP PIPE - FLAME TRAP

For minimum turbulence and to prevent fire and inflammable vapours passing through to the drainage system.

5. TWO CHAMBER

A non-turbulent flow through two horizontal treatment chambers, utilising the underflow principle to retain light liquids in all flow conditions.

A. CONTAINMENT CHAMBER: Where Total Suspended Solids (TSS) silt, sediments, sludge and gross pollutants are trapped and settle on the chamber floor and where light liquids are contained.

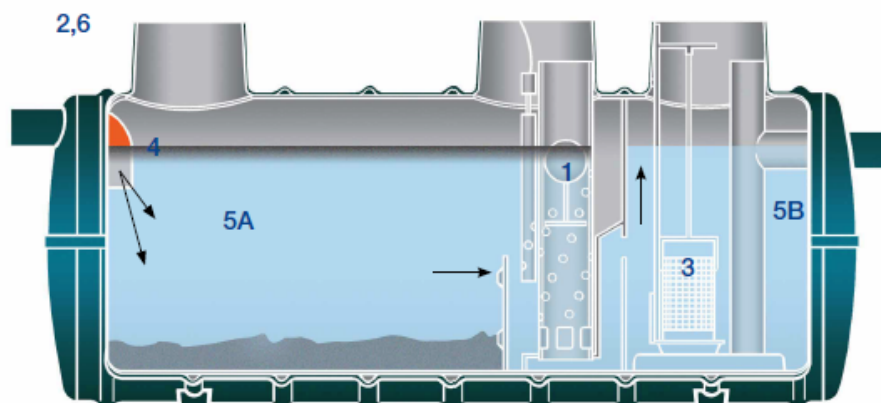
B. COALESCER CHAMBER: Where light liquids separation is enhanced reducing it to 5mg/litre or less prior to discharge.

6. GRAVITY OPERATED

Will function in the event of power failure and fits into existing pipe drainage systems or new sites.

7. MAINTENANCE

Easy and safe with no entering of the tank required.



4 SPEL Puraceptor

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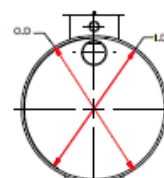
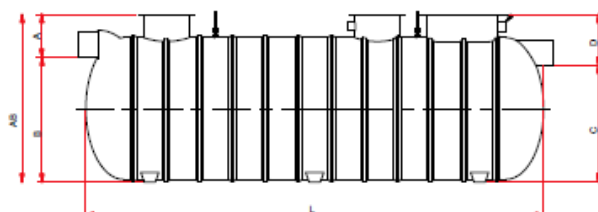
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SPECIFICATIONS



Models	Treatment Flow Rate	Weights (KG)	Dimensions (mm)								Maximum Inlet & Outlet Pipe Size (mm) Configuration*	Manholes				Max. Spill at Shut Off	Max. Working Capacity
			A	B	A&B	C	D	L	OD	ID		Qty	Size	Qty	Size		
100 Series Tanks - 900 mm Internal Diameter																	
P002.C1.2C	2 LPS	120	400	820	1220	800	420	1700	930	900	100	2	450 ID	-	-	250	800
200 Series Tanks - 1200 mm Internal Diameter																	
P004.C1.2C	4 LPS	330	460	1100	1560	1080	480	2600	1350	1200	150	2	600 ID	-	-	1,000	2,050
P006.C1.2C	6 LPS	400	425	1135	1560	1095	465	3035	1350	1200	150	2	600 ID	-	-	1,300	2,550
P008.C1.2C	8 LPS	450	460	1100	1560	1060	500	3800	1350	1200	150	2	600 ID	-	-	1,900	3,200
P010.C1.2C	10 LPS	500	450	1110	1560	1060	500	4600	1350	1200	150	2	600 ID	-	-	2,500	3,900
P013.C1.2C	13 LPS	550	446	1114	1560	1040	520	5800	1350	1200	150	3	600 ID	-	-	3,000	4,800
P015.L.C1.2C	15 LPS	600	425	1135	1560	1065	495	6500	1350	1200	150	3	600 ID	-	-	3,400	5,400
300 Series Tanks - 1850 mm Internal Diameter																	
P015.S.C1.2C	15 LPS	650	620	1630	2250	1600	650	3000	1950	1850	300	1	600 ID	1	900 x 600	3,500	5,500
P020.C1.2C	20 LPS	850	625	1625	2250	1585	665	4000	1950	1850	300	1	600 ID	1	900 x 600	3,900	7,300
P030.C1.2C	30 LPS	1100	660	1590	2250	1575	675	4860	1950	1850	300	1	600 ID	1	900 x 600	5,500	10,800
P040.S.C1.2C	40 LPS	1180	550	1600	2150	1500	650	5900	1950	1800	300	1	600 ID	1	900 x 600	8,000	13,400
P040.C1.2C	40 LPS	1240	650	1600	2250	1550	700	6540	1950	1850	300	2	600 ID	1	900 x 600	9,900	14,400
P050.L.C1.2C	50 LPS	1400	650	1600	2250	1520	730	8500	1950	1850	300	2	600 ID	1	900 x 600	10,000	18,000
P060.L.C1.2C	60 LPS	1550	650	1600	2250	1500	750	10,000	1950	1850	300	2	600 ID	1	900 x 600	11,200	21,600
P070.L.C1.2C	70 LPS	1700	650	1600	2250	1500	750	11,600	1950	1850	300	2	600 ID	1	900 x 600	12,400	25,200
400 Series Tanks - 2480 mm Internal Diameter																	
P060.S.C1.2C	50 LPS	1400	720	2230	2950	2150	800	4680	2600	2480	375	1	600 ID	1	900 x 600	9,000	18,000
P060.S.C1.2C	60 LPS	1560	550	2400	2950	2220	730	5500	2600	2480	375	1	600 ID	1	900 x 600	10,700	21,600
P070.S.C1.2C	70 LPS	1710	750	2200	2950	2150	800	6550	2600	2480	375	3	600 ID	1	900 x 600	12,400	25,200
P080.C1.2C	80 LPS	2000	600	2350	2950	2250	700	7500	2600	2480	375	3	600 ID	1	900 x 600	14,900	29,600
P090.C1.2C	90 LPS	2300	715	2235	2950	2150	800	8400	2600	2480	375	3	600 ID	1	1200 x 600	16,200	32,400
P100.C1.2C	100 LPS	2550	710	2240	2950	2150	800	9000	2600	2480	375	3	600 ID	1	1200 x 600	17,700	35,700
P110.C1.2C	110 LPS	2650	700	2250	2950	2150	800	9600	2600	2480	375	3	600 ID	1	1200 x 600	18,300	38,200
P120.C1.2C	120 LPS	2750	570	2400	2970	2300	670	10,230	2600	2480	375	3	600 ID	1	1200 x 600	21,700	43,200
P150.C1.2C	150 LPS	3360	670	2280	2950	2150	800	13,420	2600	2480	375	4	600 ID	1	1200 x 600	27,700	54,000
P180.C1.2C	180 LPS	3580	650	2300	2950	2150	800	15,400	2600	2480	375	5	600 ID	1	1200 x 600	32,500	64,800
P200.C1.2C	200 LPS	4150	555	2395	2950	2230	720	16,500	2600	2480	375	5	600 ID	1	1200 x 600	36,200	72,000

# Key to Main Dimensions & Notes	
A	Invert Level - Depth from top of manhole to base of inlet pipe.
B	Depth from base of inlet pipe to base of tank feet.
A&B	Overall depth of tank, from top of manhole to base of tank feet.
C	Depth from base of outlet pipe to base of tank feet.
D	Invert Level - Depth from top of manhole to base of outlet pipe.
L	Overall length tank.
OD	Overall outside diameter of tank including ribs.
ID	Internal diameter of tank.
S&L	"S" is Short Series Tank & "L" is Long Series Tank.



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Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

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SPEL Puraceptor

Oil water separation & high risk hydrocarbon capture

NSW HEAD OFFICE 100 Silverwater Rd, Silverwater NSW 2128 PO Box 7128, Silverwater NSW 1811 P: +61 2 8705 0255 P: 1300 773 500 E: nswwsales@spel.com.au	QLD MAIN OFFICE 130 Sandstone Pl, Parkinson QLD 4115 P: +61 7 3271 6960 P: 1300 773 500 I E: qld.sales@spel.com.au QLD SUNSHINE COAST BRANCH 19-27 Fred Chaplin Circuit, Balls Creek, QLD 4551 P: 1300 773 500 I E: qld.sales@spel.com.au	VIC & TAS OFFICE 897 Wellington Rd Rowville VIC 3178 P: +61 3 5274 1336 P: 1800 810 139 I E: sales@spel.com.au VIC GEELONG BRANCH 70 Technology Close, Corio, P: +61 3 5274 1336 P: 1800 810 139 I E: sales@spel.com.au
SA OFFICE 9 Hampden Road, Mount Barker SA 5251 P: 1300 773 500 E: sales@spel.com.au	WA OFFICE 2 Model Crescent Canning Vale WA 6155 P: +61 8 9350 1000 P: 1800 335 550 E: sales@spel.com.au	NZ OFFICE AUCKLAND 100 Montgomerie Road Airport Oaks P: +64 9 276 9045 E: sales@spel.com.au
NZ OFFICE WANGANUI 43 Heads Road Wanganui New Zealand P: +64 6 349 0088 I E: sales@spel.com.au	NZ OFFICE WELLINGTON 41 Raiffe St Portua Wellington New Zealand P: +64 4 239 6006 I E: sales@spel.com.au	PHILIPPINES OFFICE METRO MANILA Unit 2210 Lumiere Residences Pasig Boulevard, Pasig City P: +61 2 8705 0255 P: 1300 773 500 E: sales@spel.com.au
SINGAPORE OFFICE 512 Chai Chea Lane, #06-04 Bedok Industrial Estate, Singapore 469028 P: +61 2 8705 0255 P: 1300 773 500 I E: sales@spel.com.au	UK OFFICE UNITED KINGDOM Lancaster Rd Shrovesbury SY1 3NQ UK P: +44 (0)1743 445200 I E: sales@spel.com.au	USA OFFICE CLEVELAND 4548 Industrial Parkway Cleveland, Ohio 44135 P: +61 2 8705 0255 P: 1300 773 500 E: sales@spel.com.au

We believe clean water is a right not a privilege and we work to ensure a joy in water experience for you with your children and grandchildren.



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joy in water



100 Silverwater Rd, Silverwater NSW 2128 Australia
 Phone: (02) 8705 0255
 Email: sales@spel.com.au
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Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

APPENDIX C – DAYLIGHT ACCESS – GREEN STAR CALCULATION

The Green Building Council of Australia (GBCA) has created a daylight access calculation method within the Green Star benchmarking tool. This tool is widely recognised by Councils and Industry.

The Green Star Daylight Hand Calculation method is used to determine if there are risks associated with the current design, particularly with respect to meeting the desired daylight factors referenced in the Sustainable Management Plan in the Planning Process (SDAPP) Indoor Environment Quality guidelines.

According to the SDAPP guidelines, best practice is achieved where 2% daylight factor is achieved across 30% of the floor area of the nominated area.

The calculation method is based on one simple formula to calculate a zone of compliance within a nominated room. The compliant zone is the area of the room achieving 2% daylight factor and can be calculated as follows:

$$\text{Zone of Compliance} = 2 \times h \times w$$

w is the width of the glazing serving the room

h is the height of the window head above the desktop/table level

Windows serving the nominated area are required to have a minimum 40% VLT to use the formula.

The percentage of compliant area within the nominated area can then be easily calculated with the following formula:

$$\text{Percentage of compliant area} = \frac{\text{Zone of Compliance}}{\text{Nominated Area}} \times 100$$

Site Description

The proposed development consists of convenience store and food tenancy. The areas such as storage, toilets and cool rooms will not be occupied regularly, hence are not included. The nominated areas for the Hand Calculation are only comprised of the front shop area and seating area which will be regularly occupied.

The desktop/table level has been estimated to be 700mm.

See below for the mark-up of the compliant zone (orange) within each nominated area (light blue).

