

**Item** 

**21 December 2021** 

Item Number: File Number: Part:

K2 objective://id:fA146996/ PLANNING

#### **Portfolio:**

Planning & Development Services

### Subject:

Resolution to designate Flood Hazard Area

#### **Report Author:**

Evan Fritz, Manager Strategic Planning

## **Authorised by:**

Stephen Johnston, Chief Executive Officer

#### **Link to Corporate Plan:**

Our infrastructure and development - 2.3 Sustainable development - 2.3.1 Develop, implement and administer strategies and plans underpinned by the principles of sustainable development.

#### **Background:**

Since October 2015, Council has declared flood hazard areas under section 13 of the *Building Regulation 2006*, now section 8 of the *Building Regulation 2021*. Declaring flood hazard areas via resolution rather than through a planning scheme overlay allows Council to easily make changes to the flood hazard area and avoids Council having to undergo a lengthy planning scheme amendment process.

It was anticipated that future changes to the flood hazard area would be required on a semi-regular basis due to the completion of flood mitigation works, development works, capital works, and flood study/model updates.

This report is in response to the following:

- completion of the Baffle Creek Flood Study (Engeny Water Management prepared for Gladstone Regional Council, 2018);
- review/validation of results from the Burrum, Cherwell, Isis, Gregory River Flood Study (GHD, 2015) for the Rushy Creek catchment, Redridge;
- completion of development works within the flood hazard area.

#### Baffle Creek Flood Study (Engeny, 2018)

The current flood hazard area resolution includes draft results from the Baffle Creek Flood Model prepared for Gladstone Regional Council in 2013/2014. These results were conservative but more accurate than the only other flood mapping available at the time, ie, the State Planning Policy (SPP) floodplain mapping.

The model was finalised in late 2018. Since receiving the data in mid-2020, Council officers have reviewed the results and recommend replacing the current flood extent with the final results for the 1% AEP event (with climate change). It is noted that this model is based on the new Australian Rainfall and Runoff guidelines ARR 2019.

The proposed change will result in -

- 13 properties being added to the flood hazard area 7 of these are already affected by the flood hazard area (ie storm tide). These are all larger properties which have only a small area impacted by the flood hazard mapping.
- 53 properties being removed from the flood hazard area. These are typically smaller residential lots at Winfield/Rocky Point. It is noted, however that a small number of properties may still be partly affected by the Flood Hazard Area, notably storm tide mapping.

# Rushy Creek Catchment, Redridge – Burrum, Cherwell, Isis, Gregory River Flood Study (GHD, 2015)

In 2015, Bundaberg Regional Council partnered with Fraser Coast Regional Council to commission a flood study for the Burrum, Cherwell, Isis and Gregory River catchments. Following consultation, the results for the 1% AEP event (with climate change) were adopted as of Council's Flood Hazard Area resolution of 16 May 2017, with the exception of the Rushy Creek catchment (in the vicinity of Melaleuca Court and Blue Gum Drive, Redridge).

The results for the Rushy Creek catchment were removed due to significant issues raised by property owners in this catchment during consultation undertaken in March 2017. Some of these concerns were considered valid given the larger grid size used in the model. Properties in the affected area were instead included in a 'flood investigation area' in Council's on-line Flood Report as an interim step, pending further detailed flood analysis by Council (and to ensure prospective property owners were made aware of this).

Since this time, Council officers have reviewed the 2015 model results and have undertaken more refined analysis, including further modelling and consideration of possible stormwater management options to reduce the flood extent in this area. These additional investigations have validated the results from the 2015 model and indicated that flood/drainage works were largely ineffective and/or not feasible.

As such, it is now proposed to update the flood hazard area to include the results for the 1% AEP event (with climate change) for the Rushy Creek catchment from the Burrum, Cherwell, Isis, Gregory River Flood Study (GHD, 2015).

The proposed change will result in 35 properties being added to the flood hazard area. These are larger rural and rural residential properties where only part of the property is affected and dwellings and other improvements are generally located outside the proposed flood hazard area. Based on aerial imagery there are approximately 5 properties with dwellings located within the proposed flood extent.

It is noted that this model is based on older Australian Rainfall and Runoff guidelines ARR 2016 and as such, new modelling for this area (eg, based on ARR 2019) is likely to produce slightly different results, which may prompt further changes to the flood hazard area for this catchment in the future.

### Development works within the flood hazard area

A number of developments have resulted in changes to the flood hazard area. These works have included the construction of new roads, drainage infrastructure and/or earthworks resulting in various changes to ground elevations. Flood models received during the development process have been reviewed and provide the basis for the "as constructed" flood hazard area. The developments include:

- (a) Greenview Drive, Bargara (Tame, ref 521.2018.89.1)
- (b) June Place (off Bragg Street), Bundaberg East (MTR Development Pty Ltd, ref 321.206.46365.1)
- (c) Bonna Road, Branyan (ref 321.2017.31.1)
- (d) Fairymead Road and Tantitha Road, Gooburrum (Tantitha Rise, ref 321.2014.40478.1)
- (e) Kirbys Road, Kalkie (ref 521.2021.165.1)

#### **Updated Flood Hazard Area**

The proposed changes to the flood hazard area are shown at Attachment 1. The new Flood Hazard Area maps (which include the changes shown in Attachment 1) are included at Attachment 2. Council's 'Hazard Evaluation Report – Flood' has been amended to incorporate these changes and will be made available on Council's website prior to the new Flood Hazard Area resolution taking effect on 1 March 2022. Council's interactive mapping and Flood Planning Control Property Reports will also be updated accordingly.

#### **Associated Person/Organization:**

Department of State Development, Infrastructure, Local Government and Planning

#### **Consultation:**

Consultation with developers has been undertaken as part of the development assessment process. Discussions have been held with individual developers/landowners that have requested a review of the flood hazard area, including where development works have been completed.

In terms of Rushy Creek, Redridge, the community was consulted in March 2017 on proposed changes to the flood hazard area for the Burrum, Cherwell, Isis and Gregory River catchment/s. Apart from general enquiries regarding the flood investigation area, no further (or more recent) consultation has been undertaken with the community or affected landowners as part of the proposed changes.

Consistent with the requirements set out in the Minister's Guidelines and Rules for a minor planning scheme amendment to include new or amended flood hazard area mapping, a notice will be sent to all landowners impacted by the changes/new flood hazard area following adoption of the new resolution.

As part of this notice, for any properties in the Rushy Creek catchment where an existing dwelling is located within (or in close proximity to) the flood hazard area, Council will arrange to survey the habitable floor level of the dwelling so that this information can be included in Council's flood mapping and associated property reports. This information may help where it can show that the floor level of the existing dwelling is above the defined flood level.

It is proposed that this letter would be sent to affected landowners, and that the abovementioned floor levels would be surveyed as soon as possible in 2022.

#### **Chief Legal Officer's Comments:**

The flood hazard area resolution will support Council's planning scheme in ensuring development in flood hazard areas is appropriately managed. The *Planning Act 2016* identifies circumstances where a landowner may be entitled to compensation for a reduced value of interest in land arising from a change to Council's Planning Scheme. However, the Planning Act sets out some limitations on compensation where changes respond to risks associated with natural processes such as flooding.

#### **Policy Implications:**

The adoption of a Flood Hazard Area under section 8 of the *Building Regulation 2021* and its reference in the planning scheme to trigger assessment of particular development in flood hazard areas against the Flood Hazard Overlay Code will replace the current flood hazard area resolution 1/2019 adopted on 17 December 2019.

#### **Financial and Resource Implications:**

There appears to be no financial or resource implications. Council does not currently charge a fee for any development application required to be submitted for assessment as a result of the flood hazard area.

## **Risk Management Implications:**

There appears to be no risk management implications.

## **Human Rights:**

There appears to be no human rights implications.

#### **Indigenous Land Use Agreement (ILUA) Implications:**

There appears to be no ILUA implications.

#### **Attachments:**

- \$\J\$1 Proposed changes to the Flood Hazard Area
- Flood Hazard Area Maps Flood Hazard Area Resolution (No 1) 2021

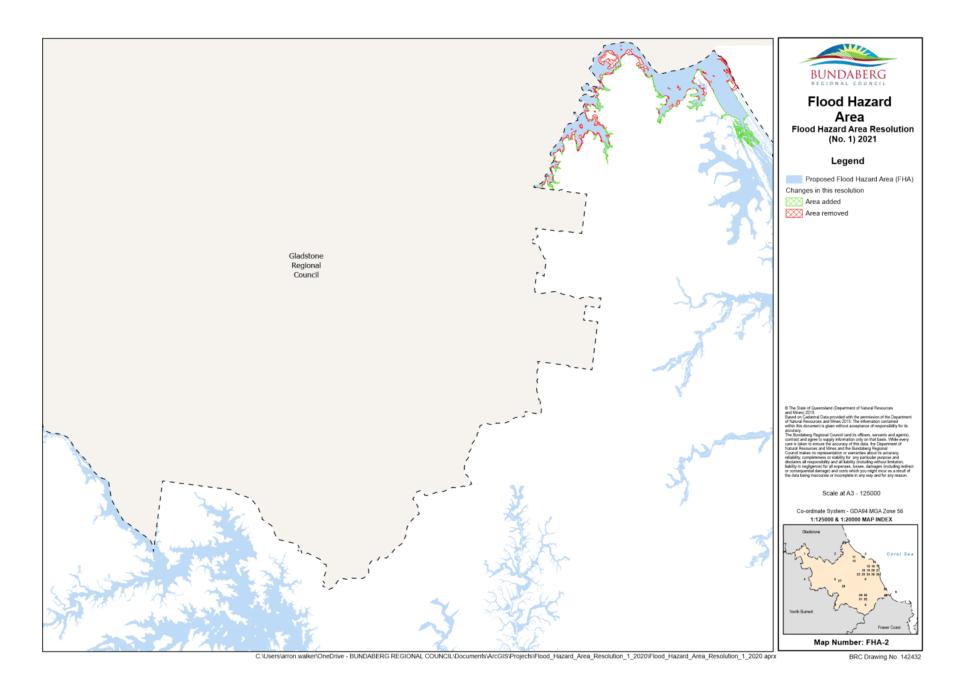
### **Recommendation**:

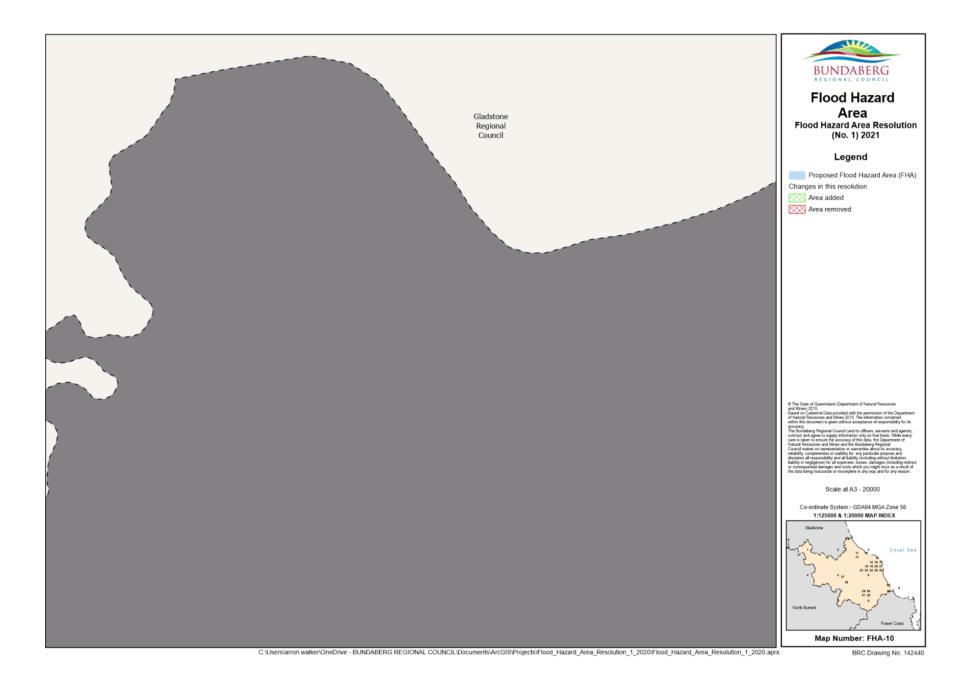
That effective from 1 March 2022:-

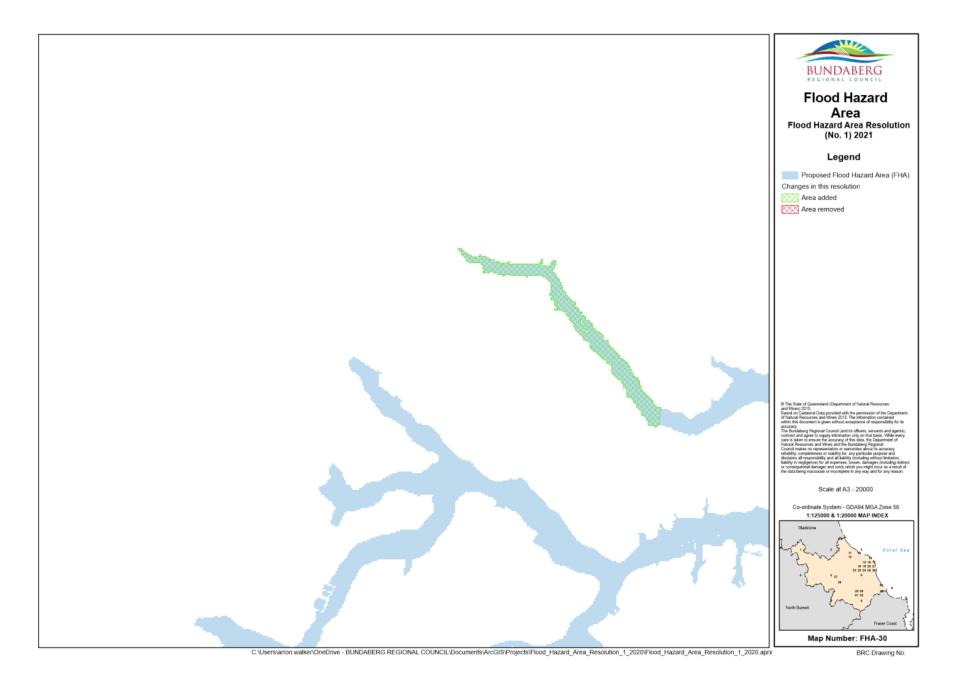
- (a) Council declares under section 8 of the Building Regulation 2021
  - (i) flood hazard areas for the Bundaberg Region as identified in the Flood Hazard Area Maps contained in the Hazard Evaluation Report Flood (December 2021, Revision 7.0);
  - (ii) the defined flood level and maximum flow velocity of water (where available) are the flood levels and velocities for the adopted defined flood events derived from the flood modelling for each catchment of the flood hazard area.

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(b) this resolution replaces flood hazard areas previously declared by Council, including Council's resolution of 17 December 2019 (Ordinary Meeting Item K1, Resolution 2449).







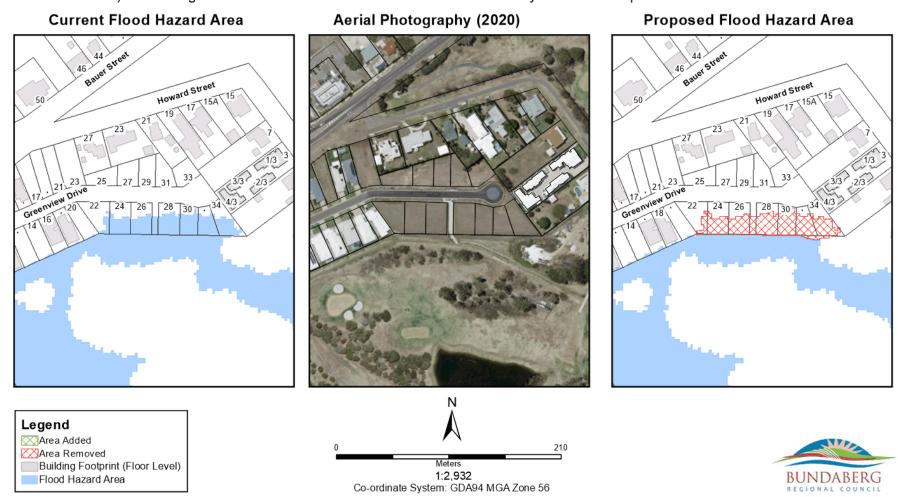
## **Proposed Change Details:**

Reason for Change: Operational works has change flooding in the area (Tame Development)

Council Reference: 523.2019.137.1

## **Description:**

Fill and drainage works associated with Bargara Road, Bargara (Tame development 521.2018.89.1 and operational works 523.2019.137.1) has changed the localised flood characteristics in the vicinity of the development.



## **Proposed Change Details:**

Reason for Change: Operational works has change flooding in the area (12 Bragg St Development)

Council Reference: 523.2017.11.1

### **Description:**

Fill and drainage works associated with 12 Bragg St, Bundaberg East (MTR Development Pty Ltd 321.2016.46365.1 and operational works 523.2017.11.1) has changed the river and localised flood characteristics in the vicinity of the development.

#### **Current Flood Hazard Area** Aerial Photography (2020) **Proposed Flood Hazard Area** Bragg Stree Bragg Stre 60 St Wes Court 60 St Wes Court 10.68m 10.68m 64 62 71A 64 Level 10.81m Sg 9.62m 9.62m 19 9/84m 19 9/84m 1/6 10.81m 68 6 67 66m, 66m) Keiran Place Keiran Place 9.3m o 9.34m 10.89n 3m 93m 8 34m Cedergreen 1 9.6m 9.43m 9.43m 10.34m 10.34m Legend Area Added 210 XXArea Removed Building Footprint (Floor Level) 1:2,901 BUNDABERG Flood Hazard Area Co-ordinate System: GDA94 MGA Zone 56

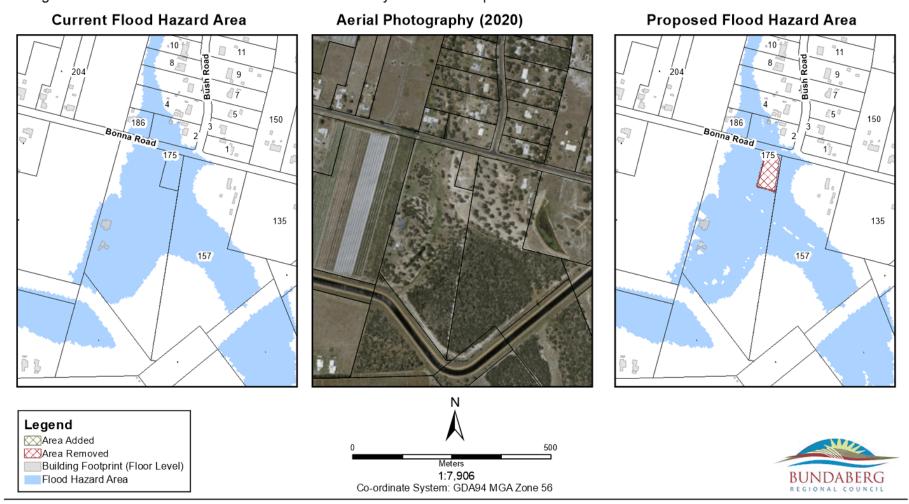
## **Proposed Change Details:**

Reason for Change: Operational works has change flooding in the area (185 Bonna Road Development)

Council Reference: 523.2019.96.1

## **Description:**

Fill and drainage works associated with 185 Bonna Road Rd, Branyan (521.2017.31.1 and operational works 523.2019.96.1) has changed the localised flood characteristics in the vicinity of the development.



