

From: Pieter Van Der Walt
To: @capitalasphalt.com.au
Cc: Alexia Foster-Bohm
Subject: FW: Independent Expert Review - Proposed asphalt plant Block 67 Section 22 Hume
Date: Tuesday, 4 August 2020 1:36:24 PM
Attachments: [image002.png](#)
[21.1004.FR1V1.pdf](#)
[Coverletter Letter - EPA - Reports.pdf](#)
[670.11108.L01.v1.1.pdf](#)
[21.1004.L1V1.pdf](#)
[NOTICE OF DECISION-201936510-67_22_HUME-SIGNED.PDF](#)
Importance: High

Chris,

Condition A1 satisfied – need to get this to EPSDD formally to get the approval to take effect.

Pieter

From: Sargent, Narelle <Narelle.Sargent@act.gov.au>
Sent: Tuesday, 4 August 2020 12:45 PM
To: Pieter Van Der Walt @CanberraTownPlanning.com.au
Cc: EPAPlanningLiaison <EPAPlanningLiaison@act.gov.au>; Power, David <DAVID.POWER@act.gov.au>
Subject: Independent Expert Review - Proposed asphalt plant Block 67 Section 22 Hume
Importance: High

Dear Pieter

Thank you for submitting the attached information for the Environment Protection Authority's (EPA) consideration in relation to condition 1a in the Notice of Decision dated 25 May 2020 for DA201936510 (attached).

The Letter Report dated 15 July 2020 prepared by Northstar Air Quality (Reference: 21.1004.FR1V1) and associated information satisfies the EPA's requirements for the purposes of condition 1a in the Notice of Decision.

The operator of the asphalt plant will require an Environmental Authorisation (EA) to be granted by the EPA prior to the asphalt plant operating. A condition in the EA will require the operation of the plant to be conducted in accordance with an Environmental Management Plan (EMP) endorsed by the EPA.

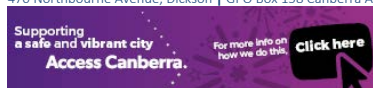
For further information about applying for an EA please see the following website:

https://www.accesscanberra.act.gov.au/app/answers/detail/a_id/3286/~environmental-authorisations#:~:text=Contact%20options-Overview,call%20for%20an%20environmental%20authorisation.&text=Each%20authorisation%20can%20be%20individually,the%20conduct%20of%20the%20activity

For further information please contact Robin Brown, Environment Protection Authority Planning Liaison on 02 6207 5642 or at EPAPlanningLiaison@act.gov.au.

Warm regards
Narelle

Narelle Sargent | the *Environment Protection Authority*
Office of the Environment Protection Authority (EPA)
Access Canberra | Chief Minister Treasury and Economic Development Directorate | ACT
Phone: 02 6207 5782 | Mobile: | Email: narelle.sargent@act.gov.au
470 Northbourne Avenue, Dickson | GPO Box 158 Canberra ACT 2601 | www.act.gov.au/accessCBR



From: Pieter Van Der Walt (<mailto:pieter.van.der.walt@canberra.townplanning.com.au>)
Sent: Friday, 31 July 2020 6:21 PM
To: Power, David <DAVID.POWER@act.gov.au>; Brown, Robin <Robin.Brown@act.gov.au>
Cc: Sargent, Narelle <Narelle.Sargent@act.gov.au>; @capitalasphalt.com.au; Robyn King <@CanberraTownPlanning.com.au>
Subject: Independent Expert Review - Proposed asphalt plant Block 67 Section 22 Hume

Hi Robin, David,

Please find attached four documents commensurate to our e-mail dated 7 July 2020 and discussion we shared in relation to the matters that transpired with the Development Application and approval of DA201936510.

The documents represents:

- Cover Letter from the proponent setting out the happenings in the review and context of the consultant advice presented,
- Two letters from the Independent Expert representing initial commentary on the modelling performed by SLR and recommendations to progress and update the modelling and resultant report as well as the final acceptance from the expert consultant that all matters have been successfully addressed in the remodelled work.
- The SLR report representing the remodelled advice.

We discussed the Proponent is preparing to submit an amendment to DA201936510 to EPSDD which will include a request that Condition 1 be augmented to allow construction to commence. The proponent accept that operation is subject to environmental licencing and would be happy for endorsement to state that operation can only commence with EA licencing granted – as would be the normal way under the statute.

We would appreciate it if you can make yourself available for a meeting early next week to discuss the information provided and we look forward to your timely response to this matter.

Thank you in advance.

Regards

Pieter



This message may be confidential. If you are not the intended recipient please contact the sender and permanently delete the message.

From: Power, David <DAVID.POWER@act.gov.au>
Sent: Tuesday, 7 July 2020 4:46 PM
To: Pieter Van Der Walt <[REDACTED]@CanberraTownPlanning.com.au>; Robyn King <[REDACTED]@CanberraTownPlanning.com.au>
Cc: Sargent, Narelle <Narelle.Sargent@act.gov.au>
Subject: Independent Expert Review - Proposed asphalt plant Block 67 Section 22 Hume

UNOFFICIAL

Hi Pieter

Northstar Air Quality Pty Ltd, as the Independent Expert Reviewer (IER) are to undertake an independent expert review of the SLR odour study (SLR Ref: 670.11108-R02, March 2020) commissioned by the Southern Asphalt Services Pty Ltd.

The review will cover the technical aspects of the SLR report and any other technical aspects that the IER may identify, including specific reference to any inputs and data. In undertaking this review the IER must consider the recommendations made in the attached ERM Report dated 1 May 2020.

The main role of the IER is to review and verify the assumptions in the SLR report and that the conclusions reached are sound in engineering/scientific terms, and are consistent with best available technology and best environmental practice.

In the event that the IER recommends modifications to the study then the amendment should be implemented and documented by SLR if they are convinced of the merit of the change. If there is disagreement between the IER and SLR, then the matter should be noted and referred to the EPA for consideration.

If the IER or yourself have any question regarding this advice please don't hesitate to contact me.

Regards

David

David Power | Manager Environmental Quality
Phone: 02 62075311 | Email: david.power@act.gov.au
Construction, Environment and Workplace Protection | Access Canberra | ACT Government
GPO Box 158 Canberra ACT 2601 | <http://www.act.gov.au/accesscbr>



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ACT
Government

Environment, Planning and
Sustainable Development

Pre-Application Meeting Notes

BLOCK:	67	PROPOSAL NUMBER:	201935370
SECTION:	22	DATE OF MEETING:	02/04/2019
SUBURB:	Hume		
PROPOSAL:	Asphalt batching plant and associated structures		
EPSDD CONTACT DETAILS:	Clinton & Anna DA Gateway Team 02 6205 2888		
PROPONENT:	Christopher Brimrose – Southern Asphalt Services Pty Ltd		
OTHER ATTENDEES:	Sam & Nathan – Capital Asphalt		
ENTITY ATTENDEES:	TCCS – Jose Henriquez Impact team – Linda Ren		

KEY CONTACTS FOR ENTITIES

Transport Canberra and City Services (TCCS):	TCCS.DA@act.gov.au (02) 6207 0019
Icon Water:	BAsubmission_watersewer@iconwater.com.au
Environment Protection Authority (EPA):	EPAPlanningLiason@act.gov.au
Heritage Office:	heritage@act.gov.au

COMMENTS ON PROPOSAL

What is the proposal	Asphalt batching plant and associated structures
Is there a Crown lease	No
Uses permissible under lease	There is not currently a lease for the site
Zone	IZ1 – General Industry
Use proposed	The use appears to be Hazardous Industry (see notes below)
Is use permissible in zone	Yes
Development codes	Industrial Zones Development Code
Precinct codes	Hume
General codes to consider	Parking and Vehicular Access General Code Access and Mobility General Code Crime Prevention through Environmental Design General Code Signs General Code

	WaterWays: Water Sensitive Urban Design General Code
Entity referral and consultation	Yes –
Mandatory referrals	<ul style="list-style-type: none"> • TCCS • Icon Water
Further entity consultation required or recommended before lodgement?	Yes – To seek further advice regarding dangerous substances. The applicant is also encouraged to liaise with ICON water, and the Environment Protection Authority to ensure their needs are addressed during the design process.
Assessment track	Merit or Impact (awaiting clarification on the classification and quantity of substances to be use don site)
If impact track, requirements for lodgement	N/A
Is pre-DA community consultation required?	No
Key issues	<ul style="list-style-type: none"> • <u>Industrial Zone Development Code</u> <p>The sketch provided to support the pre application meeting contains general concept information only. The applicant is encouraged to consider the requirements of this Code when finalising the design of the site and proposed structures and buildings.</p> <ul style="list-style-type: none"> • Building design, siting and materials used should be carefully considered in the proposed design. • Please ensure all onsite parking required for the development that meets the requirements of the Parking and Vehicular Access General Code is shown on site. • Adequate site landscaping should be shown on the proposed development plans <p><u>Input on the proposed land use</u> Based on the information provided prior to the meeting it appears the development would be defined as Hazardous Industry for the purposes of a defined land use in the Territory Plan.</p> <p>N.B - This defined land use is independent of the placard quantities of hazardous chemicals referenced in item 11, part 4.2, schedule 4, Planning and Development Act 2007.</p>
DA Leasing comments	There is no Crown lease granted over the premises as yet, so no uses can be confirmed as being permitted by the lease. Until a lease is granted, including the settlement of the

	<p>purchase, no development can commence on the site. If a lease variation is required, no lease variation can be applied for until after the lease is granted.</p>
<p>Meeting discussion points</p>	<p>TCCS – Transport Canberra and City Services</p> <ul style="list-style-type: none"> • TCCS will require information regarding the curb line and verge works taking place as once works are completed the verge areas become TCCS assets. • All verge crossings will be required to be industrial strength and wide enough to accommodate the largest vehicle to enter/exit the site. • The existing footpath should be continued and any pedestrian pathways take precedence over the verge crossing. • You will need to ensure your proposal complies with the relevant sightline requirements. • A Landscape Management Protection Plan will be required with application. • You will need to consider the waste management code. A waste management plan will be required with application identifying waste from any excavation works, waste during construction and waste collection for operation. • Truck turning templates will be required with application to show the movement of trucks on site. • A stormwater plan will be required with application. • A site management plan will be required with assessment. • You may consider consulting with a civil engineer to assist with any civil works included with this application. <p>Impact team</p> <ul style="list-style-type: none"> • Schedule 4 of the Planning and Development Act 2007 identifies works that require an EIS in an Impact track assessment. If the development includes the storage of the placard quantity of Schedule 11 hazardous chemicals than schedule 4 triggers an Impact track assessment. • Based on the information in Section 2 of the safety data sheet for the diesel product, this would be a Schedule 11 hazardous chemical due to the hazard of “Flammable Liquids: Category 4”. The placard quantity threshold would be 10,000L and the manifest quantity threshold would be 100,000L. The proponent need to confirm the quantity of diesel storage on the site. <p>The safety data sheets submitted for “Bitulastic Asphalt PMB” and “Industrial Grade Bitumen” do not appear to be current. The dangerous substances team informed that they do not recognise a safety data sheet as being current if one or more of the following apply:</p>

- Section 2 refers to hazard identification according to NOHSC criteria; or
- Section 2 contains risk phrases starting with an “R” and/or safety phrases starting with an “S”; or
- The safety data sheet was last revised more than five years ago.

Therefore, the proponent needs to provide a current safety data sheet to help us determine whether those two products are hazardous chemical and if so whether meet the placard quantity.

Based on the information of the provided safety data for the remaining products, none of these would be Schedule 11 hazardous chemicals.

Advice on dangerous substances can be obtained from DangerousSubstances@act.gov.au

Environment Protection Authority

– Advice provided via email. EPA did not attend the meeting

Environmental Authorisations

1. The production of road building materials is a class A activity and will trigger the need for an environmental authorisation
2. If an asphalt plant is to be installed (solid particles, nitrogen dioxide and VOC's) the air emissions must be managed
3. Dust from raw materials must also be managed
4. An environmental authorisation is required if more than 50 cubic metres of petroleum products are stored at the site
5. Site runoff must be managed through stormwater improvement device or be bunded
6. Noise from plant operation to be managed within 65/55dB(A)
7. Light spill must be managed if the plant will be operated beyond daylight hours

Contaminated Sites

8. All soil subject to disposal from the site must be assessed in accordance with EPA [Information Sheet 4 - Requirements for the Reuse and Disposal of Contaminated Soil in the ACT](#)
9. No soil is to be disposed from site without EPA approval

	<p><u>Air Quality</u></p> <p>10. The proposal will need to be assessed against the Environment, Planning and Sustainable Development Directorate <i>Separation Distance Guidelines for Air Emissions</i>. If the separation distance of 1000m cannot be achieved the proponent may need to undertake a detailed air quality assessment. This assessment needs to be done in accordance with the South Australian EPA <i>Ambient air quality assessment</i> guideline</p> <p>Because the impact of pollutants (such as noise) on NSW residents is enforced under the <i>Environmental Protection Act 1997 (ACT)</i>, it is advised that the applicant consider the potential impacts of the asphalt batching plant on the future urban area of Tralee.</p>
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STANDARD DA LODGEMENT REQUIREMENTS - DESIGN AND SITING

There may be additional requirements for your development required by the Territory Plan. Please also note the acknowledgement at the end of this document.

DA form – correctly completed with lessee details <i>Please note: for works involving a body corporate (for example, works affecting a common boundary wall), the body corporate must have signed as a lessee. For works on unleased territory land (for example, the road reserve) the land custodian must sign the DA form as lessee.</i>	<input type="checkbox"/> Yes
Survey certificate	<input type="checkbox"/> maybe
Statement against relevant criteria	<input type="checkbox"/> Yes
Site plan	<input type="checkbox"/> Yes
Floor plan <i>Please note: for residential development two floor plans are required, one showing an internal layout and one without the internal layout. The public register and public notification do not show the internal floor plan.</i>	<input type="checkbox"/> Yes
Area plan <i>Not required for single residential development.</i>	<input type="checkbox"/> Yes
Elevations	<input type="checkbox"/> Yes
Sections	<input type="checkbox"/> Yes
Driveway plan and turning circles	<input type="checkbox"/> Yes
Colour sample schedule	<input type="checkbox"/> Yes
Shadow diagrams	<input type="checkbox"/> maybe
Demolition plan	<input type="checkbox"/> maybe
Pollution control plan	<input type="checkbox"/> Yes
Water sensitive urban design documentation <i>Please note: this is required for all new single dwellings and additions and alterations that trigger Water Sensitive Urban Design requirements. Also required for new multi unit development & developments that trigger the Water Sensitive Urban Design General Code.</i>	<input type="checkbox"/> Yes
Unapproved existing works plan <i>Please note: this needs to be signed by a surveyor.</i>	<input type="checkbox"/> no
Tree Management Plan <i>Please note: this is required where any trees under the Tree Protection Act 2005 requires groundwork within the tree protection zone of a protected tree, or is likely to cause damage to or removal of, any protected trees.</i>	<input type="checkbox"/> no
Composite streetscape elevation	<input type="checkbox"/> Yes
Noise Management Plan <i>Please note: the EPA have been requesting a Noise Management Plan for new developments and must address all permissible uses regardless of use being taken up.</i>	<input type="checkbox"/> no

Bill of costs (must be provided for projects over \$10 million)	<input type="checkbox"/> maybe
Parking plan	<input type="checkbox"/> Yes
Off site works plan	<input type="checkbox"/> Yes
Landscape plan	<input type="checkbox"/> Yes
Access and Mobility Report	<input type="checkbox"/> No
Signage plan	<input type="checkbox"/> Maybe
Waste management plan	<input type="checkbox"/> Yes
Assessment of Environmental Effects	<input type="checkbox"/> no

IMPORTANT INFORMATION ABOUT YOUR DEVELOPMENT AND THESE NOTES

- Lodgement of development applications are electronic in the ACT and must be lodged using eDevelopment. Further information can be obtained at www.planning.act.gov.au.
- This information shall not be taken to be pre-application advice for the purposes of s138 of the *Planning and Development Act 2007*. Pre-application advice can be formally requested from the planning and land authority under s138.
- This document reflects preliminary information provided by the applicant and/or concept sketches submitted to the planning and land authority. The submitted information was not subjected to a formal assessment and this advice will not be binding on the determination of any future development application that may be lodged. It is also advised that relevant policies may alter between the time the information on this form is provided and the lodgement of the development application.
- Any information relating to advice by other authorities or entities reflected in these notes are for guidance only and must not be relied upon. It is the responsibility of the proponent to confirm any requirements of other authorities or entities directly with that authority or entity.
- A decision to sell unit 'off a plan', or a property forming part of an unapproved development, is a marketing decision entirely for the risk of the developer or Crown lessee. This practice will by no means be given any consideration in the assessment of a future development application, and sales contracts or 'off-the-plan' sales does not pre-empt or influence the planning and land authority's decision in any way.

August 2020

Notification Team - EPSDD

Dame Pattie Menzies House
GPO Box 198 Canberra ACT 2601

Via e-development

Dear EPSDD,

RE: Response to s165 Conditions of Notice of Decisions for Application ID: 201936510

In relation to the above DA for proposed Asphalt Plant, this letter has been prepared in response to the Notice of Decision dated 25 May 2020 for Conditions of Approval of 201936510. We note that this s165 relates specifically to Condition 7 of the Notice of Decision as all other Conditions have been addressed as part of a separate s165 submitted on Wednesday 5 August 2020.

This application is submitted with revised plans labelled:

- A101 Site Plan
- A601 Site Details

Elements	Response
PART A – CONDITIONS OF APPROVAL	
1. Approval does not take effect – Environment Protection Authority	
<p>a) This approval does not take effect unless the lessee/applicant has obtained the written approval from the Environment Protection Authority (EPA) in relation to the air quality and noise management measures for the development and any other issues identified by the EPA, and submits such approval to the planning and land authority as satisfying this condition of approval under s165 of the Planning and Development Act 2007.</p> <p>The EPA may require additional information, clarification, or further review of matters identified by the EPA prior to providing its advice or decision. The EPA may also impose further conditions in addition to the conditions of this decision.</p> <p>Notes: Any additional conditions imposed, and any amended drawings or environmental reports relied on for the EPA's support must be included to the information submitted to the planning and land authority. Any substantial changes to the development required for EPA approval will need to be submitted for the consideration of the planning and land authority with an application to amend the approval under s197 of the Planning and Development Act 2007.</p>	<p>Addressed as part of s165a submitted on 5/08/2020.</p>
<p>b) The lessee / application must comply with any additional conditions imposed by the EPA.</p>	<p>Noted.</p>
2. Compliance with condition 1 (EPA) – approval will end	
3. Approval does not take effect – Grant of Crown Lease	
<p>This approval does not take effect until a Crown lease that permits the approved development is granted over Block 67 Section 22 Division of Hume and registered at Access Canberra (Land Titles and Rental Bonds).</p>	<p>A Crown Lease has now been granted over Block 67 Section 22 Hume. Please refer to Crown Lease and Title provided with the s165a submission documents submitted on 5/08/2020.</p>

Elements	Response
4. Compliance with condition 3 – approval will end	Noted.
5. Commencement and completion of development	Noted.
6. Works not to comment – ICON Water	
No works in relation to this development approval is to commence until the lessee/applicant has obtained written approval (Statement of Compliance) from ICON Water and submits such approval to the planning and land authority as satisfying this condition of approval under s165 of the Planning and Development Act 2007.	Please refer to the hydraulic masterplan stamped in principle by Icon Water submitted with the s165a documentation on 5/08/2020.
(b) The lessee/applicant must comply with any additional conditions imposed by ICON Water. Notes: Refer to ICON Water “Failed to Comply” statement included with this decision. Endorsed plans may not be released prior to compliance with this condition - to the discretion of the planning and land authority. Any substantial changes to the development required for ICON Water approval will need to be submitted for the consideration of the planning and land authority with an application to amend the approval under s197 of the Planning and Development Act 2007. A resubmission to Icon Water will be required and be approved prior to commencement.	Please refer to the hydraulic masterplan stamped in principle by Icon Water submitted with the s165a documentation on 5/08/2020.
7. Further Information	
Within 28 days from the date of this decision, or within such further time as may be approved in writing by the planning and land authority, the applicant shall lodge with the planning and land authority for approval:	
Revised plans and any other relevant documentation, based on the relevant drawings submitted as part of the application, showing:	
(i) storage capacities for any liquid storage on the site to the satisfaction of the planning and land authority, Note: As this approval has been granted in the Merit track, the planning and land authority cannot support any storage that involve the storage of the placard quantity of a Schedule 11 (Work Health and Safety Regulation 2011) hazardous chemical – refer to Schedule 4 of the Planning and Development Act 2007.	Please refer to Site Plan A101 showing tank volumes noting that all volumes are to the satisfaction of ACTPLA. Tank volumes are as follows: Kerosene – 999L (under Item 11, Schedule 4 of the Planning and Development Act 2007 is not triggered as the storage capacity is under the category 3 limit of 1000L set out in Schedule 11 of the WHS Regulation). Releasing agent 3 x200L Diesel tank – 8000L Please refer to attached email correspondence confirming that proposed storage volumes do not trigger Schedule 4 of the Act.
(ii) fencing details to the satisfaction of the planning and land authority, with a preference for a less impermeable fence type for areas visible from the public domain, and	Please refer to 2.1m high colourbond fence added to street facing fence shown on A101 and A601. We note that clarification on this matter by ACTPLA asked that the proponent create more screened fencing rather than 50% transparency stated in the Industrial Zones Development Code. For these reasons a colourbond fence has been proposed.
(iii) external lighting to building frontages, to all pathways, roads/laneways and car parking areas in accordance with Australian Standard 1158.1.3 Pedestrian Lighting and AS 4282 Control of the Obtrusive Effects of Outdoor Lighting, and to the satisfaction of the planning and land authority. Note: Exterior lighting including of the production facility must ensure that there is no/minimum light spill, so as not to distract aircraft approaching or departing Canberra	Please refer to the lighting notes added to the Site Plan A101 which show development in accordance with Australian Standards.



Elements	Response
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Airport. Further evidence to this end may be required by the planning and land authority.

Overall, the proposed development remains consistent with all other planning requirements.

If you have any questions, please contact me on [redacted].

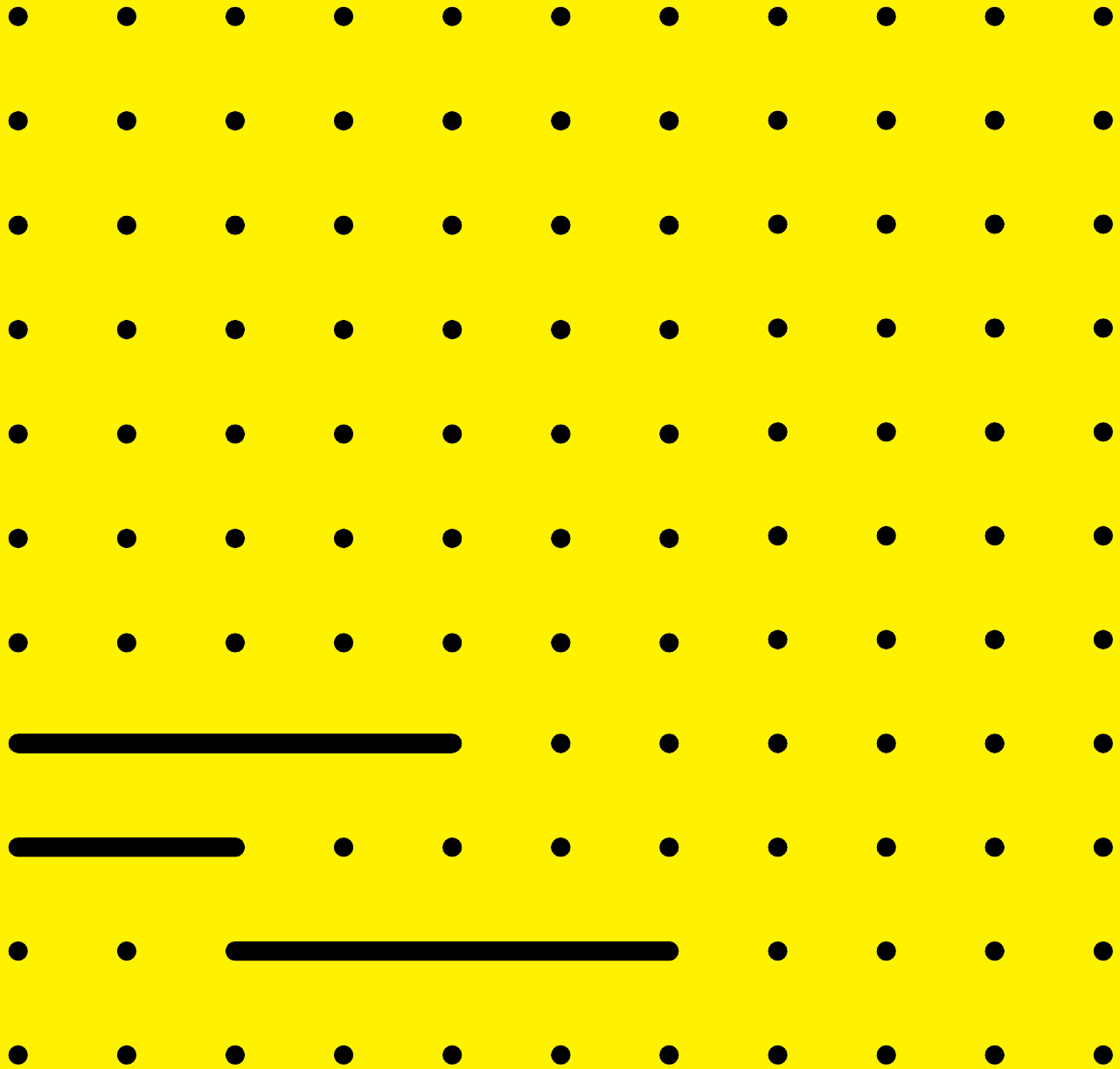
This letter is for the use only of the party to whom it is addressed and for no other parties. No responsibility is accepted to any third party who may use or rely on the whole or any part of the content of this letter.

Your sincerely,



Alexia Foster-Bohm
Town Planner





Statement Against Criteria

Block 67 Section 22 Hume

Prepared for:
Capital Asphalt Services Pty Ltd

November 2019

Prepared by:

Canberra Town Planning

Robert Slapp

Senior Town Planner

Phone: [REDACTED]

[REDACTED]@canplan.com.au

Elizabeth Slapp

Director – Senior Town Planner

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Draft for Client Review: 20.11.2019

Final for Submission: 22.11.2019

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1

Introduction

This Statement has been prepared in response to the requirements of and provisions in the *Planning and Development Act 2007 (the Act)* and the ACT Territory Plan. It acts as supporting information for a Design and Siting Development Application (DA) for:

- Bulk earthworks and ground contouring, including retaining walls and other structures;
- Installation and operation of an asphalt plant, including all required infrastructure;
- Signage;
- Site landscaping; and
- Site services, access arrangements, waste management arrangements, off-site works and other works as documented in this proposal and in the documentation included in the submission.

The proposal is currently also the subject of a separate but concurrent Direct Land Sale Application with the ACT Government Economic Development Directorate. It is expected that the sale of the subject land would be finalised post issue of a Notice of Decision for the DA.

2

Site Description and Context

2.1 Location and Site Description

Block 67 Section 22 Hume (**the site**) is situated towards the southern extent of the suburb of Hume, adjoining an area known as the New West Industry Park. The site is rectangular in shape and has an area of 9,270m². It is located with a frontage to Paspaley Street.

The site is undeveloped and is currently being utilised by the Suburban Land Agency (**SLA**) as a construction compound for the core project management associated with the delivery of the New West Industry Park.

Land adjacent to and adjoining the site is predominantly developed with various industrial type uses.

The regional site location is depicted in **Figure 1**. **Figures 2** and **3** below show the site in its local and site-specific context.

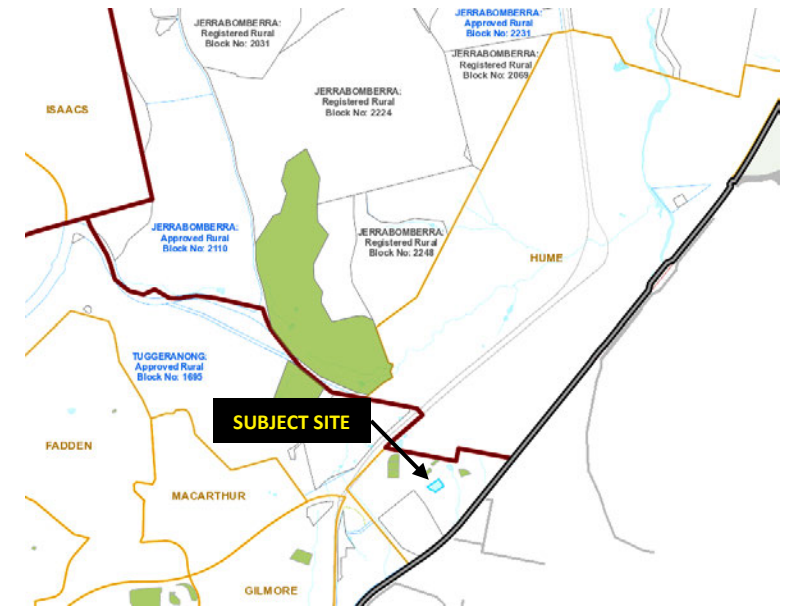


Figure 1: Regional Site Location (ACMAPI, October 2019)



Figure 2: Site Location (ACTMAPi, October 2019)



Figure 3: Site Specific Context (ACTMAPi, October 2019)

2.2 Specimen Crown Lease Provisions

Table 1 below details the key covenants included in the Specimen Crown Lease for Block 67 Section 22 Hume.

Table 1: Key Specimen Crown Lease Provisions

Key Covenant	Detail
Site Identifier	Block 67 Section 22 Hume
Site Address	5 Paspaley Street Hume
Site Area	9,270 square metres
Deposited Plan	TBC
Lease Commenced	TBC
Lease Termination	TBC
Lease Type	Market Value Lease – s238(2)(a)(ii) <i>Planning and Development Act 2007</i>
Current Use	Vacant. Site is currently being utilised by the Suburban Land Agency as a temporary construction compound
Purpose Clause	<p>To use the premises only for the purpose of:</p> <ul style="list-style-type: none"> ▪ Bulk landscape supplies; ▪ Car park; ▪ Caretakers residence; ▪ Communications facility; ▪ Craft workshop; ▪ Defence installation; ▪ Emergency services facility; ▪ Freight transport facility; ▪ General industry; ▪ Hazardous industry; ▪ Hazardous waste facility; ▪ Incineration facility; ▪ Indoor recreation facility; ▪ Industrial trades; ▪ Light industry; ▪ Liquid fuel depot; ▪ Municipal depot; ▪ Plant and equipment hire establishment; ▪ Public transport facility; ▪ Railway use; ▪ Recyclable materials collection; ▪ Recycling facility; ▪ Scientific research establishment; ▪ Service station; ▪ Store; ▪ Transport depot; ▪ Warehouse; and ▪ Waste transfer station

2.3 Development Proposal

As detailed below, the proposed development will include:

- Bulk earthworks and ground contouring, including retaining walls and other structures;
- Installation and operation of an asphalt plant, including all required infrastructure and equipment;
- Signage;
- Site landscaping; and
- Site services, access arrangements, waste management arrangements, off-site works and other works as documented in this proposal and in the documentation included in the submission.

The proposal is currently also the subject of a separate but concurrent Direct Land Sale Application with the ACT Government Economic Development Directorate. It is expected that the sale of the subject land would be finalised post issue of a Notice of Decision for the DA.

2.3.1 Bulk Earthworks & Land Contouring

To achieve the desired levels needed to facilitate the installation and operation of an asphalt plant, this Application proposes bulk earthworks and ground contouring. The Bulk Earthworks Plan (Civil Drawing No. CA060) included with this submission shows the general arrangement of the proposed levels, which will be produced as a result of the bulk earthworks (cut and fill works).

Retaining walls/structures are proposed to be incorporated into the development design so as to stabilise the desired levels for certain sections of the Block. All proposed retaining walls/structures are to be constructed from high quality materials and will be visually un-obtrusive to the industrial environment.

For the bulk earthworks, it is expected that only a minor quantity of material will need to be imported to the site. Initial estimates are circa 2,000 tonnes of general 'clean' fill and circa 4,000 tonnes of quarry produced road base (as required for the implementation of the site pavement plan).

2.3.2 Installation and Operation of an Asphalt Plant

Asphalt Plant Installation

This Application proposes the installation and operation of an asphalt plant, which will include the following infrastructure and associated equipment:

- Cold feeder bins
 - Dryer drum
 - Burner
 - Recovered fines hopper
 - Filter surface
-

- Mixing tower
- Air compressor
- Control cabin and plant management system
- Electric heated bitumen storage system
- Weigh bridge
- Raw material storage bins
- Plant office (circa 20m² GFA)
- Wash-down bay (this element is not part of the asphalt plant nor required for the operation of the plant. It is part of the asphalt placement crew/operations).

The proposed plant is anticipated to also include a production upgrade to incorporate recycling solutions in the form of Reclaimed Asphalt Pavement (**RAP**). Asphalt will be produced with up to 15% RAP as per the current approval in the relevant road specifications from the commencement of the asphalt plant. The quantity of RAP will increase up to 70% during the research and development of new asphalt mixes. RAP is a processed asphalt product, which has already been crushed and/or screened to size for recycling into new asphalt. The RAP will ultimately be stored at the subject site and used in the asphalt manufacturing process. The RAP will be capable of use within the asphalt production process through the incorporation of the RAP cold feed system.

Storage of Aggregate and Liquid Materials

For the type of asphalt plant proposed, the on-site storage of the following liquid materials is required:

Bitumen Farm

- 3 x 60m³ Vertical Bitumen Storage Cylinders
- 1 x 30m³ Vertical Bitumen Emulsion Storage Cylinder
- Provision in future for additional 1 x 60m³ Vertical Bitumen Storage Cylinders (not installed as part of this DA)

Miscellaneous Liquid Storage

- 8,000L Diesel Tank (Bunded)
- 8,000L Kerosene Tank (Bunded)
- 3 x 200L Release Agent (On chemical bund rack)

It is important to note that the above storage allocations do not meet the relevant threshold amounts listed at Schedule 11 to the Work Health and Safety Regulation 2011.

Production Capacity and Traffic Generation

During a typical shift (i.e. 6.00am to 4pm Monday to Saturday), approximately 100-200 tonnes of asphalt product will be produced. During a typical shift, the asphalt plant will operate for approximately 4 hours. The majority of this time will be in the morning so as to ensure that the asphalt storage bins remain full.

This will result in the following:

- 8 to 10 truck movements carting hot asphalt
-

- 5 to 10 truck movements delivering raw material to site (from quarry)
- Front end loader will operate for approximately 5 hours. This will be sporadic during the shift to align with the timing of the imported quarry product/material.

At these production levels, the proposed asphalt plant will receive:

- 2 bitumen bulker deliveries per week
- Minimum of 1 diesel delivery (approximately 8,000L)
- Street sweeper to clean all trafficable paths once per week (unless there is a wet weather event)
- Monthly site, plant and machinery clean/wash

During large infrastructure projects (i.e. circa 800 tonnes of asphalt) the following traffic movements are anticipated:

- First round (i.e. circa 200 tonne) – 1 truck movement carting hot asphalt every 10 minutes – maximum of 8 trucks starting at 6.30am.
- Remaining deliveries (i.e. circa 600 tonne) – 5 truck movements carting hot asphalt every hour between 10.00am to 3.00pm.
- Material deliveries to the site – 3 truck movements carting aggregates per hour and 1 truck movement carting bitumen per shift.

There would be no planned major asphalt deliveries to be made during peak hours around 8.00am and 5.00pm.

Staffing and Hours of Operation

There will be a total of six (6) full-time employees on-site including:

- Plant Manager
- Plant Operator
- Front End Loader Operator
- Lab Technician
- Receptionist
- General Site Labour x 1

In addition to the six (6) full-time employees above, approximately 15 employees associated with the off-site placement crew, will utilise the site as a base and for the parking of their personal vehicles during shifts.

The proposed hours of standard operation will be 6.00am to 4.00pm Monday to Saturday.

Occasionally, operations will occur outside of the regular hours of operation between 8.00pm and 5.00am. This would ordinarily occur during large infrastructure projects where after hours supply of asphalt is necessary and/or where customer circumstances dictate deliveries at a certain time, such to accommodate road closures or public utility maintenance windows.

Given the separation of the proposed asphalt plant from any sensitive receivers/land uses, the specific need for restrictions on operation hours is not considered to be warranted in this instance.

Ancillary Site Office and Workshop

The Application provides for the construction of an ancillary site office and workshop with a gross floor area (GFA) of circa 1,050m². The site office component will comprise a GFA of 384.64m² and will include a foyer and reception area, boardroom, staff amenities/facilities and laboratory at the ground floor level. Staff offices/workspaces and amenities/facilities and a meeting room will be provided at the upper level.

The workshop component will comprise a GFA of 669.15m² and will be utilised for the storage and servicing of vehicles, machinery and equipment associated with the operation of the asphalt plant. Four (4) electrically operated roller doors are proposed to be installed on the northern elevation and one (1) on the western elevation of the warehouse so as to provide secure access/egress for the vehicles and machinery.

The building is proposed to be constructed to a height of 8.75m (up to RL 648.05) and will comprise of pre-cast concrete panels, colorbond cladding vertically fixed, double glazed windows and colorbond roof sheeting. The colours associated with the building materials proposed will be consistent with the branding colours for Capital Asphalt Pty Ltd.

The architectural design of the proposed ancillary site office and workshop has been prepared by DNA Architects and is presented in the Architectural Drawings included with the DA submission.

2.3.3 Signage

To communicate the name and branding of Capital Asphalt Pty Ltd, it is proposed to install a number of wall signs on the ancillary site office and workshop building. As detailed below, each of the signs will have varying dimensions and will comprise the Capital Asphalt Pty Ltd logo and associated lettering 'Capital Asphalt'.

- Southern elevation (fronting Paspaley Street) – Wall sign with dimensions 1.85m (height) x 5.14m (length) x 0.05m (width).
- Western elevation – Wall sign with dimensions 2.22m (height) x 6.196m (length) x 0.05m (width).
- Eastern elevation – Wall sign with dimensions 1.235m (height) x 3.425m (length) x 0.05m (width).

The proposed colour of the signage will be consistent with the branding colours for Capital Asphalt, being black, white and blue. The signage on the southern and eastern elevations is proposed to be flood lit from below with the lights integrated into the landscaping design. The signage on the western elevation is proposed to be internally illuminated.

2.3.4 Landscaping

The proposed landscaping scheme incorporates predominantly soft landscaping elements within the setback to Paspaley Street so as to provide for an appropriate level of amenity within the new industrial area.

Where appropriate, the scheme utilises local endemic and robust, drought tolerant species to ensure low maintenance landscaping, which is suitable for the industrial environment.

The proposed landscaping scheme will not only enhance the visual appearance of the development but will also enhance the visual appearance of Paspaley Street by supplementing the relatively new landscaping provided within the verge by the SLA.

Details of the proposed landscaping scheme are provided in the Landscape Drawings prepared by Place Logic included with the DA submission.

2.4 Territory Plan

Block 67 Section 22 Hume is located within an IZ1 General Industry Zone. Figure 4 below shows the site in the context of the Territory Plan zoning as applicable to the site and surrounding areas.

Detailed planning requirements for the site are identified in the Tuggeranong District Precinct Map and Code, Hume Precinct Map and Code and the Industrial Zones Development Code.

As assessment of the proposed development against the requirements of these Codes is provided at **Section 4** below.

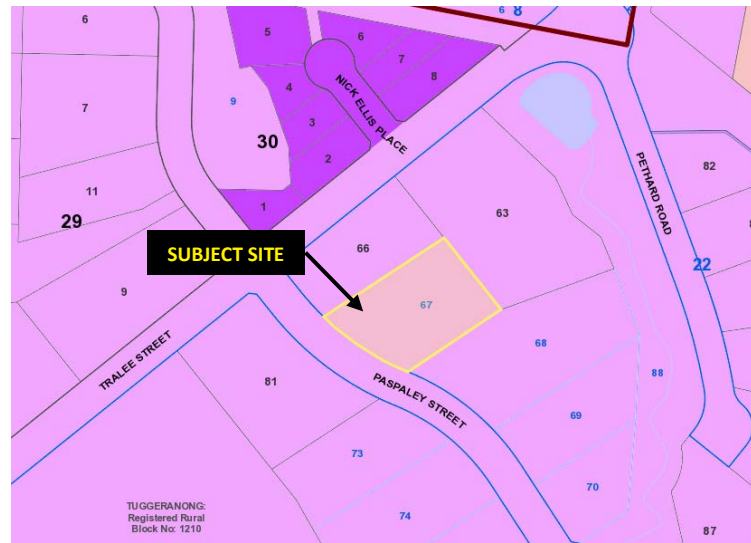


Figure 4: Zoning Overlay (ACTMAPi, October 2019)

2.5 Assessment Track Consideration

The proposed use, being a hazardous industry, is Merit Track assessable as per the IZ1 General Industry Zone Development Table in the Territory Plan.

Development Type	Commentary
1. Development that is not an exempt, code track or merit track development where the development is otherwise authorised.	Not applicable. The proposed use is merit track assessable.
2. Development specified in Schedule 4 of the Planning and Development Act 2007 and not listed as prohibited development.	Applicable, but not relevant Schedule 4 of the <i>Planning and Development Act 2007</i> identifies development proposals that require an Environmental Impact Statement for consideration and determination in the Impact Track. As detailed at Sections 2.3 and 5.2 , the proposed development does not involve the storage of a placard quantity of a Schedule 11 hazardous chemical on the land, or in a building or structure on the land.
3. Development that is authorised by a lease and listed as a prohibited use in this table.	Not applicable. The proposed use is not a prohibited use.
4. Development declared under Section 124 or Section 125 of the Planning and Development Act 2007 and not listed as a prohibited development.	Not applicable. Declarations have not been made.
5. Varying a lease to add a use assessable under the impact track.	Not applicable. Uses are not being added.

2.6 Pre-Lodgement Consultation

Planning Regulation 20A (Planning and Development Regulation 2008 as amended)) states that development proposals that meet the criteria below will be subject to mandatory pre-DA consultation – as required by Section 138AE of the *Planning and Development Act 2007*.

1. *A development proposal for 1 or more of the following is prescribed:*
 - a) *A building for residential use with 3 or more storeys and 15 or more dwellings;*
 - b) *A building with a gross floor area of more than 5,000m²;*
 - c) *A building or structure more than 25m above finished ground level;*
 - d) *A variation of a lease to remove its concessional status.*

By its nature, the proposed development does not constitute a 'prescribed development proposal' Further, as per subsection 20A(2)(a) of the Planning and Development Regulation 2008, subsection (1) does not apply to a development proposal for development of land in area designated as an industrial zone in the Territory Plan.

Noting the above, consultation with the community prior to the lodgement of this Development Application was not required and therefore, not undertaken.

3

Document List

Approved DA Form 1D provides an indication of the plans and documents that are required or may be expected to accompany a development application in the Industrial Zones.

Additional plans are also provided where necessary to describe particular details of the proposal. Below is a full list of the documentation included with this Application.

General

- DA Application Form (e-Development Form)
- Authorisation Form
- Statement Against Rules and Criteria (this Document)
- Transport Impact Assessment
- Noise Management Plan
- Air Quality Assessment
- Waste and Recycling Management Plan
- Water Reduction Calculations
- Copy of direct correspondence with EPA
- Survey Plan

Architectural

- A001 Cover Sheet
- A101 Site Plan
- A102 Pavement Plan
- A201 Ground Floor Plan
- A202 Upper Floor Plan
- A203 Roof Plan
- A301 Elevations (1)
- A302 Elevations (2)
- A401 Section A
- A501 Wash Bay Details (1)
- A502 Wash Bay Details (2)

- A503 Bin Enclosure Details (1)
- A504 Bin Enclosure Details (2)
- A505 Bin Enclosure Details (3)
- A506 Retaining Wall Elevations (1)
- A507 Retaining Wall Elevations (2)
- A508 Site Details
- A509 Building Height Analysis
- A901 Ground Public Notification Plan
- A902 Upper Public Notification Plan

Civil

- CA000 Cover Sheet
- CA001 Notes and Legend
- CA010 General Arrangement
- CA020 Existing and Proposed External Services
- CA030 Hydraulic Masterplan
- CA031 Fire Fighting Site Coverage
- CA040 Turning Movements
- CA050 Driveway Plan
- CA060 Bulk Earthworks
- CA070 Construction and Environmental Management
- CA071 Construction and Environmental Management
- CA080 Waste Management
- CA090 Temporary Traffic Management

Landscape

- L001 Cover Sheet
- L002 Plant Images
- L100 Tree Management Plan
- L101 Landscape Plan (1)
- L102 Landscape Plan (2)

- L103 Offsite Works Plan

Electrical

- E000 Cover Sheet and Electrical Services
- E900 External Lighting Layout and Electrical Services
- E905 Site Plan and Electrical Services
- E950 Lighting Category Overview – Electrical Services

4

Applicable Codes

An assessment of the Territory Plan has identified the following relevant codes:

Table 2: Assessment of Applicable Codes

National Capital Plan		Relevance
	National Capital Plan	<p>Relevant.</p> <p>The site is subject to the Urban Areas Land Use Plan in the National Capital Plan.</p> <p>The site is not Designated land and/or subject to any special requirements or Development Control Plan requirements under the National Capital Plan.</p>
Precinct Codes		Relevance
10.2	Tuggeranong District Precinct Map and Plan	<p>Relevant.</p> <p>There are no specific controls that are applicable to the site. No further assessment is required nor provided.</p>
10.1	Hume Precinct Map and Code	<p>Relevant.</p> <p>There are no specific controls that are applicable to the site. No further assessment is required nor provided.</p>
Development Codes		Relevance
5.2	Industrial Zone Development Code	<p>Relevant.</p> <p>Refer to Section 5.</p>
General Codes		Relevance
11.1	Parking and Vehicular Access General Code	<p>Relevant.</p> <p>As per Schedule 5 of Section 3.5.5 of the Code, the proposed industrial development will provide the minimum required number of car parking spaces. The parking analysis below is provided to demonstrate compliance.</p> <ul style="list-style-type: none"> ▪ Ancillary Workshop GFA – 669.15m². At 2 spaces per 100m² of GFA, this will equate to a requirement for 13 spaces. ▪ Ancillary Office GFA – 424.64m². At 2.5 spaces per 100m² of GFA, this will equate to a requirement for 11 spaces. ▪ Total required spaces – 24. As shown on Architectural Drawing No. A101 – Site Plan, a total of 24 car parking spaces are proposed to be provided. This includes

		<p>one (1) disabled parking space. One (1) motorcycle parking space is also proposed to be provided.</p> <p>Further to the above, an additional 8 parking spaces are available along Paspaley Street adjoining the site.</p> <p>For further details regarding traffic and access, please refer to the Transport Impact Assessment prepared by Graeme Shoobridge Advisory Services Pty Ltd dated 22 November 2019 as submitted with this Application.</p>
11.2	Bicycle Parking General Code	<p>Relevant.</p> <p>As per Table 1 in Section 2.1 of the Code, the proposed industrial development is not identified as being required to satisfy the requirements of the Code. Notwithstanding, the Proponent is committed to providing two (2) spaces for bicycle parking within proximity to the office building (refer to Architectural Drawing No. A101 – Site Plan).</p>
11.3	Access and Mobility General Code	<p>Relevant.</p> <p>The proposed development has been designed to comply with the requirements for disabled access and mobility in accordance with the Building Code of Australia (BCA) and Australian Standard AS1428.</p> <p>It is therefore considered that the proposal would not compromise reasonable, non-discriminatory, equitable and dignified access for people regardless of disability.</p>
11.4	Crime Prevention through Environmental Design General Code	<p>Not Relevant.</p> <p>Industrial land use is not nominated in Table 1 to the Code – ‘Development required to meet the Crime Prevention Through Environmental Design General Code’.</p>
11.5	Community and Recreation Facilities Location Guidelines General Code	<p>Not Relevant.</p> <p>The development proposed does not include community and recreation facilities.</p>
11.6	Communication Facilities and Associated Infrastructure General Code	<p>Not Relevant.</p> <p>No communication facilities or associated infrastructure are proposed.</p>
11.7	Signs General Code	<p>Relevant.</p> <p>Refer to Section 6.</p>
11.8	Water Use and Catchment General Code	<p>Not Relevant.</p> <p>The proposal does not involve the Territory’s water resources.</p>
11.9	Home Business General Code	<p>Not Relevant.</p> <p>Home business operating from a residential lease is not proposed.</p>
11.10	Waterways: Water Sensitive Urban Design General Code	<p>Relevant.</p> <p>Refer to the applicable sections of the Development Code/s and the relevant reports/drawings included with the DA submission.</p>
11.11	Planning for Bushfire Risk Mitigation General Code	<p>Not Relevant.</p> <p>The site is not identified as being within a bushfire prone area.</p>

11.12	Residential boundary fences general Code	Not Relevant. The proposal does not involve the installation of boundary fences within a residential zone.
11.13	Lease variation General Code	Not Relevant. Lease variation is not proposed.

5

Zoning and Permissibility

The subject Block is located within an IZ1 (General Industrial) Zone, and as such, this Report will address the relevant provisions of the:

- IZ1 (General Industrial Zone) Objectives and Development Table, and
- Industrial Zones Development Code

5.1 IZ1 Zone Objectives

IZ1 Zone Objectives, and how the proposal complies with them, are detailed in **Table 3** below.