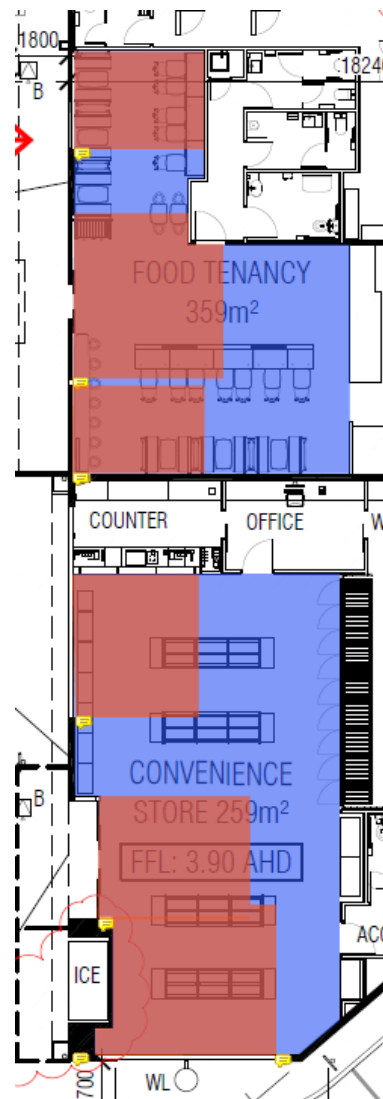


Figure 3: Compliance zone for food tenancy and convenience store

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East Brunswick VIC 3057

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03 8691 6928

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admin@fraterconsultingservices.com.au



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	Nominated Areas (m ²)	Compliant Areas (m ²)	Compliant Areas (%)
Food Tenancy	81.2	44.5	
Convenience Store	111.2	55.8	
TOTAL	81.2	44.5	55%

The green star hand calculation for the proposed food tenancy and convenience store shows that the development will achieve and exceed SDAPP best practice requirement with achieving over 55% of floor area at 2% daylight factor.

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281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

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APPENDIX D – VOC & FORMALDEHYDE EMISSION LIMITS

The following table are an extract of the Green Star Design and as built submission guidelines:

Table 13.1.1: Maximum TVOC Limits for Paints, Adhesives and Sealants

Product Category	Max TVOC content in grams per litre (g/L) of ready to use product.
General purpose adhesives and sealants	50
Interior wall and ceiling paint, all sheen levels	16
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coatings for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

The product complies with the Total VOC (TVOC) limits specified in the Table below.

Carpet Test Standards and TVOC Emissions Limits

Test protocol	Limit
ASTM D5116 - Total VOC limit	0.5mg/m ² per hour
ASTM D5116 - 4-PC (4-Phenylcyclohexene)	0.05mg/m ² per hour
ISO 16000 / EN 13419 - TVOC at three days	0.5 mg/m ² per hour
ISO 10580 / ISO/TC 219 (Document N238) - TVOC at 24 hours	0.5mg/m ² per hour



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Table 13.2: Formaldehyde Emission Limit Values for Engineered Wood Products

Test Protocol	Emission Limit/ Unit of Measurement
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1mg/ L
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.5 mg/L
AS/NZS 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1mg/ L
AS/NZS 4357.4 - Laminated Veneer Lumber (LVL)	≤1mg/ L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1mg/ L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1 mg/m ² hr*
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m ² hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m ² hr (at 3 days)
ASTM D6007	≤0.12mg/m ³ **
ASTM E1333	≤0.12mg/m ³ ***
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m ³
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m ² hr

*mg/m²hr may also be represented as mg/m²/hr.



APPENDIX E – BESS ASSESSMENT

Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterconsultingservices.com.au

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BESS Report

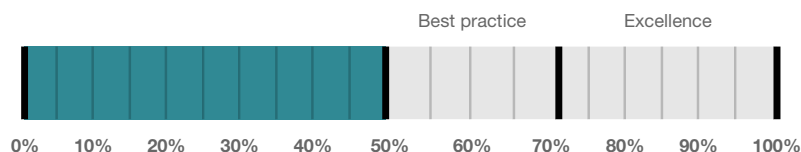
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 1 Marine Dr Safety Beach Victoria 3936. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Mornington Peninsula Shire Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score



51%

Project details

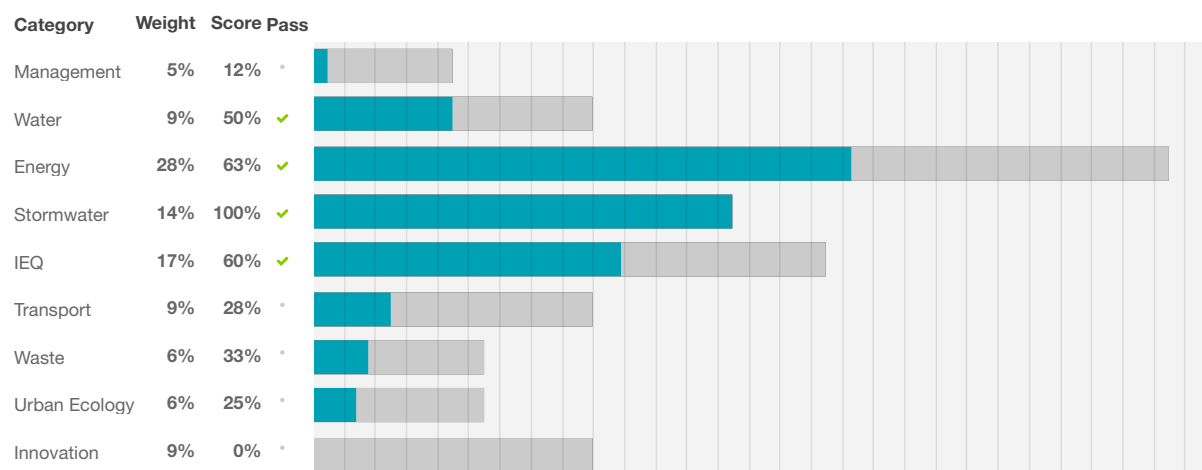
Address 1 Marine Dr Safety Beach Victoria 3936
Project no EFA7C0E1-R2
BESS Version BESS-7

Site type Non-residential development
Account zoe@fraterconsultingservices.com.au
Application no.
Site area 3,908.00 m²
Building floor area 618.00 m²
Date 24 April 2023
Software version 1.7.1-B.396



Performance by category

● Your development ● Maximum available



The Built Environment Sustainability Scorecard is an initiative of the Council Alliance for a Sustainable Built Environment (CASBE).
For more details see www.bess.net.au

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BESS, 1 Marine Dr, Safety Beach VIC 3936, Australia 1 Marine Dr, Safety Beach ...

Buildings

Name	Height	Footprint	% of total footprint
Building 1	1	618 m ²	100%

Dwellings & Non Res Spaces

Non-Res Spaces

Name	Quantity	Area	Building	% of total area
Shop				
Food Tenancy	1	359 m ²	Building 1	58%
Convenience Store	1	259 m ²	Building 1	41%
Total	2	618 m²	100%	

Supporting information

Floorplans & elevation notes

Credit	Requirement	Response	Status
Management 3.2	Individual utility meters annotated		-
Water 3.1	Water efficient garden annotated		-
Energy 4.2	Floor plans showing location of photovoltaic panels as described.		-
Stormwater 1.1	Location of any stormwater management systems used in STORM or MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strips)		-
Transport 1.4	All nominated non-residential bicycle parking spaces		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 2.1	Vegetated areas		-

Supporting evidence

Credit	Requirement	Response	Status
Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
Energy 3.7	Provide a written description of the average lighting power density to be installed in the development and specify the lighting type(s) to be used.		-
Energy 4.2	Specifications of the solar photovoltaic system(s).		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 1.4	A short report detailing assumptions used and results achieved.		-

BESS, 1 Marine Dr, Safety Beach VIC 3936, Australia 1 Marine Dr, Safety Beach ...

Credit summary

Management Overall contribution 4.5%

		12%
1.1 Pre-Application Meeting		0%
2.3 Thermal Performance Modelling - Non-Residential		0%
3.2 Metering - Non-Residential		100%
3.3 Metering - Common Areas		0%
4.1 Building Users Guide		0%

Water Overall contribution 9.0%

		Minimum required 50%	50%	✓ Pass
1.1 Potable water use reduction			40%	
3.1 Water Efficient Landscaping			100%	
4.1 Building Systems Water Use Reduction			N/A	✦ Scoped Out
No testing fire safety systems				

Energy Overall contribution 27.5%

		Minimum required 50%	63%	✓ Pass
1.1 Thermal Performance Rating - Non-Residential			37%	
2.1 Greenhouse Gas Emissions			100%	
2.2 Peak Demand			100%	
2.3 Electricity Consumption			100%	
2.4 Gas Consumption			100%	
2.6 Electrification			0%	⊗ Disabled
Credit is available when project is declared to have no gas connection.				
3.1 Carpark Ventilation			N/A	✦ Scoped Out
No encl				
3.2 Hot Water			100%	
3.7 Internal Lighting - Non-Residential			100%	
4.1 Combined Heat and Power (cogeneration / trigeneration)			N/A	✦ Scoped Out
No cogeneration or trigeneration system in use.				
4.2 Renewable Energy Systems - Solar			100%	
4.4 Renewable Energy Systems - Other			0%	⊗ Disabled
No other (non-solar PV) renewable energy is in use.				

The Built Environment Sustainability Scorecard is an initiative of the Council Alliance for a Sustainable Built Environment (CASBE).
For more details see www.bess.net.au

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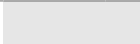
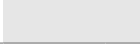
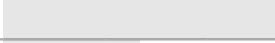
Stormwater Overall contribution 13.5%

		Minimum required 100%	100%	✓ Pass
1.1 Stormwater Treatment			100%	

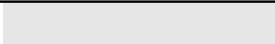
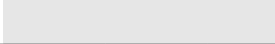
IEQ Overall contribution 16.5%

		Minimum required 50%	60%	✓ Pass
1.4 Daylight Access - Non-Residential			55%	✓ Achieved
2.3 Ventilation - Non-Residential			66%	✓ Achieved
3.4 Thermal comfort - Shading - Non-residential			66%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential			0%	
4.1 Air Quality - Non-Residential			100%	

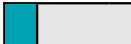
Transport Overall contribution 9.0%

			28%	
1.4 Bicycle Parking - Non-Residential			100%	
1.5 Bicycle Parking - Non-Residential Visitor			0%	
1.6 End of Trip Facilities - Non-Residential			0%	
2.1 Electric Vehicle Infrastructure			0%	
2.3 Motorbikes / Mopeds			0%	

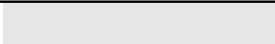
Waste Overall contribution 5.5%

			33%	
1.1 - Construction Waste - Building Re-Use			0%	
2.1 - Operational Waste - Food & Garden Waste			0%	
2.2 - Operational Waste - Convenience of Recycling			100%	

Urban Ecology Overall contribution 5.5%

			25%	
1.1 Communal Spaces			0%	
2.1 Vegetation			50%	
2.2 Green Roofs			0%	
2.3 Green Walls and Facades			0%	
3.2 Food Production - Non-Residential			0%	

Innovation Overall contribution 9.0%

			0%	
1.1 Innovation			0%	

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BESS, 1 Marine Dr, Safety Beach VIC 3936, Australia 1 Marine Dr, Safety Beach ...

Credit breakdown

Management Overall contribution 1%

1.1 Pre-Application Meeting	0%
Score Contribution	This credit contributes 37.5% towards the category score.
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?
Question	Criteria Achieved ?
Project	No
2.3 Thermal Performance Modelling - Non-Residential	0%
Score Contribution	This credit contributes 25.0% towards the category score.
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2019 Section J1.5?
Question	Criteria Achieved ?
Shop	No
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2019 Section J (Energy Efficiency), NABERS or Green Star?
Question	Criteria Achieved ?
Shop	No
3.2 Metering - Non-Residential	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Have utility meters been provided for all individual commercial tenants?
Question	Criteria Achieved ?
Shop	Yes
3.3 Metering - Common Areas	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Have all major common area services been separately submetered?
Question	Criteria Achieved ?
Shop	No
4.1 Building Users Guide	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	No

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Water Overall contribution 4% Minimum required 50%

Water Approach	
What approach do you want to use for Water?:	Use the built in calculation tools
Project Water Profile Question	
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	No
Water fixtures, fittings and connections	
Building: All	Building 1
Showerhead: All	Scope out
Bath: All	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	>= 5 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	Scope out
1.1 Potable water use reduction	40%
Score Contribution	This credit contributes 83.3% towards the category score.
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.
Output	Reference
Project	901 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	637 kL
Output	Proposed (including rainwater and recycled water use)
Project	637 kL
Output	% Reduction in Potable Water Consumption
Project	29 %
3.1 Water Efficient Landscaping	100%
Score Contribution	This credit contributes 16.7% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes
4.1 Building Systems Water Use Reduction	N/A  Scoped Out
This credit was scoped out	No testing fire safety systems

BESS, 1 Marine Dr, Safety Beach VIC 3936, Australia 1 Marine Dr, Safety Beach ...