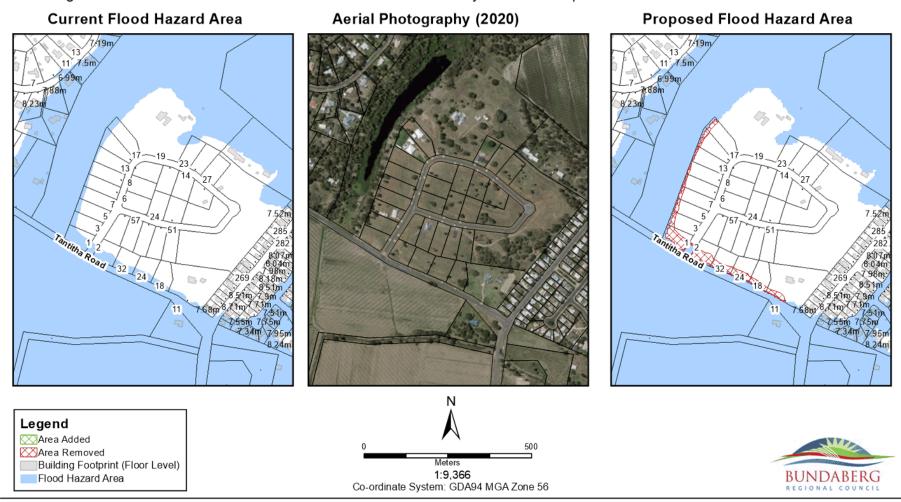
## **Proposed Change Details:**

Reason for Change: Operational works has change flooding in the area (Tantitha Rise Development)

Council Reference: 523.2018.43.1

## **Description:**

Fill and drainage works associated with 293A Fairymead Rd (Tantitha Rise 321.2014.40478.1 and operational works 523.2018.43.1) has changed the river and localised flood characteristics in the vicinity of the development.



## **Proposed Change Details:**

Reason for Change: Operational works has change flooding in the area (Kirbys Road Development)

Council Reference: 323.2015.43354.1

## **Description:**

Fill and drainage works associated with Kirbys Rd, Kalkie (521.2021.165.1 and operational works 323.2015.43354.1) has changed the localised flood characteristics in the vicinity of the development.

#### **Current Flood Hazard Area**



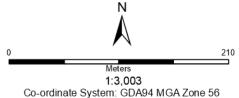
Aerial Photography (2020)