Table 3: IZ1 Zone Objectives

Objective	Response
a) Support the diversification and expansion of the ACT's industrial base and employment growth	The proposed development would not be inconsistent with the stated objective on the basis that the Block is vacant, has not been subject to past land use activities and its use for the purposes of a modern asphalt production plant will contribute positively to the ACT industrial base and employment growth.
b) Facilitate investment in a wide range of industrial and related activities, with efficient land utilisation and provision of infrastructure	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purpose of a modern asphalt production plant within a developing, fully serviced industrial area.
c) Provide convenient access for ACT and regional residents to industrial goods, services and employment opportunities	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of an existing industrial Block having access to major regional and local road corridors, which facilitate the delivery of goods and services and employment opportunities.
d) Make provision for transport-related businesses in locations accessible to major road, rail and air links	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purposes of a modern asphalt production plant being a transport related business.
e) Encourage the clustering of industrial activities according to the principles of industrial ecology	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purposes of a modern asphalt production plant within an existing industrial zone.
f) Ensure that industrial development achieves high environmental standards of cleaner production, waste disposal, noise and air quality	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purposes of a modern asphalt production plant, the siting and design of which will satisfy the principles of ecological sustainable development.

Objective	Response
g) Encourage the design and construction of industrial and commercial buildings that are energy efficient, functional and flexible	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purposes of a modern asphalt production plant, the siting and design of which will satisfy the principles of ecological sustainable development.
h) Ensure that development along major approach routes and major roads meets appropriate standards of urban design	Not Applicable The subject Block does not have a direct frontage to a major approach route.
i) Make provision for manufacturing, warehouse and transport land uses requiring large land areas accessible to main interstate road and rail connections	The proposed development would not be inconsistent with the stated objective. The subject Block is of a suitable size and shape to facilitate the development of a modern asphalt production plant. Additionally, the Block has access to both regional road and rail corridors.
j) Ensure that the use of the land for predominantly industrial purposes is not jeopardised by the uncontrolled development of higher rent commercial uses such as retailing and offices	The proposed development would not be inconsistent with the stated objective. The Block is located within a developing industrial zone in which the predominant land use activities are industrial in nature.
k) Provide small-scale services to meet the needs of the local workforce	Not Applicable. The proposed development does not involve the development of the Block for retail/commercial purposes.

5.2 IZ1 Development Table – Assessment Track

The scope of the proposed development falls within the definition of ‘Hazardous Industry’. Under the Territory Plan, ‘Hazardous Industry’ is defined as meaning:

‘an industry, not being a general, light, offensive or mining industry, which by reason of the process involved, or the method of manufacture of the materials used or produced represents a significant source of hazard to human health or life or property, for any reason.’

Given the characteristics of ‘Hazardous Industry’, the determination process can be based on either a merit or impact track assessment.

Under the provisions of the *Planning and Development Act 2007*, a development specified in Schedule 4 and not listed as a prohibited development in the Development Table is impact track assessable.

‘Hazardous Industry’ is not listed as a prohibited land use activity within the IZ1 Zone. Additionally, Schedule 4 Part 4.2 Item 11 reads:

‘proposal that involves storage of the placard quantity of a Schedule 11 hazardous chemical on land, or in a building or structure on the land, that, immediately before the commencement day, was not registered as premises in the placard quantity register, unless the authority produces an environmental significance opinion indicating that the proposal is not likely to have a significant adverse environmental impact.’

In this instance, the scope of the proposed development involves the storage of the following liquid materials on-site:

Bitumen Farm

- 3 x 60m³ Vertical Bitumen Storage Cylinders
- 1 x 30m³ Vertical Bitumen Emulsion Storage Cylinder

- Provision in future for additional 1 x 60m³ Vertical Bitumen Storage Cylinders (not installed as part of this DA)

Miscellaneous Liquid Storage

- 8,000L Diesel Tank (Bunded)
- 8,000L Kerosene Tank (Bunded)
- 3 x 200L Release Agent (On chemical bund rack)

The above storage allocations do not meet the relevant hazardous chemicals threshold amounts listed at Schedule 11 to the Work Health and Safety Regulation 2011. Accordingly, the proposed development is considered to be merit track assessable.

5.3 Industrial Zones Development Code

The Industrial Zones Development Code includes both Zone Specific and General development controls. The following parts of the Code are applicable to the subject development:

- Part A – Zone Specific Controls
- Part B – General Development Controls

All of the relevant controls (rules and criteria) are reproduced below along with how they are addressed by the proposed Application.

These rules and criteria are taken from the Industrial Zones Development Code, effective 25 May 2018.

Table 4: Part A – Zone Specific Controls

Rules	Criteria	Response
Part A (1) – IZ1 General Industrial Zone		
Element 2: Building and Site Controls		
2.1 Subdivision		
R1		
Unless stated otherwise in the lease:	This is a mandatory requirement. There is no applicable criterion.	Not Applicable.
a) the minimum block size for blocks subdivided from existing leases is 2000m ²		The proposed development does not involve the subdivision of land.
b) the average of all blocks to be created via subdivision of the original lease is to be not less than 5000m ²		

Rules	Criteria	Response
2.2 Bushfire		
R1A This rule applies to blocks identified in a precinct code as having a specified Bushfire Attack Level. Buildings are constructed to Australian Standard AS3959 –Construction of buildings in bushfire prone areas for the specified Bushfire Attack Level.	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The land is not located within a designated mapped bush fire prone area.

Table 5: Part B – General Development Controls

Rules	Criteria	Response
Element 1: Restrictions on Use		
1.1 Community Uses		
There is no applicable rule.	C3 Community uses are to be considered only where it is demonstrated that the proposed use does not jeopardise the use of surrounding land for industrial purposes.	Not Applicable. The proposed development does not involve the development of the Block for community purposes.
There is no applicable rule.	C4 An application for community uses demonstrates that the proposed use: a) services the needs of the local workforce, or b) requires a scale of building or level of amenity that is not compatible with other available land.	Not Applicable. The proposed development does not involve the development of the Block for community purposes.
1.2 Non Retail Commercial Uses		
R5 The total GFA of any individual or combination of the following must not exceed 2,000m ² per lease: a) business agency b) financial establishment c) office d) public agency.	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed development does not involve the development of the Block for purposes nominated in the Rule. Notwithstanding the above, the proposed development includes the construction of an ancillary site office, which comprises a GFA of 384.64m ² , which is compliant with the provisions of the Rule.

Rules	Criteria	Response
1.3 Caretaker's Residence		
There is no applicable rule.	C6 Residential amenity is provided, through solar access, privacy, noise attenuation and security measures.	Not Applicable. The proposed development does not incorporate a caretaker's residence.
Element 2: Building and Site Controls		
2.1 Subdivision		
R7 Subdivision is only permitted where: a) it is part of a development application for another assessable development b) it is demonstrated that any residual block can accommodate another assessable development designed in accordance with the relevant section of this Code.	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed development does not involve the subdivision of land.
R9 Urban infrastructure designs are in accordance with the Design Standards for Urban Infrastructure (ACT Department of Urban Services).	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed development does not involve the subdivision of land. It is noted that the surrounding urban infrastructure was delivered by the SLA as part of the estate development with the exception of driveways to the block and adequate water 'tie' sizes.

Rules	Criteria	Response
2.2 Demolition		
<p>R10</p> <p>In accordance with section 148 of the <i>Planning and Development Act 2007</i>, the application is accompanied by a Statement of Endorsement from utility provider (including water, sewerage, stormwater, electricity and gas) stating that:</p> <ul style="list-style-type: none"> a) All network infrastructure on or immediately adjacent the site has been identified on the plan b) All potentially hazardous substances and conditions (associated with or resulting from the demolition process) that may constitute a risk to utility services have been identified c) All required network disconnections have been identified and the disconnection works comply with utility requirements d) All works associated with the demolition comply with and are in accordance with utility asset access and protection requirements. 	<p>C10</p> <p>If a Statement of Endorsement is not provided the application will be referred to relevant utility provider in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The proposed development does not involve the demolition buildings or structures.</p>

Rules	Criteria	Response
2.3 Height		
<p>R11</p> <p>The maximum height of any wall of the building is 12 metres above natural ground level.</p>	<p>C11</p> <p>Development is of an appropriate scale compatible with an industrial area.</p>	<p>Rule Satisfied.</p> <p>Excluding the asphalt production plant, the height of all ancillary buildings will not exceed the maximum 12m height restriction. Refer to the Architectural Plans submitted with this Application.</p> <p>Criteria Satisfied.</p> <p>The proposed asphalt production plant will have a maximum height of 28m. This excludes the gantry crane, which would add an additional 1m to the overall height of the plant (i.e. 29m).</p> <p>As shown on Architectural Drawing No. A509 – Building Height Analysis, the height of the proposed asphalt plant is considered to be in context with the height of other similar industrial operations within Hume. For instance, the existing ‘Downer’ asphalt production plant on Block 76 Section 7 (No. 36 Sawmill Circuit) has a height of approximately 30-35m, which is slightly higher than the 29m as proposed.</p> <p>As also shown on Architectural Drawing No. A509 – Building Height Analysis, there are existing concrete production plants within the industrial areas of Hume and Fyshwick, which range in height from approximately 18m up to 27m.</p> <p>Noting the above, the height of the proposed development is considered to be compatible with the industrial area.</p>
2.4 Setbacks		
<p>There is no applicable rule.</p>	<p>C12</p> <p>Front and side boundary setbacks provide an acceptable design solution for the development of the site and are not detrimental to the visual relationship with adjoining buildings or the streetscape.</p>	<p>Criteria Satisfied</p> <p>The proposed front and side boundary setbacks are considered to be acceptable for the development of the site with a modern asphalt production plant.</p> <p>As detailed in the Landscaping Plans included with the DA submission, the front setback zone is proposed to be suitably landscaped, which together with the modern design of the development, will create a pleasing aesthetic effect appropriate to the industrial area.</p>

Rules	Criteria	Response
2.5 National Capital Plan		
There is no applicable rule.	<p>C13</p> <p>Where a development is subject to Special Requirements under the National Capital Plan, or any relevant Development Control Plan prepared under the National Capital Plan, the development is not inconsistent with the Special Requirements or Development Control Plan.</p> <p>Where any provision of this code is inconsistent with Special Requirements under the National Capital Plan, or any relevant Development Control Plan prepared under the National Capital Plan, that provision has no effect.</p>	<p>Not Applicable.</p> <p>The proposed development is not subject to special requirements, or any development control plan nominated in the National Capital Plan.</p>
Element 3: Built Form		
3.1 Building Design		
R14 External service equipment must be screened from public view.	C14 External service equipment must be integrated into the building design.	<p>Criteria Satisfied.</p> <p>All external service equipment has been integrated into the design of the development.</p>
There is no applicable rule.	<p>C15</p> <p>The elevations of all buildings facing roads should contribute to the quality of the streetscape through well-designed buildings that respect adjoining buildings and street landscaping.</p>	<p>Criteria Satisfied.</p> <p>The modern design of the proposed development will contribute to the quality of the streetscape and existing industrial developments within proximity. It will also contribute to the New West Industry Park (which is currently being delivered by the SLA) by setting a strong precedent for high-quality industrial development.</p> <p>The proposed landscaping scheme will further contribute towards improving the quality of the streetscape.</p>
There is no applicable rule.	<p>C16</p> <p>The proposal identifies opportunities for retrofitting of existing buildings where appropriate.</p>	<p>Not Applicable.</p> <p>The proposed development will not involve the retrofitting of existing buildings.</p>
3.2 Materials and Finish		
There is no applicable rule.	<p>C17</p> <p>The roof and/or wall finish is of low reflectivity and not white or off-white or untreated metal.</p>	<p>Criteria Satisfied.</p> <p>The proposed building materials and colour palette are of low reflectivity and not white or off-white or untreated metal.</p>

Rules	Criteria	Response
R18 External walls are clad with durable materials, such as masonry, fibre cement sheeting or prefinished metal.	C18 Where practicable, materials are chosen to increase the sustainability of the building and the built environment.	Rule Satisfied. As detailed at Section 2.3.2 above, the proposed development will be constructed of high-quality and durable materials that are appropriate for the industrial context.
There is no applicable rule.	C19 Materials colours and textures are compatible within any development and should contribute to the built character of the adjoining development.	Criteria Satisfied. The proposed building materials and colour palette are considered to be compatible with the existing industrial context and will contribute to the future built character of the adjoining New West Industry Park.
3.3 Interface		
There is no applicable rule.	C20 Public access to shops and offices ancillary to industrial buildings provide legible and safe entries, located to the front of buildings.	Not Applicable. The proposed development does not involve the construction of a shop or office unrelated to the principal land use activity. However, it does incorporate an administrative office component which, for operational efficiency and site security has been integrated into the siting and design of the principal building, which is located immediately adjacent the Paspaley Street frontage. Access to the office component will present internally to the site and will have direct access to the provision of on-site visitor carparking.
There is no applicable rule.	C21 Fencing visible from the public domain is compatible with the predominant building on the site, and is at least 50% transparent.	Criteria Satisfied. As detailed on Architectural Drawing No. A508 – Site Details, the site fencing is proposed to comprise black, plastic-coated chain wire fencing, which will be at least 50% transparent.
3.4 Crime Prevention Through Environmental Design		
There is no applicable rule.	C22 The development meets the requirements of the Crime Prevention Through Environmental Design General Code.	Not Applicable. Whilst the proposed development incorporates an office component, it is ancillary to the principle industrial use. Industrial land use is not nominated in Table 1 to the nominated Code.

Rules	Criteria	Response
3.5 Access and Mobility		
There is no applicable rule.	C23 The development meets the requirements of the Access and Mobility General Code.	Criteria Satisfied. As noted on Architectural Drawing No. A101 – Site Plan, the proposed development has been designed to comply with the requirements for disabled access and mobility in accordance with the Building Code of Australia (BCA) and Australian Standard AS1428. It is therefore considered that the proposal would not compromise reasonable, non-discriminatory, equitable and dignified access for people regardless of disability.
3.6 Location Requirements for Community and Recreation Facilities		
There is no applicable rule.	C23A The development meets the requirements of the Community and Recreation Facilities Location Guidelines General Code.	Not Applicable. The proposed development does not incorporate community and recreation facilities.
Element 4: Parking and Site Access		
4.1 Access and Parking		
There is no applicable rule.	C24 Driveways and pedestrian entrances to the site are clearly visible from the front site boundary.	Criteria Satisfied. Access to the proposed development will be provided from Paspaley Street via a driveway configuration enabling vehicles to be driven onto and from the site in a forward direction. Verge crossings/entry/exist points will be clearly visible within the streetscape thereby ensuring their effective and efficient use at all times without compromising pedestrian/road safety. Refer to the Civil Engineering Drawings prepared by John Randall Consulting as submitted with this Application.
R26 Loading docks or vehicular entries to buildings are not provided on the street frontages of buildings.	C26 Loading docks and building entries do not dominate the street frontage or conflict with parking and pedestrian movements in front of the building.	Rule Satisfied. Loading docks and vehicle entries to buildings will present internally to the development. Accordingly, any visual impact on streetscape character will be negligible.

Rules	Criteria	Response
<p>There is no applicable rule.</p>	<p>C27 Parking and vehicular access must comply with the requirements of the Parking and Vehicular Access General Code.</p>	<p>Criteria Satisfied. Vehicular access and parking will be compliant with the nominated Code as per the following. Access to the proposed development will be provided from Paspaley Street via a dual driveway configuration enabling all vehicles associated with the development to be driven onto and from the site in a forward direction. Adequate site distance is available from each of the proposed driveways for both pedestrian and vehicular traffic travelling external to the site. In relation to car parking, a total of 24 car parking spaces are required to be provided based on:</p> <ul style="list-style-type: none"> ▪ Proposed light industry GFA of 669.2m² - calculated at 2 spaces per 100m² equates to 13 spaces. ▪ Proposed office GFA of 424.64m² - calculated at 2.5 spaces per 100m² equates to 11 spaces. <p>As shown on the Architectural Plans included with the Application, it is proposed to provide 24 at-grade car parking spaces, including 1 disabled parking space within the site. One (1) motorcycle parking space is also proposed to be provided. An additional 8 parking spaces are available along Paspaley Street adjoining the site. Refer also to the Transport Impact Assessment prepared by Graeme Shoobridge Advisory Services Pty Ltd dated 22 November 2019 as submitted with this Application.</p>
<p>R28 Parking facilities are located behind the minimum front setback but forward of any onsite activity.</p>	<p>C28 The location of car-parking areas maximises opportunities for passive surveillance from areas within and adjacent to the site.</p>	<p>Criteria Satisfied. On-site staff and visitor carparking will be provided in locations within the immediate curtilage of the site office, which is located in close proximity to the property frontage. All parking will be clearly visible when viewed from the site office and from the public domain. Accordingly, a high degree of passive surveillance oversight will be maintained at all times.</p>

Rules	Criteria	Response
There is no applicable rule.	<p>C29</p> <p>Where applicable, bicycle parking complies with the requirements of the Bicycle Parking General Code.</p>	<p>Not Applicable.</p> <p>Whilst the proposed development incorporates an office component, it is ancillary to the principle industrial use.</p> <p>Industrial land use is not nominated in Table 1 to the nominated Code. Notwithstanding, a minimum of 2 bicycle parking spaces are proposed to be provided adjacent to the main entry to the site office.</p>
4.2 Service Access and Delivery		
<p>R30</p> <p>Provision is made onsite for the loading and unloading of vehicles, with adequate manoeuvring space so that vehicles can enter and leave the site travelling in a forward direction.</p> <p>Note: Loading/unloading and associated manoeuvring areas is in addition to minimum parking requirements.</p>	<p>C30</p> <p>Provision is made for associated loading and unloading of goods which complies with all of the following:</p> <ul style="list-style-type: none"> a) demonstrates adequate justification for the proposed arrangements when not entering and exiting in a forward direction b) does not unreasonably compromise the safety of pedestrian and traffic movement and operation of any adjoining facilities such as road, cycleway or pedestrian pathway, and on-street and off-street parking c) provides adequate space for the manoeuvring of vehicles d) is endorsed by the Department of Territory and Municipal Services. 	<p>Rule Satisfied.</p> <p>Access to the proposed development will be provided from Paspaley Street via a driveway configuration enabling all vehicles associated with the development to be driven onto and from the site in a forward direction.</p> <p>The driveway configuration will facilitate ease of access to loading/unloading areas within the plant without compromising driveway and on-site carparking functionality.</p> <p>Refer to the Civil Engineering Drawings as submitted with this Application for vehicle movement diagrams.</p>
Element 5: Amenity		
5.1 Landscape		
There is no applicable rule.	<p>C31</p> <p>The minimum setback area includes landscaping, comprising advanced trees and shrubs, in order to minimise the visual impacts of buildings, carparking areas, and plant and materials stored on site.</p>	<p>Criteria Satisfied.</p> <p>As shown on the Landscape Plans included with the Application, the front setback area is proposed to be suitably landscaped so as to create a pleasing aesthetic effect that is appropriate to the industrial context.</p> <p>The proposed landscaping scheme will further contribute towards improving the quality of the streetscape.</p>

Rules	Criteria	Response
There is no applicable rule.	<p>C32</p> <p>Tree planting to parking areas are positioned to provide shade to such areas and to soften the visual impact of such areas.</p>	<p>Comment.</p> <p>Tree planting to on-site car parking is not considered to be appropriate as it could cause impact to the safe and efficient operation of the asphalt production plant.</p> <p>All on-site staff and visitor car parking is proposed to be provided within the immediate curtilage of the site office and will be visually softened by the fencing and landscaping proposed along the site's frontage to Paspaley Street.</p>
5.2 Noise		
There is no applicable rule.	<p>C33</p> <p>Where the proposed use is adjacent to, or is, a noise producing activity, noise attenuation measures are utilised to protect the amenity of the area and promote compatibility of uses.</p>	<p>Criteria Satisfied.</p> <p>Refer to the report entitled Proposed Asphalt Plant Noise Management Plan prepared by SLR dated 14 November 2019 as submitted with this Application.</p>
<p>R34</p> <p>A Noise Management Plan, prepared by an accredited acoustic specialist who is a member of the Australian Acoustical Society, endorsed by Environment Protection is provided for the following uses:</p> <ul style="list-style-type: none"> - club - drink establishment - hotel - industry (except light industry) - indoor entertainment facility - restaurant <p>The Noise Management Plan details the design, siting and construction methods, which will be used to minimise the impact of noise on neighbours.</p>	<p>C34</p> <p>If an endorsed Noise Management Plan is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Rule Satisfied.</p> <p>Refer to the report entitled Proposed Asphalt Plant Noise Management Plan prepared by SLR dated 14 November 2019 as submitted with this Application.</p>

Rules	Criteria	Response
<p>R34A</p> <p>A Noise Management Plan, prepared by an accredited acoustic specialist who is a member of the Australian Acoustic Society, is provided for <i>an animal care facility</i>.</p> <p>The Noise Management Plan details the design, siting and construction methods, which will be used to minimise the impact of noise on neighbouring uses, and reduce the intrusion of noise from industrial uses into the facility.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Not Applicable.</p> <p>The proposed development does not incorporate an animal care facility.</p>
5.3 Lighting		
<p>R35</p> <p>External lighting is provided to building frontages, to all pathways, roads/laneways and car parking areas in accordance with Australian Standard 1158.1.3 <i>Pedestrian Lighting</i>.</p>	<p>C35</p> <p>External lighting is provided in accordance with the Crime Prevention Through Environmental Design General Code.</p>	<p>Rule Satisfied.</p> <p>All external lighting will be designed and installed in accordance with AS 1158.1.3 Pedestrian Lighting.</p> <p>Refer to the Lighting and Electrical Services Plans prepared by Rudds Consulting Engineers (Drawing Nos. E900, E905 and E950) included with this Application.</p>
<p>R36</p> <p>All external lighting provided is in accordance with <i>AS 4282 Control of the Obtrusive Effects of Outdoor Lighting</i>.</p>	<p>C36</p> <p>All lighting, including security and car park lighting, is designed to minimise light spill</p>	<p>Rule Satisfied.</p> <p>All external lighting will be designed and installed in accordance with AS 4282 Control of Obtrusive Effects of Outdoor Lighting.</p> <p>Refer to the Lighting and Electrical Services Plans prepared by Rudds Consulting Engineers (Drawing Nos. E900, E905 and E950) included with this Application.</p>
5.4 Signs		
<p>There is no applicable rule.</p>	<p>C37</p> <p>Signs must comply with the Signs General Code.</p>	<p>Criteria Satisfied.</p> <p>Refer to Section 6.1 below.</p>
5.5 Emergency management plan		
<p>R37A</p> <p>An Emergency Management Plan is provided for an <i>animal care facility</i>, prepared by a suitably qualified professional, and includes details of a risk assessment and evacuation plan for the facility, and is endorsed by the Emergency Services Authority (ESA).</p>	<p>C37A</p> <p>If an endorsed Emergency Management Plan is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The proposed development does not incorporate an animal care facility.</p>

Rules	Criteria	Response
Element 6: Environment		
6.1 Water Sensitive Urban Design – Mains Water Consumption		
<p>R38</p> <p>Evidence is provided that shows the development achieves a minimum 40% reduction in mains water consumption compared to an equivalent development constructed in 2003 using the ACTPLA on-line assessment tool or another tool as included in the Water Ways: Water Sensitive Urban Design General Code. The 40% target is met without any reliance on landscaping measures to reduce consumption.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>C38</p> <p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Rule Satisfied.</p> <p>The development will achieve a minimum 49% reduction in mains water consumption.</p> <p>Refer to the Report entitled Water Reduction and Stormwater Modelling Report prepared by John Randall Consulting (Undated) and submitted as part of this Application.</p>
6.2 Water Sensitive Urban Design – Stormwater Quality		
<p>R39</p> <p>All sites of size greater than 2,000m² need to provide evidence of stormwater storage greater than or equal to the volume of 1.4kL per 100m² of impervious area and release over a period of 1 to 3 days. 50% of the volume of rainwater tanks with a toilet connection may be regarded as contributing towards this requirement.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>C39</p> <p>Evidence is provided that demonstrates that for all sites of size greater than 2,000m², a reduction of 1-in-3 month stormwater peak run off flow to pre-development levels with release of captured flow over a period of 1 to 3 days can be achieved.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>Criteria Satisfied.</p> <p>The development will achieve the required standards for the retention of stormwater as nominated by the Rule/Criteria.</p> <p>Refer to the Reports entitled 'Water Reduction and Stormwater Modelling Report' and 'Relevant Rules from the Industrial Zones Development Code' prepared by John Randall Consulting (Undated) and submitted as part of this Application.</p>

Rules	Criteria	Response
<p>R40</p> <p>Sites of size greater than 5,000m2 need to provide evidence showing a reduction in average annual stormwater pollutant export load of:</p> <ul style="list-style-type: none"> a) suspended solids by 60% b) total phosphorous by 45% c) total nitrogen by 40% <p>compared to an urban catchment with no water quality management controls, using the MUSIC model to demonstrate compliance.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>C40</p> <p>Sites of size greater than 5,000m2 need to provide evidence showing a reduction in average annual stormwater pollutant export load of:</p> <ul style="list-style-type: none"> a) suspended solids by 60% b) total phosphorous by 45% c) total nitrogen by 40% <p>compared to an urban catchment with no water quality management controls, using any other method.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>Rule/Criteria Satisfied.</p> <p>The development will achieve the required standards for the treatment of stormwater as nominated by the Rule/Criteria.</p> <p>Refer to the Reports entitled 'Water Reduction and Stormwater Modelling Report' and 'Relevant Rules from the Industrial Zones Development Code' prepared by John Randall Consulting (Undated) and submitted as part of this application.</p>
<p>6.3 Water Sensitive Urban Design – Stormwater Quantity</p>		
<p>R41</p> <p>All sites of size greater than 2,000m2 and subject to redevelopment need to ensure that the capacity of the existing pipe (minor) stormwater connection to the site is not exceeded in the 1-in-10 year storm event.</p> <p>All sites of size greater than 2,000m2 and subject to redevelopment need to ensure that the capacity of the existing overland (major) stormwater system to the site is not exceeded in the 1-in-100 year storm event.</p> <p>For estate and multiple block developments larger than 5000 m2, retardation of stormwater to meet the above requirements are to be met at the estate scale rather than by measures on individual blocks.</p>	<p>C41</p> <p>Evidence is provided by a suitably qualified person that shows that for all sites of size greater than 2,000m2 and subject to redevelopment</p> <p>EITHER</p> <p>a reduction of 1-in-5 year and 1-in-100 year stormwater peak run off flow to pre-development levels. See WaterWays General Code for more detail.</p> <p>OR</p> <p>That the capacity of the downstream piped stormwater system to its outlet with an open channel is not exceeded in the 1-in-10 year storm event.</p> <p>For estate and multiple block developments larger than 5000m2, retardation of stormwater to meet the above requirements are to be met at the estate scale unless it can be demonstrated that this is less feasible than measures on individual blocks.</p>	<p>Not Applicable.</p> <p>The proposed development does not involve re-development.</p>
<p>6.4 Heritage</p>		
<p>R42</p> <p>In accordance with section 148 of the <i>Planning and Development Act 2007</i>, applications for development on land or buildings subject to interim or full heritage registration are to be accompanied by advice from the Heritage Council stating that the development meets the requirements of the <i>Heritage Act 2004</i>.</p>	<p>C42</p> <p>If advice from the Heritage Council is required, but not provided, then the application will be referred to the Heritage Council in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The Block is not listed as being subject to an interim or full heritage registration.</p>

Rules	Criteria	Response
6.5 Contamination		
<p>R43</p> <p>A statement is provided that the potential for land contamination has been assessed in accordance with the ACT Government Strategic Plan – Contaminated Sites Management 1995 and the ACT Environment Protection Authority Contaminated Sites Environmental Protection Policy 2000, and it is demonstrated that the land is suitable for the proposed development.</p>	<p>C43</p> <p>If a statement that the site has been assessed is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The Block is not registered as a contaminated site.</p>
6.6 Trees		
<p>R44</p> <p>This rule applies to a development that has one or more of the following characteristics:</p> <ul style="list-style-type: none"> a) requires groundwork within the tree protection zone of a protected tree b) is likely to cause damage to or removal of any protected trees <p>The authority shall refer the development application to the Conservator of Flora and Fauna.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Under the <i>Planning and Development Regulation 2008</i> a development application for a <i>declared site</i> under the <i>Tree Protection Act 2005</i>, must be referred to the Conservator of Flora and Fauna. 2. The authority will consider any advice from the Conservator of Flora and Fauna before determining the application in accordance with the <i>Planning and Development Act 2007</i>. 3. <i>Protected tree</i> and <i>declared site</i> are defined under the <i>Tree Protection Act 2005</i>. 	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Not Applicable.</p> <p>There are no ACT Registered Trees on the Block or within the immediately adjoining public domain.</p>
<p>R45</p> <p>Trees on development sites are removed only with the prior agreement in writing of the Territory.</p>	<p>C45</p> <p>Retained trees are protected and maintained during construction to the satisfaction of the Territory.</p>	<p>Not Applicable.</p> <p>The Block is void of any significant vegetation.</p>

Rules	Criteria	Response
6.7 Hazardous Material		
<p>R46</p> <p>For the demolition of multi-unit housing (including garages and carports) constructed* prior to 1985, and Commercial / Industrial premises constructed prior to 2005, a Hazardous Materials Survey (including an asbestos survey) is carried out and signed by an appropriately licensed person and is endorsed by Environment Protection.</p> <p>The Survey is provided and covers the disposal of hazardous materials, showing that:</p> <ul style="list-style-type: none"> a) Hazardous material disposal (including asbestos) is to be at a licensed disposal facility in the ACT b) If hazardous materials are to be transported for disposal interstate, approval from the Environment Protection Authority is obtained prior to removal of material from the site c) An appropriately licensed contractor is engaged for the removal and transport of all hazardous materials (including asbestos) present at the site. <p>* Construction date means the date when the Certificate of Occupancy was issued</p>	<p>C46</p> <p>If an endorsed hazardous material survey is required however evidence of an endorsed hazardous materials survey is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The Block is vacant and has not been subject to past development.</p>
6.8 Excavation		
<p>There is no applicable rule.</p>	<p>C47</p> <p>Onsite cut and fill is minimised and managed to ameliorate negative off site impacts.</p>	<p>Criteria Satisfied.</p> <p>The nature of any site excavation will only be to an extent, which adequately accommodates the siting and design of the proposed development and required operational efficiencies.</p>
6.9 Erosion and Sediment Control		
<p>R48</p> <p>For sites less than 0.3 of a hectare, a plan is provided to demonstrate that the development complies with the <i>ACT Environment Protection Authority, Environment Protection Guidelines for Construction and Land Development in the ACT, August 2007</i>.</p>	<p>C48</p> <p>If a plan is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The block has an area of 9,270m² (0.9270 ha).</p>

Rules	Criteria	Response
<p>R49</p> <p>For development on a site greater than 0.3 of a hectare, the application is accompanied by an Erosion and Sediment Control Plan endorsed by ACT Environment Protection.</p>	<p>C49</p> <p>If an endorsed Sediment and Erosion Control Plan is not provided the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied.</p> <p>An Erosion and Sediment Control Plan has been provided as part of the Application. Refer to Civil Drawing Nos. CA070 and CA071.</p>
Element 7: Services		
7.1 Waste Management		
<p>R50</p> <p>In accordance with section 148 of the <i>Planning and Development Act 2007</i>, applications are to be accompanied by a statement of compliance from the Department of Territory and Municipal Services stating that the waste facilities and management associated with the development are in accordance with the current version of the <i>Development Control Code for Best Practice Waste Management in the ACT</i>.</p>	<p>C50</p> <p>If a statement of compliance is not provided the application will be referred to the Department of Territory and Municipal Services in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied.</p> <p>Refer to the Waste and Recycling Management Plan submitted as part of this application for referral.</p> <p>Endorsement is to occur during the assessment of the Application.</p>
7.2 Utilities		
<p>R51</p> <p>A Statement of Compliance from each relevant utility provider is provided, which confirms that the location and nature of earthworks, utility connections, proposed buildings, pavements and landscape features comply with utility standards, access provisions and asset clearance zones.</p> <p>Note: Where there is a conflict between planning and utility requirements, the utility requirements take precedence over other provisions of this Code.</p>	<p>C51</p> <p>If a statement of endorsement is not provided the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied.</p> <p>Information is provided with this Application for referral.</p> <p>Endorsement is to occur during the assessment of the Application.</p>
7.3 Liquid Trade Waste		
<p>R52</p> <p>A Statement of Compliance from the relevant agency is provided, which confirms that the discharge (or potential discharge by accident or spillage) of non-domestic liquid waste to the sewerage or stormwater networks complies with utility standards and requirements.</p>	<p>C52</p> <p>If a Statement of Compliance is not provided the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied.</p> <p>Information is provided with this Application for referral.</p> <p>Endorsement is to occur during the assessment of the Application.</p>

Rules	Criteria	Response
7.4 Waste Water		
<p>R53 Subject to ACTEWAGL approval, all under cover areas drain to the sewer.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Rule Satisfied. All under cover areas are proposed to drain to the sewer.</p>
7.5 Storage		
<p>R54 Outdoor storage areas are located behind the building line and screened from view from any road or other public area.</p>	<p>C54 Where the proposed use of the site requires open areas for storage of goods and materials, adequate provision is included in the design and layout of the site.</p>	<p>Criteria Satisfied. The operational characteristics of the plant requires the outdoor storage of materials. The storage areas have been sited and designed to achieve operational efficiency with a minimum of maintenance and are located behind the building line.</p>
<p>R55 Outdoor storage areas do not encroach on required car-parking spaces, driveways exclusively required for vehicular circulation or landscape areas.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Rule Satisfied. The operational characteristics of the plant requires the outdoor storage of materials. The storage areas have been sited and designed to achieve operational efficiency with a minimum of maintenance. The storage areas are separated from all driveway and carparking areas. It being noted that the operational efficiency of the plant is reliant on an unobstructed driveway configuration and functionality.</p>
7.6 Servicing and Site Management		
<p>R56 In accordance with section 148 of the <i>Planning and Development Act 2007</i>, applications is accompanied by a statement of endorsement from the relevant agency stating that the waste facilities and management associated with the development are in accordance with the <i>Design Standards for Urban Infrastructure</i>.</p>	<p>C56 If a statement of endorsement is not provided the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied. Refer to the Waste and Recycling Management Plan submitted as part of this application for referral. Endorsement is to occur during the assessment of the Application.</p>

6

General Codes

6.1 Signs General Code

The Signs General Code (effective 31 March 2008) is applicable to the design, content and positioning of the proposed signs as detailed on Architectural Drawing Nos. A301 – Elevations 1 and A302 – Elevations 2. An assessment of the Signs General Code is included in the Table below.

For the purpose of the assessment, the proposed sign types are defined as follows:

Wall Sign: An advertisement, painted or otherwise affixed, flat to a wall

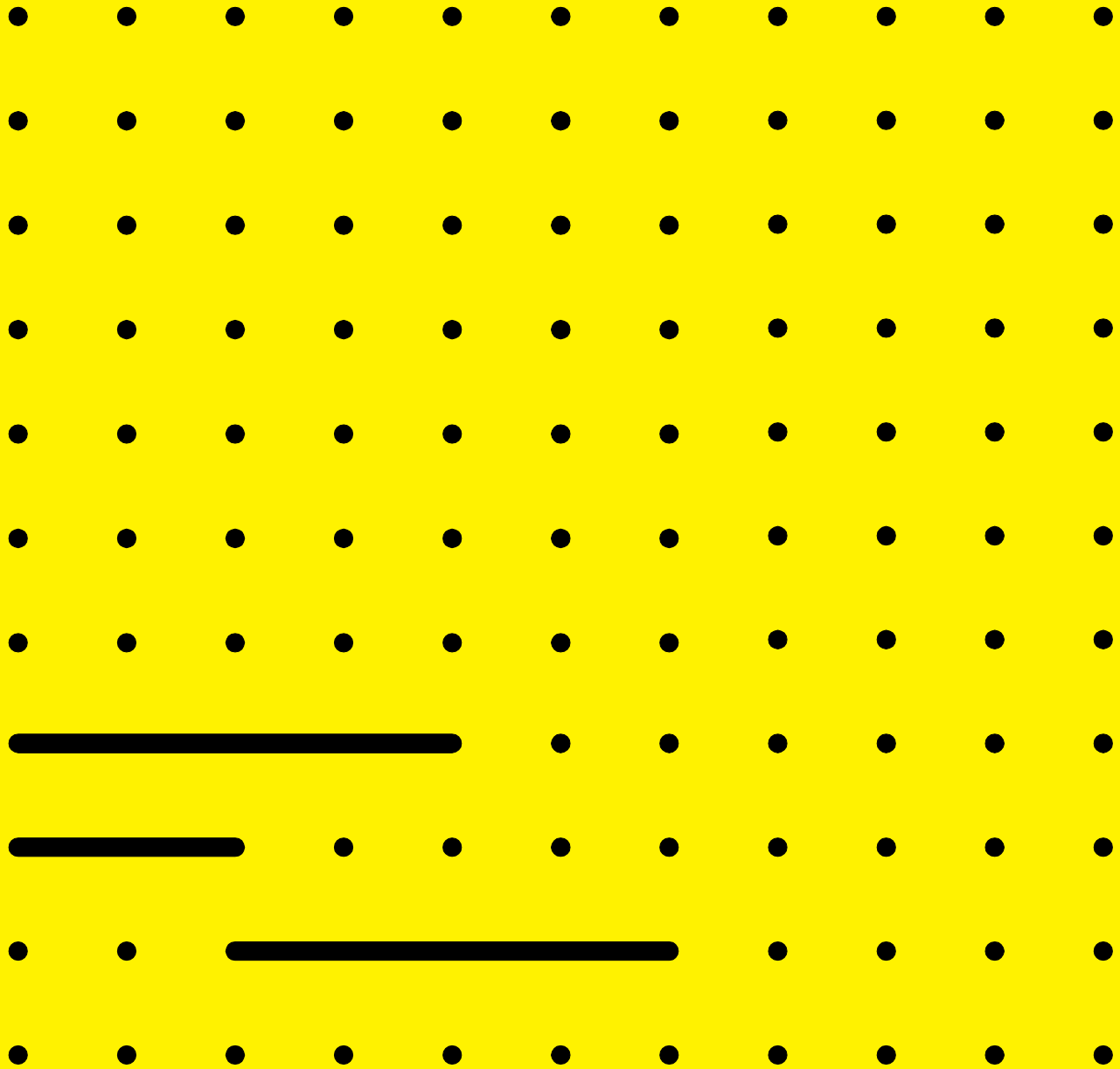
Table 6: Part A – General Development Controls

Rules	Criteria	Response
Element 1: Use		
1.1 Permissible Signs		
R1 The sign type and location comply with Table 1. Signs Permissible in Zones.	C1 The Sign meets the requirements of C4	Rule Satisfied. The proposed wall signs are permissible within the IZ1 General Industry Zone.
1.2 Content of Sign		
R2 The sign content and sign location comply with Table 2. Allowable Signage Content and Location.	C2 The Sign meets the requirements of C4	Rule Satisfied. The proposed wall signs are compliant with Table 2.
1.3 Licensing		
R3 A fixed Sign that is designed or located so that it encroaches on, over, or into unleased Territory land, has a valid licence agreement with the Territory for the sign that has been issued under Part 9.11 of the <i>Planning and Development Act 2007</i> .	C3 If development approval is granted for a fixed Sign that is designed or located so that it encroaches on, over, or into unleased Territory Land a condition of approval will be imposed requiring the applicant to enter into a licence agreement with the Territory prior to the approval of the encroaching signage taking effect.	Rule Satisfied. The proposed signage would be located so that it does not encroach on, over or into unleased Territory Land.

Rules	Criteria	Response
Element 2: Built Form		
2.27 Wall Sign		
R126 Maximum thickness: 300mm.	C126 The Sign meets the requirements of C4 as follows: Signs must: a) Not create a hazard to traffic or pedestrians b) Be of a character and design standard consistent with the objectives and controls for the relevant zone and locality c) Recognised the heritage values of sites d) Not compromise the role of the Territory as the setting of the National Capital and Seat of Government of the Commonwealth e) Complement the streetscape and amenity of the locality by virtue of its size, location, illumination, utilisation of complementary shapes, forms, colours, durable quality materials and design concepts f) If affixed to a building, complement the architectural style of the building by virtue of its size, location, illumination, utilisation of complementary shapes, forms, colours, durable quality materials and design concepts g) Not unnecessarily repeat of duplicate similar signs.	Criteria Satisfied. The proposed wall signs are proposed to have a thickness of 500mm. The design and location of the proposed signs would not: a) Create a hazard to traffic or pedestrians. b) Be out of character with the predominant industrial nature of development within the general locality. c) Be inconsistent with the objectives and controls relevant to the IZ1 General Industry Zone. d) Compromise the role of the Territory as the setting on the National Capital and Seat of Government of the Commonwealth. e) Compromise the streetscape character and/or amenity of the industrial locality. The signs would be of modest proportions in context with the bulk and scale of the proposed building to which they are to be affixed. f) Be out of character with the architectural style of the proposed building to which they are to be affixed. g) Result in visual clutter associated with the proliferation of unnecessary, inappropriate signage.
R127 Maximum number: One per tenancy.	C127 The Sign meets the requirements of C4	Criteria Satisfied. A total of three (3) wall signs are proposed to be installed. Refer to the comments at C126 above.
R128 Maximum surface area: 20% of wall space or 6 square metres, whichever is the lesser.	C128 The Sign meets the requirements of C4	Criteria Satisfied. Refer to the comments at C126 above.
R129 Location: Ground floor level and first floor level only.	This is a mandatory requirement. There is no applicable criterion.	Rule Satisfied. The location of the proposed wall signs is compliant with the Rule.

Rules	Criteria	Response
Element 3: Sign Construction		
3.1 Traffic Safety		
R132 A sign must not:	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed signage would not obstruct pedestrian view of traffic, or driver's visions of pedestrians, other traffic, or the road ahead. The proposed signage would not be located in a position that will create driver confusion at critical locations.
<ul style="list-style-type: none"> a) Obstruct pedestrians' view of traffic, or vehicle drivers' view of pedestrians, other traffic, or the road ahead; or b) Create confusion for drivers at critical locations, (such as intersections, traffic signals, or merging and weaving situations), due to the design, message/pictures, colours and location of the sign. 		
3.2 Installation fixings		
R133 No support, fixing, suspension or other systems required for the installation of a sign are exposed, unless designed as an integral feature of the sign.	C133 Conduits, wiring, switches or the mounting of other apparatus are discreetly placed and out of general view.	Rule Satisfied. No support mountings would be exposed.
R134 A sign must not be nailed or similarly fixed to a tree.	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed signage would not be nailed or similarly fixed to a tree.
3.3 Animated or flashing signs		
R135 Signs do not contain animated or flashing elements.	C135 The sign meets the requirements of C4	Not Applicable. The proposed signage does not contain any animated or flashing elements.
Element 4: Environment		
4.1 National Capital Plan		
R136 There are no National Capital Plan requirements that apply to the development.	C136 Where a development is subject to Special Requirements under the National Capital Plan (including any relevant Development Control Plan) the development is not inconsistent with the Special Requirements.	Not Applicable. The proposed development is not subject to special requirements or any development control plan nominated in the National Capital Plan.

Rules	Criteria	Response
4.2 Heritage		
<p>R137</p> <p>In accordance with section 145(2) of the <i>Planning and Development Act 2007</i>, applications for development on land or buildings subject to interim or full heritage registration are to be accompanied by advice from the Heritage Council stating that the development meets the requirements of the <i>Heritage Act 2004</i>.</p>	<p>C137</p> <p>If advice from the Heritage Council is required, but not provided, then the application will be referred to the Heritage Council in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The Block is not listed as being subject to an interim or full heritage registration.</p>
4.3 Trees		
<p>R138</p> <p>In accordance with section 145(2) of the <i>Planning and Development Act 2007</i>, where the development proposal requires groundwork within the tree protection zone of a protected tree, or is likely to cause damage to or removal of, any protected trees, the application must be accompanied by a Tree Management Plan approved under the <i>Tree Protection Act 2005</i>.</p> <p>Note: "Protected tree" is defined under the <i>Tree Protection Act 2005</i>.</p>	<p>C138</p> <p>If an approved Tree Management Plan is required, but not provided, then a draft Tree Management Plan is to accompany the application. The draft Tree Management Plan will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>There are no ACT Registered Trees on the Block or within the immediately adjoining public domain.</p>
4.4 Environmental Control		
<p>R139</p> <p>A sign must not be nailed or similarly fixed to a tree.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Not Applicable.</p> <p>The proposed signage would not be nailed or similarly fixed to a tree.</p>



Statement Against Criteria

Block 67 Section 22 Hume

Prepared for:
Capital Asphalt Services Pty Ltd

December 2019



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1

Introduction

This Statement has been prepared in response to the requirements of and provisions in the *Planning and Development Act 2007 (the Act)* and the ACT Territory Plan. It acts as supporting information for a Design and Siting Development Application (**DA**) for:

- Bulk earthworks and ground contouring, including retaining walls and other structures;
- Installation and operation of an asphalt plant, including all required infrastructure;
- Signage;
- Site landscaping; and
- Site services, access arrangements, waste management arrangements, off-site works and other works as documented in this proposal and in the documentation included in the submission.

The proposal is currently also the subject of a separate but concurrent Direct Land Sale Application with the ACT Government Economic Development Directorate. It is expected that the sale of the subject land would be finalised post issue of a Notice of Decision for the DA.

2

Site Description and Context

2.1 Location and Site Description

Block 67 Section 22 Hume (**the site**) is situated towards the southern extent of the suburb of Hume, adjoining an area known as the New West Industry Park. The site is rectangular in shape and has an area of 9,270m². It is located with a frontage to Paspaley Street.

The site is undeveloped and is currently being utilised by the Suburban Land Agency (**SLA**) as a construction compound for the core project management associated with the delivery of the New West Industry Park.

Land adjacent to and adjoining the site is predominantly developed with various industrial type uses.

The regional site location is depicted in **Figure 1**. **Figures 2** and **3** below show the site in its local and site-specific context.

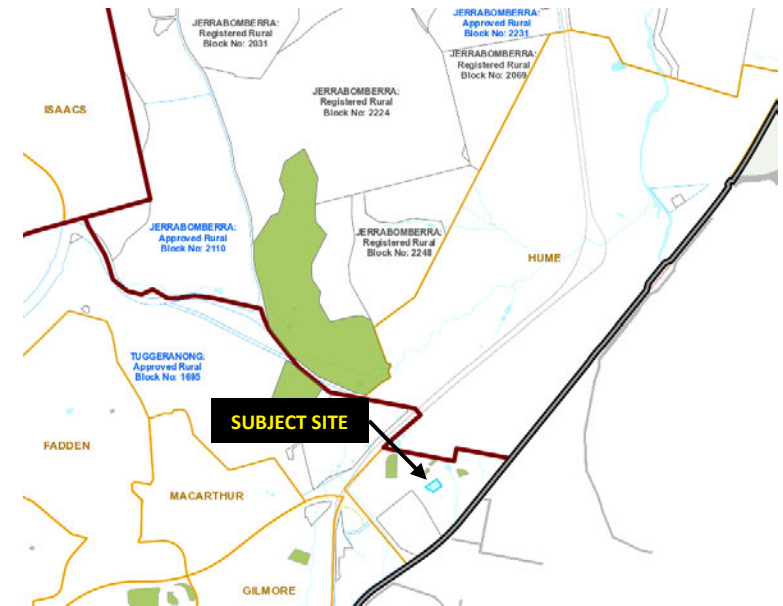


Figure 1: Regional Site Location (ACMAPI, October 2019)



Figure 2: Site Location (ACTMAPi, October 2019)



Figure 3: Site Specific Context (ACTMAPi, October 2019)

2.2 Specimen Crown Lease Provisions

Table 1 below details the key covenants included in the Specimen Crown Lease for Block 67 Section 22 Hume.

Table 1: Key Specimen Crown Lease Provisions

Key Covenant	Detail
Site Identifier	Block 67 Section 22 Hume
Site Address	5 Paspaley Street Hume
Site Area	9,270 square metres
Deposited Plan	TBC
Lease Commenced	TBC
Lease Termination	TBC
Lease Type	Market Value Lease – s238(2)(a)(ii) <i>Planning and Development Act 2007</i>
Current Use	Vacant. Site is currently being utilised by the Suburban Land Agency as a temporary construction compound
Purpose Clause	<p>To use the premises only for the purpose of:</p> <ul style="list-style-type: none"> ▪ Bulk landscape supplies; ▪ Car park; ▪ Caretakers residence; ▪ Communications facility; ▪ Craft workshop; ▪ Defence installation; ▪ Emergency services facility; ▪ Freight transport facility; ▪ General industry; ▪ Hazardous industry; ▪ Hazardous waste facility; ▪ Incineration facility; ▪ Indoor recreation facility; ▪ Industrial trades; ▪ Light industry; ▪ Liquid fuel depot; ▪ Municipal depot; ▪ Plant and equipment hire establishment; ▪ Public transport facility; ▪ Railway use; ▪ Recyclable materials collection; ▪ Recycling facility; ▪ Scientific research establishment; ▪ Service station; ▪ Store; ▪ Transport depot; ▪ Warehouse; and ▪ Waste transfer station

2.3 Development Proposal

As detailed below, the proposed development will include:

- Bulk earthworks and ground contouring, including retaining walls and other structures;
- Installation and operation of an asphalt plant, including all required infrastructure and equipment;
- Signage;
- Site landscaping; and
- Site services, access arrangements, waste management arrangements, off-site works and other works as documented in this proposal and in the documentation included in the submission.

