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DA Form 1 – Development application details

Approved form (version 1.4 effective 15 December 2023) made under section 282 of the Planning Act 2016.

This form must be used to make a development application involving code assessment or impact assessment, except when applying for development involving only building work.

For a development application involving building work only, use DA Form 2 – Building work details.

For a development application involving building work associated with any other type of assessable development (i.e. material change of use, operational work or reconfiguring a lot), use this form (DA Form 1) and parts 4 to 6 of

DA Form 2 – Building work details.

Unless stated otherwise, all parts of this form must be completed in full and all required supporting information must accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development

application relating to strategic port land and Brisbane core port land under the Transport Infrastructure Act 1994,

and airport land under the Airport Assets (Restructuring and Disposal) Act 2008.

For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).

PART 1 – APPLICANT DETAILS

1) Applicant details

Applicant name(s) (individual or company full name)

Tropical Veterinary Service Pty Ltd

Contact name (only applicable for companies)

C/o Steffan Harries

Postal address (P.O. Box or street address)

PO Box 6258

Suburb

Fairfield

State

Qld

Postcode

4103

Country

Australia

Contact number

07 3317 0042

Email address (non-mandatory)

chloe@steffanharries.au

Mobile number (non-mandatory)

Fax number (non-mandatory)

Applicant's reference number(s) (if applicable)

STP3922

2) Owner's consent

2.1) Is written consent of the owner required for this development application?

Yes - the written consent of the owner(s) is attached to this development application

No - proceed to 3)

PART 2 – LOCATION DETAILS

3) Location of the premises (complete 3.1) or 3.2), and 3.3) as applicable)

Note: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see DA Forms Guide: Relevant plans.

3.1) Street address and lot on plan

Street address AND lot on plan (all lots must be listed), or

Street address AND lot on plan for an adjoining or adjacent property of the premises (appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).

Unit No.

a)

b)

c)

Street No.

Street Name and Type

Suburb

239

Queen Street

Ayr

Postcode

Lot No.

Plan Type and Number (e.g. RP, SP)

Local Government Area(s)

4807

1

RP719267

Burdekin Shire Council

Unit No.

Street No.

Street Name and Type

Suburb

241

Queen Street

Ayr

Postcode

Lot No.

Plan Type and Number (e.g. RP, SP)

Local Government Area(s)

4807

2

RP719267

Burdekin Shire Council

Unit No.

Street No.

Street Name and Type

Suburb

42

Bower Street

Ayr

Postcode

Lot No.

Plan Type and Number (e.g. RP, SP)

Local Government Area(s)

4807

87

A26512

Burdekin Shire Council

3.2) Coordinates of premises (appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)

Note: Place each set of coordinates in a separate row.

Coordinates of premises by longitude and latitude

Longitude(s)

Latitude(s)

Datum

Local Government Area(s) (if applicable)

WGS84

GDA94

Other:

Coordinates of premises by easting and northing

Easting(s)

Northings(s)

Zone Ref.

54

55

56

Datum

Local Government Area(s) (if applicable)

WGS84

GDA94

Other:

3.3) Additional premises

Additional premises are relevant to this development application and the details of these premises have been attached in a schedule to this development application

Not required

4) Identify any of the following that apply to the premises and provide any relevant details

In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:

On strategic port land under the Transport Infrastructure Act 1994

Lot on plan description of strategic port land:

Name of port authority for the lot:

In a tidal area

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Name of local government for the tidal area (if applicable):
Name of port authority for tidal area (if applicable):
On airport land under the Airport Assets (Restructuring and Disposal) Act 2008
Name of airport:
Listed on the Environmental Management Register (EMR) under the Environmental Protection Act 1994
EMR site identification:
Listed on the Contaminated Land Register (CLR) under the Environmental Protection Act 1994
CLR site identification:
5) Are there any existing easements over the premises?
Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see DA Forms Guide.

Yes - All easement locations, types and dimensions are included in plans submitted with this development application
No

PART 3 - DEVELOPMENT DETAILS

Section 1 - Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? (tick only one box)
Material change of use

Reconfiguring a lot

Operational work

Building work

b) What is the approval type? (tick only one box)
Development permit

Preliminary approval

Preliminary approval that includes a variation approval

c) What is the level of assessment?
Code assessment

Impact assessment (requires public notification)

d) Provide a brief description of the proposal (e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):

Veterinary Service

e) Relevant plans

Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide:
Relevant plans.

Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? (tick only one box)
Material change of use

Reconfiguring a lot

Operational work

Building work

b) What is the approval type? (tick only one box)

Development permit

Preliminary approval

Preliminary approval that includes a variation approval

c) What is the level of assessment?

Code assessment

Impact assessment (requires public notification)

d) Provide a brief description of the proposal (e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):

Boundary Realignment (3 into 3)

e) Relevant plans

Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide:

Relevant plans.

Relevant plans of the proposed development are attached to the development application

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6.3) Additional aspects of development

Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application
Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?

Material change of use

Yes – complete division 1 if assessable against a local planning instrument

Reconfiguring a lot

Yes – complete division 2

Operational work

Yes – complete division 3

Building work

Yes – complete DA Form 2 – Building work details

Division 1 – Material change of use

Note: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.

8.1) Describe the proposed material change of use

Provide a general description of the proposed use

Provide the planning scheme definition
(include each definition in a new row)

Number of dwelling
units (if applicable)

Gross floor
area (m²)
(if applicable)

Veterinary Service

349

The use of premises for— (a) the medical or surgical treatment of animals; or (b) the short-term stay of animals, if the use is ancillary to the use in paragraph (a).

8.2) Does the proposed use involve the use of existing buildings on the premises?

Yes

No

Division 2 – Reconfiguring a lot

Note: This division is only required to be completed if any part of the development application involves reconfiguring a lot.

9.1) What is the total number of existing lots making up the premises?

9.2) What is the nature of the lot reconfiguration? (tick all applicable boxes)
Subdivision (complete 10))

Dividing land into parts by agreement (complete 11))

Boundary realignment (complete 12))

Creating or changing an easement giving access to a lot
from a constructed road (complete 13))

10) Subdivision

10.1) For this development, how many lots are being created and what is the
intended use of those lots:

Intended use of lots created

Residential

Commercial

Industrial

Other, please specify:

Number of lots created

10.2) Will the subdivision be staged?

Yes - provide additional details below

No

How many stages will the works include?

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What stage(s) will this development application apply to?

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?

Intended use of parts created

Residential

Commercial

Industrial

Other, please specify:

Number of parts created

12) Boundary realignment

12.1) What are the current and proposed areas for each lot comprising the premises?

Current lot

Proposed lot

Lot on plan description

Area (m2)

Lot on plan description

Area (m2)

87A26512

1079

87A26512

610

1RP719267

809

1RP719267

620

2RP719267

1423

2RP719267

2076

12.2) What is the reason for the boundary realignment?

To provide adequate access.

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement?

(attach schedule if there are more than two easements)

Existing or proposed?

Width (m)

Length (m)

Purpose of the easement? (e.g.
pedestrian access)

Identify the land/lot(s)
benefitted by the easement

Division 3 – Operational work

Note: This division is only required to be completed if any part of the
development application involves operational work.

14.1) What is the nature of the operational work?

Road work

Drainage work

Landscaping

Stormwater

Earthworks

Signage

Water infrastructure

Sewage infrastructure

Clearing vegetation

Other – please specify:

14.2) Is the operational work necessary to facilitate the creation of new lots?
(e.g. subdivision)

Yes – specify number of new lots:

No

14.3) What is the monetary value of the proposed operational work? (include GST,
materials and labour)

\$

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development
application

Burdekin Shire Council

16) Has the local government agreed to apply a superseded planning scheme for
this development application?

Yes – a copy of the decision notice is attached to this development application

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The local government is taken to have agreed to the superseded planning scheme request – relevant documents attached
No

PART 5 – REFERRAL DETAILS

17) Does this development application include any aspects that have any referral requirements?

Note: A development application will require referral if prescribed by the Planning Regulation 2017.

No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the Chief Executive of the Planning Act 2016:

Clearing native vegetation

Contaminated land (unexploded ordnance)

Environmentally relevant activities (ERA) (only if the ERA has not been devolved to a local government)

Fisheries – aquaculture

Fisheries – declared fish habitat area

Fisheries – marine plants

Fisheries – waterway barrier works

Hazardous chemical facilities

Heritage places – Queensland heritage place (on or near a Queensland heritage place)

Infrastructure-related referrals – designated premises

Infrastructure-related referrals – state transport infrastructure

Infrastructure-related referrals – State transport corridor and future State transport corridor

Infrastructure-related referrals – State-controlled transport tunnels and future state-controlled transport tunnels

Infrastructure-related referrals – near a state-controlled road intersection

Koala habitat in SEQ region – interfering with koala habitat in koala habitat areas outside koala priority areas

Koala habitat in SEQ region – key resource areas

Ports – Brisbane core port land – near a State transport corridor or future State transport corridor

Ports – Brisbane core port land – environmentally relevant activity (ERA)

Ports – Brisbane core port land – tidal works or work in a coastal management district

Ports – Brisbane core port land – hazardous chemical facility

Ports – Brisbane core port land – taking or interfering with water

Ports – Brisbane core port land – referable dams

Ports – Brisbane core port land – fisheries

Ports – Land within Port of Brisbane's port limits (below high-water mark)

SEQ development area

SEQ regional landscape and rural production area or SEQ rural living area – tourist activity or sport and recreation activity

SEQ regional landscape and rural production area or SEQ rural living area – community activity

SEQ regional landscape and rural production area or SEQ rural living area – indoor recreation

SEQ regional landscape and rural production area or SEQ rural living area – urban activity

SEQ regional landscape and rural production area or SEQ rural living area – combined use

SEQ northern inter-urban break – tourist activity or sport and recreation activity

SEQ northern inter-urban break – community activity

SEQ northern inter-urban break – indoor recreation

SEQ northern inter-urban break – urban activity

SEQ northern inter-urban break – combined use

Tidal works or works in a coastal management district
Reconfiguring a lot in a coastal management district or for a canal
Erosion prone area in a coastal management district
Urban design

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Water-related development – taking or interfering with water
 Water-related development – removing quarry material (from a watercourse or lake)
 Water-related development – referable dams
 Water-related development – levees (category 3 levees only)
 Wetland protection area
 Matters requiring referral to the local government:
 Airport land
 Environmentally relevant activities (ERA) (only if the ERA has been devolved to local government)
 Heritage places – Local heritage places
 Matters requiring referral to the Chief Executive of the distribution entity or transmission entity:
 Infrastructure-related referrals – Electricity infrastructure
 Matters requiring referral to:
 • The Chief Executive of the holder of the licence, if not an individual
 • The holder of the licence, if the holder of the licence is an individual
 Infrastructure-related referrals – Oil and gas infrastructure
 Matters requiring referral to the Brisbane City Council:
 Ports – Brisbane core port land
 Matters requiring referral to the Minister responsible for administering the Transport Infrastructure Act 1994:
 Ports – Brisbane core port land (where inconsistent with the Brisbane port LUP for transport reasons)
 Ports – Strategic port land
 Matters requiring referral to the relevant port operator, if applicant is not port operator:
 Ports – Land within Port of Brisbane's port limits (below high-water mark)
 Matters requiring referral to the Chief Executive of the relevant port authority:
 Ports – Land within limits of another port (below high-water mark)
 Matters requiring referral to the Gold Coast Waterways Authority:
 Tidal works or work in a coastal management district (in Gold Coast waters)
 Matters requiring referral to the Queensland Fire and Emergency Service:
 Tidal works or work in a coastal management district (involving a marina (more than six vessel berths))
 18) Has any referral agency provided a referral response for this development application?
 Yes – referral response(s) received and listed below are attached to this development application
 No
 Referral requirement

Referral agency

Date of referral response

Identify and describe any changes made to the proposed development application that was the subject of the referral response and this development application, or include details in a schedule to this development application (if applicable).

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules

I agree to receive an information request if determined necessary for this development application

I do not agree to accept an information request for this development application

Note: By not agreeing to accept an information request I, the applicant, acknowledge:

- that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the

development application are not obligated under the DA

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Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties

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Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.

Further advice about information requests is contained in the DA Forms Guide.

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? (e.g. a preliminary approval)

Yes – provide details below or include details in a schedule to this development application

No

List of approval/development application references

Reference number

Assessment manager

Date

Approval

Development application

Approval

Development application

21) Has the portable long service leave levy been paid? (only applicable to development applications involving building work or operational work)

Yes – a copy of the receipted QLeave form is attached to this development application

No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the

assessment manager decides the development application. I acknowledge that the assessment manager may

give a development approval only if I provide evidence that the portable long service leave levy has been paid

Not applicable (e.g. building and construction work is less than \$150,000 excluding GST)

Amount paid

Date paid (dd/mm/yy)

QLeave levy number (A, B or E)

\$

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

Yes – show cause or enforcement notice is attached

No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an

Environmentally Relevant Activity (ERA) under section 115 of the Environmental Protection Act 1994?

Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority

accompanies this development application, and details are provided in the table below

No

Note: Application for an environmental authority can be found by searching "ESR/2015/1791" as a search term at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.

Proposed ERA number:

Proposed ERA threshold:

Proposed ERA name:

Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a hazardous chemical facility?

Yes - Form 69: Notification of a facility exceeding 10% of schedule 15 threshold is attached to this development application

No

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Note: See www.business.qld.gov.au for further information about hazardous chemical notifications.

Clearing native vegetation

23.3) Does this development application involve clearing native vegetation that requires written confirmation that the chief executive of the Vegetation Management Act 1999 is satisfied the clearing is for a relevant purpose under section 22A of the Vegetation Management Act 1999?

Yes – this development application includes written confirmation from the chief executive of the Vegetation

Management Act 1999 (s22A determination)

No

Note: 1. Where a development application for operational work or material change of use requires a s22A determination and this is not included, the development application is prohibited development.

2. See <https://www.qld.gov.au/environment/land/vegetation/applying> for further information on how to obtain a s22A determination.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on

a prescribed environmental matter under the Environmental Offsets Act 2014?

Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as

having a significant residual impact on a prescribed environmental matter

No

Note: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.

Koala habitat in SEQ Region

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work

which is assessable development under Schedule 10, Part 10 of the Planning Regulation 2017?

Yes – the development application involves premises in the koala habitat area in the koala priority area

Yes – the development application involves premises in the koala habitat area outside the koala priority area

No

Note: If a koala habitat area determination has been obtained for this premises and is current over the land, it should be provided as part of this development application. See koala habitat area guidance materials at www.des.qld.gov.au for further information.

Water resources

23.6) Does this development application involve taking or interfering with underground water through an

artesian or subartesian bore, taking or interfering with water in a watercourse, lake or spring, or taking

overland flow water under the Water Act 2000?

Yes – the relevant template is completed and attached to this development application and I acknowledge that a

relevant authorisation or licence under the Water Act 2000 may be required prior to commencing development

No

Note: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au for further information.

DA templates are available from <https://planning.dsdmip.qld.gov.au/>. If the development application involves:

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Taking or interfering with underground water through an artesian or subartesian bore: complete DA Form 1 Template 1

Taking or interfering with water in a watercourse, lake or spring: complete DA Form1 Template 2

Taking overland flow water: complete DA Form 1 Template 3.

Waterway barrier works

23.7) Does this application involve waterway barrier works?

Yes – the relevant template is completed and attached to this development application

No

DA templates are available from <https://planning.dsdmip.qld.gov.au/>. For a development application involving waterway barrier works, complete

DA Form 1 Template 4.

Marine activities

23.8) Does this development application involve aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?

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Yes – an associated resource allocation authority is attached to this development application, if required under the Fisheries Act 1994

No

Note: See guidance materials at www.daf.qld.gov.au for further information.

Quarry materials from a watercourse or lake

23.9) Does this development application involve the removal of quarry materials from a watercourse or lake under the Water Act 2000?

Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

No

Note: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au and www.business.qld.gov.au for further information.

Quarry materials from land under tidal waters

23.10) Does this development application involve the removal of quarry materials from land under tidal water under the Coastal Protection and Management Act 1995?

Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

No

Note: Contact the Department of Environment and Science at www.des.qld.gov.au for further information.

Referable dams

23.11) Does this development application involve a referable dam required to be failure impact assessed under section 343 of the Water Supply (Safety and Reliability) Act 2008 (the Water Supply Act)?

Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application

No

Note: See guidance materials at www.dnrme.qld.gov.au for further information.

Tidal work or development within a coastal management district

23.12) Does this development application involve tidal work or development in a coastal management district?

Yes – the following is included with this development application:
Evidence the proposal meets the code for assessable development that is prescribed tidal work (only required if application involves prescribed tidal work)

A certificate of title

No

Note: See guidance materials at www.des.qld.gov.au for further information.

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the Queensland heritage register or on a place entered in a local government's Local Heritage Register?

Yes – details of the heritage place are provided in the table below

No

Note: See guidance materials at www.des.qld.gov.au for information requirements regarding development of Queensland heritage places.

Name of the heritage place:

Place ID:

Brothels

23.14) Does this development application involve a material change of use for a brothel?

Yes – this development application demonstrates how the proposal meets the code for a development

application for a brothel under Schedule 3 of the Prostitution Regulation 2014
No

Decision under section 62 of the Transport Infrastructure Act 1994

23.15) Does this development application involve new or changed access to a state-controlled road?

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Yes – this application will be taken to be an application for a decision under section 62 of the Transport Infrastructure Act 1994 (subject to the conditions in section 75 of the Transport Infrastructure Act 1994 being satisfied)

No

Walkable neighbourhoods assessment benchmarks under Schedule 12A of the Planning Regulation

23.16) Does this development application involve reconfiguring a lot into 2 or more lots in certain residential zones (except rural residential zones), where at least one road is created or extended?

Yes – Schedule 12A is applicable to the development application and the assessment benchmarks contained in schedule 12A have been considered

No

Note: See guidance materials at www.planning.dsdmip.qld.gov.au for further information.

PART 8 – CHECKLIST AND APPLICANT DECLARATION

24) Development application checklist

I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17

Yes

Note: See the Planning Regulation 2017 for referral requirements

If building work is associated with the proposed development, Parts 4 to 6 of DA Form 2 –

Building work details have been completed and attached to this development application

Yes

Not applicable

Supporting information addressing any applicable assessment benchmarks is with the development application

Note: This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.

Yes

Relevant plans of the development are attached to this development application

Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.

Yes

The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (see 21)

Yes

Not applicable

25) Applicant declaration

By making this development application, I declare that all information in this development application is true and correct

Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications

from the assessment manager and any referral agency for the development application where written information

is required or permitted pursuant to sections 11 and 12 of the Electronic Transactions Act 2001

Note: It is unlawful to intentionally provide false or misleading information.

Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen

assessment manager, any relevant referral agency and/or building certifier (including any professional advisers

which may be engaged by those entities) while processing, assessing and deciding the development application.

All information relating to this development application may be available for inspection and purchase, and/or

published on the assessment manager's and/or referral agency's website.

Personal information will not be disclosed for a purpose unrelated to the Planning Act 2016, Planning

Regulation 2017 and the DA Rules except where:

- such disclosure is in accordance with the provisions about public access to documents contained in the Planning

Act 2016 and the Planning Regulation 2017, and the access rules made under the Planning Act 2016 and

Planning Regulation 2017; or

- required by other legislation (including the Right to Information Act 2009); or

- otherwise required by law.

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This information may be stored in relevant databases. The information collected will be retained as required by the Public Records Act 2002.

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PART 9 – FOR COMPLETION OF THE ASSESSMENT MANAGER – FOR OFFICE
USE ONLY

Date received:

Reference number(s):

Notification of engagement of alternative assessment manager

Prescribed assessment manager

Name of chosen assessment manager

Date chosen assessment manager engaged

Contact number of chosen assessment manager

Relevant licence number(s) of chosen assessment
manager

QLeave notification and payment

Note: For completion by assessment manager if applicable

Description of the work

QLeave project number

Amount paid (\$)

Date paid (dd/mm/yy)

Date receipted form sighted by assessment manager

Name of officer who sighted the form

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DESIGN
DOCUMENTATION
PRELIMINARY
NOT FOR CONSTRUCTION

TROPICAL VETS AYR

PROJECT ADDRESS
241 QUEEN STREET, AYR QLD 4807

CONTENT
SHEET
90
91
92
93
94

TITLE
EXISTING SITE PLAN
PROPOSED SITE PLAN
EXISTING FLOOR PLAN
PROPOSED DEMOLITION PLAN
PROPOSED FLOOR PLANS

REVISION
G
G
G
G
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REVISION DESCRIPTION
RFI UPDATES ADDED
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RFI UPDATES ADDED

REVISION DATE
15/11/23
15/11/23
15/11/23
15/11/23
15/11/23

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26/02/2024 8:33:37 AM

PREPARED BY

0° 41'

56

EXISTING
WEATHERBOARD HOUSE

12

17

.85

4°
19
'

12

0m

4°

.98
m

19

,

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

EXISTING
SHED
REMOVED

15 °

A26512
1079m²

1'

PRELIMINARY
NOT FOR
CONSTRUCTION

°0

87

29

11'

19
.11

m

21 . 3
m

SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

1

EXISTING CROSSOVER HATCHED (ADJOINS
NEIGHBORING PROPERTY
CROSSOVER)

5m

583
9

.45

RP719267
809m²
7m

50

PROJECT NUMBER
DATE

21.2

42
.5 3
m
30
4°
19
'

2242
03/2023

TROPICAL VETS
AYR

EXISTING FIBRO
HOUSE

241 QUEEN STREET, AYR
QLD 4807

EXISTING SHED

NO.

DESCRIPTION

DATE

C ISSUE FOR CLIENT 06/03/23
REVIEW

2

EXISTING
CONCRETE PATH

8'

20
'

504
5

m

EXISTING
CROSSOVER

EXISTING CONCRETE
BLOCK BUILDING

EXISTING SITE PLAN
1 : 300

QU
ST EEN
RE
ET

1

°1

EX
21
I
.28
AW STIN
5m
NIN G 20
9°
G
01
'

30
4

50
.29

583
9

RP719267
1423m²

EXISTING POWER
POLE

D ISSUE FOR CLIENT 08/03/23
REVIEW
E ISSUE FOR CLIENT 09/03/23
REVIEW/
TOWNPLANNING
ADVICE
F

ISSUE FOR

SURVEYOR

27/04/23

G RFI UPDATES
ADDED

15/11/23

SCALE

1 : 300 @ A3

EXISTING SITE
PLAN

EXISTING
CONCRETE
PATH

90 G

708

24.16m

NORTH

DRAWN BY

CM

CHECKED BY

TL

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GOOD NEIGHBOUR FENCING TO
ALL NEW PROPOSED AND
EXISTING BOUNDARIES FOR LOT 2

50

.45

7m

100

0

260

0

260

0

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

260

0

m

1

7.7

2

PRELIMINARY
NOT FOR
CONSTRUCTION

.1

260

0

3

2

GOOD NEIGHBOUR FENCING TO
ALL NEW PROPOSED AND
EXISTING BOUNDARIES FOR LOT 2

4

3m

. 11

260

0

260

0

90°

1

PROPOSED
CONCRETE

CARPARKS
(12)

5m

SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

900

5
19

260
0

12

1'

m
12.108

540
0
6

11

PR
EN OPO
CL S E
OS D
UR BIN
E

21.2

X.
APPRO

10

112
3

AP
PR
OX

°
1 35

.6
.43
8m

90°

PROPOSED
BOUNDARY

9

PROPOSED
PWD SHARED
SPACE

800
0

29
°0
1'

PROPOSED PWD
CARPARK

(LAND REDUCE
TO 610m²)

2m

540
0

,

8

A26512
1079m²
.2
9.5
6

19

7

87
AP
PR
OX

.98
m

0m

240
0

4°
19
'

4°

100
0

.85

21 . 3
m

PROPOSED EXIT

12

15 ° 1

56

EXISTING
WEATHERBOARD
HOUSE - RETAINED

12

AP
PR
OX

0° 41'

EXISTING CROSSOVER HATCHED (ADJOINS
NEIGHBORING PROPERTY
CROSSOVER)

RP719267
809m²
(LAND REDUCE TO 620m²)

PROPOSED
BOUNDARY

EXISTING SHED
8'

20
'

50
.29

Y

m

2

250
0

RP719267
1423m²
(LAND INCREASE TO 2076m²)

EXISTING
CONCRETE
PATH

D ISSUE FOR CLIENT 08/03/23
REVIEW

EXISTING
CROSSOVER
WIDENED

PROPOSED SITE PLAN

150
0

1 : 300

870
0

EXISTING CONCRETE
BLOCK BUILDING RENOVATED

EXISTING POWER
POLE

DESCRIPTION

DATE

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E ISSUE FOR CLIENT 09/03/23
REVIEW/
TOWNPLANNING
ADVICE
ISSUE FOR
SURVEYOR

27/04/23

G RFI UPDATES
ADDED

15/11/23

SCALE

1 : 300 @ A3

PROPOSED SITE
PLAN

EXISTING
CONCRETE PATH

91 G

708

1

NO.