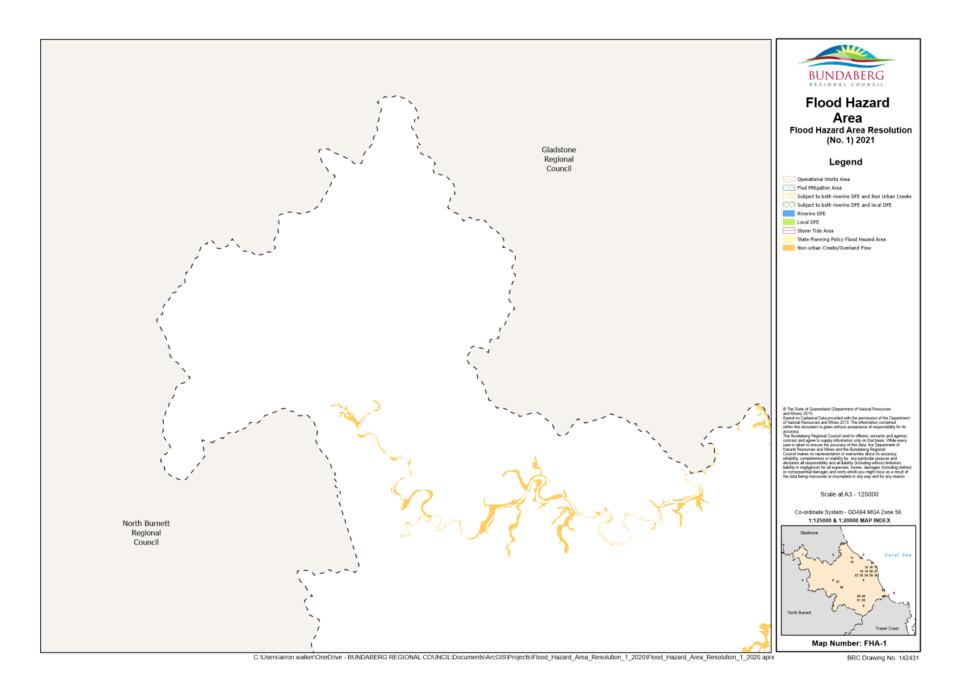
**Proposed Flood Hazard Area** 

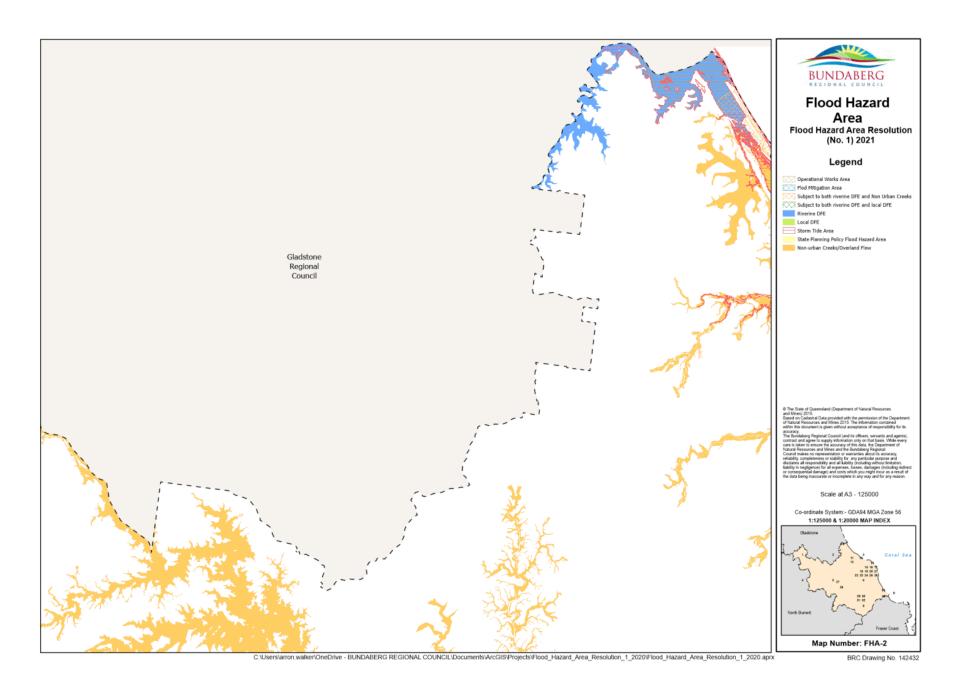


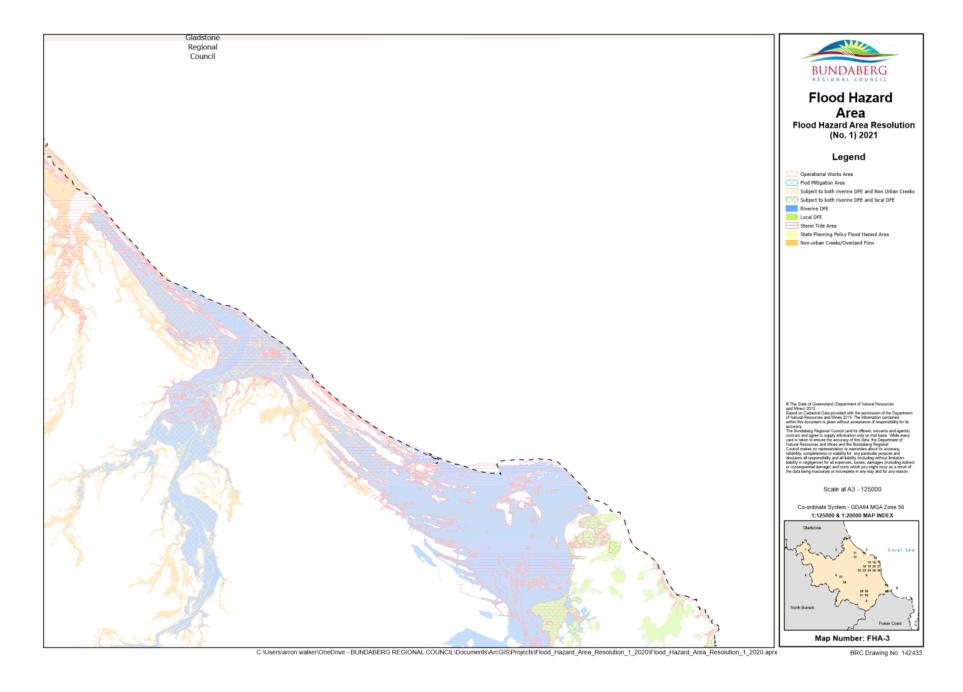


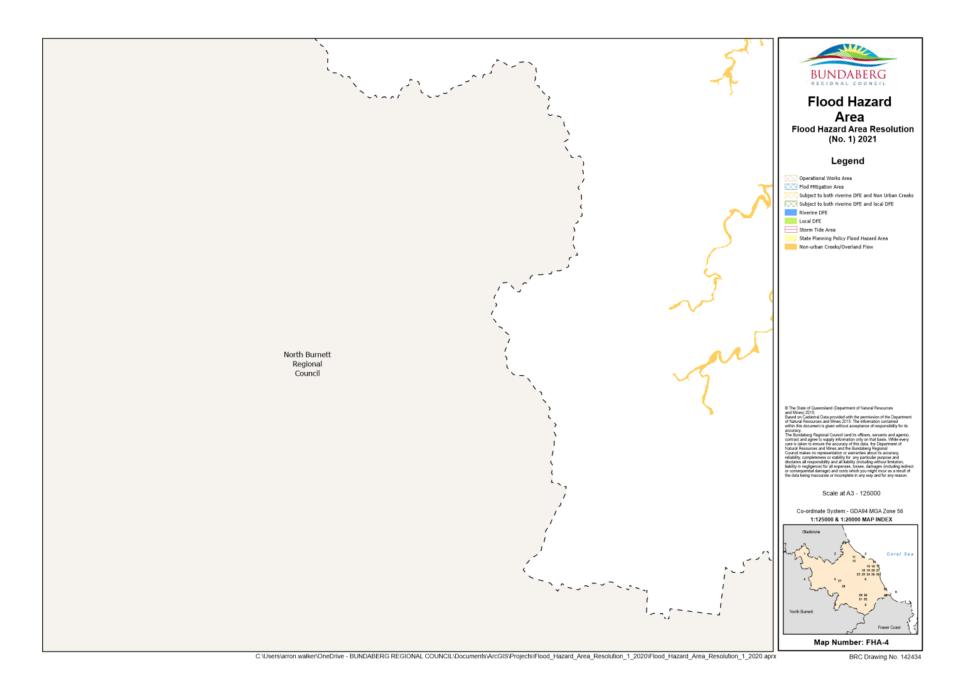


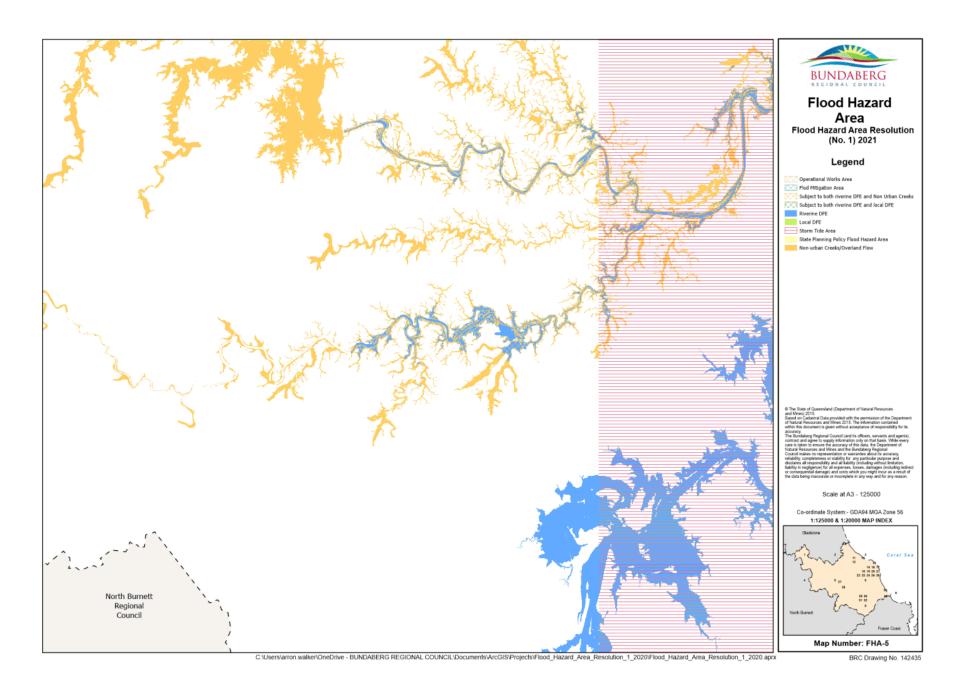


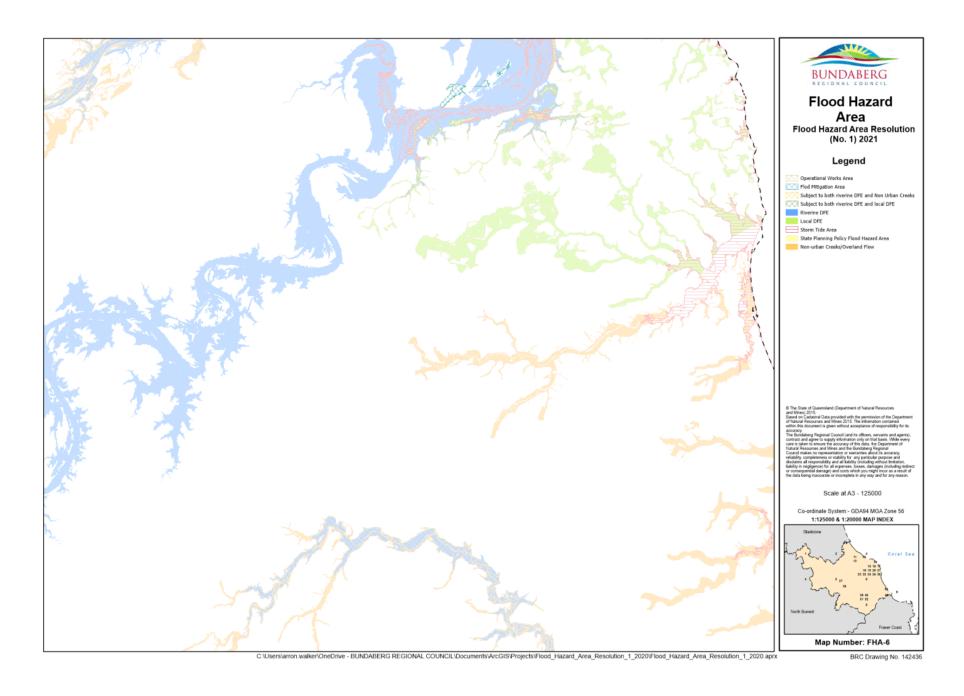


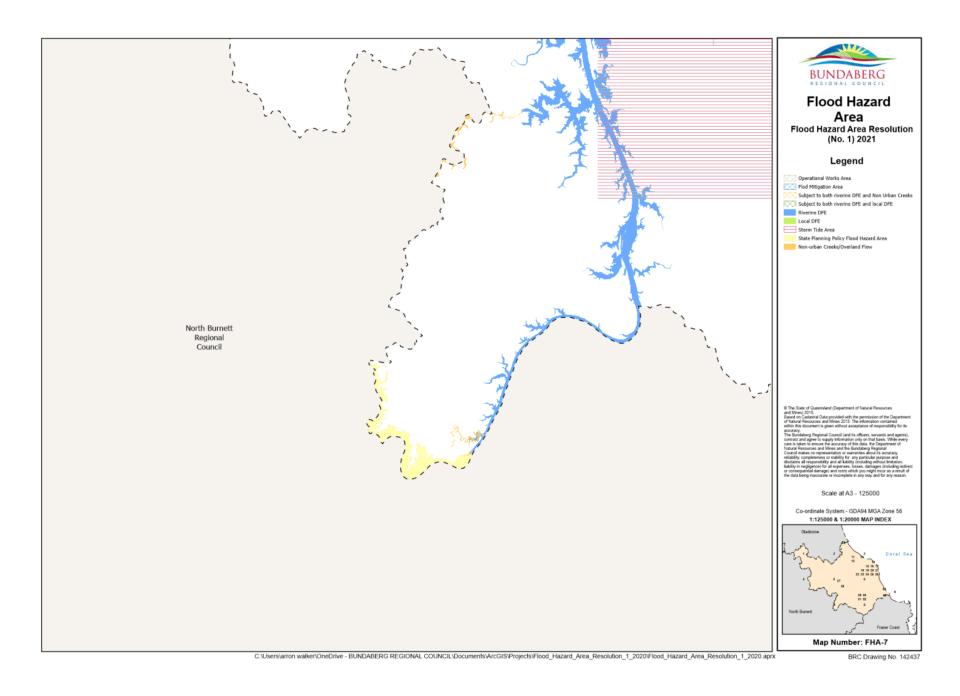


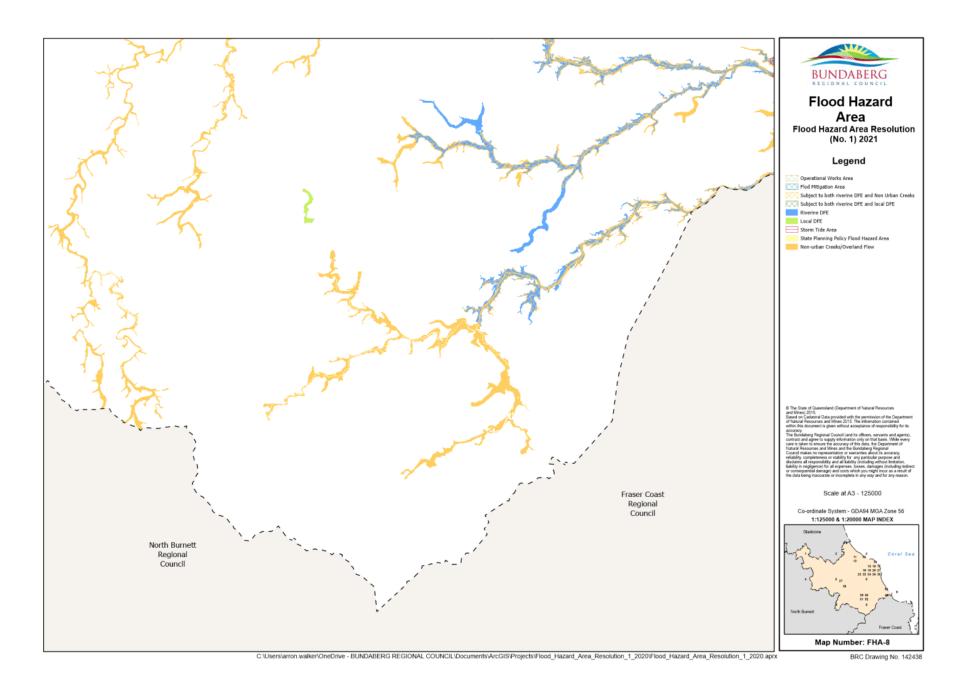


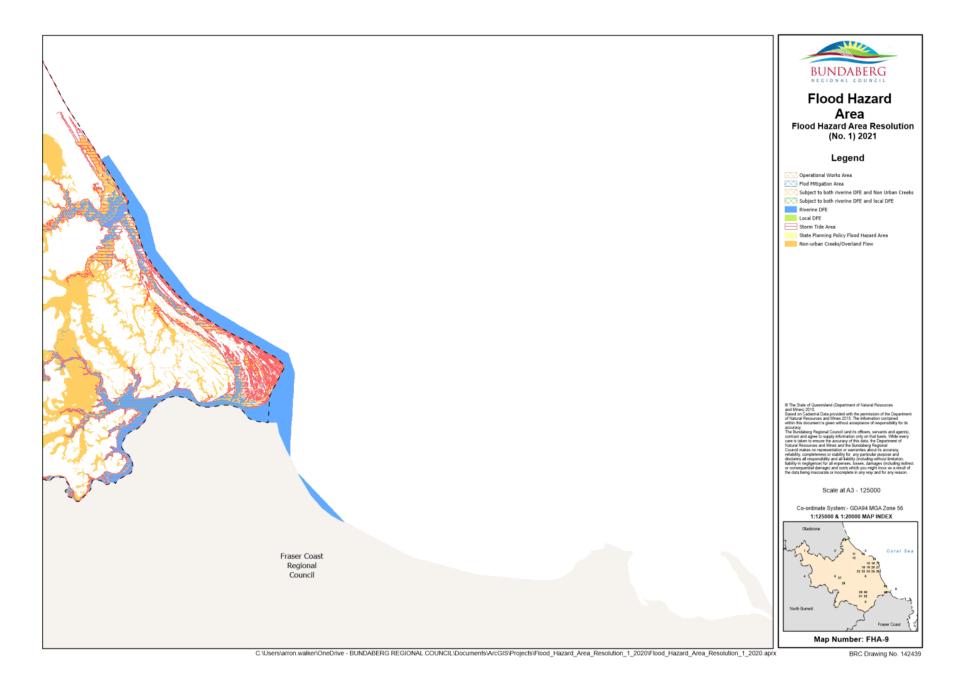


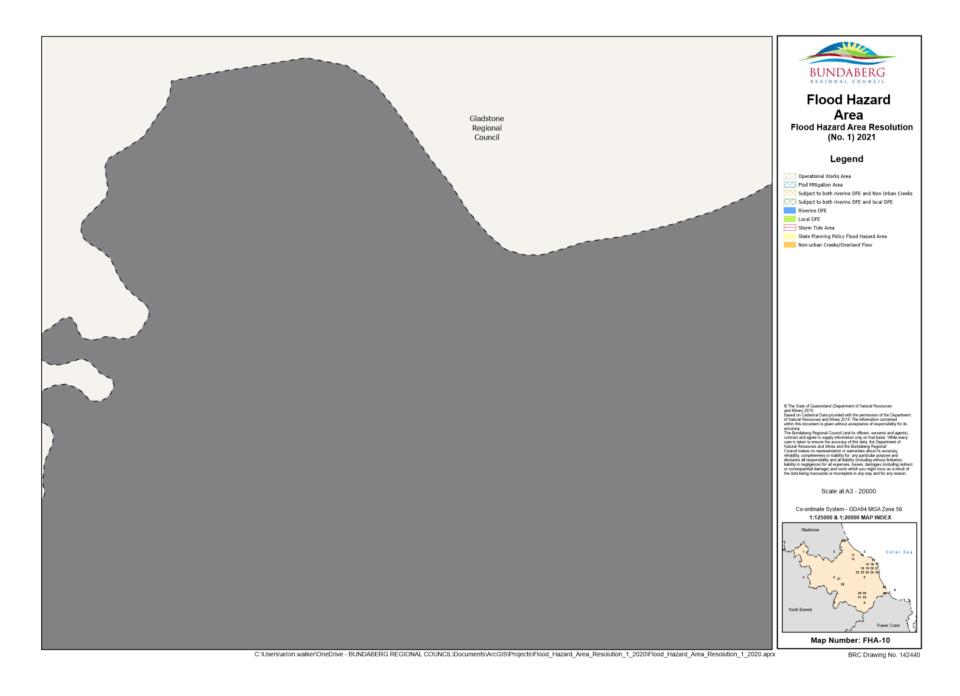


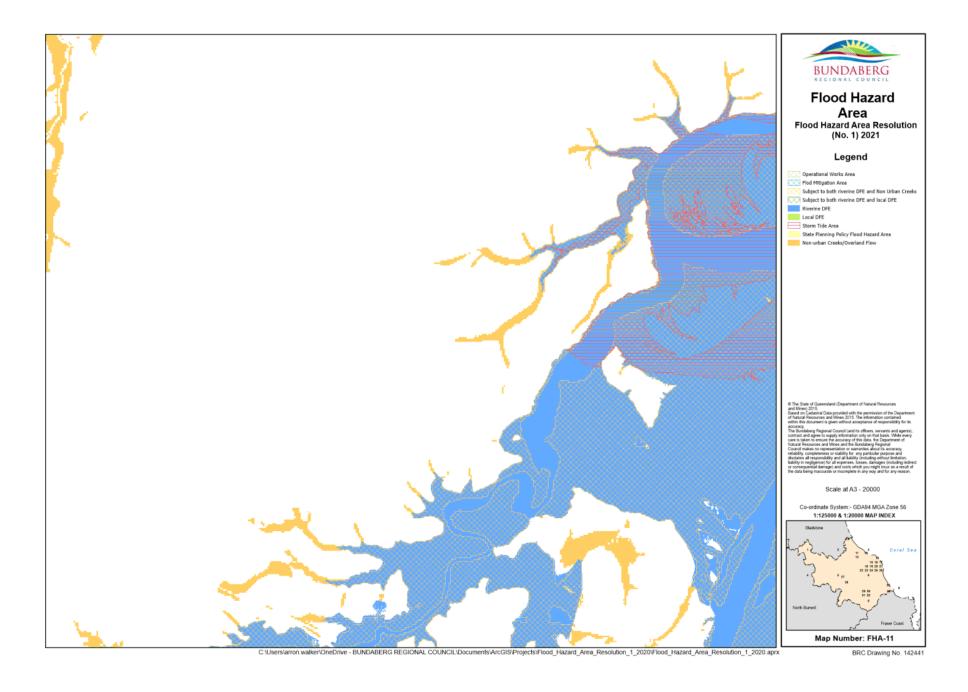


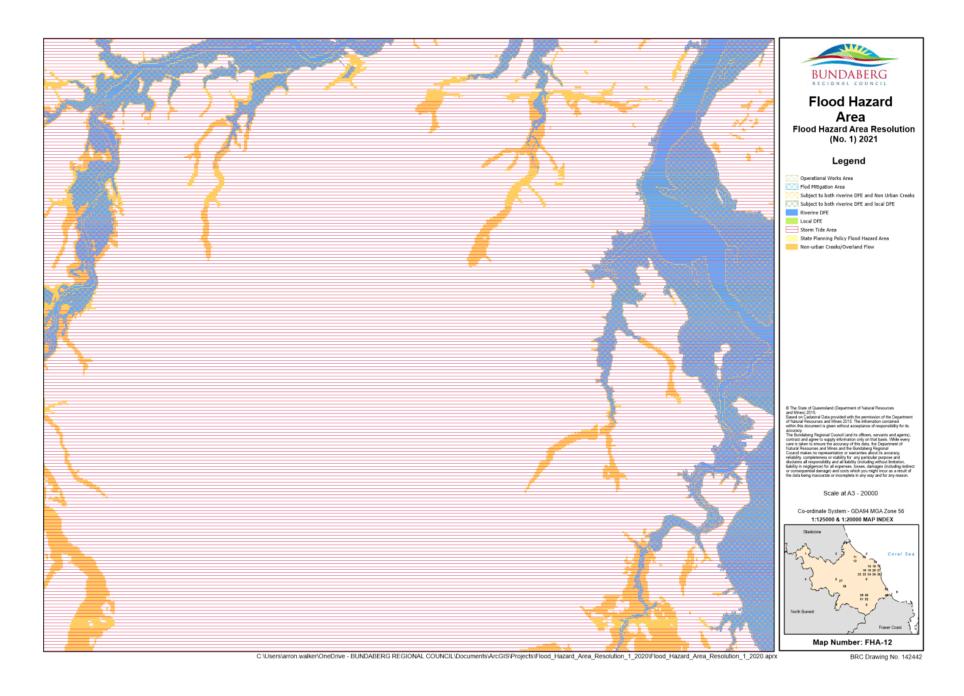


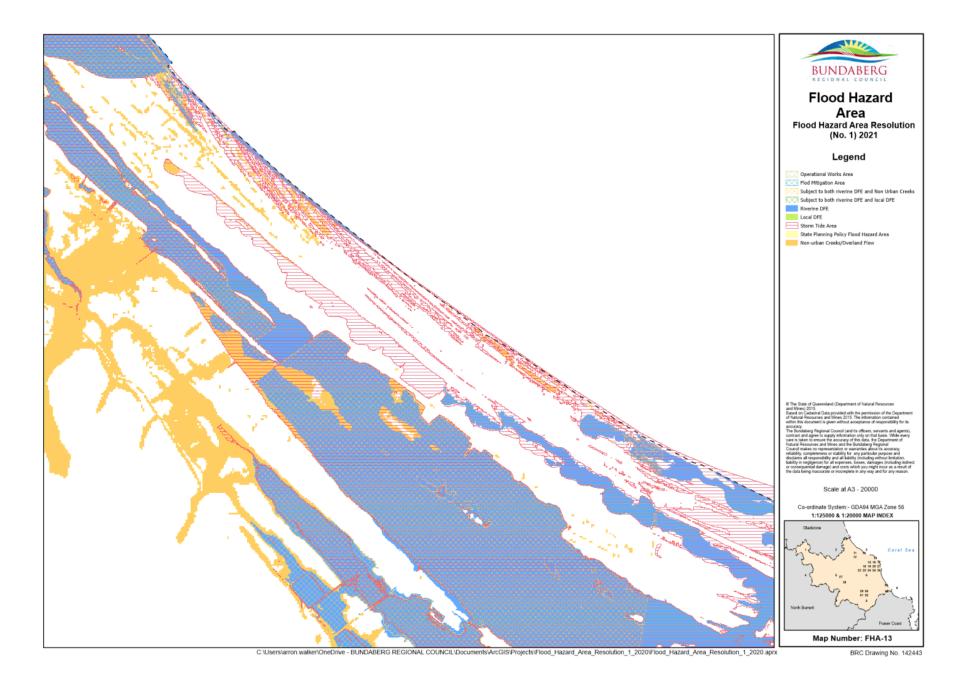


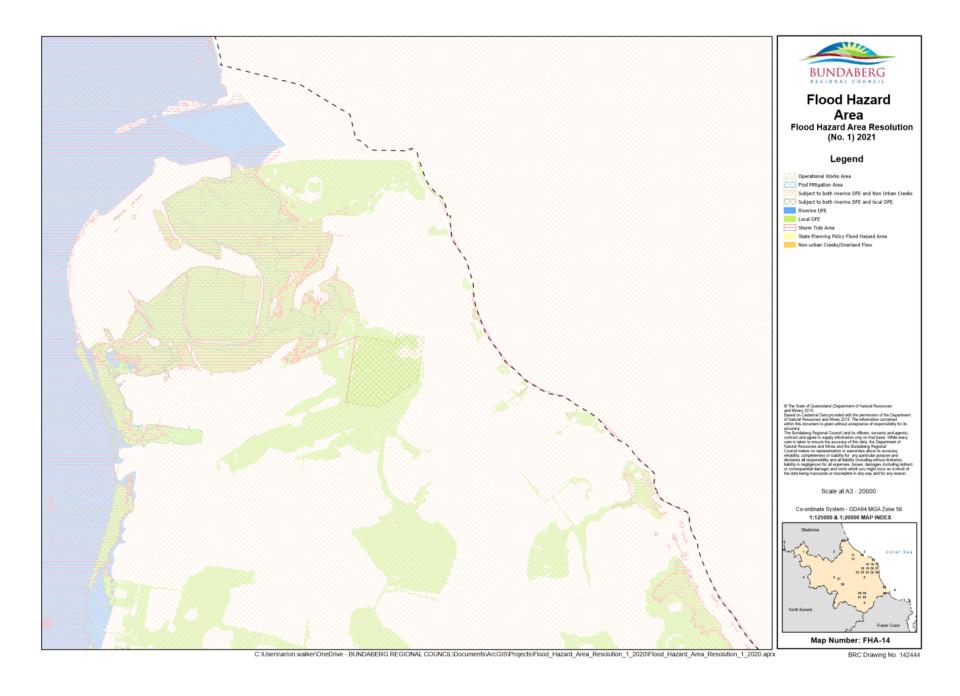


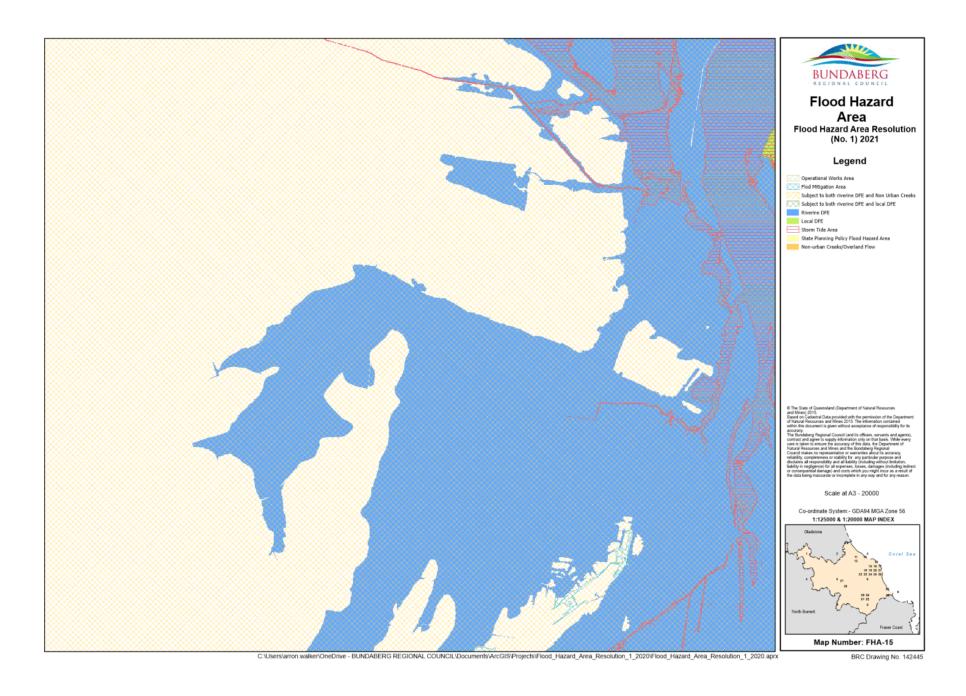


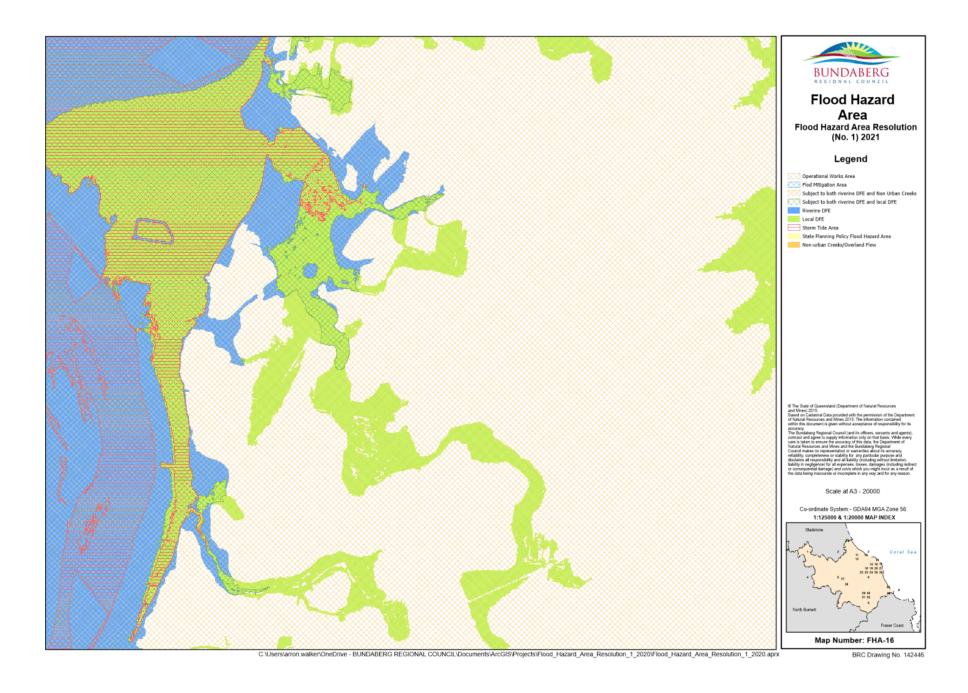


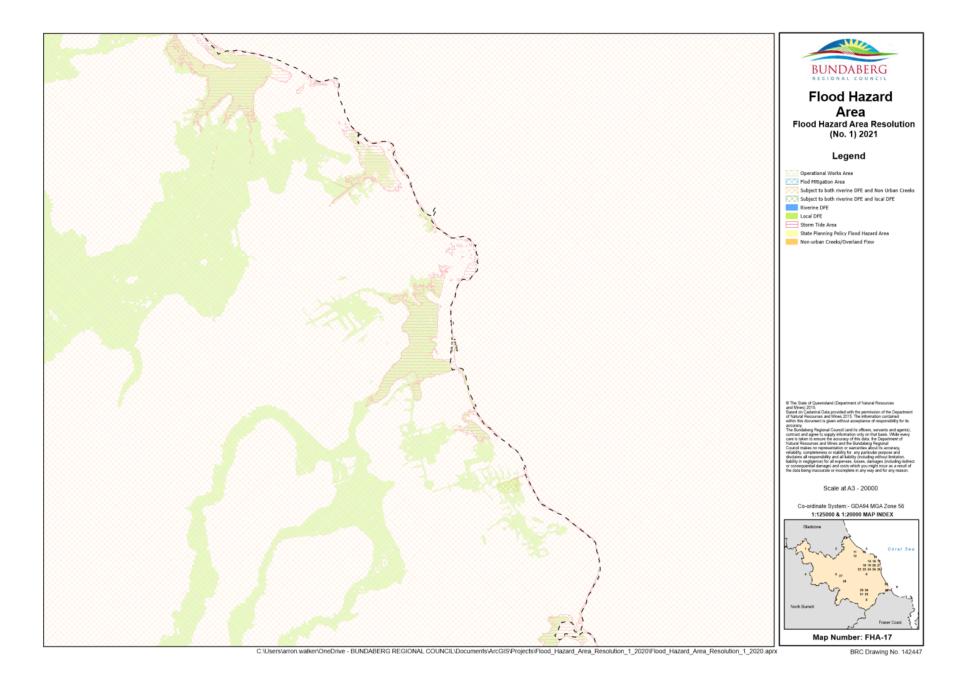


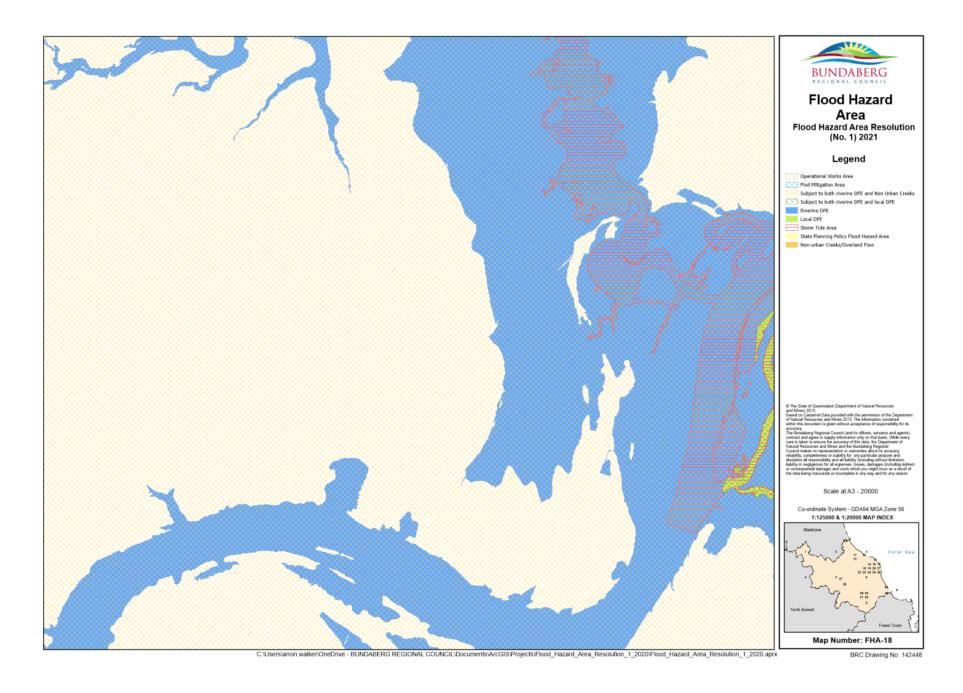


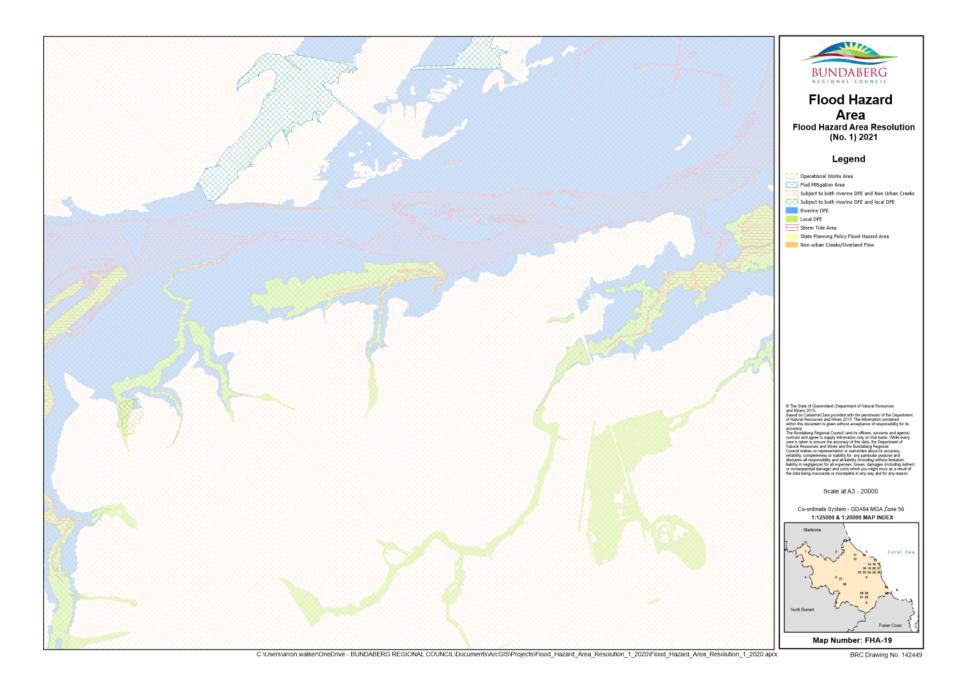


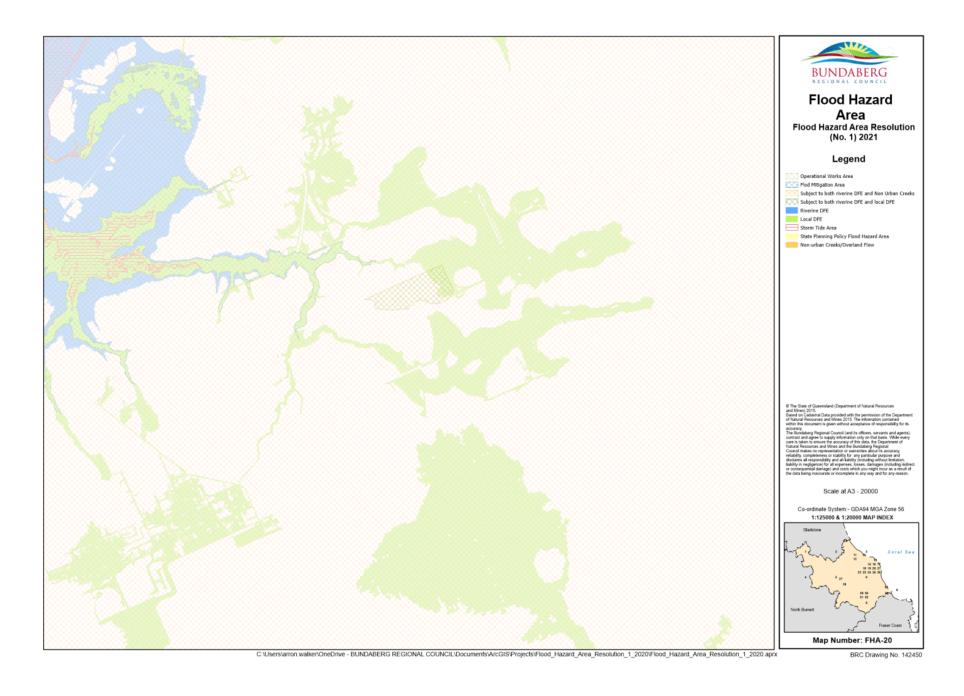


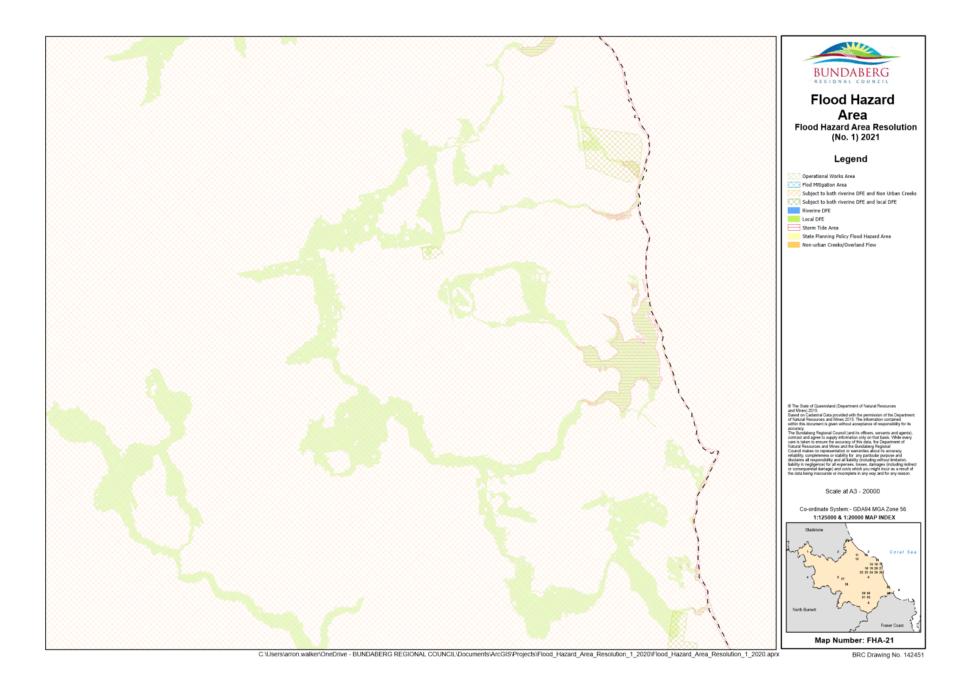


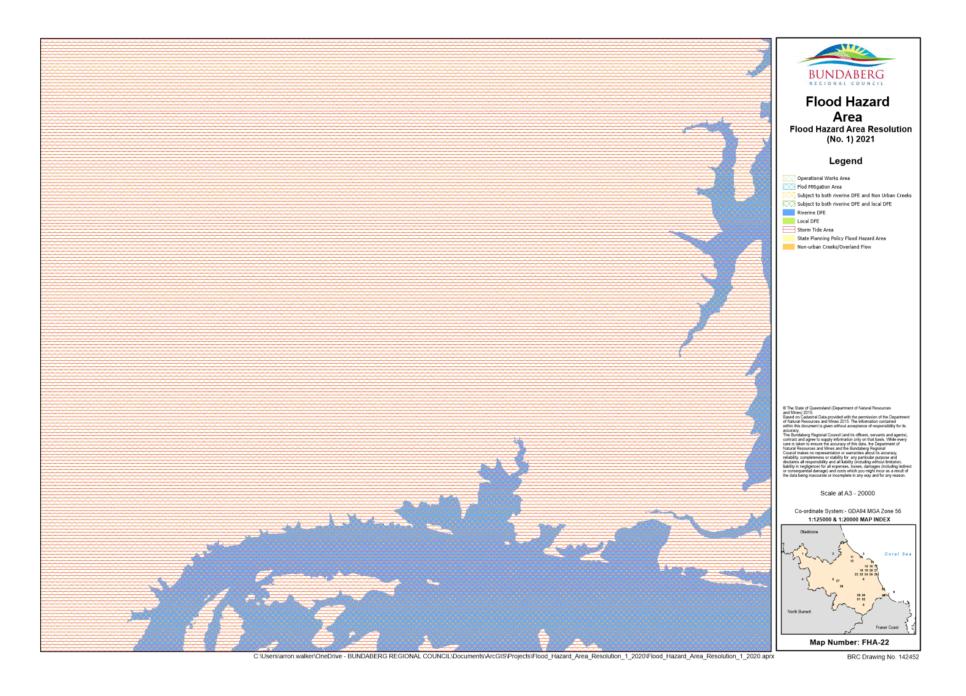


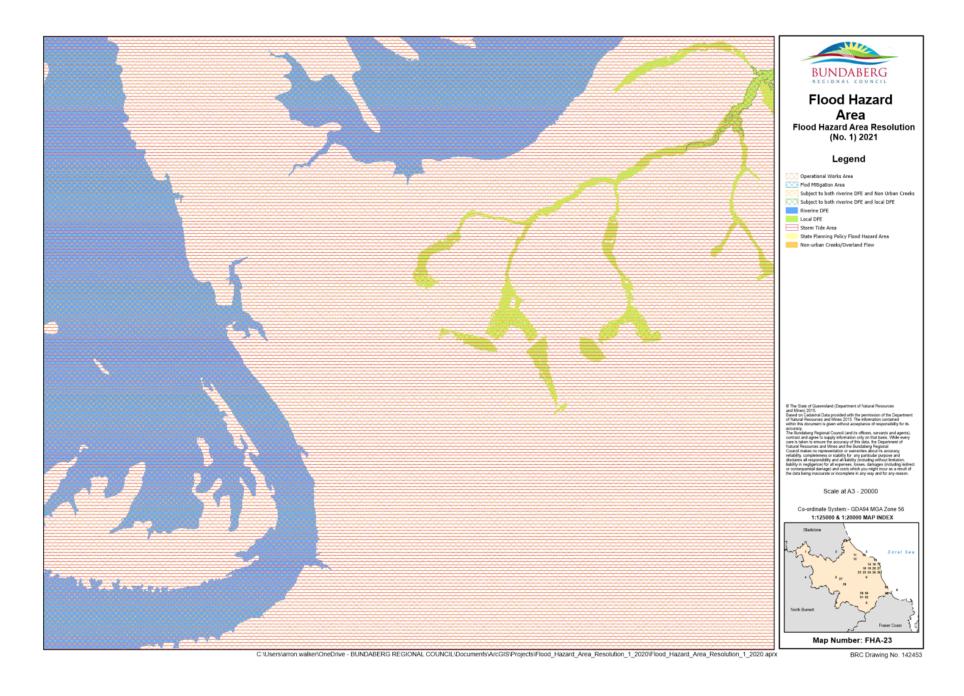


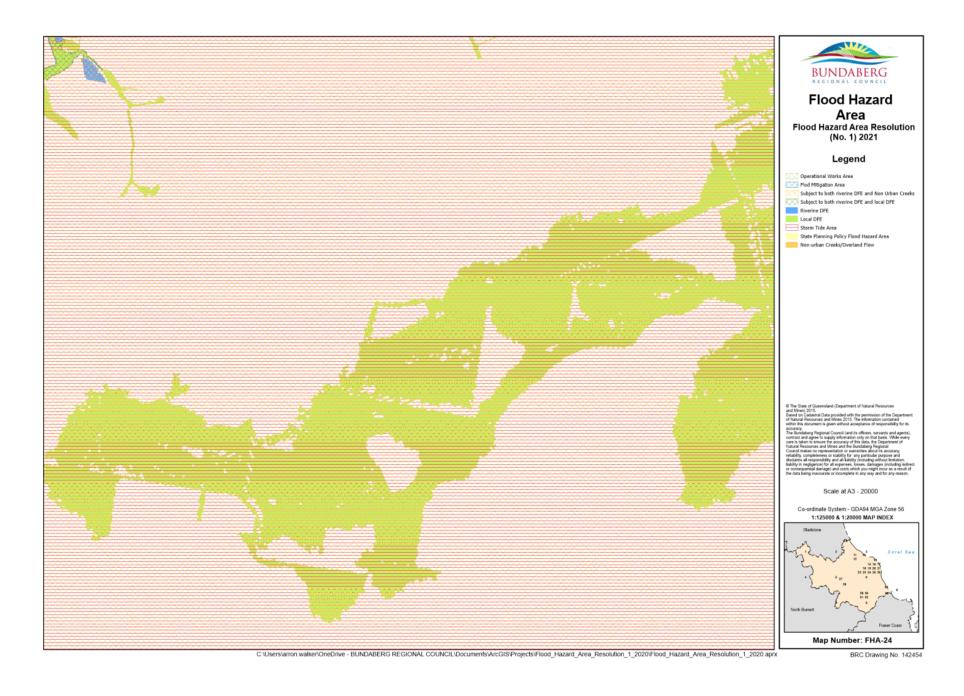


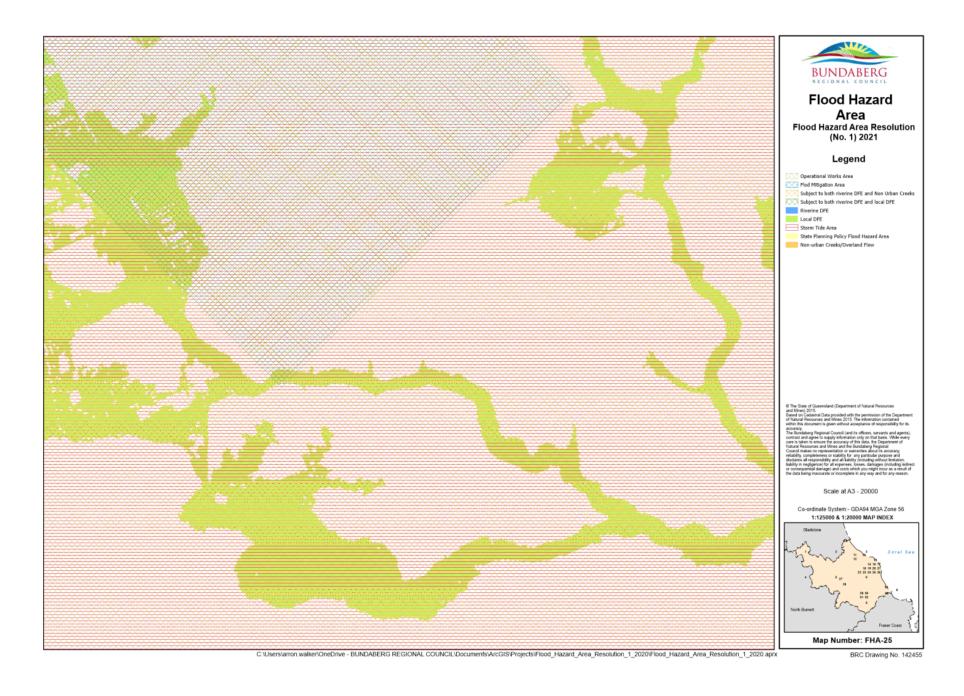


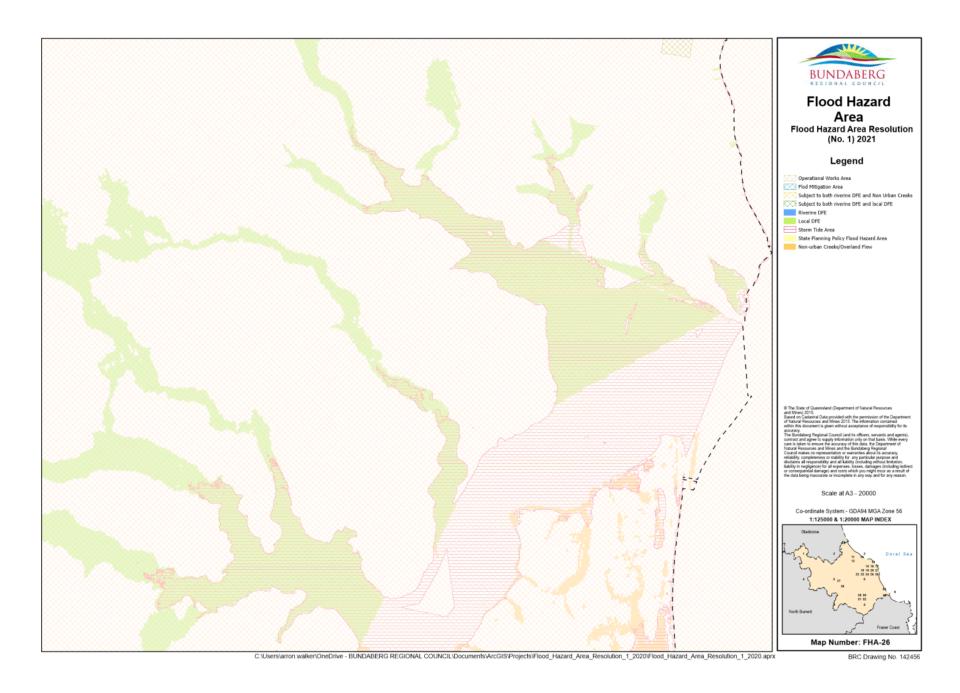


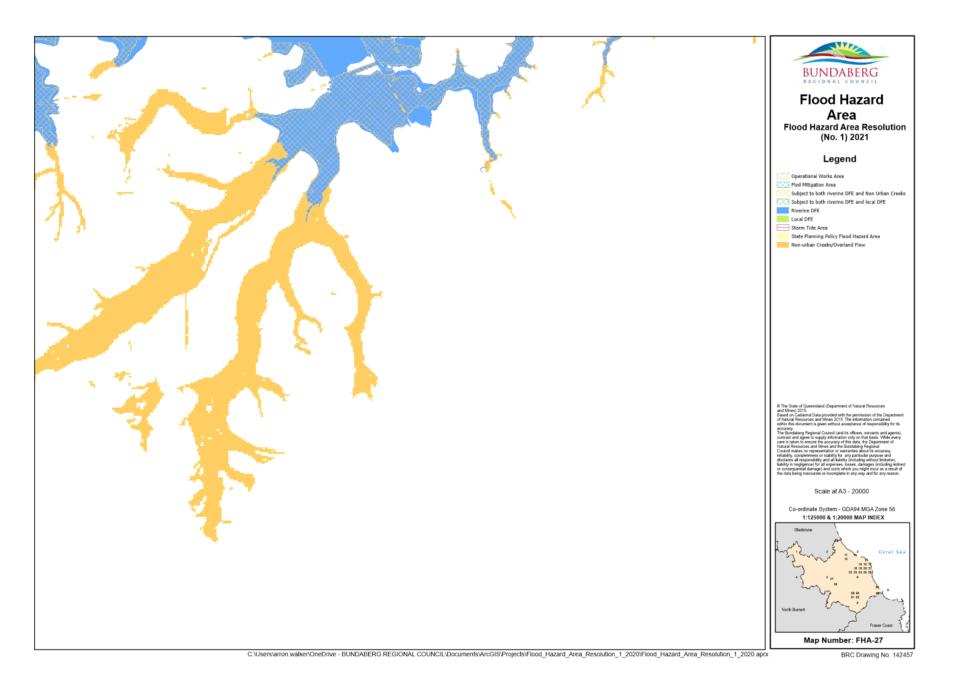


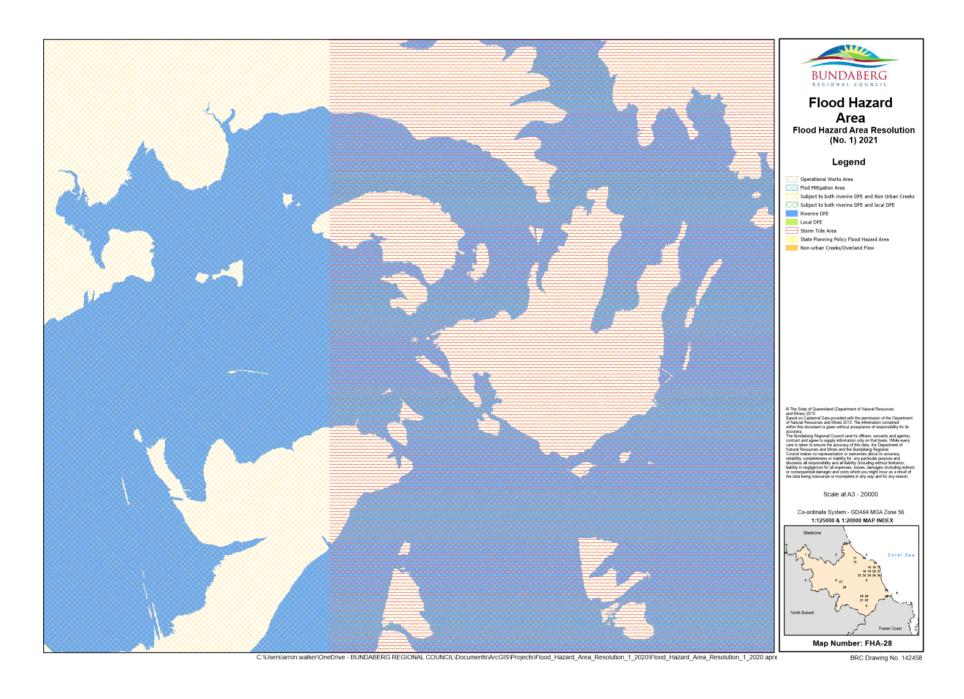


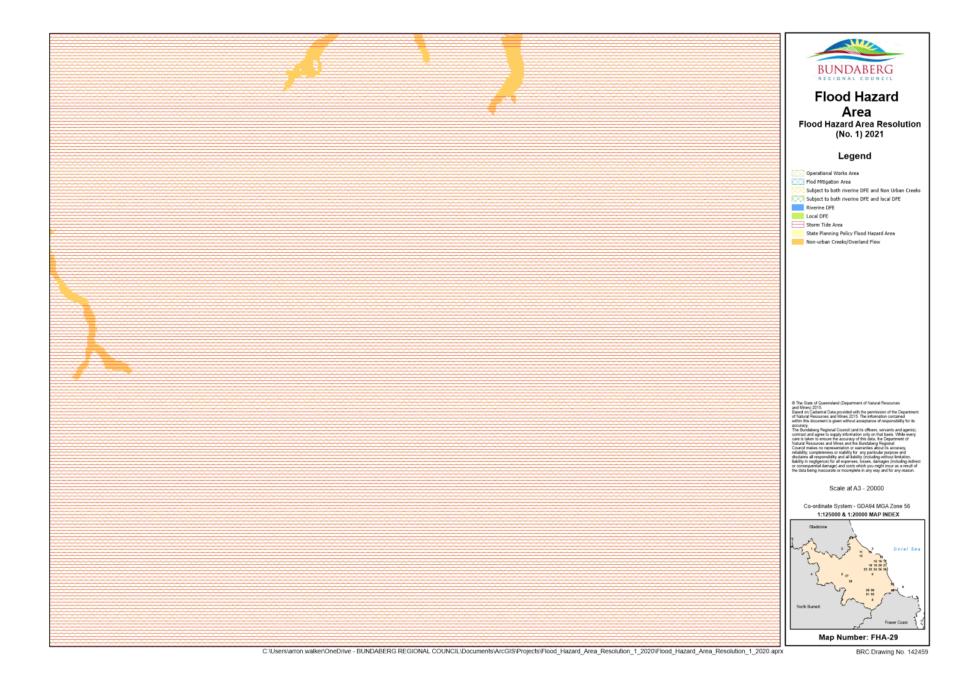


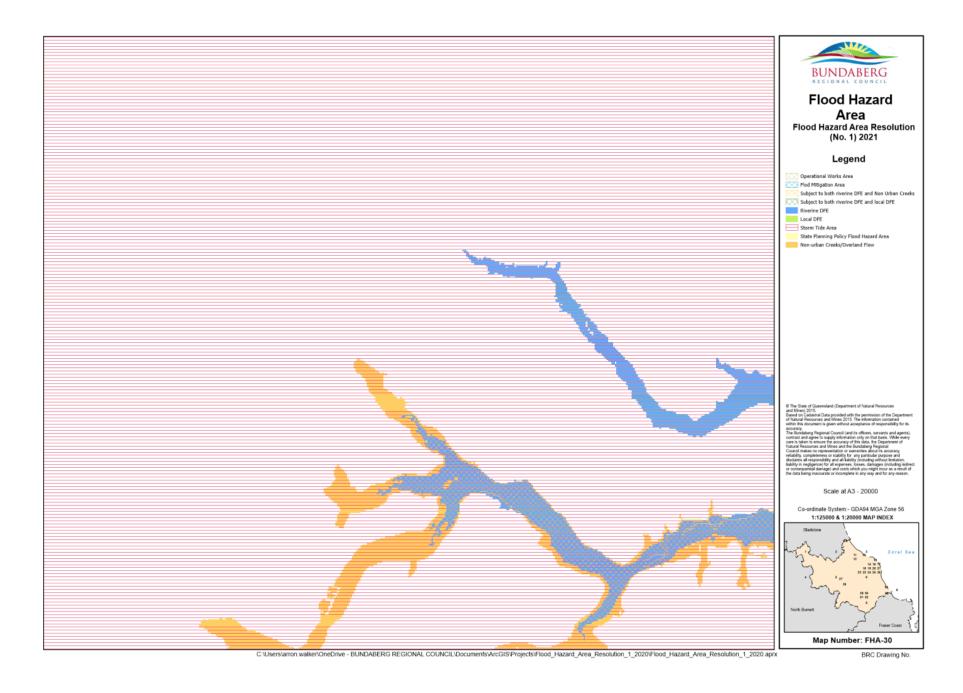


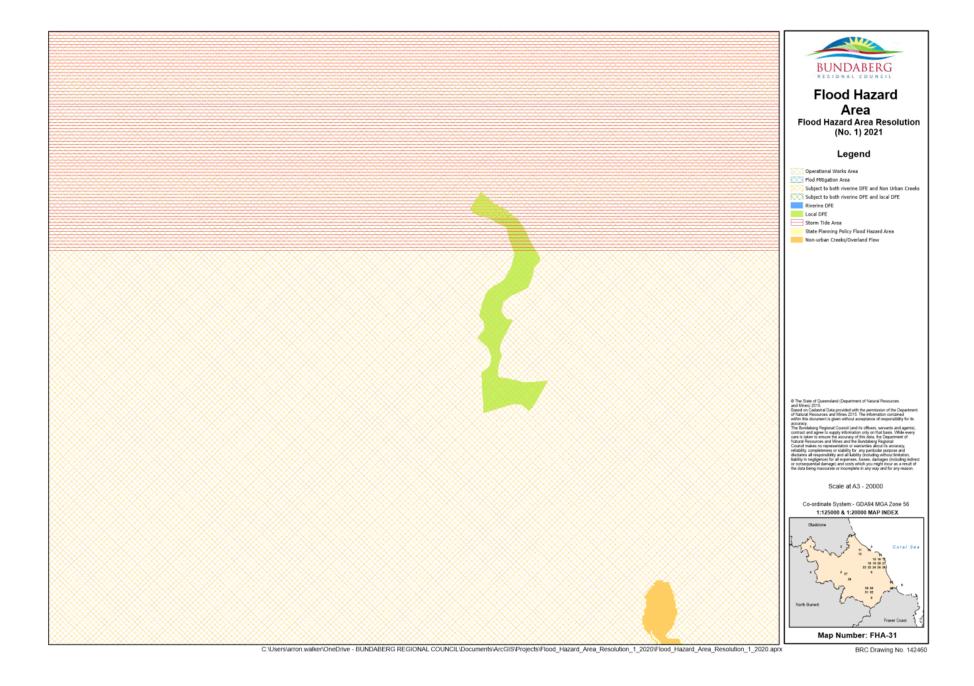


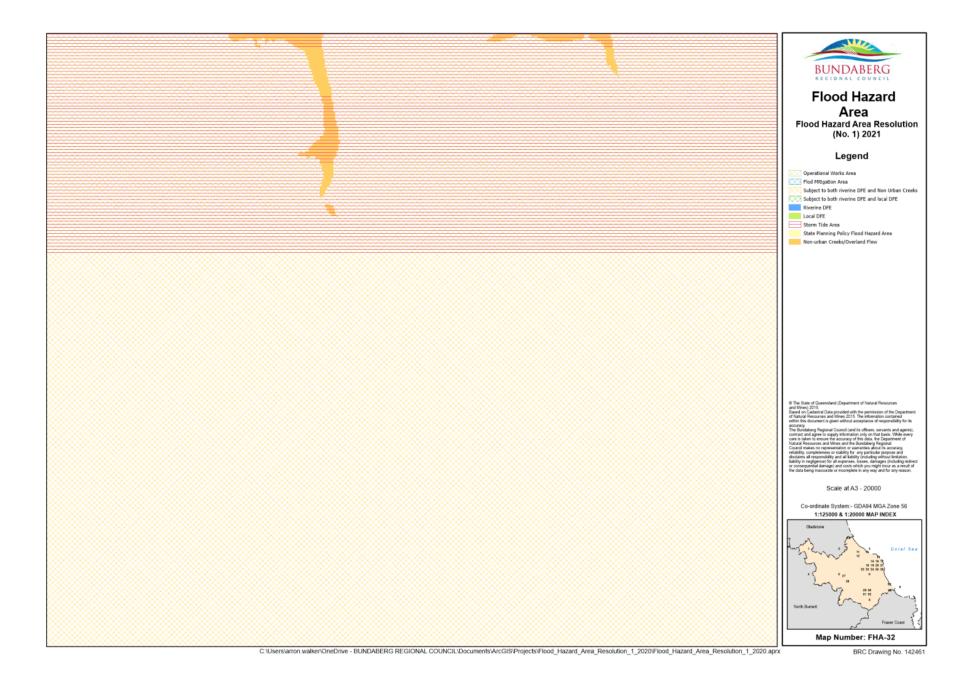


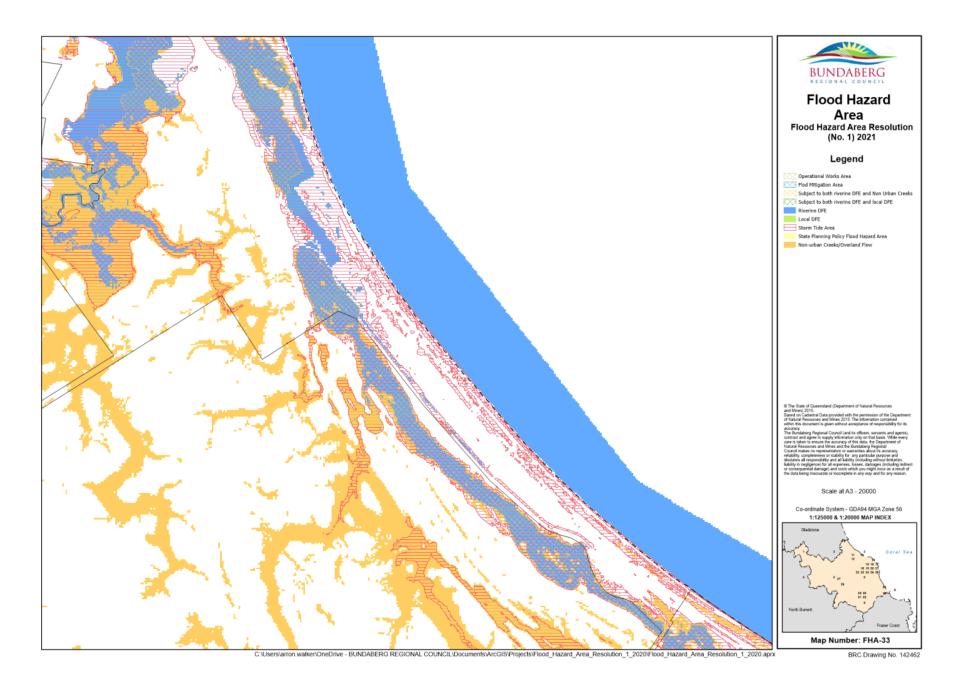


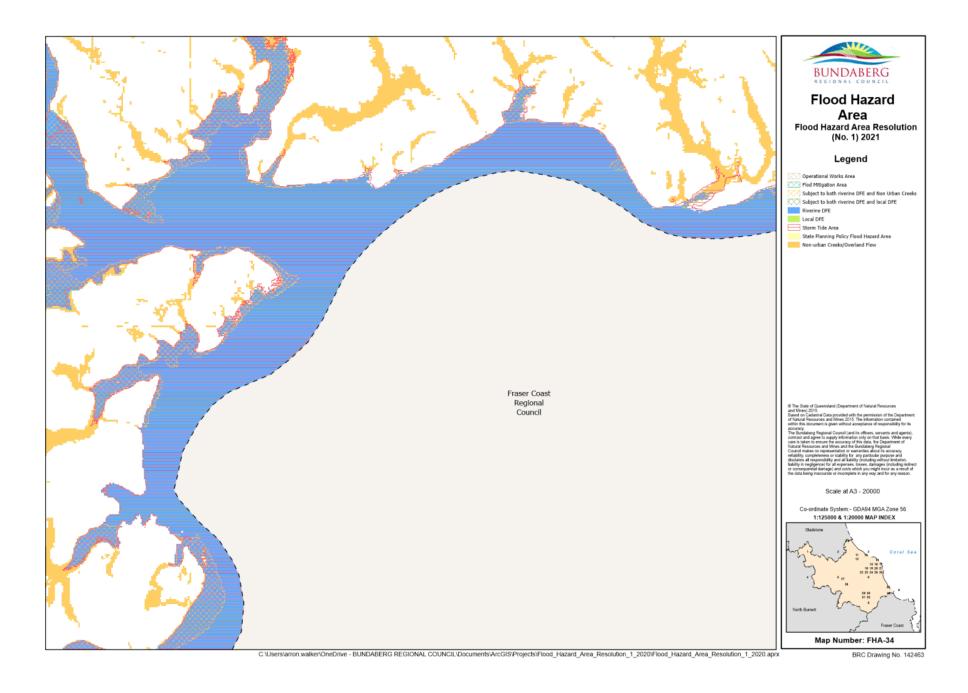














**Item** 

**21 December 2021** 

Item Number: File Number: Part:

L1 525.2021.23.1 DEVELOPMENT ASSESSMENT

# **Portfolio:**

Planning & Development Services

#### Subject:

Material Change of Use for Service Station & Food and Drink Outlet & Reconfiguration of a Lot (3 Lots into 2 Lots and 2 Access Easements) - 28696 Bruce Highway, Childers

# **Report Author:**

Scott Irwin, Planning Officer

#### **Authorised by:**

Michael Ellery, Group Manager Development