The proposal is currently also the subject of a separate but concurrent Direct Land Sale Application with the ACT Government Economic Development Directorate. It is expected that the sale of the subject land would be finalised post issue of a Notice of Decision for the DA.

2.3.1 Bulk Earthworks & Land Contouring

To achieve the desired levels needed to facilitate the installation and operation of an asphalt plant, this Application proposes bulk earthworks and ground contouring. The Bulk Earthworks Plan (Civil Drawing No. CA060) included with this submission shows the general arrangement of the proposed levels, which will be produced as a result of the bulk earthworks (cut and fill works).

Retaining walls/structures are proposed to be incorporated into the development design so as to stabilise the desired levels for certain sections of the Block. All proposed retaining walls/structures are to be constructed from high quality materials and will be visually un-obtrusive to the industrial environment.

For the bulk earthworks, it is expected that only a minor quantity of material will need to be imported to the site. Initial estimates are circa 2,000 tonnes of general 'clean' fill and circa 4,000 tonnes of quarry produced road base (as required for the implementation of the site pavement plan).

2.3.2 Installation and Operation of an Asphalt Plant

Asphalt Plant Installation

This Application proposes the installation and operation of an asphalt plant, which will include the following infrastructure and associated equipment:

- Cold feeder bins
 - Dryer drum
 - Burner
 - Recovered fines hopper
 - Filter surface
-

- Mixing tower
- Air compressor
- Control cabin and plant management system
- Electric heated bitumen storage system
- Weigh bridge
- Raw material storage bins
- Plant office (circa 20m² GFA)
- Wash-down bay (this element is not part of the asphalt plant nor required for the operation of the plant. It is part of the asphalt placement crew/operations).

The proposed plant is anticipated to also include a production upgrade to incorporate recycling solutions in the form of Reclaimed Asphalt Pavement (**RAP**). Asphalt will be produced with up to 15% RAP as per the current approval in the relevant road specifications from the commencement of the asphalt plant. The quantity of RAP will increase up to 70% during the research and development of new asphalt mixes. RAP is a processed asphalt product, which has already been crushed and/or screened to size for recycling into new asphalt. The RAP will ultimately be stored at the subject site and used in the asphalt manufacturing process. The RAP will be capable of use within the asphalt production process through the incorporation of the RAP cold feed system.

Storage of Aggregate and Liquid Materials

For the type of asphalt plant proposed, the on-site storage of the following liquid materials is required:

Bitumen Farm

- 3 x 60m³ Vertical Bitumen Storage Cylinders
- 1 x 30m³ Vertical Bitumen Emulsion Storage Cylinder
- Provision in future for additional 1 x 60m³ Vertical Bitumen Storage Cylinders (not installed as part of this DA)

Miscellaneous Liquid Storage

- 8,000L Diesel Tank (confined to separately bunded spill compound)
- 1,000L Kerosene Tank (confined to separately bunded spill compound)
- 3 x 200L Release Agent (On chemical bund rack)

It is important to note that the diesel and kerosene are proposed to be stored separately within their own separately bunded spill compounds. Each compound will have a minimum volume of 110% of the largest container or tank. On this basis, the above storage allocations do not meet the relevant combined threshold amounts listed at Schedule 11 to the Work Health and Safety Regulation 2011.

Production Capacity and Traffic Generation

During a typical shift (i.e. 6.00am to 4pm Monday to Saturday), approximately 100-200 tonnes of asphalt product will be produced. During a typical shift, the asphalt plant will operate for approximately 4 hours. The majority of this time will be in the morning so as to ensure that the asphalt storage bins remain full.

This will result in the following:

- 8 to 10 truck movements carting hot asphalt
- 5 to 10 truck movements delivering raw material to site (from quarry)
- Front end loader will operate for approximately 5 hours. This will be sporadic during the shift to align with the timing of the imported quarry product/material.

At these production levels, the proposed asphalt plant will receive:

- 2 bitumen bulker deliveries per week
- Minimum of 1 diesel delivery (approximately 8,000L)
- Street sweeper to clean all trafficable paths once per week (unless there is a wet weather event)
- Monthly site, plant and machinery clean/wash

During large infrastructure projects (i.e. circa 800 tonnes of asphalt) the following traffic movements are anticipated:

- First round (i.e. circa 200 tonne) – 1 truck movement carting hot asphalt every 10 minutes – maximum of 8 trucks starting at 6.30am.
- Remaining deliveries (i.e. circa 600 tonne) – 5 truck movements carting hot asphalt every hour between 10.00am to 3.00pm.
- Material deliveries to the site – 3 truck movements carting aggregates per hour and 1 truck movement carting bitumen per shift.

There would be no planned major asphalt deliveries to be made during peak hours around 8.00am and 5.00pm.

Staffing and Hours of Operation

There will be a total of six (6) full-time employees on-site including:

- Plant Manager
- Plant Operator
- Front End Loader Operator
- Lab Technician
- Receptionist
- General Site Labour x 1

In addition to the six (6) full-time employees above, approximately 15 employees associated with the off-site placement crew, will utilise the site as a base and for the parking of their personal vehicles during shifts.

The proposed hours of standard operation will be 6.00am to 4.00pm Monday to Saturday.

Occasionally, operations will occur outside of the regular hours of operation between 8.00pm and 5.00am. This would ordinarily occur during large infrastructure projects where after hours supply of asphalt is necessary and/or where customer circumstances dictate deliveries at a certain time, such to accommodate road closures or public utility maintenance windows.

Given the separation of the proposed asphalt plant from any sensitive receivers/land uses, the specific need for restrictions on operation hours is not considered to be warranted in this instance.

Ancillary Site Office and Workshop

The Application provides for the construction of an ancillary site office and workshop with a gross floor area (**GFA**) of circa 1,050m². The site office component will comprise a GFA of 384.64m² and will include a foyer and reception area, boardroom, staff amenities/facilities and laboratory at the ground floor level. Staff offices/workspaces and amenities/facilities and a meeting room will be provided at the upper level.

The workshop component will comprise a GFA of 669.15m² and will be utilised for the storage and servicing of vehicles, machinery and equipment associated with the operation of the asphalt plant. Four (4) electrically operated roller doors are proposed to be installed on the northern elevation and one (1) on the western elevation of the warehouse so as to provide secure access/egress for the vehicles and machinery.

The building is proposed to be constructed to a height of 8.75m (up to RL 648.05) and will comprise of pre-cast concrete panels, colorbond cladding vertically fixed, double glazed windows and colorbond roof sheeting. The colours associated with the building materials proposed will be consistent with the branding colours for Capital Asphalt Pty Ltd.

The architectural design of the proposed ancillary site office and workshop has been prepared by DNA Architects and is presented in the Architectural Drawings included with the DA submission.

2.3.3 Signage

To communicate the name and branding of Capital Asphalt Pty Ltd, it is proposed to install a number of wall signs on the ancillary site office and workshop building. As detailed below, each of the signs will have varying dimensions and will comprise the Capital Asphalt Pty Ltd logo and associated lettering 'Capital Asphalt'.

- Southern elevation (fronting Paspaley Street) – Wall sign with dimensions 1.85m (height) x 5.14m (length) x 0.05m (width).
- Western elevation – Wall sign with dimensions 2.22m (height) x 6.196m (length) x 0.05m (width).
- Eastern elevation – Wall sign with dimensions 1.235m (height) x 3.425m (length) x 0.05m (width).

The proposed colour of the signage will be consistent with the branding colours for Capital Asphalt, being black, white and blue. The signage on the southern and eastern elevations is proposed to be flood lit from below with the lights integrated into the landscaping design. The signage on the western elevation is proposed to be internally illuminated.

2.3.4 Landscaping

The proposed landscaping scheme incorporates predominantly soft landscaping elements within the setback to Paspaley Street so as to provide for an appropriate level of amenity within the new industrial area.

Where appropriate, the scheme utilises local endemic and robust, drought tolerant species to ensure low maintenance landscaping, which is suitable for the industrial environment.

The proposed landscaping scheme will not only enhance the visual appearance of the development but will also enhance the visual appearance of Paspaley Street by supplementing the relatively new landscaping provided within the verge by the SLA.

Details of the proposed landscaping scheme are provided in the Landscape Drawings prepared by Place Logic included with the DA submission.

2.4 Territory Plan

Block 67 Section 22 Hume is located within an IZ1 General Industry Zone. Figure 4 below shows the site in the context of the Territory Plan zoning as applicable to the site and surrounding areas.

Detailed planning requirements for the site are identified in the Tuggeranong District Precinct Map and Code, Hume Precinct Map and Code and the Industrial Zones Development Code.

As assessment of the proposed development against the requirements of these Codes is provided at **Section 4** below.

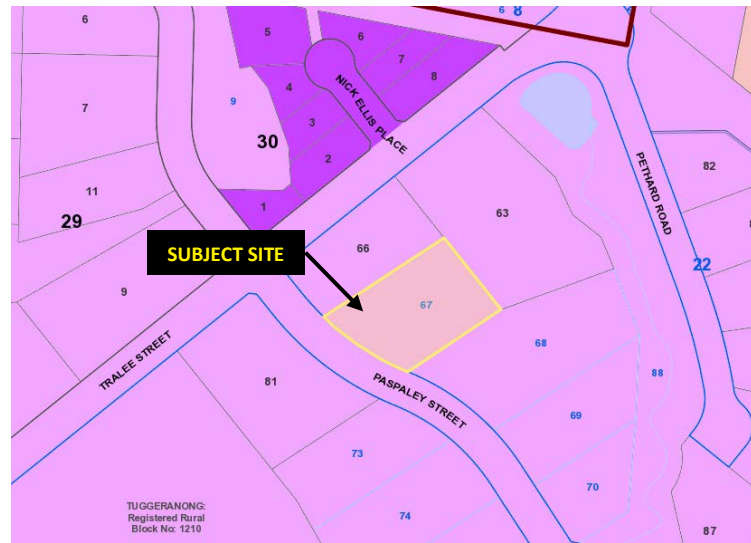


Figure 4: Zoning Overlay (ACTMAPi, October 2019)

2.5 Assessment Track Consideration

The proposed use, being a hazardous industry, is Merit Track assessable as per the IZ1 General Industry Zone Development Table in the Territory Plan.

Development Type	Commentary
1. Development that is not an exempt, code track or merit track development where the development is otherwise authorised.	Not applicable. The proposed use is merit track assessable.
2. Development specified in Schedule 4 of the Planning and Development Act 2007 and not listed as prohibited development.	Applicable, but not relevant Schedule 4 of the <i>Planning and Development Act 2007</i> identifies development proposals that require an Environmental Impact Statement for consideration and determination in the Impact Track. As detailed at Sections 2.3 and 5.2 , the proposed development does not involve the storage of a placard quantity of a Schedule 11 hazardous chemical on the land, or in a building or structure on the land.
3. Development that is authorised by a lease and listed as a prohibited use in this table.	Not applicable. The proposed use is not a prohibited use.
4. Development declared under Section 124 or Section 125 of the Planning and Development Act 2007 and not listed as a prohibited development.	Not applicable. Declarations have not been made.
5. Varying a lease to add a use assessable under the impact track.	Not applicable. Uses are not being added.

2.6 Pre-Lodgement Consultation

Planning Regulation 20A (Planning and Development Regulation 2008 as amended)) states that development proposals that meet the criteria below will be subject to mandatory pre-DA consultation – as required by Section 138AE of the *Planning and Development Act 2007*.

1. *A development proposal for 1 or more of the following is prescribed:*
 - a) *A building for residential use with 3 or more storeys and 15 or more dwellings;*
 - b) *A building with a gross floor area of more than 5,000m²;*
 - c) *A building or structure more than 25m above finished ground level;*
 - d) *A variation of a lease to remove its concessional status.*

By its nature, the proposed development does not constitute a 'prescribed development proposal' Further, as per subsection 20A(2)(a) of the Planning and Development Regulation 2008, subsection (1) does not apply to a development proposal for development of land in area designated as an industrial zone in the Territory Plan.

Noting the above, consultation with the community prior to the lodgement of this Development Application was not required and therefore, not undertaken.

3

Document List

Approved DA Form 1D provides an indication of the plans and documents that are required or may be expected to accompany a development application in the Industrial Zones.

Additional plans are also provided where necessary to describe particular details of the proposal. Below is a full list of the documentation included with this Application.

General

- DA Application Form (e-Development Form)
- Authorisation Form
- Statement Against Rules and Criteria (this Document dated 19.12.2019)
- Transport Impact Assessment
- Noise Management Plan
- Air Quality Assessment
- Waste and Recycling Management Plan
- Water Reduction Calculations
- Copy of direct correspondence with EPA
- Survey Plan

Architectural

- A001 Cover Sheet
- A101 Site Plan [Rev. B]
- A102 Pavement Plan
- A201 Ground Floor Plan
- A202 Upper Floor Plan
- A203 Roof Plan
- A301 Elevations (1)
- A302 Elevations (2)
- A401 Section A
- A501 Wash Bay Details (1)

- A502 Wash Bay Details (2)
- A503 Bin Enclosure Details (1)
- A504 Bin Enclosure Details (2)
- A505 Bin Enclosure Details (3)
- A506 Retaining Wall Elevations (1)
- A507 Retaining Wall Elevations (2) [Rev. B]
- A508 Site Details
- A509 Building Height Analysis
- A901 Ground Public Notification Plan
- A902 Upper Public Notification Plan

Civil

- CA000 Cover Sheet
- CA001 Notes and Legend
- CA010 General Arrangement
- CA020 Existing and Proposed External Services
- CA030 Hydraulic Masterplan
- CA031 Fire Fighting Site Coverage
- CA040 Turning Movements
- CA050 Driveway Plan
- CA060 Bulk Earthworks
- CA070 Construction and Environmental Management
- CA071 Construction and Environmental Management
- CA080 Waste Management
- CA090 Temporary Traffic Management

Landscape

- L001 Cover Sheet
- L002 Plant Images
- L100 Tree Management Plan
- L101 Landscape Plan (1)

- L102 Landscape Plan (2)
- L103 Offsite Works Plan

Electrical

- E000 Cover Sheet and Electrical Services
- E900 External Lighting Layout and Electrical Services
- E905 Site Plan and Electrical Services
- E950 Lighting Category Overview – Electrical Services

4

Applicable Codes

An assessment of the Territory Plan has identified the following relevant codes:

Table 2: Assessment of Applicable Codes

National Capital Plan		Relevance
	National Capital Plan	<p>Relevant.</p> <p>The site is subject to the Urban Areas Land Use Plan in the National Capital Plan.</p> <p>The site is not Designated land and/or subject to any special requirements or Development Control Plan requirements under the National Capital Plan.</p>
Precinct Codes		Relevance
10.2	Tuggeranong District Precinct Map and Plan	<p>Relevant.</p> <p>There are no specific controls that are applicable to the site. No further assessment is required nor provided.</p>
10.1	Hume Precinct Map and Code	<p>Relevant.</p> <p>There are no specific controls that are applicable to the site. No further assessment is required nor provided.</p>
Development Codes		Relevance
5.2	Industrial Zone Development Code	<p>Relevant.</p> <p>Refer to Section 5.</p>
General Codes		Relevance
11.1	Parking and Vehicular Access General Code	<p>Relevant.</p> <p>As per Schedule 5 of Section 3.5.5 of the Code, the proposed industrial development will provide the minimum required number of car parking spaces. The parking analysis below is provided to demonstrate compliance.</p> <ul style="list-style-type: none"> ▪ Ancillary Workshop GFA – 669.15m². At 2 spaces per 100m² of GFA, this will equate to a requirement for 13 spaces. ▪ Ancillary Office GFA – 424.64m². At 2.5 spaces per 100m² of GFA, this will equate to a requirement for 11 spaces. ▪ Total required spaces – 24. As shown on Architectural Drawing No. A101 – Site Plan, a total of 24 car parking spaces are proposed to be provided. This includes

		<p>one (1) disabled parking space. One (1) motorcycle parking space is also proposed to be provided.</p> <p>Further to the above, an additional 8 parking spaces are available along Paspaley Street adjoining the site.</p> <p>For further details regarding traffic and access, please refer to the Transport Impact Assessment prepared by Graeme Shoobridge Advisory Services Pty Ltd dated 22 November 2019 as submitted with this Application.</p>
11.2	Bicycle Parking General Code	<p>Relevant.</p> <p>As per Table 1 in Section 2.1 of the Code, the proposed industrial development is not identified as being required to satisfy the requirements of the Code. Notwithstanding, the Proponent is committed to providing two (2) spaces for bicycle parking within proximity to the office building (refer to Architectural Drawing No. A101 – Site Plan).</p>
11.3	Access and Mobility General Code	<p>Relevant.</p> <p>The proposed development has been designed to comply with the requirements for disabled access and mobility in accordance with the Building Code of Australia (BCA) and Australian Standard AS1428.</p> <p>It is therefore considered that the proposal would not compromise reasonable, non-discriminatory, equitable and dignified access for people regardless of disability.</p>
11.4	Crime Prevention through Environmental Design General Code	<p>Not Relevant.</p> <p>Industrial land use is not nominated in Table 1 to the Code – ‘Development required to meet the Crime Prevention Through Environmental Design General Code’.</p>
11.5	Community and Recreation Facilities Location Guidelines General Code	<p>Not Relevant.</p> <p>The development proposed does not include community and recreation facilities.</p>
11.6	Communication Facilities and Associated Infrastructure General Code	<p>Not Relevant.</p> <p>No communication facilities or associated infrastructure are proposed.</p>
11.7	Signs General Code	<p>Relevant.</p> <p>Refer to Section 6.</p>
11.8	Water Use and Catchment General Code	<p>Not Relevant.</p> <p>The proposal does not involve the Territory’s water resources.</p>
11.9	Home Business General Code	<p>Not Relevant.</p> <p>Home business operating from a residential lease is not proposed.</p>
11.10	Waterways: Water Sensitive Urban Design General Code	<p>Relevant.</p> <p>Refer to the applicable sections of the Development Code/s and the relevant reports/drawings included with the DA submission.</p>
11.11	Planning for Bushfire Risk Mitigation General Code	<p>Not Relevant.</p> <p>The site is not identified as being within a bushfire prone area.</p>

11.12	Residential boundary fences general Code	Not Relevant. The proposal does not involve the installation of boundary fences within a residential zone.
11.13	Lease variation General Code	Not Relevant. Lease variation is not proposed.

5

Zoning and Permissibility

The subject Block is located within an IZ1 (General Industrial) Zone, and as such, this Report will address the relevant provisions of the:

- IZ1 (General Industrial Zone) Objectives and Development Table, and
- Industrial Zones Development Code

5.1 IZ1 Zone Objectives

IZ1 Zone Objectives, and how the proposal complies with them, are detailed in **Table 3** below.

Table 3: IZ1 Zone Objectives

Objective	Response
a) Support the diversification and expansion of the ACT's industrial base and employment growth	The proposed development would not be inconsistent with the stated objective on the basis that the Block is vacant, has not been subject to past land use activities and its use for the purposes of a modern asphalt production plant will contribute positively to the ACT industrial base and employment growth.
b) Facilitate investment in a wide range of industrial and related activities, with efficient land utilisation and provision of infrastructure	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purpose of a modern asphalt production plant within a developing, fully serviced industrial area.
c) Provide convenient access for ACT and regional residents to industrial goods, services and employment opportunities	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of an existing industrial Block having access to major regional and local road corridors, which facilitate the delivery of goods and services and employment opportunities.
d) Make provision for transport-related businesses in locations accessible to major road, rail and air links	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purposes of a modern asphalt production plant being a transport related business.
e) Encourage the clustering of industrial activities according to the principles of industrial ecology	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purposes of a modern asphalt production plant within an existing industrial zone.
f) Ensure that industrial development achieves high environmental standards of cleaner production, waste disposal, noise and air quality	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purposes of a modern asphalt production plant, the siting and design of which will satisfy the principles of ecological sustainable development.

Objective	Response
g) Encourage the design and construction of industrial and commercial buildings that are energy efficient, functional and flexible	The proposed development would not be inconsistent with the stated objective. The proposed development involves the development of the Block for the purposes of a modern asphalt production plant, the siting and design of which will satisfy the principles of ecological sustainable development.
h) Ensure that development along major approach routes and major roads meets appropriate standards of urban design	Not Applicable The subject Block does not have a direct frontage to a major approach route.
i) Make provision for manufacturing, warehouse and transport land uses requiring large land areas accessible to main interstate road and rail connections	The proposed development would not be inconsistent with the stated objective. The subject Block is of a suitable size and shape to facilitate the development of a modern asphalt production plant. Additionally, the Block has access to both regional road and rail corridors.
j) Ensure that the use of the land for predominantly industrial purposes is not jeopardised by the uncontrolled development of higher rent commercial uses such as retailing and offices	The proposed development would not be inconsistent with the stated objective. The Block is located within a developing industrial zone in which the predominant land use activities are industrial in nature.
k) Provide small-scale services to meet the needs of the local workforce	Not Applicable. The proposed development does not involve the development of the Block for retail/commercial purposes.

5.2 IZ1 Development Table – Assessment Track

The scope of the proposed development falls within the definition of ‘Hazardous Industry’. Under the Territory Plan, ‘Hazardous Industry’ is defined as meaning:

‘an industry, not being a general, light, offensive or mining industry, which by reason of the process involved, or the method of manufacture of the materials used or produced represents a significant source of hazard to human health or life or property, for any reason.’

Given the characteristics of ‘Hazardous Industry’, the determination process can be based on either a merit or impact track assessment.

Under the provisions of the *Planning and Development Act 2007*, a development specified in Schedule 4 and not listed as a prohibited development in the Development Table is impact track assessable.

‘Hazardous Industry’ is not listed as a prohibited land use activity within the IZ1 Zone. Additionally, Schedule 4 Part 4.2 Item 11 reads:

‘proposal that involves storage of the placard quantity of a Schedule 11 hazardous chemical on land, or in a building or structure on the land, that, immediately before the commencement day, was not registered as premises in the placard quantity register, unless the authority produces an environmental significance opinion indicating that the proposal is not likely to have a significant adverse environmental impact.’

In this instance, the scope of the proposed development involves the storage of the following liquid materials on-site:

Bitumen Farm

- 3 x 60m³ Vertical Bitumen Storage Cylinders
- 1 x 30m³ Vertical Bitumen Emulsion Storage Cylinder

- Provision in future for additional 1 x 60m3 Vertical Bitumen Storage Cylinders (not installed as part of this DA)

Miscellaneous Liquid Storage

- 8,000L Diesel Tank (confined to separately bunded spill compound)
- 1,000L Kerosene Tank (confined to separately bunded spill compound)
- 3 x 200L Release Agent (On chemical bund rack)

It is important to note that the diesel and kerosene are proposed to be stored separately within their own separately bunded spill compounds. Each compound will have a minimum volume of 110% of the largest container or tank. On this basis, the above storage allocations do not meet the relevant combined threshold amounts listed at Schedule 11 to the Work Health and Safety Regulation 2011. Accordingly, the proposed development is considered to be merit track assessable.

5.3 Industrial Zones Development Code

The Industrial Zones Development Code includes both Zone Specific and General development controls. The following parts of the Code are applicable to the subject development:

- Part A – Zone Specific Controls
- Part B – General Development Controls

All of the relevant controls (rules and criteria) are reproduced below along with how they are addressed by the proposed Application.

These rules and criteria are taken from the Industrial Zones Development Code, effective 25 May 2018.

Table 4: Part A – Zone Specific Controls

Rules	Criteria	Response
Part A (1) – IZ1 General Industrial Zone		
Element 2: Building and Site Controls		
2.1 Subdivision		
R1		
Unless stated otherwise in the lease:	This is a mandatory requirement. There is no applicable criterion.	Not Applicable.
a) the minimum block size for blocks subdivided from existing leases is 2000m ²		The proposed development does not involve the subdivision of land.
b) the average of all blocks to be created via subdivision of the original lease is to be not less than 5000m ²		

Rules	Criteria	Response
2.2 Bushfire		
R1A This rule applies to blocks identified in a precinct code as having a specified Bushfire Attack Level. Buildings are constructed to Australian Standard AS3959 –Construction of buildings in bushfire prone areas for the specified Bushfire Attack Level.	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The land is not located within a designated mapped bush fire prone area.

Table 5: Part B – General Development Controls

Rules	Criteria	Response
Element 1: Restrictions on Use		
1.1 Community Uses		
There is no applicable rule.	C3 Community uses are to be considered only where it is demonstrated that the proposed use does not jeopardise the use of surrounding land for industrial purposes.	Not Applicable. The proposed development does not involve the development of the Block for community purposes.
There is no applicable rule.	C4 An application for community uses demonstrates that the proposed use: a) services the needs of the local workforce, or b) requires a scale of building or level of amenity that is not compatible with other available land.	Not Applicable. The proposed development does not involve the development of the Block for community purposes.
1.2 Non Retail Commercial Uses		
R5 The total GFA of any individual or combination of the following must not exceed 2,000m ² per lease: a) business agency b) financial establishment c) office d) public agency.	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed development does not involve the development of the Block for purposes nominated in the Rule. Notwithstanding the above, the proposed development includes the construction of an ancillary site office, which comprises a GFA of 384.64m ² , which is compliant with the provisions of the Rule.

Rules	Criteria	Response
1.3 Caretaker's Residence		
There is no applicable rule.	C6 Residential amenity is provided, through solar access, privacy, noise attenuation and security measures.	Not Applicable. The proposed development does not incorporate a caretaker's residence.
Element 2: Building and Site Controls		
2.1 Subdivision		
R7 Subdivision is only permitted where: a) it is part of a development application for another assessable development b) it is demonstrated that any residual block can accommodate another assessable development designed in accordance with the relevant section of this Code.	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed development does not involve the subdivision of land.
R9 Urban infrastructure designs are in accordance with the Design Standards for Urban Infrastructure (ACT Department of Urban Services).	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed development does not involve the subdivision of land. It is noted that the surrounding urban infrastructure was delivered by the SLA as part of the estate development with the exception of driveways to the block and adequate water 'tie' sizes.

Rules	Criteria	Response
2.2 Demolition		
<p>R10</p> <p>In accordance with section 148 of the <i>Planning and Development Act 2007</i>, the application is accompanied by a Statement of Endorsement from utility provider (including water, sewerage, stormwater, electricity and gas) stating that:</p> <ul style="list-style-type: none"> a) All network infrastructure on or immediately adjacent the site has been identified on the plan b) All potentially hazardous substances and conditions (associated with or resulting from the demolition process) that may constitute a risk to utility services have been identified c) All required network disconnections have been identified and the disconnection works comply with utility requirements d) All works associated with the demolition comply with and are in accordance with utility asset access and protection requirements. 	<p>C10</p> <p>If a Statement of Endorsement is not provided the application will be referred to relevant utility provider in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The proposed development does not involve the demolition buildings or structures.</p>

Rules	Criteria	Response
2.3 Height		
<p>R11</p> <p>The maximum height of any wall of the building is 12 metres above natural ground level.</p>	<p>C11</p> <p>Development is of an appropriate scale compatible with an industrial area.</p>	<p>Rule Satisfied.</p> <p>Excluding the asphalt production plant, the height of all ancillary buildings will not exceed the maximum 12m height restriction. Refer to the Architectural Plans submitted with this Application.</p> <p>Criteria Satisfied.</p> <p>The proposed asphalt production plant will have a maximum height of 28m. This excludes the gantry crane, which would add an additional 1m to the overall height of the plant (i.e. 29m).</p> <p>As shown on Architectural Drawing No. A509 – Building Height Analysis, the height of the proposed asphalt plant is considered to be in context with the height of other similar industrial operations within Hume. For instance, the existing ‘Downer’ asphalt production plant on Block 76 Section 7 (No. 36 Sawmill Circuit) has a height of approximately 30-35m, which is slightly higher than the 29m as proposed.</p> <p>As also shown on Architectural Drawing No. A509 – Building Height Analysis, there are existing concrete production plants within the industrial areas of Hume and Fyshwick, which range in height from approximately 18m up to 27m.</p> <p>Noting the above, the height of the proposed development is considered to be compatible with the industrial area.</p>
2.4 Setbacks		
<p>There is no applicable rule.</p>	<p>C12</p> <p>Front and side boundary setbacks provide an acceptable design solution for the development of the site and are not detrimental to the visual relationship with adjoining buildings or the streetscape.</p>	<p>Criteria Satisfied</p> <p>The proposed front and side boundary setbacks are considered to be acceptable for the development of the site with a modern asphalt production plant.</p> <p>As detailed in the Landscaping Plans included with the DA submission, the front setback zone is proposed to be suitably landscaped, which together with the modern design of the development, will create a pleasing aesthetic effect appropriate to the industrial area.</p>

Rules	Criteria	Response
2.5 National Capital Plan		
There is no applicable rule.	<p>C13</p> <p>Where a development is subject to Special Requirements under the National Capital Plan, or any relevant Development Control Plan prepared under the National Capital Plan, the development is not inconsistent with the Special Requirements or Development Control Plan.</p> <p>Where any provision of this code is inconsistent with Special Requirements under the National Capital Plan, or any relevant Development Control Plan prepared under the National Capital Plan, that provision has no effect.</p>	<p>Not Applicable.</p> <p>The proposed development is not subject to special requirements, or any development control plan nominated in the National Capital Plan.</p>
Element 3: Built Form		
3.1 Building Design		
R14 External service equipment must be screened from public view.	C14 External service equipment must be integrated into the building design.	<p>Criteria Satisfied.</p> <p>All external service equipment has been integrated into the design of the development.</p>
There is no applicable rule.	<p>C15</p> <p>The elevations of all buildings facing roads should contribute to the quality of the streetscape through well-designed buildings that respect adjoining buildings and street landscaping.</p>	<p>Criteria Satisfied.</p> <p>The modern design of the proposed development will contribute to the quality of the streetscape and existing industrial developments within proximity. It will also contribute to the New West Industry Park (which is currently being delivered by the SLA) by setting a strong precedent for high-quality industrial development.</p> <p>The proposed landscaping scheme will further contribute towards improving the quality of the streetscape.</p>
There is no applicable rule.	<p>C16</p> <p>The proposal identifies opportunities for retrofitting of existing buildings where appropriate.</p>	<p>Not Applicable.</p> <p>The proposed development will not involve the retrofitting of existing buildings.</p>
3.2 Materials and Finish		
There is no applicable rule.	<p>C17</p> <p>The roof and/or wall finish is of low reflectivity and not white or off-white or untreated metal.</p>	<p>Criteria Satisfied.</p> <p>The proposed building materials and colour palette are of low reflectivity and not white or off-white or untreated metal.</p>

Rules	Criteria	Response
<p>R18 External walls are clad with durable materials, such as masonry, fibre cement sheeting or prefinished metal.</p>	<p>C18 Where practicable, materials are chosen to increase the sustainability of the building and the built environment.</p>	<p>Rule Satisfied. As detailed at Section 2.3.2 above, the proposed development will be constructed of high-quality and durable materials that are appropriate for the industrial context.</p>
<p>There is no applicable rule.</p>	<p>C19 Materials colours and textures are compatible within any development and should contribute to the built character of the adjoining development.</p>	<p>Criteria Satisfied. The proposed building materials and colour palette are considered to be compatible with the existing industrial context and will contribute to the future built character of the adjoining New West Industry Park.</p>
3.3 Interface		
<p>There is no applicable rule.</p>	<p>C20 Public access to shops and offices ancillary to industrial buildings provide legible and safe entries, located to the front of buildings.</p>	<p>Not Applicable. The proposed development does not involve the construction of a shop or office unrelated to the principal land use activity. However, it does incorporate an administrative office component which, for operational efficiency and site security has been integrated into the siting and design of the principal building, which is located immediately adjacent the Paspaley Street frontage. Access to the office component will present internally to the site and will have direct access to the provision of on-site visitor carparking.</p>
<p>There is no applicable rule.</p>	<p>C21 Fencing visible from the public domain is compatible with the predominant building on the site, and is at least 50% transparent.</p>	<p>Criteria Satisfied. As detailed on Architectural Drawing No. A508 – Site Details, the site fencing is proposed to comprise black, plastic-coated chain wire fencing, which will be at least 50% transparent.</p>
3.4 Crime Prevention Through Environmental Design		
<p>There is no applicable rule.</p>	<p>C22 The development meets the requirements of the Crime Prevention Through Environmental Design General Code.</p>	<p>Not Applicable. Whilst the proposed development incorporates an office component, it is ancillary to the principle industrial use. Industrial land use is not nominated in Table 1 to the nominated Code.</p>

Rules	Criteria	Response
3.5 Access and Mobility		
There is no applicable rule.	C23 The development meets the requirements of the Access and Mobility General Code.	Criteria Satisfied. As noted on Architectural Drawing No. A101 – Site Plan, the proposed development has been designed to comply with the requirements for disabled access and mobility in accordance with the Building Code of Australia (BCA) and Australian Standard AS1428. It is therefore considered that the proposal would not compromise reasonable, non-discriminatory, equitable and dignified access for people regardless of disability.
3.6 Location Requirements for Community and Recreation Facilities		
There is no applicable rule.	C23A The development meets the requirements of the Community and Recreation Facilities Location Guidelines General Code.	Not Applicable. The proposed development does not incorporate community and recreation facilities.
Element 4: Parking and Site Access		
4.1 Access and Parking		
There is no applicable rule.	C24 Driveways and pedestrian entrances to the site are clearly visible from the front site boundary.	Criteria Satisfied. Access to the proposed development will be provided from Paspaley Street via a driveway configuration enabling vehicles to be driven onto and from the site in a forward direction. Verge crossings/entry/exist points will be clearly visible within the streetscape thereby ensuring their effective and efficient use at all times without compromising pedestrian/road safety. Refer to the Civil Engineering Drawings prepared by John Randall Consulting as submitted with this Application.
R26 Loading docks or vehicular entries to buildings are not provided on the street frontages of buildings.	C26 Loading docks and building entries do not dominate the street frontage or conflict with parking and pedestrian movements in front of the building.	Rule Satisfied. Loading docks and vehicle entries to buildings will present internally to the development. Accordingly, any visual impact on streetscape character will be negligible.

Rules	Criteria	Response
<p>There is no applicable rule.</p>	<p>C27 Parking and vehicular access must comply with the requirements of the Parking and Vehicular Access General Code.</p>	<p>Criteria Satisfied. Vehicular access and parking will be compliant with the nominated Code as per the following. Access to the proposed development will be provided from Paspaley Street via a dual driveway configuration enabling all vehicles associated with the development to be driven onto and from the site in a forward direction. Adequate site distance is available from each of the proposed driveways for both pedestrian and vehicular traffic travelling external to the site. In relation to car parking, a total of 24 car parking spaces are required to be provided based on:</p> <ul style="list-style-type: none"> ▪ Proposed light industry GFA of 669.2m² - calculated at 2 spaces per 100m² equates to 13 spaces. ▪ Proposed office GFA of 424.64m² - calculated at 2.5 spaces per 100m² equates to 11 spaces. <p>As shown on the Architectural Plans included with the Application, it is proposed to provide 24 at-grade car parking spaces, including 1 disabled parking space within the site. One (1) motorcycle parking space is also proposed to be provided. An additional 8 parking spaces are available along Paspaley Street adjoining the site. Refer also to the Transport Impact Assessment prepared by Graeme Shoobridge Advisory Services Pty Ltd dated 22 November 2019 as submitted with this Application.</p>
<p>R28 Parking facilities are located behind the minimum front setback but forward of any onsite activity.</p>	<p>C28 The location of car-parking areas maximises opportunities for passive surveillance from areas within and adjacent to the site.</p>	<p>Criteria Satisfied. On-site staff and visitor carparking will be provided in locations within the immediate curtilage of the site office, which is located in close proximity to the property frontage. All parking will be clearly visible when viewed from the site office and from the public domain. Accordingly, a high degree of passive surveillance oversight will be maintained at all times.</p>

Rules	Criteria	Response
There is no applicable rule.	<p>C29</p> <p>Where applicable, bicycle parking complies with the requirements of the Bicycle Parking General Code.</p>	<p>Not Applicable.</p> <p>Whilst the proposed development incorporates an office component, it is ancillary to the principle industrial use.</p> <p>Industrial land use is not nominated in Table 1 to the nominated Code. Notwithstanding, a minimum of 2 bicycle parking spaces are proposed to be provided adjacent to the main entry to the site office.</p>
4.2 Service Access and Delivery		
<p>R30</p> <p>Provision is made onsite for the loading and unloading of vehicles, with adequate manoeuvring space so that vehicles can enter and leave the site travelling in a forward direction.</p> <p>Note: Loading/unloading and associated manoeuvring areas is in addition to minimum parking requirements.</p>	<p>C30</p> <p>Provision is made for associated loading and unloading of goods which complies with all of the following:</p> <ul style="list-style-type: none"> a) demonstrates adequate justification for the proposed arrangements when not entering and exiting in a forward direction b) does not unreasonably compromise the safety of pedestrian and traffic movement and operation of any adjoining facilities such as road, cycleway or pedestrian pathway, and on-street and off-street parking c) provides adequate space for the manoeuvring of vehicles d) is endorsed by the Department of Territory and Municipal Services. 	<p>Rule Satisfied.</p> <p>Access to the proposed development will be provided from Paspaley Street via a driveway configuration enabling all vehicles associated with the development to be driven onto and from the site in a forward direction.</p> <p>The driveway configuration will facilitate ease of access to loading/unloading areas within the plant without compromising driveway and on-site carparking functionality.</p> <p>Refer to the Civil Engineering Drawings as submitted with this Application for vehicle movement diagrams.</p>
Element 5: Amenity		
5.1 Landscape		
There is no applicable rule.	<p>C31</p> <p>The minimum setback area includes landscaping, comprising advanced trees and shrubs, in order to minimise the visual impacts of buildings, carparking areas, and plant and materials stored on site.</p>	<p>Criteria Satisfied.</p> <p>As shown on the Landscape Plans included with the Application, the front setback area is proposed to be suitably landscaped so as to create a pleasing aesthetic effect that is appropriate to the industrial context.</p> <p>The proposed landscaping scheme will further contribute towards improving the quality of the streetscape.</p>

Rules	Criteria	Response
<p>There is no applicable rule.</p>	<p>C32 Tree planting to parking areas are positioned to provide shade to such areas and to soften the visual impact of such areas.</p>	<p>Comment. Tree planting to on-site car parking is not considered to be appropriate as it could cause impact to the safe and efficient operation of the asphalt production plant. All on-site staff and visitor car parking is proposed to be provided within the immediate curtilage of the site office and will be visually softened by the fencing and landscaping proposed along the site's frontage to Paspaley Street.</p>
<p>5.2 Noise</p>		
<p>There is no applicable rule.</p>	<p>C33 Where the proposed use is adjacent to, or is, a noise producing activity, noise attenuation measures are utilised to protect the amenity of the area and promote compatibility of uses.</p>	<p>Criteria Satisfied. Refer to the report entitled Proposed Asphalt Plant Noise Management Plan prepared by SLR dated 14 November 2019 as submitted with this Application.</p>
<p>R34 A Noise Management Plan, prepared by an accredited acoustic specialist who is a member of the Australian Acoustical Society, endorsed by Environment Protection is provided for the following uses:</p> <ul style="list-style-type: none"> - club - drink establishment - hotel - industry (except light industry) - indoor entertainment facility - restaurant <p>The Noise Management Plan details the design, siting and construction methods, which will be used to minimise the impact of noise on neighbours.</p>	<p>C34 If an endorsed Noise Management Plan is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Rule Satisfied. Refer to the report entitled Proposed Asphalt Plant Noise Management Plan prepared by SLR dated 14 November 2019 as submitted with this Application.</p>

Rules	Criteria	Response
<p>R34A</p> <p>A Noise Management Plan, prepared by an accredited acoustic specialist who is a member of the Australian Acoustic Society, is provided for <i>an animal care facility</i>.</p> <p>The Noise Management Plan details the design, siting and construction methods, which will be used to minimise the impact of noise on neighbouring uses, and reduce the intrusion of noise from industrial uses into the facility.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Not Applicable.</p> <p>The proposed development does not incorporate an animal care facility.</p>
5.3 Lighting		
<p>R35</p> <p>External lighting is provided to building frontages, to all pathways, roads/laneways and car parking areas in accordance with Australian Standard 1158.1.3 <i>Pedestrian Lighting</i>.</p>	<p>C35</p> <p>External lighting is provided in accordance with the Crime Prevention Through Environmental Design General Code.</p>	<p>Rule Satisfied.</p> <p>All external lighting will be designed and installed in accordance with AS 1158.1.3 Pedestrian Lighting.</p> <p>Refer to the Lighting and Electrical Services Plans prepared by Rudds Consulting Engineers (Drawing Nos. E900, E905 and E950) included with this Application.</p>
<p>R36</p> <p>All external lighting provided is in accordance with <i>AS 4282 Control of the Obtrusive Effects of Outdoor Lighting</i>.</p>	<p>C36</p> <p>All lighting, including security and car park lighting, is designed to minimise light spill</p>	<p>Rule Satisfied.</p> <p>All external lighting will be designed and installed in accordance with AS 4282 Control of Obtrusive Effects of Outdoor Lighting.</p> <p>Refer to the Lighting and Electrical Services Plans prepared by Rudds Consulting Engineers (Drawing Nos. E900, E905 and E950) included with this Application.</p>
5.4 Signs		
<p>There is no applicable rule.</p>	<p>C37</p> <p>Signs must comply with the Signs General Code.</p>	<p>Criteria Satisfied.</p> <p>Refer to Section 6.1 below.</p>
5.5 Emergency management plan		
<p>R37A</p> <p>An Emergency Management Plan is provided for an <i>animal care facility</i>, prepared by a suitably qualified professional, and includes details of a risk assessment and evacuation plan for the facility, and is endorsed by the Emergency Services Authority (ESA).</p>	<p>C37A</p> <p>If an endorsed Emergency Management Plan is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The proposed development does not incorporate an animal care facility.</p>

Rules	Criteria	Response
Element 6: Environment		
6.1 Water Sensitive Urban Design – Mains Water Consumption		
<p>R38</p> <p>Evidence is provided that shows the development achieves a minimum 40% reduction in mains water consumption compared to an equivalent development constructed in 2003 using the ACTPLA on-line assessment tool or another tool as included in the Water Ways: Water Sensitive Urban Design General Code. The 40% target is met without any reliance on landscaping measures to reduce consumption.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>C38</p> <p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Rule Satisfied.</p> <p>The development will achieve a minimum 49% reduction in mains water consumption.</p> <p>Refer to the Report entitled Water Reduction and Stormwater Modelling Report prepared by John Randall Consulting (Undated) and submitted as part of this Application.</p>
6.2 Water Sensitive Urban Design – Stormwater Quality		
<p>R39</p> <p>All sites of size greater than 2,000m² need to provide evidence of stormwater storage greater than or equal to the volume of 1.4kL per 100m² of impervious area and release over a period of 1 to 3 days. 50% of the volume of rainwater tanks with a toilet connection may be regarded as contributing towards this requirement.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>C39</p> <p>Evidence is provided that demonstrates that for all sites of size greater than 2,000m², a reduction of 1-in-3 month stormwater peak run off flow to pre-development levels with release of captured flow over a period of 1 to 3 days can be achieved.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>Criteria Satisfied.</p> <p>The development will achieve the required standards for the retention of stormwater as nominated by the Rule/Criteria.</p> <p>Refer to the Reports entitled 'Water Reduction and Stormwater Modelling Report' and 'Relevant Rules from the Industrial Zones Development Code' prepared by John Randall Consulting (Undated) and submitted as part of this Application.</p>

Rules	Criteria	Response
<p>R40</p> <p>Sites of size greater than 5,000m2 need to provide evidence showing a reduction in average annual stormwater pollutant export load of:</p> <ul style="list-style-type: none"> a) suspended solids by 60% b) total phosphorous by 45% c) total nitrogen by 40% <p>compared to an urban catchment with no water quality management controls, using the MUSIC model to demonstrate compliance.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>C40</p> <p>Sites of size greater than 5,000m2 need to provide evidence showing a reduction in average annual stormwater pollutant export load of:</p> <ul style="list-style-type: none"> a) suspended solids by 60% b) total phosphorous by 45% c) total nitrogen by 40% <p>compared to an urban catchment with no water quality management controls, using any other method.</p> <p>This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.</p>	<p>Rule/Criteria Satisfied.</p> <p>The development will achieve the required standards for the treatment of stormwater as nominated by the Rule/Criteria.</p> <p>Refer to the Reports entitled 'Water Reduction and Stormwater Modelling Report' and 'Relevant Rules from the Industrial Zones Development Code' prepared by John Randall Consulting (Undated) and submitted as part of this application.</p>
<p>6.3 Water Sensitive Urban Design – Stormwater Quantity</p>		
<p>R41</p> <p>All sites of size greater than 2,000m2 and subject to redevelopment need to ensure that the capacity of the existing pipe (minor) stormwater connection to the site is not exceeded in the 1-in-10 year storm event.</p> <p>All sites of size greater than 2,000m2 and subject to redevelopment need to ensure that the capacity of the existing overland (major) stormwater system to the site is not exceeded in the 1-in-100 year storm event.</p> <p>For estate and multiple block developments larger than 5000 m2, retardation of stormwater to meet the above requirements are to be met at the estate scale rather than by measures on individual blocks.</p>	<p>C41</p> <p>Evidence is provided by a suitably qualified person that shows that for all sites of size greater than 2,000m2 and subject to redevelopment</p> <p>EITHER</p> <p>a reduction of 1-in-5 year and 1-in-100 year stormwater peak run off flow to pre-development levels. See WaterWays General Code for more detail.</p> <p>OR</p> <p>That the capacity of the downstream piped stormwater system to its outlet with an open channel is not exceeded in the 1-in-10 year storm event.</p> <p>For estate and multiple block developments larger than 5000m2, retardation of stormwater to meet the above requirements are to be met at the estate scale unless it can be demonstrated that this is less feasible than measures on individual blocks.</p>	<p>Not Applicable.</p> <p>The proposed development does not involve re-development.</p>
<p>6.4 Heritage</p>		
<p>R42</p> <p>In accordance with section 148 of the <i>Planning and Development Act 2007</i>, applications for development on land or buildings subject to interim or full heritage registration are to be accompanied by advice from the Heritage Council stating that the development meets the requirements of the <i>Heritage Act 2004</i>.</p>	<p>C42</p> <p>If advice from the Heritage Council is required, but not provided, then the application will be referred to the Heritage Council in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The Block is not listed as being subject to an interim or full heritage registration.</p>

Rules	Criteria	Response
6.5 Contamination		
<p>R43</p> <p>A statement is provided that the potential for land contamination has been assessed in accordance with the ACT Government Strategic Plan – Contaminated Sites Management 1995 and the ACT Environment Protection Authority Contaminated Sites Environmental Protection Policy 2000, and it is demonstrated that the land is suitable for the proposed development.</p>	<p>C43</p> <p>If a statement that the site has been assessed is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The Block is not registered as a contaminated site.</p>
6.6 Trees		
<p>R44</p> <p>This rule applies to a development that has one or more of the following characteristics:</p> <ul style="list-style-type: none"> a) requires groundwork within the tree protection zone of a protected tree b) is likely to cause damage to or removal of any protected trees <p>The authority shall refer the development application to the Conservator of Flora and Fauna.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Under the <i>Planning and Development Regulation 2008</i> a development application for a <i>declared site</i> under the <i>Tree Protection Act 2005</i>, must be referred to the Conservator of Flora and Fauna. 2. The authority will consider any advice from the Conservator of Flora and Fauna before determining the application in accordance with the <i>Planning and Development Act 2007</i>. 3. <i>Protected tree</i> and <i>declared site</i> are defined under the <i>Tree Protection Act 2005</i>. 	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Not Applicable.</p> <p>There are no ACT Registered Trees on the Block or within the immediately adjoining public domain.</p>
<p>R45</p> <p>Trees on development sites are removed only with the prior agreement in writing of the Territory.</p>	<p>C45</p> <p>Retained trees are protected and maintained during construction to the satisfaction of the Territory.</p>	<p>Not Applicable.</p> <p>The Block is void of any significant vegetation.</p>

Rules	Criteria	Response
6.7 Hazardous Material		
<p>R46</p> <p>For the demolition of multi-unit housing (including garages and carports) constructed* prior to 1985, and Commercial / Industrial premises constructed prior to 2005, a Hazardous Materials Survey (including an asbestos survey) is carried out and signed by an appropriately licensed person and is endorsed by Environment Protection.</p> <p>The Survey is provided and covers the disposal of hazardous materials, showing that:</p> <ul style="list-style-type: none"> a) Hazardous material disposal (including asbestos) is to be at a licensed disposal facility in the ACT b) If hazardous materials are to be transported for disposal interstate, approval from the Environment Protection Authority is obtained prior to removal of material from the site c) An appropriately licensed contractor is engaged for the removal and transport of all hazardous materials (including asbestos) present at the site. <p>* Construction date means the date when the Certificate of Occupancy was issued</p>	<p>C46</p> <p>If an endorsed hazardous material survey is required however evidence of an endorsed hazardous materials survey is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The Block is vacant and has not been subject to past development.</p>
6.8 Excavation		
<p>There is no applicable rule.</p>	<p>C47</p> <p>Onsite cut and fill is minimised and managed to ameliorate negative off site impacts.</p>	<p>Criteria Satisfied.</p> <p>The nature of any site excavation will only be to an extent, which adequately accommodates the siting and design of the proposed development and required operational efficiencies.</p>
6.9 Erosion and Sediment Control		
<p>R48</p> <p>For sites less than 0.3 of a hectare, a plan is provided to demonstrate that the development complies with the <i>ACT Environment Protection Authority, Environment Protection Guidelines for Construction and Land Development in the ACT, August 2007</i>.</p>	<p>C48</p> <p>If a plan is not provided, the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The block has an area of 9,270m² (0.9270 ha).</p>

Rules	Criteria	Response
<p>R49</p> <p>For development on a site greater than 0.3 of a hectare, the application is accompanied by an Erosion and Sediment Control Plan endorsed by ACT Environment Protection.</p>	<p>C49</p> <p>If an endorsed Sediment and Erosion Control Plan is not provided the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied.</p> <p>An Erosion and Sediment Control Plan has been provided as part of the Application. Refer to Civil Drawing Nos. CA070 and CA071.</p>
Element 7: Services		
7.1 Waste Management		
<p>R50</p> <p>In accordance with section 148 of the <i>Planning and Development Act 2007</i>, applications are to be accompanied by a statement of compliance from the Department of Territory and Municipal Services stating that the waste facilities and management associated with the development are in accordance with the current version of the <i>Development Control Code for Best Practice Waste Management in the ACT</i>.</p>	<p>C50</p> <p>If a statement of compliance is not provided the application will be referred to the Department of Territory and Municipal Services in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied.</p> <p>Refer to the Waste and Recycling Management Plan submitted as part of this application for referral.</p> <p>Endorsement is to occur during the assessment of the Application.</p>
7.2 Utilities		
<p>R51</p> <p>A Statement of Compliance from each relevant utility provider is provided, which confirms that the location and nature of earthworks, utility connections, proposed buildings, pavements and landscape features comply with utility standards, access provisions and asset clearance zones.</p> <p>Note: Where there is a conflict between planning and utility requirements, the utility requirements take precedence over other provisions of this Code.</p>	<p>C51</p> <p>If a statement of endorsement is not provided the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied.</p> <p>Information is provided with this Application for referral.</p> <p>Endorsement is to occur during the assessment of the Application.</p>
7.3 Liquid Trade Waste		
<p>R52</p> <p>A Statement of Compliance from the relevant agency is provided, which confirms that the discharge (or potential discharge by accident or spillage) of non-domestic liquid waste to the sewerage or stormwater networks complies with utility standards and requirements.</p>	<p>C52</p> <p>If a Statement of Compliance is not provided the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied.</p> <p>Information is provided with this Application for referral.</p> <p>Endorsement is to occur during the assessment of the Application.</p>

Rules	Criteria	Response
7.4 Waste Water		
<p>R53 Subject to ACTEWAGL approval, all under cover areas drain to the sewer.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Rule Satisfied. All under cover areas are proposed to drain to the sewer.</p>
7.5 Storage		
<p>R54 Outdoor storage areas are located behind the building line and screened from view from any road or other public area.</p>	<p>C54 Where the proposed use of the site requires open areas for storage of goods and materials, adequate provision is included in the design and layout of the site.</p>	<p>Criteria Satisfied. The operational characteristics of the plant requires the outdoor storage of materials. The storage areas have been sited and designed to achieve operational efficiency with a minimum of maintenance and are located behind the building line.</p>
<p>R55 Outdoor storage areas do not encroach on required car-parking spaces, driveways exclusively required for vehicular circulation or landscape areas.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Rule Satisfied. The operational characteristics of the plant requires the outdoor storage of materials. The storage areas have been sited and designed to achieve operational efficiency with a minimum of maintenance. The storage areas are separated from all driveway and carparking areas. It being noted that the operational efficiency of the plant is reliant on an unobstructed driveway configuration and functionality.</p>
7.6 Servicing and Site Management		
<p>R56 In accordance with section 148 of the <i>Planning and Development Act 2007</i>, applications is accompanied by a statement of endorsement from the relevant agency stating that the waste facilities and management associated with the development are in accordance with the <i>Design Standards for Urban Infrastructure</i>.</p>	<p>C56 If a statement of endorsement is not provided the application will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Criteria Satisfied. Refer to the Waste and Recycling Management Plan submitted as part of this application for referral. Endorsement is to occur during the assessment of the Application.</p>

6

General Codes

6.1 Signs General Code

The Signs General Code (effective 31 March 2008) is applicable to the design, content and positioning of the proposed signs as detailed on Architectural Drawing Nos. A301 – Elevations 1 and A302 – Elevations 2. An assessment of the Signs General Code is included in the Table below.