Energy Overall contribution 18% Minimum required 50%

Use the BESS Deem to Satisfy (DtS) method for Energy?:	Yes
Do all exposed floors and ceilings (forming part of the envelope) demonstrate a minimum 10% improvement in required NCC2019 insulation levels (total R-value upwards and downwards)?:	Yes
Does all wall and glazing demonstrate meeting the required NCC2019 facade calculator (or better than the total allowance)?:	Yes
Are heating and cooling systems within one Star of the most efficient equivalent capacity unit available, or Coefficient of Performance (CoP) & Energy Efficiency Ratios (EER) not less than 85% of the CoP & EER of the most efficient equivalent capacity unit available?:	Yes
Are water heating systems within one star of the best available, or 85% or better than the most efficient equivalent capacity unit?:	Yes
Are you installing a cogeneration or trigeneration system?:	No
Non-Residential Building Energy Profile	
Heating, Cooling & Comfort Ventilation - Electricity Reference fabric & services:	-
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services:	-
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & services:	-
Heating - Gas - Reference fabric and services:	-
Heating - Gas - Proposed fabric and Reference services:	-
Heating - Gas - Proposed fabric and services:	-
Heating - Wood - reference fabric and services:	-
Heating - Wood - proposed fabric and reference services:	-
Heating - Wood - proposed fabric and services:	-
Hot Water - Electricity - Reference:	-
Hot Water - Electricity - Proposed:	-
Hot Water - Gas - Baseline:	-
Hot Water - Gas - Proposed:	-
Lighting - Reference:	-
Lighting - Proposed:	-
Peak Thermal Cooling Load - Reference:	-
Peak Thermal Cooling Load - Proposed:	-
Solar Photovoltaic system	
System Size (lesser of inverter and panel capacity): PV 1	3.0 kW peak
Orientation (which way is the system facing)?: PV 1	North
Inclination (angle from horizontal): PV 1	10.0 Angle (degrees)

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1.1 Thermal Performance Rating - Non-Residential		37%	
Score Contribution	This credit contributes 36.4% towards the category score.		
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2019 Section J)?		
2.1 Greenhouse Gas Emissions		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?		
2.2 Peak Demand		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?		
2.3 Electricity Consumption		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual electricity consumption against the benchmark?		
2.4 Gas Consumption		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual gas consumption against the benchmark?		
2.6 Electrification		0%	⊘ Disabled
This credit is disabled	Credit is available when project is declared to have no gas connection.		
3.1 Carpark Ventilation		N/A	✦ Scoped Out
This credit was scoped out	No encl		
3.2 Hot Water		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?		
3.7 Internal Lighting - Non-Residential		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	Does the maximum illumination power density (W/m2) in at least 90% of the area of the relevant building class meet the requirements in Table J6.2a of the NCC 2019 Vol 1?		
Question	Criteria Achieved ?		
Shop	Yes		
4.1 Combined Heat and Power (cogeneration / trigeneration)		N/A	✦ Scoped Out
This credit was scoped out	No cogeneration or trigeneration system in use.		

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4.2 Renewable Energy Systems - Solar		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?		
Output	Solar Power - Energy Generation per year		
Shop	3,636 kWh		
Output	% of Building's Energy		
Shop	5 %		
4.4 Renewable Energy Systems - Other		0%	⊘ Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.		

Stormwater Overall contribution 14% Minimum required 100%

	Which stormwater modelling are you using?:		MUSIC or other modelling software
	1.1 Stormwater Treatment		100%
	Score Contribution	This credit contributes 100.0% towards the category score.	
	Criteria	Has best practice stormwater management been demonstrated?	
	Question	Flow (ML/year)	
	Project	0.0 % Reduction	
	Question	Total Suspended Solids (kg/year)	
	Project	87.1 % Reduction	
	Question	Total Phosphorus (kg/year)	
	Project	61.9 % Reduction	
	Question	Total Nitrogen (kg/year)	
	Project	59.9 % Reduction	

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IEQ Overall contribution 10% Minimum required 50%

1.4 Daylight Access - Non-Residential		55%	✓ Achieved
Score Contribution	This credit contributes 35.3% towards the category score.		
Criteria	What % of the nominated floor area has at least 2% daylight factor?		
Question	Percentage Achieved?		
Shop	55 %		
2.3 Ventilation - Non-Residential		66%	✓ Achieved
Score Contribution	This credit contributes 35.3% towards the category score.		
Criteria	What % of the regular use areas are effectively naturally ventilated?		
Question	Percentage Achieved?		
Shop	-		
Criteria	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012?		
Question	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668:2012?		
Shop	50 %		
Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?		
Question	Value		
Shop	800 ppm		
3.4 Thermal comfort - Shading - Non-residential		66%	
Score Contribution	This credit contributes 17.6% towards the category score.		
Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?		
Question	Percentage Achieved?		
Shop	50 %		
3.5 Thermal Comfort - Ceiling Fans - Non-Residential		0%	
Score Contribution	This credit contributes 5.9% towards the category score.		
Criteria	What percentage of regular use areas in tenancies have ceiling fans?		
Question	Percentage Achieved?		
Shop	0 %		
4.1 Air Quality - Non-Residential		100%	
Score Contribution	This credit contributes 5.9% towards the category score.		
Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?		
Question	Criteria Achieved ?		
Shop	Yes		

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	Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?
	Question	Criteria Achieved ?
	Shop	Yes
	Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?
	Question	Criteria Achieved ?
	Shop	Yes

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Transport Overall contribution 3%

1.4 Bicycle Parking - Non-Residential		100%
Score Contribution	This credit contributes 28.6% towards the category score.	
Criteria	Have the planning scheme requirements for employee bicycle parking been exceeded by at least 50% (or a minimum of 2 where there is no planning scheme requirement)?	
Question	Criteria Achieved ?	
Shop	Yes	
Question	Bicycle Spaces Provided ?	
Shop	12	
1.5 Bicycle Parking - Non-Residential Visitor		0%
Score Contribution	This credit contributes 14.3% towards the category score.	
Criteria	Have the planning scheme requirements for visitor bicycle parking been exceeded by at least 50% (or a minimum of 1 where there is no planning scheme requirement)?	
Question	Criteria Achieved ?	
Shop	No	
Question	Bicycle Spaces Provided ?	
Shop	0	
1.6 End of Trip Facilities - Non-Residential		0%
Score Contribution	This credit contributes 14.3% towards the category score.	
Criteria	Where adequate bicycle parking has been provided. Is there also: * 1 shower for the first 5 employee bicycle spaces plus 1 to each 10 employee bicycles spaces thereafter, * changing facilities adjacent to showers, and * one secure locker per employee bicycle space in the vicinity of the changing / shower facilities?	
Question	Number of showers provided ?	
Shop	0	
Question	Number of lockers provided ?	
Shop	12	
Output	Min Showers Required	
Shop	1	
Output	Min Lockers Required	
Shop	12	
2.1 Electric Vehicle Infrastructure		0%
Score Contribution	This credit contributes 28.6% towards the category score.	
Criteria	Are facilities provided for the charging of electric vehicles?	
Question	Criteria Achieved ?	
Project	No	

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2.3 Motorbikes / Mopeds	0%
Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?
Question	Criteria Achieved ?
Project	No

Waste Overall contribution 2%

1.1 - Construction Waste - Building Re-Use	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?
Question	Criteria Achieved ?
Project	No
2.1 - Operational Waste - Food & Garden Waste	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	No
2.2 - Operational Waste - Convenience of Recycling	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are the recycling facilities at least as convenient for occupants as facilities for general waste?
Question	Criteria Achieved ?
Project	Yes

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Urban Ecology Overall contribution 1%

1.1 Communal Spaces	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Is there at least the following amount of common space measured in square meters : * 1m ² for each of the first 50 occupants * Additional 0.5m ² for each occupant between 51 and 250 * Additional 0.25m ² for each occupant above 251?
Question	Common space provided
Shop	0.0 m ²
Output	Minimum Common Space Required
Shop	55 m ²
2.1 Vegetation	50%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?
Question	Percentage Achieved ?
Project	16 %
2.2 Green Roofs	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green roof?
Question	Criteria Achieved ?
Project	No
2.3 Green Walls and Facades	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green wall or green façade?
Question	Criteria Achieved ?
Project	No
3.2 Food Production - Non-Residential	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	What area of space per occupant is dedicated to food production?
Question	Food Production Area
Shop	0.0 m ²
Output	Min Food Production Area
Shop	16 m ²

Innovation Overall contribution 0%

1.1 Innovation	0%
Score Contribution	This credit contributes 100.0% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?

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VICTORIAN CIVIL AND ADMINISTRATIVE TRIBUNAL

PLANNING AND ENVIRONMENT LIST

VCAT REFERENCE NO. P1738/2020
PERMIT APPLICATION NO. P19/2462

CATCHWORDS

Section 77 of the *Planning and Environment Act 1987*; Mornington Peninsula Planning Scheme; General Residential Zone; Design & Development Overlay; Environmental Significance Overlay; Service station; Convenience restaurant; Whether service station a prohibited use; Policy for out of centre development; Vehicle access and circulation; Net community benefit

APPLICANT	AA Holdings Pty Ltd
RESPONSIBLE AUTHORITY	Mornington Peninsula Shire Council
FIRST RESPONDENTS	Andrew Robertson, Ann Buchanan & Margaret Campbell
SECOND RESPONDENT	Kathryn Ann Hoddle Young
THIRD RESPONDENT	Paul Whitaker
FOURTH RESPONDENT	Safety Beach Foreshore Landscape Committee Inc
FIFTH RESPONDENT	Dromana Foreshore Committee of Management Inc
SIXTH RESPONDENT	Rose O’Leary
SUBJECT LAND	1 & 2 Marine Drive and 5 Nepean Highway, Safety Beach
HEARING TYPE	Hearing
DATE OF HEARING	12, 13, 14, 15, 16, 19 & 20 July 2021
DATE OF INTERIM ORDER	28 July 2021
DATE OF ORDER	30 November 2021
CITATION	AA Holdings Pty Ltd v Mornington Peninsula SC [2021] VCAT 1441

ORDER

Decision affirmed

- 1 The decision of the responsible authority dated 17 September 2020 is affirmed.



No permit granted

2 In permit application P19/2462 no permit is granted.

Geoffrey Code
Senior Member

Peter Gaschk
Member

APPEARANCES

By videoconference

For AA Holdings Pty Ltd

Jeremy Gobbo QC and Matthew Townsend of
Counsel, instructed by S & K Planning
Lawyers

They called the following witnesses:

- Darren Tardio, acoustic consultant,
Enfield Acoustics Pty Ltd
- Charmaine Dunstan, traffic engineer,
Traffix Group Pty Ltd
- Craig Czarny, urban designer, Hansen
Partnership Pty Ltd
- John Patrick, landscape architect, John
Patrick Pty Ltd
- Sophie Jordan, town planner, Sophie
Jordan Consulting Pty Ltd
- Colleen Peterson, town planner, Ratio
Consultants Pty Ltd

They tendered a statement of evidence
prepared by Chris Goss, architect and visual
amenity consultant, Orbit Solutions Pty Ltd.
Mr Goss was not called to be examined.

For Mornington Peninsula
Shire Council

Kate Morris, Harwood Andrews Lawyers



For Andrew Robertson, Ann Buchanan & Margaret Campbell	Jane Sharp of Counsel She called the following witnesses: • Rob Milner, town planner, Kinetica Planning • John-Paul Maina, traffic engineer, Impact Traffic Engineering Pty Ltd
For Kathryn Ann Hoddle Young	In person
For Paul Whitaker	In person
For Safety Beach Foreshore Landscape Committee Inc	Andrew Robertson
For Dromana Foreshore Committee of Management Inc	John Steele
For Rose O’Leary	No appearance



INFORMATION

Description of proposal	Service station and convenience restaurant
Nature of proceeding	Application under section 77 of the <i>Planning and Environment Act 1987</i> – to review the refusal to grant a permit.
Planning scheme	Mornington Peninsula Planning Scheme
Zone and overlays	General Residential Zone Schedule 1 (GRZ1) (<i>Mornington Peninsula Town Areas</i>) Environmental Significance Overlay, Schedule 25 (ESO25) (<i>Port Phillip Coastal Area</i>) Vegetation Protection Overlay Schedule 1 (VPO1) (<i>Township Vegetation</i>) Design & Development Overlay, Schedule 1 (DDO1) (<i>Township Design</i>) The Nepean Highway and Marine Drive are both Road Zone Category 1 (RDZ1) along the frontages of the land.
Permit requirements	Clause 32.08-2 (use for a service station and convenience restaurant in GRZ1) Clause 32.08-9 (buildings and works for a service station and convenience restaurant in GRZ1) Clause 42.01-2 (construction of buildings and works in ESO25) Clause 42.01-2 (construction of fencing under cl 3.0 of ESO25) Clause 42.02-2 (removal of vegetation under cl 3.0 of VPO1) Clause 43.02-2 (construction of buildings and works in DDO1) Clause 52.05-13 (installation of a business identification sign) Clause 52.06-3 (reduction in car parking requirement) Clause 52.29-1 (creation or alteration of access to a road in RDZ1)



Relevant scheme policies and provisions (at dates of hearing)	Clauses 11, 12, 13, 15, 17, 18, 19, 21.03, 21.04, 21.06, 21.07, 21.08, 22.05, 22.10, 22.12, 22.13, 32.09, 42.01, 42.02, 43.02, 52.05, 52.06, 52.29, 52.34, 53.04, 53.18, 65, 66, 71.02 & 71.03
Relevant scheme policies and provisions (at date of this order)	Clauses 02, 11, 12, 13, 15, 17, 18, 19, 32.09, 42.01, 42.02, 43.02, 52.05, 52.06, 52.29, 52.34, 53.04, 53.18, 65, 66, 71.02, 71.03 & 74.01
Land description	The land is at the north-east corner of the intersection of the Nepean Highway and Marine Drive and directly opposite the Port Phillip Bay foreshore. The intersection is a large and prominent signalised intersection located about one kilometre west of the Peninsula Link/Nepean Highway interchange at Dromana. The land comprises three lots (1 & 2 Marine Drive and 5 Nepean Highway) and has a curved frontage to the intersection and has an irregular shape. The total frontage to both roads is about 126 metres and the depth ranges between about 45 and 65 metres. It has an area of about 3,908 m². An existing eight-bowser service station occupies 1 Marine Drive. It has a two-way access point off both Marine Drive and Nepean Highway. It operates mainly as entry from Marine Drive and exit to Nepean Highway. A small part (about 60 m²) at the front of 5 Nepean Highway forms part of the accessway at the Nepean Highway. The land area occupied by the service station is about 2,294 m². The service station operates 24 hours per day. It contains a convenience store and a carwash. The service station dates to about the 1950s and the service station use is not subject to any permit issued under the Scheme. Between 1982 and 1991, permits were issued for a 'take away food shop', for signs and for some works at the service station.