# **Link to Corporate Plan:**

Our infrastructure and development - 2.3 Sustainable development - 2.3.2 Provide an efficient, effective and transparent development assessment service consistent with community and statutory expectations.

#### **Summary**:

APPLICATION NO	525.2021.23.1
PROPOSAL	MCU for Service Station and Food and Drink Outlet
	and ROL (3 Lots into 2 Lots and 2 access easements)
APPLICANT	KPG Nominees (No 32) Pty Ltd
OWNER	Sunstate Caravan Parks Pty Ltd
PROPERTY DESCRIPTION	Lot 1, 2 and 3 on RP14425
ADDRESS	28696 Bruce Highway and Bruce Highway, Childers
PLANNING SCHEME	Bundaberg Regional Council Planning Scheme 2015
ZONING	Specialised Centre Zone
OVERLAYS	Cane Railway, Electricity infrastructure and State
	Controlled Road buffers
LEVEL OF ASSESSMENT	Code
SITE AREA	6,556 m2
CURRENT USE	Caravan Park
PROPERLY MADE DATE	12 October 2021
STATUS	The 35 business day decision period ends on 18
	November 2021
REFERRAL AGENCIES	Department of State Development, Infrastructure,
	Local Government & Planning
NO OF SUBMITTERS	Not applicable
PREVIOUS APPROVALS	Nil

SITE INSPECTION CONDUCTED	8 November 2021
LEVEL OF DELEGATION	Moderate

#### 1. INTRODUCTION

#### 1.1. Proposal

The applicant seeks a Development Permit for Material Change of Use for a Service Station and Food and Drink Outlet and Reconfiguring a Lot being 3 lots into 2 new lots and 2 access easements.

The proposal involves the amalgamation of 3 lots into 2 new lots being proposed Lots 1 and 2. Proposed Lot 1 will comprise 4,220 m<sup>2</sup> and include a Service Station comprising the following:

- 4 general bowsers 8 general vehicle refuelling bays under a 475 m<sup>2</sup> forecourt with a 5.2 metre minimum clearance;
- 2 Truck bowsers 4 truck refuelling bays under a 130 m<sup>2</sup> forecourt with a 5.4 m minimum clearance; and
- 235.5 m<sup>2</sup> Service Station convenience shop and food outlet with a 6 car queue drive through. The proposal indicates the site will be occupied by a United 24 (Service Station) with a Quick stop outlet (convenience shop) and Pie Face (shop with drive through).