For the purpose of the assessment, the proposed sign types are defined as follows:

Wall Sign: An advertisement, painted or otherwise affixed, flat to a wall

Table 6: Part A – General Development Controls

Rules	Criteria	Response
Element 1: Use		
1.1 Permissible Signs		
R1 The sign type and location comply with Table 1. Signs Permissible in Zones.	C1 The Sign meets the requirements of C4	Rule Satisfied. The proposed wall signs are permissible within the IZ1 General Industry Zone.
1.2 Content of Sign		
R2 The sign content and sign location comply with Table 2. Allowable Signage Content and Location.	C2 The Sign meets the requirements of C4	Rule Satisfied. The proposed wall signs are compliant with Table 2.
1.3 Licensing		
R3 A fixed Sign that is designed or located so that it encroaches on, over, or into unleased Territory land, has a valid licence agreement with the Territory for the sign that has been issued under Part 9.11 of the <i>Planning and Development Act 2007</i> .	C3 If development approval is granted for a fixed Sign that is designed or located so that it encroaches on, over, or into unleased Territory Land a condition of approval will be imposed requiring the applicant to enter into a licence agreement with the Territory prior to the approval of the encroaching signage taking effect.	Rule Satisfied. The proposed signage would be located so that it does not encroach on, over or into unleased Territory Land.

Rules	Criteria	Response
Element 2: Built Form		
2.27 Wall Sign		
R126 Maximum thickness: 300mm.	C126 The Sign meets the requirements of C4 as follows: Signs must: a) Not create a hazard to traffic or pedestrians b) Be of a character and design standard consistent with the objectives and controls for the relevant zone and locality c) Recognised the heritage values of sites d) Not compromise the role of the Territory as the setting of the National Capital and Seat of Government of the Commonwealth e) Complement the streetscape and amenity of the locality by virtue of its size, location, illumination, utilisation of complementary shapes, forms, colours, durable quality materials and design concepts f) If affixed to a building, complement the architectural style of the building by virtue of its size, location, illumination, utilisation of complementary shapes, forms, colours, durable quality materials and design concepts g) Not unnecessarily repeat of duplicate similar signs.	Criteria Satisfied. The proposed wall signs are proposed to have a thickness of 500mm. The design and location of the proposed signs would not: a) Create a hazard to traffic or pedestrians. b) Be out of character with the predominant industrial nature of development within the general locality. c) Be inconsistent with the objectives and controls relevant to the IZ1 General Industry Zone. d) Compromise the role of the Territory as the setting on the National Capital and Seat of Government of the Commonwealth. e) Compromise the streetscape character and/or amenity of the industrial locality. The signs would be of modest proportions in context with the bulk and scale of the proposed building to which they are to be affixed. f) Be out of character with the architectural style of the proposed building to which they are to be affixed. g) Result in visual clutter associated with the proliferation of unnecessary, inappropriate signage.
R127 Maximum number: One per tenancy.	C127 The Sign meets the requirements of C4	Criteria Satisfied. A total of three (3) wall signs are proposed to be installed. Refer to the comments at C126 above.
R128 Maximum surface area: 20% of wall space or 6 square metres, whichever is the lesser.	C128 The Sign meets the requirements of C4	Criteria Satisfied. Refer to the comments at C126 above.
R129 Location: Ground floor level and first floor level only.	This is a mandatory requirement. There is no applicable criterion.	Rule Satisfied. The location of the proposed wall signs is compliant with the Rule.

Rules	Criteria	Response
Element 3: Sign Construction		
3.1 Traffic Safety		
R132 A sign must not:	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed signage would not obstruct pedestrian view of traffic, or driver's visions of pedestrians, other traffic, or the road ahead. The proposed signage would not be located in a position that will create driver confusion at critical locations.
<ul style="list-style-type: none"> a) Obstruct pedestrians' view of traffic, or vehicle drivers' view of pedestrians, other traffic, or the road ahead; or b) Create confusion for drivers at critical locations, (such as intersections, traffic signals, or merging and weaving situations), due to the design, message/pictures, colours and location of the sign. 		
3.2 Installation fixings		
R133 No support, fixing, suspension or other systems required for the installation of a sign are exposed, unless designed as an integral feature of the sign.	C133 Conduits, wiring, switches or the mounting of other apparatus are discreetly placed and out of general view.	Rule Satisfied. No support mountings would be exposed.
R134 A sign must not be nailed or similarly fixed to a tree.	This is a mandatory requirement. There is no applicable criterion.	Not Applicable. The proposed signage would not be nailed or similarly fixed to a tree.
3.3 Animated or flashing signs		
R135 Signs do not contain animated or flashing elements.	C135 The sign meets the requirements of C4	Not Applicable. The proposed signage does not contain any animated or flashing elements.
Element 4: Environment		
4.1 National Capital Plan		
R136 There are no National Capital Plan requirements that apply to the development.	C136 Where a development is subject to Special Requirements under the National Capital Plan (including any relevant Development Control Plan) the development is not inconsistent with the Special Requirements.	Not Applicable. The proposed development is not subject to special requirements or any development control plan nominated in the National Capital Plan.

Rules	Criteria	Response
4.2 Heritage		
<p>R137</p> <p>In accordance with section 145(2) of the <i>Planning and Development Act 2007</i>, applications for development on land or buildings subject to interim or full heritage registration are to be accompanied by advice from the Heritage Council stating that the development meets the requirements of the <i>Heritage Act 2004</i>.</p>	<p>C137</p> <p>If advice from the Heritage Council is required, but not provided, then the application will be referred to the Heritage Council in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>The Block is not listed as being subject to an interim or full heritage registration.</p>
4.3 Trees		
<p>R138</p> <p>In accordance with section 145(2) of the <i>Planning and Development Act 2007</i>, where the development proposal requires groundwork within the tree protection zone of a protected tree, or is likely to cause damage to or removal of, any protected trees, the application must be accompanied by a Tree Management Plan approved under the <i>Tree Protection Act 2005</i>.</p> <p>Note: "Protected tree" is defined under the <i>Tree Protection Act 2005</i>.</p>	<p>C138</p> <p>If an approved Tree Management Plan is required, but not provided, then a draft Tree Management Plan is to accompany the application. The draft Tree Management Plan will be referred to the relevant agency in accordance with the requirements of the <i>Planning and Development Act 2007</i>.</p>	<p>Not Applicable.</p> <p>There are no ACT Registered Trees on the Block or within the immediately adjoining public domain.</p>
4.4 Environmental Control		
<p>R139</p> <p>A sign must not be nailed or similarly fixed to a tree.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>	<p>Not Applicable.</p> <p>The proposed signage would not be nailed or similarly fixed to a tree.</p>


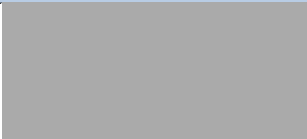
Air Quality Emissions – Capital Asphalt

Block 67, Section 22 Hume

November, 2019



Certificate of approval for issue of documents

Document Name	Air Quality Emissions – Capital Asphalt		
Date of Issue	22 November 2019	Job Number	11014
Client	Capital Asphalt		
Report Preparation		Reviewed and Approved	
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1. Introduction

Robson Environmental Pty. Ltd. undertook a desktop assessment of air quality emissions (pollutants) potentially associated with the proposed asphalt plant ('the Facility') to be located on land known as 5 Paspaley Street (Block 67 Section 22), Hume in the Australian Capital Territory (ACT). This report considers air quality emissions expected to be associated with the Facility with regard to zone standards determined in accordance with the ACT Environmental Protection Regulation 2005 ('the Regulations').

1.1. Objective

The purpose of this assessment is to determine the likely effect on the ambient air quality while the plant, located in shaded position in Figure 1, is under construction and under operational conditions, to meet the requirements of the Development Application (DA) and the Environmental Protection Authority (EPA), to ensure that the client is compliant with requirements of the National Environmental Protection Measure (NEPM) for Ambient Air Quality.



Figure 1: Location of Proposed Development

1.2. Scope

The scope of this assessment included:

1. Review of the requirements of the DA;
2. Assessment, based on a hazard/risk assessment, of whether the development is likely to result in a deterioration of local air quality (i.e. by way of emissions from the plant), incorporate existing sources of air pollution and covering both the construction phase of the project and operational phase of the project; and
2. Advice on management and mitigation measures to improve any potential for impact for the proposed development at Block 67, Section 22, Hume, for Capital Asphalt, if required.

1.3. Terminology

The terms asphalt and bitumen are often used interchangeably to mean both natural and manufactured forms of the substance. For this report the following has been adopted:

- Asphalt – a mixture of aggregate and bituminous binder produced at this facility (often referred to as hotmix); and
- Bitumen – the heated liquid binder that is the constituent in asphalt (often referred to as tar).

2. Project Site and Description

Capital Asphalt's proposed development at Block 67, Section 22, Hume (5 Paspaley St, Hume) is shown in Figure 1. The site is located within an industrial area with several undeveloped areas at the time of this assessment.

The Facility is expected to have a maximum output of 160 tonnes per hour, and the plant operation is expected to follow the typical process for Hot Mix Asphalt Manufacturing as described by The National Pollutant Inventory Emission Estimation Technique Manual for Hot Mix Asphalt Manufacturing (NPI, 1999) as follows:

'Hot mix asphalt is produced by mixing measured quantities of graded high-quality aggregate with liquid bitumen. This aggregate may include reclaimed or recycled asphalt pavement (RAP), and accounts for over 92 per cent of the total hot mix asphalt mixture by weight.

The asphalt plant uses a batch mixing process. Aggregate is transported from storage piles into appropriate hoppers of a cold feed unit. From there measured amounts are transferred onto a conveyor belt for drying within an inclined diesel-fired rotary dryer. Hot aggregate leaving the dryer drops into a bucket elevator which transfers it to a series of vibrating screens for separation into hot bins, each containing a specific size fraction.

The plant operator controls aggregate size distribution within the final batch mix by emptying various hot bins over a weigh hopper until the desired mix and weight for individual components are obtained. Whilst the aggregate is being weighed, liquid bitumen is pumped from heated storage tanks, known as kettles, to an asphalt bucket, where it is weighed to achieve the desired mix. When the mixing time has elapsed, the mix is discharged directly into a truck (or a skip if it is to be sent to hot storage bins).

The weighed aggregate is then heated to a temperature of up to 200 °C and is coated with bitumen in a mixing chamber called a pug mill. The resulting hot mix asphalt is directly discharged into a delivery truck, at temperatures between 160 and 175 °C, for transport offsite. RAP, sand or other

filler materials may also be incorporated into the mix if available. The recycled materials are fed into the bucket elevator and are heated by direct contact with the hot virgin aggregates. The heated mixture of virgin and recycled materials is then transferred on to the screen deck for separation into appropriate bins.

Raw material feed for the asphalt plant is supplied by road. Aggregate deliveries are made by either truck and dog or semi-trailers and asphalt deliveries are made by asphalt tankers to the site, where they are mixed and despatched by either semi-trailers or truck and dog combinations. Excess material may be stockpiled during the day to allow a front-end loader to maintain the cold feed bins during night-time operations.'

A detailed site plan for the Capital Asphalt site, provided in Figure 2, shows the locations of the proposed plant facilities, stockpiles, and traffic movements. It is understood that standard operating hours will be from 6:00 am to 4:00 pm. Occasional night shift works will occur between 8:00 pm and 5:00 am. There would be approximately seven trucks per hour during the peak delivery times.

3. Hazard and Risk Assessment

The proposed asphalt plant has been designed with lower energy consumption and reduced air emissions compared to other asphalt plants currently operating in Australia. The Downer EDI asphalt plant, within 100m of the proposed facility, is an older plant operating at similar production capacity, higher stack (35m compared to 28m for the new facility) and currently has been shown to not adversely impact the industrial zone in Hume.

A review of the proposed asphalt plants design and operations specifications, as given in Appendix 1, and the SDS's for the products to be put through the plant against the ACT the ACT Air Environment Protection Policy show a low risk of the asphalt plant facility exceeding the requirements for air quality by the EPA. The main bitumous products – C170 & C240 are low sulphur containing chemicals which would enable to asphalt plant to meet the NEPM criteria for sulphur dioxide, nitrogen dioxide and VOC. The emissions from the proposed asphalt plant meet the stringent German air quality guidelines (TA-air-2002), which are well under the NEPM criteria for odour emission levels.

If the plant is constructed and managed following the recommended controls listed in Section 7 of this report, the asphalt plant will meet the EPA air quality requirements and is not expected to adversely impact the neighbouring industrial facilities.

4. Air Quality Criteria

Potential pollutants to air that are emitted from the asphalt production process include:

- Odours;
- Smoke;
- Dust (e.g. measured as Total Suspended Particulates (TSP) or particulate matter <math><10\mu\text{m}</math> (PM₁₀);
- Asphalt fume (e.g. measured as Total Organic Carbon); and
- Gases:
 - Volatile organic compounds (VOCs);
 - Oxides of nitrogen (NO_x);
 - Sulphur dioxide;

- Carbon dioxide;
- Carbon monoxide; and
- Polycyclic aromatic hydrocarbons (PAHs).

Most of these are only released in trace amounts however some, such as odour, may be significant. For completeness the proposed new plant shall be assessed for emissions against the ACT Air Environment Protection Policy & the National Environment Protection (Ambient Air Quality) Measure (NEPM) for 5 possible contaminants (summary shown in Table 1) as given by Schedule 2 (Appendix 1).

Table 1: NEPM Air Pollution Exceedance Criteria

Pollutant	Criteria
Solid Particulates – Total	50µg/Nm ³
Nitrogen Dioxide – NO ₂	350mg/Nm ³
Volatile organic compounds (VOCs), as n-propane	40mg/Nm ³
Sulphur Dioxide	1000mg/Nm ³
Carbon Monoxide	500mg/m ³

5. Best practice for operation of asphalt plants

A review of available literature on best practice for asphalt plants in relation to air quality and odour was undertaken. No specific guidance was available in Australia, however documentation has been published in the US and Canada. A publication from Ontario, Canada is the most recent and is considered most relevant for the Capital Asphalt Plant. A comparison of best available practices in regard to air quality and odour from *Environmental Practices Guide – Ontario Hot Mix Asphalt Plants* (Ontario Hot Mix Producers Association, 2015) and the proposed Capital Asphalt operations is provided in Appendix 3.

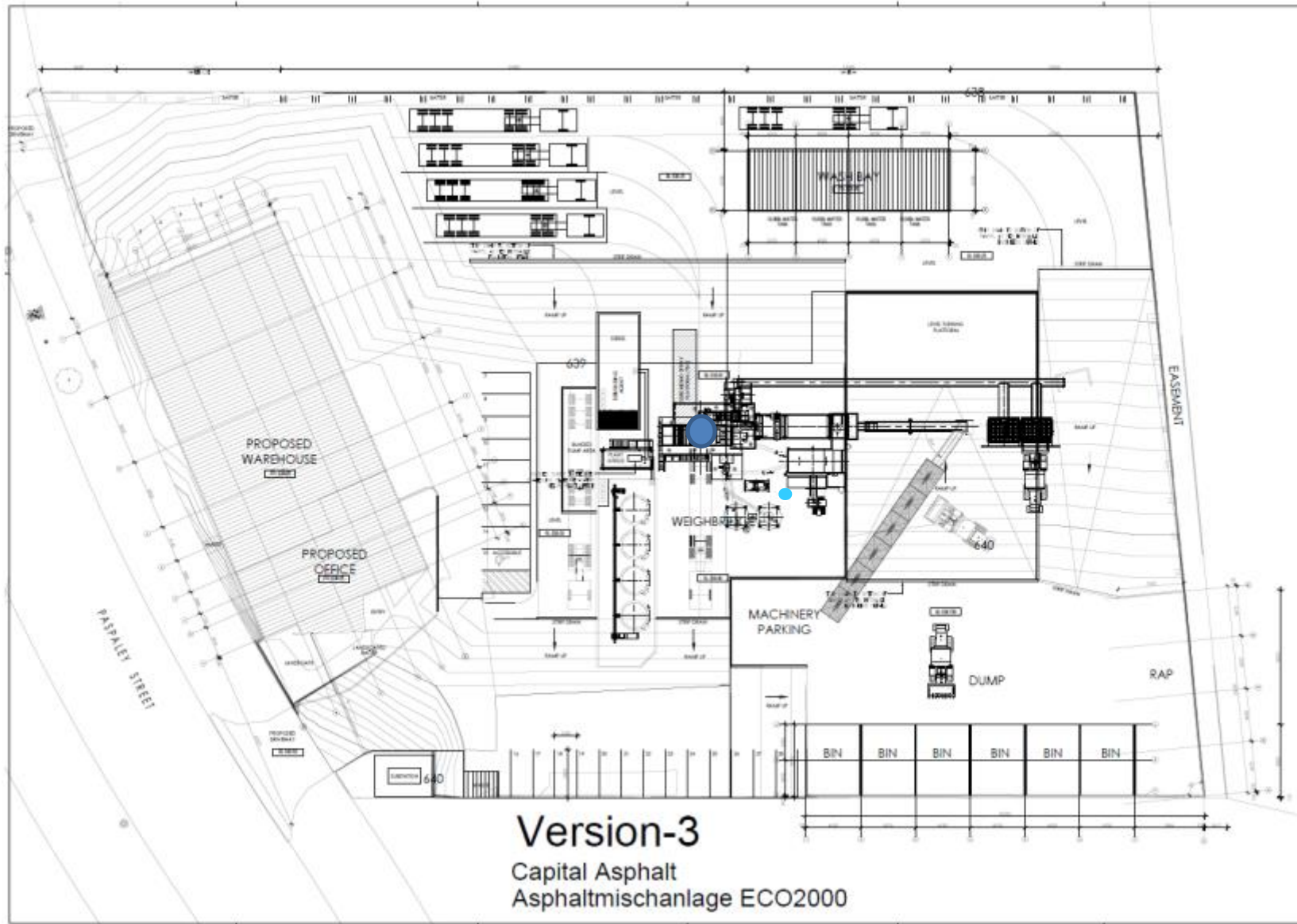


Figure 2: Detailed site plan

6. Facility Construction – Control and Mitigation Assessment

6.1. Source of Emissions

The development of the site is expected to generate dust as part of the construction. The dust would be expected to contain some crystalline silica, which may be generated whilst preparing the site for development.

6.2. Dust Mitigation

Dust mitigation strategies planned for the construction phase are shown in

Table 2.

Table 2: Dust mitigation measures

Impact/Issue	Mitigation measure
Dust Generation	<ul style="list-style-type: none"> Limit cleared areas of land and clear only when necessary to reduce fugitive dust emissions from cleared areas of ground. Any exposed surfaces should be stabilised as soon as practicable. Minimise the size of storage stockpiles where possible. Stockpiles will be maintained within 3-sided bins that are not loaded beyond the height of bin walls.
Emission of airborne particles	<ul style="list-style-type: none"> Works (including the spraying of paint and other materials) would be suspended during strong winds or in weather conditions where high levels of dust or airborne particulates are likely.
Equipment and plant	<ul style="list-style-type: none"> All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards. Machinery would be turned off when not in use and not left to idle for prolonged periods. Surveillance would be undertaken to identify any vehicle, plant or equipment that is causing visible emissions. If any defective vehicles, plant or equipment are identified, operation of this machinery would cease, and service/maintenance would be undertaken.
Transportation	<ul style="list-style-type: none"> Control on-site traffic by designating specific routes for haulage and access and limiting vehicle speeds to below 25 kilometres per hour. Water material prior to it being loaded for on-site haulage, where appropriate. All trucks hauling material will be covered on the way to the site and will maintain a reasonable amount of vertical space between the top of the load and top of the trailer. All materials movement will be conducted on a hardstand to facilitate good housekeeping practices. Any aggregate and dust spills to the hardstand should be removed on a daily basis.
Dust dispersion	<ul style="list-style-type: none"> Work conducted in areas of low moisture content material will be suspended during high wind speed events or water sprays should be used.
Dust generation and dispersion	<ul style="list-style-type: none"> Level 2 watering (greater than 2 litres/m²/hour) will be undertaken on areas of site that are seen to be a source of dust such as unpaved access roads, areas where earthworks are occurring or stockpiles.

7. Facility Operation – Control and Mitigation Assessment

Four potential emission sources from the Facility were identified through the hazard and risk identification process:

- Particulate, gaseous and odour emissions from the asphalt dispensing silo and exhaust stack which is shown as a blue dot in Figure 2;
- Odour emissions from hot-mix asphalt, particularly from the heated bitumen storage tanks, which, if uncontrolled, could become a significant odour source;
- Dust (particulates) from aggregate handling (including in the aggregate heater/dryer drum) and movement; and
- Potential spillages including hot bitumen, diesel fuel and lubricating oil.

7.1. Potential Fugitive Odour Emissions – Hotmix Asphalt Operations

7.1.1. Source of Emissions

Hotmix asphalt has a characteristic odour that is present during manufacture, transport and application of the material. There is little risk of fugitive odour from the production of asphalt impacting the surrounding neighbours if the plant is operated correctly.

The aggregate/bitumen mixing takes place within an enclosed pug-mill. Digital monitoring of the drum temperature ensures aggregate heating does not exceed a defined temperature limit, maximising fuel efficiency and ensuring controlled temperature for aggregate/bitumen mixing, and also eliminating the generation of fugitive blue-smoke emission. When mixing is completed hotmix asphalt is briefly exposed to the atmosphere when dumped to the gob-hopper via an enclosed conveyor and later when dumped to a waiting truck. The load is covered as soon as truck loading is completed so as to minimise temperature loss which also minimises fugitive odour emission.

The loading from the Bitumen Tanker does not cause significant odour with the only odour coming from the venting of air from above the bitumen at elevation. The main source of odour risk is from the pugmill, where the asphalt is mixed and loaded to the trucks.

Odour consists of a number of aromatic organic compounds that are vapourised when heated and then can be carried by the air. As the compounds cool they condense to a liquid or solid. That means that at the transfer of hot bitumen and discharge to trucks most compounds rapidly cool on contact with the air and it is only lighter, more volatile compounds, which are capable of being transmitted in the air.

The hotter the substances the greater the number of compounds vapourised, and therefore bitumen and asphalt plants operate within defined temperatures which are not exceeded. In the case of this plant the temperatures are 165 – 168 degrees Celsius.

7.1.2. Mitigation

Aggregate heating and liquid bitumen temperature is maintained in the optimum temperature bandwidth for the hotmix product that avoids fuel wastage, quality degradation and odour emission.

The manufacturing process should be digitally controlled and monitored in the operators' cabin by the worker.

Departing vehicles carrying hotmix asphalt are required to cover their loads to ensure optimum temperature is maintained. This requirement also minimises fugitive odour emissions from moving vehicles.

The loading of asphalt will be conducted in a strictly controlled manner with the truck being loaded in a dedicated bay. All workers should be trained to report and or investigate any abnormal source of odour as that may indicate the mix is getting too hot.

If any significant odour occurs, it will be first noted on site by the operators and action can be taken quickly before the odour moves offsite.

Potential residential areas and current residentially occupied areas are of sufficient distance for potential fugitive odour emissions to be of no concern, as the location is zoned for "IZ1 General Industry". There are only two nearby industrial sites, a recycling plant adjacent to the north- north west of the site and a glass manufacturer to the south of the site.

7.2. Potential Point Source Emissions

7.2.1. Source of Emissions

The drying/heating of aggregate within a rotating drum may result in atmospheric particulate emissions. Heating energy is supplied by diesel fuel to the drum burner - resulting in potential gaseous emission.

Air from the aggregate drying and heating process is forced through the baghouse by a high velocity inductions fan before being discharged via the vertical stack on the baghouse.

7.2.2. Mitigation

Design specifications of the Facility are in line with the European emission standards I.S EN 12697 2012, which indicates that point-source particulate emissions from the plant would be below the ACT air guideline emission values of:

- Particulates < 20mg/Nm³ (O₂ content in combustion products 17%)
- NO₂ < 350 mg/Nm³ (O₂ content in combustion products 17%);
- SO₂ < 350 mg/Nm³ (O₂ content in combustion products 17%) (which depends solely on the amount of sulphur contained in the fuel used); and
- CO < 500 mg/Nm³ (O₂ content in combustion products 17%).

Operators will be required to carry out regular maintenance of the plant including the baghouse on a scheduled basis. The baghouse should also receive an annual service where all bags are checked and replaced as required. Spare bags should be kept in stock for replacement when required, to reduce fugitive particulate emissions.

It is recommended that operators report to management any increase in the visible tail discharge from the stack. In the event of a suspected bag leak coloured dye may be added the baghouse induction port. Any leakages will be evident once the baghouse has been opened for inspection.

7.3. Potential Gaseous Emissions

7.3.1. Source of Emissions

During the heating and mixing process, various gases including:

- Volatile organic compounds (VOCs);
- Oxides of nitrogen (NO_x);
- Sulphur dioxide;
- Carbon dioxide;
- Carbon monoxide; and
- Polycyclic aromatic hydrocarbons (PAHs),

are released to the atmosphere. These occur from the combustion of fuel and the balance of fuel oxygen mix at the burner.

7.3.2. Mitigation

Six monthly stack-testing is recommended to be conducted to verify compliance with ACT air emission policy and NEPM gaseous and particulate emission limitations and in accordance with NSW Clean Air (Plant and Equipment) Regulation 1997 Test Method 15.

7.4. Potential Dust Emissions – Materials Handling

7.4.1. Source of Emissions

A front-end loader will be used to top up cold aggregate bins from stockpiles. Dust may be generated during loading operations under windy conditions. Dust may be generated by the movement of the loader and trucks.

7.4.2. Mitigation

Planned mitigation factors include:

- Stockpiles will be maintained within 3-sided bins that are not loaded beyond the height of bin walls.
- All materials movement will be conducted on a hardstand to facilitate good housekeeping practices.
- Any aggregate and dust spills to the hardstand should be removed on a daily basis.
- During dry and windy conditions, stockpiles and operating/trafficked areas are advised to be kept damp using misting sprays.

7.5. Diesel/Bitumen Storage

7.5.1. Source of Emissions

Bitumen is obtained from the refining of crude oil. The composition is influenced by the source of crude oil and processes used in its manufacture. Bitumen's are complex mixtures of many chemical compounds, mainly hydrogen and carbon, but with small amounts of sulphur, oxygen, and nitrogen. Bitumen may also contain trace quantities of metals. Because of its complexity, a complete analysis of the composition of bitumen would be impracticable. However, it is possible to characterise the

primary constituent groups by a variety of methods such as solubility in different solvents, by molecular weight or by broad chemical types. Bitumen comprises two broad chemical groups (Rebbechi, 2008):

- Asphaltenes are brown/black amorphous solids of high molecular weight (in Australia generally comprise 10–15% by mass of the bitumen); and
- Maltenes comprise the oily components of bitumen and can be further subdivided as resins, aromatics and saturates with molecular weights that are progressively less than the asphaltene component.

A review of the provided SDSs for the bitumen products that will be used on site (Bitulastic A15E, Bitulastic A450, Bitulastic C170, Bitulastic C240, Diesel) and hydrated lime was conducted to determine the potential source of off gassing emissions.

The bitumen is delivered to site by a heated tanker which discharges to heated tanks adjacent to the plant. The tank is electrically heated. During the asphalt batching process, the required amount of bitumen is pumped to the mixer where it is mixed with heated aggregate. The asphalt is then dispensed to the waiting truck and immediately transported to the construction site.

Bitumen is transferred by way of hoses and pipes. Upon completion of transfer, the hoses are generally cleaned out using diesel to prevent bitumen solidifying and blocking the lines. The diesel is stored in catch tanks at the suction line then reused to flush each time a delivery is taken. The diesel is changed periodically and disposed of by a certified contractor.

Diesel is stored on site and used as fuel for site vehicles. The design, installation and operation of diesel storage tanks is as per *Australian Standards* and *Codes of Practice*. Hydrocarbon spills may occur during refilling and refuelling operations, these are most likely to be either drip or at most small volumes less than a few litres.

7.5.2. Mitigation – Diesel

All operations will be conducted on a hard stand that will prevent loss of hydrocarbons to the underlying soil and facilitate any potential spill clean-ups. A spill-kit bin will be kept on site for clean-up in the event of a minor spill. Diesel fuel will be stored according to bunding requirements. Diesel fuel will be stored within a bunded compound that is capable of containing 110% of the largest container within the bund.

The fuel supply to the diesel burner is controlled by pump at the burner. Consequently, fuel is drawn under negative pressure. Any potential leakage in the supply line would result in air entering the fuel line and fuel running back to the tanker.

Any minor spills and drips during refuelling will be recovered by containing the spill with sand and returning this to the manufacturing process.

7.5.3. Mitigation – Bitumen and Lubricating Oils

Any bitumen that might be spilled during topping up of the bitumen tank will set rapidly to a solid state as it cools. This will be retrieved and recycled into the operation. Bitumen does not present an environmental risk. Roads in ACT are surfaced with the same product that will be produced by the proposed operation.

It is likely that the diesel generator and other plant will require servicing while located within the proposed premises. Such plant will operate and be surfaced on a hardstand. Any potential spills are likely to be very minor and easily recovered. All waste lubricating oil will be stored for recycling as per ACT storage and transport guidelines.

8. Conclusion and Recommendations

Robson Environmental's assessment of expected operational air quality emissions associated with a proposed Asphalt Plant to be located at 5 Paspaley Street (Block 67 Section 22) in Hume, ACT, undertaken in November 2019, included:

- Prediction of operational air quality emission levels from the site based on data of plant/equipment and their proposed operation;
- Assessment of the predicted air quality emission levels; and
- Advice on management and mitigation measures to improve any potential for impact.

Four potential emission sources from the Facility were identified through the hazard and risk identification process:

- Particulate, gaseous and odour emissions from the asphalt dispensing silo and exhaust stack;
- Odour emissions from hot-mix asphalt;
- Dust (particulates) from aggregate handling and movement; and
- Potential spillages include hot bitumen, diesel fuel and lubricating oil.

The proposed operation presents very low environmental risk or amenity issues for nearest sensitive premises. The primary emissions expected to occur are odour and particulate emissions.

Odour emissions are highly unlikely to impact the amenity of the nearest residential zoned areas due to:

- Employment of modern computer-controlled manufacturing process that strictly controls drum heating temperatures;
- Fugitive odour emissions may arise briefly from hot mix asphalt production via gob hopper and truck loading operation;
- Departing vehicles are required to cover hotmix loads that will minimise odour emission; and
- Sufficient distance to the nearest "Residential" zoned area.

Particulate emissions are unlikely to impact the local environment because of:

- The use of efficient filtering of particulates arising from drying/heating process;
- Regular maintenance and bag replacement will be conducted to ensure compliance with ACT air emission policy and EPA licencing requirements;
- Any visible increase stack tail emissions will be followed up by an inspection and replacement of bags as required; and
- Periodic stack testing will be conducted to verify compliance with EPA licence conditions.

9. Limitations

While Robson has taken all care to ensure that this report includes the most accurate information available, samples were taken at certain times on the day or days indicated within the report and Robson is unable to comment on conditions at other times. Any statement of expected conditions at other times should be taken as possible conditions only.

The report, including any risk assessment presented, is based on the information obtained by Robson at the time of sampling. Any variation in the environment, activities, methods, practices, products, or equipment used may change exposures to hazards, invalidating the presented risk assessment. Robson recommends that risks be re-assessed prior to making any changes to the aforementioned factors.

The findings contained within this report are developed from the interpretation of the results of specific sampling methods used in accordance with generally accepted practices and standards, based on the current state of knowledge. To the best of Robson's knowledge, our assessment of the data represents a reasonable interpretation of the general conditions, and subsequent risk at the time of sampling. Should you have any questions or require further information please contact Robson Environmental.

10. References

- National Pollutant Inventory (NPI), 1999, *Emission Estimation Technique Manual for Hot Mix Asphalt Manufacturing*, Environment Australia, June 1999, 32 pp.
- NSW Environmental Protection Agency (EPA), 2006, *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*, NSW Government Gazette of 5 December 2006, Department of Environment and Conservation NSW, Sydney.
- *NSW Clean Air Protection of the Environment Operations (Clean Air) Regulation (Schedule 5) 2010 (NSW)*
- NSW EPA, 2016, *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*. NSW Government Gazette of 26 August 2005, NSW Department of Environment and Conservation, Sydney,
- Ontario Hot Mix Producers Association, 2015. *Environmental Practices Guide – Ontario Hot Mix Asphalt Plants*, Canada.
- Rebbechi, J, 2008, *Guide to Pavement Technology Part 4F: Bituminous Binders*, Austroads Incorporated, Publication No. AGPT04F/08.

Appendix 1 European Air Quality Emission Test Certificate



A WIRTGEN GROUP COMPANY

Bescheinigung

Attestation

Wir, Firma

We,

**Benninghoven GmbH & Co. KG
Industriegelände
54486 Mülheim/Mosel**

**Benninghoven GmbH & Co. KG
Industriegelände
54486 Mülheim/Mosel**

erklären, dass unser Produkt

declare that our product

**Asphaltmischanlage
Typ: ECO 3000
Anlagen Nr.: 102004
AB-Nr.: 181779**

**Asphalt mixing plant
Type: ECO 3000
Plant Number: 102004
Order Number: 181779**

die Grenzwerte nach TA-Luft 2002
(Technische Anleitung zur Reinhaltung der Luft
Deutschland)

the limit value of the TA-air 2002
(Technical Instructions on Air Quality
Germany)

Halbstundenmittelwerte, die nicht überschritten
werden:

half hourly average values are not
exceeded:

Massenkonzentrationen	mg/m ³ Abgas
Kohlenmonoxid (CO)(wird angestrebt):	500
Gesamtstaub:	20
Organische Stoffe (Cges):	50
Schwefeldioxid (SO ₂):	350
Stickstoffdioxid (NO ₂):	350

mass concentration	mg/m ³ exhaust
carbon monoxide(CO) (targeted)	500
total dust:	20
organics (Ccom):	50
sulfur dioxide (SO ₂):	350
nitrogen dioxide (NO ₂):	350

Die Emissionswerte beziehen sich auf 17 Vol.%
Sauerstoff im Abgasstrom.
Normzustand (273 K=0°C, 1013 hPa=1013 mbar),
trocken.

the emission value refer to 17 vol% oxygen in the
exhaust stream.
Standard state (273 K=0°C, 1013 hPa=1013 mbar),
dryly.

Lärmemission EN ISO 11201:

Abstand 1m: 102,8 LAeq (dB)

Gesamtanlage aus 25 m Entfernung: 68,0 LAeq (dB)

Noise Emission EN ISO 11201:

Distance 1m: 102,8 LAeq (dB)

Complete plant from a distance of 25 m: 68,0 LAeq (dB)

Die zuvor genannten Schalleistungen entsprechen
den Werten, die beim Einsatz normaler
handelsüblicher Aggregate bei einwandfreiem
Wartungszustand auf ebenem, befestigten
Untergrund zu erwarten sind.

The above mentioned noise level are conform to the
values, which are to be expected by the use of normal
commercial aggregates in a proper maintenance
condition on an even, fixed underground.



BENNINGHOVEN GmbH & Co. KG

Mülheim - Germany

Mülheim, 05.12.2017

Product Safety Manager

Appendix 2 Schedule 2, Table 1 Air Pollution (from the ACT Air Environment Protection Policy)

AUTHORISATION NO. 0704

SCHEDULE 2

TABLE 1: AIR POLLUTION

Requirement									
1	<p>The operations at the site shall be managed to ensure that air stack emissions from the asphalt plant do not exceed the following standards:</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Parameter</th> <th>Criteria</th> </tr> </thead> <tbody> <tr> <td>Solid particles (total)</td> <td>50Nmg/m³</td> </tr> <tr> <td>Nitrogen dioxide</td> <td>350mg/Nm³</td> </tr> <tr> <td>Volatile organic compounds (VOCs), as n-propane</td> <td>40mg/Nm³</td> </tr> </tbody> </table>	Parameter	Criteria	Solid particles (total)	50Nmg/m ³	Nitrogen dioxide	350mg/Nm ³	Volatile organic compounds (VOCs), as n-propane	40mg/Nm ³
Parameter	Criteria								
Solid particles (total)	50Nmg/m ³								
Nitrogen dioxide	350mg/Nm ³								
Volatile organic compounds (VOCs), as n-propane	40mg/Nm ³								
2	Air stack samples are to be taken annually, at least 6 months apart and in accordance with New South Wales Clean Air (Plant and Equipment) Regulation 1997 Test Method 15.								
3	For the purpose of assessment, monitoring shall be carried out in accordance with the New South Wales Protection of the Environment Operations (Clean Air) Regulation 2010, Schedule 5.								
4	Vehicles carrying loads containing material which may become wind blown or spilt must be covered.								
5	Dust emissions from roads, disturbed areas, stockpiles and machinery must be controlled to prevent environmental harm.								
6	Asphalt storage material bins/bunkers are to be confined on three sides, excluding reclaimed asphalt product.								
7	<p>Take practical measures to ensure vents are not blocked.</p> <p>Venting vapours must not impact adjoining premises.</p>								

Appendix 3 Best available practice for emission controls and Capital Asphalt emissions controls

Emission Source	Best practice emission control	Proposed Capital Asphalt emission controls
Particulate emissions		
Roads, working areas and stockpiles	<ul style="list-style-type: none"> • All roadways and working areas should be adequately watered, swept or given an application of a suitable dust suppressant to minimise dust emissions from vehicle traffic; • Roadways should be paved to reduce dust emissions; • Stockpiles should be kept neat and orderly; • Stockpile height should be kept to a reasonable height to reduce wind erosion; • Stockpiles should be positioned to take advantage of existing wind screens; and • All vehicle delivering aggregates to the site should be tarped. 	<ul style="list-style-type: none"> • Site surfaces are sealed with either asphalt pavement or Concrete; • Regular housekeeping is organised to reduce dust build up; • Stockpiles are partially enclosed by concrete walls that act as wind screens to reduce wind erosion emissions; • Water sprays are to be used on stockpiles to reduce wind erosion during unfavourable meteorological conditions; • All vehicles delivering aggregate are tarped to reduce particulate emissions; and • Speed limit on site is restricted to 10 kilometres per hour to reduce dust generation by vehicles.
Material transfer through the plant	<ul style="list-style-type: none"> • The height of material drop points to transfer points should be kept to a minimum and be partially/fully enclosed as required; • Conveyed material should be effectively protected from wind by trough configuration of the conveyor belt or shielded by a guard from wind erosion; • Hydrated lime storage silos should be equipped with a ventilation filter and a vent valve; • The elevator housing and plant tower should be inspected for cracks and holes, and repaired as required; • Tight seals should be maintained at connections between elevator and screens; • The number of transfer point should be minimised 	<ul style="list-style-type: none"> • The number of material drop points are minimised and sloping belt feeders are used by the plant to minimise drop heights; • All aggregate and particulate conveyor assemblies are covered to reduce wind erosions; • Conveyor feed belt rate is regulated to control the transfer of material through plant; • All equipment is regularly inspected and maintained to a high standard to reduce leakage though cracks, holes and damaged seals; and • Lime silo is fitted with a bag filter and automatic, pneumatic high level shut off valve
Cyclone/ knockout box	<ul style="list-style-type: none"> • Cyclone/knockout box should be sized and maintained properly and operated according to manufacturer's specifications 	<ul style="list-style-type: none"> • Plant is fitted with a Cyclone separator; and • Plant maintained in accordance with manufacturers recommendations
Baghouse	<ul style="list-style-type: none"> • Baghouse should be sized and maintained properly and operated according to manufacturer's specifications 	<ul style="list-style-type: none"> • Baghouse is installed on the stack to minimise emissions; • The baghouse limits dust emissions to a maximum of 20 mg/m³.

Emission Source	Best practice emission control	Proposed Capital Asphalt emission controls
Combustion emissions		
Maintaining and proper use of combustion equipment	<ul style="list-style-type: none"> • Burner valves, nozzles, blowers and linkages should be maintained. Fuel pressure, air-fuel ratio and combustion pressure should function according to manufacturer specifications; • Dryer flights should be properly maintained to manufacturers specifications; • Exhaust fans should be properly sized, operated and maintained; • Damper should be properly operated and maintained; • All drum & duct air seal point should be intact and in working order; • Hot oil heater burner systems and lines should be kept clean and functioning according to the manufacturers specifications; • Thermocouples and other sensors should be used to monitor temperature and pressure changes within the system. They should be regularly calibrated; and • Vehicles and equipment not in use should be shut off during idle periods to reduce tailpipe emissions. 	<ul style="list-style-type: none"> • High pressure rails burner with modulated control is installed to control combustion; • Dyer is fitted with a bag filter assembly and dust recovery system; • Low sulphur fuel would be used where available to reduce Sulphur Dioxide emissions; • Dryer flights are maintained to manufacturers specifications; • Exhaust fan is correctly sized, operated and maintained; • The plant bag house fan is controlled by a Variable speed drive to optimise air flow/combustion; • All drum & duct air seal point should be intact and in working order; • The Dryer is a close coupled counter flow dryer with flame enclosed; • The plant does not use a hot oil heater burner system -the Bitumen tanks and plant pipes are electrically heated with external insulation reduce heat loss; • Thermocouples and other sensors are used to monitor temperature and pressure changes within the system; • Vehicles and equipment not in use to be shut off during idle periods to reduce tailpipe emissions; • The following emissions limits will be met by the plant: <ul style="list-style-type: none"> ○ Carbon monoxide (targeted) limit of 500 mg/m³ ○ Total dust limit of 20 mg/m³ ○ Organics limit of 50 mg/m³ ○ Sulphur dioxide limit of 350 mg/m³ ○ Nitrogen dioxide limit of 350 mg/m³
Organic and odour emissions		
Fuel unloading and storage	<ul style="list-style-type: none"> • Lids on fuel storage tanks should be kept closed; • Any spills should be cleaned up as quickly as possible and minor fuel leaks and drips should be limited/prevented 	<ul style="list-style-type: none"> • Spill kits are provided on site and regular housekeeping will be undertaken

Emission Source	Best practice emission control	Proposed Capital Asphalt emission controls
Asphalt cement unloading and storage	<ul style="list-style-type: none"> Where possible, asphalt cement unloading should be scheduled during periods of least impact to neighbours 	<ul style="list-style-type: none"> The plant in its current configuration does not store Asphalt, it is produced and trucked off site.
Hot mix asphalt storage	<ul style="list-style-type: none"> Lead-out area should be designed to minimise spillage; Any spills should be cleaned up immediately as per Safety Data Sheets (SDS); Asphalt storage temperatures should be kept as low as possible 	<ul style="list-style-type: none"> Electronic temperature control of bitumen storage with over temperature alarm and over temperature automatic cut out of heating to prevent over heating of product.
Hot mix asphalt mixing/loading temperate	<ul style="list-style-type: none"> HMA mix temperature at discharge point should not exceed 175 °C unless directed by owner specifications or suppliers guidelines; Asphalt plant should record the mixing/loading temperature of their product 	<ul style="list-style-type: none"> The majority of asphalt production is heavy duty dense grade asphalt, which is produced using C170 and C240 grade Bitumen, carried out at a maximum of 175 degrees; The plants rated capacity is when operating at 160 °C; Where practical, operation will be undertaken at a lower production temperature to minimise the cost of operation; Asphalt plant is fitted with process control systems with temperature monitoring and control to limit asphalt production to below 185 °C. Keeping asphalt production temperatures low minimises odour; Load out temperature is recorded on product delivery dockets.
Anti-stripping additives	<ul style="list-style-type: none"> Anti-stripping additives should be well blended. Anti-stripping additives should be stored according with manufacturers recommendations; Low odour anti stripping additives should be used 	<ul style="list-style-type: none"> Generally anti stripping agents are not required with current mix designs; In the event that additives become necessary to meet client specifications the Plant has the capability to automatically dose anti stripping additives that is Computer (PLC) Controlled to precisely control dosage; Should anti stripping additives be required they would be stored according with manufacturers recommendations; and Low odour anti stripping additives would be used

From: [EPAPanningLiaison](#)
To: [Elizabeth Slapp](#)
Subject: RE: Capital Asphalt Proposal - Block 67 Section 22 Hume [SEC=UNCLASSIFIED]
Date: Thursday, 17 October 2019 2:28:14 PM
Attachments: [ENVIRONMENTAL GUIDELINES FOR PETROLEUM STORAGE IN THE ACT JUNE 2019 \(A20.....pdf\)](#)

Hi Elizabeth

These are the air emission limits in the currently authorised asphalt plants in the Territory. The Environmental Authorisations (EAs) for asphalt plants (0401 and 0716) can be found here <https://www.accesscanberra.act.gov.au/app/services/epa-water-search#/epa-authorisations>. It may assist to review those EA's as they will provide information about the likely content of the EA the proponent will require to obtain prior to operations.

The operations at the site will be required to be managed to ensure that emissions from the asphalt plant do not exceed the following air emission standards:

Parameter	Criteria
Solid particles (total)	50Nmg/m ³
Nitrogen dioxide	350mg/Nm ³
Volatile organic compounds (VOCs), as n-propane	40mg/Nm ³

The plant may also be required to be designed in accordance with the attached guidelines and other emissions will be required to be controlled including noise and to stormwater.

Happy to assist further where I can.

Regards,

Robin Brown | Environment Protection Authority Planning Liaison

Phone 02 6207 5642

Environmental Quality | Office of the Environment Protection Authority | Access Canberra | **ACT Government**
470 Northbourne Ave Dickson ACT 2602 | GPO Box 158 Canberra ACT 2601 | www.environment.act.gov.au

From: Elizabeth Slapp [mailto:██████████@CanberraTownPlanning.com.au]

Sent: Tuesday, 15 October 2019 10:30 AM

To: EPAPanningLiaison <EPAPanningLiaison@act.gov.au>

Subject: Capital Asphalt Proposal - Block 67 Section 22 Hume

Importance: High

Hi Robin,

Further to our meeting with you on Friday 13 September 2019, please find attached some information in relation to the asphalt plant proposed to be installed on Block 67 Section 22 Hume.