2 Marine Drive is a lot with a frontage of 15.2 m, a depth of 65.2 m and an area of about 994 m². In 2019, a two-storey dwelling on that land was removed and the land is now vacant. A single-storey dwelling occupies 5 Nepean Highway.

The land abuts two parcels. To the north is 3 Marine Drive, which contains a two-storey dwelling facing the Bay and with a relatively large rear garden. To the east is 7-9 Nepean Highway which contains 12 two-storey townhouses. Units 1 & 2 share a common boundary with the land. To the north and east of these parcels, the area is predominantly residential.

Tribunal inspection

Travel restrictions in relation to the COVID-19 pandemic prevented an early inspection following the hearing. On Saturday 30 October 2021 we were able to inspect the subject land from the public realm and the surrounding area and road network. We observed operations at the existing service station including a tanker delivering fuel at around 4.45 pm. Representatives of the parties did not accompany us on this inspection.



REASONS¹

WHAT IS THIS PROCEEDING ABOUT?

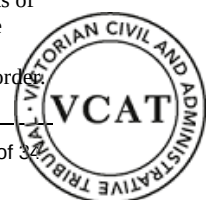
- 1 This proceeding relates to the BP service station at Safety Beach at 1 Marine Drive and part of 5 Nepean Highway, Safety Beach (in these reasons, the **existing service station**).
- 2 The existing service station is located at a prominent position on an irregular lot of 2,294 m² at the intersection of the Nepean Highway and Marine Drive, opposite the Port Phillip Bay foreshore at Safety Beach and Dromana. The intersection occupies a large area containing many curving traffic lanes and signals.
- 3 The service station is tired and out-dated. No significant improvements have been made for over 20 years. It contains four bowsters containing eight fuel points, a car wash, and a small convenience store in the main building. Part of the main building contains a long-disused and now vacant take-away food premises and caretaker's dwelling.
- 4 Most vehicles enter the service station from Marine Drive and exit to the Nepean Highway. At the exit to the Nepean Highway, the accessway crosses part of the front section of 5 Nepean Highway. The main building and the canopy over the bowsters face south to the Nepean Highway. It lacks any meaningful landscaping.
- 5 AA Holdings Pty Ltd (**AA Holdings**) wants to wholly replace the existing service station with a new service station that includes what AA Holdings describes as a 'food tenancy' (the **new service station**). In the food tenancy, patrons purchase food and drink for consumption on or off the premises. Purchases for off premises consumption may also be made from a 'drive-thru' adjoining the food tenancy.

APPLICATION

- 6 AA Holdings applied to the Mornington Peninsula Shire Council (the **Council**) for permission under the Mornington Peninsula Planning Scheme (the **Scheme**) to use and develop the new service station.² The Council refused to grant permission on 12 grounds.
- 7 AA Holdings has applied to the Tribunal to review that decision. Some of the many persons who objected to the Council have joined the proceeding as respondents to oppose the application.

¹ The filed and oral submissions of the parties, the documents they tendered during the hearing, the filed statements of evidence and the oral evidence of the witnesses, and all the filed statements of grounds have been considered in the determination of the proceeding. In accordance with the practice of the Tribunal, not all of this material will be cited or referred to in these reasons.

² The permissions required under the Scheme are referred to in the Information section in this order.



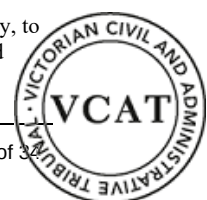
- 8 The parties did not oppose us giving leave to AA Holdings to amend its permit application at the start of the hearing. We granted that leave.³

PROPOSAL

- 9 AA Holdings proposes to establish the new service station on an expanded area of 3,908 m² by including land at 2 Marine Drive and a major part of 5 Nepean Highway.
- 10 The existing service station will be wholly demolished (including the underground fuel tanks) and the dwelling at 5 Nepean Highway will also be demolished.
- 11 The new service station building is to be located at the eastern side of the land and faces west to Marine Drive and the foreshore.⁴ It has a wall facing the foreshore that is about 44 metres long. The building is about 20 metres deep and is set back about 39 metres from Marine Drive and about eight metres from the Nepean Highway. The canopy is set back about 8.3 metres from Marine Drive.
- 12 The floor level of the new service station building will be raised by up to 900 mm to 3.90 metres AHD to meet building requirements for flood prone land. The building has a maximum height of 6.9 metres to the top of the canopy and building.
- 13 The external materials in the new service station building include timber battens, precast concrete panels with vertical and horizontal grooves in grey tones, aluminium cladding panels, metal cladding and aluminium window frames.
- 14 The new canopy is located between the building and Marine Drive. Under the canopy is eight bowsers containing sixteen fuel points, aligned parallel to Marine Drive.
- 15 The building contains a 'convenience store' of 295 m² floor area and a 'food tenancy' of 400 m² floor area and seating for 86 patrons.
- 16 The entry to the food tenancy drive-thru is off Marine Drive, wrapping around the north and east sides of the building and exiting near the Nepean Highway. It has a maximum height of 3.85 metres. It is largely within a tunnel-form enclosure with acoustically treated outer walls and ceiling. The drive-thru has two entry lanes each containing an ordering point.
- 17 Before the drive-thru enclosure entry, the north boundary contains an acoustic boundary fence two metres high. Generally, at the end of the enclosure, the eastern boundary contains a similar fence. On other parts of

³ The details of the amendments to the permit application are set out in an interim order dated 28 July 2021.

⁴ The subject land is irregularly shaped and the Marine Drive frontage faces a direction more accurately described as the north-west. For simplicity in these reasons, we will refer to the frontage as facing 'west', to the side boundary with 3 Marine Drive as the 'northern' boundary, to the side or rear boundary with 7-9 Nepean Highway as the 'eastern' boundary, and the curved frontage to the Nepean Highway as the 'southern' boundary.



the northern and eastern boundaries, there is a two metres high non-acoustic fence.

- 18 A 92 m² shared service yard is located on the north side of the building and a loading bay is located just outside the service yard.
- 19 The proposed hours of operation vary according to peak season (1 December to 28 February plus Easter) or outside the peak season. They may be summarised as follows:
 - (a) The new service station (including convenience store) will operate 24 hours per day every day of the year.
 - (b) The food tenancy will operate every day of the year and close at midnight, except at 1 am on Saturday and Sunday mornings during peak season.
 - (c) The food tenancy drive-thru will operate 24 hours per day seven days per week but, during the peak season, the electronic ordering device will not operate between 10 pm and 6 am.⁵
- 20 The new service station will contain 25 car spaces, excluding informal spaces at the fuel points, spaces for vehicles moving through the drive-thru and two 'waiting area' car spaces at the end of the drive-thru.
- 21 Signage will comprise retention of a double sided internally illuminated pole sign on the Nepean Highway boundary and retention of a double sided internally illuminated promotion sign on the Marine Drive boundary and various other signs on the canopy and building.

SUMMARY

- 22 This proceeding turns on our judgment, based on the submissions and evidence, as to whether the proposal represents a net community benefit. This is because the Scheme urges us to integrate relevant policies and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations.⁶
- 23 There are conflicting objectives relevant to the proposal.
- 24 There are aspects of the proposal that we could support as being a benefit to the community or as being responsive to relevant provisions of the Scheme. These include:
 - (a) Upgrading a run-down service station that is not up to the standard now expected by the wider community.
 - (b) Location at the junction of two arterial roads and accessible to the nearby Peninsula Link freeway.

⁵ During the hearing, AA Holdings confirmed it would not oppose this restriction applying throughout the year.

⁶ The Scheme cl 72.01.



- (c) A more spacious layout with greater building setbacks to Marine Drive and opportunity for better quality landscaping.
 - (d) The provision of eight bowsers containing 16 refuelling points that enables a better level of service at busier times.
 - (e) Removal of the poorly located carwash.
 - (f) A low-rise building with a more attractive presentation and contemporary materials.
 - (g) Acoustic treatments such as the drive-thru tunnel and restrictions on in-store food tenancy hours during the night time.
 - (h) A comprehensive use and development permit for the first time.
- 25 It is unnecessary to refer to the specific policies or provisions that support these aspects of the proposal.
- 26 The three main issues in this proceeding are:
- (a) Whether a service station use is a prohibited use of the land.
 - (b) Whether the proposal responds to objectives for out of centre retail or commercial development and for non-residential uses in residential zones.
 - (c) Whether vehicle access to and from the land, and vehicle circulation with the land, is an acceptable planning outcome.
- 27 The first issue is a threshold issue. The other two are merits issues. We hasten to acknowledge that applying policies or objectives related to the two merits issues is not a simple exercise of applying the provisions in isolation. Our task is more nuanced than that. An assessment of how a proposal responds to policies require consideration of context. We have carefully considered the relevant context in each case.
- 28 Our ultimate finding is that we are not persuaded that vehicle access and circulation represents any real improvement on the existing sub-standard access and circulation arrangements. This is often a critical issue in service station proposals, as it is in this proceeding. It outweighs the benefit to the community that the proposal would otherwise bring. We will refuse to grant a permit. We encourage AA Holdings to reconsider access and circulation arrangements before it submits any new application.



IS THE SERVICE STATION A PROHIBITED USE?

- 29 The land is in a General Residential Zone (**GRZ**). Use of land for a service station requires permission in the GRZ. The land adjoins on two boundaries (Marine Drive and the Nepean Highway), two roads in a Road Zone. Consequently, the '[s]ite must not exceed ... 3,600 square metres' (the **condition**).⁷ The parties agree that if the site does exceed 3,600 m², use for the new service station is prohibited.⁸
- 30 The parties agree that use for a service station has existed on 1 Marine Drive and part of 5 Nepean Highway for over 40 years. In its permit application, AA Holdings did not claim existing use rights for this part of the land. AA Holdings sought permission to use the whole of the subject land for the new service station. The Council considered the application on that basis. At the hearing, AA Holdings did not claim any existing use rights.⁹
- 31 The Council contends the part of the land on which the 'food tenancy' is located should be characterised as a separate 'convenience restaurant' use but will be used in conjunction with the new service station and thus is part of the land used for the new service station. Accordingly, it contends the site for the new service station exceeds 3,600 m² and use for a service station is prohibited.
- 32 The first respondents made submissions in support of the Council's contentions.
- 33 Whether the use of the subject land for the new service station is prohibited is a question of law. We must find what is the meaning of 'the site' in the condition and whether the area of the site for the new service station exceeds 3,600 m². The first of these matters is a question of law. The second of these matters is a question of fact. A mixed question of law and fact is a question of law.¹⁰

Site

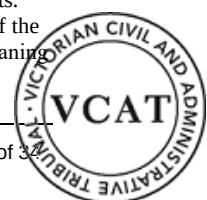
- 34 To make a finding as to what is the site, we must have regard to the meaning of that word and how to apply that meaning to the facts in this case.

⁷ The Scheme cl 32.08-2 section 2 condition for 'service station'.

⁸ The Scheme cl 71.03-2.

⁹ While AA Holdings proceeded at the hearing as if the use of the part of the subject land comprising 1 Marine Drive and a small part of 5 Nepean Highway was being lawfully used for a service station, it did not at any stage formally claim existing use rights or adduce evidence in support of a claim of those rights. Having regard to the permit application and the way AA Holdings proceeded, we are not required to determine whether there are any existing use rights.

¹⁰ This question of law is determined by Senior Member Code as the member of this Division of the Tribunal who is an Australian lawyer. In this section of the reasons, 'we' must be read as meaning only Senior Member Code.