F

EX
21

I
.28

AW STIN
5m
NIN G 20
9°

G
01
,

WINDOW OPENINGS 1.5m FROM
BOUNDARY TO BE REMOVED - MAKE
WALL GOOD TO BE 90/90/90 FRL

PEDESTRIAN
SIGHT SPLAY

QU
ST E E N
RE
ET

°1

241 QUEEN STREET, AYR
QLD 4807

200
0

30
4

710
0

442
8

TROPICAL VETS
AYR

EXISTING FIBRO
HOUSE - RETAINED

600
0
CE
SS

BOLLARDS

110
0

PROPOSED ENCLOSED
ANIMAL EXERCISE AREA

540
0

2242
03/2023

AC

PROPOSED GRAVEL STAFF
CARPARKS

AP

PR
42
OX
.53
.3
m
5. 8
30
4
45
°1
PR
m
9'
OP
OS
PR
ED
OP
CO
OS
NC
ED
RE
FO
TE
OT
DR
PA
I VE
TH
WA

PROJECT NUMBER
DATE

PROPOSED GRAVEL HORSE
FLOAT PARKING AND ACCESS

260
0

250
0

17

PROPOSED
LANDSCAPING

PEDESTRIAN SIGHT SPLAY

2000

24.16m

NORTH

EXISTING SHOPFRONT WITHIN
1.5m FROM BOUNDARY TO BE
REMOVED - MAKE WALL GOOD
TO BE 90/90/90 FRL

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50

250

250

1400

920

950

14286

SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

3366

5316

2050

280

7170

5880

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

3330

PRELIMINARY
NOT FOR
CONSTRUCTION

280

6830

PROJECT NUMBER

18984

18299

2242
03/2023

TROPICAL VETS
AYR

280

5968

19548

3339

DATE

241 QUEEN STREET, AYR
QLD 4807
3332

12329

6830

NO.

DESCRIPTION

DATE

C ISSUE FOR CLIENT 06/03/23
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280

D ISSUE FOR CLIENT 08/03/23
REVIEW

2920

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TOWNPLANNING
ADVICE
ISSUE FOR
SURVEYOR

27/04/23

G RFI UPDATES
ADDED

15/11/23

SCALE

280

3110

6120

3333

F

1 : 100 @ A3

EXISTING FLOOR
PLAN
3170

3480

7456
14286

NO

92 G

1 : 100

H

EXISTING GROUND FLOOR PLAN

RT

1

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SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575
QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

PRELIMINARY
NOT FOR
CONSTRUCTION

PROJECT NUMBER

2242

DATE

03/2023

TROPICAL VETS
AYR
241 QUEEN STREET, AYR
QLD 4807

NO.

DESCRIPTION

DATE

C ISSUE FOR CLIENT 06/03/23
REVIEW
D ISSUE FOR CLIENT 08/03/23
REVIEW
E ISSUE FOR CLIENT 09/03/23
REVIEW/
TOWNPLANNING
ADVICE
F

ISSUE FOR
SURVEYOR

27/04/23

G RFI UPDATES
ADDED

SCALE

15/11/23

As indicated @ A3

PROPOSED
DEMOLITION
PLAN

EXISTING FLOOR COVERING TO BE REMOVED

PROPOSED DEMOLITION GROUND FLOOR PLAN
1 : 100

H

EXISTING WALLS TO REMAIN

1

93 G

RT

EXISTING WALLS TO BE DEMOLISHED

NO

DEMOLITION LEGEND

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3682

2000

UAT & SHR

1955

ISO

DOG WARD

3848

1218

1991

1500

3683

1360

SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

CEILINGS FOR
ROOMS BELOW

NEW WINDOW

SURGERY

RECOVERY

STORAGE

LAB
LINE OF BEAMS
ABOVE

1100

03/2023

EXISTING MEZZANINE TOTAL 201m²
REDUCED TO 76m²

TROPICAL VETS
AYR

OFFICE
CONSULT 2

CONSULT 3

3000

CONSULT 1

2242

DATE

CONSULT 3

2116

LAB/PHARMACY

PHARMACY
EXISTING STEEL
COLUMNS

7684

241 QUEEN STREET, AYR
QLD 4807

1102

2000

PROJECT NUMBER

F

TEA ROOM

OFFICE

TEA ROOM

2116
3000

F

2116

CAT WARD

NEW WINDOW

NURSE

2450

STERI
AC

CONSULT 1/2

PRELIMINARY
NOT FOR
CONSTRUCTION

SCRUB
STERI

2450

CAT WARD

PASS

MEETING ROOM

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

5025

TREATMENT
5943

IMAGING

TREATMENT

3200

SURGERY

2527

IMAGING

9785

WM
DR

NEW WINDOW

1842

FOOD
PREP

1181

1434

HALLWAY

1800

600

DOG WARD

BREAKOUT ROOM

ID

STAIRS

LAUNDRY

STAIR WALLS TO
MEZZANINE
CEILING

DOG WARD

1000

CPD

UAT & SHR

F

1218
1842

ISO

1223

FIRE
DOOR

ISO

VO

LAUNDRY

WALLS FILLED IN WITH FRL
90/90/90 CONSTRUCTION TO
ALL OPENINGS, WITHIN 1.5M OF
BOUNDARY AND TO BACK WALL
CONNECTING TO EXISTING
BACK SHED

5066

6500

UAT & SHR

2645

829

4658

WALLS FILLED IN WITH
FRL 90/90/90
CONSTRUCTION TO ALL
OPENINGS, WITHIN 1.5M
OF BOUNDARY AND TO
BACK WALL CONNECTING
TO EXISTING BACK SHED

1840

RECEPTION/WAITING
DOG WAITING

E ISSUE FOR CLIENT 09/03/23
REVIEW/
TOWNPLANNING
ADVICE

CAT WAITING

3000

3000

3002

CONSULT 1

CONSULT 2

OFFICE

1440

14286

3436

2

OPTION 2

COVERED SHEET VINYL

WINDOWS

G RFI UPDATES
ADDED

15/11/23

SCALE

As indicated @ A3

PROPOSED MEZZANINE PLAN
1 : 100

OPTION 2

H

NEW WALLS
EXISTING WALLS

PROPOSED FLOOR
PLANS

94 G

RT

ITEM BY OTHERS
PLANK VINYL

27/04/23

NO

TOTAL GROSS FLOOR AREAS:
GROUND FLOOR 273m²
MEZZANINE 76m²
TOTAL:
349m²

ISSUE FOR
SURVEYOR

CONSULT 3

PROPOSED GROUND FLOOR PLAN.
1 : 100

DATE

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F

1

DESCRIPTION

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3149

880
4398

DOG WAITING

NO.

SCALE

OVERHEAD CUPBOARDS

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A

STRATEGIC FRAMEWORK

.....	
.....	
.....	3
Liveable communities and infrastructure	
.....	
.....	3

A.1

Burdekin's urban structure

.....	
.....	3
Centres	
.....	
.....	4
Integrated infrastructure	
.....	
.....	5

Safe and resilient communities

.....	
.....	
.....	7

A.4

B

Flood hazard

.....	
.....	
.....	7

ZONE CODES

.....	
.....	
.....	9
Centre Zone Code	
.....	
.....	9
Low-medium density residential zone code	
.....	
.....	15

C

OVERLAY CODES

.....	
.....	
.....	25
Flood hazard overlay code	
.....	
.....	25
Regional infrastructure overlay code	
.....	
.....	29

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DEVELOPMENT

CODES	
.....	
.....	35
Development Works	
Code	
.....	
.....	35
Reconfiguring a Lot	
Code	
.....	
.....	45

Appendix B

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A.1

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Burdekin's Urban Structure

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Centres

Appendix B

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Integrated Infrastructure

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A.4

Flood Hazard

-
-

-
-
-

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Traffic Impact Assessment
239 & 241 Queen Street & 42 Bower Street, Ayr
Proposed Veterinary Services Development

Document Information
Prepared for: Elite Fit Out Solutions Pty Ltd
Project:

Job Reference MOD221247QLD

239 & 241 Queen Street & 42 Bower Street, Ayr
Proposed Veterinary Services Development

Document Control
Version

Date

Description of Revision

Prepared by

Approved By

1

01/12/2023

Final

BF

HS

2

25/01/2024

Final Update for Lodgement

BF

HS

RPEQ Certification

Harj Singh
Director
RPEQ 22364

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ABN 49 668 863 269

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239 & 241 Queen Street & 42 Bower Street, Ayr - 2 -

Introduction

Overview

Modus has been commissioned by Elite Fit Out Solutions Pty Ltd to provide traffic advice in relation to the proposed development located at 239 & 241 Queen Street & 42 Bower Street, Ayr.

This Traffic Impact Assessment (TIA) has been produced by Modus to assess the traffic and transport engineering items in support of the proposed development. A copy of the proposed development plans are provided at Appendix A.

References

The following resources were referred to in the preparation of this report:

N

Burdekin Shire Council Planning Scheme,

N

Institute of Public Works Engineering Australia (IPWEA): Standard Drawings, 2014,

N

Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, 2017,

N

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N

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N

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N

Transport and Main Roads (TMR) Annual Average Daily Traffic (AADT) 2022 Data – TMR Site
Development Volume Impact - BRUCE HIGHWAY (BOWEN - AYR),

N

TMR Guide to Traffic Impact Assessments (2019).

Limitations

Modus has completed this traffic report in accordance with the usual care and thoroughness of the consulting profession. The assessment is based on accepted traffic engineering practises and standards applicable at the time of undertaking the assessment. Modus disclaims responsibility for any changes to project planning or road conditions that may occur after completion of the assessment.

239 & 241 Queen Street & 42 Bower Street, Ayr - 3 -

Existing Conditions

Site Location

The development site is located at 239 & 241 Queen Street & 42 Bower Street, Ayr and is bounded by Queen Street to the south-east and residential dwellings surrounding the development.

In accordance with the Burdekin Shire Council Zoning Maps, the development is located within the Centre Zone. Furthermore, the site achieves primary access via Queen Street and secondary access exists to the rear onto Bower Street. The site location is illustrated on Figure 2-1 below.

Figure 2-1

Site Location

Source: Nearmap

Existing Site Use

The 241 Queen Street site is currently occupied by two (2) building structures, in addition to a shed at the rear of the lot in the north-western corner. The two (2) building structures have previously been utilised for a Hardware and Trades supply use tenanted by Deltra Furniture and Joinery Works.

The 239 Queen Street site is currently occupied by a single residential dwelling, with a single crossover provided onto Queen Street. Additionally, the 42 Bower Street site is currently occupied by a single residential dwelling, with a single crossover provided onto Bower Street. An informal driveway is present on-site that connects the three (3) sites together.

239 & 241 Queen Street & 42 Bower Street, Ayr - 4 -

Existing Road Network

Table 2-1 outlines the characteristics of the existing road network in proximity to the proposed development site.

Table 2-1

Surrounding Road Network Conditions

Road Condition

Queen Street

Bower Street

Hierarchy

State Controlled Road

Local roads of regional significance

Carriageway Widths & Alignment

10.5m typical width with straight horizontal alignment

Road Shoulders

6.0m shoulder at site frontage

3.0m shoulder at site frontage

Movement Restrictions

Two-way movements all directions

Left in / left out only

Posted Speed Limits

50 km/hr

60 km/hr

TMR Road Conditions

Not a Limited Access Road,
Critical Road for service vehicle permits,
Planned upgrade ID 931459 Ayr - Dalbeg
Road to Queen Street, improve safety.

N/A

Active and Public Transport Facilities

A dedicated pedestrian pathway is currently provided along the site frontage along Queen Street that connects to the wider pedestrian network. Furthermore, a dedicated pedestrian pathway is provided directly south of the existing crossover onto Bower Street which also connects to the wider pedestrian network.

Furthermore, the development site is located approximately 1.0km south-east of the Ayr Railway Station.

Crash History

Crash data over the previous 5 years was obtained from TMR in order to determine any incident trends in the vicinity of development site. The TMR Crash data suggests that zero (0) crashes have occurred within vicinity of the development site within the previous 5 years, and hence does not any intrinsic existing safety concerns.

239 & 241 Queen Street & 42 Bower Street, Ayr - 5 -

Proposed Development Overview

The proposed development comprises a Veterinary Services use located within the existing building on-site. The development will utilise the existing concrete block building for the primary operations, where the adjacent existing shed (north-west of the existing concrete block building) will be utilised for storage exclusively. On this basis, the effective Gross Floor Area (GFA) of the proposed Veterinary Services use is 349 sq.m over a Ground Floor and Mezzanine Floor component. As part of the proposed development, the following traffic arrangements will be implemented:

N

Access upgrade onto Queen Street to crossover width 8.7m and access driveway width 6.0m,

N

1.1m protected pedestrian pathway (via bollards) along the building extent,

N

Demolition of the existing shed in the northern lot region to accommodate 12 parking spaces inclusive of one (1) PWD parking space,

N

Three (3) staff spaces north-west of the adjacent existing shed,

N

Formal exit only egress via the adjacent lot onto Bower Street.

Furthermore, the proposed operational hours are anticipated to be consistent with other Tropical Vet practices, of which are typically open from 8:00AM-5:00PM on weekdays and 9:00AM-12:00PM on Saturdays. The proposed development plans are illustrated on Figure 3-1, and provided in full at Appendix A.
Figure 3-1

Proposed Development Plans

239 & 241 Queen Street & 42 Bower Street, Ayr - 6 -

Proposed Residential Access to 42 Bower Street

Furthermore, a new access crossover is proposed onto Bower Street along the frontage of 42 Bower Street solely to service the existing residential dwelling that will be retained.

This proposed access crossover will only be utilised by private vehicles associated with the existing residential dwelling, as a means to separate residential private vehicles from outbound vehicles associated with the Veterinary Services use.

The proposed access crossover is illustrated on Figure 3-2 below and is further discussed in Section 4.1.3 of this report.

Figure 3-2

Proposed Residential Access to 42 Bower Street

239 & 241 Queen Street & 42 Bower Street, Ayr - 7 -

Overall Development Access Arrangements

The development access arrangements outlined in Table 3-1 are proposed.
Table 3-1

Proposed Access Arrangements

Site

Access Arrangements

N

Access upgrade to crossover width 8.7m and access driveway width 6.0m,

N

The existing crossover south of this (in front of the existing roller door) is to be removed with the kerb reinstated at this location:

N

The existing crossover is to remain as is, to ensure that residential access is separated from the proposed development access,

N

Formal exit only egress that only accommodates left-out movements,

N

New 3.0m wide crossover onto Bower Street to accommodate inbound / outbound private vehicle access solely for the existing dwelling at 42 Bower Street.

241 Queen Street

239 Queen Street

42 Bower Street

239 & 241 Queen Street & 42 Bower Street, Ayr - 8 -

Traffic and Transport Design Review Access Design and Locations

4.1.1

Driveway Design

In accordance with Australian Standards AS2890.1, the minimum driveway requirements for the proposed development are outlined in Table 4-1.
Table 4-1

Driveway Design Compliance

AS2890.1 Driveway Design Compliance
Site Conditions
Access Facility Category
Required Driveway Widths

Requirements
Arterial Road Frontage
User Class 3
<25 Spaces
2
Minimum 6.0m - 9.0m combined,
Minimum 3.0m for one-way entry / exit.

The proposed two-way (entry and exit) driveway onto Queen Street is 6.0m wide, and the one-way (exit only) driveway onto Bower Street is minimum 3.3m in width. Therefore, the proposed driveway widths are compliant with Australian Standards AS2890.1.

4.1.2

Driveway Crossover Design

The proposed development plans indicate a non-compliant crossover design onto Queen Street, compared to the IPWEAQ Standard Drawing requirements. However, Modus considers the proposed crossover design acceptable given that the design allows two (2) B99 design vehicles to enter and exit simultaneously, with a consistent 600mm clearance between both vehicles. This is demonstrated on the swept path assessment provided at Appendix B. Furthermore, the development plans do not suggest the proposed crossover design onto Bower Street. Therefore, Modus recommends the crossover be designed in accordance with General Wide Crossover design as per IPWEAQ Standard Drawings RS-051 as detailed below:

239 & 241 Queen Street & 42 Bower Street, Ayr - 9 -

4.1.3

Proposed Residential Crossover Design

The proposed access crossover will only be utilised by private vehicles associated with the existing residential dwelling, as a means to separate residential private vehicles from outbound vehicles associated with the Veterinary Services use. The proposed access crossover has been designed in accordance with IPWEAQ Standard Drawing RS-049, comprising a 4.0m width at the kerb line and a 3.0m width at the property boundary. This is illustrated on Figure 4-1 below.

Figure 4-1

Proposed Residential Crossover Design

Furthermore, the crossover location allows the existing on-site pathway that leads to the residential dwelling to be retained, in addition to achieving sufficient separation distance to the existing utility pole and grounding cable north of the frontage access gate. Provided that Bower Street is currently divided, the proposed residential access crossover will accommodate left-in / left-out private vehicle movements. Additionally, in accordance with the Burdekin Shire Planning Scheme, a forward-in / forward-out vehicle arrangement is only required when the frontage road is classed as a State Controlled Road or Arterial Road. Given that Bower Street is not classed as either of these classifications, a reverse-out manoeuvre is permissible. Therefore, Modus has conducted a swept path assessment which confirms a B85 design vehicle is able to safely and efficiently enter & exit the site by utilising the proposed access design. This swept path assessment is provided at Appendix B. Overall, Modus considers the proposed residential access design and location to be acceptable, acknowledging this crossover will only be utilised by private vehicles (typical traffic generation of one vehicle per hour).

4.1.4

Driveway Location Impacts

The proposed driveway location fronting Queen Street will require the following modifications:

N

Removal of one (1) on-street parking space,

N

Relocation of the roundabout warning signage.

These impacts are illustrated in Table 4-2 below for reference.

Table 4-2

Driveway Location Implications

Proposed Development Driveway Location

Google Streetview Imagery Context

From a review of historic Aerial and Google Streetview imagery, the impacted on-street parking space is not frequently utilised. Furthermore, there are substantial on-street parking spaces along Queen Street to accommodate vehicle parking. Therefore, removal of this single on-street parking space is not expected to significantly impact on-street car parking. Modus also notes that the existing power pole along the Queen Street frontage will be retained in its current location, where the swept path assessment provided at Appendix B ensures all vehicles can enter the site with a 500mm clearance to the power pole. Furthermore, the proposed access onto Bower Street will not have any impacts for on-street space / street furniture.

4.1.5

Grades and Pedestrian Pathway Impacts

While the proposed development plans do not outline the required grades at and across the access driveways, Modus recommends that the grade requirements outlined in Australian Standards AS2890.1 and IPWEAQ Standard Drawing RS-50 is achieved. Achieving the grade requirements stipulated within the abovementioned documents will ensure that no vehicle scraping will occur, as well as a 2.5% pedestrian pathway grade being implemented. It appears the existing crossover onto Queen Street achieves these grades, and hence the grades of the proposed crossover are to be consistent with the existing crossover grades on this basis.

4.1.6

Recommended Driveway Directional Movements

To ensure the development does not impact the safety nor efficiency of the external road network, Modus recommends that the directional movements illustrated on Figure 4-2 be implemented.

Figure 4-2

Recommended Driveway Directional Movements

Modus recommends that right-turning exit movements onto Queen Street be restricted such that vehicle queueing within the central turning lane of Queen Street does not occur. It is reasoned that vehicles exiting onto Bower Street would travel to the Bower Street / Queen Street / Kennedy Street intersection to the south, where vehicles undertaking this right-turn exit onto Queen Street would also arrive at this intersection. As such, no extensive delays or diversions will result due to restricting right-turning exit movements onto Queen Street. Furthermore, it is acknowledged that the hatched island along Bower Street does not allow right out movements, and hence Modus recommends only left-out movements be permitted at the access onto Bower Street.

4.1.7

Pedestrian Sight Splays

In accordance with Australian Standards AS2890.1, pedestrian sight splays should be provided at the egress point of a driveway and measure 2.5m in length and 2.0m in width from the property boundary.

The proposed development is able to accommodate sufficient pedestrian sight splays for the access crossover onto Queen Street, with one pedestrian sight splay provided onto the crossover onto Bower Street.

While a pedestrian sight splay is not provided on the southern side of the Bower Street crossover

measured from the property boundary, it is noted that an Australian Standards AS2890.1 complaint

pedestrian sight splay is achievable from the existing pedestrian pathway along Bower Street. This is illustrated on Figure 4-3 below.

Figure 4-3

Southern Pedestrian Sight Splay for Bower Street Crossover

Provided that an Australian Standards AS2890.1 complaint pedestrian sight splay is achievable from the existing pedestrian pathway along Bower Street, of which pedestrians will be walking along (as opposed to directly at the property boundary), Modus considers the pedestrian visibility to be acceptable.

Furthermore, as detailed further within this traffic report, it is anticipated that at most three (3) vehicles will exit onto Bower Street in a given hour, which is an extremely low frequency. Additionally, the development is able to accommodate service vehicle inbound and outbound movements exclusively via the Queen Street access crossover.

4.1.8

Vehicle Access Sight Distance

Modus has assessed the Safe Intersection Sight Distance (SISD) available at the Queen Street and Bower Street access to determine whether the development accesses have restricted vehicular visibility. The SISD assessment has been undertaken in accordance with AGTRD Part 3 and 4A for the following values:
N

Decision Time (DT): 5.0 seconds,

N

Design Speed (V): 60km/hr along Queen Street, 70km/hr along Bower Street (+10 km/hr above posted speed limit),

N

Coefficient of Deceleration (d): 0.46

Therefore, the corresponding SISD distance along Queen Street is 114m and along Bower Street is 138m, to be measured 5.0m back from the directional conflict point. The minimum SISD requirements at each location is provided in detail at Appendix C. In summary, the SISD assessment indicates that the existing street furniture and on-street parking will not be required to be relocated or modified. Furthermore, it is acknowledged that the vehicle sight distance requirements in accordance with Australian Standards AS2890.1 for each frontage road is below:
N

Queen Street Access: 69m sight distance (5 second desirable gap),

N

Bower Street Access: 83m sight distance (5 second desirable gap),

Provided that the SISD distance requirement far exceeds the sight distance requirement as per Australian Standards AS2890.1, of which the SISD distance is achieved, this indicates the vehicle access sight distance is acceptable.

Parking Provision

In accordance with Table 6.2.1.3(e) of the Burdekin Shire Planning Scheme, the minimum car parking requirements for the proposed development is outlined in Table 4-3.
Table 4-3

Proposed Car Parking Assessment

Land Use

Car Parking Requirement

Yield

Car Parking
Required

Car Parking
Proposed

Compliant

Veterinary
Service

1 space per 50m²
gross floor area.

349 sq.m GFA

7 spaces

15 Spaces Total

✓

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Therefore, the proposed development provides the minimum car parking requirements outlined in the Burdekin Shire Planning Scheme. As previously outlined, the adjacent existing shed (north-west of the existing concrete block building) will be utilised for storage exclusively and hence will not warrant a parking demand.

Furthermore, one (1) PWD parking space is provided on-site as per the National Construction Code (NCC) requirements.