At this stage, there are two preferred plant options that Capital Asphalt is considering. At this stage, the preferred option is the Marini BE Tower 2000. However, the Team is travelling to China this weekend to inspect the TTM TS1501, which is a larger plant with greater material production output.

For the purpose of issuing an informal scoping document, can you please utilise the information attached as it related to the TTM. This would be the worst case scenario.

Give me a call should you require anything further.

Ta.

-E

CTP Logo



Elizabeth Slapp
Director – Senior Town Planner

5/32 Lonsdale Street, Braddon 2612

Mobile [REDACTED]
[REDACTED]@canplan.com.au
canberratownplanning.com.au



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23 March 2020

DA Enquiries
Environment, Planning and Sustainable Development Directorate
GPO Box 158
CANBERRA ACT 2601
Via email DAEnquiries@act.gov.au

Dear Sir/Madam,

RE: DA201936510 Block 67 Section 22 Hume – Further Information Request and Response to public Representations

This document serves as both responses to the Section 141 Further Information Request received from EPSDD as well to the Public Representations received during the notification period for DA201936510.

The s141 request was issued on Thursday 27 February 2020.

The following documents have been produced to support this submission and inform the responses to the matters raised by EPSDD and the Community:

- An Updated Noise Management Plan (SLR Consulting Australia)
- Updated Air Quality Impact Assessment Report (SLR Consulting Australia)
- Updated Traffic Impact Assessment Report (Graeme Shoobridge Consulting)
- Hydraulic Master Plan – endorsed in principle by Icon Water
- Response to public comments letter (drafted by Robsons Environmental)

This document also provides a summary of public representations and key themes raised with responses to each.

Below is a response to the elements of the further information request.

Elements	Response
ICON WATER	
All Icon Water Values, hydrants, meters and maintenance holes / pits must have 24/7 access by Icon Water and Emergency Services. The developer is to obtain Icon Water padlocks which must be installed in a daisy chain fashion at each entry and exit point of the construction site. No stockpile, Temporary structures or equipment is to be located within the pipe protection envelope. This is to be noted on relevant verge plans.	24/7 access will be available via the front gates as stated in email correspondence with Icon Water on 26/02/2020. Padlock requirements have been noted and will be complied with during and post construction. Refer to endorsed hydraulic masterplan provided by John Randall Consulting.
Design Acceptance for External Services or off-site works must be in principle design approved by Icon Water Hydraulic Assets. Phone Icon Water Asset Acceptance on ph: 02 6248 3111 or email hydraulicassetacceptance@iconwater.com.au . This needs to be referred back to Icon Water Building Approvals area for approval prior to any DA/ BA Approval for ACTPLA or certifiers.	An updated engineering design has been endorsed principle. Please see hydraulic masterplan provided by John Randall Consulting. Detail Design may be completed along with detail design post approval and the proponent request consideration that a condition of approval may facilitate finalising design matters.



Elements	Response
<p>Emergency access to sewerage manholes has not been provided, contrary to section 124 of the Utility Act.</p>	<p>See updated (and principally endorsed) hydraulic masterplan provided by John Randall Consulting. Detail Design may be completed along with detail design post approval and the proponent request consideration that a condition of approval may facilitate finalising design matters.</p>
<p>Please complete attached Icon Water Design Form Pack, Hydraulic servicing plans and email to hydraulicassetacceptance@iconwater.com.au . Icon Water will then identify whether your development falls into the capital contribution code scheme, and will write you a letter to confirm.</p>	<p>A Design Form Pack has been completed for the site. See updated hydraulic masterplan provided by John Randall Consulting. Detail Design may be completed along with detail design post approval and the proponent request consideration that a condition of approval may facilitate finalising design matters.</p>
<p>A design "In-Principle" acceptance must be approved by Icon Water – Hydraulic Asset Acceptance team prior to the DA being assessed. Please contact your hydraulic consultant to submit the 'Design Form Pack -Minor Works' to Icon Water – Hydraulic Asset Acceptance team for approval;</p>	<p>The design has been approved in principle. Please see hydraulic masterplan provided by John Randall Consulting for details.</p>
<p>Icon Water requires 24/7 emergency access (min. 1.5m wide x 2.2m high) to the existing manhole located in the North-East corner of the block. Please provide details for Icon Water emergency access or contact Bibek Lital on 6180 6964 to discuss any alternate solutions;</p>	<p>24/7 access will be available via the front gates as stated in email correspondence with Icon Water on 26/02/2020. Refer to hydraulic masterplan provided by John Randall Consulting.</p>
<p>The retaining wall on the North-East corner besides the easement impedes Icon Water's access to the manhole and the easement. Please provide details of the proposed retaining wall. Icon Water requires unobstructed access to the manhole/easement which can be ramped to a max of 1 in 4 slope with sufficient turning chamfer for change of direction;</p>	<p>Please see updated hydraulic masterplan provided by John Randall Consulting for details.</p>
<p>Icon Water requires the structural details for retaining walls along North-East corner adjacent to the easement (similar to the Rap Bunker footing details provided in drawing A505);</p>	<p>Please see updated hydraulic masterplan provided by John Randall Consulting for details.</p>
<p>The sewer main along the easement have not been handed over to Icon Water as yet therefore, we are unable to verify the location of the mains within the easement. Icon Water will require evidence of the location of the sewer main location within the easement or the asset to be handover prior to approving any structures besides it;</p>	<p>Please see updated hydraulic masterplan provided by John Randall Consulting for details.</p>
<p>Environmental Protection Authority (EPA)</p>	
<p>Noise Management Plan The Noise Management Plan must be revised to include an assessment of the anticipated/predicted noise levels from the plant equipment at the boundary and from trucks operating on the site.</p>	<p>The updated Noise Management Plan includes an assessment of anticipated / predicted noise levels from six locations directly adjacent to the plant, including Rose Cottage and residential land across the NSW border. The assessment addresses predicted noise levels for the operation of the facility during the day and at night-time. Refer to update SLR Consulting Report for details.</p>



Elements	Response
	<p>The report includes a range of recommendations that may be implemented to ensure compliance and an acceptable operational context for the proposed plant. The proponent would be happy to adopt the recommendations as set out in the report conclusion.</p>
<p>Air Quality Report The Air Quality Report (AQR) must include further details about the proposed management of air and odour emissions. The recommendations in the AQR must ensure emissions meet the required standards.</p>	<p>The updated Air Quality Impact Assessment Report provided by SLR Consulting includes further details regarding the management of air and odour emissions in relation to the South Australian Environmental Protection (Air) Quality Policy 2016 and South Australian EPA ambient air quality assessment guidelines 2016. In addition – Robson’s environmental have provided a letter responding to public comments made during notification. Please refer to this document for further details regarding air quality. The report concludes that not only is the proposed plant operating well within the acceptable standards but that the plant in conjunction with the other operation will not increase emissions to unacceptable levels.</p>
<p>Water Management It must be demonstrated that any potentially contaminated water will not be discharged to stormwater.</p>	<p>The Environmental Protection Agreement requires the proponent to actively manage any impacts associated with stormwater and wastewater. Waste Water will be controlled within the site and disposed of appropriately (likely contaminated water will not be discharged to stormwater networks).</p> <p>In addition, the proposed site is a ‘greenfields’ site (not yet developed for industrial purposes) and therefore this proposal has the opportunity to construct traps and facilitate the plant to be placed on a sealed concrete pad which will substantially manage the opportunity to control onsite storm- and waste-water management.</p>

Public Representations

A total of 5 submissions were submitted during the public notification period. Representation raised a range of matters that were considered and distilled into the impact theme's below. The proponent further commissioned additional investigations (included in this submission) as alluded to in the introduction of this correspondence to outline the context, likely impact and suggested mitigation measures (where appropriate) to manage the proposed development to minimise impact to acceptable levels.

The matters raised (themes) a description summary and short response are outlined below; for further information (where applicable) reference to the technical investigations are made to assist in the consideration of the response. These documents must be considered concurrently and in tandem.

The key issues and our summary responses are presented below:

Theme	Submission Summary	Response
Air Quality	Toxic release of chemicals harming the health of workers in nearby business and residents of South Jerrabomberra	<p>Well-constructed and managed modern manufacturing plants are designed to manage environmental impacts appropriately and minimise the likely opportunities for environmental harm flowing from proposed operations.</p> <p>The choice of new technology being a modern plant, is a cornerstone in the proponent's interest and desire to run a well-managed and environmentally responsible plant and operations.</p> <p>The proponent is investing in state-of-the-art equipment that will be operated under best in industry and best practice operational management procedures and structures.</p> <p>The proposed plant will operate under the applicable EPA licences, Environmental Management agreements and require active management, auditing and monitoring procedures. The operations will be closely monitored by EPA; similarly, to the existing operation within the same industrial estate – this is a highly regulated industry and environmental impact is closely monitored by the proponent and EPA at all times.</p> <p>The updated Air Quality Impact Assessment Report includes new modelling which indicates that all emissions (from both this plant and the second operation separately and combined) will be within the South Australian Environmental Protection (Air) Quality Policy 2016 and South Australian EPA ambient air quality assessment guidelines 2016 which includes all sensitive receptor locations and businesses at each boundary. Appropriate mitigations have been put in place in both the selection of plant and equipment, design of the operation and in the proposed management and operational plans and procedures to reduce and minimise the likelihood for release of toxic chemicals.</p>



Theme	Submission Summary	Response
		<p>Please refer to the updated report and 'Response to comments' document provided by Robson's Environmental for further details . This should be read in conjunction with the Air Quality Impact Assessment report submitted.</p>
	<p>Recommended buffer distances between air emissions and sensitive land uses (residential) have not been considered. South Australian Environment Protection (Air Quality) Policy 2016 and South Australian EPA ambient air quality assessment guidelines 2016 need to be evaluated & Robson report needs to contain reference to atmospheric dispersion modelling given that within 1000m buffer area</p>	<p>Please refer to the updated Air Quality Impact Assessment Report which includes atmospheric dispersion modelling. The findings of this report suggest that the proposed plant and its operation will not exceed the guideline thresholds for air emissions.</p> <p>Please also refer to Robsons Response to Public Comments document for further detail.</p>
	<p>Plants operating below capacity are less efficient. More starts and stops cause increased emissions. As a result higher emissions would be expected from three plants operating like this in one region. Baseline air quality assessment is required to show if additional plant will add to cumulative effects.</p>	<p>Please refer to S4. of the Air Quality Impact Assessment report which addresses the 'existing air quality', plant and cumulative impact considerations as requested.</p> <p>Please refer to Robsons Response to Public Comments document for further detail.</p> <p>The proposal is investing in state-of-the-art equipment that will be operated under best in industry and best practice operational management procedures and structures. The plant's efficiency will be well within the proponent and regulator's expectations and will have comparative low levels of emissions when considered and compared with other operators in the area.</p>
	<p>Robson report doesn't mention whether polymer binders or crumb rubber activities will be used. These are the highest emitters of odour and volatile organic compounds – if proposed please state in report otherwise emissions are underrepresented.</p>	<p>Please refer to Robsons Response to Public Comments document for further detail.</p> <p>The updated Air Quality Impact Assessment Report identifies the volatile organic compounds likely to be produced from the plant and has modelled BTEX Compounds.</p> <p>Please refer to the report which indicates that fugitive emissions will be minimised during the operation of the plant due to effective redirection of emissions via the baghouse and baghouse stack.</p> <p>The proposal is investing in state-of-the-art equipment that will be operated under best in industry and best practice operational management procedures and structures that will result in low emissions levels from its operations.</p>
	<p>The EPA separation distance guidelines are not being met (development is within 1000m) which can cause disturbances to businesses (dust, noise and toxic odours). Predictions for air quality, odour and noise must look at all sensitive use locations within a 1000m buffer (i.e. the current noise assessment only considers a single residence in NSW).</p>	<p>Please refer to the updated Noise Management Plan which models noise at the boundary, at Rose Cottage and at the NSW border. In accordance with the Environmental Protection Regulation 2005 the compliance point for noise is at the NSW boundary hence no more receptors have been assessed.</p>



Theme	Submission Summary	Response
		<p>The Air Quality Impact Assessment provided by SLR Consulting models a total of eight residential receptor locations along the NSW border and five industrial receptors (immediately surrounding the site).</p> <p>Dust has been addressed as part of this assessment. Please refer to this report which identifies mitigations taken to ensure that the guidelines at met within 1000m for both residential and industrial receptors.</p> <p>The proposal is investing in state-of-the-art equipment that will be operated under best in industry and best practice operational management procedures and structures that will result in low emissions levels from its operations.</p>
Odour	<p>Odour emissions and their impact on residential receptors have not been evaluated within the Robsons report. the proposed plant is located within 600m of South Jerrabomberra boundary, Hume industrial area and residential development. ERM studies show odour travels up to 600m from source. In accordance with the SA EPR Air assessment guidelines an odour unit objective of 2 odour units (OU) is appropriate. Results of the modelling indicate that OU well above this (10 - 20 at western edges of residential areas and 30 within buffer areas). Appropriate mitigations should be included in modelling.</p>	<p>The Air Quality Impact Assessment Report uses Schedule 3 of the South Australian Environment Protection (Air Quality) Policy 2016 to model odour predictions. A conservative number of 2 (ou) is used in assessment and modelling has taken place at the nearest industrial and residential receptor. Results of the modelling indicate concentrations are well below the criterion.</p> <p>In addition, please refer to Robsons Response to Public Comments document and air report for further detail.</p>
	<p>Cumulative harmful odour impacts to residents as the result of another plant in addition to existing Downer Plant in Hume Industrial Area.</p>	<p>The cumulative impact of odour has also been addressed in the Air Impact Assessment Report. Refer to Section 7.7 of the report which indicates that cumulative impacts (Downer and proposed plant) will still operate well within criterion.</p> <p>Also refer to Robsons Response to Public Comments document which responds to this issue.</p>
	<p>Odour control is not adequate in proximity to sensitive land uses - Robsons report to discuss odour abatement through NSW EPA 2006 technical framework which assesses management of odour from stationary sources. This framework will review control measures such as determining :</p> <ol style="list-style-type: none"> a) Best management practice during operation of the plant i.e. establish risk programs and choice of raw materials b) Suitable odour control technology i.e. lower temperatures and heighten stacks c) How to best manage odour between the plant and nearby receptors i.e. landscaping and buffer heights 	<p>In the absence of ACT guidelines for air quality the South Australian EPA's Ambient Air Quality Assessment Guideline (SA EPA 2016) were adopted which addresses odour from stationary sources.</p> <p>Please refer to chapter 8 of the Air Quality Impact Assessment Report which determines suitable odour control technology used to mitigate impacts during the operation of the plant.</p> <p>The proposal is investing in state-of-the-art equipment that will be operated under best in industry and best practice operational management procedures and structures that will result in low emissions levels from its operations.</p> <p>Please also refer to Robsons Response to Public Comments document for further detail.</p>



Theme	Submission Summary	Response
Noise	<p>65dB is exceeded beyond the boundary. The noise report indicates an increase between 3dB - 13dB increase which is unsafe and distracting, exceeding acceptable levels.</p> <hr/> <p>Noise barriers were stated as non-viable but are a necessity. Regardless, barriers would probably have minor impacts given exceedances.</p> <hr/> <p>The noise report has not established noise criteria or predicted noise impacts on South Jerrabomberra residential area. Schedule 2 of the EPR regulation using noise management measures should be modelled which aim to demonstrate compliance with recommended 45dB day time and 35dB night time criteria.</p> <hr/> <p>Sleep disturbance among residents with 24 hour operation. Predictions using the NSW Noise Policy for Industry 2017 criteria should be implemented.</p>	<p>The proposed plant will mostly operate between 6am and 4pm – these types of exceedances are likely to occur during occasional night-time operations at which will not affect sensitive receptors. In all cases guidelines are met for sensitive receptors and negligible exceedances of up to 2dB occur during the daytime for industrial receptors and is unlikely to result in noise complaints.</p> <p>It is to be expected that these adjoining uses create similar noises and are appropriately managed – this operation will be able to achieve the same or better performance given its location and the recommendations made in the noise assessment. Please refer to the updated Noise Management Plan for further details.</p> <hr/> <p>Common areas directly adjacent to the boundaries of the site include carparking, material storage, waste stockpiles etc which aren't considered noise sensitive uses. In addition, noise barriers are not stated as a requirement in the guidelines.</p> <p>Future development surrounding the site will help to screen the impacts of noise. Please refer to the Noise Management Plan for further details.</p> <p>The lessee will adopt the recommendations of the Noise Report to limit impact from operations as per the report findings.</p> <hr/> <p>Schedule 2 of the EPR Regulation has been adopted and demonstrates compliance with this schedule, please refer to the updated Noise Management Plan.</p> <p>The lessee will adopt the recommendations of the Noise Report to limit impact from operations as per the report findings.</p> <hr/> <p>In most cases the plant will operate from 6am – 4pm, notwithstanding this the proposed plant demonstrates compliance with guidelines during night- time operation.</p> <p>Please refer to the Noise Management Plan which discusses the NSW Noise Policy for Industry 2017.</p> <p>The lessee will adopt the recommendations of the Noise Report to limit impact from operations as per the report findings.</p>
Assessment and ongoing monitoring and management of development	<p>Insufficient management and monitoring of dust, air and run off events may contaminate and damage adjacent property.</p>	<p>Please refer to the Air Quality Impact Assessment Report which determines mitigation and management for the operation of the plant.</p> <p>State of the art technology will be used which will minimise impacts on the environment and surrounding uses and sensitive receivers. Backed-up by best in industry and best practice operational management procedures the plant and operations will operate at low emissions levels.</p>



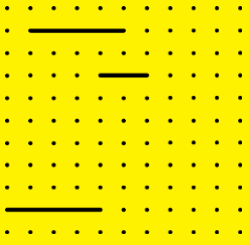
Theme	Submission Summary	Response
		<p>Coupled with the expectation that the proponent will be required to operate under strict EPA license and operational requirements that will include both active and passive monitoring and reporting requirements this matter is readily addressed, management and viewed by the lessee and regulator.</p> <p>Please refer to Robsons Response to Public Comments document for further detail.</p>
	<p>Robust conditions are required to ensure that impacts are projected onto entities causing the impact.</p>	<p>The proposed development and its operations will be highly regulated in accordance the proponents licence agreement which will determine matters such as emissions requirements, allowable production limits, operational requirements and the like.</p> <p>Proponents and operations such as this are commonly (under an authorisation and/or agreement) required to self-audit the operation of the plant to ensure operations are within licenced parameters and within the capacity limitations of their licence. This information is periodically given to and will be used to inform regular monitoring by EPA as to compliance matters for the operations.</p> <p>These types of operations are highly regulated, managed and controlled by requirements from the appropriate regulators.</p>
	<p>Suitability of site –</p> <ul style="list-style-type: none"> • The adjacent site is considered fire prone – questionable as to whether the presence of a plant containing flammable material is appropriate. • Alternative sites have not been evaluated or considered 	<p>The proposed development is situated within the IZ1 General Industrial zones of the ACT, and is both zoned and leased for the proposed purpose. Both the Territory Plan and specimen Crown Lease envisions this type of operation to be situated in the Hume industrial area and authorised the use of the land for such activities; albeit where the proposed plant and operations can be demonstrated to be operated within acceptable parameters and limits.</p> <p>Prior to purchase of the land the proponent investigated a number of sites in the ACT and determined the subject land is well located , appropriately zoned and leased, able to house the operations, allow integration with the urban fabric, be designed and can operate within the expected planning context and environmental limitations; in short it meets all of the environmental, commercial, planning and other objectives needed to invest into the establishment of the operation.</p> <p>There is no specific requirement to demonstrate a comparative site assessment process where the land is zoned and leased for the use; this work was undertaken with the establishment of the Territory Plan and preparation and sale of the Crown Lease and is not for assessment in the Development Application.</p>



Theme	Submission Summary	Response
	<p>Environmental assessments should be based on the maximum capacity of 1600t per day. There is risk otherwise that the proponent’s activities go beyond what is assessed in the DA.</p>	<p>The proposed development will be highly regulated in accordance the proponents licence agreement which determines the allowable production; the opportunity to operate outside the licence agreement is limited and could result in the licence be revoked and punitive measures be levelled against the operator; this is unlikely to occur.</p> <p>The proponent will be required to self-audit the operation of the plant to ensure that they are operating within the capacity that is issued under their licence and report the findings to the EPA. This information will be used to inform regular monitoring by EPA to assure compliance of the licence and operational/environmental agreements that the proponent will be required to enter into.</p>
<p>Economics - Demand, development by stealth and Feasibility of Plant</p>	<p>Demand for a third asphalt plant in the ACT given that other two plants are operating at less than 50%.</p>	<p>The matter of demand, competition and economic performance of any specific operation is not a matter for consideration in the Territory Plan.</p> <p>This is not a matter of interest in the assessment of this planning proposal.</p> <p>Notwithstanding, the plant being modern and able to produce product in a low emission environment may well result in beneficial impacts should it have the result of attracting increased production in comparison to other operators.</p>
	<p>The capacity of the plant is far greater than the expected production (1600t per day capacity, 800t expected production). It is not clear why the proponent requires this capacity when the market is below 50%.</p>	<p>The choice in plant and the operating capacity there-off is a factor of good planning and future proofing; it leaves an ability to grow if future production demands increase and is not an uncommon business and operational decision.</p> <p>It does not per se mean that the plant will be operated in this manner. The plant will always be operating within the ACT guidelines, the planning approvals sought and is approved, given, environmental licenses and agreements, operational rules and the like that will be controlled by the EPA and other regulators.</p> <p>This is a highly regulated industry and the opportunity to operate at with and without boundaries and limits are highly unlikely.</p>
	<p>200t is not feasible in the long term and will result in job losses.</p>	<p>The economic feasibility of the proposed plant has been extensively investigated by the proponent and they are prepared to invest into this operation.</p> <p>The matter of demand, competition and economic performance of any specific operation is not a matter for consideration in the Territory Plan.</p>



Theme	Submission Summary	Response
		<p>This is not a matter of interest in this assessment. Notwithstanding the plant being modern and able to produce product in a low emission environment may well result in beneficial impacts should it have the result of attracting increased production in comparison to other operators.</p>
	<p>Land used unnecessarily for a use not required – this development will not diversify the industrial base.</p>	<p>The Hume Industrial Estate has been specifically created, zoned and planning controls written to permit and house various forms of industrial uses within this area of Canberra and the ACT. This is part of the role of prudent Town Planning.</p> <p>The matter of demand, competition and economic performance of any specific operation is not a matter for consideration in the Territory Plan.</p> <p>Both the Territory Plan and specimen Crown Lease envisions this type of operation to be situated at the site and authorised the use of the land for such activities; albeit where the proposed plant and operations can be demonstrated to be operated within acceptable parameters and limits. The documentation provided with the DA and this submission demonstrate that these matters can be successfully addressed.</p>
	<p>Lack of demand will result in economic impacts such as job losses. Baseline economic information is required to understand the potential economic impact of a plant being developed in this location to satisfy the objectives of the Act (which states that economic considerations must be accounted for in decision making).</p>	<p>The matter of demand, competition and economic performance of any specific operation is not a matter for consideration in the Territory Plan.</p>
Traffic	<p>Asphalt is likely required to be travelled further out. Deliveries are made during the day affecting afternoon peak traffic periods. The assumptions in the report aren't reflective of asphalt operations.</p>	<p>Majority of deliveries will occur between 10am and 3pm – these are not considered peak time periods. Up to eight trucks will transport from 6.30am in the morning leaving every 10 minutes to limit traffic impacts. Please refer to the updated Transport Impact Assessment Report for further details.</p>
	<p>Parking and queuing are likely to arise from cul-de-sac and only having one driveway in and out of the site. This will affect other neighbouring businesses. The cumulative impact of traffic doesn't seem to be assessed.</p>	<p>The industrial area has been designed for this kind of development - for larger trucks and the like. The purpose of the area is industrial and is frequently utilised by heavy vehicle traffic as is expected. The truck storage onsite is considered adequate for the quantity of asphalt to be produced on a daily basis and the site includes a separate driveway in and out of the site. Please refer to the updated Transport Impact Assessment Report for further details.</p>



Summary

We trust that this response satisfactorily addresses the matters raised in the information request. Should you have any queries, please do not hesitate to contact the applicant.

Yours Sincerely,

Pieter van der Walt
Director



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3 March 2020

Response to Public Comments following DA Submission

Robson Environmental Pty Ltd (Robson) was asked by Capital Asphalt to review the public DA responses and provided feedback on any concerns raised in relation to air quality or odour.

1 Village Building Co Pty Ltd

1.1 Issue 1 & Issue 2:

After reviewing the buffer distance, as set out in the South Australian EPA Ambient air Quality Assessment Guideline, of 1000m, Robson agrees that a detailed odour modelling assessment should be conducted to answer the concerns raised. Consultation with the client was conducted and an independent company was engaged to conduct the modelling based on the proposed German technology for the low emission plant.

1.2 Issue 3 & Issue 6:

When Robson was engaged to undertake the assessment, the Jerrabomberra sub development was not identified and therefore not taken into consideration.

As the Capital Asphalt plant is a top tier German designed manufactured plant, it is design to minimises any emissions from the process. Where a typical odour sources would be expected on an older style plant, this newer style is designed to capture and recycle any fugitive odours, thus reducing the impact to the environment.

The bitumen tanks are designed to circulate air back into the tanker or through a water bath filter to remove and capture any odour.

A detailed odour modelling assessment based on this newer style of asphalt batching plant has been recommended to the client and is currently being undertaken by an independent consulting firm. This will address the concerns in issue 3 & Issue 6 raised by Village Building Co.

1.3 ERM Report on behalf of Village Building Company

The concerns detailed in the ERM report, Issue 1, Issue 2, Issue 3 & Issue 6 provide more context the two points listed above. The proposed recommendations for the concerns, in the ERM report, are being address with the independent air quality modelling assessment being conduct on the proposed asphalt plant.

2 Colin Biggers & Paisley Lawyers

Concerns were raised by Colin Biggers & Paisley Lawyers on behalf of their client” Downer” regarding air quality monitoring in section 30 – 32 of their response.

The concern in section 30 regarding polymer binder or crumbs was not considered as part of the Robson report as this was not advised to be a part of the plant’s requirements.

The concerns raised in section 31 & 32 are being addressed by the independent odour assessment modelling that is being conducted. A follow up baseline assessment was recommended as part of the Robson report, to be conducted once operational and the ongoing either monthly or six monthly, to ensure that the plant is meeting its requirements and satisfy the neighbours’ concerns.

Please do not hesitate to contact the undersigned for further information.

Yours sincerely,



Marcus Brooks MAIOH COH
BSc. MSc Occ. Hyg.
Senior Occupational Hygienist
Robson Environmental Pty. Ltd.



3 Limitations

While Robson has taken all care to ensure that this report includes the most accurate information available, samples were taken at certain times on the day or days indicated within the report and Robson is unable to comment on conditions at other times. Any statement of expected conditions at other times should be taken as possible conditions only.

The report, including any risk assessment presented, is based on the information obtained by Robson at the time of sampling. Any variation in the environment, activities, methods, practices, products, or equipment used may change exposures to hazards, invalidating the presented risk assessment. Robson recommends that risks be re-assessed prior to making any changes to the aforementioned factors.

The findings contained within this report are developed from the interpretation of the results of specific sampling methods used in accordance with generally accepted practices and standards, based on the current state of knowledge. To the best of Robson's knowledge, our assessment of the data represents a reasonable interpretation of the general conditions, and subsequent risk at the time of sampling. Should you have any questions or require further information please contact Robson Environmental.

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9. This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval with comments are provided by Robson Environmental Pty Ltd.

PROPOSED ASPHALT PLANT, HUME

5 Paspaley Street (Block 67 Section 22)
Air Quality Impact Assessment

Prepared for:

Southern Asphalt Services Pty Ltd
4/8 Victoria Street
Hall ACT 2618

SLR Ref: 670.11108-R02
Version No: -v1.0
March 2020



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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Southern Asphalt Services Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
670.11108-R02-v1.0	17 March 2020			

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1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by Southern Asphalt Services Pty Ltd (Capital Asphalt) to undertake an Air Quality Impact Assessment (AQIA) for a proposed asphalt plant (the Project) to be located at 5 Paspaley Street (Block 67 Section 22), Hume in the Australian Capital Territory (ACT) (the Project Site).

A qualitative risk based air quality assessment was completed for the Project by Robson Environmental in November 2019. During the public exhibition, ERM Consulting, on behalf of Village Building Company (VBC) recommended that (ERM 2020):

*“**Recommendation 2:** Consistent with ACT buffer distance guidance, a revised air quality assessment should be completed in accordance with the South Australian EPA Ambient air quality assessment guideline. Dispersion modelling should reference representative air emissions data and be used to determine the potential air quality/odour impacts of the proposed asphalt plant upon all current and proposed sensitive land uses. Modelling should be representative of seasonal variation within the study area with the view that mitigation at the plant may be compromised at certain times of the year.”*

*“**Recommendation 6:** Detailed odour dispersion modelling should clearly show where there are predicted to be odour impacts from the proposed asphalt plant. The odour emission inventory should reference a similar plant operating in Australia and appropriate mitigation measures should be committed to and be included in the modelling.”*

This AQIA has been prepared to address the above recommendations, and was conducted in accordance with the South Australian EPA’s *Ambient Air Quality Assessment Guideline* (SA EPA 2016) (hereon ‘the Guideline’). The ground level criteria for the pollutants assessed in this AQIA have been sourced from the *South Australian Environment Protection (Air Quality) Policy 2016*.

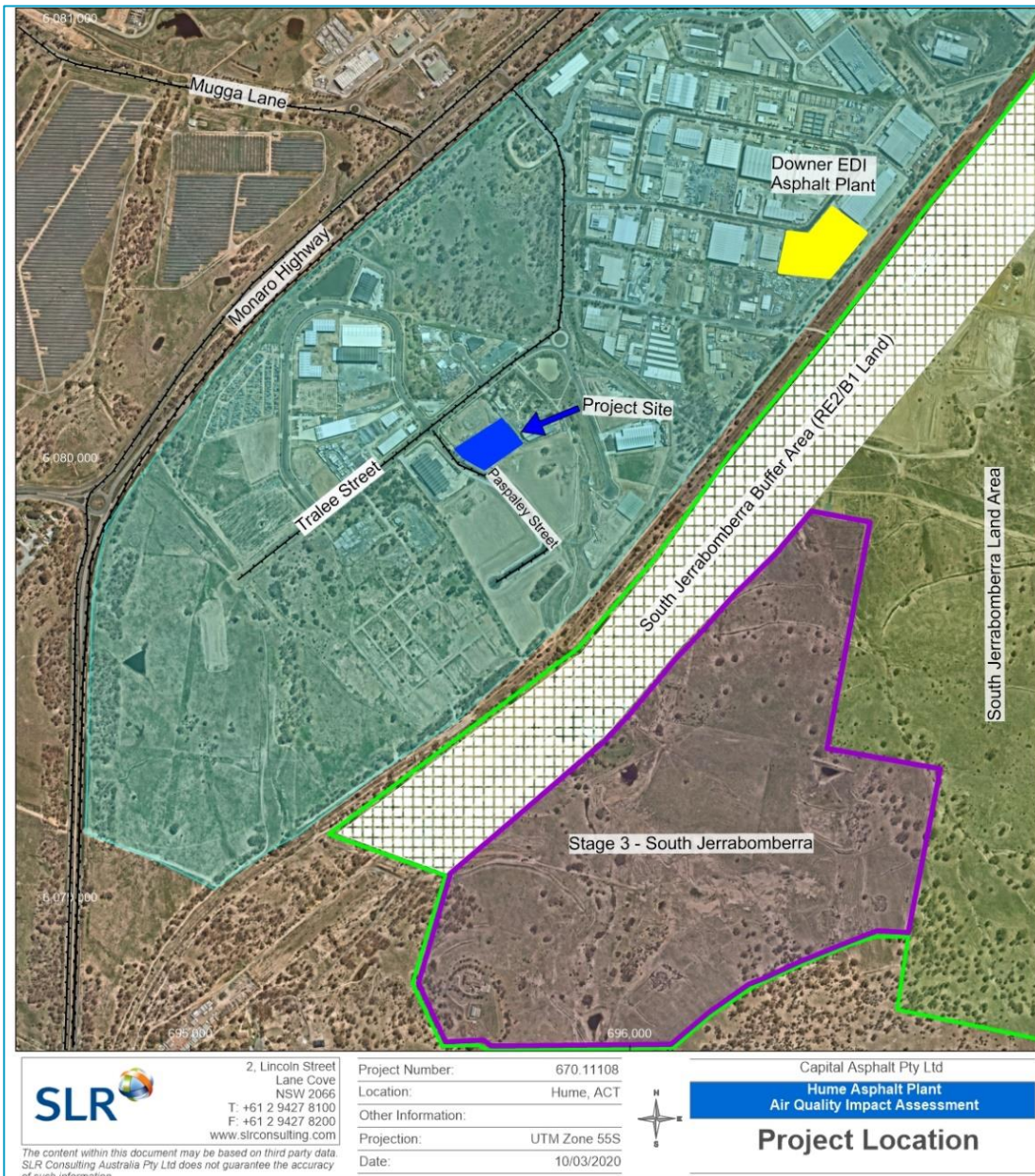
2 Project Overview

2.1 Location

The Project Site is located approximately 13 kilometres (km) south of the Canberra Central Business District, and is located within an industrial area with several undeveloped sites in close vicinity. The closest industrial receptor is located on the opposite (western) side of Paspaley Street, and the closest residential receptors would be located in a proposed future residential area approximately 620 metres (m) to the southeast, in South Jerrabomberra Stage 3.

The location of the Project Site is shown in **Figure 1**. Also shown in **Figure 1** is the location of an existing asphalt plant operated by Downer EDI, which is located approximately 760 m to the northeast.

Figure 1 Project Site Location and Surrounding Land Use

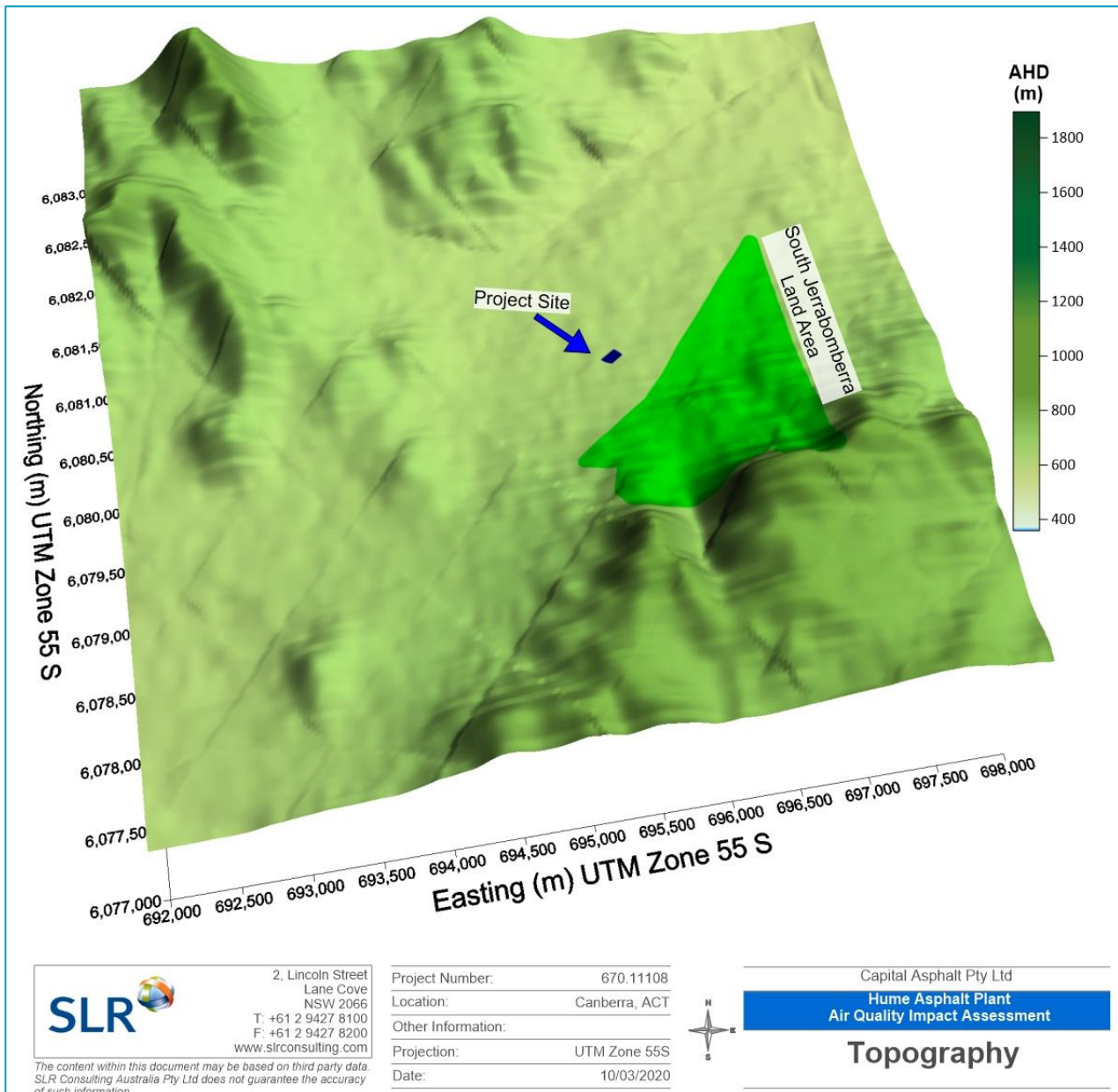


2.2 Local Topography

Local topography is important in air quality studies as local atmospheric dispersion can be influenced by night-time katabatic (downhill) drainage flows from elevated terrain or channelling effects in valleys or gullies.

A three dimensional representation of the topography surrounding the Project Site is shown in **Figure 2**. The ground elevation within the area illustrated in **Figure 2** shows a maximum terrain height of approximately 1,800 m Australian Height Datum (AHD). There are significant regional topographical features, ie undulating terrain northwest and southeast of the Project Site. However the area between the Project Site and the nearest proposed residential area located to the southeast (South Jerrabomberra) is relatively flat, and therefore local terrain is not expected to significantly influence the dispersion of air emissions from the Project Site for near-field receptors. The regional topography has been taken into consideration in the selection of the model and modelling grid resolution used for the study.

Figure 2 Local Topographical Features



2.3 Proposed Operational Activities

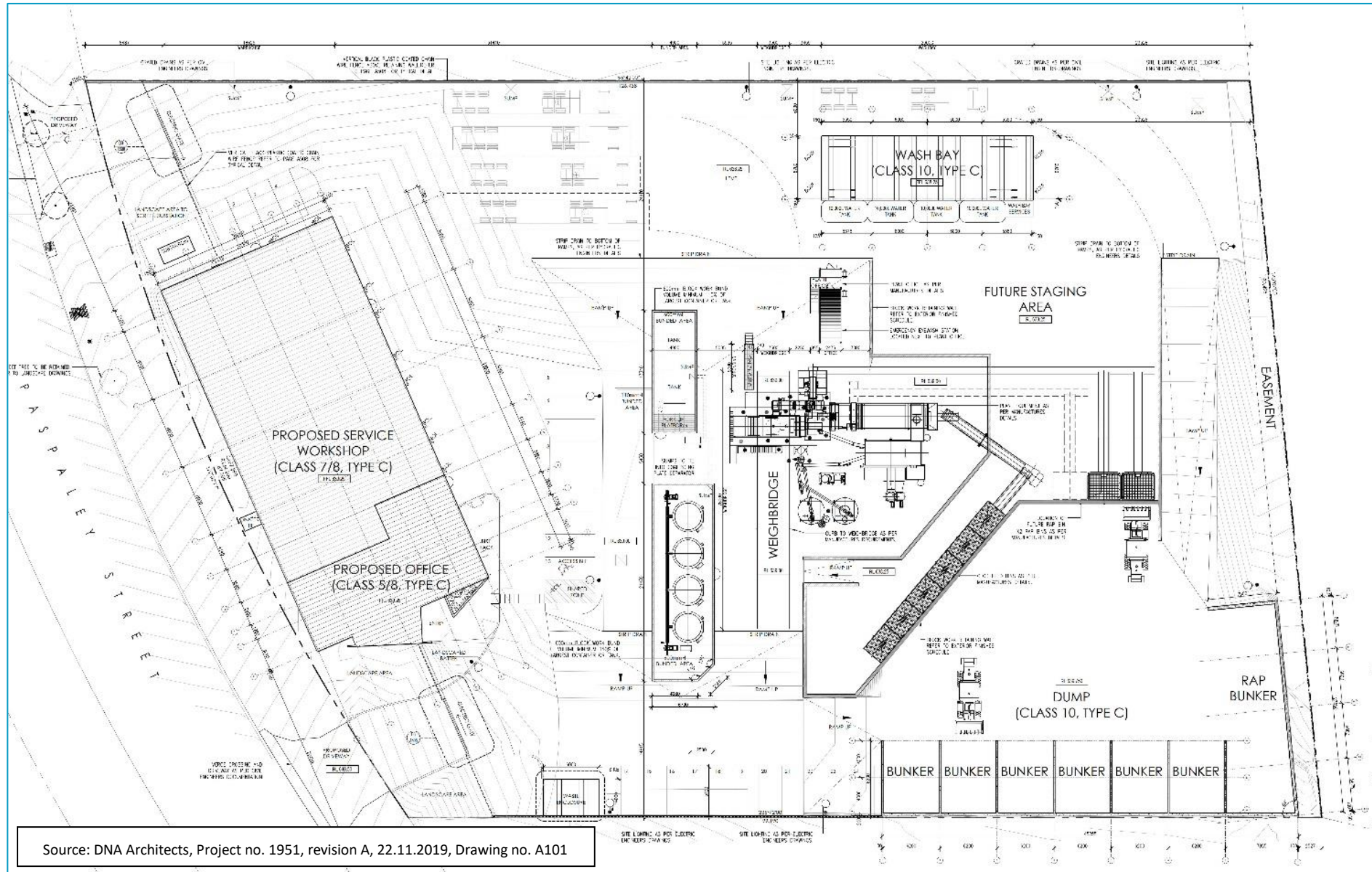
The Project intends to provide asphalt for road projects in the Canberra region. The Project will generally be operating during the day period (6 am – 4 pm) and will be capable of producing up to a maximum 130 tonnes per hour (tph) of asphalt. The proposed site layout plan is shown in **Figure 3**.

The Project Site is proposed to include:

- A bitumen storage and blending facility, with an associated loading/unloading bunded area;
- Raw materials storage bunkers for the storage of aggregates, sand and other raw materials in a 3-sided and roofed enclosure, with an associated loading/unloading area and front end loader work area;
- Workshop and truck parking area;
- Two-storey office (and laboratory);
- Truck, plant and staff/visitor parking areas;
- Benninghove/Wirtgen Semi Mobile ECO 2000 batch asphalt plant (see **Figure 4**) consisting of:
 - mixing tower and screen
 - hot elevator
 - dryer bins
 - compressor
 - exhaust stack serving a baghouse
 - truck load out area
 - associated control building

Other plant and equipment to be used onsite includes delivery trucks, front end loader, bobcat and other ancillary buildings (amenities and demountable staff room).

Figure 3 Proposed Site Layout Plan



Source: DNA Architects, Project no. 1951, revision A, 22.11.2019, Drawing no. A101

Figure 4 Benninghove/Wirtgen Semi Mobile ECO 2000 Batch Asphalt Plant



The operation of the Project will consist of:

- Transporting aggregate from storage piles to the appropriate hoppers of a cold feed unit.
- Metering of aggregate from the hoppers onto a conveyor belt and transporting them into a dual-fuel fired rotary dryer.
- Transferring the hot aggregate from the dryer to a set of vibrating screens that drops the aggregate into individual hot bins according to size.
- Opening various hot aggregate bins over a weigh hopper until the desired mix and weight for individual components is obtained.
- Pumping liquid bitumen from a heated storage tank to an asphalt bucket, where it is weighed, prior to being added to the aggregate mix to achieve the desired product. This is done concurrent with the aggregate being weighed.
- Loading the product into trucks for delivery off-site.

The trucks used for materials and asphalt delivery would be semi-tippers and truck & dog combinations, which typically would carry between 25-30 tonnes. It is proposed that at maximum production, 58 heavy vehicle movements per day (ie 29 truckloads) would occur. This is comprised of up to 40 movements for asphalt delivery (ie 20 truckloads) and 18 movements for raw materials delivery (ie 9 truckloads).

2.4 Identification of Potential Emissions to Atmosphere

The key potential air emission sources associated with the operation of the Project will be:

- Fugitive particulate matter from:
 - wind erosion of the stockpiles
 - onsite material handling
 - wheel-generated dust from onsite vehicle movements
- Products of combustion (including particulate matter) from:
 - the dual-fuel dryer exhaust stack
- Volatile Organic Compounds (VOCs) and associated odours from:
 - the dryer exhaust stack
 - storage tanks containing hot bitumen
 - the load-out operations to the delivery trucks

Emissions from the sources listed above have been quantified and assessed as part of an air dispersion modelling study performed as part of this assessment.

There will also be a number minor sources of air emissions associated with the proposed Project, including:

- Vehicle exhaust emissions from raw material and product delivery trucks
- VOC emissions from fuel storage and handling
- Intermittent, short-term emissions from the generator during maintenance and testing activities

These emissions will be minor compared to the sources covered by the modelling and have not been considered further.

2.5 Sensitive Receptors

The nearest residential receptors that have the potential to be impacted by air emissions during operation of the Project have been identified for investigation in this assessment. The locations of the nearest sensitive receptors are shown in **Figure 5** and listed in **Table 1**.

Representative residential receptors have been located along the northern boundary of the proposed South Jerrabomberra Stage 3 area, located approximately 620 m southeast of the Project Site. Existing industrial facilities are present to the north, east and west of the Project Site and vacant industrial land is located to the south. These locations have also been included as discrete receptors in the modelling.

Figure 5 Identified Sensitive Receptor Locations

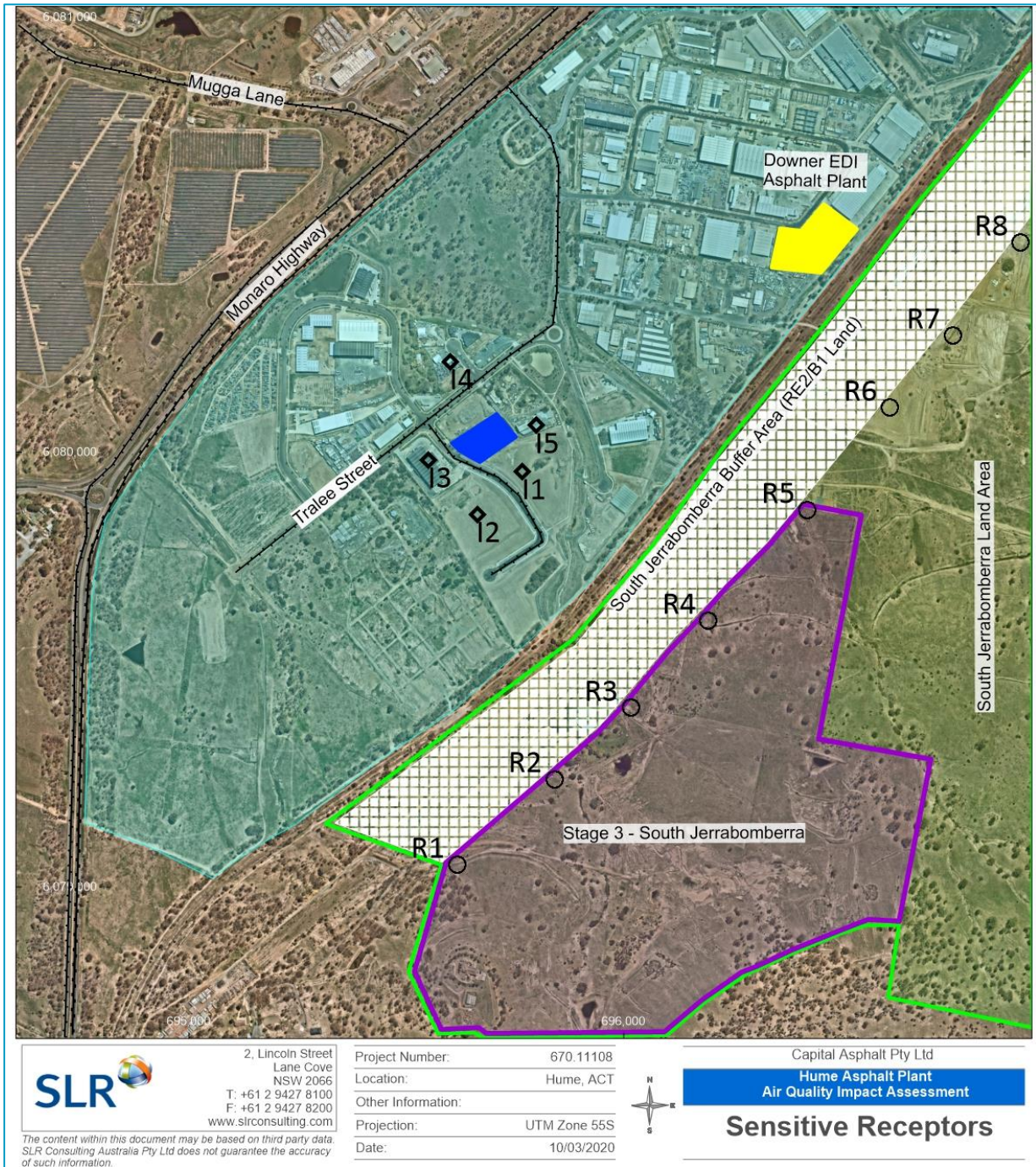


Table 1 Locations of Identified Sensitive Receptors

ID	Easting (m)	Northing (m)
Residential Receptors		
R1	695,617	6,079,051
R2	695,841	6,079,248
R3	696,016	6,079,412
R4	696,195	6,079,612
R5	696,423	6,079,867
R6	696,612	6,080,102
R7	696,757	6,080,268
R8	696,913	6,080,482
Industrial Receptors		
I1	695,767	6,079,956
I2	695,663	6,079,857
I3	695,551	6,079,983
I4	695,601	6,080,208
I5	695,798	6,080,062

3 Relevant Air Quality Criteria

In the absence of relevant guidelines or policies published by the ACT EPA, and as specified in Recommendation 1 of ERM Consulting submission (ERM 2020), this assessment was conducted in accordance with the South Australian EPA's *Ambient Air Quality Assessment Guideline* (SA EPA 2016).