Meaning of the word

- 35 'Site' is not defined in the condition, the GRZ, the Scheme, the *Planning and Environment Act 1987* or the *Interpretation of Legislation Act 1984*. It therefore has its ordinary meaning.
- 36 The Tribunal has previously considered the meaning of site in the condition.
- 37 In *BP Australia Ltd v Bayside CC*,¹¹ the Tribunal held that site in the condition does not mean the lot on which the service station is located but, having regard to its ordinary dictionary meaning, it is the area on which the use is located.¹² This meaning was adopted in *Typhoon Pty Ltd v Macedon Ranges SC*¹³ and in *TAG-Waterford Rise Pty Ltd v Baw Baw SC*.¹⁴
- 38 There is a consistent line of authority that 'site' for the purposes of the condition does not mean the 'lot' or 'whole of the land' in the permit application for permission to use a service station (ie the 'planning unit'). Those authorities hold that 'site' for the purposes of the condition means the land actually used or to be used for the purpose of a service station. We agree with these authorities.
- 39 Use, including proposed use, for the purpose of a service station includes activities ancillary to that purpose.

What is the site on the facts?

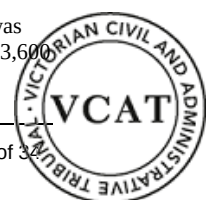
- 40 To determine the site for the service station, the main issues are whether or not the 'convenience store' and the 'food tenancy' are ancillary activities to the purpose of the use of the land for a service station.
- 41 If the real and substantial purpose of the 'convenience store' or 'food tenancy' is a use that is different from or separate to a service station, the area actually used for that different or separate purpose may be excluded for the purposes of the condition.
- 42 According to the plans, the convenience store occupies a gross floor area of 295 m² and, by our estimate, more than half that area comprises storage, cool room, office and amenities. The balance is the retail floor area, including the counter, accessible by patrons paying for their fuel and selecting items for purchase from displays/shelving.
- 43 Neither the Council nor the first respondents seriously contended that the convenience store was not ancillary to the new service station and accepted that it was part of the site to be used for the new service station. Having

¹¹ [2004] VCAT 604 ('*BP Australia*').

¹² *BP Australia Ltd v Bayside CC* [2004] VCAT 604 [59].

¹³ [2004] VCAT 913 [19].

¹⁴ [2019] VCAT 8 [8]-[9]. In this case, there was no convenience restaurant use and the issue was whether the site for the service station could include the vacant area in a lot well in excess of 3,600 m² not proposed to be used for the service station.



regard to contemporary service station activities, we accept the convenience store is not a different or separate use.

- 44 The position in relation to the food tenancy is not so clear cut.
- 45 We agree with the first respondents' submission that:
- The contemporary approach to service station development includes partnerships with food providers, such as Hungry Jacks and McDonalds, and corporations such as David Jones to provide a suite of offerings at a service station, ancillary sit-down areas and fast-food outlets'.¹⁵
- 46 The first respondents submit the food tenancy is an activity that is ancillary to the new service station and the area occupied by the food tenancy is part of the service station site under the condition. They rely on:
- (a) The majority of the subject land is for other service station activities.
 - (b) The food tenancy and convenience store are within the same building.
 - (c) The food tenancy has no direct street frontage.
 - (d) The food tenancy may be operated by a different entity than the service station.
 - (e) The new service station will operate 24 hours per day.
- 47 The Council has a more nuanced submission. It submits the food tenancy is a separate use mainly because it is likely to be operated by a different entity to the service station operator and 'to a large extent, function independently'.¹⁶ On the other hand, it submits the shared accessways, loading bay, storage area and landscaping mean that the food tenancy will operate in conjunction with the service station.
- 48 We discern this submission is one supporting the food tenancy as a separate use but one that should be included in the service station site. This submission lacks internal logic.
- 49 We are not persuaded that likely or possible operation by a different entity is material to the question. We are also not persuaded that location within the same building, lack of a direct street frontage, or sharing of some features (such as accessways) is material to the question.
- 50 We find the food tenancy is a different and separate use. The main features that lead to this finding are that its floor area is substantial and separate from the service station, it has separate pedestrian access from shared spaces, and it has its own kitchen and amenities.
- 51 If the food tenancy is a different or separate use, none of the parties disputed that the proper characterisation of its purpose is for a 'convenience restaurant', being a use defined in the Scheme. We agree.

¹⁵ Written submissions on behalf of first respondents [22] (footnotes excluded).

¹⁶ Written submission on behalf of the Council [102].



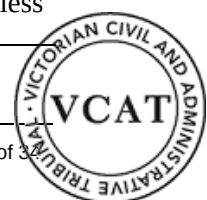
Does the site for service station use exceed 3,600 m²?

- 52 The definition of service station assists in determining the land used for a service station. The definition is:

Land used to sell motor vehicle fuel from bowsers, and lubricants. It may include the:

- (a) selling of motorvehicle accessories or parts;
 - (b) selling of food, drinks and other convenience goods;
 - (c) hiring of trailers;
 - (d) servicing or washing of motor vehicles; and
 - (e) installing of motor vehicle accessories or parts.¹⁷
- 53 Items (c), (d) & (e) in the definition are irrelevant in this proceeding. The key areas are the bowser areas and the convenience store. AA Holdings relies on a plan it has prepared showing the parts of the site used for a service station, convenience restaurant, 'common areas' and landscaped areas (the **uses plan**).
- 54 The uses plan shows the convenience store, the canopy area, the relevant part of the service yard and the ice box with a total area of 953 m². AA Holdings contends this is the service station 'site'. As this area is well under 3,600 m², AA Holdings contends the service station is not prohibited.
- 55 The site for the convenience restaurant should not be included in the site for the service station. AA Holdings' plan shows the part of the land used for the convenience restaurant, comprising the floor area, the drive-thru and the relevant part of the service yard with a total area of 963 m². There is no sharing of this area with the service station use.
- 56 AA Holdings' plan shows what are described as the 'common areas' (ie common to both uses) and these comprise the shared accessways, the shared car spaces and the shared loading bay. AA Holdings' plan also separately shows the landscaping area across the whole of the land. AA Holdings submits these two areas are, respectively, 1,354 m² and 538 m². We must decide whether these areas are part of the site for the service station.
- 57 In *BP Australia*, the accessway to the service station was through the convenience restaurant car park. The service station and convenience restaurant were in clearly separate buildings and each had associated car parking. Subdivision was proposed to create a separate lot for each use and the accessway through the proposed convenience restaurant lot was to be burdened with carriageway easements benefitting the service station lot.
- 58 The access arrangements satisfied the Tribunal that one use was not ancillary to the other and that there was only one real and substantial purpose of the use of the whole of the land. In finding that the site was less

¹⁷ The Scheme cl 73.03.



than 3,600 m², we discern that the Tribunal found the site of the service station did not include the area in the shared accessway.

- 59 In *Brimin Gem Pty Ltd v Mornington Peninsula SC*,¹⁸ the Tribunal considered whether a carwash (and not a convenience restaurant, as in this proceeding) was a separate use from a service station. On the facts in that case, the Tribunal found that certain common areas could not be excluded from the service station site.
- 60 On the facts in this proceeding, we find the accessways (excluding those parts of the accessways directly below the bowser canopy), the shared loading bay and the landscaping are part of the service station site. Accordingly, the total area of the site used for the service station is less than 3,600 m² and the use is not prohibited.

Is the convenience store a separate use?

- 61 The first respondents submitted that, if the site for the service station use excludes the area occupied by food tenancy (as we have found), the application is nonetheless prohibited because the convenience store is a prohibited use.
- 62 The first respondents submit the convenience store is a separate use because it has a gross leasable floor area of 295 m². They do not characterise the purpose of the convenience store as a ‘convenience shop’ because the definition of that use in the Scheme contains a limit of a leasable floor area of 240 m². They submit the purpose is therefore ‘retail premises’ (having regard to the primacy of retail sales) and that use is prohibited in the GRZ.
- 63 This submission does not appeal to us. Just because the gross leasable floor area exceeds 240 m² does not make use for the convenience store a separate purpose, for the reasons we have already referred to. While floor area is sometimes a relevant indicator of separate purpose, it is not in this application, having regard to the size of the subject land and size of the various components.

Conclusion

- 64 The service station site does not exceed 3,600 m² and the new service station is not a prohibited use.

¹⁸ [2004] VCAT 1381.



OUT OF CENTRE DEVELOPMENT

- 65 At the hearing, the Council and respondents submitted the proposal is a poor response to policies relating to activity centres, out of centre development and non-residential uses in residential zones.¹⁹
- 66 The subject land is not in an activity centre. It is in a residential zone. The nearest activity centre is Dromana, which is about 650 metres further south-west on the Nepean Highway. At the hearing, the planning witnesses – Mr Milner, Ms Jordan and Ms Peterson – referred in detail to and expressed their opinions about the various policies in the Scheme relating to activity centres, out of centre development and non-residential uses in residential zones.
- 67 We do not set out those policies here. We nonetheless record that policies at the time of the hearing for non-residential uses in residential zones:
- (a) Discouraged proposals for out of centre commercial development that undermines activity centre policy.
 - (b) Strongly discouraged free standing out of centre service stations.
 - (c) Strongly discouraged free standing out of centre food and drink premises.²⁰
- 68 We also record that local policy for activity centres includes supporting the strengthening of the hierarchy of activity centres and provides that ‘out of centre ... service stations ... detract from compact urban patterns’.²¹

Amendment C279

- 69 On 22 July 2021, two days after the hearing concluded, notice of approval of Amendment C279 (**AmC279**) to the Scheme was published in the *Victoria Government Gazette*. The Minister for Planning was the planning authority for AmC279 and exemptions were granted so that the Minister was not required to give public notice of the Amendment.
- 70 We were disappointed that the Council did not bring AmC279 to our attention at the hearing.
- 71 Although the Council did not prepare AmC279, it is now clear to us that the Minister extensively consulted the Council and invited the Council’s comments on various drafts. It is also now clear to us that, on 27 January 2021, the Council told the Minister that it supported the Minister’s preparation and approval of AmC279. Neither AA Holdings nor any of the respondents could have been aware at the hearing of the imminent approval of AmC279 at the hearing.

¹⁹ The Scheme cls 11.03-1S, 11.03-5S, 17.02-2S, 21.07-3 & 22.12. We emphasise these were relevant policies at the time of the hearing. Some of these policies have been removed or amended since the conclusion of the hearing, to which we will shortly refer.

²⁰ Mr Milner emphasised these policies: Robert Milner, statement of evidence [18]. See also the Scheme at (former) cl 22.12.

²¹ The Scheme at (former) cl 21.07-3.



- 72 We accept that the Council could not have brought to our attention at the hearing the subsequent publication of the notice of approval of AmC279. However, the Council has a duty as a model litigant to inform the Tribunal of relevant matters regarding imminent changes to the law of which it is aware..
- 73 We were not told that the consultations with the Council before the hearing were not a matter of public record. We are also aware that the Minister prepared and approved AmC279 on 14 July 2021. This was day 3 of the hearing and the hearing did not conclude until 20 July 2021. We understand it is usual practice for the Minister's Department to advise the relevant responsible authority well before publication of the notice of approval and therefore assume the Council had knowledge of the Minister's approval before the end of the hearing.
- 74 As AmC279 includes no transitional provisions, we must decide the application in accordance with the Scheme as amended by AmC279.
- 75 Among other changes, AmC279 replaced the Municipal Strategic Statement at clause 21 and Local Planning Policies at clause 22 of the Scheme with a new Municipal Planning Strategy, local policies within the Planning Policy Framework (the **PPF**) and selected local schedules to zones, overlays, particular provisions, and general and operational provisions.
- 76 Relevantly, AmC279 removed the local policies for non-residential uses in residential zones and for activity centres to which we have just referred.²²
- 77 Consequently, and in an interim order, we gave the parties an opportunity to identify whether AmC279 changed the grounds on which the parties relied or changed their primary submissions and whether the parties wished to file an addendum of evidence for any of their witnesses. The Council, AA Holdings and the first respondents filed submissions and AA Holdings filed addenda to Ms Jordan's and Ms Peterson's evidence statements. None of the parties requested a further hearing.

Submissions about AmC279

- 78 The Council submits that the changes in AmC279 are 'generally policy neutral' and 'should have no substantive effect' on the determination of the application. It relies on a reference in the explanatory report for AmC279 that the changes are 'generally administrative and policy neutral'. It submits the policies in clauses 21 & 22 that were deleted have been re-made in substance into the amended PPF.²³
- 79 Accordingly, the Council maintains its submissions that the proposal is not supported by strategic policy. It says the proposal's out of centre location is inconsistent with policies that support development and growth in its

²² Being the policies at former clauses 21.07-3 & 22.12.

²³ In particular, in new or amended clauses 02, 10 to 19, 74.01 & 74.02.



primary activity centres and that seek to protect the amenity of residential areas.