Parking Layout

Modus has conducted a design review of the car park against the design guidelines within Australian Standards AS2890.1. The compliance has been summarised below in Table 4-4.
Table 4-4

Car Parking Layout Compliance

AS2890.1
Requirement

Proposed Design

Compliant

Bay Length – General Spaces

5.4m

5.4m



Bay Length – PWD Spaces

5.4m

5.4m



Bay Width – Staff Spaces

2.4m

2.4m



Bay Width – Visitor Spaces

2.6m

2.6m



Bay Width – PWD Spaces

2.4m + adjacent 2.4m
wide shared zone

2.4m + adjacent 2.4m

wide shared zone



Parking Aisle Width

5.8m

8.0m



Parking Clearance
(any obstruction exceeding 0.15m)

0.3m

> 0.3m



Terminating Aisle Extension

1.0m

1.0m



Design Criteria
Parking Bays

Parking Aisles

Therefore, the proposed parking layout is compliant with the requirements of Australian Standards

AS2890.1. Furthermore, Modus has conducted a swept path assessment which confirms the following:

N

A B85 design vehicle is able to manoeuvre to safely and efficiently, within and from the site,

N

Two (2) B99 design vehicles to enter and exit simultaneously from Queen Street,

N

A car and trailer (11.5m design length) is able to traverse throughout the site, as well as two-way simultaneous car and trailer entry / exit movements via Queen Street.

This is demonstrated on the swept path assessment provided at Appendix B.

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Servicing Requirements

The Burdekin Shire Planning Scheme does not indicate the required service vehicle for a Veterinary Service, though a review of surrounding Local Government Area Planning Schemes indicates the following service vehicles:

N

Small Rigid Vehicle (SRV),

N

Refuse Collection Vehicle (RCV).

Therefore, Modus has conducted a swept path assessment for each of the above service vehicles which confirms each vehicle can safely and efficiently travel to, within and from the site in a forward gear. This swept path assessment is provided at Appendix B. Modus recommends that a service management plan be implemented such that SRV and RCV servicing occurs outside operational hours, such that the on-site parking operations are not impacted for general vehicles.

Burdekin Shire Council Code Requirements

Modus has prepared Code responses to the Traffic and Transport related codes within Table 6.2.1.3(b)

of the Burdekin Shire Council Planning Scheme (refer to Appendix D).

The development accords with the relevant Acceptable Outcomes / Performance Outcomes of the

Burdekin Shire Council Planning Scheme and hence Modus considers the proposed development

acceptable from a traffic perspective.

Traffic Generation Impact

Development Traffic Generation

Provided that there is a lack of traffic generation data pertaining to Veterinary Service uses, Modus has assessed the indicative traffic generation from a first principles assessment.
As such, the traffic generation associated with the proposed use is derived below:

N

The Tropical Vets practices operate on a booking / appointment basis, in which patrons are to book an appointment prior to travelling to the site (with exception for emergencies),

N

From a review of the online Tropical Vets booking system for the existing practises, multiple bookings cannot take place at the same time where at minimum a 10-minute time separation is available between booking slots,

N

On this basis, at most a new vehicle / patron will travel to the site once every 10 minutes, equating to six (6) vehicles travelling inbound within a given hour,

N

Based on Google Patronage Data for other Tropical Vet sites, patrons typically spend 15-45 minutes on-site (as illustrated from the Tropical Vets Ingham site),

N

Therefore, at most six (6) vehicles will travel outbound within a given hour of which will occur 1545 minutes after each vehicle travels to the site.

Therefore, the theoretical hourly traffic generation rate is six (6) inbound vehicles every hour, and six (6) outbound vehicles every hour, equating to 12 cumulative vehicles per hour. To validate this traffic generation, Modus has assessed the peak parking accumulation based on the above traffic generation compared to the minimum car parking rate outlined in the Burdekin Shire Planning Scheme (7 spaces). Assuming each patient stays on-site for 45 minutes with one (1) inbound patient every 10 minutes, this corresponds to a peak parking accumulation of five (5) visitor parking spaces in a given hour. Allowing for an extra two (2) parking spaces indicatively for staff, this corresponds to a peak parking accumulation of seven (7) total parking spaces in a given hour. On this basis, Modus considers the abovementioned traffic generation rates to be appropriate given that the resultant peak hour parking accumulation aligns within the minimum car parking rate outlined in the Burdekin Shire Planning Scheme.

Queen Street Background Traffic Volumes

To understand the background traffic volumes along Queen Street, Modus has referenced the AADT data provided from the 2022 TMR AADT data for Queen Street (TMR Site 91396). Based on the 2022 TMR AADT data, the background traffic volumes along Queen Street at the site frontage are illustrated on Figure 5-1.

239 & 241 Queen Street & 42 Bower Street, Ayr - 17 -

Figure 5-1

Queen Street 2022 AADT Volumes

Source: TMR AADT Data for TMR Site 91396 in 2022

An industry accepted factor is that the AM and PM peak hours approximately 10% of the directional AADT volumes. Therefore, the AM and PM peak hour background directional volumes along Queen Street are as follows:
N

Queen Street (travelling from the south to the north): 302 vehicles per hour (vph).

N

Queen Street (travelling from the north to the south): 249 vehicles per hour (vph).

Development Directional Distributions
Modus has assumed that the development traffic directional distribution is consistent with the existing background traffic directional distribution, of which has been referenced from the 2022 TMR AADT data for Queen Street (TMR Site 91396).
As such, the following background directional distributions have been derived:
N

Queen Street (travelling from the south to the north): 55%,

N

Queen Street (travelling from the north to the south): 45%.

Provided that development allows northbound exit movements onto Queen Street, and southbound exit movements onto Bower Street, Modus has assumed the outbound vehicle distributions are consistent with the abovementioned background directional distributions.

239 & 241 Queen Street & 42 Bower Street, Ayr - 18 -

Proposed Development Traffic Generation Volumes

Therefore, the proposed development directional distributions based on the peak hour traffic generations outlined in Section 5.1 is illustrated on Figure 5-2 below.
Figure 5-2

Proposed Development Peak Hour Traffic Generation Volumes

Source: TMR AADT Data for TMR Site 91396 in 2022

Development Volume Impact

Therefore, the impact of the development peak hour traffic volumes compared to the background peak hour traffic volumes is illustrated in Table 5-1.
Table 5-1

Proposed Development Volume Impact

Directional Distribution

Background
Peak Hour
Volumes

Development
Peak Hour
Volumes

Impact

Queen Street (travelling from the south to the north)

302 vph

3 vph

0.99%

Queen Street (travelling from the north to the south)

249 vph

3 vph

1.2%

Therefore, impact of the development peak hour traffic volumes compared to the background peak hour traffic volumes is less than 5%, hence indicating the proposed development will not have a significant impact on the safety nor efficiency of the external road network.

Safety Considerations

Based on the findings of the above, Modus does not consider there to be any safety concerns in relation to the proposed development on the following basis:

N

The development will accommodate left-out only movements onto Queen Street and Bower Street, indicating that safety concerns associated with right-out movements are negated,

N

The access locations provide sufficient SISD on the approaches along Queen Street and Bower Street, and hence the likelihood of a vehicle collision is considered to be extremely low,

N

The development will not generate a substantial traffic generation, of which a maximum of three (3) vehicle movements will occur on each directional inbound / outbound vehicle movement. This corresponds to a vehicle every 20 minutes on average within an hour period, which is considered to be an extremely low frequency,

N

Further to the above, the low traffic generation volumes will not compromise the safety nor efficiency of the external road network and intersections,

Overall, the development is not considered to generate any significant risks, nor exacerbate any background risks. This is verified on the basis that there have been zero (0) reported crashed within the previous five (5) year period.

SARA Development Code Requirements

Furthermore, Modus has prepared Code responses to SDAP Codes 1 and 6 (refer to Appendix D).

The proposed development does not compromise the safety nor efficiency of the external road network, nor does the proposed development impede on the current / future road operations.

Therefore, Modus considers the proposed development acceptable from a traffic perspective.

Summary

Modus has been commissioned by Elite Fit Out Solutions Pty Ltd to provide traffic advice in relation to the proposed development located at 239 & 241 Queen Street & 42 Bower Street, Ayr.

Based on the assessment undertaken, Modus has the following findings:

EXISTING SITE CONDITIONS

N

The development site is located within the Centre Zone and fronts Queen Street (TMR Road) and Bower Street (Council Road),

N

The Council / State conditions along these frontage roads do not restrict vehicular access to / from the site,

N

TMR Crash data suggests that zero (0) crashes have occurred within vicinity of the development site within the previous 5 years, and hence does not any intrinsic existing safety concerns.

PROPOSED DEVELOPMENT REVIEW

N

The proposed driveway widths comply with Australian Standards AS2890.1 requirements,

N

The proposed driveway crossover designs are sufficient in accommodating the development traffic,

N

The proposed driveway location onto Queen Street will require removal of one (1) on-street parking space and the relocation of one (1) roundabout warning sign,

N

A new driveway and crossover is proposed along the 42 Bower Street frontage to accommodate residential vehicle access solely for the existing residential dwelling, where the crossover design and location is considered acceptable,

N

The minimum SISD requirements at the access locations can be achieved, indicating that the existing street furniture and on-street parking will not be required to be relocated or modified (not including the above implications),

N

The development exceeds the minimum parking requirements outlined in the Burdekin Shire Planning Scheme,

N

The parking layout accords with Australian Standards AS2890.1 requirements,

N

The development can service a SRV and RCV allowing forward-in / forward-out movements,

N

The development is anticipated to generate 6 inbound trips, and 6 outbound trips within the development peak hour period (12 trips total),

N

The development traffic is less than 5% of the background traffic volumes along Queen Street, and therefore the development is not considered to have a significant impact on the safety nor efficiency of the external road network.

239 & 241 Queen Street & 42 Bower Street, Ayr - 21 -

Should there be any issue with the above, please contact the undersigned.

Yours sincerely,

MODUS TRANSPORT AND TRAFFIC ENGINEERING
Harj Singh
Director (RPEQ 22364)

239 & 241 Queen Street & 42 Bower Street, Ayr - 22 -

APPENDIX A
Development Plans

239 & 241 Queen Street & 42 Bower Street, Ayr - 21 -

0° 41'

4°

19

m

540

0

,

.85

800

0

0

19

,

100

4°

7

0m

100

12

8

50

.45

0

260

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

4

7.7

0

PRELIMINARY
NOT FOR
CONSTRUCTION

.1

260

AP

PR

OX

2

00

1

EXISTING CROSSOVER HATCHED (ADJOINS
NEIGHBORING PROPERTY
CROSSOVER)

1

70

PROPOSED
CONCRETE
CARPARKS
(12)

5m

GOOD NEIGHBOUR FENCING TO
ALL NEW PROPOSED AND
EXISTING BOUNDARIES FOR LOT 2

23
m

29
°0
1'

260
0
260
0
260

90°

3

3

0
240

15° 1
1'

7m
21.2

GOOD NEIGHBOUR FENCING TO
ALL NEW PROPOSED AND
EXISTING BOUNDARIES FOR LOT 2

5

112

AP
PR

X.

APPRO

12

PR
EN OPO
CL SE
OS D
UR BIN
E

m
12.108

900

0
11

8m
OX

.6

.43

°
135

8000

00

PROPOSED
BOUNDARY

SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

0

6

0

2m

540

260

(LAND REDUCE
TO 610m²)

.56

10

PROPOSED
PWD SHARED
SPACE

90°

29

9

19
.11
m

A26512
1079m²

AP
P

R0
X.

PROPOSED PWD
CARPARK

21.3

87

260

m

0

PROPOSED EXIT

.98

12

0

56

EXISTING
WEATHERBOARD
HOUSE - RETAINED

80

RP719267
809m²
(LAND REDUCE TO 620m²)

PROPOSED
BOUNDARY

0
18

'2

0' '

00
70

Y

110

800
0

241 QUEEN STREET, AYR
QLD 4807

50

0
800

.29

0

m

710

2

800

0

250
0

EXISTING
CONCRETE
PATH

D ISSUE FOR CLIENT 08/03/23
REVIEW

EXISTING
CROSSOVER
WIDENED

PROPOSED SITE PLAN

150
0

1 : 300

870

EXISTING POWER
POLE

DESCRIPTION

DATE

C ISSUE FOR CLIENT 06/03/23
REVIEW

E ISSUE FOR CLIENT 09/03/23
REVIEW/
TOWNPLANNING
ADVICE
F ISSUE FOR
SURVEYOR

27/04/23

G RFI UPDATES
ADDED

15/11/23

SCALE

1 : 300 @ A3

PROPOSED SITE
PLAN

EXISTING
CONCRETE PATH

91 G

708

1

EXISTING CONCRETE
BLOCK BUILDING RENOVATED

EX
21
I
.28
AW STIN
5m
NIN G 20
9°
G
01
,

WINDOW OPENINGS 1.5m FROM
BOUNDARY TO BE REMOVED - MAKE
WALL GOOD TO BE 90/90/90 FRL

NO.

0

RP719267
1423m²
(LAND INCREASE TO 2076m²)

PEDESTRIAN
SIGHT SPLAY

QU
ST EEN
RE
ET

30
4°

EXISTING SHED

200
0

8

S

600
442

2242
03/2023

TROPICAL VETS
AYR

EXISTING FIBRO
HOUSE - RETAINED

AC
C

BOLLARDS

0

0

PROPOSED ENCLOSED
ANIMAL EXERCISE AREA

540

ES

0
PROPOSED GRAVEL STAFF
CARPARKS

AP
PR
OX
.53
.3
m
30
5.8
4
45
PR
°1
m
9'
OP

OS
PR
ED
OP
CO
OS
NC
ED
RE
FO
TE
OT
DR
PA
IVE
TH
WA

42

PROJECT NUMBER
DATE

PROPOSED GRAVEL HORSE
FLOAT PARKING AND ACCESS

260

250
0

17

PROPOSED
LANDSCAPING

PEDESTRIAN SIGHT SPLAY

2000

24.16m

NORTH

EXISTING SHOPFRONT WITHIN
1.5m FROM BOUNDARY TO BE
REMOVED - MAKE WALL GOOD
TO BE 90/90/90 FRL

DRAWN BY

CM

CHECKED BY

TL

Report all discrepancies in this drawing and/or included specification to this office prior to construction. No claims arising due to negligence of these precautions shall be accepted. These drawings are copyright and cannot be reproduced wholly or in any part without written permission.

0° 41'

17

56

EXISTING
WEATHERBOARD HOUSE

12

.85

12

4°

4°

0m

.98

19

m

,

19

,

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

EXISTING
SHED
REMOVED

00

A26512
1079m²

EXISTING CROSSOVER HATCHED (ADJOINS
NEIGHBORING PROPERTY
CROSSOVER)

RP719267
809m²

583

9

5m

800

0

42

30
4°

m

19

,

00
70

241 QUEEN STREET, AYR
QLD 4807

7000

70

800

00

NO.

00

EXISTING
CONCRETE PATH

'2

583
9

0''

504
5

m

EXISTING
CROSSOVER

EXISTING CONCRETE
BLOCK BUILDING

EXISTING SITE PLAN
1 : 300

QU
ST EEN
RE
ET

18

EX
21
I
.28
AW STIN
5m

NIN G 20
9°
G
01
,

4°

.29

8000

2

30

DESCRIPTION

DATE

C ISSUE FOR CLIENT 06/03/23
REVIEW

0

RP719267
1423m²

50

2242
03/2023

TROPICAL VETS
AYR

EXISTING FIBRO
HOUSE

.53

EXISTING SHED

EXISTING POWER
POLE

D ISSUE FOR CLIENT 08/03/23
REVIEW

E ISSUE FOR CLIENT 09/03/23
REVIEW/

TOWNPLANNING
ADVICE

F ISSUE FOR
SURVEYOR

27/04/23

G RFI UPDATES
ADDED

15/11/23

SCALE

1 : 300 @ A3

EXISTING SITE
PLAN

EXISTING
CONCRETE
PATH

90 G

708

1

PROJECT NUMBER
DATE

21.2

7m

.45

70

1
50

PRELIMINARY
NOT FOR
CONSTRUCTION

29
°0

15° 1
1

87

1'

19
.11
m

,

8000

80
0

0

21.3

m

SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

80

24.16m

NORTH

DRAWN BY

CM

CHECKED BY

TL

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50

250

250

1400

920

950

14286

3366

5316

SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

2050

280

7170

5880

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

3330

PRELIMINARY
NOT FOR
CONSTRUCTION

280

6830

PROJECT NUMBER

18984

18299

2242
03/2023

TROPICAL VETS
AYR

280

5968

19548

3339

DATE

241 QUEEN STREET, AYR
QLD 4807
3332

12329

6830

NO.

DESCRIPTION

DATE

C ISSUE FOR CLIENT 06/03/23
REVIEW

280

D ISSUE FOR CLIENT 08/03/23
REVIEW

F ISSUE FOR
SURVEYOR

27/04/23

G RFI UPDATES
ADDED

15/11/23

SCALE

280

3110

6120

3333

2920

E ISSUE FOR CLIENT 09/03/23
REVIEW/
TOWNPLANNING
ADVICE

1 : 100 @ A3

EXISTING FLOOR
PLAN
3170

3480

7456
14286

1

EXISTING GROUND FLOOR PLAN

1 : 100

H
RT

NO

92 G
DRAWN BY

CM

CHECKED BY

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SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

UP

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

PRELIMINARY
NOT FOR
CONSTRUCTION

PROJECT NUMBER

2242

DATE

03/2023

TROPICAL VETS
AYR
241 QUEEN STREET, AYR
QLD 4807

NO.

DESCRIPTION

DATE

C ISSUE FOR CLIENT 06/03/23
REVIEW
D ISSUE FOR CLIENT 08/03/23
REVIEW
E ISSUE FOR CLIENT 09/03/23
REVIEW/
TOWNPLANNING
ADVICE
F ISSUE FOR
SURVEYOR

27/04/23

G RFI UPDATES
ADDED

SCALE

15/11/23

As indicated @ A3

PROPOSED
DEMOLITION
PLAN

EXISTING WALLS TO REMAIN
EXISTING FLOOR COVERING TO BE REMOVED

1

PROPOSED DEMOLITION GROUND FLOOR PLAN

1 : 100

H
RT

EXISTING WALLS TO BE DEMOLISHED

93 G

NO

DEMOLITION LEGEND

DRAWN BY

CM

CHECKED BY

TL

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2000

UAT & SHR

1955

ISO

DOG WARD
3848

1218

6500

FIRE
DOOR

DOG WARD

1181

1434

DN
BREAKOUT ROOM
NEW WINDOW

1842

HALLWAY

1360

CEILINGS FOR
ROOMS BELOW

SUITE 4, 1 INNOVATION PARKWAY
BIRTINYA, 4575

NEW WINDOW

SURGERY

STERI

RECOVERY

7684

STORAGE

LAB
LINE OF BEAMS
ABOVE

1100

03/2023

EXISTING MEZZANINE TOTAL 201m²
REDUCED TO 76m²

TROPICAL VETS

AYR

OFFICE
CONSULT 2

CONSULT 3

3000

CONSULT 1

2242

DATE

CONSULT 3

2116

LAB/PHARMACY

PHARMACY
EXISTING STEEL
COLUMNS

PRELIMINARY
NOT FOR
CONSTRUCTION

PROJECT NUMBER

F

TEA ROOM

QBSA LICENCE No. 1076691
VBA REGISTRATION CCB-L 54024
PH: 07 5413 5600

241 QUEEN STREET, AYR
QLD 4807

1102

2000

F

OFFICE

2116
3000

CONSULT 1/2

TEA ROOM

AC

2116

CAT WARD

NEW WINDOW

NURSE

2450

SCRUB
STERI

2450

CAT WARD

PASS

MEETING ROOM

5025

TREATMENT
5943

IMAGING

TREATMENT

3200

SURGERY

2527

IMAGING

9785

1800

FOOD
PREP

1500

WM
DR

3683

STAIRS

LAUNDRY

STAIR WALLS TO
MEZZANINE
CEILING

DOG WARD

UP

1991

1000

CPD

UAT & SHR

F

1218

1842

ISO

ISO

ID

V0

LAUNDRY

WALLS FILLED IN WITH FRL
90/90/90 CONSTRUCTION TO
ALL OPENINGS, WITHIN 1.5M OF
BOUNDARY AND TO BACK WALL
CONNECTING TO EXISTING
BACK SHED

5066

4658

829

600

2645

3682

UAT & SHR

1223

WALLS FILLED IN WITH
FRL 90/90/90
CONSTRUCTION TO ALL
OPENINGS, WITHIN 1.5M
OF BOUNDARY AND TO
BACK WALL CONNECTING
TO EXISTING BACK SHED

1840

RECEPTION/WAITING
DOG WAITING

1

3000

3002

CONSULT 1

CONSULT 2

OFFICE

1440

E ISSUE FOR CLIENT 09/03/23
REVIEW/
TOWNPLANNING
ADVICE

14286

3436

2

OPTION 2

WINDOWS

G RFI UPDATES
ADDED

15/11/23

SCALE

As indicated @ A3

NEW WALLS
EXISTING WALLS

PROPOSED FLOOR
PLANS

PROPOSED MEZZANINE PLAN
1 : 100

OPTION 2

H
RT

ITEM BY OTHERS
PLANK VINYL

27/04/23

94 G

NO

COVERED SHEET VINYL

F ISSUE FOR
SURVEYOR

CONSULT 3

PROPOSED GROUND FLOOR PLAN.

TOTAL GROSS FLOOR AREAS:
GROUND FLOOR 273m²
MEZZANINE 76m²
TOTAL :
349m²

DATE

D ISSUE FOR CLIENT 08/03/23
REVIEW

CAT WAITING

3000

1 : 100

DESCRIPTION

C ISSUE FOR CLIENT 06/03/23
REVIEW
3149

880

4398

DOG WAITING

NO.

SCALE

OVERHEAD CUPBOARDS

DRAWN BY

CM

CHECKED BY

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APPENDIX B
Swept Path Assessment

239 & 241 Queen Street & 42 Bower Street, Ayr - 22 -

00

VEHICLE USED IN SIMULATION
B99

70

5.20

0.95

Meters
Width
Track
Lock to Lock Time
Steering Angle

3.05

: 1.94
: 1.84
: 6.0
: 33.5

SWEPT PATH LEGEND
VEHICLE BODY
FRONT TIRES
VEHICLE PATH
VEHICLE CLEARANCE (300mm)
VEHICLE
5KM/H DESIGN SPEED
10KM/H DESIGN SPEED

70

00

8000

80

00

PROJECT
241 QUEEN STREET
CLIENT
ELITE FITOUTS
DRAWING TITLE
B99 ACCESS VEHICLE
SWEPT PATH
DRAWING NUMBER
MOD221247QLD - SK02
DATE

REVISION

30 NOV 2023

D

REV DRAWN BY APPROVED

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AMENDMENT DETAILS

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310 Edward Street, BRISBANE CITY QLD 4000
T: 1300 606 408 E: marketing@moduseng.com.au
W: www.modusengineering.com.au

VEHICLE USED IN SIMULATION

70

00

5.20

0.95

3.05

1.20

1.30

5.00

3.70

CAR&TRAILER

meters

Car Width

Trailer Width

Car Track

Trailer Track

Lock to Lock Time

Steering Angle

Articulating Angle

: 1.94

: 1.94

: 1.84

: 1.84

: 6.0

: 33.5

: 70.0

SWEPT PATH LEGEND

VEHICLE BODY

FRONT TIRES

VEHICLE PATH

VEHICLE CLEARANCE (500mm)

VEHICLE

5KM/H DESIGN SPEED

10KM/H DESIGN SPEED

70

00

8000

80

00

PROJECT

241 QUEEN STREET

CLIENT

ELITE FITOUTS

DRAWING TITLE

CAR AND TRAILER SWEPT

PATH

DRAWING NUMBER

MOD221247QLD - SK07

DATE

REVISION

30 NOV 2023

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VEHICLE USED IN SIMULATION

5.20

0.95

3.05

1.20

1.30

5.00

3.70

CAR&TRAILER

meters

Car Width

Trailer Width

Car Track

Trailer Track

Lock to Lock Time

Steering Angle

Articulating Angle

: 1.94

: 1.94

: 1.84

: 1.84

: 6.0

: 33.5

: 70.0

70

00

SWEPT PATH LEGEND

VEHICLE BODY

FRONT TIRES

VEHICLE PATH

VEHICLE CLEARANCE (500mm)

VEHICLE

5KM/H DESIGN SPEED

10KM/H DESIGN SPEED

PROJECT

241 QUEEN STREET

800

0

CLIENT

00

70

ELITE FITOUTS

8000

80

00

DRAWING TITLE
CAR AND TRAILER SWEPT
PATH
DRAWING NUMBER
MOD221247QLD - SK08
DATE

REVISION

30 NOV 2023

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VEHICLE USED IN SIMULATION
9.84

1.51

5.20

6x4 Rear Loader
meters
Width
Track
Lock to Lock Time
Steering Angle

: 2.50
: 2.50
: 6.0
: 33.4

70

70

00

00

SWEPT PATH LEGEND
VEHICLE BODY
FRONT TIRES
VEHICLE PATH
VEHICLE CLEARANCE (500mm)
VEHICLE
5KM/H DESIGN SPEED
10KM/H DESIGN SPEED

PROJECT
241 QUEEN STREET

800
0

800
0

CLIENT
00

70

0

0
70

ELITE FITOUTS

8000

8000

80

00

80
00

DRAWING TITLE
RCV VEHICLE SWEPT
PATH
DRAWING NUMBER
MOD221247QLD - SK05
DATE

REVISION

30 NOV 2023

D

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VEHICLE USED IN SIMULATION
B85

4.91

0.92

Meters
Width
Track
Lock to Lock Time
Steering Angle

2.80

: 1.87
: 1.77
: 6.0
: 34.0

800
0

800
0

70
00

70
00

SWEPT PATH LEGEND
VEHICLE BODY
FRONT TIRES
VEHICLE PATH
VEHICLE CLEARANCE (300mm)
VEHICLE
5KM/H DESIGN SPEED
10KM/H DESIGN SPEED

PROJECT

8000

8000

241 QUEEN STREET
CLIENT
ELITE FITOUTS
DRAWING TITLE
B85 ACCESS VEHICLE
SWEPT PATH
DRAWING NUMBER
MOD221247QLD - SK03
REVISION

30 NOV 2023

D

70

70

00

00

DATE

DATE

AMENDMENT DETAILS

800

800

0

0

REV DRAWN BY APPROVED

8000

8000

80

00

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VEHICLE USED IN SIMULATION
6.40

SRV
Meters
Width
Track
Lock to Lock Time
Steering Angle
1.05

: 2.30
: 2.30
: 6.0
: 38.0

3.80

70

70

00

00

SWEPT PATH LEGEND
VEHICLE BODY
FRONT TIRES
VEHICLE PATH
VEHICLE CLEARANCE (500mm)
VEHICLE
5KM/H DESIGN SPEED
10KM/H DESIGN SPEED

PROJECT
241 QUEEN STREET

800
0

800
0

CLIENT
00

70

0

0
70

ELITE FITOUTS

8000

8000

80

00

80
00

DRAWING TITLE
SRV VEHICLE SWEEP PATH
DRAWING NUMBER
MOD221247QLD - SK04
DATE

REVISION

30 NOV 2023

D

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CROSSOVER LOCATION
POSITIONED TO RETAIN
EXISTING GATE / PATHWAY.