The South Australian EPA's *Ambient Air Quality Assessment Guideline* (SA EPA 2016) lists the statutory methods for modelling and assessing air pollutants from stationary sources in South Australia, while the *South Australian Environment Protection (Air Quality) Policy 2016* specifies maximum ambient ground level concentrations for air pollutants that reflect the environmental outcomes adopted by the EPA. These are generally consistent with Standards set out in the National Environment Protection Measure (Ambient Air).

The air quality criteria set out by the South Australian EPA relevant to the Project Site are identified and discussed below.

3.1 Particulate Matter

Airborne contaminants that can be inhaled directly into the lungs can be classified on the basis of their physical properties as gases, vapours or particulate matter. In common usage, the terms "dust" and "particulates" are often used interchangeably. The term "particulate matter" refers to a category of airborne particles, typically less than 30 microns (μm) in diameter and ranging down to 0.1 μm and is termed total suspended particulate (TSP).

PM₁₀ (particulate matter less than 10 microns) and PM_{2.5} (particulate matter less than 10 microns) are considered important pollutants due to their ability to penetrate into the respiratory system. In the case of the PM_{2.5} category, recent health research has shown that this penetration can occur deep into the lungs. Potential adverse health impacts associated with exposure to PM₁₀ and PM_{2.5} include increased mortality from cardiovascular and respiratory diseases, chronic obstructive pulmonary disease and heart disease, and reduced lung capacity in asthmatic children.

Schedule 2 of the *South Australian Environment Protection (Air Quality) Policy 2016* sets out maximum ground level concentrations for PM₁₀ and PM_{2.5} as listed in **Table 2**.

Table 2 Air Quality Assessment Criteria for Suspended Particulates

Pollutant	Averaging Period	Maximum Concentration ($\mu\text{g}/\text{m}^3$)
PM ₁₀	24-hours	50
PM _{2.5}	24-hours	25
	Annual	8

3.2 Products of Combustion

The main products of fuel combustion that would be emitted by the asphalt plant operations (predominantly from the dual-fuel fired dryer but also from vehicles entering and leaving the site) include oxides of nitrogen (NO_x), carbon monoxide (CO), sulphur dioxide (SO₂) and particulates (TSP, PM₁₀ and PM_{2.5}). Volatile organic compounds (VOCs) are also emitted as a result of incomplete combustion of fossil fuels and these pollutants are discussed in **Section 3.3** along with emissions of VOCs from the handling of hot mix and from the heated bitumen storage tanks.

Oxides of nitrogen (NO_x) is a general term used to describe any mixture of nitrogen oxides formed during combustion. In atmospheric chemistry, NO_x generally refers to the total concentration of nitric oxide (NO) and nitrogen dioxide (NO₂). NO is a colourless and odourless gas that does not significantly affect human health. However, in the presence of oxygen, NO can be oxidised to NO₂ which can have significant health effects including damage to the respiratory tract and increased susceptibility to respiratory infections and asthma. NO will be converted to NO₂ soon after leaving a vehicle exhaust.

CO is an odourless, colourless gas formed from the incomplete burning of fuels. It can be a common pollutant at the roadside and highest concentrations are found at the kerbside with concentrations decreasing rapidly with increasing distance from the road.

Sulfur in the burner fuel will convert to sulfur oxides during combustion, hence emissions of sulphur dioxide (SO₂) are directly related to the concentration of sulfur in the fuel and the burner operation has little effect on the percent of this. Diesel contains more sulfur than gas, as there is negligible sulfur content in Australian natural gas and LPG.

A summary of the relevant maximum ground level concentrations from Schedule 2 of the *South Australian Environment Protection (Air Quality) Policy 2016* is given in **Table 3**.

Table 3 Air Quality Impact Assessment Criteria for Combustion-Related Pollutants

Pollutant	Averaging Period	Maximum Concentration (µg/m ³)
Carbon monoxide (CO)	1-hour	31,240
	8-hours	11,250
Nitrogen dioxide (NO ₂)	1-hour	250
	Annual	60
Sulphur dioxide (SO ₂)	1-hour	570
	24-hours	230
	Annual	60

3.3 VOCs

VOCs are organic chemicals that have a high vapour pressure at ordinary room temperature. Their high vapour pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublime from the liquid or solid form of the compound and enter the surrounding air, a trait known as volatility. They include both human-made and naturally occurring chemical compounds.

The potential impacts of emissions of VOCs into the ambient environment include:

- human health impacts due to the toxicity of some individual VOCs
- odour nuisance impacts due to the odorous nature of some VOCs even at very low concentrations
- visibility and health impacts due to their contribution to the creation of photochemical smog under certain conditions.

VOC emissions from an asphalt plant include a wide range of individual chemical species. For the purposes of this assessment, emissions of VOCs have been assessed based on four indicator compounds:

- benzene
- toluene
- ethylbenzene
- xylenes

These compounds are often referred to as ‘BTEX’ and are commonly used as indicators of ambient VOC levels as they are emitted from a wide range of sources including industry and vehicle exhausts. They also provide an indication of both potential health impacts and odour nuisance impacts of VOC emissions. A summary of the relevant maximum ground level concentrations from Schedule 2 of the *South Australian Environment Protection (Air Quality) Policy 2016* is shown in **Table 4**.

Table 4 Air Quality Impact Assessment Criteria for BTEX

Pollutant	Averaging Period	Maximum Concentration ($\mu\text{g}/\text{m}^3$)
Benzene	3 minutes	58
Toluene	3 minutes	710
Ethylbenzene	3 minutes	15,800
Xylene	3 minutes	380

3.4 Odour

Impacts from odorous air contaminants are often nuisance-related rather than health-related. Odour performance goals guide decisions on odour management, but are generally not intended to achieve “no odour”.

The detectability of an odour is a sensory property that refers to the theoretical minimum concentration that produces an olfactory response or sensation. This point is called the *odour threshold* and defines one odour unit (ou). An odour goal of less than 1 ou would theoretically result in no odour impact being experienced.

In practice, the character of a particular odour can only be judged by the receiver's reaction to it, and preferably only compared to another odour under similar social and regional conditions. Based on the literature available, the level at which an odour is perceived to be a nuisance can range from 2 ou to 10 ou depending on a combination of the following factors:

- **Odour quality:** whether an odour results from a pure compound or from a mixture of compounds. Pure compounds tend to have a higher threshold (lower offensiveness) than a mixture of compounds.
- **Population sensitivity:** any given population contains individuals with a range of sensitivities to odour. The larger a population, the greater the number of sensitive individuals it contains.
- **Background level:** whether a given odour source, because of its location, is likely to contribute to a cumulative odour impact. In areas with more closely-located sources it may be necessary to apply a lower threshold to prevent offensive odour.
- **Public expectation:** whether a given community is tolerant of a particular type of odour and does not find it offensive, even at relatively high concentrations. For example, background agricultural odours may not be considered offensive until a higher threshold is reached than for odours from a landfill facility.
- **Source characteristics:** whether the odour is emitted from a stack (point source) or from an area (diffuse source). Generally, the components of point source emissions can be identified and treated more easily than diffuse sources. Emissions from point sources can be more easily controlled using control equipment. Point sources tend to be located in urban areas, while diffuse sources are more often located in rural locations.
- **Health effects:** whether a particular odour is likely to be associated with adverse health effects. In general, odours from agricultural activities are less likely to present a health risk than emissions from industrial facilities.

Odour performance goals need to be designed to take into account the range in sensitivities to odours within the community, and provide additional protection for individuals with a heightened response to odours, using a statistical approach which depends on the size of the affected population. As the affected population size increases, the number of sensitive individuals is also likely to increase, which suggests that more stringent goals are necessary in these situations. In addition, the potential for cumulative odour impacts in relatively sparsely populated areas can be more easily defined and assessed than in highly populated urban areas. It is often not possible or practical to determine and assess the cumulative odour impacts of all odour sources that may impact on a receptor in an urban environment. Therefore, the proposed odour performance goals allow for population density, cumulative impacts, anticipated odour levels during adverse meteorological conditions and community expectations of amenity.

A summary of the impact assessment criteria given for various population densities, as drawn from Schedule 3 of the *South Australian Environment Protection (Air Quality) Policy 2016*, is given in **Table 5**.

Table 5 Impact Assessment Criteria for Complex Mixtures of Odorous Air Pollutants

Population of Affected Community (number of receptors)	Impact Assessment Criteria for Complex Mixtures of Odours (ou) (3-minute average, 99.9 th percentile)
2,000 or more	2
350 – 1,999	4
60 – 349	6
12 – 59	8
Single residence (fewer than 12)	10

As a conservative measure, an odour criterion of 2 ou was adopted for this Project.

4 Existing Air Quality

In order to assess the potential air quality impacts of the Proposed Site emissions at nearby sensitive receptors, an understanding of the existing, or background, air environment is required. Background pollutant concentrations need to be estimated for each relevant pollutant so that they can be added to the incremental impacts predicted as a result of the proposed site operations to provide cumulative concentrations that can be compared against the air quality criteria identified in **Section 3**.

In addition to the regional background pollutant concentrations derived from the Monash AQMS data discussed below, existing local air quality impacts associated with the nearby Downer EDI asphalt plant have also been included in the modelling, as discussed in **Section 5.2**.

4.1 Regional Monitoring Station Data

Background air quality data for CO, NO₂, PM₁₀ and PM_{2.5} have been obtained from the Air Quality Monitoring Station (AQMSs) operated by the ACT EPA in Monash, approximately 5 km southwest of the Project Site. The ACT has never monitored sulfur dioxide (SO₂) as it is primarily an industrial pollutant and the ACT does not have a lot of heavy industry (ACT EPA 2019).

In addition to the data summarised below, the ACT Air Quality Report (ACT EPA 2019) notes that:

- Canberra's air quality in 2018 was generally good, with no exceedances of the AAQ NEPM standards for carbon monoxide, nitrogen dioxide or ozone at any of the ACT's monitoring stations;
- The major impacts on Canberra's air quality during 2018 came from the accumulation of particles from events such as hazard reduction burns and dust storms and human activities such as wood heaters; and
- Some significantly high particle levels, PM₁₀ in particular, occurred in 2018 as a result of more frequent dust storms due to the prolonged drought conditions experienced during this reporting period.

4.1.1 Particulate Matter

PM₁₀

The maximum 24-hour and annual average PM₁₀ concentrations recorded by the Monash AQMS from 2014 to 2018 are presented in **Table 6**. At the time of writing this report, the verified data for 2019 are not available yet.

As shown in **Table 6**, exceedances of the 24-hour average air quality guideline for PM₁₀ were recorded by the Monash AQMS in 2018. The ACT Air Quality Report (ACT EPA 2019) states that:

"While there were 13 exceedances of the standard recorded in the ACT during 2018, these were attributed to dust storms and were excluded when assessing compliance against the daily goal."

Table 6 Measured Ambient PM₁₀ Concentrations – Monash AQMS

Year	Maximum 24-hour Average (µg/m ³)	95 th Percentile 24-hour Average (µg/m ³)
2014	39.3	19.1
2015	49.4	19.5
2016	31.9	21.5
2017	28.3	20.5
2018	139.2	23.0
Criteria	50	

Source: ACT EPA 2019

As mentioned above, the recorded exceedances in 2018 were caused due to the extraordinary natural events (dust storms). The high background values have therefore been excluded and instead the 95th percentile 24-hour average for 2018 of 23.0 µg/m³ has been adopted as the regional background value.

PM_{2.5}

The maximum 24-hour and annual average PM_{2.5} concentrations recorded by the Monash AQMS from 2014 to 2018 are presented in **Table 7**. As shown in **Table 7**, exceedances of the 24-hour average air quality guideline for PM_{2.5} have been recorded by the Monash AQMS every year over the period reviewed. The ACT Air Quality Report (ACT EPA 2019) also states that:

“In the last few years the annual average PM_{2.5} readings for Monash and Florey have also increased and are now approaching the NEPM standard. Excluding temporal variation, this rise is more than likely because of an increase in wood heater use and/or installation as a result of the increasing cost of gas and electricity.”

Table 7 Measured Ambient PM_{2.5} Concentrations – Monash AQMS

Year	Maximum 24-hour Average (µg/m ³)	95 th Percentile 24-hour Average (µg/m ³)	Annual Average (µg/m ³)
2014	31.5	18.7	6.8
2015	33.8	19.0	7.4
2016	32.7	20.7	7.4
2017	35.2	22.5	7.7
2018	32.0	19.2	6.8
Criteria	25		8

Source: ACT EPA 2019

Similar to PM₁₀, to provide a conservative but realistic estimate of background 24-hour average PM_{2.5} concentrations, the 95th percentile 24-hour average for 2018 of 19.2 µg/m³ has been adopted as the regional background value. The annual average recorded in 2018 of 6.8 µg/m³ was adopted as the regional background annual average value.

4.1.2 Carbon Monoxide (CO)

The maximum 8-hour average CO concentrations recorded by the Monash AQMS for the years 2014-2018 are presented in **Table 8**. The measured ambient concentrations of CO were well below the relevant criterion for all years of available data.

Table 8 Measured Ambient CO Concentrations – Monash AQMS

Year	Maximum 8-hour average ($\mu\text{g}/\text{m}^3$)
2014	2,070
2015	2,185
2016	1,955
2017	1,840
2018	1,725
Criterion	11,250

Source: ACT EPA 2019

The maximum 8-hour average for 2018 has been adopted as regional background value.

4.1.3 Nitrogen Dioxide (NO₂)

The maximum 1-hour and annual average NO₂ concentrations recorded in Monash from 2014 to 2018 are presented in **Table 9**. At the time of writing this report, the verified data for 2019 is not available yet. The measured ambient concentrations of NO₂ were far below the relevant criteria for all years of available data.

Table 9 Measured Ambient NO₂ Concentrations – Monash AQMS

Year	Maximum 1-hour Average ($\mu\text{g}/\text{m}^3$)	Annual Average ($\mu\text{g}/\text{m}^3$)
2014	68	9
2015	60	8
2016	68	8
2017	58	8
2018	73	8
Criteria	250	60

Source: ACT EPA 2019

The maximum 1-hour average and annual average for 2018 has been adopted as regional background values.

4.1.4 BTEX and Odour

BTEX is not monitored by the Monash AQMS. Ambient concentrations of BTEX compounds are generally only measured at significant levels close to major industrial sources and at the kerbside of major highways. Given the absence of site-representative monitoring data and the expectation that VOC concentrations in the vicinity of the Project Site and nearest sensitive receptors will be well below the relevant criteria, the impacts of emissions from the Project have been assessed based on the predicted incremental impacts (ie. excluding background) only.

The odour modelling has considered the cumulative impacts of emissions from the Project as well as the existing Downer EDI asphalt plant. There are no other sources of odour with similar characteristics identified in the surrounding area.

4.2 Regional Background Levels Adopted for this Assessment

A summary of the ambient background concentrations adopted for this assessment based on the information presented above is provided in **Table 10**.

Table 10 Ambient Air Quality Environment for Assessment Purposes

Pollutant	Averaging Period	Background Value Adopted ($\mu\text{g}/\text{m}^3$)	Basis/Source
PM ₁₀	24-hours	23.0	95 th percentile as recorded at Monash AQMS
PM _{2.5}	24-hours	19.2	95 th percentile as recorded at Monash AQMS
	Annual	6.8	Annual average recorded at Monash AQMS
CO	1-hour	ND	No data available
	8-hours	1,725	Maximum as recorded at Monash AQMS
NO ₂	1-hour	73.0	Maximum as recorded at Monash AQMS
	Annual	8.0	Maximum as recorded at Monash AQMS
SO ₂	1-hour	0.0	Not measured in ACT due to negligible levels
	24-hours	0.0	Not measured in ACT due to negligible levels
	Annual	0.0	Not measured in ACT due to negligible levels
BTEX	3-minutes	0.0	Assumed to be negligible
Odour	3-minutes	0.0	No other sources of similar odours (besides the EDI Downer plant) identified

It is noted that estimated pollutant emissions from the existing Downer EDI asphalt plant (see **Section 5.2**), were included in the modelling as local background sources in addition to the ambient background values listed in **Table 10**.

5 Emission Estimation

5.1 Proposed Operations

5.1.1 Dryer Stack

Potential air emissions and relevant stack parameters for the dryer stack were estimated based on information provided by Capital Asphalt, publicly available emissions testing data from similar facilities and published air pollutant emission factors for asphalt plant operations. The emission rates was scaled as appropriate based on the ratio of the maximum hourly throughput of the Project facility (130 tph) and the referenced facility (240 tph).

Table 11 presents a summary of the stack parameters and emission rates used in the modelling for the main stack.

Table 11 Stack Parameters and Emission Rates – Dryer Stack (130 tph)

Parameter	Data	Unit	Reference/Base
Temperature	130	°C	Capital Asphalt
Stack height	12	m	Capital Asphalt
Exit velocity	21.5	m/s	Capital Asphalt
Stack diameter	1.05	m	Capital Asphalt
Emission Rates			
PM ₁₀	0.18	g/s	US EPA AP-42 emission factors for Batch Mix Asphalt Plants (USEPA 2004)
PM _{2.5}	0.18*	g/s	
CO	7.22	g/s	
NO _x	2.17	g/s	
SO ₂	1.59	g/s	
Benzene	0.0051	g/s	
Toluene	0.018	g/s	
Xylene	0.049	g/s	
Ethylbenzene	0.040	g/s	
Odour	4,473	ou/s	Scaled from emission rate presented in the publicly available Bushells Ridge Asphalt Plant AQIA (SLR 2016), which were in turn sourced from monitoring data from a facility in Rutherford, NSW. An odour emission rate of 8,257.5 ou.m ³ /s was estimated for the 240 tph Rutherford Asphalt Plant.

* Conservatively assumed all PM₁₀ is PM_{2.5}

5.1.2 Load Out Area

Potential odour emission rates from the load out operation were estimated based on publicly available measured data from similar operations (ie Rutherford Asphalt Plant) as documented in the Bushells Ridge Asphalt Plant AQIA (SLR 2016). The measured emission rates were scaled based on the ratio of the maximum hourly throughput of the proposed facility and the hourly throughput of the monitored facility. BTEX emissions were estimated based on published air pollutant emission factors for asphalt plant operations. **Table 12** presents a summary of parameters and emission rates for the load out area.

Table 12 Estimated Odour Emission Rates – Load Out Area

Parameter	Data	Unit	Reference/Base
Area	20.0	m ²	Site layout
Emission Rates			
Toluene	0.0045	g/s	US EPA AP-42 emission factors for Batch Mix Asphalt Plants (USEPA 2004)
Xylene	0.0026	g/s	
Ethylbenzene	0.012	g/s	
Odour	1,300	ou/s	Scaled from emission rate presented in the publicly available Bushells Ridge Asphalt Plant AQIA (SLR 2016).

Note: Fumes from the load out area will be extracted with the use of suction pipes, directed to the baghouse and released to the atmosphere via the baghouse stack.

5.1.3 Bitumen Tanks

BTEX emission rates from the on-site bitumen tanks were estimated based on publicly available measured data from similar operations (ie Rutherford Asphalt Plant) as documented in the Bushells Ridge Asphalt Plant AQIA (SLR 2016). The measured emission rates were scaled based on the ratio of the maximum hourly throughput of the proposed facility and the hourly throughput of the monitored facility. **Table 13** presents a summary of parameters and emission rates for the bitumen tanks.

Table 13 Estimated Emission Rates – Bitumen Tanks

Parameter	Data	Unit	Reference/Base
Area	105	m ²	Site layout
Emission Rates			
Benzene	0.0044	g/s	Scaled from emission rate presented in the publicly available Bushells Ridge Asphalt Plant AQIA (SLR 2016). The Rutherford Asphalt Plant recorded the following emission rates for a 240 tph plant: Benzene: 0.00547 g/s Toluene: 0.0195 g/s Xylene: 0.0421 g/s Ethylbenzene: 0.0149 g/s
Toluene	0.016	g/s	
Xylene	0.034	g/s	
Ethylbenzene	0.012	g/s	

Note: Bitumen tanks are to be equipped with Vapour Recovery – Stage 1 (VR 1), where any displaced air is diverted back into the delivery tanker during loading.

5.1.4 Fugitive Particulate Emission Sources

Fugitive particulate emissions have potential to be generated as a result of material handling, wind erosion from stockpiles and wheel-generated dust from onsite vehicle movements. Potential particulate emissions from the proposed facility were estimated based on the relevant AP-42 and NPI emission factors. A brief summary of the emission factors used and estimated particulate emissions for each potential source is presented in **Table 14**, with further details provided in **Appendix A**.

Table 14 Estimated Emission Rates – Fugitive Particulate Sources

Source	Emission Factors			Emission Rate (g/s)		Variables
	PM ₁₀	PM _{2.5}	Unit	PM ₁₀	PM _{2.5}	
Material handling	0.0001	0.00002	kg/t	0.0080	0.0012	Wind speed factor ¹ = 1.85 Moisture Content = 6% ²
Wheel Generated Dust – Paved Road	0.05	0.012	kg/VKT	0.012	0.0029	Silt loading = 3 g/m ² Average vehicle weight = 28 t Average vehicle capacity = 25 t Number of trucks = 57 trucks/day Onsite distance = 250 m Vehicle speed <30 km/hr = 40% control
Wind erosion (storage piles)	0.2	0.02	kg/ha/hr	0.00030	0.00003	Bins area = 71 m ² Stockpile area = 475 m ² Three sided enclosure = 90% control

¹ Wind speed factor = (Wind speed/2.2)^{1.3}

² Assumed similar to Bushells Ridge asphalt plant

5.2 Downer EDI Plant Emissions

Section 3.5 of the Guideline states:

Airshed modelling is required for an assessment when multiple sources of an air pollutant are present up to 10 km from the source of interest and where cumulative effects may need to be considered.

In line with the Guideline, the potential cumulative impacts associated with the combined emissions from the Proposed Site and the existing Downer EDI asphalt plant located 760 m to the northeast have been assessed by including estimated emissions for the Downer EDI Plant in the model. The location of the Downer EDI asphalt plant in relation to the Project Site operations is presented in **Figure 1**.

There is no publicly available information on the air emissions from the Downer EDI asphalt plant, so estimated emission rates were derived by scaling the emissions estimated for the Project Site by the plant throughputs ie (200 tph for the Downer EDI plant, compared to 130 tph for the Project Site).

The Downer EDI asphalt plant was modelled as a simplified volume source, with an initial horizontal dimension of 100 m, an initial vertical dimension of 5 m, and a release height of 1.2 m.

6 Atmospheric Dispersion Modelling

The air emissions from the Project Site have been modelled using a combination of the TAPM, CALMET and CALPUFF models. CALPUFF is a transport and dispersion model that ejects “puffs” of material emitted from modelled sources, simulating dispersion and transformation processes along the way. In doing so, it typically uses the fields generated by a meteorological pre-processor CALMET. Temporal and spatial variations in the meteorological fields selected are explicitly incorporated in the resulting distribution of puffs throughout a simulation period.

The primary output files from CALPUFF contain either hourly concentration or hourly deposition fluxes evaluated at selected receptor locations. The CALPOST post-processor is then used to process these files, producing tabulations that summarise results of the simulation for user-selected averaging periods.

The modelling methodology used is in line with the Guideline (SA EPA 2016).

6.1 Meteorological Modelling Methodology

To adequately characterise the dispersion meteorology of the Project Site, information is needed on the prevailing wind regime, atmospheric stability, mixing depth and other meteorological parameters.

The Bureau of Meteorology (BoM) maintain and publish data from automatic weather stations (AWS) throughout Australia. The closest such station to the Project Site is the Tuggeranong AWS, which is located approximately 6.5 km to the southwest of the Project Site.

Selection of Representative Year for Meteorological Modelling

While there is no guidance in the Guideline (SA EPA 2016) regarding selection of the meteorological data period to be used for modelling, standard industry practice in dispersion modelling is to analyse at least five consecutive years’ meteorological data to pick a representative one year period for modelling purposes.

To identify a representative meteorological year for use in this dispersion modelling study, the last five years of meteorological data (2015-2019) recorded by the Tuggeranong AWS were analysed against the five year average meteorological conditions. Specifically, the following parameters were analysed:

- Frequency and distribution of the predominant wind directions;
- Monthly average wind speeds; and
- Monthly average temperatures.

Based on this analysis, it was concluded that the year 2018 was suitably representative of the last five years of meteorological conditions experienced at the Tuggeranong AWS, and hence the 2018 calendar year was adopted for use in this assessment. A summary of the analysis is presented in **Appendix B**.

TAPM

The TAPM prognostic model, developed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), was used to generate the upper air data required for CALMET modelling.

TAPM predicts wind speed and direction, temperature, pressure, water vapour, cloud, rain water and turbulence. The program allows the user to generate synthetic observations by referencing databases (covering terrain, vegetation and soil type, sea surface temperature and synoptic scale meteorological analyses) which are subsequently used in the model input to generate one full year of hourly meteorological observations at user-defined levels within the atmosphere.

Additionally, TAPM may assimilate actual local wind observations so that they can optionally be included in a model solution. The wind speed and direction observations are used to realign the predicted solution towards the observation values. In this study, data from the BoM’s Tuggeranong AWS has been used to nudge (ie influence) the TAPM predictions. **Table 15** details the parameters used in the TAPM meteorological modelling for this assessment.

Table 15 Meteorological Parameters Used for this Study - TAPM

TAPM (v 4.0)	
Number of Grids (spacing)	4 (30 km, 10 km, 3 km and 1 km)
Number of Grid Points	25 x 25 x 25
Year of Analysis	2018
Centre of Analysis	695,665 m E 6,079,989 m S
Data Assimilation	Tuggeranong AWS

CALMET

CALMET is a meteorological model that develops hourly wind and other meteorological fields on a three-dimensional gridded modelling domain that are required as inputs to the CALPUFF dispersion model. Associated two dimensional fields such as mixing height, surface characteristics and dispersion properties are also included in the file produced by CALMET. The interpolated wind field is then modified within the model to account for the influences of topography, sea breeze, as well as differential heating and surface roughness associated with different land uses across the modelling domain. These modifications are applied to the winds at each grid point to develop a final wind field. The final hourly varying wind field thus reflects the influences of local topography and land uses.

The CALMET domain was modelled with a resolution of 150 m. The TAPM-generated 3-dimensional meteorological dataset (1 km resolution) was used as the ‘initial guess’ wind field and the local topography and available surface weather observations in the area were used to refine the wind field predetermined by TAPM. **Table 16** details the parameters used in the meteorological modelling to drive the CALMET model.

Table 16 Meteorological Parameters Used for this Study – CALMET (Version 6.1)

CALMET Domain	
Meteorological Grid	16 km × 16 km
Meteorological Grid Resolution	150 m
Initial Guess Filed	3D output from TAPM modelling
Topography	SRTM-derived 3-second (90 m) data sourced from Geosciences Australia
Surface station data	None

6.2 Meteorological Data Used in Modelling

To provide a summary of the meteorological conditions predicted at the Project Site using the methodology described in **Section 6.1**, a single-point, ground-level meteorological dataset was extracted from the 3-dimensional modelled dataset at the Project Site and is presented in this section.

Wind Speed and Direction

A summary of the annual wind behaviour predicted by CALMET for 2018 (extracted at the Project Site) is presented as a wind speed distribution plot in **Figure 6** and wind roses in **Figure 7**.

The wind roses show the frequency of occurrence of winds by direction and strength. The bars correspond to the 16 compass points (degrees from north). The bar at the top of each wind rose diagram represents winds blowing from the north (i.e. northerly winds), and so on. The length of the bar represents the frequency of occurrence of winds from that direction, and the widths of the bar sections correspond to wind speed categories, the narrowest representing the lightest winds. Thus, it is possible to visualise how often winds of a certain direction and strength occur over a long period, either for all hours of the day, or for particular periods during the day. The 'Beaufort Wind Scale' (consistent with terminology used by the BoM) was used to describe the wind speeds experienced at the Project Site, outlined in **Table 17**.

Table 17 Beaufort Wind Scale

Beaufort Scale #	Description	m/s	Description on land
0	Calm	0-0.5	Smoke rises vertically
1	Light air	0.5-1.5	Smoke drift indicates wind direction
2-3	Light/gentle breeze	1.5-5.3	Wind felt on face, leaves rustle, light flags extended, ordinary vanes moved by wind
4	Moderate winds	5.3-8.0	Raises dust and loose paper, small branches are moved
5	Fresh winds	8.0-10.8	Small trees in leaf begin to sway, crested wavelets form on inland waters
6	Strong winds	>10.8	Large branches in motion, whistling heard in telephone wires; umbrellas used with difficulty

Source: <http://www.bom.gov.au/lam/glossary/beaufort.shtml>

The annual wind rose in **Figure 7** shows that light/gentle breezes (between 1.5 m/s and 5.3 m/s) were predicted to predominate at the Project Site during 2018. Calm wind conditions were predicted to occur approximately 3% of the time throughout the modelling period. The relatively high percentage of light breeze and calm wind conditions predicted for the Project Site will tend to inhibit pollutant dispersion, potentially resulting in higher pollutant concentrations at the surrounding receptors.

The seasonal wind roses in **Figure 7** indicate that typically:

- In summer, winds predominantly blew from the southeasterly direction, with lower wind frequencies predicted from the southwest and south directions. Very low frequencies of winds from the northern and southwestern directions were predicted. On average, calm winds were predicted approximately 3% of the time during summer.

- In autumn, winds predominantly blew from the south and south-southwest directions. Very low frequencies of winds were predicted from the northeastern directions. On average, calm winds were predicted less than 3% of the time during autumn.
- In winter, winds predominantly blew from between the south and west-northwest directions, with very low frequency of winds from other directions. On average, calm winds were predicted approximately 3% of the time during winter.
- In spring, winds blew almost evenly from all directions, except from northeast, from where winds blew less than 2% of the time. On average, calm winds were predicted less than 2% of the time during spring.

Figure 6 CALMET-Predicted Annual Wind Speed Frequencies at the Project Site – 2018

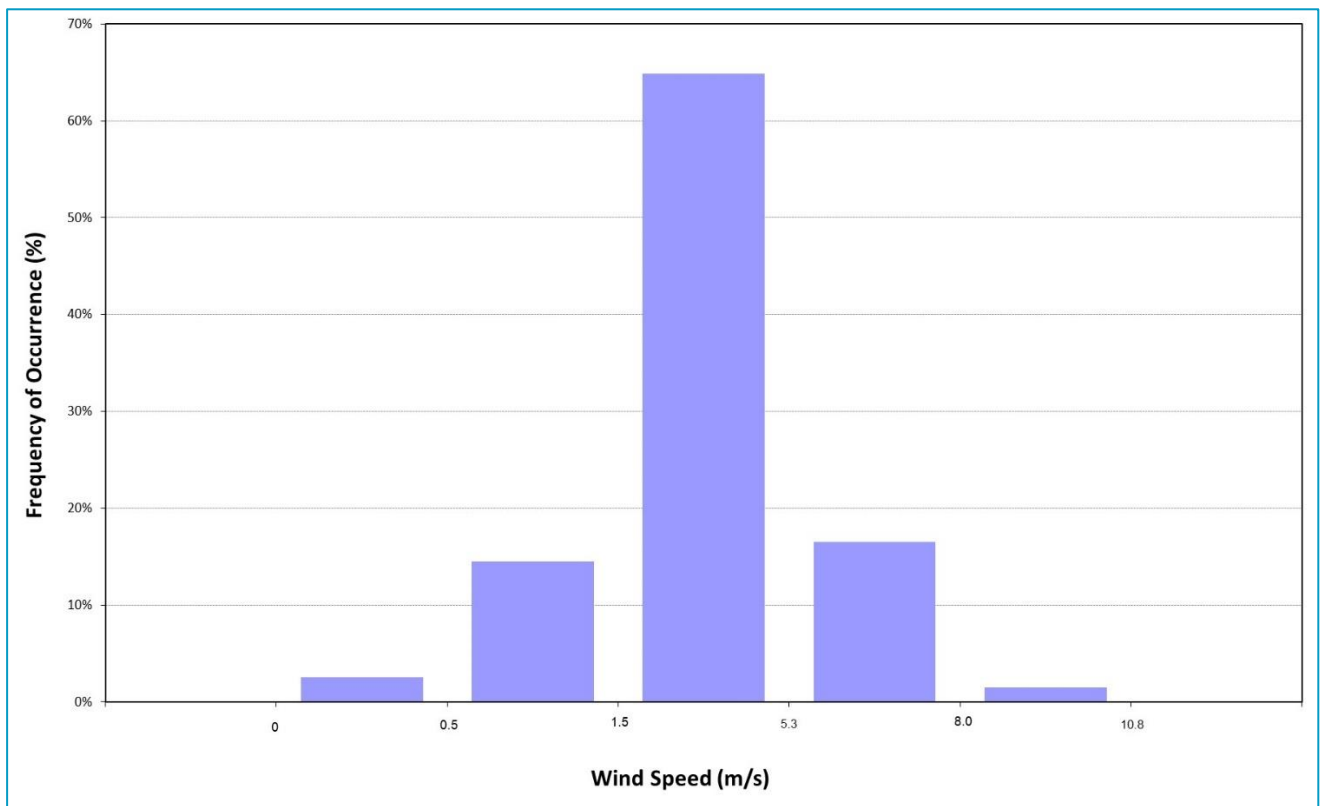
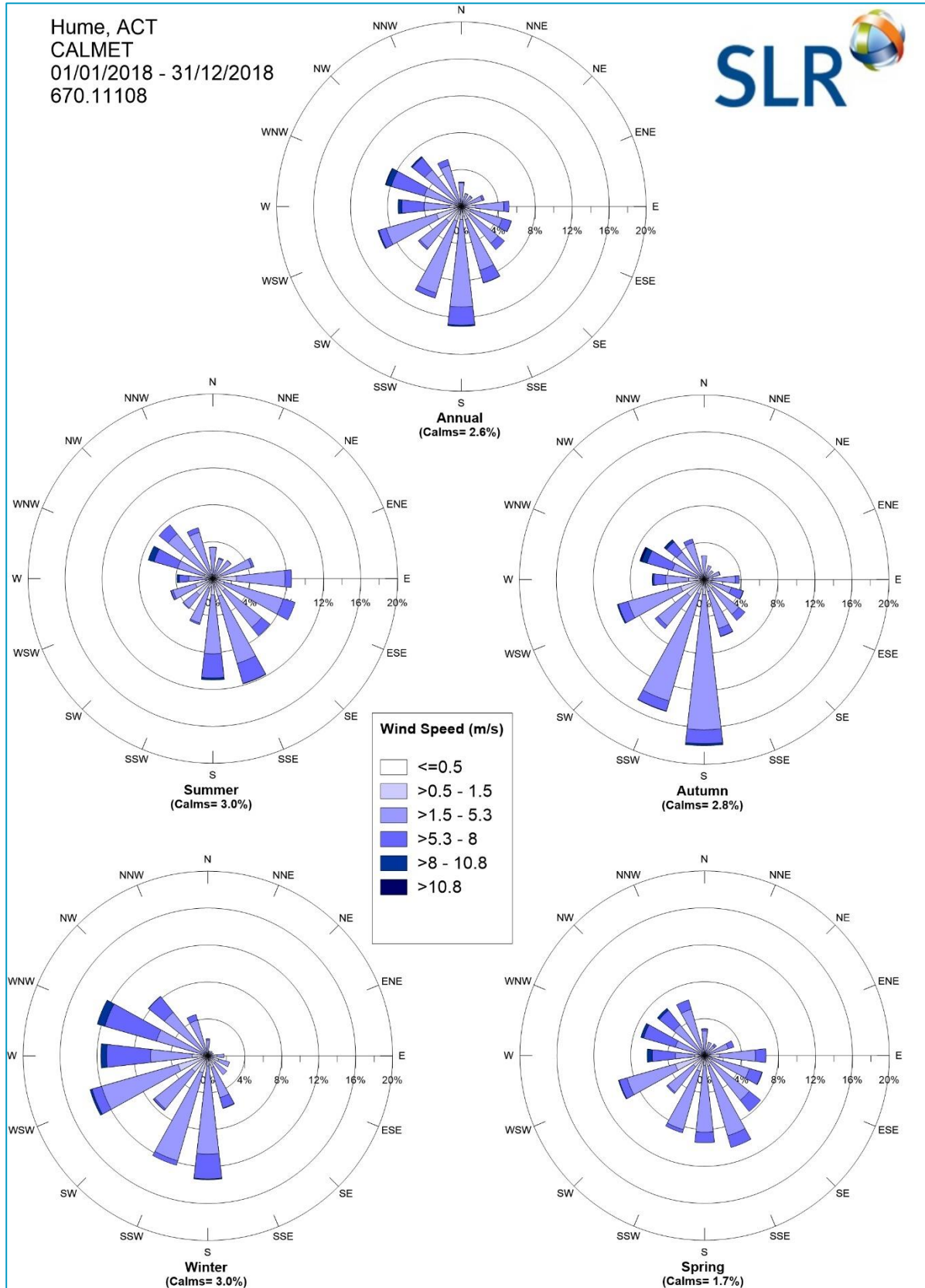


Figure 7 CALMET-Predicted Seasonal Wind Roses for the Project Site – 2018



Atmospheric Stability

Atmospheric stability refers to the tendency of the atmosphere to resist or enhance vertical motion. The Pasquill-Gifford-Turner (PGT) assignment scheme identifies six stability classes, A to F, to categorise the degree of atmospheric stability as follows:

- A = Extremely unstable conditions
- B = Moderately unstable conditions
- C = Slightly unstable conditions
- D = Neutral conditions
- E = Slightly stable conditions
- F = Moderately stable conditions

The meteorological conditions defining each PGT stability class are shown in **Table 18**.

Table 18 Meteorological Conditions Defining PGT Stability Classes

Surface Wind Speed (m/s)	Daytime Insolation			Night-Time Conditions	
	Strong	Moderate	Slight	Thin overcast or > 4/8 low cloud	<= 4/8 cloudiness
< 2	A	A - B	B	E	F
2 - 3	A - B	B	C	E	F
3 - 5	B	B - C	C	D	E
5 - 6	C	C - D	D	D	D
> 6	C	D	D	D	D

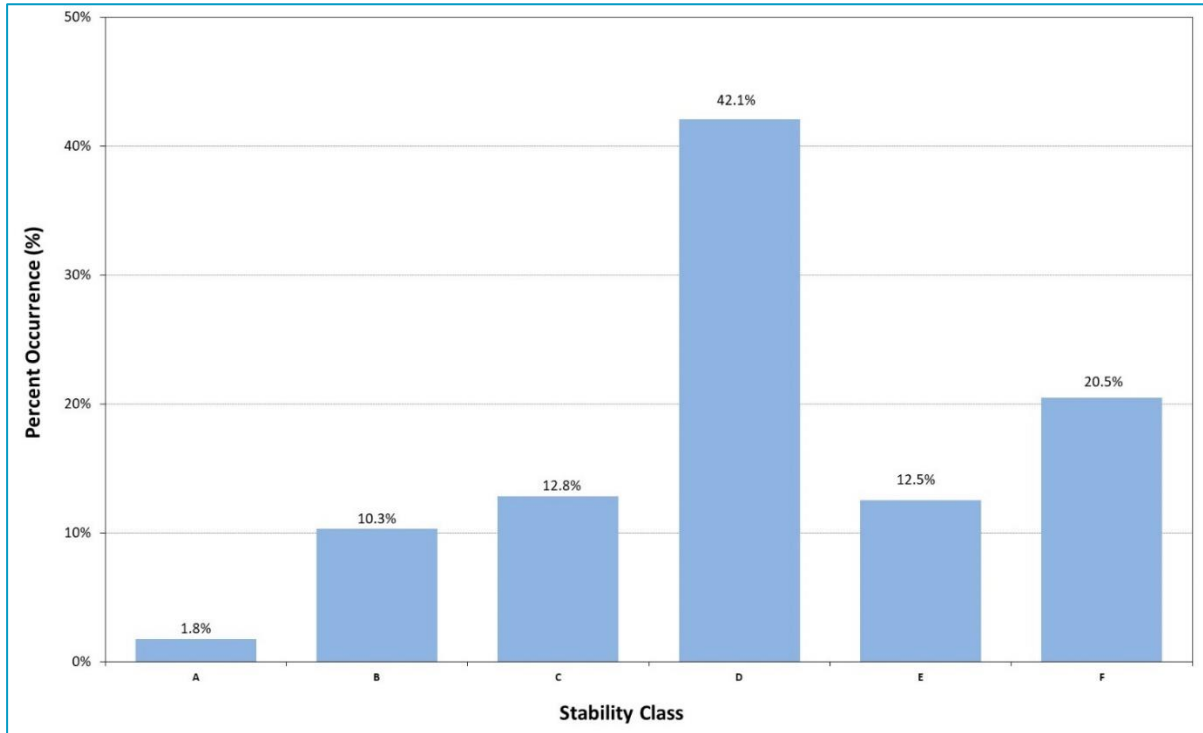
Source: NOAA 2018

Notes:

1. Strong insolation corresponds to sunny midday in midsummer in England; slight insolation to similar conditions in midwinter.
2. Night refers to the period from one hour before sunset to one hour after sunrise.
3. The neutral category D should also be used, regardless of wind speed, for overcast conditions during day or night and for any sky conditions during the hour preceding or following night as defined above.

The frequency of each stability class predicted by CALMET at the Project Site during the modelling period is presented in **Figure 8**. The results indicate a high frequency of conditions typical to Stability Class D. Stability Class D is indicative of neutral conditions, which can occur due to heavily overcast skies during the day as well as during night time when wind speeds are elevated, resulting in moderate pollutant dispersion.

Figure 8 CALMET-Predicted Stability Class Frequencies at the Project Site – 2018

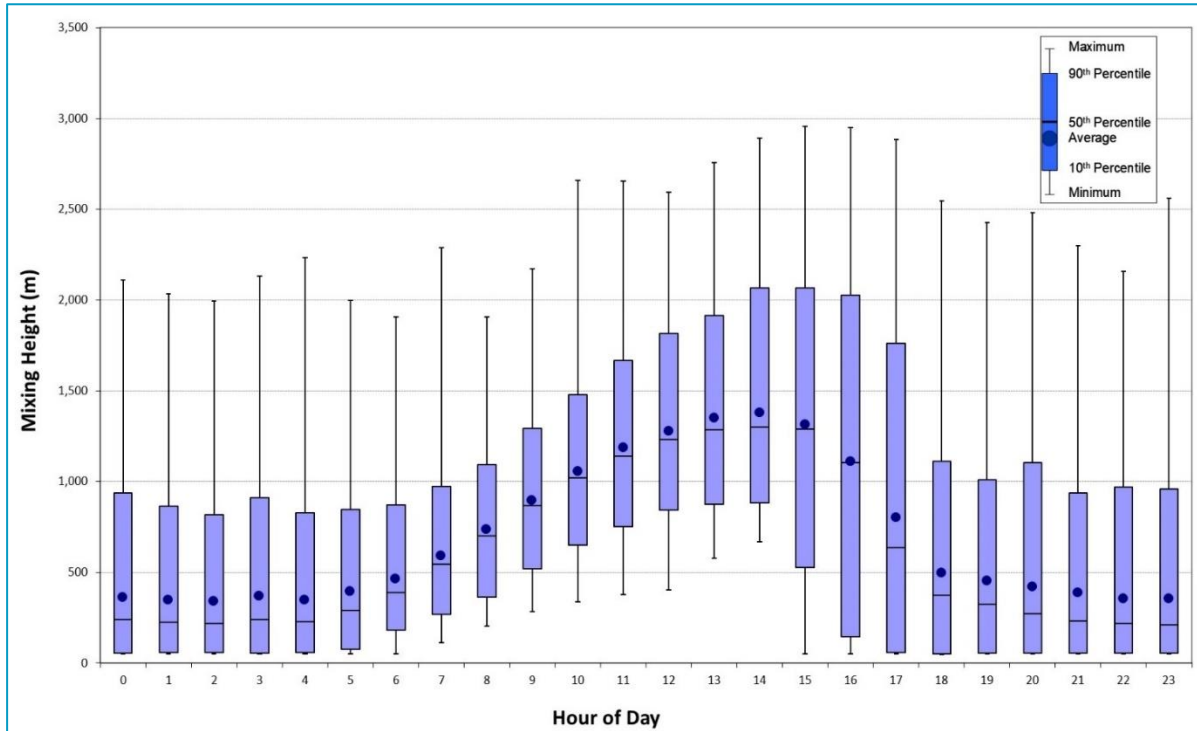


Mixing Heights

Diurnal variations in maximum and average mixing heights predicted by CALMET at the Project Site during the 2018 modelling period are illustrated in **Figure 9**.

As would be expected, an increase in mixing depth during the morning is apparent, arising due to the onset of vertical mixing following sunrise. Maximum mixing heights occur in the mid to late afternoon, due to the dissipation of ground based temperature inversions and growth of the convective mixing layer.

Figure 9 CALMET-Predicted Mixing Heights at the Project Site – 2018



6.3 Dispersion Modelling Methodology

Characterisation of Emission Sources

Fugitive particulate emissions from the material handling, and transportation activities were represented in the model by a series of volume sources, while wind erosion from exposed areas and odour and VOC emissions from the bitumen tanks and load out area were represented by area sources. Emissions from the dryer stack were modelled as a point source using the stack parameters outlined in **Table 11**.

The fugitive particulate emissions were modelled as:

- Fine particulates (FP < 2.5 μm);
- Course matter (2.5 μm <CM<10 μm); and
- Rest of the particulates (RE>10 μm).

These parameters were then grouped using CALPOST to predict PM_{2.5} and PM₁₀ concentrations at surrounding receptor locations. This approach provides the most realistic treatment of the differing size fractions, with the lighter, finer particulate matter being dispersed further than the heavier size fraction which settles out of the air more rapidly.

Based on the sensitivity of each activity to wind speed, an hourly varying emission file representing hourly FP, CM and RE emissions for each source was generated using the annual average emission rate estimated for each activity. Details of the algorithm used to generate the variable emission files are presented in **Appendix C**.

Hours of Operation

In compiling the hourly-varying emission files for the fugitive dust sources, the material handling activities were assumed to occur continuously during the hours of 6:00 am to 4:00 pm (see **Section 2.3**), while wind erosion was modelled as a 24 hour emission source dependent on the wind speed.

Emissions from the dryer stack, bitumen tanks and load out area were assumed to emit during the hours of 6:00 am to 4:00 pm only.

The emissions from the Downer EDI plant were modelled with the same hours of operation as the Project Site.

NO_x to NO₂ conversion

NO_x emitted from combustion processes mainly consist of nitrogen oxide (NO) with a small portion (approximately 10%) of nitrogen dioxide. In the atmosphere however, NO emitted from the source oxidises to NO₂ in the presence of ozone (O₃) and sunlight as it travels further from the source. The rate of oxidation depends on a number of parameters including the ambient O₃ concentration.

Information available in literature indicates that on road NO₂/NO_x ratios range between 0.25 to 0.35 (Bryant et al 2017). In lieu of any monitored NO₂/NO_x ratio data from the Monash AQMS, a 40% conversion has been assumed for this Project, as a conservative estimate.

Short-Term Averaging Times

For pollutants with short-term (sub-hourly) air quality impact assessment criteria, the short term concentrations have been calculated from the 1-hour average predictions using the formula cited in the *Guidance notes for using the regulatory air pollution model AERMOD in Victoria (VIC EPA 2013)* as follows:

$$C_t = C(t_0) \times (t_0/t)^{0.2}$$

Where

C_t = concentration for the longer time-averaging period

C_0 = concentration for the shorter time-averaging period

t_0 = longer averaging time

t = shorter averaging time

6.4 Accuracy of Air Dispersion Modelling

Atmospheric dispersion models represent a simplification of the many complex processes involved in the dispersion of pollutants in the atmosphere. To obtain good quality results it is important that the most appropriate model is used and the quality of the input data (meteorological, terrain, source characteristics) is adequate.

The main sources of uncertainty in dispersion models, and their effects, are discussed below.