- 80 The Council also maintains its reliance on *Contour Consultants v Mornington Peninsula SC*.²⁴ In that decision, the Tribunal refused permission to redevelop a service station in a residential zone at a nearby location at 107-113 Point Nepean Road, Dromana.
- 81 The first respondents did not file any addenda to the evidence of Mr Milner or Mr Maina. They submit that despite the changes in AmC279, the Scheme's policies continue to support their concerns about the proposal's poor response to out of centre development policies.
- 82 AA Holdings submits that the changes made by AmC279 cannot be characterised as 'policy neutral'. It relies on addenda to the evidence of Ms Jordan and Ms Peterson. Ms Jordan's opinion was that:

[T]here is now a distinct and noticeable reduction in the policy guidance provided by the [Scheme] regarding the extent to which certain land uses might be discouraged outside of a defined commercial precinct and activity centre. This change to the policy framework is not subtle and is not neutral.²⁵

Findings

- 83 First, the changes to the Scheme made by AmC279 cannot be characterised as 'policy neutral'.
- 84 In relation to the removal of policies at clauses 21 & 22, AmC279 states that it 'deletes or adjusts incompatible content that conflict with State planning policy of the Victorian Planning Provisions' and 'removes or updates outdated content'.²⁶
- 85 Second, a service station or a convenience restaurant is no longer 'strongly discouraged' on the subject land.
- 86 We acknowledge, at a broad level, the Scheme's policies continue to encourage development in the defined settlement patterns, to protect the coastal and other values of townships, and to strengthen the activity centre hierarchy. This includes a particular strategy in the out of centre policy to 'discourage proposals for expansion of single use ... commercial ... facilities outside activity centres'.²⁷
- 87 However, the key relevant local policies are now:
- Avoid locating retail, ... service station ... developments in out of centre residential ... locations.²⁸

²⁴ [2010] VCAT 1797 ('*Contour Consultants*').

²⁵ Sophie Jordan, statement of evidence, addendum dated 27 August 2021 [10].

²⁶ AmC279, Explanatory Report, p 1.

²⁷ The Scheme cl 17.02-2S, 'Strategies', second point.

²⁸ The Scheme cl 11.03-1L-01, 'Strategies', seventh point. We observe this policy does not expressly apply to land in a GRZ.



Encourage non-residential uses to ... [l]ocate adjacent or close to commercial or industrial zones in a way that complements the relevant activity centre.²⁹

Encourage the design and location of development for non-residential uses to include ... [f]eatures to reduce noise and overlooking ... [and a] buffer to adjoining residential development ...³⁰

- 88 The Scheme now softens the policy to ‘avoidance’ of retail and service stations developments in residential locations.
- 89 Third, it must be recalled that policy (either before or after AmC279) must not be applied as a control and must be applied flexibly, having regard to the particular circumstances and to the policies as a whole in the Scheme. The latter is the balancing task required by the Scheme.
- 90 The net effect of the policy changes in AmC279 is to add relative weight to State policy. This policy ‘discourages’ expansion of the broadly identified ‘retail and commercial facilities’ outside activity centres.
- 91 Fourth, in the circumstances of this proceeding, the proposal is an acceptable response to policy and does not warrant refusal of a permit on the grounds of policy. We have taken into account the following matters:
- (a) A service station/convenience store has operated on a substantial part of the subject land for many decades.
 - (b) A take away food premises operated for many years (but no longer operates) on part of the subject land.
 - (c) Of the two parcels of residentially zoned land at 2 Marine Drive and 5 Nepean Highway that have been added to the existing service station land to form the subject land in this proceeding, the land at 5 Nepean Highway is already used in part for the existing service station.
 - (d) The proposed convenience store provides enhanced small-scale shopping opportunities (petrol and convenience goods) that would meet the local needs of residents and workers/visitors.
 - (e) The scale and mix of development will not undermine the primacy of existing activity centres, including Dromana.
 - (f) The proposal will not lead to a de facto commercial strip at the intersection of Marine Drive and the Nepean Highway.
 - (g) The location of the subject land is not a residential hinterland location but is at an intersection of two major roads and close to freeway access to the Metropolitan area.
 - (h) The proposal still requires a rigorous assessment under all relevant zone and overlays and particular provisions.

²⁹ The Scheme cl 13.07-1L, ‘Strategies’, first point.

³⁰ The Scheme cl 13.07-1L, ‘Strategies’, third point.



- 92 Mr Milner placed significant weight on loss of land for additional housing with the expansion of the land for the new service station onto 2 Marine Drive and part of 5 Nepean Highway. While we accept this loss is a minor disbenefit, it is not so significant to result in an unacceptable response to policy.
- 93 We have carefully considered *Contour Consultants*. It is of little assistance in this proceeding. It may be distinguished on its facts. It is clear to us that the Tribunal found the design response unsatisfactory.
- 94 In conclusion, we find the proposal satisfactorily responds to out of centre development policy and a permit should not be refused on the grounds of these policies.

ACCESS AND CIRCULATION

- 95 Traffic and circulation issues ultimately determine this proceeding. We will begin by briefly describing existing arrangements. We then set out what is proposed, the positions of the road authorities, and then the expert evidence called at the hearing. We then set out our findings.

Existing arrangements

- 96 There are two entry/exit points. The Marine Drive point is a right turn in through a break in the Marine Drive median and a left turn in off Marine Drive. The Marine Drive point is also a right and left turn exit to Marine Drive. The Nepean Highway point is a left turn in and a right and left turn exist.
- 97 The subject land is about 2 kilometres south-west of the popular Safety Beach boat ramp. Vehicles and attached motor boats and jet skis frequently refuel at the existing service station going to and from the boat ramp.
- 98 There is little dispute that access and circulation is currently highly problematic.
- 99 We confirmed this state of affairs at our inspection on Saturday 30 October 2021 at around 4.30 pm to 5.30 pm. This was an off peak time of year but acknowledge it was a weekend day following an easing of pandemic travel restrictions. The time of day was nonetheless well past the busier time around the middle of the day.
- 100 Generally consistent with Mr Whitaker's video evidence at the hearing, there is insufficient space before the bowzers off Marine Drive to manage the volumes of vehicle and vehicles with trailers carrying boats and jet skis. We observed grid lock while vehicles propped in the Marine Drive entry point waiting for an available pump.
- 101 This meant vehicles turning left in off Marine Drive banked up and stopped the single lane through traffic. It also meant vehicles turning right in off Marine Drive propped at the median opening. If one or two vehicles propped or if one vehicle plus trailer propped, through traffic travelling



north along Marine Drive would need to manoeuvre around the propped vehicles using the adjoining diminishing-width merging lane. If more than two vehicles propped or if two vehicles plus trailers propped, through traffic would be blocked.

- 102 The problematic arrangements were exacerbated by the bowser/pump locations. We observed many vehicles failing to find an available pump for the relevant side of the vehicle and proceeding to the end of the southern end of the bowsters and then turning back northwards to try and find a pump. The lack of space for these manoeuvres added to the grid lock as did the difficulties in exiting after refuelling from the bowsters at a non-preferred angle. A few vehicles attempted a left turn exit into Marine Drive but this only added to congestion and delays at the crossover.
- 103 The problematic arrangements also adversely affected tanker fuel deliveries. We observed the tanker propped in the Marine Drive median opening waiting to turn right into the service station. The volume of left turn in vehicles and vehicles with trailers and the lack of space in the accessway just inside the crossover prevented the tanker from being able to cross the southbound lane in Marine Drive and find sufficient space in the service station.
- 104 The tanker's turning circle also meant that it occupied the whole of the median opening and thus blocked the opening for right turn exit movements.
- 105 The tanker also needed to manoeuvre to the west side of the bowsters to reach the refuelling point near the Nepean Highway entry/exit point. That manoeuvre was affected by vehicles blocking the accessway when travelling around the bowsters to find a pump, to which we have referred.
- 106 The result was unacceptable delays for the tanker propped in Marine Drive, substantially blocking northbound through traffic. We observed the delay was over 300 seconds.
- 107 It suffices to state that, for the proposal to be acceptable from a traffic and circulation point of view, there would need to be a significant improvement on existing arrangements.

Proposed arrangements

- 108 The proposal includes a new crossover at 2 Marine Drive for left turn entry. This provides access to the drive-thru, the car spaces in front of and opposite the convenience restaurant, and the bowsters along the 3.7 metres wide two-way accessway along the west side of the bowsters. The median in Marine Drive will be extended to prevent right hand exits into Marine Drive.
- 109 The crossover to the Nepean Highway will be modified to prevent left turn entry. It will therefore only offer left or right turn exits to the Highway. All drive-thru vehicles will either exit with a left or right hand turn into the



Highway or circulate on the site to the north if access to the bowzers or convenience store is needed.

- 110 Importantly, there is no change proposed to the dimensions or operation of the existing Marine Drive entry/exit point.
- 111 The key manoeuvres at these exit/entry points are shown in figure 1, below.

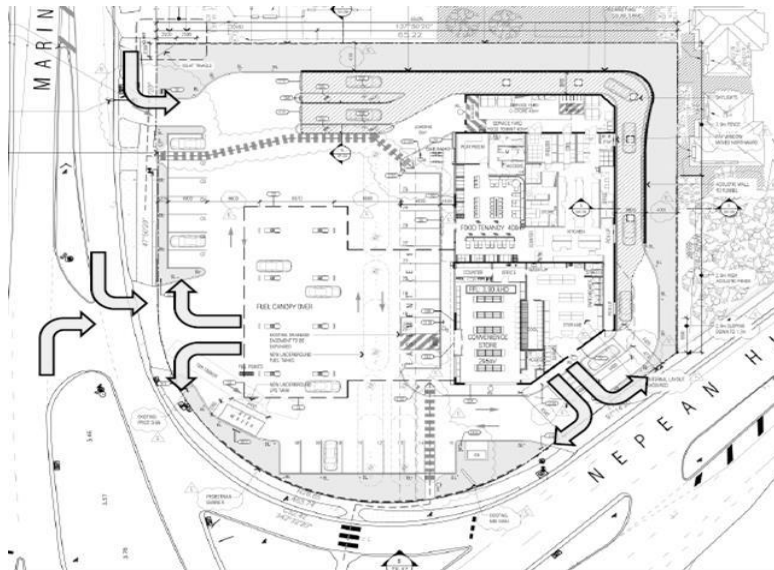


Figure 1 – Proposed access arrangements: vehicle entry and exit points

Source: John-Paul Maina, statement of evidence, para 41 p 19.

- 112 Figure 1 shows eight bowzers containing 16 pump points aligned north-south but parallel to Marine Drive. These bowzers will replace the four existing bowzers containing eight pump points aligned north-west to south-east angled away from Marine Drive towards the Nepean Highway.
- 113 Figure 2, below, shows Mr Maina's uncontested depiction of proposed circulation arrangements.

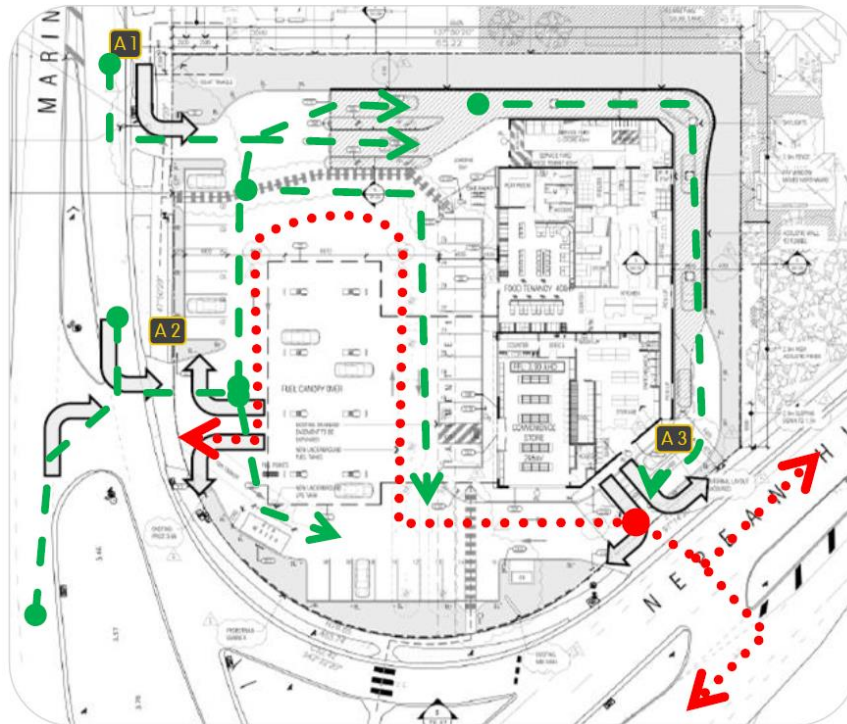


Figure 2 – Proposed access and circulation arrangements

Source: John-Paul Maina, statement of evidence, para 66 p 24.

- 114 We discern from the green broken line in figure 2 that, following entry from the two Marine Drive points, vehicles will circulate as shown with the arrows to access the bowsters, the drive-thru, the loading bay, the convenience restaurant and convenience store. The green broken line generally shows the ultimate exit to the Nepean Highway.
- 115 We also discern from the red dotted line that, following exit from the drive-thru, vehicles will either exit to the Nepean Highway or circulate the bowser area and exit to Marine Drive.
- 116 Mr Maina does not show all likely manoeuvres on figure 2. We will return to other manoeuvres shortly.
- 117 Access to the site for tanker delivery of fuel does not change but the propping location of the tanker when filling the new underground tanks moves closer to Marine Drive. The exact location is shown in Ms Dunstan's statement of evidence at her figure 11 on page 26 and the swept paths are shown in Appendix C of her statement.