1.5

PROJECT
241 QUEEN STREET

4.0
3.0

CLIENT
ELITE FITOUTS
DRAWING TITLE

CROSSOVER DESIGN AS
PER IPWEAQ STANDARD
DRAWING RS-049

NEW DRIVEWAY LOCATION
AND DESIGN
DRAWING NUMBER
MOD221247QLD - SK10
DATE

REVISION

25 JAN 2024

A

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VEHICLE USED IN SIMULATION
B85

4.91

0.92

Meters
Width
Track
Lock to Lock Time
Steering Angle

2.80

: 1.87
: 1.77
: 6.0
: 34.0

SWEPT PATH LEGEND
VEHICLE BODY
FRONT TIRES
VEHICLE PATH
VEHICLE CLEARANCE (300mm)
VEHICLE
5KM/H DESIGN SPEED
10KM/H DESIGN SPEED

PROJECT
241 QUEEN STREET
CLIENT
ELITE FITOUTS
DRAWING TITLE
NEW DRIVEWAY B85 DESIGN
VEHICLE SWEPT PATH
DRAWING NUMBER
MOD221247QLD - SK11
DATE

REVISION

25 JAN 2024

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APPENDIX C
SISD Review

239 & 241 Queen Street & 42 Bower Street, Ayr - 23 -

SISD ASSESSMENT

DT = 5.0 seconds (2.0 second reaction time)
V = 60 / 70 km/hr (Posted Speed Limit +10km/hr)
70
0

0

d = 0.46
a = 1%

8000

SISD REQUIREMENT IS 114m ALONG QUEEN
STREET AS WELL AS 138m ALONG BOWER
STREET, TO BE TAKEN BACK 5.0m MINIMUM
FROM THE CONFLICT POINT

70

00

8000

80

00

5.0

PROJECT
241 QUEEN STREET

114.1

CLIENT

139.0

ELITE FITOUTS
DRAWING TITLE
SISD ASSESMENT
DRAWING NUMBER
MOD221247QLD - SK06

5.0

DATE

REVISION

30 NOV 2023

D

DATE

AMENDMENT DETAILS

8000

70

00

REV DRAWN BY APPROVED

8000

80

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APPENDIX D
Council / State Code Responses

239 & 241 Queen Street & 42 Bower Street, Ayr - 24 -

Burdekin Shire Council Planning Scheme:
Traffic and Access Outcomes

Modus Response

PERFORMANCE OUTCOME ACHIEVED

The development traffic will not compromise the efficiency or safety of the surrounding Arterial Roads and Local Roads of Regional Significance.

PERFORMANCE OUTCOME ACHIEVED

The development ensures safe and efficient movements and arrangements for all road users on the external network.

PERFORMANCE OUTCOME ACHIEVED

The development allows safe and efficient for private vehicles and service vehicles, and allows complete forward-in / forward-out access.

PERFORMANCE OUTCOME ACHIEVED

The development allows safe and efficient for private vehicles and service vehicles, and allows complete forward-in / forward-out access.

ACCEPTABLE OUTCOME ACHIEVED

The development provides parking as per the Planning Scheme

ACCEPTABLE OUTCOME ACHIEVED

The development complies with the requirements within AS2890.1

N/A

N/A

N/A

N/A

-2-

State code 6: Protection of state transport networks

Table 6.2 Development in general

Performance outcomes

Network impacts

P01 Development does not compromise the safety of users of the state-controlled road network.

P02 Development does not adversely impact the structural integrity or physical condition of a state-controlled road or road transport infrastructure.

P03 Development ensures no net worsening of the operating performance the state-controlled road network.

P04 Traffic movements are not directed onto a state-controlled road where they can be accommodated on the local road network.

P05 Development involving haulage exceeding 10,000 tonnes per year does not damage the pavement of a state-controlled road.

P06 Development does not require a new railway level crossing.

P07 Development does not adversely impact the operating performance of an existing railway crossing.

P08 Development does not adversely impact on the safety of an existing railway crossing.

P09 Development is designed and constructed to allow for on-site circulation to ensure vehicles do not queue in a railway crossing.

P010 Development does not create a safety hazard within the railway corridor.

P011 Development does not adversely impact the operating performance of the railway corridor.

P012 Development does not interfere with or obstruct the railway transport infrastructure or other rail infrastructure.

Acceptable outcomes

Response

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

State Development Assessment Provisions v3.0
State code 3: Development in a busway environment

Performance outcomes

P013 Development does not adversely impact the structural integrity or physical condition of a railway corridor or rail transport infrastructure.

Stormwater and overland flow

P014 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of a state transport corridor or state transport infrastructure.

P015 Stormwater run-off or overland flow from the development site does not result in a material worsening of operating performance of a state transport corridor or state transport infrastructure.

P016 Stormwater run-off or overland flow from the development site does not interfere with the structural integrity or physical condition of the state transport corridor or state transport infrastructure.

P017 Development associated with a statecontrolled road or road transport infrastructure ensures that stormwater is lawfully discharged.

Acceptable outcomes

No acceptable outcome is prescribed.

Response

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

A017.1 Development does not create any new points of discharge to a state transport corridor or state transport infrastructure.

N/A

AND

A017.2 Development does not concentrate flows to a state transport corridor.

AND

A017.3 Stormwater run-off is discharged to a lawful point of discharge.

AND

A017.4 Development does not worsen the condition of an existing lawful point of discharge to a state transport corridor or state transport infrastructure.

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State code 3: Development in a busway environment

Performance outcomes

Flooding

P018 Development does not result in a material worsening of flooding impacts within a state transport corridor or state transport infrastructure

Acceptable outcomes

Response

For a state-controlled road or road transport infrastructure, all of the following apply:

N/A

A018.1 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (within +/- 10mm) to existing flood levels within a state transport corridor.

AND

A018.2 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10% increase) to existing peak velocities within a state transport corridor.

AND

A018.3 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10% increase) to existing time of submergence of a state transport corridor.

No acceptable outcome is prescribed for a railway corridor or rail transport infrastructure.

Drainage infrastructure

P019 Drainage infrastructure does not create a safety hazard in a state transport corridor.

For a state-controlled road environment, both of the following apply:

N/A

A019.1 Drainage infrastructure associated with, or in a state-controlled road is wholly contained within the development site, except at the lawful point of discharge.

AND

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State code 3: Development in a busway environment

Performance outcomes

Acceptable outcomes

A019.2 Drainage infrastructure can be maintained without requiring access to a state transport corridor.

Response

For a railway environment both of the following apply:

A019.3 Drainage infrastructure associated with a railway corridor or rail transport infrastructure is wholly contained within the development site.

AND

P020 Drainage infrastructure associated with, or in a state-controlled road or road transport infrastructure is constructed and designed to ensure the structural integrity and physical condition of existing drainage infrastructure and the surrounding drainage network is maintained.

Planned upgrades

P021 Development does not impede delivery of planned upgrades of state transport infrastructure.

A019.4 Drainage infrastructure can be maintained without requiring access to a state transport corridor.

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

Table 6.3 Public passenger transport infrastructure and active transport
Performance outcomes

P022 Development does not damage or interfere with public passenger transport infrastructure, active transport infrastructure or public passenger services.

Acceptable outcomes

No acceptable outcome is prescribed.

Response

PERFORMANCE OUTCOME ACHIEVED

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State code 3: Development in a busway environment

Performance outcomes

P023 Development does not compromise the safety of public passenger transport infrastructure, public passenger services and active transport infrastructure.

Acceptable outcomes

No acceptable outcome is prescribed.

Response

PERFORMANCE OUTCOME ACHIEVED

P024 Development does not adversely impact the operating performance of public passenger transport infrastructure, public passenger services and active transport infrastructure.

P025 Development does not adversely impact the structural integrity or physical condition of public passenger transport infrastructure and active transport infrastructure.

P026 Upgraded or new public passenger transport infrastructure and active transport infrastructure is provided to accommodate the demand for public passenger transport and active transport generated by the development.

P027 Development is designed to ensure the location of public passenger transport infrastructure prioritises and enables efficient public passenger services.

P028 Development enables the provision or extension of public passenger services, public passenger transport infrastructure and active transport infrastructure to the development and avoids creating indirect or inefficient routes for public passenger services.

P029 New or modified road networks are designed to enable development to be serviced by public passenger services.

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

N/A

A029.1 Roads catering for buses are arterial or sub-arterial roads, collector or their equivalent.

N/A

AND

A029.2 Roads intended to accommodate buses are designed and constructed in accordance with:

1. Road Planning and Design Manual, 2nd Edition, Volume 3 – Guide to Road Design; Department of Transport and Main Roads;

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State code 3: Development in a busway environment

Performance outcomes

Acceptable outcomes

2. Supplement to Austroads Guide to Road Design (Parts 3, 4-4C and 6), Department of Transport and Main Roads;
3. Austroads Guide to Road Design (Parts 3, 44C and 6);
4. Austroads Design Vehicles and Turning Path Templates;
5. Queensland Manual of Uniform Traffic Control Devices, Part 13: Local Area Traffic Management and AS 1742.13-2009 Manual of Uniform Traffic Control Devices – Local Area Traffic Management;

Response

AND

P030 Development provides safe, direct and convenient access to existing and future public passenger transport infrastructure and active transport infrastructure.

P031 On-site vehicular circulation ensures the safety of both public passenger transport services and pedestrians.

P032 Taxi facilities are provided to accommodate the demand generated by the development.

P033 Facilities are provided to accommodate the demand generated by the development for community transport services, courtesy transport services, and booked hire services other than taxis.

A029.3 Traffic calming devices are not installed on roads used for buses in accordance with section 2.3.2 Bus Route Infrastructure, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.
No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

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State code 3: Development in a busway environment

Performance outcomes

P034 Taxi facilities are located and designed to provide convenient, safe and equitable access for passengers.

P035 Educational establishments are designed to ensure the safe and efficient operation of public passenger services, pedestrian and cyclist access and active transport infrastructure.

Acceptable outcomes

A034.1 A taxi facility is provided parallel to the kerb and adjacent to the main entrance.

Response

N/A

AND

A034.2 Taxi facilities are designed in accordance with:

1. AS2890.5-1993 Parking facilities - on-street parking and AS1428.1-2009 Design for access and mobility - general requirements for access - new building work;
2. AS1742.11-1999 Parking controls - manual of uniform traffic control devices
3. AS/NZS 2890.6-2009 Parking facilities -off street parking for people with disabilities;
4. Disability standards for accessible public
5. transport 2002 made under section 31(1) of the Disability Discrimination Act 1992;
6. AS/NZS 1158.3.1 - Lighting for roads and public spaces, Part 3.1: Pedestrian area (category P) lighting - Performance and design requirements;
7. Chapter 7 Taxi Facilities, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.

A035.1 Educational establishments are designed in accordance with the provisions of the Planning for Safe Transport Infrastructure at Schools, Department of Transport and Main Roads, 2011.

N/A

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State code 3: Development in a busway environment

State code 1: Development in a state-controlled road environment

State Development Assessment Provisions guideline - State Code 1: Development in a state-controlled road environment. This guideline provides direction on how to address State Code 1.

Table 1.1 Development in general
Performance outcomes

Acceptable outcomes

Buildings, structures, infrastructure, services and utilities

P01 The location of the development does not

A01.1 Development is not located in a statecreate a safety hazard for users of the statecontrolled road.
controlled road.

AND

P02 The design and construction of the development does not adversely impact the structural integrity or physical condition of the state-controlled road or road transport infrastructure.

P03 The location of the development does not obstruct road transport infrastructure or adversely impact the operating performance of the state-controlled road.

P04 The location, placement, design and operation of advertising devices, visible from the state-controlled road, do not create a safety hazard for users of the state-controlled road.

Response

PERFORMANCE OUTCOME ACHIEVED

A01.2 Development can be maintained without requiring access to a state-controlled road.
No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

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Performance outcomes

Acceptable outcomes

Response

P05 The design and construction of buildings and structures does not create a safety hazard by distracting users of the state-controlled road.

A05.1 Facades of buildings and structures fronting the state-controlled road are made of non-reflective materials.

PERFORMANCE OUTCOME ACHIEVED

AND

A05.2 Facades of buildings and structures do not direct or reflect point light sources into the face of oncoming traffic on the state-controlled road.

AND

A05.3 External lighting of buildings and structures is not directed into the face of oncoming traffic on the state-controlled road.

AND

P06 Road, pedestrian and bikeway bridges over a state-controlled road are designed and constructed to prevent projectiles from being thrown onto the state-controlled road.

Landscaping

P07 The location of landscaping does not create a safety hazard for users of the statecontrolled road.

A05.4 External lighting of buildings and structures does not involve flashing or laser lights.

A06.1 Road, pedestrian and bikeway bridges over the state-controlled road include throw protection screens in accordance with section 4.11 of the Design Criteria for Bridges and Other Structures Manual, Department of Transport and Main Roads, 2020.

A07.1 Landscaping is not located in a statecontrolled road.

N/A

N/A

AND

A07.2 Landscaping can be maintained without requiring access to a state-controlled road.
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Performance outcomes

Acceptable outcomes

Response

AND

A07.3 Landscaping does not block or obscure the sight lines for vehicular access to a state-controlled road.

Stormwater and overland flow

P08 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the state-controlled road.

P09 Stormwater run-off or overland flow from the development site does not result in a material worsening of the operating performance of the state-controlled road or road transport infrastructure.

P010 Stormwater run-off or overland flow from the development site does not adversely impact the structural integrity or physical condition of the state-controlled road or road transport infrastructure.

P011 Development ensures that stormwater is lawfully discharged.

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

A011.1 Development does not create any new N/A points of discharge to a state-controlled road.

AND

A011.2 Development does not concentrate flows to a state-controlled road.

AND

A011.3 Stormwater run-off is discharged to a lawful point of discharge.

AND

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Performance outcomes

Acceptable outcomes

Response

A011.4 Development does not worsen the condition of an existing lawful point of discharge to the state-controlled road.

Flooding

P012 Development does not result in a material worsening of flooding impacts within a state-controlled road.

A012.1 For all flood events up to 1% annual exceedance probability, development results in negligible impacts (within +/- 10mm) to existing flood levels within a state-controlled road.

N/A

AND

A012.2 For all flood events up to 1% annual exceedance probability, development results in negligible impacts (up to a 10% increase) to existing peak velocities within a statecontrolled road.

AND

A012.3 For all flood events up to 1% annual exceedance probability, development results in negligible impacts (up to a 10% increase) to existing time of submergence of a statecontrolled road.

Drainage Infrastructure

P013 Drainage infrastructure does not create a safety hazard for users in the state-controlled road.

A013.1 Drainage infrastructure is wholly contained within the development site, except at the lawful point of discharge.

N/A

AND

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Performance outcomes

P014 Drainage infrastructure associated with, or within, a state-controlled road is constructed, and designed to ensure the structural integrity and physical condition of existing drainage infrastructure and the surrounding drainage network.

Acceptable outcomes

Response

A013.2 Drainage infrastructure can be maintained without requiring access to a statecontrolled road.
No acceptable outcome is prescribed.

N/A

Table 1.2 Vehicular access, road layout and local roads Performance outcomes

Acceptable outcomes

Response

Vehicular access to a state-controlled road or within 100 metres of a state-controlled road intersection

P015 The location, design and operation of a
No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

new or changed access to a state-controlled road does not compromise the safety of users of the state-controlled road.

P016 The location, design and operation of a
No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

new or changed access does not adversely impact the functional requirements of the statecontrolled road.

P017 The location, design and operation of a
No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

new or changed access is consistent with the future intent of the state-controlled road.

P018 New or changed access is consistent with No acceptable outcome is prescribed.

N/A

the access for the relevant limited access road policy:

1. LAR 1 where direct access is prohibited; or
2. LAR 2 where access may be permitted, subject to assessment.

P019 New or changed access to a local road
No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

within 100 metres of an intersection with a statecontrolled road does not compromise the safety of users of the state-controlled road.

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Performance outcomes

Acceptable outcomes

P020 New or changed access to a local road
No acceptable outcome is prescribed.
within 100 metres of an intersection with a state-controlled road does not adversely impact on the operating performance of the intersection.

Public passenger transport and active transport

P021 Development does not compromise the

No acceptable outcome is prescribed.

safety of users of public passenger transport infrastructure, public passenger services and active transport infrastructure.

P022 Development maintains the ability for

No acceptable outcome is prescribed.

people to access public passenger transport infrastructure, public passenger services and active transport infrastructure.

P023 Development does not adversely impact the No acceptable outcome is prescribed.

operating performance of public passenger transport infrastructure, public passenger services and active transport infrastructure.

P024 Development does not adversely impact

No acceptable outcome is prescribed.

the structural integrity or physical condition of public passenger transport infrastructure and active transport infrastructure.

Response

PERFORMANCE OUTCOME ACHIEVED

PERFORMANCE OUTCOME ACHIEVED

PERFORMANCE OUTCOME ACHIEVED

PERFORMANCE OUTCOME ACHIEVED

PERFORMANCE OUTCOME ACHIEVED

Table 1.3 Network impacts

Performance outcomes

Acceptable outcomes

Response

P025 Development does not compromise the safety of users of the state-controlled road network.

P026 Development ensures no net worsening of the operating performance of the state-controlled road network.

P027 Traffic movements are not directed onto a state-controlled road where they can be accommodated on the local road network.

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

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Performance outcomes

Acceptable outcomes

Response

P028 Development involving haulage exceeding 10,000 tonnes per year does not adversely impact the pavement of a state-controlled road.

P029 Development does not impede delivery of planned upgrades of state-controlled roads.

P030 Development does not impede delivery of corridor improvements located entirely within the state-controlled road corridor.

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

Table 1.4 Filling, excavation, building foundations and retaining structures
Performance outcomes

Acceptable outcomes

Response

P031 Development does not create a safety hazard for users of the state-controlled road or road transport infrastructure.

P032 Development does not adversely impact the operating performance of the state-controlled road.

P033 Development does not undermine, damage or cause subsidence of a state-controlled road.

P034 Development does not cause ground water disturbance in a state-controlled road.

P035 Excavation, boring, piling, blasting and fill compaction do not adversely impact the physical condition or structural integrity of a statecontrolled road or road transport infrastructure.

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

No acceptable outcome is prescribed.

N/A

P036 Filling and excavation associated with the construction of new or changed access do not compromise the operation or capacity of existing drainage infrastructure for a state-controlled road.

No acceptable outcome is prescribed.

N/A

Table 1.5 Environmental emissions
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State code 1: Development in a state-controlled road environment

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Statutory note: Where a state-controlled road is co-located in the same transport corridor as a railway, the development should instead comply with Environmental emissions in State code 2: Development in a railway environment.

Performance outcomes

Acceptable outcomes

Response

Reconfiguring a lot

Involving the creation of 5 or fewer new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor

P037 Development minimises free field noise

A037.1 Development provides a noise barrier or

N/A

intrusion from a state-controlled road.

earth mound which is designed, sited and constructed:

1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1);

2. in accordance with:

a. Chapter 7 integrated noise barrier design of the Transport Noise Management

Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013;

b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;

c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.

OR

A037.2 Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.

OR

A037.3 Development provides a solid gap-free fence or other solid gap-free structure along the full extent of the boundary closest to the statecontrolled road.

Involving the creation of 6 or more new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor

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Performance outcomes

Acceptable outcomes

P038 Reconfiguring a lot minimises free field noise intrusion from a state-controlled road.

A038.1 Development provides noise barrier or N/A

earth mound which is designed, sited and constructed:

1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1);
2. in accordance with:
 - a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013;
 - b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;
 - c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.

Response

OR

A038.2 Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.

Material change of use (accommodation activity)

Ground floor level requirements adjacent to a state-controlled road or type 1 multi-modal corridor

P039 Development minimises noise intrusion from A039.1 Development provides a noise barrier or

N/A

a state-controlled road in private open space. earth mound which is designed, sited and constructed:

1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for private open space at the ground floor level;
2. in accordance with:

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Performance outcomes

Acceptable outcomes

- a.
- b.
- c.

Response

Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013;
Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;
Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.

OR

P040 Development (excluding a relevant residential building or relocated building) minimises noise intrusion from a state-controlled road in habitable rooms at the facade.

A039.2 Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for private open space by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.

A040.1 Development (excluding a relevant N/A

residential building or relocated building) provides a noise barrier or earth mound which is designed, sited and constructed:

1. to achieve the maximum building facade acoustic level in reference table 1 (item 1.1) for habitable rooms;

2. in accordance with:

a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013;

b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;

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Performance outcomes

Acceptable outcomes

c.

Response

Technical Specification-MRTS04 General
Earthworks, Transport and Main Roads,
2020.

OR

A040.2 Development (excluding a relevant
residential building or relocated building)
achieves the maximum building façade acoustic
level in reference table 1 (item 1.1) for habitable
rooms by alternative noise attenuation
measures where it is not practical to provide a
noise barrier or earth mound.
No acceptable outcome is provided.

P041 Habitable rooms (excluding a relevant
N/A

residential building or relocated building) are
designed and constructed using materials to
achieve the maximum internal acoustic level in
reference table 3 (item 3.1).

Above ground floor level requirements (accommodation activity) adjacent to a
state-controlled road or type 1 multi-modal corridor

P042 Balconies, podiums, and roof decks include: No acceptable outcome is
provided.

N/A

1. a continuous solid gap-free structure or
balustrade (excluding gaps required for
drainage purposes to comply with the Building
Code of Australia);

2. highly acoustically absorbent material
treatment for the total area of the soffit above
balconies, podiums, and roof decks.