- 10 Car parking spaces are provided around the Service Station facility.

Proposed Lot 2 is a triangular shape lot comprising 2,364m² with a 180m² Food and Drink Outlet incorporating a drive through. The drive through permits 11 car spaces from the pick-up point and 4 of those spaces are from the ordering point without interfering with internal car parking arrangements. Additionally, 15 car parking spaces are provided around the Food and Drink outlet with 4 of the spaces being provided for staff that are accessed via the drive through. Two (2) car and trailer parking spaces are also provided for the development within proposed Lot 2 at the eastern extent of the site near the site access.

The development is accessed centrally with left and right turns permitted into the site. The exit is located at the eastern end of the site where a left turn will only be permitted. The access easements are located on proposed Lot 1 and include a 172 m<sup>2</sup> area at the access into the property and the exit from Lot 2 along the northern and eastern boundaries of proposed Lot 2 to the exit point comprising 1,046 m<sup>2</sup>.

#### 1.2. Site Description

The development site comprises three (3) lots being Lots 1, 2 and 3 on RP14425, having a combined area of 6,556 m². All three (3) lots are located within the Specialised centre zone and are not adjoined by any other Specialised centre zoned properties. The property to the east is zoned industry, property to the north is zoned Community facilities (Cane Railway), properties across the Bruce Highway are zoned Low Density Residential and Rural Residential.

The properties combined form a triangular shape with a frontage of approximately 216 metres to the Bruce Highway. The property has been known as the Childers Central Caravan Park and Backpackers. The site was historically utilised as a small scale

service station resulting in the land being identified on the Environmental management register.