Road authorities

- 118 The road authority for both Marine Drive and the Nepean Highway is the Department of Transport. The Head, Transport for Victoria (**TfV**) is a determining referral authority for the application.
- 119 TfV initially objected to the application in its original form but subsequently withdrew the objection subject to conditions, following preparation by AA Holdings of a functional layout plan. The conditions required the following to be shown on amended plans:
- A requirement for a new left-in access off Marine Drive and the relocation of the crossover further south.
 - The median traffic island in Marine Drive extended north with a 'No U-Turn' review sign to reinforce left-in only access.
 - Relocated position of an existing streetlight, side entry pit and other utilities as required.
 - No left turn sign at the Nepean Highway access point to prevent vehicles turning into the petrol station off Nepean Highway.
 - The removal or reinstatement of disused or redundant vehicle crossovers.
- 120 TfV also required inclusion of a permit condition requiring AA Holdings to submit detailed engineering design plans along with the detailed design stage road safety audit.
- 121 The Department of Transport did not participate in the proceeding. We did not therefore have the benefit of its views on the contested traffic evidence, particularly Mr Maina's opinions about the impact on functionality and efficiency of traffic flows along and leading into Marine Drive. As a determining referral authority, we give weight to its support for the proposal access arrangements.
- 122 The local road authority is the Council. Its traffic engineers and consultant (One Mile Grid) did not object, subject to conditions. At the hearing, the Council did not oppose the access arrangements and this is unsurprising given access is a matter for TfV. At the hearing, the Council pressed concerns with the propping location of the tanker when delivering fuel. The Council did not press with any force concerns about vehicle circulation on the land.

Evidence

- 123 The starting point of Ms Dunstan's evidence is that service stations are businesses of convenience. If a driver sees that a service station is busy, they are likely to continue driving to other nearby service stations. Her opinions included:



- (a) The proposed parking layout and traffic circulation on the site satisfies the relevant guidelines.³¹
 - (b) Swept path analysis to all 16 fuel pumps confirms that vehicle movement accords with the objectives and standards of these guidelines.
 - (c) The proposed drive-thru facility can accommodate up to 18 vehicles in queue which exceeds the recommended queue length of 12 vehicles for a McDonald's restaurant.³²
 - (d) The vehicle access arrangements to the site are appropriate and will facilitate appropriate vehicle movements to and from the site.
 - (e) The location set aside for the refuelling vehicle to prop within the site is appropriate and will not have a detrimental impact to the operation or safety of vehicle movements on the site or external to the site.
 - (f) Loading and waste collection associated with the convenience store and convenience restaurant undertaken onsite via the dedicated loading bay is appropriate.
 - (g) The level of traffic generated as a result of this proposal can be adequately accommodated by the road network.
- 124 Ms Dunstan's opinion is that the fuel delivery propping location is appropriate having regard to it being wholly on the site and away from the Marine Drive crossover and deliveries taking place outside peak times. She acknowledges access to two of the vehicle locations at bowzers and access to air and water will be lost during deliveries but considers this acceptable as a common practice.
- 125 We also record that Ms Dunstan agreed that congestion around the drive-thru entry could be eased with more space for another queued vehicle at the ordering location, with a minor layout change.
- 126 Mr Maina is concerned that the existing vehicle access already presents significant traffic challenges to vehicles, particularly those with attached trailers for jet-skis and boats. In his opinion, the efficiency of the proposed two-way accessway along the west side of the bowzers is critical, particularly with its use not just by vehicles entering the bowser points. He concludes:
- the design may not have sufficient resilience to cope with a scenario where two vehicles prop at the bowzers for fuel, with one of the vehicles being a typical B85 + Trailer / Speed Boat, and the other being a typical B85 vehicle. This combination would reduce the

³¹ The Scheme cl 52.06-9 'Design standards for car parking'; AS2890.1-2004 – Part 1: Off-Street Car Parking, where relevant; AS2890.2-2018 – Part 2: Off-Street Commercial Vehicle Facilities, where relevant; AS2890.6-2009 – Part 6: Off-Street Parking for People with Disabilities.

³² The RTA Guide to Traffic Generating Developments (2002) (RTA Guide) sets out traffic generation rates based on survey data collected in New South Wales for a range of land uses and recommends a queue capacity of 12 vehicles for McDonald's and 8 vehicles for KFC.



effective width of the main circulation aisle to about 3.7 metres. This width is insufficient to accommodate two-way movements and introduces the potential for traffic grid lock at a sensitive location within the site.³³

- 127 In Mr Maina's opinion, the design of the southern access to the service station site from Marine Drive requires significant redesign. This is because, in part, he maintains that the Sidra analysis on which Ms Dunstan relies assumes there is no queueing of up to 180 metres along Marine Drive along the frontage of subject land. Mr Maina says this is an incorrect assumption.
- 128 Mr Maina says the redesign requires a channelised right-hand turn, and a recommended minimum queue length of 74 metres along Marine Drive. If this queueing length cannot be achieved given the existing roundabout arrangement, then he says a minimum queueing length of 59 metres would be acceptable.
- 129 If this treatment cannot be accommodated, Mr Maina's opinion is that the proposal would continue to experience significant traffic obstructions, as vehicles seek to enter the service station, including potential for unsafe movements by motorists in the form of U-turn movements upstream in Marine Drive, as motorists seek to gain quicker alternative access to the site.

Findings

- 130 Having regard to the evidence, submissions and our inspection, we are not persuaded vehicle access to and from the subject land and circulation within the subject land is a better outcome or an improvement to the existing arrangements.
- 131 Ms Dunstan puts great weight on the additional bowsters and their layout, and in her opinion the additional bowsters and reorientation of the access aisles will ensure that existing vehicle movement will be improved across the site.
- 132 The location of the new bowsters in respect to the main entry points to the site, particularly the nearest bowser to the southern access in Marine Drive, is in roughly the same position as present. The present bowser location is problematic for the reasons we saw at our inspection and to which we have referred.
- 133 The propping problem observed with the fuel delivery tanker and potential conflict with other vehicles and trailers at times will be worse under the proposal because the fuel tanker will effectively need to prop closer to Marine Drive than is presently the case.

³³ John-Paul Maina, statement of evidence [78]-[79].



- 134 Changing the access point for tanker delivery to the proposed northern Marine Drive entry is not an apparent option. AA Holdings' submission, supported by the Council, is that the change would not be possible.
- 135 The proposed circulation of vehicles on the site is problematic and unresolved. Figure 2 does not show all movements. For example, it does not show:
- (a) Vehicles circulating, after refuelling, exiting to Marine Drive or entering the drive-thru.
 - (b) Vehicles circulating to enter the bowser area after exiting the drive-thru.
 - (c) Vehicles entering from the northern Marine Drive access, parking near the convenience restaurant and then entering the bowser area or exiting to Marine Drive at the southern access.
 - (d) Vehicles entering from the northern Marine Drive access, parking near the convenience store and then exiting to Marine Drive at the southern access.
 - (e) Vehicles entering from the northern Marine Drive access, unloading in the loading area and then exiting to Marine Drive at the southern access.
- 136 These 'circulating' movements will result in additional navigation complexity. They will lead to an unacceptable outcome of two-way vehicle flows relating to the two uses. There will be a high likelihood of internal traffic snarls. They will add to right turn exit movements to Marine Drive which are problematic given vehicle propping in the median when doing right turn entry movements and unreasonably add to congestion at this entry/exit point.
- 137 We agree with Mr Maina's opinion that the proposal, with the drive-thru, could generate between 395-408 vehicle movement trips during the mid-morning/PM peak hours on weekends, including some 154 right-hand turn movements at the primary accessway point off Marine Drive.
- 138 In short, the convenience restaurant will add to circulating complexities and congestion.
- 139 In Mr Maina's opinion, the amount of estimated vehicle movements in this location, without effective resolution of potential vehicle obstructions seeking to enter the site and improving internal traffic circulation, will lead to significant traffic conflict on and off the site in Marine Drive. We also agree with him that the internal width of the key access aisle providing access to the tanker fuelling location and nearby bowzers, will be insufficient to accommodate effective two-way movements, potentially increasing traffic grid lock at this important location.
- 140 Ms Dunstan, in her oral evidence, supported 'keep clear' road marking being added in the Marine Drive southbound lane opposite the southern



crossover and the median opening. In her opinion, this would prevent blockage of the lane. While it may ease southbound lane blockages, it does not ease on-site congestion or northbound lane blockages.

- 141 We are mindful that likely circulation congestion should not be assessed at the busiest time ie under a worst-case scenario. We also accept that additional pumps will help vehicles more quickly get to a pump. Nonetheless, the evidence and our inspection persuade us that there would be unsatisfactory arrangements at many other times.
- 142 The Scheme seeks to ensure, amongst other matters, that new development is designed to a high standard, does not adversely affect the amenity of the locality, and achieves a satisfactory, efficient, and safe access for motorists entering and leaving the site. The application has not reached this standard in its design and does not provide an improved outcome in relation to traffic and vehicle movements.
- 143 After undertaking the task of balancing conflicting Scheme objectives, to which we will refer later in these reasons, the application's shortcomings in relation to traffic and circulation means that we cannot grant a permit. For completeness, we are unable to include conditions on a permit to rectify the shortcomings. The issues need reconsideration and in any future application. The reconsideration should include consultation with the road authorities.

OTHER MERITS ISSUES

- 144 The Council's and respondents' grounds raised a variety of other merits issues. As we will not grant a permit, it is unnecessary to give detailed consideration to them. In this section of our reasons, we summarise our observations on these issues.

Parking

- 145 A service station does not have any specified car parking requirement under clause 52.06-5 of the Scheme.
- 146 As this is a new development proposal on the review site, sufficient parking must be provided to the satisfaction of the responsible authority. A parking rate of 0.3 spaces is required to each patron permitted for the convenience restaurant.³⁴ The proposal includes 16 car spaces for the service station and convenience store and 25 spaces for the convenience restaurant.
- 147 We have already referred to Ms Dunstan's opinion that the application makes acceptable provision for parking.
- 148 In particular, Ms Dunstan says the allocation of 16 spaces at the proposed refuelling points is appropriate for the service station. She acknowledges there may be minor additional staff car parking demands at times on site. However, she considers these demands are unlikely to occur at the same

³⁴ The Scheme cl 52.06-5.



peak times and that customers will also use multiple facilities on the site without generating additional car parking demands.

- 149 In Mr Maina's opinion, five spaces should be provided for the service station and convenience store, thereby providing specifically for one space for staff and four spaces for customers. It is also his view, based on a demand analysis he has undertaken, that an additional 2-3 parking spaces should be provided on-site to support the overall development intensity.
- 150 We are attracted to Mr Maina's opinion, if only because some additional parking spaces would reduce the number of vehicles circulating on the site looking for a parking space and would therefore ease congestion from vehicles circulating the site.
- 151 Nonetheless, if we had been intending to grant a permit, we would have been likely to have preferred Ms Dunstan's evidence as a reasonable outcome for the intensity and mix of development in the proposal. However, this is not a finding and an appropriate supply needs reconsideration in any future application.

Foreshore interface

- 152 The subject land, Marine Drive and the foreshore is part of the 'Port Phillip Coastal Area' in Environmental Significance Overlay Schedule 25 (ESO25). The Statement of Environmental Significance in ESO25 provides:

The Port Phillip coastal area and adjoining offshore areas contain some of Victoria's most significant cultural and natural features, including sites of ecological, archaeological, geological, geomorphological, aesthetic and cultural heritage value. These places are of cultural, scientific and educational value to current and future generations.³⁵

- 153 Environmental objectives to be achieved under ESO25 include:

To protect and enhance the natural features, vegetation, ecological diversity, landscape quality, heritage values and recreation opportunities of the Port Phillip Bay coastal area and associated intertidal and marine habitats.

To promote excellence in design of buildings, facilities and structures in the coastal area.

To promote coordinated management of the Port Phillip coastal area.³⁶

- 154 The Safety Beach Foreshore Landscape Committee and Dromana Foreshore Committee of Management do not support the proposal, on grounds that include adverse impacts on the Dromana (and Safety Beach Foreshore) Reserve(s) and Port Phillip Bay more generally.

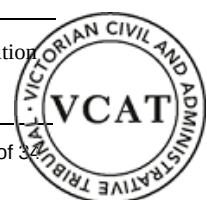
³⁵ The Scheme cl 42.01 sch 25 cl 1.0.

³⁶ The Scheme cl 42.01 sch 25 cl 2.0.