P043 Habitable rooms (excluding a relevant
No acceptable outcome is provided.

N/A

residential building or relocated building) are
designed and constructed using materials
to achieve the maximum internal acoustic level in
reference table 3 (item 3.1).

Material change of use (other uses)

Ground floor level requirements (childcare centre, educational establishment,
hospital) adjacent to a state-controlled road or type 1 multi-modal
corridor

P044 Development:

No acceptable outcome is provided.

N/A

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Performance outcomes
 provides a noise barrier or earth mound that is designed, sited and constructed:

- a. to achieve the maximum free field acoustic level in reference table 2 (item 2.3) for all outdoor education areas and outdoor play areas;
- b. in accordance with:
 - i. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013;
 - ii. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;
 - iii. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or
2. achieves the maximum free field acoustic level in reference table 2 (item 2.3) for all outdoor education areas and outdoor play areas by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.

P045 Development involving a childcare centre or educational establishment:

1. provides a noise barrier or earth mound that is designed, sited and constructed:
2. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2);
3. in accordance with:
 - a. Chapter 7 integrated noise barrier design of the Transport Noise Management

Acceptable outcomes

Response

1.

No acceptable outcome is provided.

N/A

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 State code 1: Development in a state-controlled road environment

Performance outcomes

Acceptable outcomes

Response

Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013;

b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;

c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or

4. achieves the maximum building facade acoustic level in reference table 1 (item 1.2) by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.

P046 Development involving:

No acceptable outcome is provided.

N/A

1. indoor education areas and indoor play areas; or

2. sleeping rooms in a childcare centre; or

3. patient care areas in a hospital achieves the maximum internal acoustic level in reference table 3 (items 3.2-3.4).

Above ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multimodal corridor

P047 Development involving a childcare centre

No acceptable outcome is provided.

N/A

or educational establishment which have balconies, podiums or elevated outdoor play areas predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from a state-controlled road are provided with:

1. a continuous solid gap-free structure or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia);

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Performance outcomes

2. highly acoustically absorbent material treatment for the total area of the soffit above balconies or elevated outdoor play areas.

P048 Development including:

1. indoor education areas and indoor play areas in a childcare centre or educational establishment; or
2. sleeping rooms in a childcare centre; or
3. patient care areas in a hospital located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.23.4).

Air, light and vibration

P049 Private open space, outdoor education areas and outdoor play areas are protected from air quality impacts from a state-controlled road.

Acceptable outcomes

Response

No acceptable outcome is provided.

N/A

A049.1 Each dwelling or unit has access to a private open space which is shielded from a state-controlled road by a building, solid gapfree fence, or other solid gap-free structure.

N/A

OR

A049.2 Each outdoor education area and outdoor play area is shielded from a statecontrolled road by a building, solid gap-free fence, or other solid gap-free structure.

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Performance outcomes

Acceptable outcomes

P050 Patient care areas within hospitals are protected from vibration impacts from a state-controlled road or type 1 multimodal corridor.

A050.1 Hospitals are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of $0.1\text{m/s}^1.75$.

Response
N/A

AND

P051 Development is designed and sited to ensure light from infrastructure within, and from users of, a state-controlled road or type 1 multimodal corridor, does not:

1. intrude into buildings during night hours (10pm to 6am);
2. create unreasonable disturbance during evening hours (6pm to 10pm).

A050.2 Hospitals are designed and constructed to ensure vibration in the ward of a patient care area does not exceed a vibration dose value of $0.4\text{m/s}^1.75$.
No acceptable outcomes are prescribed.

N/A

Table 1.6: Development in a future state-controlled road environment
Performance outcomes

Acceptable outcomes

Response

P052 Development does not impede delivery of a future state-controlled road.

A052.1 Development is not located in a future state-controlled road.

PERFORMANCE OUTCOME ACHIEVED

OR ALL OF THE FOLLOWING APPLY:

A052.2 Development does not involve filling and excavation of, or material changes to, a future state-controlled road.

AND

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Performance outcomes

Acceptable outcomes

Response

A052.3 The intensification of lots does not occur within a future state-controlled road.

AND

P053 The location and design of new or changed access does not create a safety hazard for users of a future state-controlled road.

P054 Filling, excavation, building foundations and retaining structures do not undermine, damage or cause subsidence of a future state-controlled road.

P055 Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a future state-controlled road or road transport infrastructure.

P056 Development ensures that stormwater is lawfully discharged.

A052.4 Development does not result in the landlocking of parcels once a future statecontrolled road is delivered.

A053.1 Development does not include new or changed access to a future state-controlled road.

No acceptable outcome is prescribed.

PERFORMANCE OUTCOME ACHIEVED

No acceptable outcome is prescribed.

N/A

A056.1 Development does not create any new points of discharge to a future state-controlled road.

N/A

N/A

AND

A056.2 Development does not concentrate flows to a future state-controlled road.

AND

A056.3 Stormwater run-off is discharged to a lawful point of discharge.

AND

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Performance outcomes

Acceptable outcomes

Response

A056.4 Development does not worsen the condition of an existing lawful point of discharge to the future state-controlled road.

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Civil, Structural and Soil Testing

SITE BASED STORMWATER
MANAGEMENT PLAN

FOR

PROPOSED RECONFIGURATION AND VETERINARY SERVICE
239-241 QUEEN STREET & 42 BOWER STREET, AYR

JOB NO 23.2157
JANUARY 2024

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23/01/2024

CERTIFICATION

Site Based Stormwater Management Plan

Job Number:

Issue No:

Report Date:

Author:

23.2157

1.0

23/01/2024

Nathan Trotter

Site Address:

RP Description:

Proposed Development:

Burdekin Shire Council Ref:

239-241 Queen Street & 42 Bower Street, Ayr

Lot 1 & 2 on RP719267 & Lot 87 on A26512

Reconfiguration and Veterinary Service

Signature:

For and on behalf of DEQ Consulting Pty Ltd

t/a DEQ Consulting Engineers

R.P.E.Q. No: 06249

DATE: __23/01/2024

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1 INTRODUCTION

DEQ Consulting Pty Ltd has been commissioned to prepare a Site Based Stormwater Management Plan for inclusion with the Development Application submission to Burdekin

Shire Council for the proposed reconfiguration and veterinary service at 239-241 Queen Street & 42 Bower Street, Ayr.

This Site Based Stormwater Management Plan has been prepared to address the increase in

stormwater runoff caused by the proposed development to meet with Councils requirement for

stormwater quantity management on downstream infrastructure and properties.

Details regarding all analysis and calculations are described in this report.

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2 SITE CHARACTERISTICS

2.1

LOCATION

The subject development (Lot 1 & 2 on RP719267 & Lot 87 on A26512) is developed land with a total area of 3,308m². The site is bounded by a Queen Street to the southeast, a residential lot and a commercial lot to the northeast, Bower Street to the west and service station to the southwest.

Figure 1 - Site Location Plan

Refer Appendix A - Site Survey Plan & Existing Services

2.2

TOPOGRAPHY AND SITE DRAINAGE

The existing site contains a block masonry building with an attached shed, a standalone shed and 2 free standing dwellings with the surrounding ground levels predominantly falling from the southwest boundary towards the northeast boundary. Existing stormwater runoff is conveyed to adjoining lots to the northeast of the site as broadsheet flow. Ultimately runoff is discharged to either Queen Street or Bower Street.

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A search of Burdekin Shire Planning Scheme Flood Hazard Overlay Maps indicates that the entire development site is a medium hazard to river flooding from the Burdekin River and a part of the development site is a low hazard to local rain event flooding.

3 DEVELOPMENT PROPOSAL

3.1

PROPOSED DEVELOPMENT

It is proposed to reconfigure the existing 3 lots to create 2 smaller residential lots for the existing dwellings and one larger lot for the proposed veterinary service where the existing concrete masonry building is to be refurbished and provided with associated car parking and landscaping. Access to the veterinary service will be achieved through an upgraded driveway crossover to Queen Street and secondary access through a new driveway crossover to Bower Street.

Refer Appendix B – Development Proposal

3.2

PROPOSED STORMWATER DRAINAGE

It is proposed to utilise the existing kerb and channel in both Queen Street and Bower Street as the lawful point of discharge for the developed veterinary service site flows while the existing dwellings are to remain unchanged.

An on-site stormwater drainage network is proposed to service the refurbished building with attached shed and proposed carpark for the veterinary service and convey runoff to the lawful point.

Roofwater runoff from the refurbished building with attached shed tank will be conveyed

through an aboveground detention for stormwater management purposes prior to discharge

the stormwater drainage network then to the lawful point of discharge.

Surcharge on the on-site drainage system (Q100 major less Q10 piped) within the site will be

conveyed within the driveway across either the southeast boundary as broadsheet flow to

Queen Street or the west boundary as broadsheet flow to Bower Street.

Note that no stormwater quality is proposed as the development for the veterinary service is

under 2,500m² and therefore does not trigger the requirements for stormwater runoff to be

treated to the water quality objectives in the State Planning Policy.

Refer Appendix C – Civil Siteworks Concept Plan

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4 HYDROLOGIC ANALYSIS

4.1

INTRODUCTION

Rational Method calculations were performed for the catchment contributing to flows within the site for the existing and developed site conditions. These Rational Method calculations have been completed in accordance with the parameters recommended in Burdekin Shire Council's

Planning Scheme and the Queensland Urban Drainage Manual (QUDM, 2013).

Refer Appendix D – Rational Method Calculations

4.2

CATCHMENT DETAILS

The existing and developed catchment conditions were analysed using detailed survey and the development proposal plans supplied in Appendix A and B respectively. Catchment area and

fraction impervious details are shown for each catchment in the table below.

Table 1 - Catchment Details

Existing
Catchment Area

Existing
Catchment
Fraction
Impervious

m²
3,308
4.3

Developed
Catchment Area

Developed
Catchment
Fraction
Impervious

m²
0.37

3,308

0.66

COEFFICIENT OF RUNOFF

For the existing catchment a C10 value of 0.77 (fraction impervious of 0.37) was calculated (from QUDM Tables 4.5.3 and 4.5.4).

For the developed catchment a C10 value of 0.83 (fraction impervious of 0.66) was assumed (from QUDM Table 4.5.3).

4.4

TIME OF CONCENTRATION

For the existing catchment, the time of concentration was determined using Friend's Equation (QUDM S4.06.6(c)) as detailed in the table below.

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Table 2 - Time of Concentration - Existing Catchment

Catchment

Overland
Sheet Flow
Path Length

Horton's
Surface
Roughness
Factor

m
Existing
Site

76

0.020

Slope of
Surface

Overland
Sheet Flow
Travel Time

Total tc

%

min

min

1

9.1

9

For the proposed development catchments, the time of concentration was determined from standard inlet time (QUDM S4.06.4) and pipe flow travel time (BCC S3.3.2) as detailed in the following table.

Table 3 - Time of Concentration - Developed Catchment

4.5

Standard Inlet Time

Pipe
Distance

Pipe Flow
Velocity

Pipe Flow

Time

Total tc

min

m

m/s

min

Min

5

106

2

1

6

RAINFALL INTENSITY FREQUENCY DURATION DATA

Rainfall intensity frequency duration data was taken from Burdekin Shire Council IFD data.

Rainfall intensity for the previously calculated time of concentration is shown in the table below.

Table 4 - Rainfall Intensities

Time of
Concentration

1 year
ARI

2 year
ARI

5 year
ARI

10 year
ARI

20 year
ARI

50 year
ARI

100 year
ARI

min

mm/hr

mm/hr

mm/hr

mm/hr

mm/hr

mm/hr

mm/hr

6

109

140

181

205

237

279

312

9

95

122

157

178

206

242

271

4.6

COMPARISON OF FLOWS

The flows calculated for the existing and developed catchment conditions for a range of design storm events are shown in the following tables.

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Table 5 - Comparison of Flows

ARI

Existing
Catchment

Developed
Unmitigated
Catchment

Difference

years

m³/s

m³/s

m³/s

1

0.054

0.067

0.013

2

0.074

0.091

0.017

5

0.106

0.131

0.025

10

0.126

0.157

0.031

20

0.154

0.190

0.036

50

0.198

0.245

0.047

100

0.231

0.286

0.055

The results in the table above show an increase in stormwater runoff from the total developed site by the additional flows generated from the additional impervious areas (roofs and hardstand surfaces).

5 HYDRAULIC ANALYSIS

5.1

PROPOSED MITIGATION

It is proposed to mitigate the developed catchment flows by providing stormwater detention of the refurbished building with attached shed roof runoff within a detention tank located adjoining the attached shed to temporarily detain the increase in peak flows so that the developed catchment discharge is equal or less than the existing site catchments discharge. The tank and outlets have been designed so that the detention of the site runoff attains a sufficient reduction in developed flows to compensate for the increased flows for the total developed site area (i.e., also compensates for flows not directed through the tank).

5.2

STORMWATER MODELLING - EXISTING CATCHMENT FLOWS

Runoff from the existing sites catchments were calculated for the Q1, Q2, Q5, Q10, Q20, Q50 & Q100 ARI storm events using XP-RAFS (2009) modelling software. The existing site catchment results are shown in the following tables.

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Table 6 - Existing Catchment Flows

AEP

ARI

XP-RAFTS

Existing Catchment Flows

%

years

m³/s (25 min)

m³/s (60 min)

63.2

1

0.052

0.054

50

2

0.072

0.077

20

5

0.102

0.109

10

10

0.120

0.129

5

20

0.148

0.164

2

50

0.173

0.197

1

100

0.210

0.224

5.3

STORMWATER MODELLING - DEVELOPED CATCHMENT FLOWS

The XP-RAFTS developed mitigated catchment results are shown in the next table.
Table 7 - Developed Mitigated Flows

AEP

ARI

XP-RAFTS

Developed Mitigated Flows

%

years

m³/s (25 min)

m³/s (60 min)

63.2

1

0.055

0.057

50

2

0.076

0.077

20

5

0.104

0.105

10

10

0.120

0.120

5

20

0.143

0.143

2

50

0.157

0.163

1

100

0.180

0.211

5.4

COMPARISON OF FLOWS

The flows calculated for the existing and developed catchment conditions for a range of design storm events are shown in the following tables.

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Table 8 - Comparison of Flows

XP-RAFTS OUTPUT
25 MIN STORM
AEP

ARI

Existing
Developed
Catchment Catchment
Flows
Flows

60 MIN STORM

Difference

Existing
Catchment
Flows

Developed
Catchment
Flows

Difference

%

years

m³/s

m³/s

m³/s

m³/s

m³/s

m³/s

63.2

1

0.052

0.055

0.003

0.054

0.057

0.003

50

2

0.072

0.076

0.004

0.077

0.077

0.000

20

5

0.102

0.104

-0.002

0.109

0.105

-0.004

10

10

0.120

0.120

0.000

0.129

0.120

-0.009

5

20

0.148

0.143

-0.005

0.164

0.143

-0.021

2

50

0.173

0.157

-0.016

0.197

0.163

-0.034

1

100

0.210

0.180

-0.030

0.224

0.218

-0.006

The XP-RAFTS modelling software has demonstrated that the proposed mitigation of the site runoff (by aboveground detention tank) has attained a total developed catchment runoff to be no greater than the total existing catchment runoff.

6 CONSTRUCTION PHASE WATER QUALITY MANAGEMENT

6.1

POLLUTANTS

Pollutants typically generated during the construction phase of the development are shown below (BCC, 2014).

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Table 9 - Pollutants Typically Generated During the Construction Phase

Pollutant

Sources

Litter

Paper, construction packaging, food packaging, cement bags, offcuts

Sediment

Unprotected exposed soils and stockpiles during earthworks and building

Hydrocarbons

Fuel and oil spills, leaks from construction vehicles, leaks from cars and delivery vehicles

Toxic materials

Cement slurry, asphalt prime, solvents, cleaning agents, washwater (eg from tile works)

pH altering substances

Acid sulphate soils, cement slurry and washwaters

Source: Brisbane City Council Subdivision and Development Guidelines (2008).

6.2

POTENTIAL IMPACTS

The construction phase of a development has the potential to release significant amounts of coarse / fine sediments and other pollutants into the city's waterways. Potential impacts on the surrounding environment will be minimised during the construction phase with measures as outlined in this SBSMP and detailed Erosion and Sediment Control Plan to be provided at the Operational Works phase.

6.3

EROSION AND SEDIMENT CONTROL MEASURES

6.3.1 Prestart

ESC measure- silt fences, diversion drains & dust control (clearing).

Where possible, disturbance to the existing surface is to be limited to the immediate work area.

The existing ground cover is not to be stripped until contractor is ready for earthworks. Silt

fence to be erected along boundary and around the construction area and is to be cleaned by

the contractor when the capacity is reduced by 25%.

6.3.2 Bulk Earthworks

ESC measure- sediment dam, silt fences, diversion drains & dust control.

All exposed areas are to be protected against wind & water erosion at all times.

A sediment pond shall be constructed at the lowest point on the site to capture all contaminated runoff. Silt fences are to be erected around the base of earthworks areas, downstream property boundaries and materials stockpiles. Stockpiles and construction materials are not permitted

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to be stored within the road reserve. Diversion drains are to be provided at upstream boundaries to divert 'clean' runoff around the disturbed areas on site subject to earthworks.

6.3.3 Construction

ESC measure- sediment basin, silt fences, diversion drains, dust & litter control.

ESC measures are to be provided prior to earthworks commencing. The ESC measures may

be modified on site to suit the staging of construction, the contractor is responsible for

requesting this action prior to implementation. A temporary construction exit is to be located at

the road entry to the site. The contractor is to ensure no dust is tracked onto surrounding

roads. Dust producing areas shall be swept to remove silt / dust.

At least one bin or litter trap is to be provided for waste material. Concrete runoff from washdown of exposed aggregate areas is to be prevented from discharging off the site.

Excavated material from the laying of services is to be placed on the high side of trench. The

contractor is to stockpile topsoil & subsoil separately. Where under pavement, the trenches

are to be backfilled with CBR 15 material, otherwise the trenches are to be backfilled, capped

with topsoil and compacted to 100mm min above adjacent ground level.

6.3.4 Maintenance Period

ESC measure - silt fences, ground cover, dust control.

Silt fences are to remain in place during the maintenance period until landscaping is

established / accepted "On Maintenance" by Burdekin Shire Council .

6.4

PERFORMANCE OBJECTIVES AND INDICATORS

BCC's Guideline on Identifying and Applying Water Quality Objectives in Brisbane City (2000)

states that stormwater runoff during the construction phase must be in accordance with the

following concentration ranges (or upper limits) shown in the next table.

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Table 10 - Construction Phase Pollutants

Pollutant

Criteria

Total Suspended Solids
(TSS)

<50mg/L

pH

6.5 – 8.5

Total Nitrogen (mg/L)

0.65

Turbidity (NTU)

Less than 10% above background

Total Phosphorus (mg/L)

0.070

Dissolved Oxygen

80 to 105 percent saturation

Oils and Grease

No visible films or odours

Litter

No anthropogenic material greater than 5m

Source: Brisbane City Council Guideline on Identifying and Applying Water
Quality Objectives in Brisbane City
(2000).

6.5

MONITORING AND MAINTENANCE

The requirement of monitoring during the construction phase will be:

-
-
-
-
-
-
-
-

Work activities are restricted to designated construction areas
Earthworks and site clearing are undertaken in accordance with the Erosion and
Sediment Control Plans

Erosion and sediment control devices are to be constructed / installed in accordance

with the Erosion and Sediment Control Plans

Water quality monitoring at the nominated monitoring stations must be carried out

monthly and following significant rainfall (>25mm in 72 hrs)

Stormwater discharges from the site are not having any adverse effect on the downstream environment

Monitoring and recording of the performance of the drainage control devices including

water quality testing where required

Any failure in the stormwater system shall be immediately rectified to prevent uncontrolled discharge from the site

Any failure to the stormwater system causing damage to surroundings should implement immediate remedial work to the damaged area

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6.6

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RESPONSIBILITY AND REPORTING

The Construction Contractor will be responsible for the implementation of the Stormwater Management Plan during the course of all construction activities. Regular inspections of the devices (and records of any failures) shall be undertaken. Refer Appendix F – Erosion and Sediment Control Inspection Checklists

7 CONCLUSION

7.1

STORMWATER QUANTITY MANAGEMENT

7.1.1 Operational Phase

It has been demonstrated that the proposed mitigation to be included with the stormwater drainage system as part of the development proposal will achieve a developed runoff less than / equal to the existing runoff from the pre-developed scenario.

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APPENDIX A

SITE SURVEY PLAN & EXISTING SERVICES

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APPENDIX B

DEVELOPMENT PROPOSAL

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APPENDIX C

CIVIL SITEWORKS CONCEPT PLAN

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APPENDIX D

RATIONAL METHOD CALCULATIONS

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Overland Sheet Flow
(Shallow Sheet Flow Only) - Predeveloped Site
Job No:
Job Address
Calc By
Date

23.2157
241 Queen Street, Ayr
NT
02/11/2023

Taken from QUDM
Section 4.06.6 Overland Flow
c) Friend's Equation/Nomograph for Overland Sheet Flow Time
(Preferred Method for Overland Flow Calculation)
The formula shown below and attributed to Friend (1954) may be used for
determination of overland sheet flow times.

Friend's Equation
$$t = (107nL^{0.333})/S^{0.2}$$

where

t = overland sheet flow travel time (min)
L = overland sheet flow path length (m)
= 76
m
n = Horton's surface roughness factor (similar to Manning's n)
= 0.025
S = slope of surface (%)
=1
%

t = 11.3

mins

No. 5 Parkview Street, Milton Qld 4064 Phone: (07) 3367 0211 Fax: (07) 3367 0205
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Stormwater Runoff Calculations

Job No:

Job Address

Calc By

Locality

Date

23.2157

241 Queen Street, Ayr

NT

Ayr

02/11/2023

Existing Site Conditions

Impervious Area:

Pervious Area:

Total Area:

Fraction Impervious:

0.1208

0.2100

0.3308

0.37

Time of Concentration:

11

ha

ha

ha

Co-Efficient Runoff

Co-Efficient Runoff

0.9

0.7

ha

ha

ha

Co-Efficient Runoff

Co-Efficient Runoff

0.9

0.7

Developed Site Conditions

Impervious Area:

Pervious Area:

Total Area:

Fraction Impervious:

0.2183

0.1125

0.3308

0.66

Time of Concentration:

6

Existing Site Results

Q3 month

Q1

Q2

Q5

Q10

Q20

Q50

Q100

0.025

0.050

0.068

0.099

0.117

0.142

0.184

0.214

Developed Site Results

m³/s

m³/s

m³/s

m³/s

m³/s

m³/s

m³/s

m³/s

Q3 month

Q1

Q2

Q5

Q10

Q20

Q50

Q100

0.033

0.067

0.091

0.131

0.157

0.190

0.245

0.286

m³/s

m³/s

m³/s

m³/s

m³/s

m³/s

m³/s

m³/s

Increase In Site Runoff

Q3 month

Q1

Q2

Q5

Q10

Q20

Q50

Q100

0.008
0.017
0.023
0.033
0.040
0.048
0.061
0.072

m³/s
m³/s
m³/s
m³/s
m³/s
m³/s
m³/s
m³/s

33.31 %
33.31 %
33.34 %
33.43 %
33.72 %
33.55 %
33.46 %
33.78 %

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Initial Q100 Detention Sizing Calculations
Refer to QUDM Section 5.05.1

Flow to be retarded:
Reduction ratio,
where

$$0.072 \text{ m}^3/\text{s}$$

$$r =$$

$$Q_i =$$

$$Q_o =$$

$$(Q_i - Q_o) / Q_i$$

$$0.286 \text{ m}^3/\text{s}$$

$$0.214 \text{ m}^3/\text{s}$$

therefore,

$$r =$$

$$0.253$$

Inflow volume,

$$V_i =$$

$$(4 * t_c * Q_i) / 3$$

where

$$t_c =$$

$$Q_i =$$

$$6 \text{ mins}$$

$$0.286 \text{ m}^3/\text{s}$$

therefore,

$$V_i =$$

$$137.39 \text{ m}^3$$

note: t'c in seconds

Storage volumes:

Culp

$$V_s =$$

Boyd

Carroll

$$V_s =$$

$$17.40 \text{ m}^3$$

$$V_s =$$

$$(V_i * r)$$

$$V_s =$$

$$34.69 \text{ m}^3$$

Vs =

Vs =

Basha

Vs =

Average volume,

$$(V_i * r (1 + 2r)) / 3$$

$$(V_i * r (3 + 5r)) / 8$$

(QUDM eqn 5.01)

(QUDM eqn 5.02)

(QUDM eqn 5.03)

18.48 m³

$$(V_i * r (2 + r)) / 3$$

Vs =

26.05 m³

Vs =

24.16 m³

(QUDM eqn 5.04)

No. 5 Parkview Street, Milton Qld 4064 Phone: (07) 3367 0211 Fax: (07) 3367 0205
Email: civil@deq.com.au

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APPENDIX E

STORMWATER QUANTITY MANAGEMENT CALCULATIONS

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XP-RAFTS MODEL PARAMETERS

1. Vectored Slope,

2. Roughness,

Concrete roadway, Roof

Landscaping, grassed batters

3. Loss

Landscaping, etc

Roof, roads, etc

Initial Loss

10 mm

1.5 mm

-

1.0% predeveloped

1.0% developed

-

n=0.015

n=0.025

Continuing Loss

2.5 mm

0 mm

4. Catchment Areas

Existing Catchment (37% impervious)

Impervious Area (100% impervious),

Pervious Area (0% impervious),

Total Site

0.121 ha

0.210 ha

0.331 ha

Developed Catchment Tank

Impervious Area (100% impervious),

Pervious Area (0% impervious),

Total Site

0.076 ha

0.000 ha

0.076 ha

Developed Catchment Bypass

Impervious Area (100% impervious),

Pervious Area (0% impervious),

Total Site

0.142 ha

0.113 ha

0.255 ha

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5. Comparison of Flows
XP-RAFTS OUTPUT
25 MIN STORM
AEP

ARI

Existing
Developed
Catchment Catchment
Flows
Flows

60 MIN STORM

Difference

Existing
Catchment
Flows

Developed
Catchment
Flows

Difference

%

years

m³/s

m³/s

m³/s

m³/s

m³/s

m³/s

63.2

1

0.052

0.055

0.003

0.054

0.057

0.003

50

2

0.072

0.076

0.004

0.077

0.077

0.000

20

5

0.102

0.104

-0.002

0.109

0.105

-0.004

10

10

0.120

0.120

0.000

0.129

0.120

-0.009

5

20

0.148

0.143

-0.005

0.164

0.143

-0.021

2

50

0.173

0.157

-0.016

0.197

0.163

-0.034

1

100

0.210

0.180

-0.030

0.224

0.218

-0.006

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PREDEVELOPED FLOWS

#####

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

1.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

EX

0.1208 0.2100 1.000 1.000 100.0 0.000

Pern

#1

#2

.015 .025

B

#1

#2

.0005 .0127

Link

No.