- **Oversimplification of physics:** This can lead to both under-prediction and over-prediction of ground level pollutant concentrations. Errors are greater in Gaussian plume models as they do not include the effects of non-steady-state meteorology (ie spatially- and temporally-varying meteorology).
- **Errors in emission rates:** Ground level concentrations are proportional to the pollutant emission rate. In addition, most modelling studies assume constant worst case emission levels or are based on the results of a small number of stack tests, however operations (and thus emissions) are often quite variable.
- **Errors in source parameters:** Plume rise is affected by source dimensions, temperature and exit velocity. Inaccuracies in these values will contribute to errors in the predicted height of the plume centreline and thus ground level pollutant concentrations. As this study involves emissions of particulate from non-buoyant ground level sources, plume buoyancy factors will be negligible. However, inaccuracies in source location etc can potentially impact on the results of the modelling.
- **Errors in wind direction and wind speed:** Wind direction affects the direction of plume travel, while wind speed affects plume rise and dilution of plume. Errors in these parameters can result in errors in the predicted distance from the source of the plume impact, and magnitude of that impact. In addition, aloft wind directions commonly differ from surface wind directions. The preference to use rugged meteorological instruments to reduce maintenance requirements also means that light winds are often not well characterised.
- **Errors in mixing height:** If the plume elevation reaches 80% or more of the mixing height, more interaction will occur, and it becomes increasingly important to properly characterise the depth of the mixed layer as well as the strength of the upper air inversion.
- **Errors in temperature:** Ambient temperature affects plume buoyancy, so inaccuracies in the temperature data can result in potential errors in the predicted distance from the source of the plume impact, and magnitude of that impact.
- **Errors in stability estimates:** Gaussian plume models use estimates of stability class, and 3D models use explicit vertical profiles of temperature and wind (which are used directly or indirectly to estimate stability class for Gaussian models). In either case, errors in these parameters can cause either under-prediction or over-prediction of ground level concentrations. For example, if an error is made of one stability class, then the computed concentrations can be off by 50% or more.

The US EPA makes the following statement in its Modelling Guideline (TRC 2011) on the relative accuracy of models:

“Models are more reliable for estimating longer time-averaged concentrations than for estimating short-term concentrations at specific locations; and the models are reasonably reliable in estimating the magnitude of highest concentrations occurring sometime, somewhere within an area. For example, errors in highest estimated concentrations of ± 10 to 40% are found to be typical, i.e., certainly well within the often quoted factor-of-two accuracy that has long been recognised for these models. However estimates of concentrations that occur at a specific time and site, are poorly correlated with actually observed concentrations and are much less reliable.”

This study utilises the CALPUFF dispersion model in full 3D mode, incorporating the 3D meteorological output from CALMET. The meteorological dataset and emissions inventory developed for use in this assessment were compiled to provide a robust and conservative assessment of potential downwind impacts due to air emissions from the Project Site operations.

7 Assessment of Air Quality Impacts

As discussed in **Section 5.1**, emissions to air from the Project Site were estimated based on the maximum hourly throughput and data from similar operations where available, or relevant published emission factors. The CALPUFF dispersion model, utilising a 1-year dataset of site-representative 3-dimensional meteorological data generated by TAPM and CALMET, was then used to predict potential worst case off site impacts at surrounding sensitive receptors based on the estimated emission rates and source parameters presented in **Section 5.1**. The use of this approach is likely to significantly overestimate the annual average downwind air pollutant concentrations as the Project Site will not operate at maximum capacity on every day of the year.

The results of the dispersion modelling study are presented in the following sections.

7.1 PM₁₀

Table 19 presents the maximum 24-hour average incremental and cumulative PM₁₀ concentrations predicted at surrounding residential and industrial receptor locations. Regional background concentrations have been included as outlined in **Section 4.2**. Contour plots of the predicted incremental PM₁₀ concentrations are presented in **Appendix A**.

Table 19 Predicted PM₁₀ Concentrations at Sensitive Receptors

Receptor ID	Maximum 24-Hour Average (µg/m ³)			
	Project Site Increment	Downer EDI Increment	Regional Background	Cumulative
R1	0.2	0.1	23.0	23.3
R2	0.3	0.1	23.0	23.3
R3	0.3	0.2	23.0	23.3
R4	0.6	0.3	23.0	23.6
R5	0.6	0.6	23.0	23.6
R6	0.4	1.2	23.0	24.2
R7	0.3	2.4	23.0	25.4
R8	0.3	3.3	23.0	26.3
I1	3.2	0.3	23.0	26.2
I2	1.3	0.3	23.0	24.4
I3	2.4	0.2	23.0	25.6
I4	2.4	0.4	23.0	25.4
I5	5.6	0.4	23.0	28.6
Criteria				50.0

Table 19 shows that the cumulative 24-hour average PM₁₀ concentrations are predicted to be below the relevant criterion at all sensitive receptor locations modelled. It is noted that the cumulative predictions do not necessarily match the sum of the Project impacts plus Downer EDI impacts plus background, because the maximum predicted 24-hour average impacts from the Project and the Downer EDI plant may not occur on the same day.

7.2 PM_{2.5}

Table 20 presents maximum 24-hour average incremental and cumulative PM_{2.5} concentrations at surrounding residential and industrial receptor locations. The contour plots of predicted incremental PM_{2.5} concentrations are presented in **Appendix A**.

Table 20 Predicted Maximum 24-Hour Average PM_{2.5} Concentrations at Sensitive Receptors

Receptor ID	Maximum 24-Hour Average (µg/m ³)			
	Project Site Increment	Downer EDI Increment	Regional Background	Cumulative
R1	0.2	0.1	19.2	19.4
R2	0.3	0.1	19.2	19.5
R3	0.3	0.2	19.2	19.5
R4	0.6	0.3	19.2	19.8
R5	0.6	0.5	19.2	19.8
R6	0.4	1.1	19.2	20.3
R7	0.3	2.2	19.2	21.4
R8	0.3	2.9	19.2	22.2
I1	2.3	0.3	19.2	21.5
I2	1.1	0.2	19.2	20.3
I3	2.1	0.2	19.2	21.4
I4	2.0	0.4	19.2	21.2
I5	4.6	0.4	19.2	23.8
Criteria				25.0

Table 20 shows that the cumulative maximum 24-hour average PM_{2.5} concentrations are predicted to be below the relevant criterion at all residential and industrial receptor locations. It is noted that the cumulative predictions do not necessarily match the sum of the Project impacts plus Downer EDI impacts plus background, because the maximum predicted 24-hour average impacts from the Project and the Downer EDI plant may not occur on the same day.

The cumulative concentrations at these receptors are dominated by the regional background. The contribution of the Project Site towards the resultant cumulative concentrations is approximately 1% only.

Table 21 presents the incremental and cumulative annual average PM_{2.5} concentrations predicted at surrounding residential and industrial receptor locations. Contour plots of the predicted incremental PM_{2.5} concentrations are presented in **Appendix A**.

The modelling results showed that the predicted cumulative annual average PM_{2.5} concentrations are below the relevant ambient air quality criteria at all receptor locations modelled.

Table 21 Predicted Annual Average PM_{2.5} Concentrations at Sensitive Receptors

Receptor ID	Annual Average (µg/m ³)			
	Project Site Increment	Downer EDI Increment	Regional Background	Cumulative
R1	<0.1	<0.1	6.8	<7.0
R2	<0.1	<0.1	6.8	<7.0
R3	<0.1	<0.1	6.8	<7.0
R4	0.1	<0.1	6.8	<7.0
R5	0.1	0.1	6.8	7.0
R6	0.1	0.3	6.8	7.1
R7	0.0	0.4	6.8	7.3
R8	0.0	0.3	6.8	7.1
I1	0.7	<0.1	6.8	<7.6
I2	0.1	<0.1	6.8	<7.0
I3	0.2	<0.1	6.8	<7.0
I4	0.2	<0.1	6.8	<7.0
I5	0.6	<0.1	6.8	<7.5
Criteria				8

7.3 NO₂

Table 22 presents the incremental and cumulative maximum 1-hour average NO₂ concentrations predicted at surrounding residential and industrial receptor locations. Contour plots of the predicted incremental NO_x concentrations are presented in **Appendix A**. To simplify the analysis, and as the predictions are well below the criterion, the cumulative impacts were calculated by adding the maximum incremental predictions for each site to the estimated regional background value. This is very conservative as it assumes the peak impacts from each site occur on the same hour.

The modelling results showed that the predicted cumulative maximum 1-hour and annual average NO₂ concentrations are below the relevant ambient air quality criteria at all receptor locations modelled.

Table 22 Predicted NO₂ Concentrations at Sensitive Receptors

Receptor ID	Maximum 1-Hour Average (µg/m ³)			
	Project Site Increment	Downer EDI Increment	Regional Background	Cumulative
R1	4.1	2.8	52.6	59
R2	4.0	4.2	52.6	61
R3	5.5	6.2	52.6	64
R4	11.4	10.1	52.6	74
R5	7.1	21.6	52.6	81
R6	7.7	48.7	52.6	109
R7	7.2	65.9	52.6	126
R8	5.1	154.9	52.6	213
I1	32.4	9.5	52.6	95
I2	18.6	7.4	52.6	79
I3	22.2	9.1	52.6	84
I4	21.2	35.1	52.6	109
I5	28.0	12.9	52.6	94
Criteria				250

Table 23 presents the incremental and cumulative annual average NO₂ concentrations predicted at surrounding residential and industrial receptor locations. Contour plots of the predicted incremental NO_x concentrations are presented in **Appendix A**.

The modelling results showed that the predicted cumulative maximum 1-hour and annual average NO₂ concentrations are below the relevant ambient air quality criteria at all receptor locations modelled.

Table 23 Predicted NO₂ Concentrations at Sensitive Receptors

Receptor ID	Annual Average (µg/m ³)			
	Project Site Increment	Downer EDI Increment	Regional Background	Cumulative
R1	0.1	<0.1	7.5	7.6
R2	0.1	<0.1	7.5	7.7
R3	0.2	0.1	7.5	7.8
R4	0.3	0.1	7.5	7.9
R5	0.2	0.4	7.5	8.1
R6	0.1	1.3	7.5	9.0
R7	0.1	2.1	7.5	9.7
R8	0.1	1.4	7.5	8.9
I1	3.0	0.1	7.5	10.6

Receptor ID	Annual Average ($\mu\text{g}/\text{m}^3$)			
	Project Site Increment	Downer EDI Increment	Regional Background	Cumulative
I2	0.5	0.1	7.5	8.2
I3	0.5	0.1	7.5	8.1
I4	0.4	0.1	7.5	8.1
I5	1.1	0.1	7.5	8.8
Criteria				60

7.4 CO

Table 24 presents the maximum incremental and cumulative 1-hour average CO concentrations predicted at surrounding residential and industrial receptor locations and **Table 25** presents the maximum incremental and cumulative 8-hour average CO concentrations predicted. Contour plots of the predicted incremental CO concentrations are presented in **Appendix A**.

No background monitoring data is available for 1-hour average CO concentrations (see **Section 4.2**) hence no background values are included in the cumulative 1-hour predictions. As for NO_2 , the cumulative CO impacts were calculated by adding the maximum incremental predictions for each site, which conservatively assumes the peak impacts from each site occur over the same period. Based on the predicted results, it can be concluded that emissions from the Project would not cause any exceedances of relevant CO criteria at any surrounding sensitive receptor locations.

Table 24 Predicted 1-Hour Average CO Concentrations at Sensitive Receptors

Receptor ID	Maximum 1-Hour Average ($\mu\text{g}/\text{m}^3$)			
	Project Site Increment	Downer EDI Increment	Regional Background	Cumulative
R1	34	23	ND	57
R2	33	35	ND	68
R3	46	51	ND	97
R4	95	84	ND	179
R5	59	180	ND	239
R6	64	405	ND	469
R7	60	548	ND	608
R8	42	1,289	ND	1,331
I1	270	79	ND	349
I2	155	62	ND	217
I3	186	76	ND	261
I4	177	292	ND	469
I5	234	107	ND	341
Criteria				31,240

Table 25 Predicted 8-Hour Average CO Concentrations at Sensitive Receptors

Receptor ID	Maximum 8-Hour Average ($\mu\text{g}/\text{m}^3$)			
	Project Site Increment	Downer EDI Increment	Regional Background	Cumulative
R1	16	9	1,725	1,749
R2	18	13	1,725	1,756
R3	24	18	1,725	1,767
R4	35	31	1,725	1,791
R5	19	66	1,725	1,810
R6	14	121	1,725	1,860
R7	14	143	1,725	1,882
R8	11	294	1,725	2,030
I1	200	29	1,725	1,954
I2	105	22	1,725	1,852
I3	134	25	1,725	1,884
I4	92	40	1,725	1,857
I5	172	38	1,725	1,935
Criteria				11,250

7.5 SO₂

Table 26 presents the incremental and cumulative maximum 1-hour average, maximum 24-hour average and annual average SO₂ concentrations predicted at surrounding residential and industrial receptor locations. Contour plots of the predicted incremental SO₂ concentrations are presented in **Appendix A**. Background concentrations are assumed to be negligible as discussed in **Section 4.1**.

The modelling results show that that cumulative SO₂ concentrations are predicted to be well below the relevant criteria at all surrounding receptor locations.

Table 26 Predicted SO₂ Concentrations at Residential Receptors

Receptor ID	Maximum 1-hour (µg/m ³)			Maximum 24-hour (µg/m ³)			Annual Average (µg/m ³)		
	Increment (Project)	Increment (Downer)	Cumulative	Increment (Project)	Increment (Downer)	Cumulative	Increment (Project)	Increment (Downer)	Cumulative
	1-Hour	1-Hour	1-Hour	24-Hour	24-Hour	24-Hour	Annual	Annual	Annual
R1	7.5	5.1	13	1.2	0.8	2	0.1	0.1	0.2
R2	7.3	7.7	15	1.7	1.1	3	0.2	0.1	0.3
R3	10.0	11.3	21	2.2	1.5	4	0.3	0.1	0
R4	20.9	18.4	39	4.0	2.3	6	0.6	0.2	1
R5	13.0	39.6	53	2.3	4.9	7	0.4	0.7	1
R6	14.1	89.2	103	1.5	9.7	11	0.2	2.4	3
R7	13.2	120.7	134	1.3	19.4	21	0.1	3.8	4
R8	9.3	283.8	293	0.9	25.9	27	0.1	2.5	3
I1	59.3	17.5	77	16.7	2.7	19	5.4	0.2	6
I2	34.0	13.6	48	7.8	2.1	10	1.0	0.2	1
I3	40.8	16.7	57	11.8	1.9	14	0.9	0.2	1
I4	38.8	64.4	103	8.9	3.5	12	0.8	0.2	1
I5	51.4	23.6	75	18.1	3.2	21	2.1	0.3	2
Criteria			570			230			60

7.6 BTEX Compounds

Predicted incremental concentrations of BTEX compounds at surrounding residential and industrial receptor locations are presented in **Table 27**. As discussed in **Section 4**, no background data are available for these compounds at any nearby monitoring stations and background levels have been assumed to be negligible.

Based on the modelling results presented in **Table 27**, it is concluded that air emissions from the Project would not result in any exceedances of relevant ambient air quality criteria for any of the BTEX compounds at any surrounding residential or industrial receptor locations.

Table 27 Predicted Maximum Incremental 3-Minute Average Concentrations of BTEX Compounds

Receptor ID	Benzene		Toluene		Ethylbenzene		Xylene	
	Increment (Project)	Increment (Downer)	Increment (Project)	Increment (Downer)	Increment (Project)	Increment (Downer)	Increment (Project)	Increment (Downer)
	3-minute	3-minute	3-minute	3-minute	3-minute	3-minute	3-minute	3-minute
R1	0.1	0.1	0.5	0.2	0.3	0.5	0.7	0.4
R2	0.1	0.1	0.6	0.3	0.4	0.8	0.8	0.5
R3	0.2	0.1	0.8	0.5	0.6	1.1	1.3	0.8
R4	0.3	0.2	1.6	0.8	1.0	1.8	2.3	1.3
R5	0.2	0.4	1.0	1.7	0.9	3.8	1.7	2.8
R6	0.2	1.0	1.1	3.8	1.0	8.7	1.9	6.2
R7	0.2	1.3	1.2	5.2	1.1	11.7	2.0	8.4
R8	0.2	3.1	1.1	12.1	1.0	27.6	1.9	19.8
I1	2.1	0.2	9.5	0.7	8.6	1.7	16.9	1.2
I2	1.0	0.1	4.6	0.6	4.2	1.3	8.0	0.9
I3	4.4	0.2	20.0	0.7	18.9	1.6	36.2	1.2
I4	2.6	0.7	13.3	2.8	11.6	6.3	21.4	4.5
I5	5.5	0.3	27.1	1.0	24.3	2.3	45.3	1.6
Criterion	58	58	710	710	15,800	15,800	380	380

7.7 Odour

Table 28 presents the ground level odour concentrations (99.9th percentile, 3-minute averaging period) predicted by the dispersion modelling at the nearest residential and industrial receptor locations for the Project and Downer EDI operations.

It is noted that the cumulative predictions do not necessarily match the sum of the Project impacts plus Downer EDI impacts because the maximum predicted impacts from the Project and the Downer EDI plant may not occur on the same hour.

A contour plot presenting the predicted odour concentrations across the modelling domain is presented in **Appendix A**.

Table 28 Predicted Odour Concentrations at Sensitive Receptors

Receptor ID	(99.9 th Percentile 3-minute Average)		
	Project Site Increment	Downer EDI Increment	Cumulative
R1	<0.1	<0.1	<0.1
R2	<0.1	<0.1	<0.1
R3	0.1	0.1	0.1
R4	0.1	0.1	0.1
R5	0.1	0.2	0.2
R6	0.1	0.4	0.4
R7	0.1	0.5	0.5
R8	<0.1	1.1	1.1
I1	0.5	0.1	0.5
I2	0.3	0.1	0.3
I3	0.4	0.1	0.4
I4	0.4	0.1	0.4
I5	1.2	0.1	1.2
Criterion	2.0	2.0	2.0

Table 28 shows that the odour concentrations predicted at all of the nearest sensitive receptors are below the adopted odour criterion of 2 ou.

Based on the results of the modelling, it is concluded that operation of the Project is unlikely to cause odour nuisance at any surrounding residential receptors.

8 Mitigation and Management

The following mitigation and management measures will be implemented at the Project Site to minimise off-site air quality and odour impacts during the operational phase.

- The asphalt plant will be fitted with pollution control equipment to minimise off site air quality impacts. Specifically:
 - Emissions from the dryer will be controlled by the baghouse, which will remove particulate from the exhaust gas stream prior to discharge to atmosphere.
 - The dryer will be fitted with pressure sensors and an alarm system to warn of any broken filter bags.
 - Fumes from the load out area will be extracted with the use of suction pipes, directed to the baghouse and released to the atmosphere via the baghouse stack.
- Water sprays will be used to minimise emissions from on-site stockpiles and material handling.
- Hardstand areas and driveways will be kept clean by use of a sweeper to minimise dust from wind erosion and vehicle movements.
- A vehicle speed limit of 30 km/hr will be imposed across all areas of the site.
- All on-site, fixed and mobile diesel powered plant will be maintained in accordance with the manufacturers' specifications.

9 Conclusions

SLR has been commissioned by Capital Asphalt to undertake an Air Quality Impact Assessment (AQIA) for a proposed asphalt plant (the Project) to be located at 5 Paspaley Street (Block 67 Section 22), Hume in the Australian Capital Territory (ACT) (the Project Site).

A qualitative risk based air quality assessment was completed for the Project by Robson Environmental in November 2019. During the public exhibition, ERM Consulting, on behalf of Village Building Company (VBC) recommended that an AQIA be completed in accordance with South Australian EPA Ambient Air Quality Assessment Guideline.

This AQIA has been prepared in accordance with the South Australian EPA's *Ambient Air Quality Assessment Guideline* (SA EPA 2016) (hereon 'the Guideline'). The ground level criteria for the pollutants assessed in this AQIA have been sourced from the *South Australian Environment Protection (Air Quality) Policy 2016*.

Potential emissions to air from the Project operations were estimated based on measured data from similar facilities (where available) and appropriate NPI or USEPA AP-42 emission factors/equations. The emission calculations were based on a maximum potential throughput of 130 tph. The emissions investigated in this assessment included odour, particulate matter (as PM₁₀ and PM_{2.5}), NO_x, CO, SO₂ and VOCs (benzene, toluene, ethyl benzene and xylenes).

The estimated emissions from the site during the operational phase were modelled based on the plant operating at maximum production of 130 tph, between the hours of 6:00 am to 4:00 pm Monday to Friday to assess the potential impacts at surrounding sensitive receptors.

The modelling results indicated that the cumulative concentrations of all pollutants are predicted to be below the relevant criteria at all sensitive receptor locations modelled.

Based on the results of the modelling, it is concluded that air emissions from the operation of the Project would not have a significant impact on local air quality, and would not be anticipated to give rise to any adverse amenity (odour) or health impacts in the surrounding area.

Mitigation measures that will be incorporated in the design of the plant to minimise air emissions include use of a baghouse to control particulate emissions from the dryer.

Fugitive dust emissions will be minimised during the operational phase by:

- Installation of water sprays on the on-site stockpiles and material handling areas.
- Keeping paved roadways, hardstand areas and driveways clean by use of a sweeper to minimise dust from wind erosion and vehicle movements.
- Implementation of a 30 km/hr vehicle speed limit across all areas of the site.

Fugitive VOC/BTEX emissions will be minimised during the operational phase by:

- Extraction of fumes from the load out area with the use of suction pipes. These emissions will be directed to the baghouse and released to the atmosphere via the baghouse stack.

All on-site, fixed and mobile diesel powered plant will be maintained in accordance with the manufacturers' specifications.

It is noted that the modelling results presented in this report are based on estimated odour emission rates for the Project, which are in turn based on a limited number of emission tests from a similar facility. Given the limited data available on the potential odour emission from the plant, there is potential for odour and other air pollutant emission rates from the proposed plant to vary slightly from the emission rates used in this assessment. To account for this limitation, and to provide a conservative assessment of potential off-site impacts, a number of conservative assumptions were made (eg, plant operating at maximum throughput on every day of the year) and not all mitigation measures adopted by Capital Asphalt were quantified as part of the emissions estimation calculations.

10 References

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- USEPA 2004, United States Environmental Protection Authority, Compilation of Air Pollutant Emission Factors AP-42 - Chapter 11.1 Hot Mix Asphalt Plants, March 2004.
- VIC EPA 2013, Guidance notes for using the regulatory air pollution model AERMOD in Victoria, Publication number 1551, October 2013, authorised and published by EPA Victoria, 200 Victoria Street, Carlton.

APPENDIX A

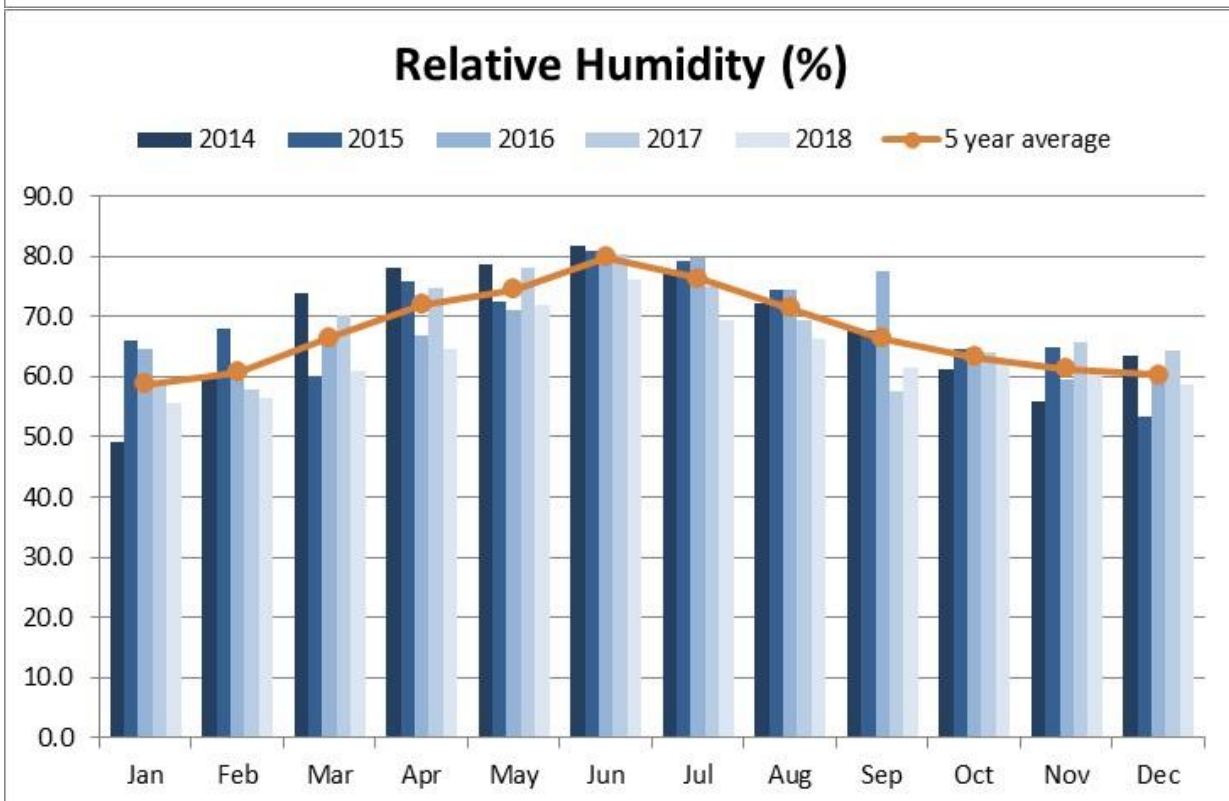
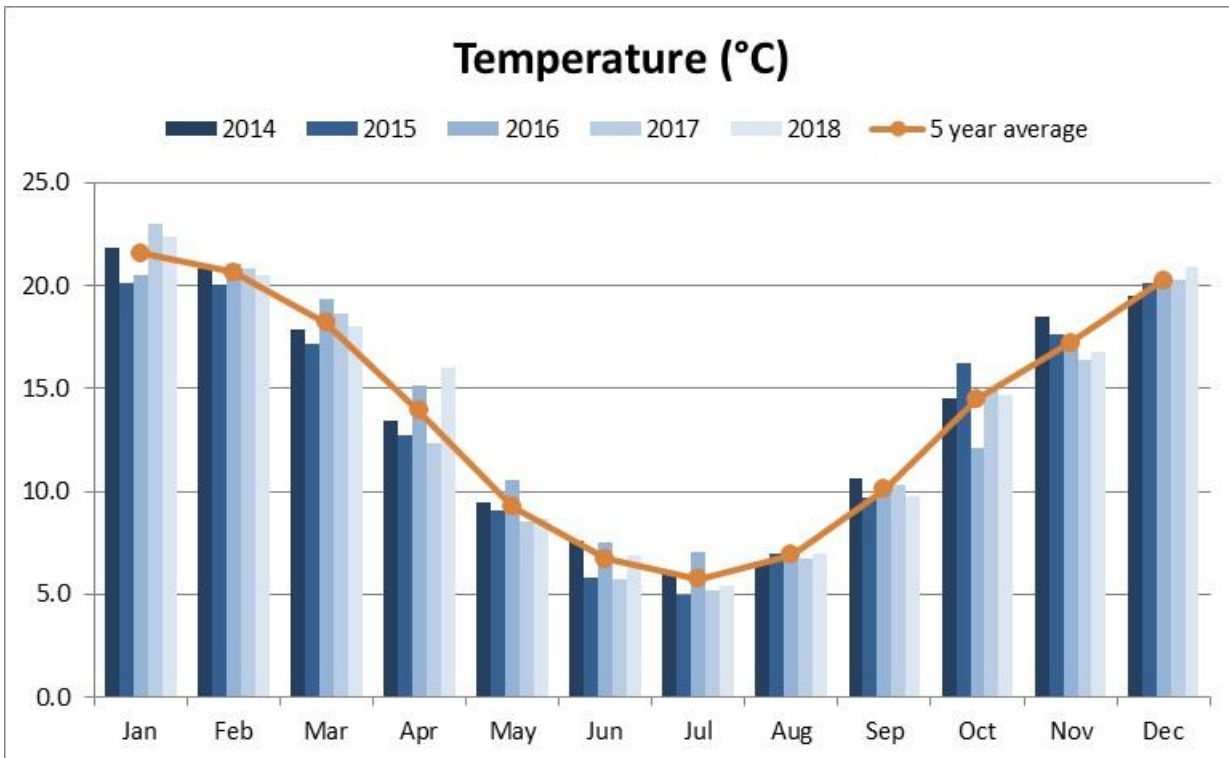
EMISSION FACTORS

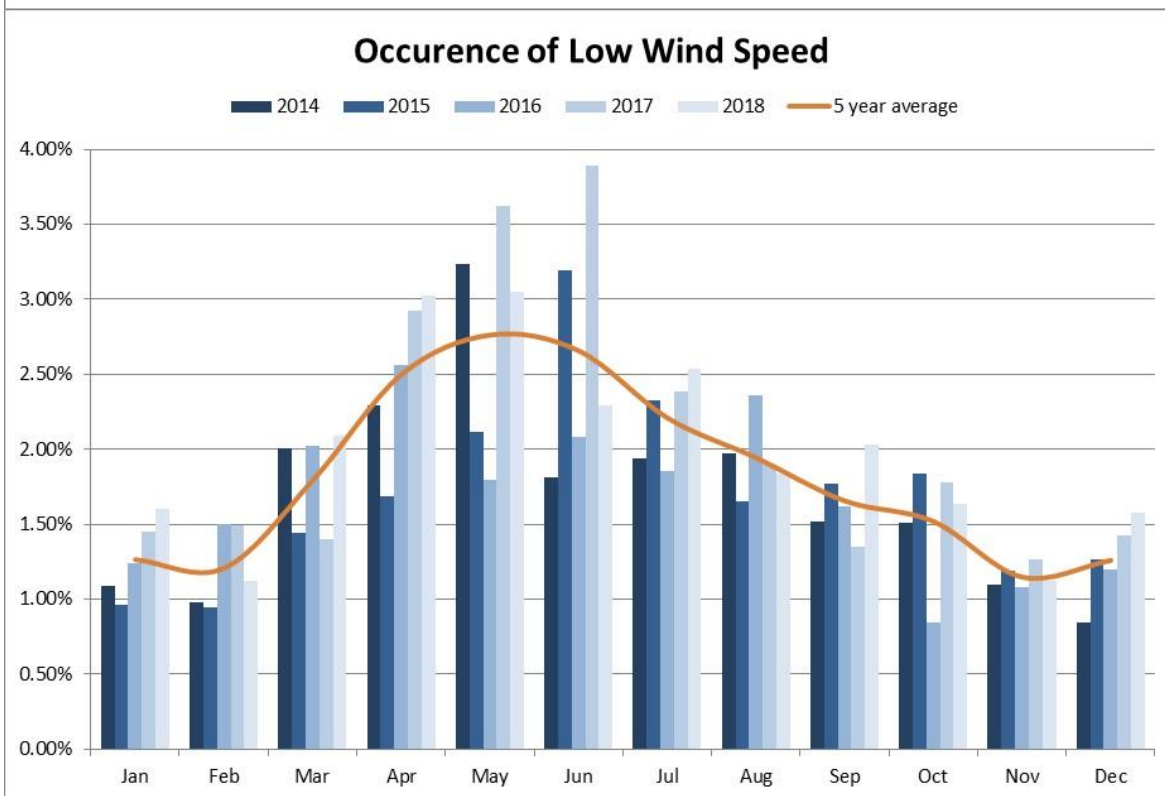
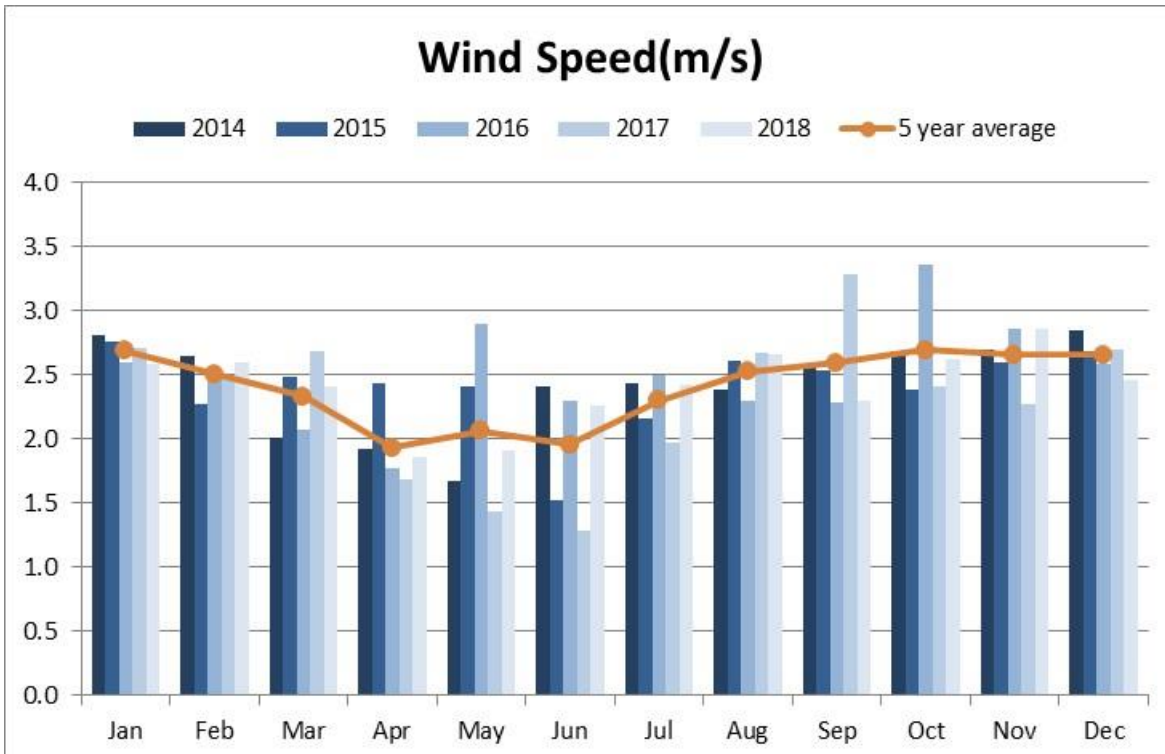
APPENDIX A – EMISSION FACTORS

Activity	Emission Factor / Equation	Units	Source	Variables
Dryer Emission Factors				
Benzene	$EF = 0.00028$ $EF = 0.00014$	lb/ton kg/tonne	(US EPA, 2004)	-
Toluene	$EF = 0.001$ $EF = 0.0005$	lb/ton kg/tonne	(US EPA, 2004)	-
Xylene	$EF = 0.00270$ $EF = 0.00135$	lb/ton kg/tonne	(US EPA, 2004)	-
Ethylbenzene	$EF = 0.0022$ $EF = 0.0011$	lb/ton kg/tonne	(US EPA, 2004)	-
Material Handling				
Loading and unloading from stockpiles and processing plants	$EF = \frac{k \times 0.0016 \times \frac{U^{1.3}}{2.2}}{\frac{M^{1.4}}{2}}$	kg/VKT	(US EPA, 2006)	k = 0.74 (TSP) k = 0.35 (PM ₁₀) k = 0.053 (PM _{2.5}) U ^{1.3} = wind speed factor (1.08) M = moisture content (%) (6%)
Road Haulage				
Road haulage within the site (paved roads)	$EF_{TSP} = 3.23 \times sL^{0.91} \times W^{1.02}$ $EF_{PM10} = 0.62 \times sL^{0.91} \times W^{1.02}$ $EF_{PM2.5} = 0.15 \times sL^{0.91} \times W^{1.02}$	kg/VKT	(US EPA, 2011)	sL = road surface silt loading (3 g/m ²) W = average weight of vehicles travelling on the road (28 t)
Wind Erosion				
Road haulage within the site (paved roads)	$EF_{TSP} = 0.4$ $EF_{PM10} = 0.2$ $EF_{PM2.5} = 0.047 \times EF_{TSP}$	kg/ha/hr	(DSEWPC, 2012) (SPCC, 1983)	

APPENDIX B

SELECTION OF METEOROLOGICAL YEAR





APPENDIX C

VARIABLE EMISSION FILES – CALCULATION STEPS

A brief summary of the steps used in calculating the hourly varying emission rates for each source are presented below.

Step 1: Calculate annual average emission rate (kg/year) for FP, CM and RE

$FP_{\text{annual}} = PM_{2.5, \text{annual}}$	(FP) Fine Particulate – particulate of size less than 2.5 μm
$CM_{\text{annual}} = PM_{10, \text{annual}} - PM_{2.5, \text{annual}}$	(CM) Coarse Particulate – particulate of size between 10 μm and 2.5 μm
$RE_{\text{annual}} = TSP_{\text{annual}} - PM_{10, \text{annual}}$	(RE) Rest Particulate – particulate of size greater than 10 μm

Step 2: Identify the operating hours for each activity

Step 3: Classify the sensitivity of each type of activity to wind speed

- Wind insensitive: activities with emission factor that is independent of wind speed (e.g. blasting)
- Wind sensitive: activities with emission factor that is a function of (Wind speed/2.2)^{1.3} (e.g. loading)
- Wind erosion: emission from exposed areas/stockpiles

Step 4: Identify the number of sources associated with each activity

- Note that each wind erosion source is modelled as an independent source.

Step 5: Calculate the hourly average emission rate for each activity per source

$FP_{AC,i,h} = \frac{FP_{\text{annual},i} \times 1000}{N_{\text{days}} \times OH_i \times 3600 \times N_{s,i} \times WS_{\text{Factor}}_{i,h}}$ $CM_{AC,i,h} = \frac{CM_{\text{annual},i} \times 1000}{N_{\text{days}} \times OH_i \times 3600 \times N_{s,i} \times WS_{\text{Factor}}_{i,h}}$ $RE_{AC,i,h} = \frac{RE_{\text{annual},i} \times 1000}{N_{\text{days}} \times OH_i \times 3600 \times N_{s,i}} \times WS_{\text{Factor}}_{i,h}$ <p>For wind insensitive activities</p> $WS_{\text{Factor}}_{i,h} = 1$ <p>For wind sensitive activities</p> $WS_{\text{Factor}}_{i,h} = \frac{\left(\frac{WS_h}{2.2}\right)^{1.3}}{\frac{\sum_{j=1}^n \left(\frac{WS_j}{2.2}\right)^{1.3}}{n}}$ <p>For wind erosion activities</p> $WS_{\text{Factor}}_{i,h} = \frac{(WS_h)^3}{\frac{\sum_{j=1}^n (WS_j)^3}{n}}$	<p>Where:</p> <p>$FP_{AC,i,h}$- Fine particulates emission rate for Activity i (g/s) at hour h</p> <p>$CM_{AC,i,h}$- Fine particulates emission rate for Activity i (g/s) at hour h</p> <p>$RE_{AC,i,h}$- Fine particulates emission rate for Activity i (g/s) at hour h</p> <p>OH_i-daily Operating hours (1- 24) for Activity i</p> <p>N_{days}-Number of days in the meteorological data file</p> <p>$N_{s,i}$-Number of sources associated with Activity i</p> <p>WS_h-Wind speed at the hour</p> <p>n-number of hours in the meteorological data file</p>
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Note: If the activity was modelled as area source, the equation on the left column of the table needs to be divided by the area of that activity.

Step 5: Calculate hourly average emission rate for each source

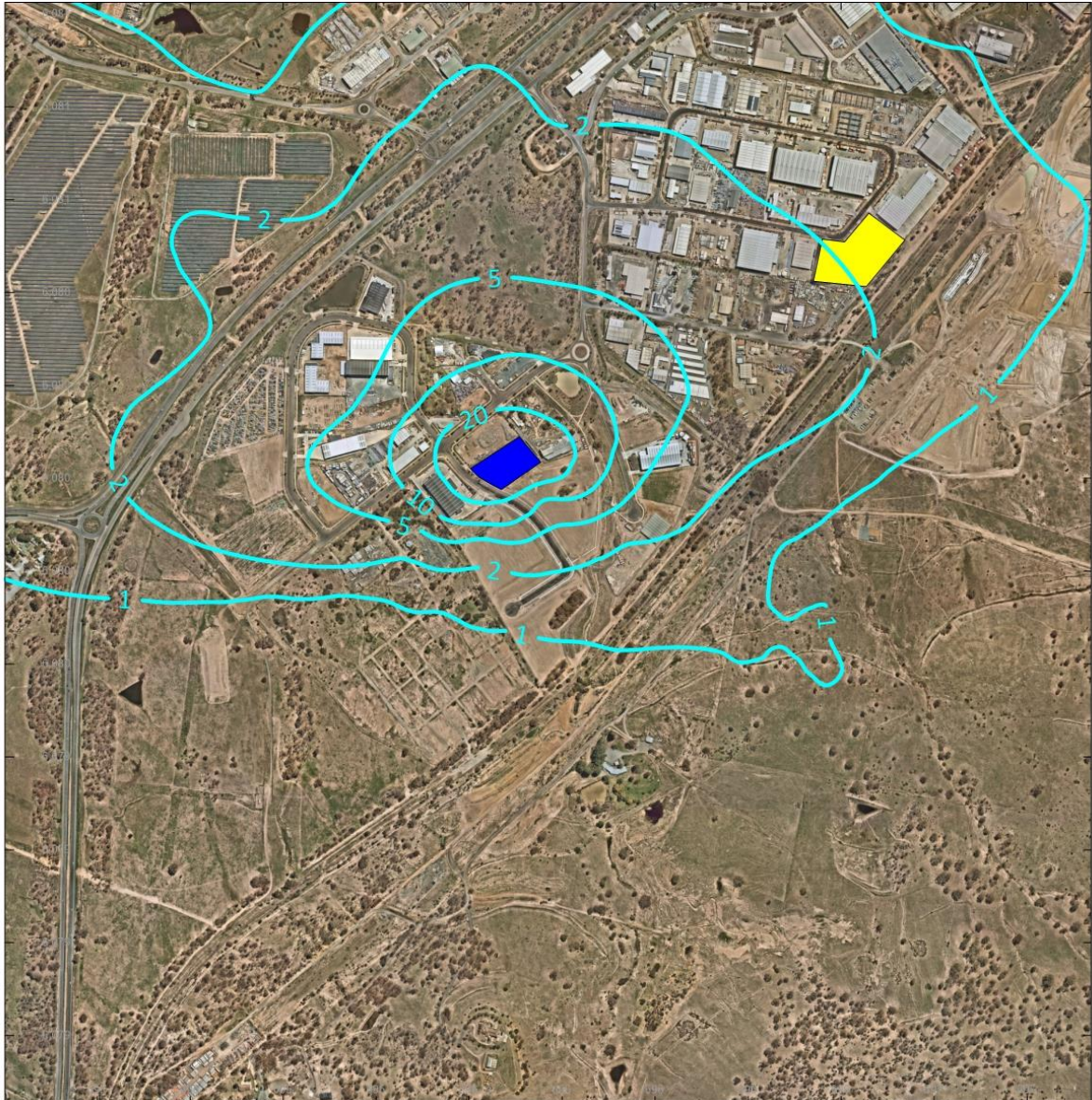
To calculate the emission rate for a particular source for a particular hour, add up the calculated emission rate for each activity associated with source.