- 155 Both submit the proposal will result in increased rubbish and debris, increase traffic congestion, add to natural hazards and climate change and increase concerns associated with potential flooding, drainage contamination and amenity/overdevelopment impacts.
- 156 These concerns were supported by the other respondents in their submissions, who also referred to what they considered to be the minimal provision of landscaping to the public realm proposed by the development and importance of the character and visual setting of the foreshore area.
- 157 Both committees pointed out that, in addition to the subject land being part of ESO25, part of the foreshore opposite the subject land is also part of ESO17 being part of a streamlines area where it emerges onto the foreshore from the hinterland to the southeast. Both also pointed out the subject land and/or its surrounds are subject to the *Marine and Coastal Act 2018*, the *Safety Beach Coastal Management Plan 2016* and the *Crown Land (Reserves) Act 1978*.
- 158 The committees submitted the concentration of uses and increased hard stand area associated with the proposal, built form structure, additional underground fuel storage and increased traffic movement, together with the potential for increase rubbish, will adversely impact the foreshore environs opposite and would be contrary to the wider policy and legislative context.
- 159 We acknowledge the importance of protecting environmental conditions and managing specific challenges that can be presented by new development proposals in sensitive foreshore environs such as the Safety Beach/Dromana area.
- 160 However, these matters are addressed by the various strategic policy provisions included in the Scheme, as well as the wider policy and legislative context to which we have referred. We also point out that, while we would have to be satisfied that the application satisfactorily responds to ESO25, we would need to make a decision on the application after integrating all relevant provisions of the Scheme.
- 161 After considering the submissions and evidence in relation to impact on the foreshore, we would not have been persuaded that the proposed development will result in unreasonable adverse impacts on the foreshore area. The impacts identified by the respondents can and should be appropriately managed by the respective land use operators, site management plans, compliance with other legislative requirements and permit conditions relevant to the proposed development.³⁷
- 162 The design response and low-rise (single storey) nature and location of built form associated with the proposal are appropriate and generally in keeping with the character of this area. In a general sense, the built form does not impose on the foreshore.

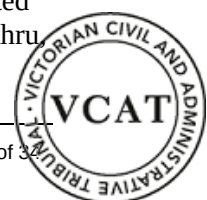
³⁷ In relation to permit conditions, we record that AA Holdings would not have opposed a condition requiring it to collect foreshore litter at specified frequencies.



- 163 The height of the proposed canopy at 6.7 metres will be like the existing canopy form. This height is also compliant with height objectives stipulated under Design & Development Overlay Schedule 1 and compatible with the double storey wall height of the dwellings at 3 Marine Drive and 7-9 Nepean Highway. The canopy is open to all sides and enables views and daylight through this structure. We are not persuaded the reorientation of the canopy along Marine Drive would impact on the visual setting of the foreshore area opposite, or the longer views beyond to Arthurs Seat.
- 164 We do have some concerns about the proposed landscaping along Marine Drive.
- 165 We accept Mr Patrick's opinion that the additional planting proposed along the residential northern interface is an improvement to the current sparse landscape treatment to this interface. Nonetheless, the scale of proposed landscaping along Marine Drive is in our view minimal and requires reconsideration in any future application.
- 166 The reconsideration might include widening of the proposed landscape bed to enable some larger landscape species along this interface opposite the beach foreshore. We therefore agree with the Council that the site warrants some improved landscaped setting to this interface.
- 167 Apart from these landscaping concerns, we accept the urban design assessment provided by Mr Czarny and his opinion that the predominately single storey form of the new buildings, with a slightly higher canopy form and stepped building setbacks to all boundaries, is appropriate to the scale and setting of surrounding built form and foreshore setting opposite.

Acoustic impact

- 168 The Council expressed concern about the height of acoustic barriers. It considered this did not respect the residential character of the area or ESO25 objectives. The Council also expressed concern about the potential for unreasonable noise impacts associated with the proposal, particularly given the existing service station with four bowsers operates at a significantly lower intensity than the new service station with eight bowsers.
- 169 The Council and respondents both acknowledge the drive-thru tunnel, if constructed in accordance with the recommendations of acoustic engineers, will address direct noise emanating from the drive-thru facility when the vehicles are in the tunnel.
- 170 However, they submit this tunnel and the 2.0 metres high acoustic fence will not address patron noise, car noise and door slamming in the car parking spaces adjacent to the western boundary, particularly into the upper levels of 3 Marine Drive. They submit these concerns will be exacerbated by the proposed 24-hour operation of the convenience restaurant drive-thru combined with the 24-hour operation of the new service station.



171 AA Holdings relies on the expert acoustic evidence of Mr Tardio. Mr Tardio's opinion, after assessing potential noise sources from plant associated with refrigeration, air-conditioning and exhaust from deliveries and waste collection, from patrons, and from use of the drive-thru area for ordering is that the proposed sound tunnel:

would provide significant noise reduction, far exceeding the requirements of noise policies and to that end, I am satisfied that the Applicant has attempted to minimise all noise impacts beyond the minimum planning requirements.³⁸

172 Mr Tardio also modelled impacts from waste collection services, fuel deliveries, customer vehicles moving throughout the site and plant equipment.

173 Based on his comparisons to previous noise modelling carried out by Marshall Day Acoustics and peer-reviewed by SLR Consulting, it is Mr Tardio's recommendation the following noise mitigation conditions be applied to any permit that may issue:

- The premises shall comply with Environmental Protection Protocols, including the Protocols gazetted 1 July 2021, or any policy that supersedes it.
- All acoustic fencing noted on the Plans shall have a minimum mass of 15 kg/m² or as otherwise approved to be an acoustic rated fence with a minimum sound insulation of Rw30.
- Waste collection shall only be permitted during the nominated hours of 7 am – 6 pm, Monday-Saturday.
- Fuel and store deliveries shall only be permitted during the nominated hours of 7 am – 10 pm, Monday-Sunday, with the exception of LPG deliveries being 7 am – 6 pm Monday-Saturday.³⁹

174 AA Holdings accepted Mr Tardio's recommendations to reduce the convenience restaurant operating hours during the off season, together with switching off the 24-hour drive-thru electronic customer ordering service between 10 pm to 6 am. Ms Jordan also supported these recommendations. If we had decided to grant a permit, we would have supported the conditions and recommendations.

175 It is significant that the drive-thru would be totally enclosed and treated acoustically in tunnel form and effectively wraps around the more sensitive north and eastern boundaries of the convenience store and convenience restaurant. This treatment would be more effective and extensive than acoustic fencing which is normally required for a drive-thru in a residential setting.

³⁸ Darren Tardio, statement of evidence, [56].

³⁹ Darren Tardio, statement of evidence, [71].



- 176 The reduced operating hours for the convenience restaurant during the off season are also a positive element to assist in noise attenuation from this building. We agree with Ms Jordan and Ms Peterson that this action will result in fewer patrons being present on the site at night during these periods. This would assist in lowering the level of patron noise emanating from the site at these times.
- 177 Other noise mitigation measures also could be considered. AA Holdings tendered a draft Site Management Plan. It could be improved by independent testing and analysis. It could also be improved by inclusion of an assessment of impact from car doors and general patron movement and any mitigating measures. We encourage this work as part of any new application.
- 178 In relation to draft permit conditions, we record that Mr Tardio did not oppose conditions requiring the specification of the minimum mass of the acoustic fence, acoustic ratings of the walls and roof of the customer ordering device point, the use of three car spaces nearest the northern boundary for staff only after hours, fuel deliveries restricted to evenings, and low flow LPG pump and a noise complaints recording system in a site management plan.
- 179 Nevertheless, we would have been satisfied that Mr Tardio has undertaken a detailed and now tested analysis of noise mitigation treatments as part of this proposal. We would have been satisfied that the more sensitive residential interfaces to the north and east have been appropriately treated using the noise tunnel.

THE BALANCING TASK

- 180 The proposal fails to meet objectives relating to traffic and circulation objectives. Integrated decision making requires us to balance the benefits against the disbenefits of a proposal. If the disbenefits are relatively minor, they might be outweighed by the benefits, and permission could then be granted. Even if the disbenefits are substantial, permission could also be granted if the benefits are even more substantial. That is the essence of the balancing task.
- 181 In this matter, we find the disbenefits surrounding traffic movement and circulation outweigh the other benefits of the proposal. We do not find the proposal is of a net community benefit. Accordingly, we are unable to grant permission.



CONCLUSION

182 For the above reasons, we will not grant a permit and will affirm the Council's decision.

Geoffrey Code
Senior Member

Peter Gaschk
Member



Detailed list of objector concerns:

- Traffic/parking/bicycles
 - The current BP already creates traffic jams.
 - Video of ingress traffic and pedestrians <https://youtu.be/Sxs2fUz5wWc>
 - Congestion has gotten worse since the VCAT hearing.
 - Traffic survey was March 2021 during Covid lockdowns.
 - Numerous accidents a year at this intersection, including deaths. One accident last year resulted in a car flipped on its roof.
 - Dangerous corner – will lead to accidents, including with cyclists and pedestrians.
 - Danger to pedestrians crossing Marine Drive from the beach.
 - Additional pedestrian crossing will impact traffic and will be dangerous for pedestrians.
 - Vehicle access from petrol station via drive-thru entry is dangerous.
 - Conflict between vehicles existing the drive-thru and exiting the petrol station.
 - Right turn exit to Nepean Highway will be more dangerous and should be removed.
 - Existing right turn from Marine Drive should be removed.
 - No Right Turn exit to Marine Drive will result in 3-point turns using crossovers of nearby residents.
 - Increase in traffic to local streets to enable left-turn into the drive-thru.
 - Vehicles for the convenience restaurant will queue in Marine Drive blocking traffic
 - It will push more cars into Dromana Parade and other local streets, where there are no footpaths.
 - Insufficient parking, including inadequate number of disabled spaces.
 - Needs 10 bicycle spaces.
 - Fuel delivery trucks will not be able to safely enter the site.
 - Inadequate room for vehicles with boats.
 - Impacts to vehicle access to 3 Marine Drive.
 - Impact to emergency vehicles.
 - Pedestrian path and tables will impact on vehicle access to the beach and vegetation
- Use
 - Will have a significant impact on small business food outlets, reducing retail options in the area and resulting in loss of local culture.
 - Impacts to the Rosebud McDonalds.
 - Promotes unhealthy food – health impacts, particularly to children and opposite a childcare centre. This will undermine the healthy food program of the childcare centre.
 - Creates litter, which then needs to be cleaned up by the community.
 - Intensity of development inconsistent with the zone and size is prohibited.
 - Petrol stations are inappropriate in residential areas.
 - Should include EV charging.
 - Not required – there are other petrol stations and convenience restaurants on the peninsula.
- Amenity impacts
 - 24/7 operation will create late night noise and destroy the peaceful character of the area, incompatible with the GRZ1.
 - Too close to south-east boundary.
 - Noise impacts

- Intensification of the use
 - Vehicle drive-thru
 - Fuel deliveries will be late at night.
 - Early morning waste collection.
- Smells from kitchen to abutting residents.
 - The electro-static filter exhaust system will not be odour free.
- Light impacts
- Increased rubbish to neighbouring properties.
- Insufficient onsite parking will lead to an increase in parking at the childcare centre, where people will dump their rubbish as there is no bins there. The owner should not have to bear the cost of restricting access due to the proposal.
- Overlooking
- Overshadowing
- Vandalism/anti-social behaviour/crime - consider what happens in the car parks of other convenience food outlets - young adults with their music blaring, revving engines, motorbikes taking off at a roar, dangerous adults, drug addicts, drug dealers and other crime.
- Increased possibility of vermin.
- Environmental considerations:
 - Flood prone.
 - Inconsistent with climate change policies.
 - The Preliminary Site Assessment Report prepared by Kleinfelder provides only a preliminary assessment and should be peer reviewed to establish the accuracy and reliability of analysis.
 - Increased stormwater impacts to neighbouring properties.
 - Drainage
- Environmental impacts.
 - Increase in litter at the beach (including impact to marine environment) from fast food outlet and increase in butt's, needles, alcohol etc.
 - Potential increase in contamination to the bay from larger petrol station.
 - Proposed 200m litter patrols will be unfeasible and inadequate.
 - More public bins will be required on the foreshore.
 - Will put more pressure on local volunteers who pick up rubbish.
 - Increased use of the foreshore impacting on vegetation.
 - Contradicts Council's commitment to sustainability.
 - Removal of onsite vegetation
- Built form and Neighbourhood Character:
 - Overdevelopment
 - Inconsistent with the character of the area.
 - Will be an eyesore at the gateway to the area.
 - Noise tunnel is unsightly and will be filled by contaminated air.
- Has not adequately addressed previous VCAT concerns.
- This has already been refused before. To approve it would be deceitful.
- No net community benefit.
- Impact the ambience of the area.
- Devalue nearby houses.
- Zoning/residential exiting use rights of current vacant parts of the subject site has lapsed due to lack of occupation.
- Construction impacts – closure of petrol station.
- Removes an iconic servo and an even more iconic car wash too.
- It will attract young people who will then go to the beach.