#### 2. ASSESSMENT PROVISIONS

#### 2.1. Assessment Benchmarks

The following are the benchmarks applying for this development:

Benchmarks applying for the development	Benchmark reference	
Zone Code: Specialised Centre Zone	Bundaberg Regional Council Planning Scheme 2015	
Overlay Code	Bundaberg Regional Council	
Infrastructure overlay code	Planning Scheme 2015	
Use Code	Bundaberg Regional Council	
Service station code	Planning Scheme 2015	
Business uses code		
Other Development Code	Bundaberg Regional Council	
Landscaping code	Planning Scheme 2015	
Nuisance code		
Reconfiguring a lot code		
Transport and parking code		
Works, services and infrastructure code		
Planning Scheme Policies	Bundaberg Regional Council	
Planning scheme policy for development works	Planning Scheme 2015	
Planning scheme policy for waste management		
Interim Development Assessment Requirements	State Planning Policy	

# 3. ISSUES RELEVANT TO THE APPLICATION

The following significant issues have been identified in the assessment of the application:

#### Specialised centre zone code

The specialised centre zone code seeks to provide for large floor plate retail business activities and other activities which because of their size, requirement for high levels of accessibility to private motor vehicle traffic, or other characteristics, are best located outside of identified activity centres and adjacent to major road transport corridors. More specifically, the zone code outlines development in the zone does not provide for higher order and other retail facilities better suited to establishing within an activity centre.

The proposed development involves a Service Station with drive through convenience food and drink outlet as well as standalone Food and Drink Outlet incorporating a drive

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through. As the proposed development is highly reliant on the use of vehicles and seeks to attract such users through the design and is located on the Bruce Highway, it is considered the proposal readily complies with the intent of the code and more broadly is compatible with surrounding land uses.

#### Business uses code

The Business uses code is solely triggered as part of the Food and Drink Outlet and seeks to ensure the development is established in a manner consistent with the Bundaberg Region Activity Centre Network and is of a high quality design which reflects good centre design principles and appropriately responds to local character, environment and amenity considerations.

The development complies with all the acceptable outcomes of the code excluding AO5.1 and AO5.2 that requires development to present a minimum of 65% of the building frontage to a public street or other public space to present with clear or relatively clear windows and glazed doors. The applicable performance outcome PO5 requires the business use is in a building which is designed to create vibrant and active streets and public spaces. The subject development is located well outside (over 800m) of the core business and retail centre of Childers and is surrounded by a mix of zonings including industrial, community, rural residential and low density residential. In this regard, PO5 is not considered overly relevant to the outcomes of the immediate surrounding area as it is not intended for general retail with active street frontages. The proposed uses are accessed via a shared access and generally front internally towards each other and the shared access. As such, the proposal is considered to comply with the broader outcomes of the code.

### Service Station Code

The Service Station Code seeks to ensure service stations are development in appropriate locations and in a manner which meets the needs of users, provides safe access and protects the environment and amenity of surrounding premises.

The acceptable outcomes seek for a 7.5 metre frontage setback and 2 metres of landscaping around the boundaries of the site. The southern front corner of the car refuelling forecourt is located 3.8 metres from the frontage boundary at the closest point due to the angle of the boundary. The forecourt encroaches the prescribed 7.5 metre setback for a distance of 10.5 metres and an area of approximately 21 m<sup>2</sup>. Additionally, the site only includes a 1 metre landscaping strip along the frontage of the Service Station and the rear boundary that adjoins the Cane railway line. Despite the minor non-compliances with acceptable outcomes the proposal is considered t comply with the applicable performance outcomes as the development incorporates landscaping that softens the development, contributes to providing an attractive appearance and provides adequate separation from adjoining land uses.

Further, the development will provide a significant improvement on the streetscape within the surrounding area as the existing surrounding commercial built form on the Industrial and Specialised Centre zone includes industrial sheds with lesser setbacks and a Service Station located at 28677 Bruce Highway has a fuel forecourt with an 11 metre length at a nil setback to the road frontage. Additionally, no formalised landscaping strips exist along the frontages of other existing commercial uses that front the Bruce Highway in the immediate surrounding area.

#### Reconfiguring a Lot Code

The purpose of the Reconfiguring a Lot Code primarily seeks to ensure new lots are configured in a manner which:

- Is appropriate for their intended use;
- Is responsive to local character and site constraints;
- Provides appropriate access (including access for services); and
- Supports high quality urban design outcomes;

The proposed layout is considered to achieve the purpose of the code for the following reasons:

- The proposal reduces the number of lots from 3 to 2;
- The proposal will result in a single access and exit point for the 2 new lots with the use of access easements;
- o The proposal will create lots that are usable for the proposed uses that are consistent with the intent of the zone.

### Transport and Parking Code

The applicant has proposed a reciprocal access easement over vehicle manoeuvrings contained within proposed Lot 1 to allow lawful access and egress for Lot 2. A condition will be added to provide the access easement burdening lot 1 to the benefit of lot 2. Additionally, the onsite vehicle manoeuvring and car parking complies with the prescribed minimum car parking requirements contained within the code.

The proposal was also referred to SARA for evaluation of matters associated with the development due to the site adjoining a State Controlled Road (Bruce Highway). The SARA response supports the proposed development design and generally just conditions the development as proposed.

As such, the development is considered to comply with the purpose of the code through ensuring transport infrastructure is provided in a manner which meets the needs of the development whilst maintaining a safe and efficient road network.

#### Stormwater

The site discharges to the Isis Central Sugar Mill Company Limited land to the north of the development. The applicant has proposed a mixture of overland and piped drainage system with a 7kL detention tank to mitigate the stormwater runoff generated by the creation of additional impervious area. The proposed tank includes the installation of Spel filters to filter the TSS, TP & TN's. The refuelling area will be treated for hydrocarbon contaminants by the installation of a SPEL Puraceptor P040.

The stormwater quality and quantity components will be maintained by the applicant as they are on private property. It is noted that no indication of discharge agreement has been indicated and the applicant has proposed works on the property adjoining to the north. A condition will be added for this to be addressed.

# Infrastructure Overlay Code

The proposal triggers assessment against the infrastructure overlay codes as it adjoins a State controlled road and Cane railway corridor. The only applicable assessment criteria relates to ensuring the development maintains and, where practicable, enhances the safety, efficiency and effectiveness of the corridor. The proposal is not expected to impact on the function or efficiency of Cane railway infrastructure as the

development is not a sensitive land use and does not have any direct connection or association with the rail use. Despite this, fencing along the adjoining boundary will be conditioned to restrict access and reduce amenity impacts.

The proposal was referred to the State in relation to State controlled road matters. The car parking and access arrangements were altered numerous times over a period of 5 months before the State provided agreement to the design through their Concurrence Agency response. The final design provides access for both directions of traffic with the turning lanes, while exiting is limited to left out (southbound) only.

#### 4. REFERRALS

#### 4.1 Internal Referrals

Advice was received from the following internal departments:

Internal department	Referral Comments Received
Development Assessment - Engineering	23 November 2021
Water and Wastewater	27 April 2021
Health and Regulatory Services	15 April 2021
Engineering – Program Management	23 April 2021

Any significant issues raised in the referrals have been included in section 3 of this report.

# 4.2 Referral Agency

Referral Agency responses were received from the following State agencies:

Agency	Concurrence/ Advice	Date Received	Conditions Yes/No
Department of State Development, Infrastructure Local Government & Planning	Concurrence	12 October 2021	Yes

Any significant issues raised have been included in section 3 of this report.

#### 5. PUBLIC NOTIFICATION

Not Applicable.

#### 6. DRAFT CONDITIONS

Draft conditions were issued to the Applicant on 24 November 2021.

The Applicant submitted representations to Council on 29 November 2021 relating seeking clarification regarding approved plans, infrastructure charges and a date on the Concurrence Agency response. No issues were submitted in relation to actual draft conditions.

#### 7. REASONS FOR DECISION

The reasons for this decision are:

Meeting held: 21 December 2021

- The development is for a Material Change of Use for a Service Station and Food and Drink Outlet and Reconfiguring a Lot being code assessable within the Specialised Centre zone.
- The proposed development can be provided with an appropriate level of infrastructure
- The proposed development is considered to comply, or can be conditioned to comply with the relevant assessment benchmarks.

# **Communication Strategy:**

Communications Team consulted. A Communication Strategy is:

- □ Required

#### **Attachments:**

- 1 Locality Plan
- \$\square\$2\$ Site Plan
- 4 Referral Agency Response

#### **Recommendation:**

That the Development Application 525.2021.23.1 detailed below be decided as follows:

#### 1. Location details

Street address: 28696 Bruce Highway, Childers Real property description: Lots 1, 2 and 3 on RP14425

Local government area: Bundaberg Regional Council

#### 2. Details of the proposed development

Development Permit for Material Change of Use for Service Station & Food and Drink Outlet & Reconfiguring a Lot (3 Lots into 2 Lots and 2 access easements).

#### 3. Decision

Decision details: Approved in full with conditions. These conditions are

set out in <u>Schedule 1</u> and are clearly identified to indicate whether the assessment manager or a

concurrence agency imposed them.

The following approvals are given:

	Planning Regulation 2017 reference	Development Permit	Preliminary Approval
Development assessable under the planning scheme, a temporary local planning instrument, a master plan or a preliminary approval which includes a variation approval			

# 4. Approved plans and specifications

Copies of the following plans, specifications and/or drawings are enclosed.

Drawing/report title	Prepared by	Date	Reference no	Version/ issue	
Aspect of developmen	t: Material Cha	nge of Use			
Title Sheet	Verve Building Design Co	25.03.2021	DA00	P5	
Building Elevations & Perspectives	Verve Building Design Co	25.03.2021	DA02	P6	
Building Elevations & Perspectives	Verve Building Design Co	25.03.2021	DA03	P7	
Proposed Site Plan	Verve Building Design Co	17.11.2021	DA01	P11	
Building Floor Plan	Verve Building Design Co	03.03.2021	DA06	P3	
Aspect of development: Reconfiguring a Lot					
Proposed Reconfiguration of Lot 1- 3 on RP14425 (Bruce Highway, Childers)	Land Partners Surveyors and Planners	19/03/2021	BRLS7690- 000-18-4	4	

#### 5. Conditions

This approval is subject to the conditions in <u>Schedule 1</u>. These conditions are clearly identified to indicate whether the assessment manager or concurrence agency imposed them.

# 6. Further development permits

Please be advised that the following development permits are required to be obtained before the development can be carried out:

- All Building Work
- All Plumbing and Drainage Work
- All Operational Work

### 7. Properly made submissions

Not applicable — No part of the application required public notification.

#### 8. Referral agencies for the application

The referral agencies for this application are:

For an application involving	Name of referral agency	Advice agency or concurrence agency	Address
State-controlled road Schedule 10, Part 9, Division 4, Subdivision 2, Table 1, Item 1 and Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1	Infrastructure, Local Government &	Concurrence Agency	State Assessment a Referral Agency (SARA) E: wbbregionalservices@ds mip.qld.gov.au P: PO Box 979 Bundaberg Qld 4670

# 9. Currency period for the approval

This development approval will lapse at the end of the period set out in section 85 of *Planning Act 2016*.

# 10. Agreements under Section 49(4)(b) or 66(2)(b) or (c) of the Planning Act 2016

There are no agreements about these matters.

#### 11. Conditions about infrastructure

The following conditions about infrastructure have been imposed under Chapter 4 of the *Planning Act 2016*:

Condition/s	Provision under which the condition was imposed
20-31	Section 145 – Non-trunk Infrastructure
N/A	Section 128 – Trunk Infrastructure

# 12. Rights of appeal

The rights of applicants to appeal to a tribunal or the Planning and Environment Court against decisions about a development application are set out in Chapter 6, Part 1 of the *Planning Act 2016*. For particular applications, there may also be a right to make an application for a declaration by a tribunal (see Chapter 6, Part 2 of the *Planning Act 2016*).

# Appeal by an applicant

An applicant for a development application may appeal to the Planning and Environment Court against the following:

- the refusal of all or part of the development application
- a provision of the development approval
- the decision to give a preliminary approval when a development permit was applied for
- a deemed refusal of the development application.

An applicant may also have a right to appeal to the Development tribunal. For more information, see Schedule 1 of the *Planning Act 2016*.

#### Appeal by a submitter

A submitter for a development application may appeal to the Planning and Environment Court against:

- any part of the development application for the development approval that required impact assessment
- a variation request.

The timeframes for starting an appeal in the Planning and Environment Court are set out in Section 229 of the *Planning Act 2016*.

<u>Schedule 2</u> is an extract from the *Planning Act 2016* that sets down the applicant's appeal rights and the appeal rights of a submitter.

# SCHEDULE 1 CONDITIONS AND ADVICES IMPOSED BY THE ASSESSMENT MANAGER

# PART 1A - CONDITIONS IMPOSED BY THE ASSESSMENT MANAGER

NO	CONDITION	TIMING
GENE		TIMING
OZ.III		
1.	Comply with all conditions of this development approval and maintain compliance whilst the use continues.	At all times unless otherwise stated
2.	Where there is any conflict between the conditions of this Development approval and details shown on the Approved plans, the conditions prevail.	At all times
3.	The full cost of all work and any other requirements associated with this development must be met by the developer, unless specified in a particular condition or Infrastructure agreement.	At all times
4.	The survey plan for the subdivision (3 Lots into 2 Lots) and access easements must be endorsed.	Prior to the commencement of the use
AMEN	NITY	
HOUF	RS OF OPERATION	
5.	Operating hours of the approved use are 24 hours a day 7 days per week.	At all times
6.	Deliveries, loading/unloading activities must only be undertaken between the hours of 7 am $-$ 10 pm Monday to Sunday.	At all times
7.	Refuse collection must only be undertaken between the hours of 7 am to 6 pm weekdays.	At all times
LIGH	TING	
8.	Design and install all external lighting in accordance with AS4282 – Control of the obtrusive effects of outdoor lighting so as not to cause nuisance to residents or obstruct or distract pedestrian or vehicular traffic.	Prior to the commencement of the use and then to be maintained
NOIS	E	
9.	Noise levels from the use must achieve the acoustic environment and acoustic quality objectives for sensitive receiving environments set out in the Environment Protection (Noise) Policy 2008.	At all times
SCRE	ENING OF PLANT AND SERVICES	

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10. Install and maintain suitable screening to all air conditioning, lift motor rooms, plant, service facilities, or similar equipment located on the rooftop or to an external face of the building. The screening structures must be constructed from materials that are consistent with materials used elsewhere on the building facade or as an architectural feature of and visually consistent with the profile of the building.

Prior to the commencement of the use and then to be maintained

#### **LANDSCAPING**

- 11. Landscape the site in accordance with the approved plans. Landscaping must:
  - a. consist of permanent garden beds planted with trees and shrubs, with particular attention to the street frontage(s) of the site
  - b. include species recognised for their tolerance for low water conditions
  - c. be provided with a controlled underground or drip watering system. Any such system is to be fitted with an approved testable backflow prevention device

Note:

Council does not require the submission of an landscaping that is nominated nominated requirements for Accepted development.

Prior to the commencement of the use and then to be maintained

Operational works development application for as Accepted development where the works comply with the

#### **FENCES**

12. Provide and maintain a solid screen fence along all side and rear boundaries of the development site.

> The fence is to have a minimum height of 1.8 m behind the front building line or 6 m from the front boundary (whichever is lesser) and a height of 1.2 m in front of this point.

> Where side boundary fencing is continuous, the height may be taped from 1.2 m up to 1.8 m over a maximum distance of 2.5 m.

> The erection of a second boundary fence parallel to any existing fence is prohibited.

Prior to the commencement of the use

#### WASTE MANAGEMENT

13.	<b>D</b>	5
13.	Provide an impervious bin storage area (bin enclosure) for the storage of refuse bins in accordance with the following:	Prior to the commencement of the use and
	a. designed so as to prevent the release of contaminants into the environment	then to be maintained
	b. sufficiently sized to accommodate all refuse bins required by the Assessment Manager for the scale of the development	
	c. screened from the road frontage or other public space, and adjoin properties by landscaping or constructed screening	
	d. a suitable hose cock (with backflow prevention) and hoses must be provided at the bin storage area, and wash down to be drained to the sewer and fitted with an approved stormwater diversion valve arrangement	
	e. must be maintained in a clean and sanitary manner	
14.	Maintain and operate an adequate waste disposal service, including the maintenance of refuse bins and associated storage areas so as not to cause an environmental nuisance.	At all times
15.	Ensure that any potential food / waste sources are covered and collected so that they are not accessible to wildlife.	At all times
BUIL	DING WORK ASSOCIATED WITH THE MCU	
16.	Demolish or relocate all existing buildings/structures on the site including the removal of all existing concrete slabs, foundations, and the disconnection of services. Where necessary work must be in accordance with a valid approval from the service provider or Building development approval.	Prior to the endorsement of the survey plan
OPE	RATIONAL WORK ASSOCIATED WITH THE MCU	
17.	Ensure all assessable Operational work is carried out in accordance with a valid Operational work approval.	Prior to the commencement of work
	Note: Where Accepted development does not comply with a nominated requirement for accepted development, a Development application for Operational work must be submitted to Council.	
L	ı	1

18.	Provide certification from a Registered Professional Engineer of Queensland (RPEQ) that any operational work that is Accepted development has been designed and constructed in accordance with the conditions of this Development approval and any other relevant approval issued by Council.	Prior to the commencement of the use
	Note: Council does not require the submission of an Operational works development application for work that is nominated as Accepted development where the works comply with the nominated requirements for Accepted development and are certified by a RPEQ.	
CONS	STRUCTION MANAGEMENT	
19.	Unless otherwise approved in writing by the Assessment Manager, ensure no audible noise from work is made:	At all times during construction
	<ul> <li>a. on a business day or Saturday, before 6.30 am or after 6.30 pm</li> </ul>	
	b. on any other day, at any time.	
STOR	RMWATER	
20.	Design and implement a stormwater drainage system for lot 1, as per the Stormwater Management Report prepared by Kehoe Myers connecting to the lawful point of discharge located on the shared boundary with lot 284 on SP285167.	Prior to site work commencing and at all times during construction
21.	Design and implement a stormwater drainage system for lot 2, as per the Stormwater Management Report prepared by Kehoe Myers connecting to the lawful point of discharge located on the shared boundary with lot 284 on SP285167.	Prior to site work commencing and at all times during construction
22.	Submit a discharge agreement noting Lot 284 SP285167 accepts ongoing stormwater discharge from proposed lot 1.	Prior to the commencement of construction
23.	Submit a discharge agreement noting Lot 284 SP285167 accepts ongoing stormwater discharge from proposed lot 2.	Prior to the commencement of construction

WATI	≣R	
24.	Provide a metered water service and internal infrastructure as required to each proposed lot, to satisfy the firefighting and water supply demands of the development.	Prior to the commencement of the use and then to be
	Note:	maintained
	Water infrastructure must be designed by an appropriately qualified hydraulic consultant to assess the suitability of the water supply system to cater for the proposed development, including firefighting requirements in accordance with AS2419 — Fire hydrant installation.	
SEWI	ERAGE	
25.	Provide a reticulated sewerage service to each proposed lot in accordance with the applicable Planning scheme codes and Planning scheme policy for development works.	Prior to the endorsement of the survey plan
26.	All sewerage infrastructure must be clear of all proposed and existing buildings.	At all times
ROAI	DWORKS, ACCESS, AND CAR PARKING	
27.	Remove all disused or redundant vehicular crossings, kerb drainage outlets, and footpath crossovers and reinstate kerb and channel, and footpaths as required.	Prior to the commencement of the use
28.	Design and construct off-street car parking, access, and manoeuvring areas for lot 1 in accordance with the Approved plans, applicable Planning scheme codes, and the Planning scheme policy for development work.	Prior to the commencement of use and then to be maintained
	Car parking, access, and manoeuvring areas must:	
		i e e e e e e e e e e e e e e e e e e e
	a. provide a minimum of 10 parking spaces	
	<ul><li>a. provide a minimum of 10 parking spaces</li><li>b. be designed and constructed in accordance with AS2890 Parking facilities – off-street car parking</li></ul>	
	b. be designed and constructed in accordance with	
	<ul> <li>b. be designed and constructed in accordance with AS2890 Parking facilities – off-street car parking</li> <li>c. provide parking spaces for people with a disability in accordance with the Building Code of Australia and AS2890.6 Off-street parking for people with</li> </ul>	

- Refuse collection vehicle
- e. allow all design vehicles to enter and exit the site in a forward gear
- f. be constructed and sealed with asphaltic concrete or concrete.
- g. be signed and delineated in accordance with the Queensland manual of uniform traffic control devices
- h. allow for the provision of fill and/or boundary retaining walls and the containment and management of site stormwater drainage
- i. be drained to a legal point of discharge
- j. be available free of charge to staff and customers during operating hours
- k. Provide shade trees in car parking areas at a minimum ratio of one (1) tree for every six (6) parking spaces.
- Design and construct off-street car parking, access, and manoeuvring areas for lot 2 in accordance with the Approved plans, applicable Planning scheme codes, and the Planning scheme policy for development work.