For example, if Source 1 is associated with Activity 1, Activity 2 and Activity 3, then:

- $ER_{S1,h,FP} = FP_{AC,1,h} + FP_{AC,2,h} + FP_{AC,3,h}$
- $ER_{S1,h,CM} = CM_{AC,1,h} + CM_{AC,2,h} + CM_{AC,3,h}$
- $ER_{S1,h,RE} = RE_{AC,1,h} + RE_{AC,2,h} + RE_{AC,3,h}$

APPENDIX D

CONTOUR PLOTS



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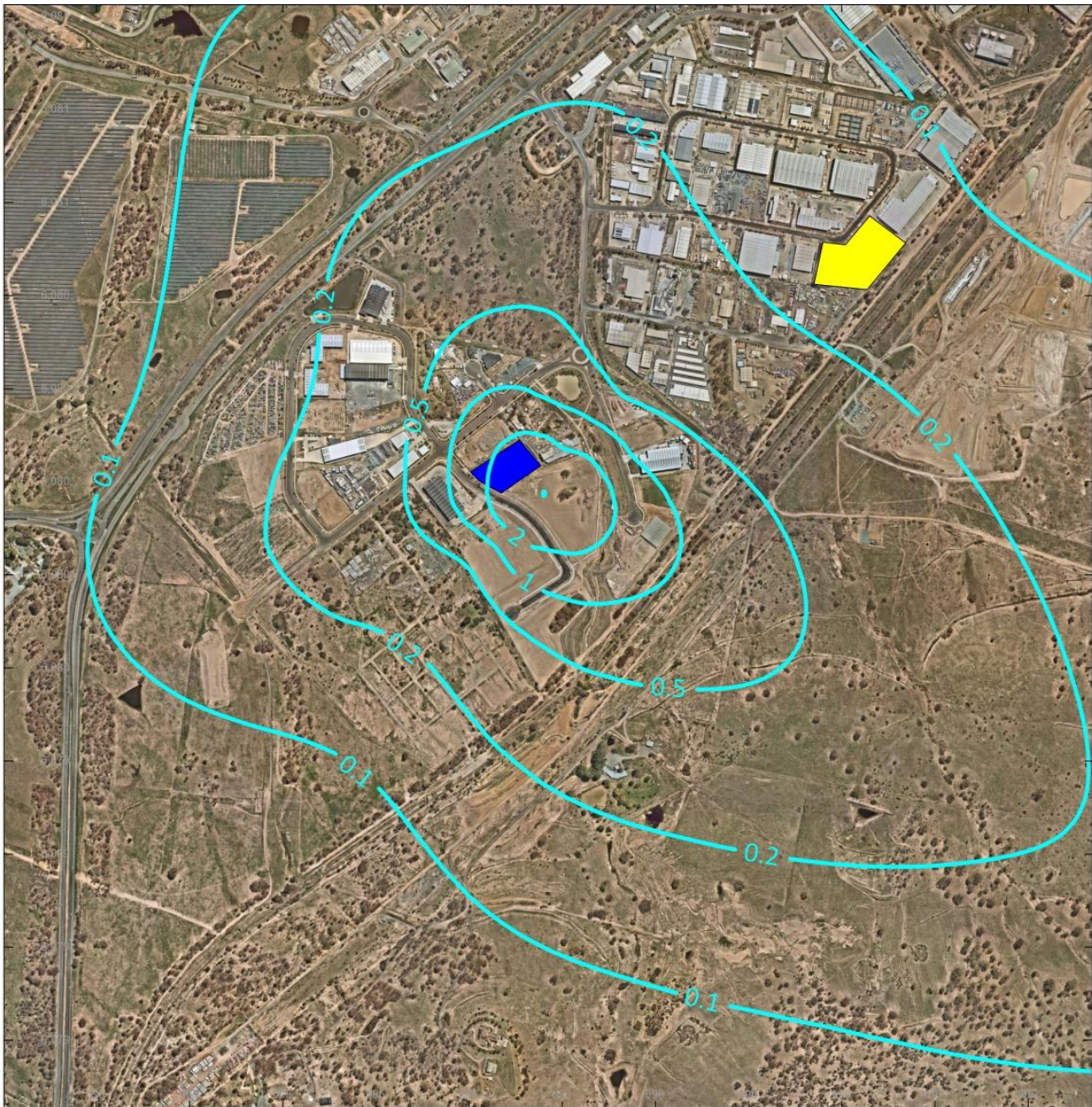
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Project Number:	670.11108
Dispersion Model:	CALPUFF
Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt			
Hume Asphalt Plant			
Air Quality Impact Assessment			
Incremental Impact			
Pollutant	Toluene	Averaging 3-minute Period	Unit $\mu\text{g}/\text{m}^3$



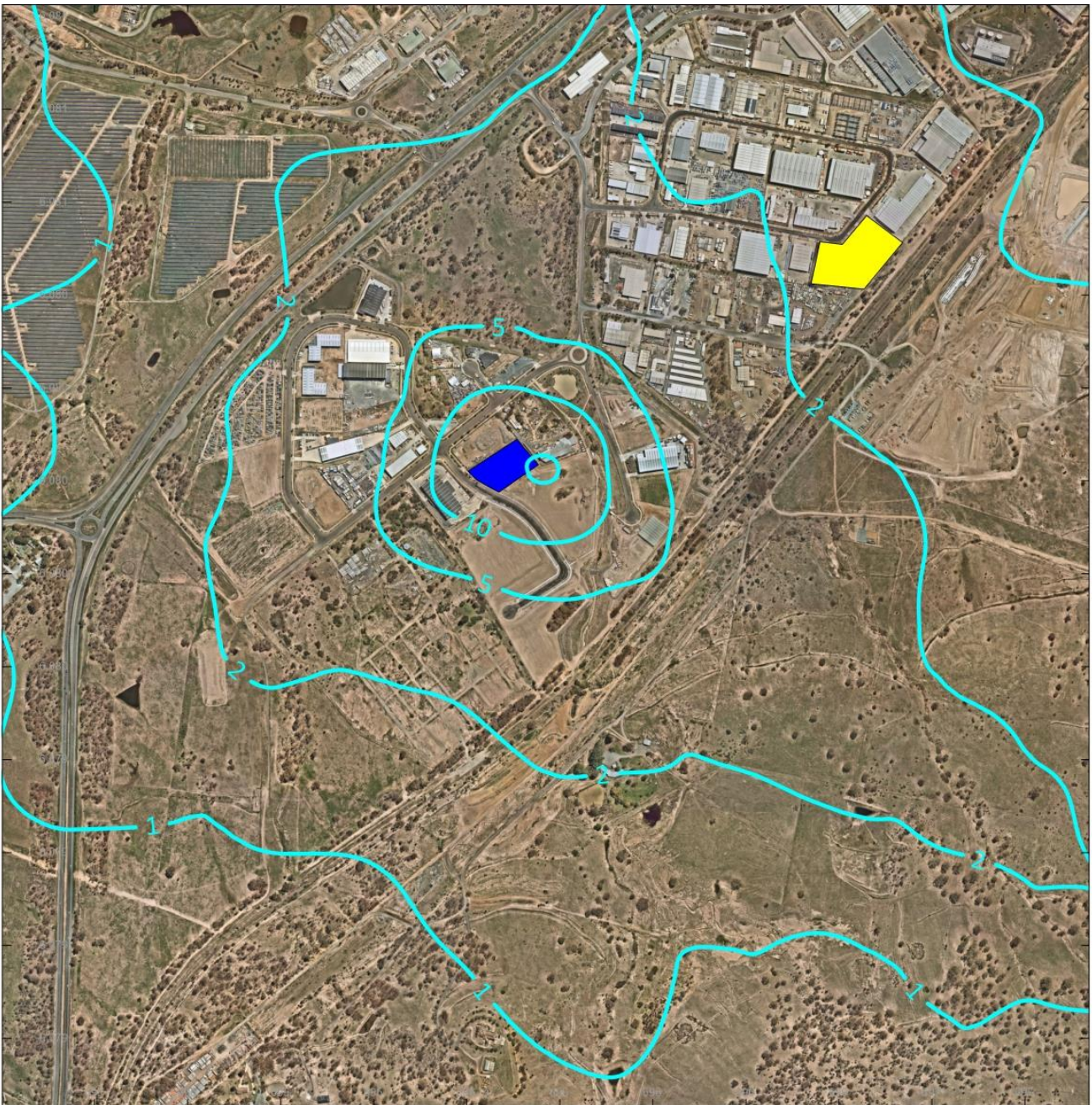
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Dispersion Model:	CALPUFF
Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt Hume Asphalt Plant Air Quality Impact Assessment				
Incremental Impact				
Pollutant	SO ₂	Averaging Period	Annual	Unit
				µg/m ³



SLR 

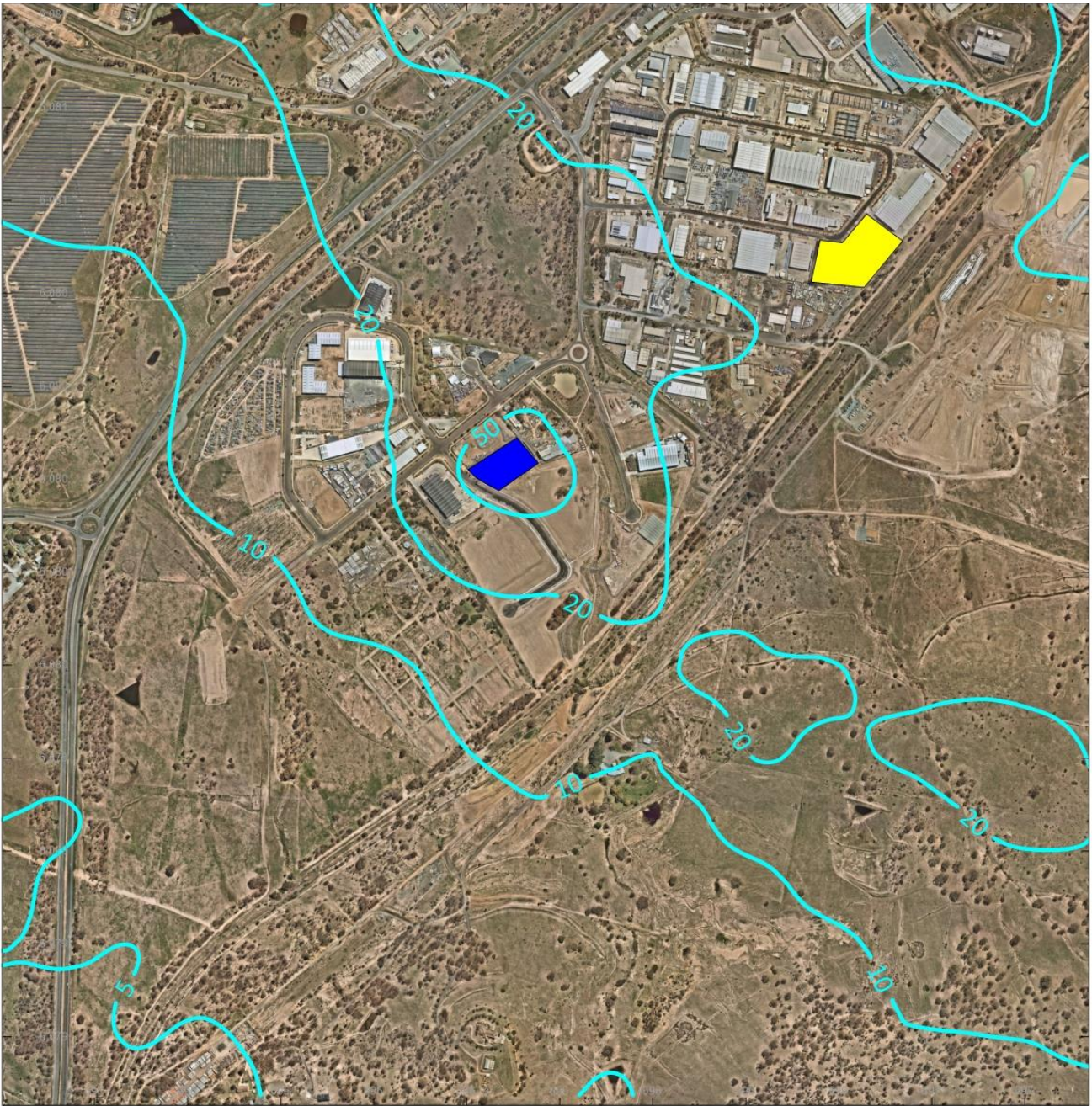
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Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt					
Hume Asphalt Plant					
Air Quality Impact Assessment					
Incremental Impact					
Pollutant	SO ₂	Averaging Period	24-Hour	Unit	µg/m ³



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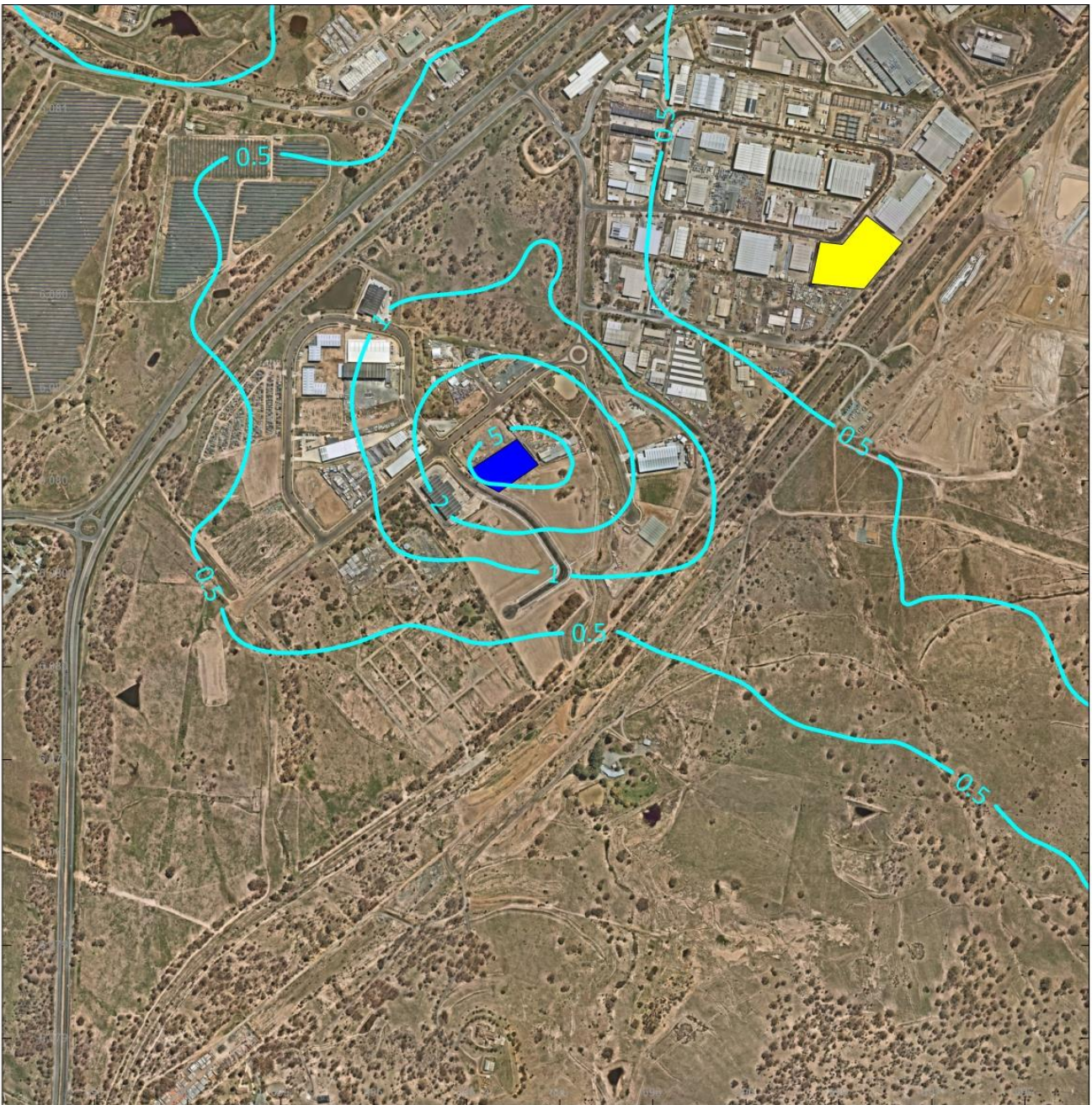
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Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt					
Hume Asphalt Plant					
Air Quality Impact Assessment					
Incremental Impact					
Pollutant	SO ₂	Averaging Period	1-Hour	Unit	µg/m ³



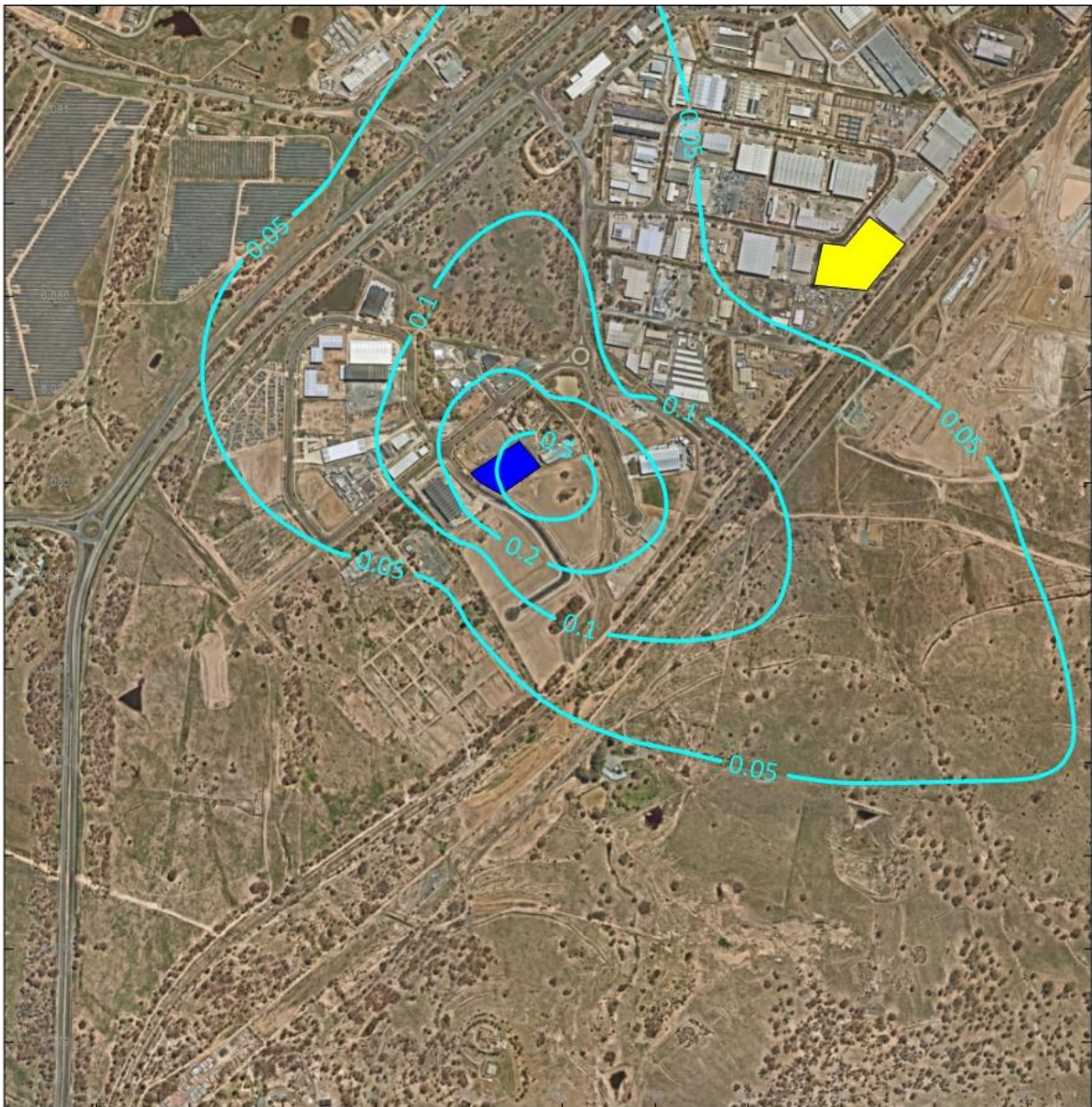
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Dispersion Model:	CALPUFF
Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt Hume Asphalt Plant Air Quality Impact Assessment				
Incremental Impact				
Pollutant	PM ₁₀	Averaging Period	24-Hour	Unit
				µg/m ³



SLR 

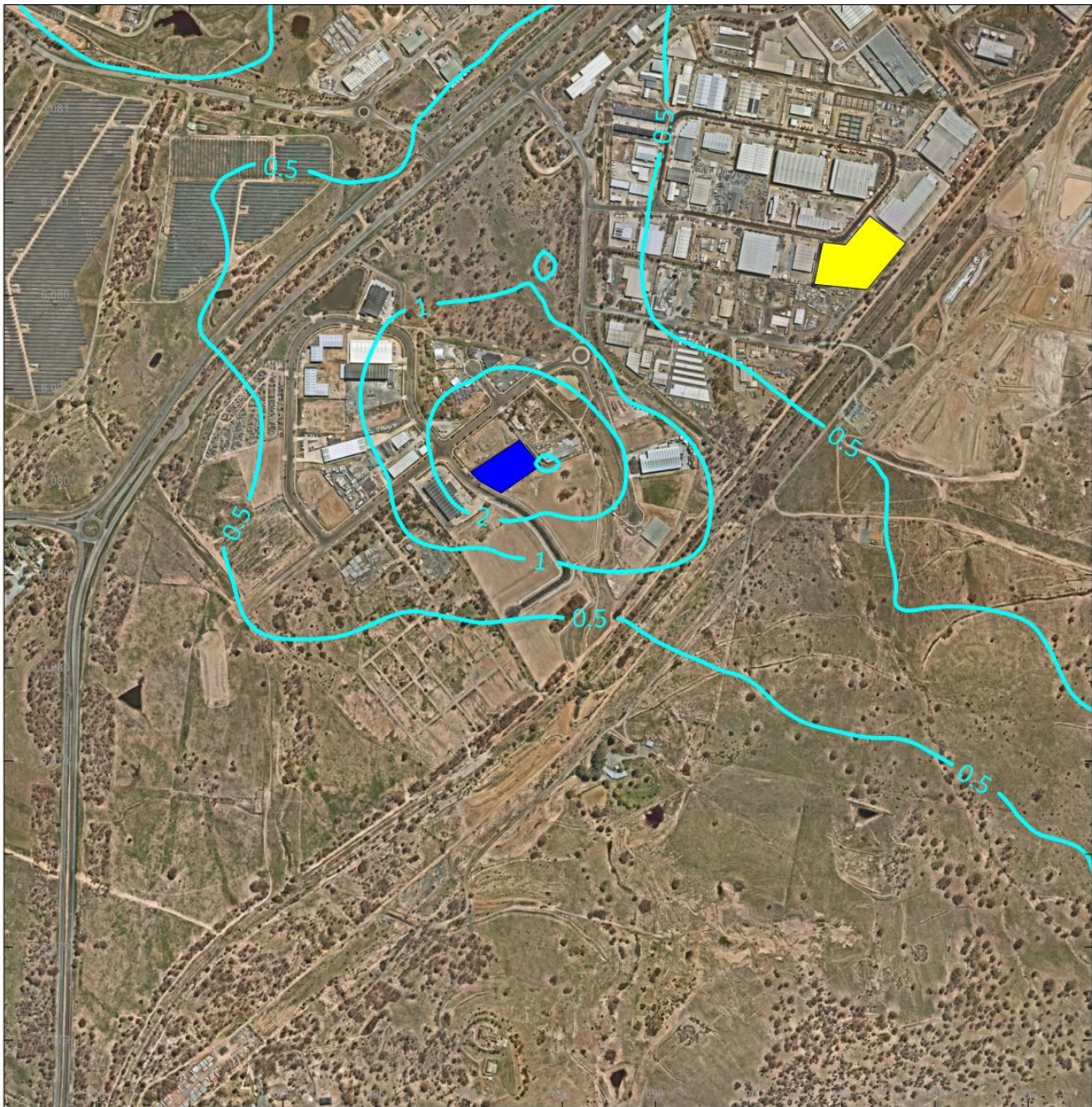
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Dispersion Model:	CALPUFF
Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt					
Hume Asphalt Plant					
Air Quality Impact Assessment					
Incremental Impact					
Pollutant	PM _{2.5}	Averaging Period	Annual	Unit	µg/m ³



SLR 

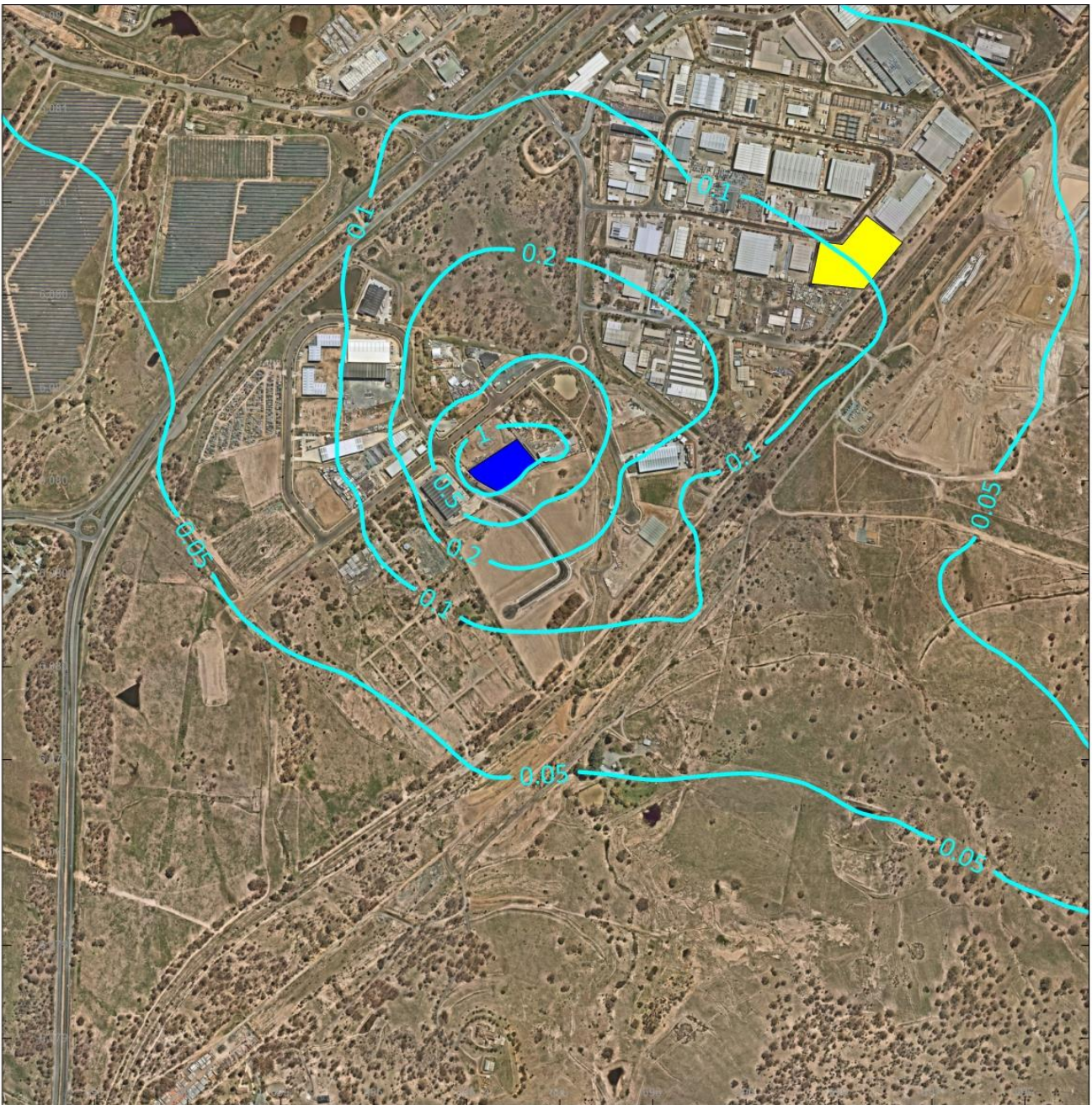
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Dispersion Model:	CALPUFF
Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt Hume Asphalt Plant Air Quality Impact Assessment				
Incremental Impact				
Pollutant	PM _{2.5}	Averaging Period	24-Hour	Unit
				µg/m ³



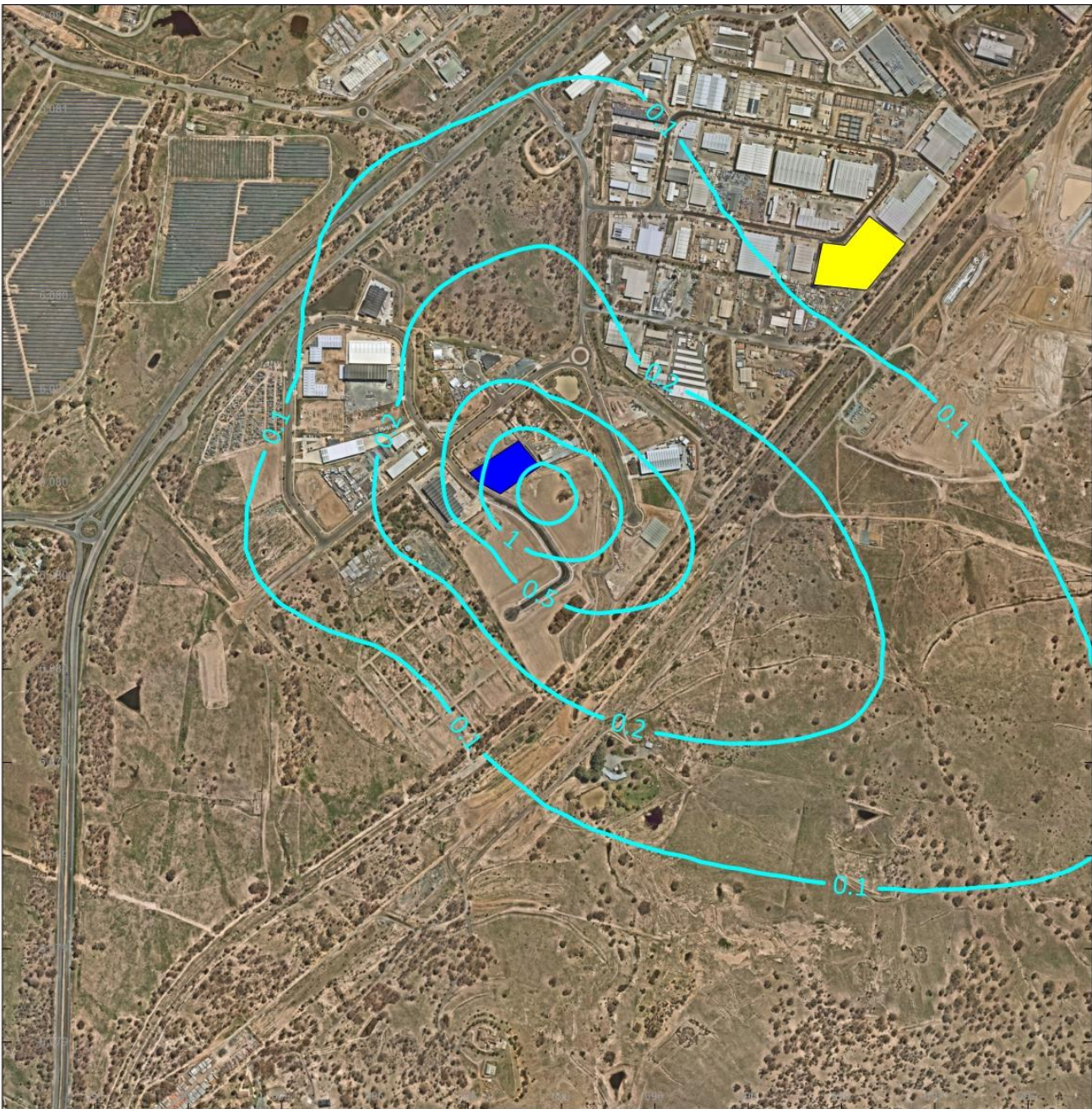
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Dispersion Model:	CALPUFF
Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt			
Hume Asphalt Plant			
Air Quality Impact Assessment			
Incremental Impact (99.9%)			
Pollutant	Odour	Averaging 3-minute Period	Unit OU



SLR 

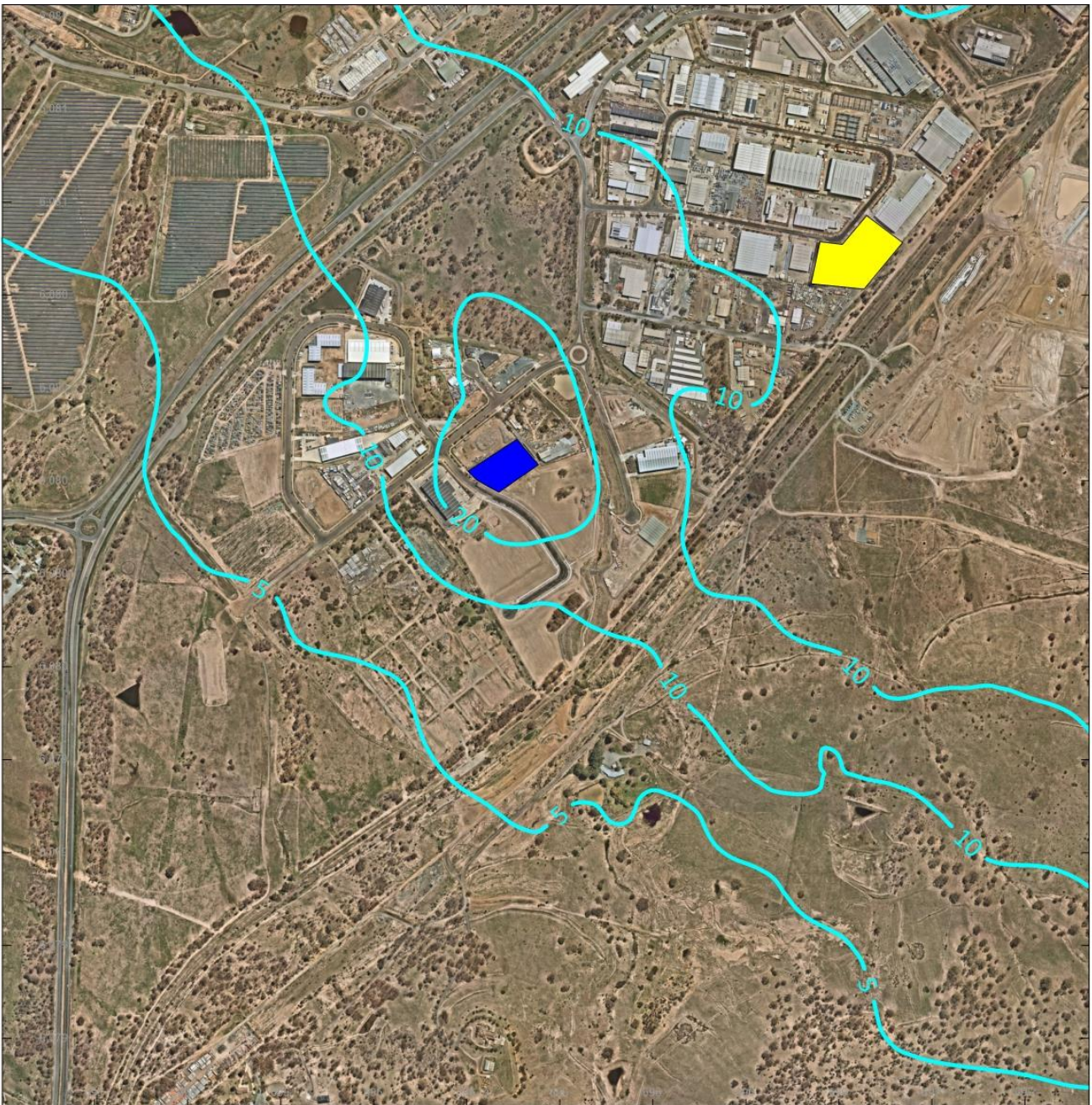
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Hume Asphalt Plant					
Air Quality Impact Assessment					
Incremental Impact					
Pollutant	NO ₂	Averaging Period	Annual	Unit	µg/m ³



SLR 

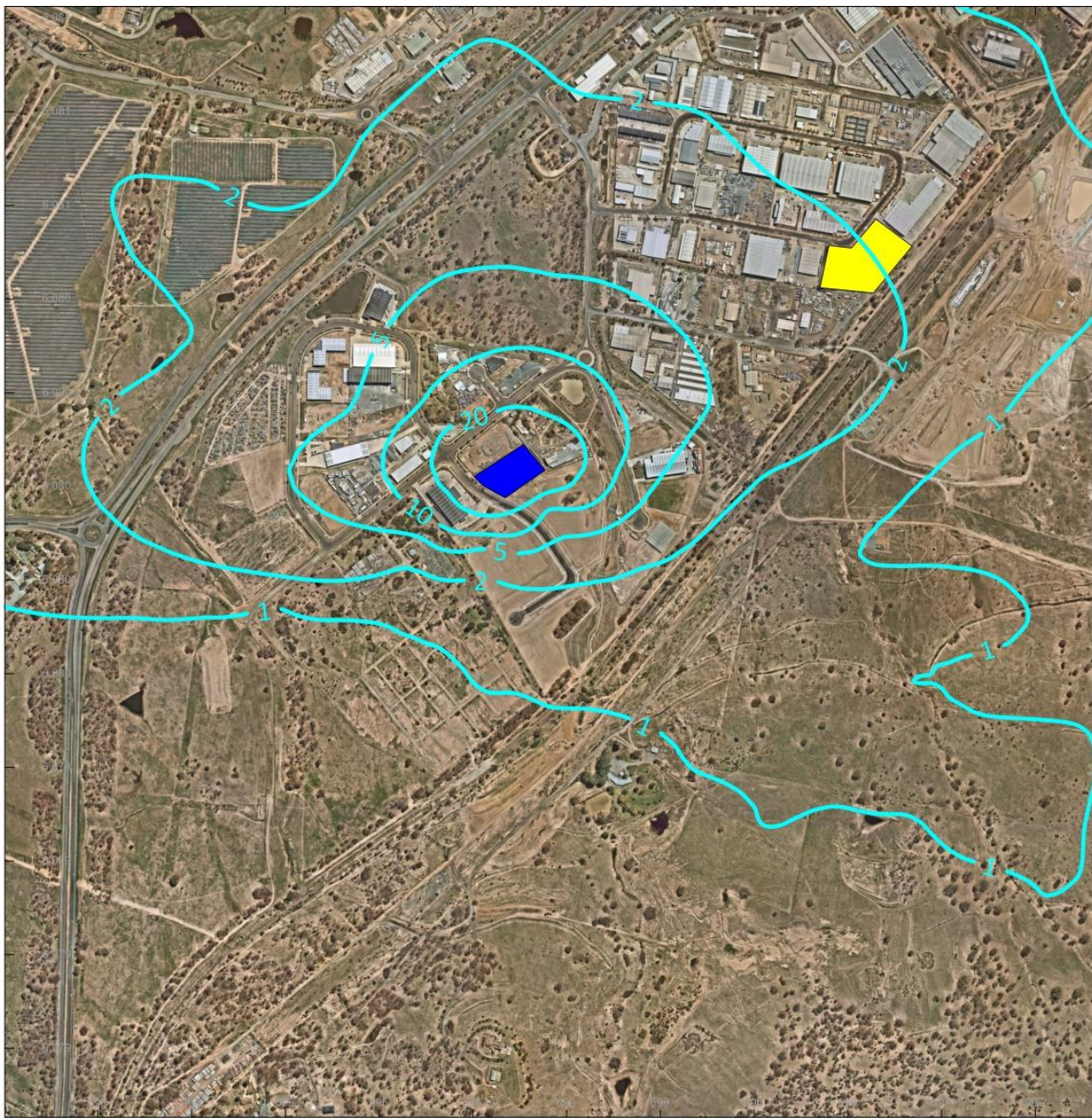
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Project Number:	670.11108
Dispersion Model:	CALPUFF
Modelling Period:	2018
Projection:	UTM Zone 56S
Date:	16/03/2020



Capital Asphalt					
Hume Asphalt Plant					
Air Quality Impact Assessment					
Incremental Impact					
Pollutant	NO ₂	Averaging Period	1-Hour	Unit	µg/m ³



SLR 

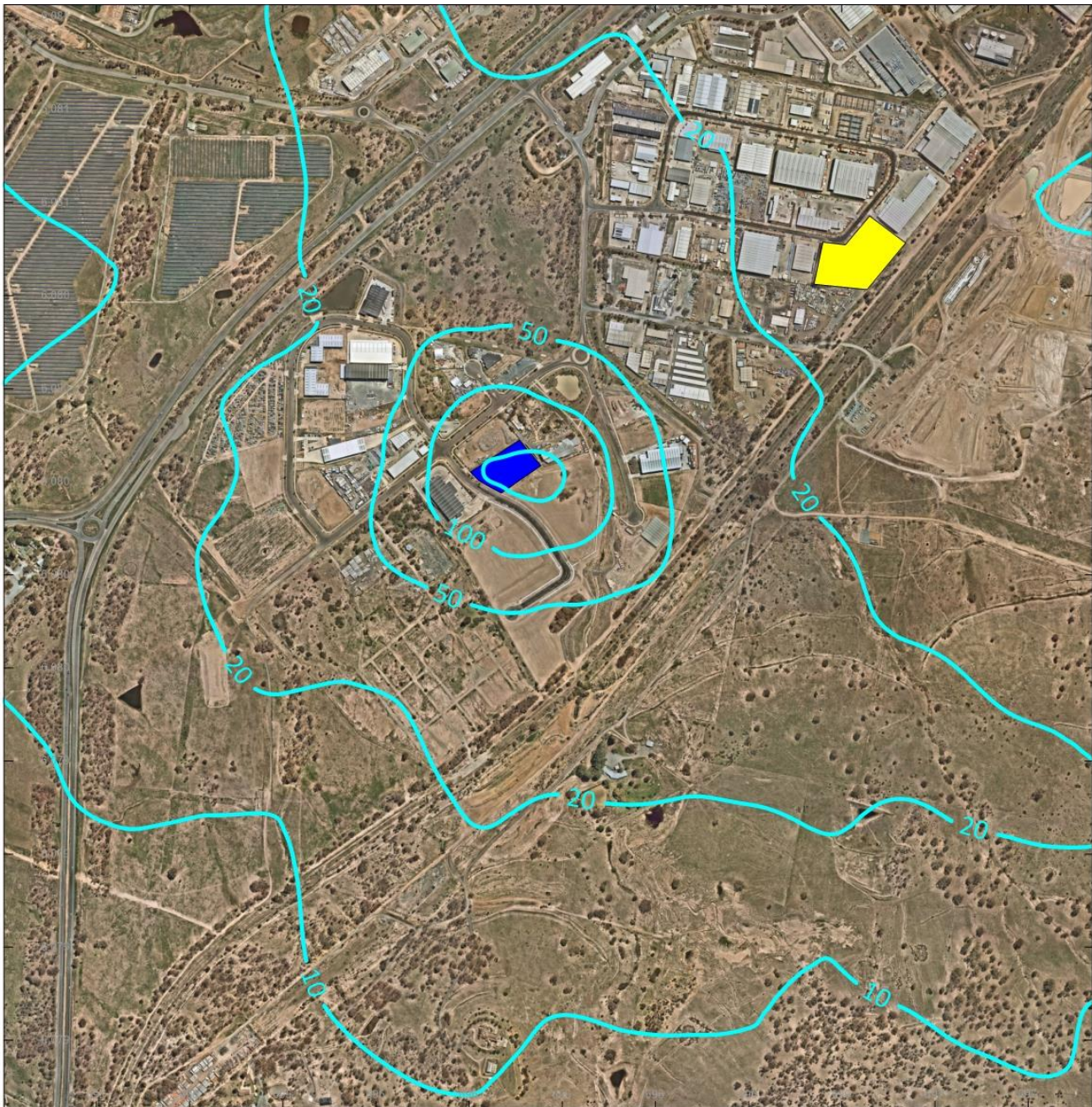
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Date:	16/03/2020



Capital Asphalt			
Hume Asphalt Plant			
Air Quality Impact Assessment			
Incremental Impact			
Pollutant	Ethylbenzene	Averaging 3-minute Period	Unit $\mu\text{g}/\text{m}^3$



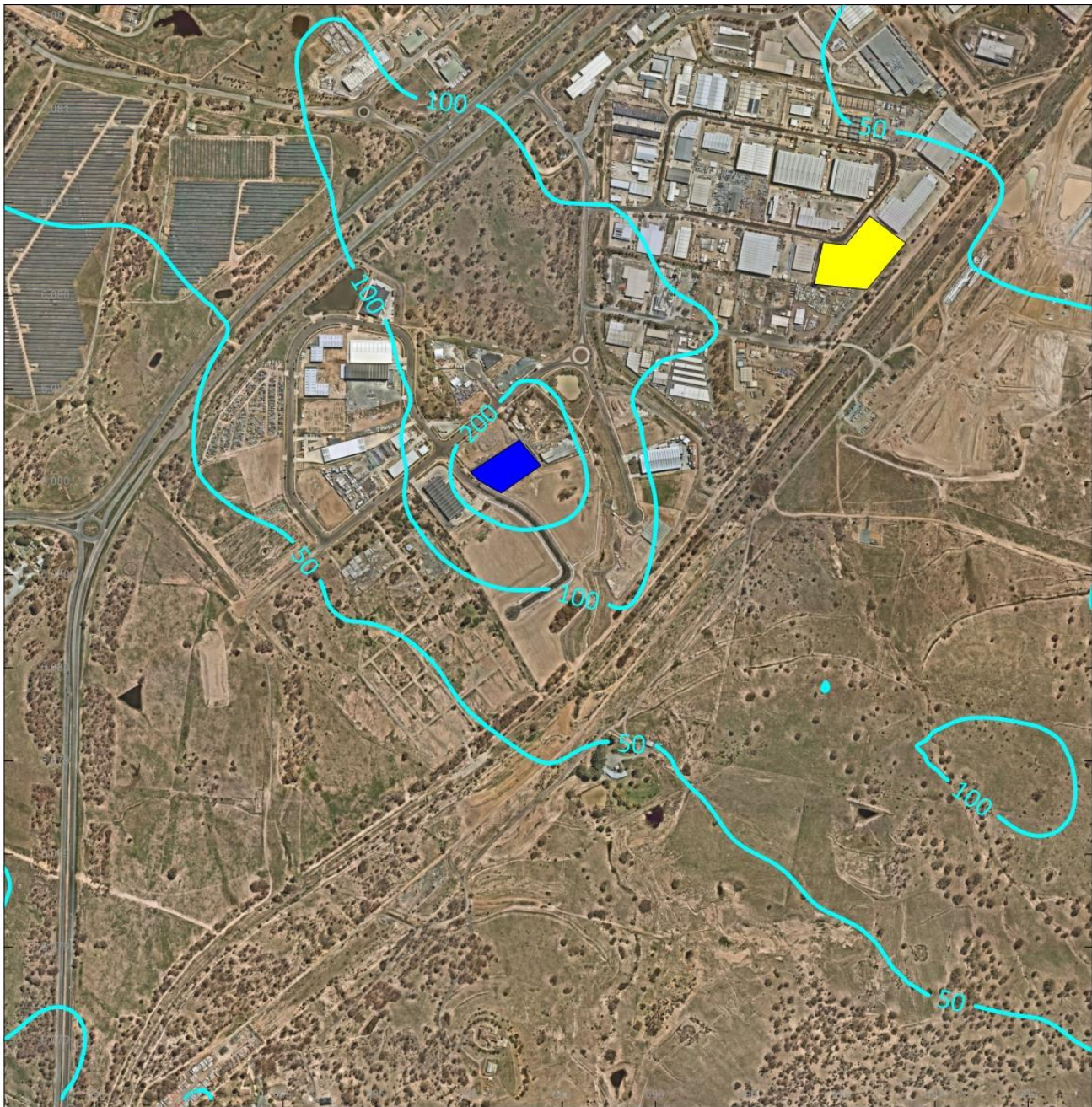
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Date:	16/03/2020



Capital Asphalt Hume Asphalt Plant Air Quality Impact Assessment				
Incremental Impact				
Pollutant	CO	Averaging Period	8-Hour	Unit
				µg/m ³



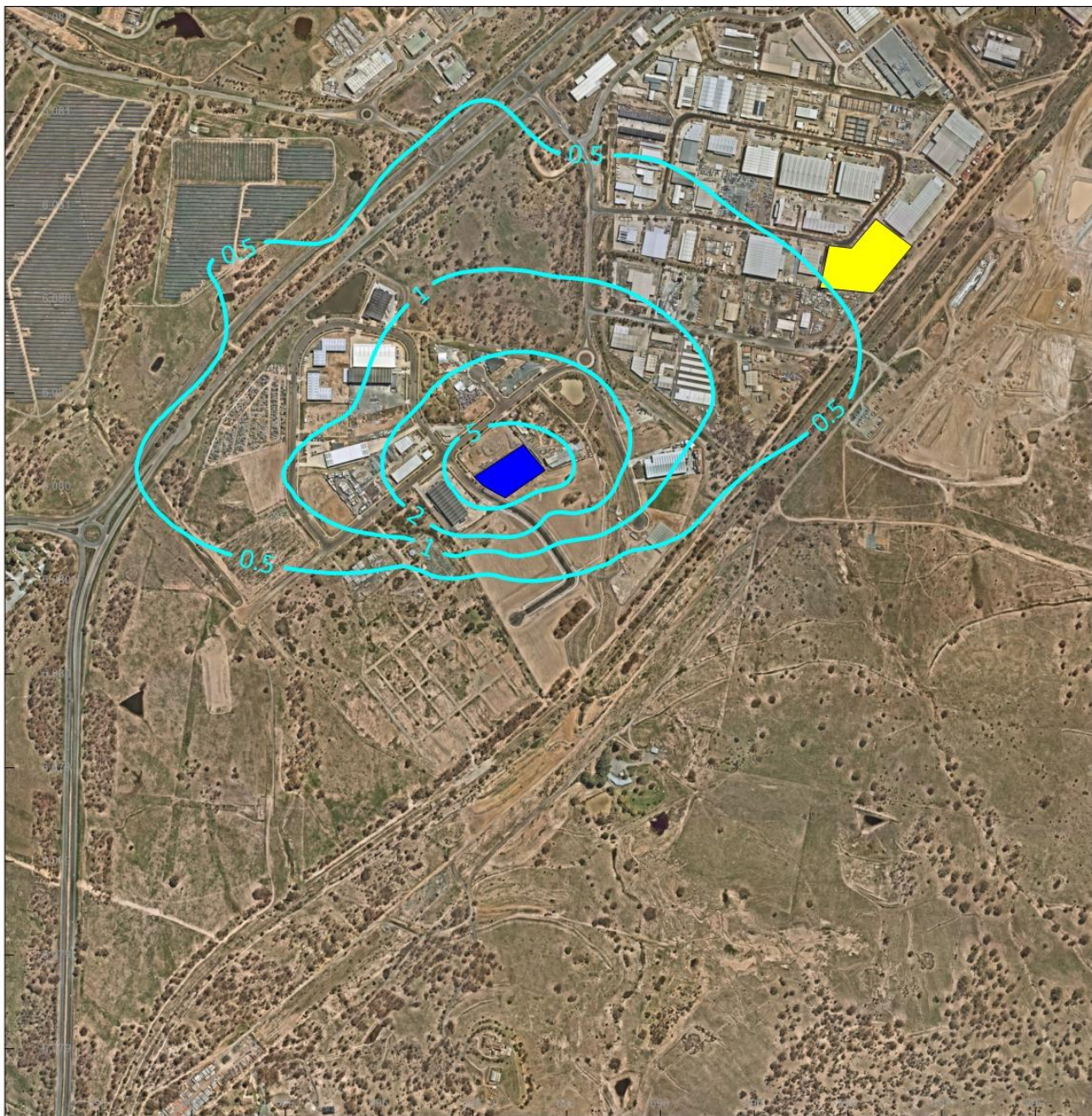
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Capital Asphalt Hume Asphalt Plant Air Quality Impact Assessment				
Incremental Impact				
Pollutant	CO	Averaging Period	1-Hour	Unit
				µg/m ³



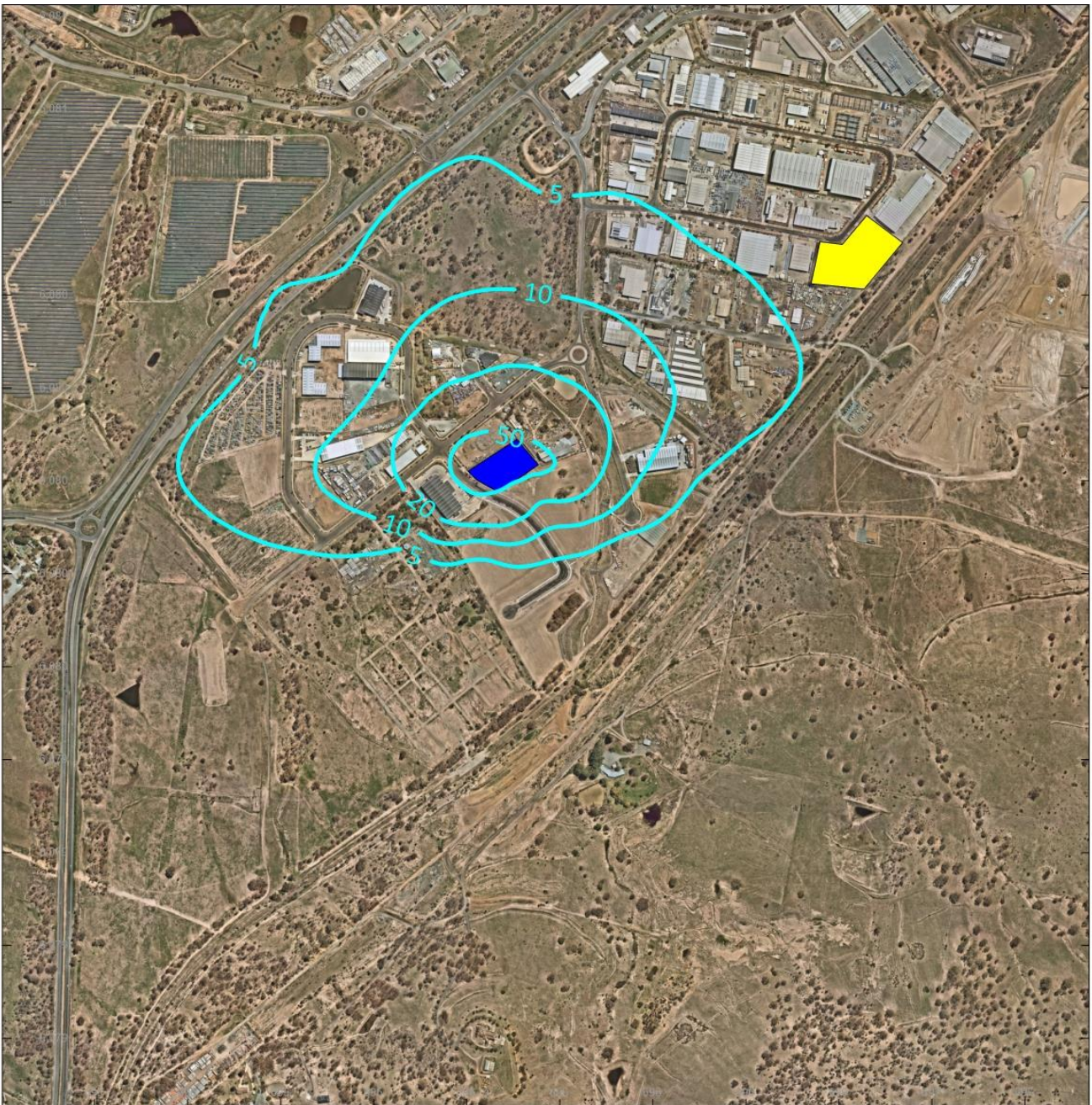
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Capital Asphalt Hume Asphalt Plant Air Quality Impact Assessment				
Incremental Impact				
Pollutant	Benzene	Averaging 3-minute Period	Unit	µg/m ³



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Date:	16/03/2020



Capital Asphalt			
Hume Asphalt Plant			
Air Quality Impact Assessment			
Incremental Impact			
Pollutant	Xylene	Averaging 3-minute Period	Unit $\mu\text{g}/\text{m}^3$

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