1.000

Link

Label

Average Init. Loss Cont. Loss

Excess Rain

Peak

Time

Link

Intensity #1

#2

#1

#2

#1

#2

Inflow

to

Lag

(mm/h)
(mm)
(mm/h)
(mm)
(m^3/s) Peak mins
EX
60.178 1.500 10.00 0.000 2.500 23.574 14.407 0.0519 15.00 0.000

STORM DURATION (MINS)
=
60.
RETURN PERIOD (YRS)
=
1.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000

Pern
#1
#2
.015 .025

B
#1

#2

.0005 .0127

Link
No.
1.000

Link
Label

Average Init. Loss Cont. Loss
Excess Rain
Peak
Time
Link
Intensity #1
#2
#1
#2
#1
#2
Inflow

```

to
Lag
(mm/h)
( mm )
(mm/h)
( mm )
(m^3/s) Peak mins
EX
39.420 1.500 10.00 0.000 2.500 37.920 27.504 0.0544 25.00 0.000
#####
#####
STORM DURATION (MINS)
=
25.
RETURN PERIOD (YRS)
=
2.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000

Pern
#1
#2
.015 .025

B
#1

#2

.0005 .0127

Link
No.
1.000

Link
Label

Average Init. Loss Cont. Loss
Excess Rain
Peak
Time
Link
Intensity #1
#2
#1
#2
#1

```

```

#2
Inflow
to
Lag
(mm/h)
( mm )
(mm/h)
( mm )
(m^3/s) Peak mins
EX
77.918 1.500 10.00 0.000 2.500 30.966 21.716 0.0720 15.00 0.000
#####
#####
STORM DURATION (MINS)
=
60.
RETURN PERIOD (YRS)
=
2.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000

Pern
#1
#2
.015 .025

B
#1

#2

.0005 .0127

Link
No.
1.000

Link
Label

Average Init. Loss Cont. Loss
Excess Rain
Peak
Time
Link
Intensity #1
#2
#1

```

```

#2
#1
#2
Inflow
to
Lag
(mm/h)
( mm )
(mm/h)
( mm )
(m^3/s) Peak mins
EX
50.968 1.500 10.00 0.000 2.500 49.468 38.989 0.0765 25.00 0.000
#####
#####
STORM DURATION (MINS)
=
25.
RETURN PERIOD (YRS)
=
5.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000
Link
Label
EX

Average Init. Loss
Intensity #1
#2
(mm/h)
( mm )
101.83 1.500 10.00

Cont. Loss
#1
#2
(mm/h)
0.000 2.500

Pern
#1
#2
.015 .025

B
#1

#2

```

.0005 .0127

Excess Rain
Peak

#1

#2

Inflow

(mm)

(m³/s)

40.929 31.638 0.1020

Link

No.

1.000

Time

Link

to

Lag

Peak mins

15.00 0.000

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#####

#####

STORM DURATION (MINS)

=

60.

RETURN PERIOD (YRS)

=

5.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

EX

0.1208 0.2100 1.000 1.000 100.0 0.000

Pern

#1

#2

.015 .025

B

#1

#2

.0005 .0127

Link

No.

1.000

Link

Label

Average Init. Loss Cont. Loss

Excess Rain

Peak

Time

Link

Intensity #1

#2

#1

#2

#1

#2

Inflow

to

Lag

(mm/h)

(mm)
(mm/h)
(mm)
(m^3/s) Peak mins
EX
66.355 1.500 10.00 0.000 2.500 64.855 54.313 0.1088 25.00 0.000

STORM DURATION (MINS)
=
25.
RETURN PERIOD (YRS)
=
10.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000

Pern
#1
#2
.015 .025

B
#1

#2

.0005 .0127

Link
No.
1.000

Link
Label

Average Init. Loss Cont. Loss
Excess Rain
Peak
Time
Link
Intensity #1
#2
#1
#2
#1
#2
Inflow
to

Lag
(mm/h)
(mm)
(mm/h)
(mm)
(m³/s) Peak mins
EX
115.23 1.500 10.00 0.000 2.500 46.512 37.200 0.1203 15.00 0.000

STORM DURATION (MINS)
=
60.
RETURN PERIOD (YRS)
=
10.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000

Pern
#1
#2
.015 .025

B
#1

#2

.0005 .0127

Link
No.
1.000

Link
Label

Average Init. Loss Cont. Loss
Excess Rain
Peak
Time
Link
Intensity #1
#2
#1
#2
#1
#2

Inflow
 to
 Lag
 (mm/h)
 (mm)
 (mm/h)
 (mm)
 (m³/s) Peak mins
 EX
 74.934 1.500 10.00 0.000 2.500 73.434 62.871 0.1293 25.00 0.000
 #####
 #####
 STORM DURATION (MINS)
 =
 25.
 RETURN PERIOD (YRS)
 =
 20.
 SUMMARY OF CATCHMENT AND RAINFALL DATA
 Link
 Catch. Area
 Slope
 % Impervious
 Label
 #1
 #2
 #1
 #2
 #1
 #2
 (ha)
 (%)
 (%)
 EX
 0.1208 0.2100 1.000 1.000 100.0 0.000

 Pern
 #1
 #2
 .015 .025

 B
 #1

 #2

 .0005 .0127

 Link
 No.
 1.000

 Link
 Label

 Average Init. Loss Cont. Loss
 Excess Rain
 Peak
 Time
 Link
 Intensity #1
 #2
 #1
 #2

```

#1
#2
Inflow
to
Lag
(mm/h)
( mm )
(mm/h)
( mm )
(m^3/s) Peak mins
EX
133.66 1.500 10.00 0.000 2.500 54.194 44.860 0.1482 15.00 0.000
#####
#####
STORM DURATION (MINS)
=
60.
RETURN PERIOD (YRS)
=
20.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000
Link
Label
EX

Average Init. Loss
Intensity #1
#2
(mm/h)
( mm )
86.775 1.500 10.00

Cont. Loss
#1
#2
(mm/h)
0.000 2.500

Pern
#1
#2
.015 .025

B
#1

#2

```

.0005 .0127

Excess Rain
Peak

#1

#2

Inflow

(mm)

(m³/s)

85.275 74.691 0.1636

Link

No.

1.000

Time

Link

to

Lag

Peak mins

25.00 0.000

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#####

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

50.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

EX

0.1208 0.2100 1.000 1.000 100.0 0.000

Pern

#1

#2

.015 .025

B

#1

#2

.0005 .0127

Link

No.

1.000

Link

Label

Average Init. Loss Cont. Loss

Excess Rain

Peak

Time

Link

Intensity #1

#2

#1

#2

#1

#2

Inflow

to

Lag

(mm/h)

(mm)
(mm/h)
(mm)
(m³/s) Peak mins
EX
158.19 1.500 10.00 0.000 2.500 64.413 55.038 0.1729 15.00 0.000

STORM DURATION (MINS)
=
60.
RETURN PERIOD (YRS)
=
50.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000

Pern
#1
#2
.015 .025

B
#1

#2

.0005 .0127

Link
No.
1.000

Link
Label

Average Init. Loss Cont. Loss
Excess Rain
Peak
Time
Link
Intensity #1
#2
#1
#2
#1
#2
Inflow
to

Lag
 (mm/h)
 (mm)
 (mm/h)
 (mm)
 (m³/s) Peak mins
 EX
 102.50 1.500 10.00 0.000 2.500 101.00 90.354 0.1973 25.00 0.000
 #####
 #####
 STORM DURATION (MINS)
 =
 25.
 RETURN PERIOD (YRS)
 =
 100.
 SUMMARY OF CATCHMENT AND RAINFALL DATA
 Link
 Catch. Area
 Slope
 % Impervious
 Label
 #1
 #2
 #1
 #2
 #1
 #2
 (ha)
 (%)
 (%)
 EX
 0.1208 0.2100 1.000 1.000 100.0 0.000

 Pern
 #1
 #2
 .015 .025

 B
 #1

 #2

 .0005 .0127

 Link
 No.
 1.000

 Link
 Label

 Average Init. Loss Cont. Loss
 Excess Rain
 Peak
 Time
 Link
 Intensity #1
 #2
 #1
 #2
 #1
 #2

```

Inflow
to
Lag
(mm/h)
( mm )
(mm/h)
( mm )
(m^3/s) Peak mins
EX
177.14 1.500 10.00 0.000 2.500 72.310 62.914 0.2102 15.00 0.000
#####
#####
STORM DURATION (MINS)
=
60.
RETURN PERIOD (YRS)
=
100.
SUMMARY OF CATCHMENT AND RAINFALL DATA
Link
Catch. Area
Slope
% Impervious
Label
#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
EX
0.1208 0.2100 1.000 1.000 100.0 0.000

Pern
#1
#2
.015 .025

B
#1

#2

.0005 .0127

Link
No.
1.000

Link
Label

Average Init. Loss Cont. Loss
Excess Rain
Peak
Time
Link
Intensity #1
#2
#1
#2

```

#1
#2
Inflow
to
Lag
(mm/h)
(mm)
(mm/h)
(mm)
(m^3/s) Peak mins
EX
114.63 1.500 10.00 0.000 2.500 113.13 102.47 0.2241 25.00 0.000

#####

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MITIGATED DEVELOPED FLOWS

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

1.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

60.178 1.500 0.000

60.178 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

Link

No.

.0004 0.000
.0006 .0092

Excess Rain
Peak

#1

#2

Inflow

(mm)

(m³/s)

23.574 0.000 0.0251

23.574 14.407 0.0545

1.000

1.001

Time

Link

to

Lag

Peak mins

11.50 0.000

15.00 0.000

SUMMARY OF BASIN RESULTS

Link

Time

Peak

Time

Peak

Total

----- Basin -----Label

to

Inflow

to

Outflow Inflow

Vol.

Vol.

Stage

Peak (m³/s) Peak (m³/s)

(m³)

Avail

Used

Used

Tank

11.50 .0251 26.50

.0010

17.931

0.0000

16.789 1.0674

#####

#####

STORM DURATION (MINS)

=

60.

RETURN PERIOD (YRS)

=

1.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

39.420 1.500 0.000

39.420 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

Link

No.

.0004 0.000

.0006 .0092

Excess Rain

Peak

#1

#2

Inflow

(mm)

(m³/s)

37.920 0.000 0.0234

37.920 27.504 0.0570

1.000

1.001

Time
Link
to
Lag
Peak mins
21.50 0.000
25.00 0.000

SUMMARY OF BASIN RESULTS

Link
Time
Peak
Time
Peak
Total

----- Basin -----Label

to
Inflow
to
Outflow Inflow
Vol.
Vol.
Stage
Peak (m³/s) Peak (m³/s)

(m³)
Avail
Used
Used
Tank
21.50 .0234 60.50
.0013
28.849
0.0000
25.510 1.6219

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

2.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link
Catch. Area
Slope
% Impervious
Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank
Bypass

Average Init. Loss
Intensity #1

#2
(mm/h)
(mm)
77.918 1.500 0.000
77.918 1.500 10.00

Cont. Loss
#1
#2
(mm/h)
0.000 0.000
0.000 2.500

SUMMARY OF BASIN RESULTS

Link
Time
Peak
Time
Peak
Label
to
Inflow
to
Outflow
Peak (m³/s) Peak (m³/s)
Tank
11.50 .0325 26.50
.0012

Pern
#1
#2
.015 0.00
.015 .025

B
#1

Link
No.

.0004 0.000
.0006 .0092

Excess Rain

Peak
#1
#2
Inflow
(mm)
(m³/s)
30.966 0.000 0.0325
30.966 21.716 0.0761

Total
Inflow
(m³)
23.553

#2

1.000
1.001

Time
Link
to
Lag
Peak mins
11.50 0.000
15.00 0.000

----- Basin -----Vol.
Vol.
Stage
Avail
Used
Used
0.0000
22.220 1.4127

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#####

#####

RETURN PERIOD (YRS)

=

2.

BX

=

1.1000

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

50.968 1.500 0.000

50.968 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

Link

No.

.0004 0.000
.0006 .0092

Excess Rain
Peak

#1

#2

Inflow

(mm)

(m³/s)

49.468 0.000 0.0305

49.468 38.989 0.0770

1.000

1.001

Time

Link

to

Lag

Peak mins

21.50 0.000

25.00 0.000

SUMMARY OF BASIN RESULTS

Link

Time

Peak

Time

Peak

Total

----- Basin -----Label

to

Inflow

to

Outflow Inflow

Vol.

Vol.

Stage

Peak (m³/s) Peak (m³/s)

(m³)

Avail

Used

Used

Tank

21.50 .0305 61.00

.0015

37.633

0.0000

33.764 2.1467

#####

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

5.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

101.83 1.500 0.000

101.83 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

Link

No.

.0004 0.000

.0006 .0092

Excess Rain

Peak

#1

#2

Inflow

(mm)

(m³/s)

40.929 0.000 0.0426

40.929 31.638 0.1038

1.000

1.001

Time
Link
to
Lag
Peak mins
11.50 0.000
15.00 0.000

SUMMARY OF BASIN RESULTS

Link
Time
Peak
Time
Peak
Total

----- Basin -----Label

to
Inflow
to
Outflow Inflow
Vol.
Vol.
Stage
Peak (m³/s) Peak (m³/s)
(m³)
Avail
Used
Used
Tank
11.50 .0426 26.50
.0014
31.135
0.0000
29.576 1.8804

#####

#####

STORM DURATION (MINS)

=

60.

RETURN PERIOD (YRS)

=

5.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link
Catch. Area
Slope
% Impervious
Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

66.355 1.500 0.000

66.355 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

SUMMARY OF BASIN RESULTS

Link

Time

Peak

Time

Peak

Label

to

Inflow

to

Outflow

Peak (m³/s) Peak (m³/s)

Tank

21.50 .0400 61.00

.0017

Pern

#1

#2

.015 0.00

.015 .025

B

#1

Link

No.

.0004 0.000

.0006 .0092

Excess Rain

Peak

#1

#2

Inflow

(mm)

(m³/s)

64.855 0.000 0.0400

64.855 54.313 0.1045

Total

Inflow

(m³)

49.339

#2

1.000
1.001

Time
Link
to
Lag
Peak mins
21.50 0.000
25.00 0.000

----- Basin -----Vol.
Vol.
Stage
Avail
Used
Used
0.0000
44.835 2.8505

23.2157

23/01/2024

#####

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

10.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

115.23 1.500 0.000

115.23 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

Link

No.

.0004 0.000
.0006 .0092

Excess Rain
Peak

#1

#2

Inflow

(mm)

(m³/s)

46.512 0.000 0.0482

46.512 37.200 0.1203

1.000

1.001

Time

Link

to

Lag

Peak mins

11.50 0.000

15.00 0.000

SUMMARY OF BASIN RESULTS

Link

Time

Peak

Time

Peak

Total

----- Basin -----Label

to

Inflow

to

Outflow Inflow

Vol.

Vol.

Stage

Peak (m³/s) Peak (m³/s)

(m³)

Avail

Used

Used

Tank

11.50 .0482 26.50

.0015

35.385

0.0000

33.715 2.1435

#####

#####

STORM DURATION (MINS)

=

60.

RETURN PERIOD (YRS)

=

10.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

74.934 1.500 0.000

74.934 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

Link

No.

.0004 0.000

.0006 .0092

Excess Rain

Peak

#1

#2

Inflow

(mm)

(m³/s)

73.434 0.000 0.0453

73.434 62.871 0.1202

1.000

1.001

Time
Link
to
Lag
Peak mins
21.50 0.000
25.00 0.000

SUMMARY OF BASIN RESULTS

Link
Time
Peak
Time
Peak
Total

----- Basin -----Label

to
Inflow
to
Outflow Inflow
Vol.
Vol.
Stage
Peak (m³/s) Peak (m³/s)
(m³)
Avail
Used
Used
Tank

21.50 .0453 45.00
.0091
55.867
0.0000
45.758 2.9092

#####

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

20.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link
Catch. Area
Slope
% Impervious
Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

133.66 1.500 0.000

133.66 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

SUMMARY OF BASIN RESULTS

Link

Time

Peak

Time

Peak

Label

to

Inflow

to

Outflow

Peak (m³/s) Peak (m³/s)

Tank

11.50 .0559 26.50

.0016

Pern

#1

#2

.015 0.00

.015 .025

B

#1

Link

No.

.0004 0.000

.0006 .0092

Excess Rain

Peak

#1

#2

Inflow

(mm)

(m³/s)

54.194 0.000 0.0559

54.194 44.860 0.1429

Total

Inflow

(m³)

41.225

#2

1.000
1.001

Time
Link
to
Lag
Peak mins
11.50 0.000
15.00 0.000

----- Basin -----Vol.
Vol.
Stage
Avail
Used
Used
0.0000
39.412 2.5057

23.2157

23/01/2024

#####

#####

STORM DURATION (MINS)

=

60.

RETURN PERIOD (YRS)

=

20.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

86.775 1.500 0.000

86.775 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

Link

No.

.0004 0.000
.0006 .0092

Excess Rain
Peak

#1

#2

Inflow

(mm)

(m³/s)

85.275 0.000 0.0526

85.275 74.691 0.1433

1.000

1.001

Time

Link

to

Lag

Peak mins

21.50 0.000

25.00 0.000

SUMMARY OF BASIN RESULTS

Link

Time

Peak

Time

Peak

Total

----- Basin -----Label

to

Inflow

to

Outflow Inflow

Vol.

Vol.

Stage

Peak (m³/s) Peak (m³/s)

(m³)

Avail

Used

Used

Tank

21.50 .0526 35.00

.0192

64.875

0.0000

46.484 2.9553

#####

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

50.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

158.19 1.500 0.000

158.19 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

Link

No.

.0004 0.000

.0006 .0092

Excess Rain

Peak

#1

#2

Inflow

(mm)

(m³/s)

64.413 0.000 0.0593

64.413 55.038 0.1570

1.000

1.001

Time
Link
to
Lag
Peak mins
11.50 0.000
15.00 0.000

SUMMARY OF BASIN RESULTS

Link
Time
Peak
Time
Peak
Total

----- Basin -----Label

to
Inflow
to
Outflow Inflow
Vol.
Vol.
Stage
Peak (m³/s) Peak (m³/s)
(m³)
Avail
Used
Used
Tank

11.50 .0593 25.50
.0121
49.004
0.0000
46.002 2.9247

#####

#####

STORM DURATION (MINS)

=

60.

RETURN PERIOD (YRS)

=

50.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link
Catch. Area
Slope
% Impervious
Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

102.50 1.500 0.000

102.50 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

SUMMARY OF BASIN RESULTS

Link

Time

Peak

Time

Peak

Label

to

Inflow

to

Outflow

Peak (m³/s) Peak (m³/s)

Tank

21.50 .0580 30.50

.0256

Pern

#1

#2

.015 0.00

.015 .025

B

#1

Link

No.

.0004 0.000

.0006 .0092

Excess Rain

Peak

#1

#2

Inflow

(mm)

(m³/s)

101.00 0.000 0.0580

101.00 90.354 0.1632

Total

Inflow

(m³)

76.834

#2

1.000
1.001

Time
Link
to
Lag
Peak mins
21.50 0.000
25.00 0.000

----- Basin -----Vol.
Vol.
Stage
Avail
Used
Used
0.0000
46.866 2.9797

23.2157

23/01/2024

#####

#####

STORM DURATION (MINS)

=

25.

RETURN PERIOD (YRS)

=

100.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link

Catch. Area

Slope

% Impervious

Label

#1

#2

#1

#2

#1

#2

(ha)

(%)

(%)

Tank

0.0761 0.000 1.000 0.000 100.0 0.000

Bypass

0.1422 0.1125 1.000 1.000 100.0 0.000

Link

Label

Tank

Bypass

Average Init. Loss

Intensity #1

#2

(mm/h)

(mm)

177.14 1.500 0.000

177.14 1.500 10.00

Cont. Loss

#1

#2

(mm/h)

0.000 0.000

0.000 2.500

Pern

#1

#2

.015 0.00

.015 .025

B

#1

#2

.0004 0.000

.0006 .0092

Excess Rain
Peak
#1
#2
Inflow
(mm)
(m^3/s)
72.310 0.000 0.0663
72.310 62.914 0.1799

Link
No.
1.000
1.001

Time
Link
to
Lag
Peak mins
11.50 0.000
15.00 0.000

SUMMARY OF BASIN RESULTS

Link
Time
Peak
Time
Peak
Total
----- Basin -----Label
to
Inflow
to
Outflow Inflow
Vol.
Vol.
Stage
Peak (m^3/s) Peak (m^3/s)
(m^3)
Avail
Used
Used
Tank
11.50 .0663 25.00
.0187
55.010
0.0000
46.454 2.9535

#####

#####

STORM DURATION (MINS)

=

60.

RETURN PERIOD (YRS)

=

100.

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link
Catch. Area
Slope
% Impervious
Label

#1
#2
#1
#2
#1
#2
(ha)
(%)
(%)
Tank
0.0761 0.000 1.000 0.000 100.0 0.000
Bypass
0.1422 0.1125 1.000 1.000 100.0 0.000
Link
Label
Tank
Bypass

Average Init. Loss
Intensity #1

#2
(mm/h)
(mm)
114.63 1.500 0.000
114.63 1.500 10.00

Cont. Loss

#1
#2
(mm/h)
0.000 0.000
0.000 2.500

Pern

#1
#2
.015 0.00
.015 .025

B

#1

#2

.0004 0.000
.0006 .0092

Excess Rain

Peak

#1

#2

Inflow

(mm)

(m³/s)

113.13 0.000 0.0648
113.13 102.47 0.2182

Link

No.