  Car parking, access, and manoeuvring areas must:

Prior to the commencement of use and then to be maintained

- a. provide a minimum of 15 parking spaces
- b. provide a minimum of 2 vehicles with trailer parking spaces
- c. be designed and constructed in accordance with AS2890 Parking facilities off-street car parking
- d. provide parking spaces for people with a disability in accordance with the Building Code of Australia and AS2890.6 Off-street parking for people with disabilities
- e. provide on-site loading, unloading, and manoeuvring for all necessary service vehicles, including:
  - Medium Rigid Vehicle
  - Refuse collection vehicle
- f. allow all design vehicles to enter and exit the site in a forward gear
- g. be constructed and sealed with asphaltic concrete or concrete.

	h. be signed and delineated in accordance with the Queensland manual of uniform traffic control devices				
	<ul> <li>allow for the provision of fill and/or boundary retaining walls and the containment and management of site stormwater drainage</li> </ul>				
	j. be drained to a legal point of discharge				
	k. be available free of charge to staff and customers during operating hours				
	<ol> <li>Provide shade trees in car parking areas at a minimum ratio of one (1) tree for every six (6) parking spaces.</li> </ol>				
30.	Repair any damaged kerb and channel, footpath, or road (including removal of concrete slurry from footpath, roads, kerb and channel, and stormwater gullies and drainlines) and reinstate existing traffic signs and pavement markings that have been removed or damaged during any works carried out in association with the approved development.	Prior to the commencement of the use			
31.	Provide six (6) secure bicycle parking spaces for customers of the Service Station on Lot 1 and four (4) secure bicycle parking spaces for customers of the Food and Drink Outlet on Lot 2. Customer bicycle parking must be located in a visible area close to the entrance of each building.	commencement			
ELEC	ELECTRICITY AND TELECOMMUNICATIONS				
32.	Provide for telecommunications to each proposed lot in accordance with the Planning scheme policy for development works.	Prior to the endorsement of the survey plan			
33.	Provide for electrical reticulation to each proposed lot in accordance with the Planning scheme policy for development works.	Prior to the endorsement of the survey plan			
EASE	MENTS				
34.	Lodge to the State (Titles office) for registration the following easement(s):	Prior to the endorsement of			
	<ul> <li>a. access easements as shown on Drawing 19115- DA01, Rev P11 burdening Lot 1 to the benefit of Lot 2.</li> </ul>	the survey plan			

	b. minimum 3m wide sewerage easement in gross over all existing and proposed reticulated sewerage traversing the site	
35.	Submit draft easement documentation to the Assessment Manager for endorsement.	Prior to the endorsement of the survey plan

# **PART 1B - ADVICE NOTES**

NO.	<u>ADVICE</u>	<u>TIMING</u>	
CONCURRENCE AGENCY PRE-RESPONSE FOR ASSOCIATED BUILDING WORK			
1.	This decision notice can also be taken as Council's Concurrence agency pre-response for the removal/demolition of existing structures located on the land plans against Council's Amenity and aesthetics, and building work involving removal or rebuilding policy (November 2017) and for security matters under Schedule 9, Division 2, Tables 1 and 7 of the <i>Planning regulation 2017</i> .	For the life of the approval	
AMEN	AMENITY		
2.	Ensure the development does not cause environmental nuisance or environmental harm as per the <i>Environmental Protection Act</i> 1994.	At all times	
3.	Storage of flammable and /or combustible liquids must comply with the minor storage provisions of AS1940 – the storage and handling of flammable and combustible liquids.	At all times	
ENVIF	RONMENTAL HARM		
4.	The Environmental Protection Act 1994 states that a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm. Environmental harm includes environmental nuisance. In this regard persons and entities, involved in the civil, earthworks, construction, and operational phases of this development, are to adhere to their 'general environmental duty' to minimise the risk of causing environmental harm. Environmental harm is defined by the Act as any adverse effect, or potential adverse effect whether temporary or permanent and of	At all times	

whatever magnitude, duration or frequency on an environmental value and includes environmental nuisance. Therefore, no person should cause any interference with the environment or amenity of the area by reason of the emission of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, wastewater, waste products, grit, sediment, oil, or otherwise, or cause hazards likely in the opinion of the administering authority to cause undue disturbance or annoyance to persons or affect property no connected with the use.

#### **FOOD ACT**

5. All operators of the approved use will be required to comply with the *Food Act 2006* and Council's minimum requirements for food premises. All necessary approvals should be obtained from the Environment, regulatory, and public health section of Council.

Prior to the commence ment of the use and then to be maintained

#### Note:

For further information about these requirements please contact Council's Environmental health services section on 1300 883 699.

#### ABORIGINAL CULTURAL HERITAGE

6. All development should proceed in accordance with the Duty of care guidelines under the *Aboriginal Cultural Heritage Act 2003*. Penalties may apply where duty of care under that act has been breached.

At all times

#### **WATER AND SEWERAGE**

7. In order for agreed Council work to be performed on existing live water and sewer infrastructure:

At all times

- a. ensure a detailed design proposal is submitted to the Assessment Manager, marked 'For construction'
- complete a Notice to Service Provider application at <a href="https://www.bundaberg.qld.gov.au/water-sewer-connections">https://www.bundaberg.qld.gov.au/water-sewer-connections</a>
- c. pay the applicable lodgment fee
- d. if necessary, a quote will be prepared by Council's Water Service section once the detailed design proposal is approved
- e. follow instructions provided with the quotation and pay the quoted fee

Meeting held: 21 December 2021

	Note: The Notice to Service Provider application can cater for both water and sewer connection requirements in the one application. The applicable lodgment fee will be adjusted at the time of lodgment according to the features requested.			
8.	Connection to water or sewer infrastructure is subject to further approvals. For further information about these requirements, please contact Council's Water Services section on 1300 883 699.  No plumbing and drainage works are to commence prior to the issuing of the Plumbing and Drainage Approval by the Council.	Prior to commence ment of the use		
SIGNAGE				
9.	All signage must comply with the applicable acceptable outcomes contained in the Planning Scheme unless a valid operational works approval is obtained.	At all times		
RATE	RATES AND CHARGES			
10.	In accordance with the <i>Planning Act 2016</i> , all rates, charges, or any expenses being a charge over the subject land under any Act must be paid prior to the Plan of Subdivision being endorsed by the Assessment Manager.	Prior to the endorsemen t of the survey plan		

# PART 2—CONCURRENCE AGENCY CONDITIONS

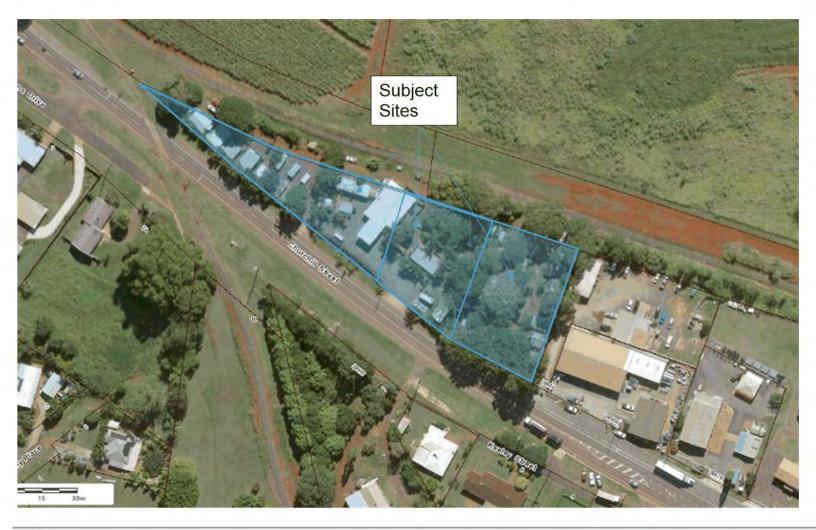
Department of State Development, Infrastructure, Local Government & Planning, by letter dated 12 October 2021 (copy letter attached for information).

# **Locality Plan**



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# Site Plan

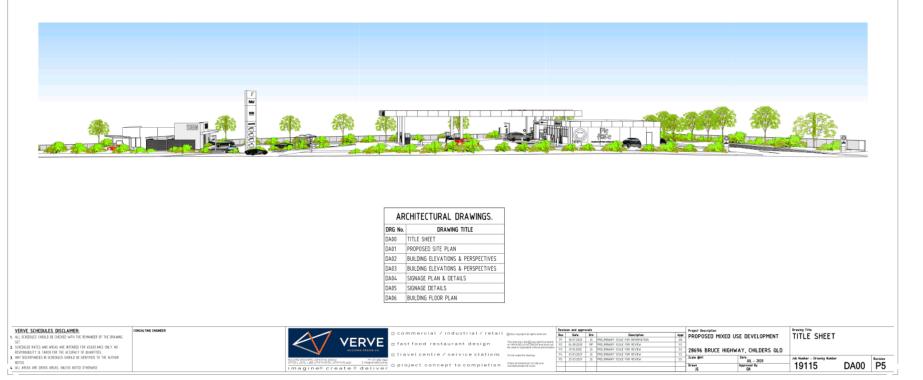


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# ARCHITECTURAL DRAWINGS DEVELOPMENT APPLICATION

PROPOSED MIXED USE DEVELOPMENT 28696 BRUCE HIGHWAY, CHILDERS, QLD.

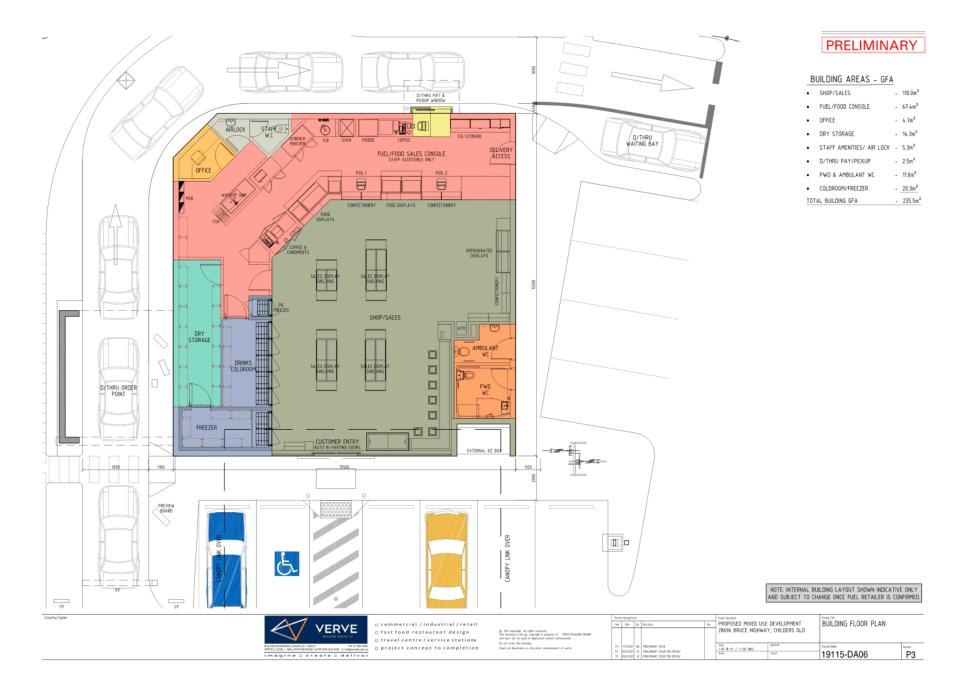


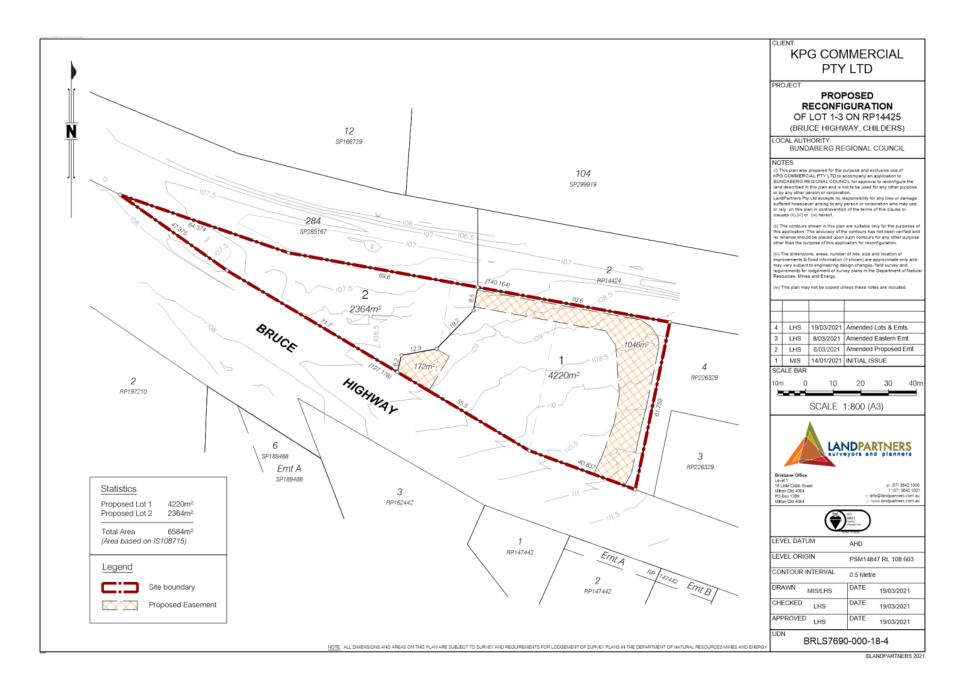




### **PRELIMINARY**









Our reference: 2104-22124 SRA Your reference: 525.2021.23.1 Applicant reference: 1620008

12 October 2021

The Chief Executive Officer Bundaberg Regional Council PO Box 3130 BUNDABERG QLD 4670

development@bundaberg.qld.gov.au

Attention: Mr Scott Irwin

Dear Mr Irwin

# SARA Response – Bruce Highway and 28696 Bruce Highway, CHILDERS (Lots 1, 2 & 3 on RP14425)

(Given under Section 56 of the Planning Act 2016)

The development application described below was confirmed as being properly referred to the State Assessment and Referral Agency (SARA) on 27 April 2021.

#### Response

Outcome: Referral Agency Response under Section 56(1)(b) of the Planning

Act 2016 (with conditions)

Date of response: 12 October 2021

Conditions: The approval is subject to the conditions in **Attachment 1** 

Advice: Advice to the applicant is in Attachment 2

Reasons: The reasons for the referral agency response are in Attachment 3

#### **Development Details**

Description: Development Permit for Material Change of Use – Service

Station and Food and Drink Outlet

Development Permit for Reconfiguring a Lot – 3 Lots into 2

Lots and access easements

Wide Bay Burnett regional office Level 1, 7 Takalvan Street, Bundaberg PO Box 979, Bundaberg QLD 4670

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2104-22124 SRA

SARA role: Referral agency

SARA triggers: Schedule 10, Part 9, Division 4, Subdivision 2, Table 1, Item 1-

Reconfiguring a lot near a State transport corridor (Planning

Regulation 2017)

Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1– Material change of use of premises near a State transport corridor

(Planning Regulation 2017)

SARA reference: 2104-22124 SRA

Assessment Manager: Bundaberg Regional Council

Street address: Bruce Highway and 28696 Bruce Highway, CHILDERS

Real property description: Lots 1, 2 and 3 on RP14425

Applicant name: KPG Nominees (No. 32) Pty Ltd

Applicant contact details: C/- Place Design Group

PO Box 1027

SOUTHPORT BC QLD 4215 madison.r@placedesigngroup.com

State-controlled road access permit:

This referral included an application for a road access location, under Section 62(A) of the *Transport Infrastructure* 

Act 1994.

Below are the details of this decision:

• Approved - with conditions

TMR21-032770Date: 11 October 2021

#### Representations

An applicant may make representations to a concurrence agency, at any time before the application is decided, about changing a matter in the referral agency response (section 30 of the Development Assessment Rules).

Copies of the relevant provisions are in Attachment 4.

A copy of this response has been sent to the applicant for their information.

State Assessment and Referral Agency (SARA)

Page 2 of 9

2104-22124 SRA

For further information please contact Peter Mulcahy, Principal Planning Officer, on (07) 4331 5605 or via email WBBSARA@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely

Manager, Planning – Wide Bay Burnett

Attachment 1 – Referral agency conditions
Attachment 2 – Advice to the applicant
Attachment 3 – Reasons for referral agency response
Attachment 4 – Representations about a referral agency response
Attachment 5 – Approved plans and specifications

KPG Nominees (No. 32) Pty Ltd

C/- Place Design Group

madison.r@placedesigngroup.com

Department of Transport and Main Roads Wide.Bay.Burnett.IDAS@tmr.qld.gov.au

State Assessment and Referral Agency (SARA)

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2104-22124 SRA

Attachment 1—Referral agency conditions

(Under Section 56(1)(b)(i) of the *Planning Act 2016* the following conditions must be attached to any development approval relating to this application) (Copies of the plans and specifications referenced below are found at Attachment 5)

No.	Conditions	Condition timing				
Development Permit for Reconfiguring a Lot – 3 Lots into 2 Lots and Access Easements						
Chief E Departn which t	le 10, Part 9, Division 4, Subdivision 2, Table 1, Item 1 of the Planning executive administering the <i>Planning Act 2016</i> nominates the Dinent of Transport and Main Roads to be the enforcement authority fhis development approval relates for the administration and enfort to the following condition(s):	rector-General of the for the development to				
1.	The development must be carried out generally in accordance with the following plan:  i) Proposed Reconfiguration of Lot 1-3 on RP14425, prepared by LandPartners, reference: BRLS7690-000-18-4, dated 19 March 2021 inclusive of easements to facilitate access.	Prior to submitting the Plan of Survey to the local government for approval.				
2.	(a) The applicant must register reciprocal access easements on the titles of proposed Lots 1 and 2 as shown on drawing titled <i>Proposed Site Plan</i> prepared by Verve dated 16 August 2021, reference 19115-DA01 (Revision P10) as amended in red by the SARA on 12 October 2021.	(a) At the time of Survey Plan registration.				
	(b) The applicant must provide to the District Director (Wide Bay Burnett) Department of Transport and Main Roads, Locked Bag 486, Bundaberg QLD or by e-mail to Wide.Bay.Burnett.IDAS@tmr.qld.gov.au a copy of Registration Confirmation Statement/s and easement registration dealing number/s as evidence of the registration of the easement/s referred to in part (a) of this condition.	(b) Within 20 business days of registration of the easements.				
Develo	pment Permit for Material Change of Use – Service Station and Fo	od and Drink Outlet				
Chief E Departn which t relating	le 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1 of the Planning Executive administering the <i>Planning Act 2016</i> nominates the Dinent of Transport and Main Roads to be the enforcement authority fhis development approval relates for the administration and enfort to the following condition(s):	rector-General of the for the development to cement of any matter				
3.	The Commercial Crossovers, Auxiliary left turn treatment, cycle lane and No Entry signage must be provided generally in accordance with the following plan:  - Proposed Site Plan prepared by Verve dated 16 August 2021, reference 19115-DA01 (Revision P10) as amended in red by SARA on 12 October 2021	Prior to the commencement of use and to be maintained at all times.				
4.	(a) The stormwater management of the proposed development must be undertaken generally in accordance with the <i>Stormwater Management Plan</i> prepared by Kehoe Meyers Consulting Engineers dated 24 March 2021, Project No. S20210106, Revision 5.	(a) At all times.				
	(b) Provide certification from a Registered Professional Engineer of Queensland (RPEQ) that the development has been constructed in accordance with part (a) of this condition.	(b) Prior to the commencement of use.				