1.000

1.001

Time

Link

to
Lag
Peak mins
21.50 0.000
25.00 0.000

SUMMARY OF BASIN RESULTS

Link
Time
Peak
Time
Peak
Total
----- Basin -----Label

to
Inflow
to
Outflow Inflow
Vol.
Vol.
Stage
Peak (m³/s) Peak (m³/s)
(m³)
Avail
Used
Used
Tank
21.50 .0648 25.50
.0443
86.070
0.0000
47.831 3.0411

#####

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APPENDIX F

EROSION AND SEDIMENT CONTROL
INSPECTION CHECKLISTS

Site Based Stormwater Management Plan - 239-241 Queen Street & 42 Bower Street,
Ayr

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DAILY SITE INSPECTION

LOCATION

SITE SUPERVISOR

SIGNATURE
Legend:

DATE

.....
OK

Not OK

N/A Not applicable

Item

Consideration

1

All tradespeople working on the site have been informed of the erosion and sediment control requirements of the site.

.....

All required builder identification, safety notices, and pollution (e.g. litter and sediment control) management signs are visible.

.....

The work site and all erosion and sediment control measures do not represent a safety risk to tradespeople or the public.

.....

2

3

4

Assessment

Public roadways are clear of sediment.
.....

5

6

7

8

9

10

Turfing on the footpath area is clear of sediment, sand and mud.

.....

Entry/exit pads are clear of excessive sediment deposition.

.....

Entry/exit pads have adequate available void spacing to trap sediment.

.....

The construction site is clear of litter and unconfined rubbish.

.....

Long-term (> 24 hours) soil/sand stockpiles are protected from wind, rain, and stormwater flow.

.....

At end of day, all short-term soil/sand stockpiles located
Site Based Stormwater Management Plan - 239-241 Queen Street & 42 Bower Street,
Ayr

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outside the sediment control zone have been removed and cleaned.

11

.....

No dust problems exist on the site.

.....

12

13

Up-slope "clean" water is being appropriately diverted through the site in a non-erosive manner.

.....

Drainage lines are free of soil scour and sediment deposition.

.....

14

Stormwater flow down exposed earth batters does not cause erosion.

15

Appropriate erosion controls of all finished soil disturbances have been discussed with the client.

16

17

18

19

20

21

22

.....

Sediment fences have been correctly installed (e.g. fabric buried and standing up-slope of stakes) and are free of damage.

.....

Sediment fences have been installed in a manner that will allow sediment-laden stormwater to temporarily pond and settle behind the fence rather than flow around the fence.

.....

Appropriate sediment controls have been placed adjacent to, or around, stormwater inlets—as appropriate for the type of inlet.

.....

All sediment traps are free of excessive sediment deposition.

.....

Finished service trenches have been appropriately backfilled, compacted and stabilised.

.....

All reasonable and practicable measures are being taken to control sediment runoff from the site.

.....

The site is adequately prepared for potential storms.

.....

23

24

Adequate stockpiles exist of ESC materials, such as extra sediment fence fabric.

.....

Temporary downpipes have been correctly connected to any installed roof gutters.

.....

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Ayr

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WEEKLY SITE INSPECTION

LOCATION

INSPECTION OFFICER

DATE

SIGNATURE

Legend:

.....
OK

Not OK

N/A Not applicable

Consideration

Assessment

Item

1

Public roadways clear of sediment.

.....

2

Entry/exit pads clear of excessive sediment deposition.

.....

3

Entry/exit pads have adequate void spacing to trap sediment.

.....

4

The construction site is clear of litter and unconfined rubbish.

.....

5

Adequate stockpiles of emergency ESC materials exist on site.

.....

6

Site dust is being adequately controlled.

.....

7

Appropriate drainage and sediment controls have been installed prior to new areas being cleared or disturbed.

.....

Up-slope "clean" water is being appropriately diverted around/through the site.

.....

8

9

Drainage lines are free of soil scour and sediment deposition.

.....

10

No areas of exposed soil are in need of erosion control.

.....

11

Earth batters are free of "rill" erosion.

.....

12

Erosion control mulch is not being displaced by wind or water.

.....

13

Long-term soil stockpiles are protected from wind, rain and stormwater flow with appropriate drainage and

.....

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Ayr

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erosion controls.

14

Sediment fences are free from damage.

.....

15

Sediment-laden stormwater is not simply flowing "around" the sediment fences or other sediment traps.

.....

Sediment controls placed up-slope/around stormwater inlets are appropriate for the type of inlet structure.

.....

16

17

All sediment traps are free of excessive sediment deposition.

18

The settled sediment layer within a sediment basin is clearly visible through the supernatant prior to discharge such water.

19

.....

.....

All reasonable and practicable measures are being taken to control sediment runoff from the site.

.....

All soil surfaces are being appropriately prepared (i.e. pH, nutrients, roughness and density) prior to revegetation.

.....

21

Stabilised surfaces have a minimum 70% soil coverage.

.....

22

The site is adequately prepared for imminent storms.

.....

23

All ESC measures are in proper working order.

.....

20

Concrete Block with Chain Wire Fence

C100

LEGEND

These standard symbols can
be found in the drawing.

MAJOR CONTOUR
(1.00m Interval)

MINOR CONTOUR
(0.25m Interval)

FENCE LINE
POWER LINE
EDGE OF VEGETATION
CHANGE OF GRADE
BOTTOM OF BANK
TOP OF WALL
BUILDING
BUILDING EAVES
DRIVEWAY

Concrete Block with Chain Wire Fence

Bower Street

EDGE OF CONCRETE
EDGE OF BITUMEN

Ch

ain

BACK OF KERB

Wi
re

EDGE OF PAVING

Fe
nc

EDGE OF PATH

e

CLOTHES HOIST
COMMUNICATIONS PIT
ELECTRICAL MISCELLANEOUS

Co

nc

POWER M/H

Pa

th

STRUCTURE GATE
STORMWATER M/H

SURVEY PSM
SURVEY BENCH MARK

en
W

ire

Fe
nc

8.9

80

e

Flo

or

Le

ve
l 8.0
4

4F

SURVEY CONTROL

nce

Weatherboard House

TRAFFIC SIGN

n Wi
re Fe

ick

WATER TAP
WATER METER

Chic
ke

Ch

loo

TREE

rL

ev
el

Ch
ick

Co
ncr

ete

en

Wi

re

nc
e

Ste

el

Fe
n

ce

87

Shed
Fe

W
eld

me

sh
F

en
c

e

So

un
dP

C101

roo
fF

en

ce

8.0
85
F

loo

rL

ev

C102

el

7.244 Floor Level
Fibro House

8.089 Floor Level

Fen
me
sh

h

We
ld

ug

ce

1

Tro
Shed

9.092 Floor Level

2

8.3

8.3
12
F

12

loo

Flo
or

rL

ev

el

rL

ev
el

Str

loo

C103

ee
n

0F

Qu

8.3

1

Concrete Block Building

ee

t

Tim

ber

Ga

te

C104

Le

ve

l

SURVEY CONTROL

Revisions

No.

Date

A

21.02.23

EASTING

796.075

842.643

884.026

939.123

912.090

NORTHING

4924.011

4866.524

4862.759

4834.386

4837.818

ELEVATION

7.789

8.026

7.896

8.124

8.122

DESCRIPTION

Spike

Spike

Spike

Spike

Screw in Conc Path

Level Datum: A.H.D Der

Details

Original Issue

Check
GEO

The title boundaries as shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey. Services shown hereon have been located where possible by field survey. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

B.M. Used: PM78103 RL: 7.934
Coordinate Projection: Plane
Coordinate Datum: Arbitrary
Origin of Coordinates: Stn B1

E:

1000.000

Meridian: Vide IS251860

N:

5000.000

Map Reference:
Contour Interval: 0.25m

Surveyed by: JW

Job No: 56958-001-01

Drawn: MJM

File No: 56958_001A.dwg

Approved:

Note:
This is proof plot only. Only selected levels have been shown. For other specific levels refer CAD file 56958_001A.dwg

Client:

TROPICAL VETS

Project:

DETAIL AND LEVEL SURVEY OF
LOTS 1 & 2 ON RP719267 AND LOT 87 ON A26512
241 QUEEN STREET - AYR
Local Authority: Burdekin Shire Council

Locality: Ayr

Date: 21st February, 2023
Sheet

of

Sheets
A1

Scale: 1:250

Plan No:

1

56958/001 A

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SURVEYING

TOWNPLANNING

P R O J E C T M A N A G E M E N T

MAPPING&GIS

Y E A R S

POINT

C100

C101

C102

C103

C104

Proposed Veterinary Surgery
241 Queen Street, Ayr

ENVIRONMENTAL
NOISE IMPACT ASSESSMENT

Prepared For
Tropical Vets Ayr

2 February 2024
crgref: 23042 report REV 1

1.0

INTRODUCTION

This report is in response to a request from Elite Fitout Solutions Pty Ltd for an environmental noise impact assessment of a proposed veterinary surgery in Ayr. In undertaking the assessment, unattended noise monitoring was conducted for the site and through modelling, predictions of onsite activity noise emissions were produced. Based upon the predicted noise impact levels, recommendations regarding acoustic treatment to the development have been provided.

2.0

DESCRIPTION OF THE DEVELOPMENT

The proposal is to refurbish the existing industrial building (previously a Cabinetmaker) to house a Veterinary practice, and replace an existing industrial shed with car parking to the northern part of Lot 2 on RP719267 on land zoned "Centre". Lot 1 on RP719267 will be reconfigured to allow for the proposed car parking, with the existing dwelling on that lot retained in the current position, and Lot 87 on A26512 will be reconfigured to allow for a driveway access to Bower Street, staff parking and an animal exercise area. For site location refer to Appendix A. Proposed hours of operation are as follows:

-
-

8.30am – 5.00pm, Monday – Friday;
9.00am – 12.00pm Saturday.

Staff will be onsite between 7.30am – 5.30 most days.
From an activity sheet, the existing clinic has an average of 4 patients visit per hour.

The site is bounded by the following uses:

-
-
-
-

Shell service station to the immediate south at 245 Queen Street, on land zoned "Centre" (Lot 24 on SP257330). The service station operates 24 hours.
A lowset dwelling to the northwest at 42 Bower Street (Lot 87 on A26512), on land zoned Low-medium Density Residential;
A highset dwelling to the north at 40 Bower Street (Lot 88 on A26512) on land zoned Lowmedium Density Residential;
A lowset dwelling to the northeast at 239 Queen Street (Lot 1 on RP719267), on land zoned "Centre".

The subject site is within land zoned "Centre", which under the Burdekin Shire Council Planning Scheme which anticipates a mix of commercial, community, government, entertainment and permanent and visitor accommodation activities.

The proposal is to fit out the southern end (the Queen street end) of the existing building to comprise the following (for development plans refer to Appendix B):

-
-
-
-
-
-
-
-
-
-
-

Reception and waiting area;
Three consulting rooms;
Staff room;
Pharmacy and lab area;
Cat ward and dog ward;
Animal exercise area to the rear of the building;
Treatment room;
Surgery room;
Sterilisation room;
Imaging x-ray room;
Breakout and Meeting Rooms on mezzanine level.

The exterior building shell is concrete block, with the ground floor level devoid of openings to the ground floor level, with the exception of the façade facing onto Queen Street. The top floor level will have windows facing northeast from the Breakout and Meeting Rooms on mezzanine level.

The facility will offer overnight accommodation for sick, injured and recovering animals. Dogs staying overnight will be kept inside the dog ward, which will be acoustically treated to mitigate noise breakout. We have been advised by many Veterinarians that sick or unwell dogs (the main source of animal noise associated with the use) do not tend to bark.

3.0

AMBIENT NOISE SURVEY

3.1

Instrumentation and Measurement Methodology

The following equipment was used to record ambient noise levels at the subject site locale.

-
-

Rion NC 73 Calibrator; and

Larson Davis SoundExpert 721 logging sound level meter.

All instrumentation used in this assessment hold current calibration certificate from a certified NATA calibration laboratory.

3.2

Unattended Measurement Methodology

A logger was located centrally onsite, adjacent to the open shed. The microphone was within a freefield location, approximately 1.2m above ground level and was set to record noise statistics in 15 minute blocks continually between Wednesday 22/11/2023 and Wednesday 29/11/2023, although the power supply failed on 27/11/2023 (the data recorded was consistent over the 6 days of recording, therefore, we are confident that the data is representative and valid, and the 1 day of missing data is of no concern). Refer to Figure 2 in Appendix A of this report for the logger location.

Measurements were conducted generally in accordance with Australian Standard AS 1055:1997 -

"Acoustics-Description and measurement of environmental noise", with data recorded as "A" Weight,

"Fast" Response, with the meter range set to 14 - 140 dB.

The operation of the sound level logging equipment was field calibrated before and after the measurement session, with no significant drift from the reference signal recorded.

Daily weather observations were obtained from the Bureau of Meteorology's website at the Ayr

weather station. Weather conditions during the noise monitoring period were generally fine (except

less than 3mm of rain recorded on 23/11, 25/11, 26/11 and 28/11)), a temperature range between

22 to 34°C and relative humidity between 61 and 89%.

3.3

Unattended Measurement Results

Table 1 below presents the Rating Background noise levels calculated in accordance with the

methodology detailed in the QLD EPA guideline "Planning for noise control".

Graphical presentation

of the measured noise levels from the logger are attached to this letter. Note that we have not excluded

the days that recorded rain (all days were less than 3mm), as the rain did not appear to affect measured

levels. Graphical presentation of the measured noise levels is presented in the Appendix C.

Time Period

7am to 6pm

6pm to 10pm

10pm to 7am

Rating Background Level dB(A)

42
36
31

Table 1: Rating Background Noise Levels calculated from measured background noise levels.

Page 4

4.0

NOISE CRITERION

P018 of the Centre Zone code of the Burdekin Shire Council /Planning Scheme states the following:

As there is no set criteria, we have applied the criteria defined in the Environmental Protection (Noise) Policy 2008.

4.1

Acoustic Quality Objectives for Onsite Activity Noise

Section 6 of the Environmental Protection (Noise) Policy 2019 provides the following framework for environmental values to be enhanced or protected:

Section 9 of the Environmental Protection (Noise) Policy 2019 provides the following framework for management intent for noise:

Schedule 1 of the Environmental Protection (Noise) Policy 2019 provides the following specific "Acoustic Quality Objectives" to ensure that the above is achieved at offsite noise sensitive receivers impacted by onsite noise emissions, and onsite noise sensitive receivers impacted by offsite commercial noise emissions:

Table 2: Criterion from Schedule 1 of the Environmental Protection (Noise) Policy 2019.

We note that the night time period has no external criteria, but sets indoor noise limits. An external impact 5 dB above the indoor limit will meet the indoor limits, allowing for open windows (e.g. L Aeq, adj, 1hr of 35 dB(A), LA10, adj, 1hr of 40 dB(A), LA01, adj, 1hr of 45 dB(A)).

4.2

Controlling Background Creep for Onsite Activity Noise

The Environmental Protection (Noise) Policy 2008 provided the following guidance for control of

"Background Creep"¹:

"Background creep" is the effect of assessing continuous noise such as air conditioners at levels above background conditions.

The new plant will raise background noise levels, therefore, if extra plant is added, a higher noise limit results from the effect of the existing plant. As more plant is added, the noise limits increase, thereby increasing the allowable level of noise from plant.

1

Based upon the measured RBLs detailed in Table 1 of Section 3.3, the above "Background Creep"

criterion equates to the following levels:

Time Varying Noise Source

Day 7am to 6pm

Evening 6pm to 10pm

Night-time 10pm to 6am

Continuous Noise Source

Day 7am to 6pm

Evening 6pm to 10pm

Night-time 10pm to 6am

Noise Limit, SPL dB(A) Leq

47 (Measured RBL level 42 + 5 dB)

41 (Measured RBL level 36 + 5 dB)

36 (Measured RBL level 31 + 5 dB)

Noise Limit, SPL dB(A) L90

42 (Measured RBL level 42 + 0 dB)

36 (Measured RBL level 36 + 0 dB)

31 (Measured RBL level 31 + 0 dB)

Table 3: Noise limit criterion for "Background Creep".

5.0

PREDICTED NOISE IMPACTS

All noise source levels used in the assessment have been collected from similar investigations. All noise levels assessed under the "Acoustic Quality Objectives" criterion have been corrected for impulsiveness or tonality as per Australian Standard AS 1055:1997 - "Acoustics-Description and measurement of environmental noise".

The following noise source levels would typically occur as part of the proposed development and have been assessed within this report. Note that we have not assessed goods delivery or waste collection, as these activities occurred as part of the previous industrial operations on the site. Further, we have not undertaken predictions of dog barking in the exercise area, as they would be under supervision of a Staff member, and again, sick dogs do not tend to bark. We have assessed barking inside, as there is no Staff attending overnight at the facility, and if a dog does bark, there will be nobody to control the barking.

Activity/Noise Source

Car door closures

Car bypass

Car starts

Dog barking inside dog ward

Distance

To Source

1m

1m

1m

1m

Event Duration Noise Level, SPL dB(A)

Leq

L01 1hr

L01 1hr

80*

83*

85*

68

70

73

73

74

75

80*

99*

105*

* Denotes + 5 dB correction for impulsiveness in accordance with AS1055. ** Denotes + 5 dB correction for tonality in accordance with AS1055.

Table 4: Typical noise source levels associated with the proposed development. With regards to the LA10 1hr and LA01 1hr levels, in many cases, particularly during the night-time period, noise events such as car door closures may not register as LA10 or LA01 levels if the events do not occur for 10% or 1% of the time period respectively. For example, a 1 second event would have to occur

360 times during a one-hour period to register as an LA10, and 36 times during a one-hour period to register as an LA01 as these noise descriptors are statistically defined. If the events do not occur for the minimum number of iterations (or time period) we have presented the results as "N/A" in Table 5.

For the LAeq levels in Table 5 have presented both the adjusted 15 minute duration and also the adjusted one hour duration. For assessment of the "Background Creep" criterion we have adopted the LAeq 15 minute duration levels.

Based upon the proposed onsite activities in relation to the nearest, most exposed noise sensitive receivers (building façades, inside rooms with windows open), we predict the following noise impact levels as presented in Table 5.

The predicted levels assume that the recommended treatments detailed in Section 6 are incorporated into the development. For point source calculations refer to Appendix C.

Fluctuating Noise Source
 Leq 15min
 R1: Dwelling northwest 42 Bower Street
 Car door closures
 21
 Car bypass
 22
 Car starts
 <20
 Dog barking inside dog ward
 <20
 Combined Impact
 26
 R2: Dwelling north 40 Bower Street
 Car door closures
 <20
 Car bypass
 <20
 Car starts
 <20
 Dog barking inside dog ward
 <20
 Combined Impact
 21
 R3: Dwelling northeast 239 Queen Street
 Car door closures
 25
 Car bypass
 37
 Car starts
 23
 Dog barking inside dog ward
 <20
 Combined Impact
 37
 Applicable Criterion
 B. Creep
 7am to 10pm Criterion
 42 / 41
 10pm to 7am Criterion
 36

Predicted Noise Impact, SPL dB(A)

Nearest Façade
 Inside Windows Open

Leq 1hr
 L10 1hr
 L01 1hr
 Leq 1hr
 L10 1hr
 L01 1hr

26
 22
 <20
 <20
 28

N/A
 N/A
 N/A
 26
 N/A

39
41
32
N/A

<20
<20
<20
<20
21

N/A
N/A
N/A
<20
N/A

44
31
<20
25
N/A

22
<20
<20
<20
24

N/A
N/A
N/A
24
N/A

47
34
37
30
N/A

<20
<20
<20
<20
<20

N/A
N/A
N/A
<20
N/A

40
26
30
22
N/A

30
37
23
23
38

N/A
N/A
N/A
43
N/A

N/A
N/A
N/A
35
N/A

48
46
38
41
N/A

40
35

45
40

50

55
23
54
29
45
<20
49
<20
N/A

30
Acoustic Quality Objectives
55
65
35
30

Table 5: Predicted onsite fluctuating noise impact levels at noise sensitive receivers.

Continuous noise source levels have been compiled from similar previous investigations, and have been corrected for impulsiveness or tonality where appropriate as per Australian Standard

AS 1055:1997 - "Acoustics-Description and measurement of environmental noise". As mechanical plant selections have yet to be undertaken we have applied noise levels from other

similar development sites as follows:

- Commercial package air-conditioning condenser units x 3 located on the roof (each unit 57 dB(A) at 1m).

Based upon the assumed locations of onsite plant in relation to the nearest noise sensitive receivers

(building façades, inside rooms with windows open), we predict the following noise impact levels as

presented in the following table. The predicted levels assume that all three condenser units operate in

the daytime, and one runs through the night. For point source calculations refer to Appendix C.

Continuous Noise Source

R1: Dwelling northwest 42 Bower Street

Combined air conditioner three large units operating (daytime scenario)

One air conditioner large unit operating (evening/ night scenario)

R2: Dwelling north 40 Bower Street

Combined air conditioner three large units operating (daytime scenario)

One air conditioner large unit operating (evening/ night scenario)

R3: Dwelling northeast 239 Queen Street

Combined air conditioner three large units operating (daytime scenario)

One air conditioner large unit operating (evening/ night scenario)

7am to 10pm Criterion

10pm to 7am Criterion

Predicted Noise Impact, SPL L90 dB(A)

Nearest Façade

Inside Windows Open

29

21

24

<20

26

<20

21

<20

41

33

36

28

42 / 36

31

35

30

Table 6: Predicted onsite continuous noise impact levels at noise sensitive receivers.

Page 10

6.0

RECOMMENDED ACOUSTIC TREATMENTS

The following acoustic treatments and management controls are recommended to mitigate onsite activity noise emissions:

-

Trading hours for the veterinary surgery be limited to the 7am to 6pm Monday to Friday and 7am to 6pm Saturday, with allowance for overnight accommodation to sick, injured and recovering animals.

-

Waste collection and deliveries be limited to the daytime period of 7am to 6pm.

-

A staff member is to be in attendance at all times when an animal is within the exercise area.

-

In the event that a dog is barking at the exercise area the staff member with the animal is to take the dog inside immediately if the barking cannot be controlled.

-

In the event that a dog is barking in the reception and waiting area, the Receptionist is to ask the dog owner to quiet the animal.

-

Acoustical barriers of 2m in height be constructed along the common boundaries of the adjacent residential lots. Refer to Sketch No. 1 in Appendix "A" for details.

-

The dog ward walls are to achieve an acoustical rating of no less than Rw 43; One example that achieves this rating is a single layer of 6mm CeminSeal Wallboard either side of a 51mm steel stud, with 50mm GW Acoustiguard 11kg wall batts in the wall void (CSR System 1000(b)).

-

The ceiling system above the dog ward to achieve an acoustical rating of no less than Rw 43; One example that achieves this rating is 1 layer of 10mm "Supercheck plasterboard below the mezzanine floor (floor sheets min 19mm particleboard, fibre cement sheet greater than 15kg/m² or timber flooring), with 90 Gold Battis in the void below the mezzanine floor (CSR System 6007(b)).

-

The fire door be acoustically rated to achieve a minimum Rw rating of 28; such as a solid-core 35mm thick door.

-

Automatic door closers should be installed at the entry door to the Reception / Waiting area, and the Reception / Lab area.

-

Mechanical plant be designed and installed to comply with the noise criterion presented in Section 4. As final plant selection has not been completed, additional acoustic assessment/s should be undertaken once plant selections are finalised. Such assessments should be undertaken prior to Building Approval; and be conditioned within the Development Approval.

DISCUSSION

The proposed use will not operate 24 hours per day; however, the veterinary will offer onsite overnight accommodation to sick, injured and recovering animals. We have been advised by many Veterinarians that sick or unwell dogs (the main source of animal noise associated with the use) do not tend to bark. This point notwithstanding, the main noise control will be within the Dog Ward, to ensure that noise from barking that may occur overnight when Staff are not in attendance is controlled to an appropriate level.

The nearest noise sensitive receivers are the existing dwellings to the northwest, north and east, with the Proponent owning the dwellings to the east and northwest (note that we have still treated the properties owned by the Proponent as standard noise sensitive receivers, in case these dwellings are sold later).

Based upon the assessment, noise emissions from the veterinary surgery are predicted within the "Background Creep" and "Acoustic Quality Objectives" criterion except for a 1 dB exceedance of the indoor criteria for car bypass impacting the dwelling to the immediate northeast at 239 Queen Street.

An exceedance of 1 dB is not viewed as significant, given the average person cannot detect less than a 3 dB shift in sound pressure level.

We have also provided an indication of potential noise impact levels of likely onsite mechanical plant; although the levels are merely a guide as no plant selections have yet been completed. For this reason, additional more detailed assessment/s should be conducted upon determination of plant. Such assessments should be undertaken prior to Building Approval; and be conditioned within the Development Approval.

CONCLUSIONS

This report is in response to a request from Elite Fitout Solutions Pty Ltd for an environmental noise impact assessment of a proposed veterinary surgery in Ayr. The facility was previously a cabinetmaker, and therefore, an industrial use has been undertaken on the site for many years.

Overall, the proposed development will generally be within acceptable levels of the adopted criterion, subject to the acoustic treatments recommended in Section 6 being integrated into the design, construction and operation of the development.

Report Compiled By:

JAY CARTER BSc
Director

APPENDIX A
Attachments, Subject Site and Logger Locations

Page 14

Figure No. 1: Subject Site (Google Maps).

Subject Site

Page 15

Figure No. 2: Subject Site, Monitoring Location and Offsite Noise Sensitive Receivers (DNRM QLD GLOBE).

Receiver R2

Receiver R1

Logger Location

Subject Site

Page 16

Receiver R3

ACOUSTIC TREATMENT LEGEND

Sketch No. 1: Recommended Acoustical Barrier

Minimum 2.0m high acoustic barriers. Barriers are to be constructed above the existing or finished ground level, whichever is higher. Barriers are to be free of gaps and holes, including no gaps between the ground and the base of the barrier. Typical materials include, 19mm lapped timber fence (40% overlap), 9mm FC sheet, toughened glass, acrylic, masonry, earth berms or a combination of the above (a minimum surface mass of 11kg/m² is required).

ONS ITE ACTIVITY NOIS E PREDICTION CALCULATIONS : (LA10 1hr and LA01 1hr levels are represented as N/A if the duration of events do not occur for 10% or 1% of the 1 hour period)

R1: Dwelling northwest 42 Bower S treet

AT-GRADE CAR DOOR CLOS URE

Noise source level for single event

Duration of single event

Number of events in the measurement period

Total time duration of combined events

Noise source level for assessment time period

Tonality / Impulsiveness correction

M inimum distance to receiver

Distance attenuation (-6 dB per doubling of distance)

Barrier screening

Façade reflection

Impact at nearest façade

Reduction through open window

Impact inside open window (excludes façade correction)

R2: Dwelling north 40 Bower S treet

Creep

LAeq

Acoustic Quality Objectives

LAeq

LA10

LA01

75

78

80

dB (A)

1.5

S e c o nds

6

24

Eve nts

9.0

36.0

S e c o nds

LAeq

LAeq 1hr LA10 1hr LA01 1hr

55

55

N/A

80

dB (A)

0

5

dB

26

m

-28

dB

-8

dB

2.5

dB

21

26

N/A

51

dB (A)

-5

-5

-5
dB
19
N/A
44
dB (A)

AT-GRADE CAR DOOR CLOSURE
Noise source level for single event
Duration of single event
Number of events in the measurement period
Total time duration of combined events
Noise source level for assessment time period
Tonality / Impulsiveness correction
Minimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Barrier screening
Façade reflection
Impact at nearest façade
Reduction through open window
Impact inside open window (excludes façade correction)

131.84185 416.92055
AT-GRADE CAR BYPASS
Noise source level for single event
Duration of single event
Number of events in the measurement period
Total time duration of combined events
Noise source level for assessment time period
Tonality / Impulsiveness correction
Minimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Barrier screening
Façade reflection
Impact at nearest façade
Reduction through open window
Impact inside open window (excludes façade correction)

Acoustic Quality Objectives

LAeq
LA10
LA01
68
70
73
dB (A)
19
Seconds
3
12
Events
57.0
228.0
Seconds
LAeq
LAeq 1hr LA10 1hr LA01 1hr
56
56
N/A
73
dB (A)
0
0
dB

34
m
-30.6
dB
-6
dB
2.5
dB
22
22
N/A
39
dB (A)
-5
-5
-5
dB
14
N/A
31
dB (A)

Noise source level for single event
Duration of single event
Number of events in the measurement period
Total time duration of combined events
Noise source level for assessment time period
Tonality / Impulsiveness correction
Minimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Barrier screening
Façade reflection
Impact at nearest façade
Reduction through open window
Impact inside open window (excludes façade correction)

Creep
LAeq

3
9.0
LAeq
53
0

19

AT-GRADE CAR BYPASS
Noise source level for single event
Duration of single event
Number of events in the measurement period
Total time duration of combined events
Noise source level for assessment time period
Tonality / Impulsiveness correction
Minimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Barrier screening
Façade reflection
Impact at nearest façade
Reduction through open window
Impact inside open window (excludes façade correction)

Noise source level for single event
Duration of single event

Number of events in the measurement period
Total time duration of combined events

AT-GRADE CAR S TARTS

dB (A)
S e c o n d s
Eve n t s
S e c o n d s

LAeq 1hr LA10 1hr LA01 1hr

53
N/A
75
dB (A)
0
dB
26
m
-28
dB
-8
dB
2.5
dB
19
N/A
41
dB (A)
-5
-5
-5
dB
12
N/A
34
dB (A)

Noise source level for assessment time period
Tonality / Impulsiveness correction
M inimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Inside to outside attenuation
Façade reflection
Impact at nearest façade
Reduction through open window
Impact inside open window (excludes façade correction)

Acoustic Quality Objectives

LAeq
LA10
LA01
75
94
100
1
900
2700
900.0
2700.0

2

17

Creep
LAeq

Acoustic Quality Objectives

LAeq
LA10
LA01
70
73
dB (A)
19
S e c o n d s
12
Eve n t s
228.0
S e c o n d s
LAeq 1hr LA10 1hr LA01 1hr
56
N/A
73
dB (A)
0
dB
48
m
-33.6
dB
-8
dB
2.5
dB
17
N/A
34
dB (A)
-5
-5
-5
dB
9
N/A
26
dB (A)

68
3
57.0
LAeq
56
0

17

Noise source level for single event
Duration of single event
Number of events in the measurement period
Total time duration of combined events
Noise source level for assessment time period
Tonality / Impulsiveness correction
M inimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Barrier screening
Façade reflection
Impact at nearest façade

Reduction through open window
Impact inside open window (excludes façade correction)

Creep

LAeq

73

3

9.0

LAeq

53

0

15

31.87876

Creep

LAeq

LAeq

75

0

6

9.0

LAeq

55

0

48.882102 48.882102

Acoustic Quality Objectives

LAeq

LA10

LA01

73

74

75

3

12

36.0

83.186587 83.186587

DOG BARKING INS IDE DOG WARD

Acoustic Quality Objectives

LAeq

LA10

LA01

78

80

dB (A)

1.5

S e c o n d s

24

Eve n t s

36.0

S e c o n d s

LAeq 1hr LA10 1hr LA01 1hr

55

N/A

80

dB (A)

5

dB
42
m
-32
dB
-8
dB
2.5
dB
22
N/A
47
dB (A)
-5
-5
-5
dB
15
N/A
40
dB (A)

75

50.52443 159.77228

Creep
LAeq

154.40968 154.40968
AT-GRADE CAR S TARTS

Creep
LAeq

DOG BARKING INS IDE DOG WARD
dB (A)
S e c o n d s
Eve n t s
S e c o n d s

LAeq 1hr LA10 1hr LA01 1hr
74
94
100
dB (A)
5
dB
59
m
-35
dB
-40
dB
2.5
dB
6
26
32
dB (A)
-5
-5
-5
dB

-2
19
25
dB (A)

Page 25

Noise source level for single event
Duration of single event
Number of events in the measurement period
Total time duration of combined events
Noise source level for assessment time period
Tonality / Impulsiveness correction
Minimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Inside to outside attenuation
Façade reflection
Impact at nearest façade
Reduction through open window
Impact inside open window (excludes façade correction)

Acoustic Quality Objectives

LAeq
LA10
LA01
74
75
3
12
36.0

dB (A)
Seconds
Events
Seconds

LAeq 1hr LA10 1hr LA01 1hr
53
N/A
75
dB (A)
0
dB
42
m
-32
dB
-8
dB
2.5
dB
15
N/A
37
dB (A)
-5
-5
-5
dB
8
N/A
30
dB (A)

31.87876

Creep
LAeq

Acoustic Quality Objectives

LAeq
LA10
LA01
75
94
100
1
900
2700
900.0
2700.0
LAeq
75
0

0

dB (A)
S e c o n d s
Eve n t s
S e c o n d s

LAeq 1hr LA10 1hr LA01 1hr

74
94
100
dB (A)
5
dB
79
m
-38
dB
-40
dB
2.5
dB
3
24
30
dB (A)
-5
-5
-5
dB
-4
16
22
dB (A)

R3: Dwelling northeast 239 Queen S treet
 AT-GRADE CAR DOOR CLOSURE
 Noise source level for single event
 Duration of single event
 Number of events in the measurement period
 Total time duration of combined events
 Noise source level for assessment time period
 Tonality / Impulsiveness correction
 Minimum distance to receiver
 Distance attenuation (-6 dB per doubling of distance)
 Barrier screening
 Façade reflection
 Impact at nearest façade
 Reduction through open window
 Impact inside open window (excludes façade correction)

Creep
 LAeq

Acoustic Quality Objectives

LAeq
 LA10
 LA01
 75
 78
 80
 dB (A)
 1.5
 Seconds
 6
 24
 Events
 9.0
 36.0
 Seconds
 LAeq
 LAeq 1hr LA10 1hr LA01 1hr
 55
 55
 N/A
 80
 dB (A)
 0
 5
 dB
 16
 m
 -24
 dB
 -8
 dB
 2.5
 dB
 25
 30
 N/A
 55
 dB (A)
 -5
 -5
 -5
 dB
 23
 N/A

48

dB (A)

348.1449 1100.9308

AT-GRADE CAR BYPASS

Noise source level for single event

Duration of single event

Number of events in the measurement period

Total time duration of combined events

Noise source level for assessment time period

Tonality / Impulsiveness correction

Minimum distance to receiver

Distance attenuation (-6 dB per doubling of distance)

Barrier screening

Facade reflection

Impact at nearest facade

Reduction through open window

Impact inside open window (excludes facade correction)

Creep

LAeq

68

3

57.0

LAeq

56

0

37

Acoustic Quality Objectives

LAeq

LA10

LA01

70

73

19

12

228.0

dB (A)

Seconds

Events

Seconds

LAeq 1hr LA10 1hr LA01 1hr

56

N/A

73

dB (A)

0

dB

5

m

-14.0

dB

-8

dB

2.5

dB

37

N/A

54

dB (A)

-5
-5
-5
dB
29
N/A
46
dB (A)

4504.9745 4504.9745
AT-GRADE CAR S TARTS
Noise source level for single event
Duration of single event
Number of events in the measurement period
Total time duration of combined events
Noise source level for assessment time period
Tonality / Impulsiveness correction
Minimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Barrier screening
Façade reflection
Impact at nearest façade
Reduction through open window
Impact inside open window (excludes façade correction)

Creep
LAeq
73
3
9.0
LAeq
53
0

23

Acoustic Quality Objectives

LAeq
LA10
LA01
74
75
3
12
36.0

dB (A)
Seconds
Events
Seconds

LAeq 1hr LA10 1hr LA01 1hr
53
N/A
75
dB (A)
0
dB
16
m
-24
dB
-8
dB

2.5
dB
23
N/A
45
dB (A)
-5
-5
-5
dB
16
N/A
38
dB (A)

219.66458 219.66458
DOG BARKING INS IDE DOG WARD
Noise source level for single event
Duration of single event
Number of events in the measurement period
Total time duration of combined events
Noise source level for assessment time period
Tonality / Impulsiveness correction
Minimum distance to receiver
Distance attenuation (-6 dB per doubling of distance)
Inside to outside attenuation
Façade reflection
Impact at nearest façade
Reduction through open window
Impact inside open window (excludes façade correction)

Creep
LAeq

Acoustic Quality Objectives

LAeq
LA10
LA01
75
94
100
1
900
2700
900.0
2700.0
LAeq
75
0

19

dB (A)
Seconds
Events
Seconds

LAeq 1hr LA10 1hr LA01 1hr
74
94
100
dB (A)
5
dB

9
m
-19
dB
-40
dB
2.5
dB
23
43
49
dB (A)
-5
-5
-5
dB
15
35
41
dB (A)

MECH PLANT NOISE PREDICTION CALCULATIONS

R1: Dwelling northwest 42 Bower S treet
Large A/C condensor unit
Number of condensor units
Total of all plant
Distance to receiver
Distance attenuation

Onsite building screening
Façade reflection
Impact at Façade
Impact inside

R1: Dwelling northwest 42 Bower S treet
Large A/C condensor unit
Number of condensor units
Total of all plant
Distance to receiver
Distance attenuation

Onsite building screening
Façade reflection
Impact at Façade
Impact inside

R3: Dwelling northeast 239 Queen S treet
Large A/C condensor unit
Number of condensor units
Total of all plant
Distance to receiver
Distance attenuation

Onsite building screening
Façade reflection
Impact at Façade
Impact inside

R3: Dwelling northeast 239 Queen S treet
Large A/C condensor unit
Number of condensor units
Total of all plant
Distance to receiver
Distance attenuation

Onsite building screening
Façade reflection
Impact at Façade
Impact inside

57 dB(A) @ 1m
3 units
62 dB(A) @ 1m
61 m
-36 dB(A)
0 dB(A)
2.5 dB(A)
29 dB(A)
21 dB(A)

57 dB(A) @ 1m
1 unit
57 dB(A) @ 1m
61 m
-36 dB(A)
0 dB(A)
2.5 dB(A)
24 dB(A)

16 dB(A)

R2: Dwelling north 40 Bower S treet
Large A/C condensor unit
Number of condensor units
Total of all plant
Distance to receiver
Distance attenuation

Onsite building screening
Façade reflection
Impact at Façade
Impact inside
R2: Dwelling north 40 Bower S treet
Large A/C condensor unit
Number of condensor units
Total of all plant
Distance to receiver
Distance attenuation

Onsite building screening
Façade reflection
Impact at Façade
Impact inside

57 dB(A) @ 1m
3 units
62 dB(A) @ 1m
15 m
-24 dB(A)
0 dB(A)
2.5 dB(A)
41 dB(A)
33 dB(A)

57 dB(A) @ 1m
1 unit
57 dB(A) @ 1m
15 m
-24 dB(A)
0 dB(A)
2.5 dB(A)
36 dB(A)
28 dB(A)

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57 dB(A) @ 1m
3 units
62 dB(A) @ 1m
81 m
-38 dB(A)
0 dB(A)
2.5 dB(A)
26 dB(A)
19 dB(A)

57 dB(A) @ 1m
1 unit
57 dB(A) @ 1m
81 m
-38 dB(A)
0 dB(A)
2.5 dB(A)

21 dB(A)

14 dB(A)

Receipt/Tax Invoice

ABN: 66 393 843 289
PO Box 974, Ayr Qld 4807
T (07) 4783 9800 F (07) 4783 9999
enquiries@burdekin.qld.gov.au
www.burdekin.qld.gov.au

Tropical Vet Properties Pty Ltd (TTE)
C/- Steffan Harries
P O Box 6258
FAIRFIELD QLD 4103

Receipt Date:

15/03/2024

Receipt No:

1231526

Description

Reference

Narrative

Amount

Receipt

651TPSubsReconsChg

MCU24/0005 Combined Reconfiguration Lot (3 into 3
Lots) and MCU - Veterinary Service at 239-241 Queen
Street and 42 Bower Street, Ayr (GL Receipt)

\$4,041.00

Transaction Total:

\$4,041.00

Includes GST of:

\$0.00

Balance

Amounts Tendered
Cash

Cheque

Db/Cr Card

Money Order

Agency

Total

\$0.00

\$0.00

\$4,041.00

\$0.00

\$0.00

\$4,041.00

Rounding:
Change:

\$0.00

\$0.00

Nett:

\$4,041.00

Cheques are accepted subject to clearance by your bank

Page 1 of 1

Printed 15/03/2024 2:51:47PM

Confirmation Notice
Planning Act 2016
Enquiries to:

Address all communications to
The Chief Executive Officer

Planning Department

Our Reference:

MCU24/0005

Your Reference

STP3922

PO Box 974, Ayr Qld 4807
T (07) 4783 9800 | F (07) 4783 9999
planning@burdekin.qld.gov.au
www.burdekin.qld.gov.au

27 March 2024
Tropical Vets Properties Pty Ltd (TTE)
C/- Steffan Harries
PO Box 6258
Fairfield QLD 4103
Via Email: chloe@steffanharries.au
Attention: Chloe Gordon, Town Planner

Dear Chloe,
Council acknowledges receipt of your application, which has been determined as properly made on 15 March 2024.

This Confirmation Notice has been prepared in accordance with the Development Assessment Rules and contains information relevant to the processing and assessment of the application. The following details are confirmed:

Application Details
Application No:

MCU24/0005

Proposal:

Combined Reconfiguring a lot – Boundary realignment (3 lots into 3 lots) and Material Change of Use – Veterinary Service

Street Address:

239-241 Queen Street and 42 Bower Street, Ayr

Real Property Description:

Lots 1-2 on RP719267 and Lot 87 on A26512

Planning Scheme:

Burdekin Shire Planning Scheme December 2022

Type of Development
The application seeks development approval for: Combined Reconfiguring a lot – Boundary realignment (3

lots into 3 lots) and Material Change of Use – Veterinary Service.

Superseded Planning Scheme

Is the application for development under the Superseded Planning Scheme?

No

Code Assessment

Will Code Assessment be required?

No

Impact Assessment

Will Impact Assessment be required?

Yes

MCU24/0005

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Referral Agencies

Based on the information accompanying the lodged application, referral is required to the following referral agencies. Accordingly, you are required to forward a copy of the application, this Confirmation Notice and any applicable referral agency application fee, to the referral agency within ten (10) business days.

You are also required to give the assessment manager written notice of the day the applicant referred the application to each referral agency within five (5) days of each referral. Please note that the application will automatically lapse if you do not meet these timeframes.

Note: Council officers will carry out the internal referral of the application for any Environmentally Relevant Activity (ERA) that has been devolved to Council.

Referral

Status

Concurrence

Referral Agency and Address

Referral Trigger from Planning Regulation 2017

NQSARA,

PO Box 5666, Townsville, Q4810

Email: NQSARA@dsdilgp.qld.gov.au

Material Change of Use – State transport corridors

Schedule 10, Part 9, Division 4, Subdivision 2, Table 4

Development being within 25metres of State Controlled Road

Public Notification Details

Is Public Notification Required?

Yes

Refer to the enclosed Explanatory Note for Public Notification Procedures.

Please ensure all public notices

published in the newspaper, placed on the land, and given to adjoining land owners clearly state:

(a)

written submissions may be made electronically; and

(b)

electronic submissions are to be sent to planning@burdekin.qld.gov.au and

(c)

all submissions, including individual submitter's particulars, will be published on Council's website

and therefore will be accessible to internet search engines.

Information Request

Has the applicant advised on the approved form that the applicant does not agree to accept an

Information Request?

Note:

No

Regardless of this advice, any referral agency for the application may make an Information Request.

Should the assessment manager not make an Information Request within the timeframes specified in the

Development Assessment Rules, the applicant can proceed to the next part of the development assessment

process.

Other Details

You can follow the progress of this application online at:

<https://www.burdekin.qld.gov.au/current-development-applications>

Should you have any further queries in relation to the above, please do not hesitate to contact Council's

Town Planning Section.

Yours faithfully

Kellie Galletta

MANAGER – PLANNING & DEVELOPMENT

MCU24/0005

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Explanatory Note - Public Notification Procedures
Planning Act 2016 & Development Assessment Rules
Introduction

The purpose of this Explanatory Note is to provide guidance to applicants on the public notification requirements under Section 53 of the Planning Act 2016 (the Act) and under the Development Assessment Rules (the Rules). The Act and the Rules, set out the requirements for the giving of public notice. These guidelines quote much of the material contained within the Act and the Rules.

If there is doubt about a particular public notification aspect, the applicant should refer to the Act and the Rules or have the public notice procedures undertaken by a consultant who is familiar with the public notice requirements. Whilst every care has been taken in preparation of this explanatory note, ultimately it is the applicant's responsibility to ensure that the procedures are correctly followed. Council will not accept any responsibility for incorrect giving of public notice.

Overview of Public Notification Procedures (Public Notice)

There are three distinct tasks to be undertaken when carrying out public notice:

1. Publishing a notice in a local newspaper.
2. Placing a notice or notices on the premises.
3. Giving notice to adjoining owners.

After the notification period has ended, the applicant must give the assessment manager notice of compliance with the public notice requirements.

One key aspect to note is that an application automatically lapses if public notification does not start within 20 business days of the completion of the relevant preceding part. Furthermore, the application also automatically lapses if applicant does not give the assessment manager the notice of compliance with the public notice requirements within 10 business days from the day after the last day on which a submission may be made.

When Notification Part Starts

Part 4 of the Rules states when the public notification part starts. The following is an extract from Part 4.

16. When this part starts

16.1. If there are no referral agencies for the application and part 3 does not apply because:

- (a) the applicant has advised that it does not wish to receive an information request and it is not an application mentioned in section 11.3; or
- (b) the assessment manager states in the confirmation notice that it does not intend to make an information request;

public notification must start within 20 days of the day after the confirmation notice is given to the applicant.

16.2. If—

- (a) the applicant has advised that it does not wish to receive an information request; and
- (b) it is not an application mentioned in section 11.3; and
- (c) there are referral agencies;

public notification must start within 20 days after the day the last referral assessment period for any referral agency has started.

16.3. If sections 16.1 and 16.2 do not apply, public notification must start within 20 days of the day after part 3 has ended.

16.4. For a changed application, where public notification is required to be undertaken again from its beginning, public notification must commence within 20 days—

- (a) if both part 2 and part 4 are relevant to the application as a result of the changed application, the day after part 3 has ended;
- (b) otherwise, the day after the day notice is given under section 26.2(a) or 26.2(c).

What is Public Notice

The following is extracted from Part 4 of the Rules.

17. Public notice requirements

17.1. The applicant, or the assessment manager acting under section 53(10) of the Act, must give public notice by—

(a) publishing a notice at least once in a newspaper circulating generally in the locality of the premises the subject of the application; and

(b) placing notice on the premises the subject of the application that must remain on the premises for the period of time up to and including the stated day; and

(c) giving notice to the adjoining owners of all lots adjoining the premises the subject of the application.

17.2. The applicant must give notice to the assessment manager of the intended start date of public notification.

17.3. Schedule 3 prescribes the way in which public notice must be given.

17.4. All public notice requirements under section 17.1 and 17.2 must be undertaken within the period prescribed under section 16.

18. Notice of compliance

18.1. If the applicant gives public notice, it must, within 10 days from the day after the last day on which a submission may be made, or a further period agreed between the applicant and the assessment manager, give the assessment manager notice of compliance with the public notice requirements.

Public Notification Period

Section 53 of the Act states the required public notification period. The following is an extract from Section 53.

53(4) The notice must state that—

(a) a person may make a submission about the application to the assessment manager; and

(b) any submission must be made by a stated day that is at least—

(i) for an application that includes a variation request—30 business days after the notice is given; or

(ii) for an application of a type prescribed by regulation—the period, of more than 15 business days after the notice is given, prescribed for the application; or

(iii) for any other application—15 business days after the notice is given.

53(5) However, if the development assessment rules require the notice to be given in more than 1 way, the period mentioned in

subsection (4)(b) starts on the day after the day when the last notice is given.

Please ensure that all public notices that are published in the newspaper, placed on the land, and given to adjoining land owners clearly state that:

(a) written submissions may be made electronically; and

(b) electronic submissions are to be sent to planning@burdekin.qld.gov.au

(c) all submissions, including individual submitter's particulars, will be published on Council's website and therefore will be accessible to internet search engines.

MCU24/0005