State Assessment and Referral Agency (SARA)

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5.	The permitted road access locations are to be located in accordance with the drawing titled <i>Proposed Site Plan</i> prepared by Verve dated 16 August 2021, reference 19115-DA01 (Revision P10) as amended in red by SARA on 12 October 2021.	commencement of
6.	Road access works must be provided at Permitted Road Access Location 1 comprising:  a) A 75 metre Auxiliary left turn treatment (AUL) and cycle lane treatment must be provided in accordance with All Movements Site Access Arrangement, prepared by TTM, Drawing No. 20BRT0073-14 (Revision A) Sheet 2 of 3, dated 18 August 2021. Lane widths are to lip of kerb and channel, as per Austroads Guide to Road Design Part 4A section 6.5.1 as accepted in the Department of Transport and Main Roads' Road Planning and Design Manual 2nd edition, Part 4A.  b) A painted centre median in accordance with All Movements Site Access Arrangement, prepared by TTM, Drawing No. 20BRT0073-14 (Revision A) Sheet 1 of 3, dated 18 August 2021 as amended in red by SARA on 12 October 2021. c) Provide a crossover of sufficient width to cater to the largest design vehicle, which is identified as a 26 metre B-Double. d) Erection of 'No Entry' signage (R2-4) on both sides of Permitted road access location 1 facing north in accordance with the Department of Transport and Main Roads' Manual of Uniform Traffic Control Devices (MUTCD). e) The road access works must be constructed in accordance with the Department of Transport and Main Roads' Road Planning and Design Manual 2nd Edition, standard drawings and specification.	
7.	<ul> <li>Road access works must be provided at Permitted Road Access Location 2 comprising: <ul> <li>a) An access of sufficient width to cater to the largest design vehicle, which is identified as a 26 metre B-Double.</li> <li>b) Erection of 'No Entry' signage (R2-4) on both sides of Permitted road access location 2 facing south in accordance with the Department of Transport and Main roads' Manual of Uniform Traffic Control Devices (MUTCD).</li> <li>c) The road access works must be constructed in accordance with the Department of Transport and Main Roads' Road Planning and Design Manual 2nd edition, standard drawings and specification.</li> </ul> </li> </ul>	commencement of use.
	<ul> <li>d) Relocate the electricity pole – solar iv. Identified on Proposed Site Plan prepared by Verve dated 16 August 2021, reference 19115-DA01 (Revision P10) as amended in red by SARA on 12 October 2021 clear of the vehicle access.</li> <li>e) Relocate the heavy vehicle counter located at the proposed exit location to a new location clear of the access.</li> <li>f) Removal all redundant road access works and reinstate new kerb and channel and verge, in accordance with Bundaberg Regional Council requirements.</li> </ul>	

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#### Attachment 2—Advice to the applicant

#### General advice

 Terms and phrases used in this document are defined in the *Planning Act 2016* its regulation or the State Development Assessment Provisions (SDAP) v2.6. If a word remains undefined it has its ordinary meaning.

#### Access arrangements to/from the state-controlled road

 In accordance with Section 67(2) of the *Transport Infrastructure Act 1994* (TIA) there is no guarantee of the continuation of road access arrangements, as this depends on future traffic safety and efficiency circumstances.

In addition to the statements above right turns into and out from the site are available under the decision about access given by the Department of Transport and Main Roads under Section 62 of the TIA (Permitted Road Access Location). Road users are permitted to travel within and turn across the painted median.

The Department of Transport and Main Roads will monitor operation of the access. Under Section 67(2) of the TIA the Department of Transport and Main Roads reserves the right to restrict or change access arrangements in the future to address any emerging road safety issues including limitations on right turns into and/or out from the site.

#### Advertising devices

 Advertising devices to be placed on the subject site which will be visible from the from the state-controlled roads should be in accordance with the Department of Transport and Main Roads Roadside Advertising Manual 2<sup>nd</sup> Edition.

Where advertising devices are not in accordance with the Department of Transport and Main Roads Roadside Advertising Manual 2<sup>nd</sup> Edition, and are considered to be a hazard or distraction to drivers, the Department of Transport and Main Roads may exercise powers under the *Transport Infrastructure Act 1994* to have the signage modified or removed. Any such action required will be at the expense of the landowner or occupier.

#### Further development permits required (road works approval)

 Under Section 33 of the Transport Infrastructure Act 1994, written approval is required from the Department of Transport and Main Roads to carry out road works on a state-controlled road.

Please contact the Department of Transport and Main Roads on (07) 4154 0200 or e-mail <a href="Wide.Bay.Burnett.IDAS@tmr.qld.gov.au">Wide.Bay.Burnett.IDAS@tmr.qld.gov.au</a> to make an application for road works approval. This approval must be obtained prior to commencing any works on the state-controlled road reserve. The approval process may require the approval of engineering designs for the proposed works, certified by a Registered Professional Engineer of Queensland (RPEQ).

The road works approval process takes time – please contact the Department of Transport and Main Roads as soon as possible to ensure that gaining approval does not delay construction (DTMR Reference: TMR21-32770).

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#### Attachment 3—Reasons for referral agency response

(Given under Section 56(7) of the Planning Act 2016)

#### The reasons for the SARA decision are:

The proposed development complies with the assessment benchmarks and purpose statement within State Code 1: Development in a state-controlled road environment of the State Development Assessment Provisions, as the proposed development is:

- not considered to result in safety and efficiency impacts on the state-controlled road network
- not considered to result in a worsening of the operating performance of state-controlled roads
- not considered to compromise the state's ability to maintain and operate state-controlled roads
- not considered to result in adverse stormwater impacts on the state-controlled road

Conditions have been applied to ensure compliance with State Code 1 including where applicable.

#### Material used in the assessment of the application:

- The development application material
- Planning Act 2016.
- · Planning Regulation 2017.
- The State Development Assessment Provisions (Version 2.6).
- The Development Assessment Rules (DA Rules).
- SARA DA Mapping system.
- Human Rights Act 2019.

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## Attachment 4—Representations about a referral agency response

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## Attachment 5—Approved plans and specifications

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## Development Assessment Rules—Representations about a referral agency response

The following provisions are those set out in sections 28 and 30 of the Development Assessment Rules¹ regarding representations about a referral agency response

## Part 6: Changes to the application and referral agency responses

#### 28 Concurrence agency changes its response or gives a late response

- 28.1. Despite part 2, a concurrence agency may, after its referral agency assessment period and any further period agreed ends, change its referral agency response or give a late referral agency response before the application is decided, subject to section 28.2 and 28.3.
- 28.2. A concurrence agency may change its referral agency response at any time before the application is decided if—
  - (a) the change is in response to a change which the assessment manager is satisfied is a change under section 26.1; or
  - (b) the Minister has given the concurrence agency a direction under section 99 of the Act; or
  - (c) the applicant has given written agreement to the change to the referral agency response.<sup>2</sup>
- 28.3. A concurrence agency may give a late referral agency response before the application is decided, if the applicant has given written agreement to the late referral agency response.
- 28.4. If a concurrence agency proposes to change its referral agency response under section 28.2(a), the concurrence agency must—
  - (a) give notice of its intention to change its referral agency response to the assessment manager and a copy to the applicant within 5 days of receiving notice of the change under section 25.1;
     and
  - (b) the concurrence agency has 10 days from the day of giving notice under paragraph (a), or a further period agreed between the applicant and the concurrence agency, to give an amended referral agency response to the assessment manager and a copy to the applicant.

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Pursuant to Section 68 of the Planning Act 2016

In the instance an applicant has made representations to the concurrence agency under section 30, and the concurrence agency agrees to make the change included in the representations, section 28.2(c) is taken to have been satisfied.

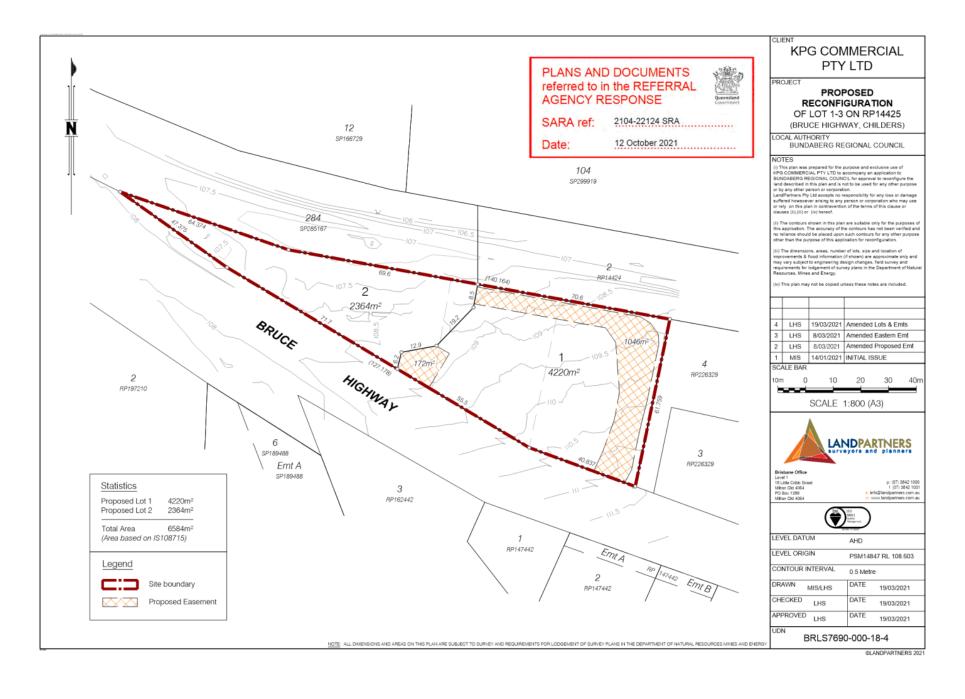
#### Part 7: Miscellaneous

#### 30 Representations about a referral agency response

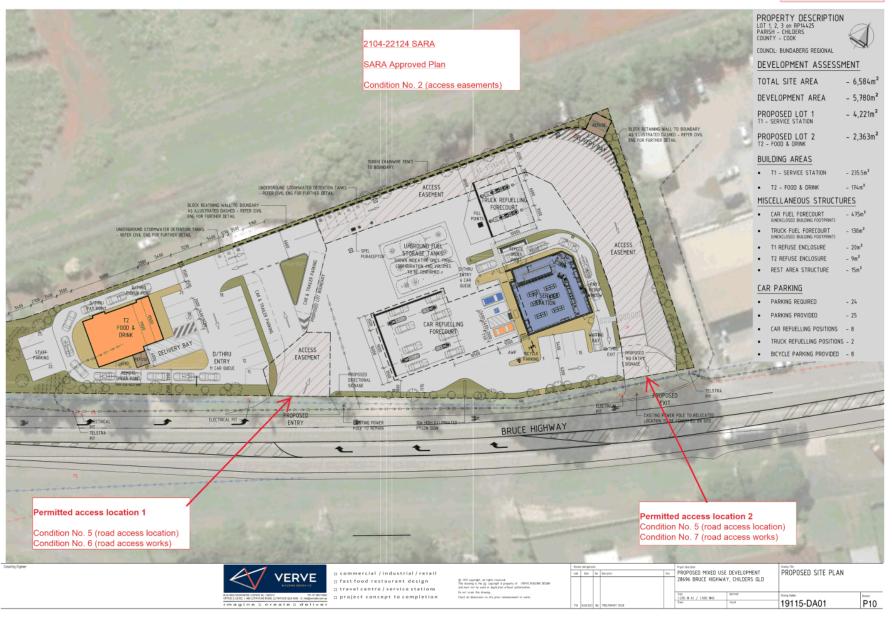
30.1. An applicant may make representations to a concurrence agency at any time before the application is decided, about changing a matter in the referral agency response.3

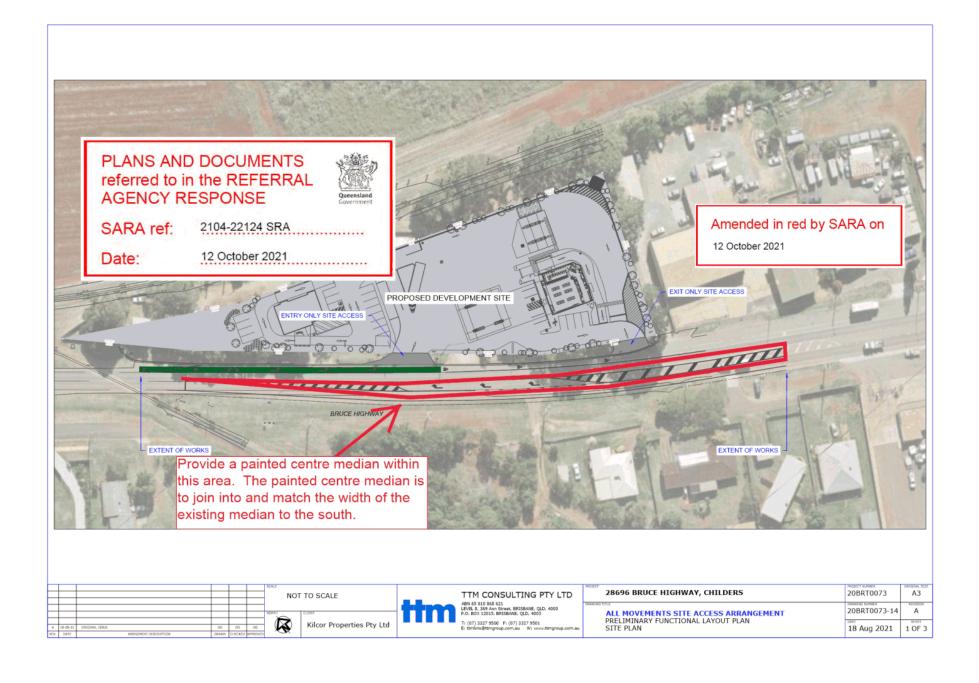
Page 2 of 2

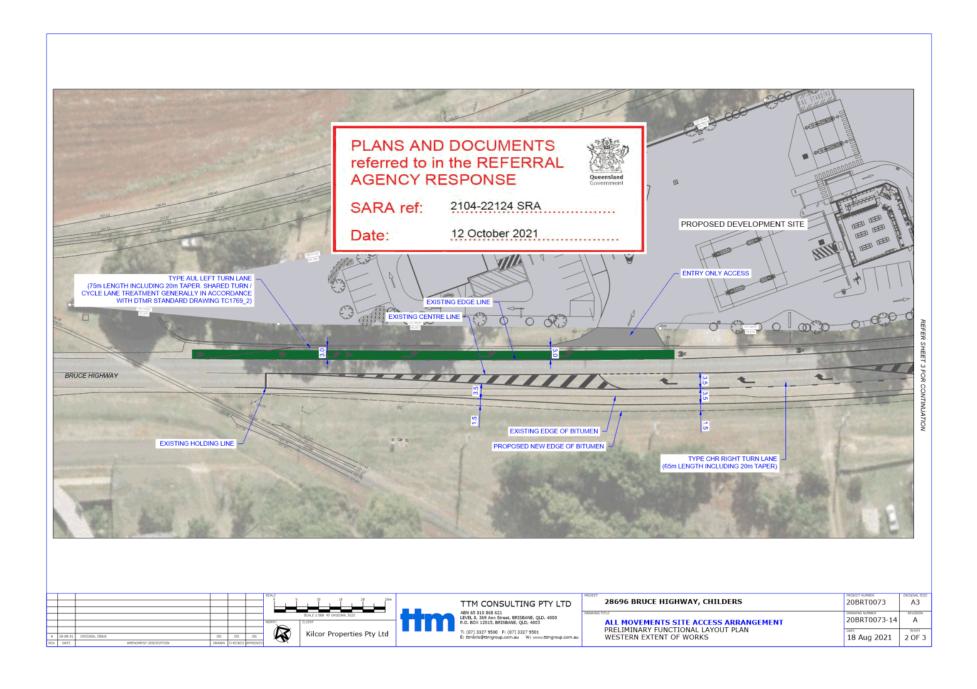
An applicant may elect, under section 32, to stop the assessment manager's decision period in which to take this action. If a concurrence agency wishes to amend their response in relation to representations made under this section, they must do so in accordance with section 28.



### **PRELIMINARY**







Our ref TMR21-032770 Your ref Enquiries Andrea McPherson



Department of
Transport and Main Roads

11 October 2021

## Amended Decision Notice – Permitted Road Access Location (s62(1) Transport Infrastructure Act 1994)

This is not an authorisation to commence work on a state-controlled road<sup>1</sup>

Development application reference number 525.2021.23.1, lodged with Bundaberg Regional Council involves constructing or changing a vehicular access between Lot 1RP14425, 2RP14425, 3RP14425, the land the subject of the application, and the Bruce Highway (a state-controlled road). This decision supersedes any other s62 decision issued for this use.

In accordance with section 62A(2) of the *Transport Infrastructure Act 1994* (TIA), this development application is also taken to be an application for a decision under section 62(1) of TIA.

Applicant Details

Name and address Kpg Nominees (No. 32) Pty Ltd

PO Box 1027

SOUTHPORT BC QLD 4215

**Application Details** 

Address of Property 28696 Bruce Highway, CHILDERS QLD 4660

Real Property Description 1RP14425, 2RP14425, 3RP14425

Aspect/s of Development Material Change of Use for Service Station and Food and Drink

Outlet, 3 Lots into 2 Lots and access easements

#### Decision (given under section 67 of TIA)

It has been decided to approve the application, subject to the following conditions:

No.	Conditions of Approval	Condition Timing
1	The permitted road access locations are to be in accordance with drawing titled Proposed Site Plan prepared by Verve dated 16.08.2021 reference 19115-DA01 (rev. P10) as amended in red by the Department of Transport and Main Roads on the 8 September 2021.	Prior to the commencement of use.
2	Use of permitted road access locations is permitted for the following movements:  a) Permitted road access location 1 – left and right turn in	At all times

Please refer to the further approvals required under the heading 'Further approvals'

Program Delivery and Operations Southern Queensland Region 23 Quay Street Bundaberg QLD 4670 Locked Bag 486 Bundaberg DC QLD 4670 Telephone +61 7 (07) 4154 0208
Website www.tmr.qld.gov.au
Email WBB.IDAS@tmr.qld.gov.au

ABN: 39 407 690 291

No.	Condi	tions	of Approval	Condition Timing
	b)	Pern	ements only; and nitted road access location 2 – left and right turn out ements only.	
3	<ul> <li>a) Road access works must be provided at Permitted road access location 1 comprising:</li> </ul>			Prior to commencement of use
		i.	A 75 metre Auxiliary left turn treatment (AUL) and cycle lane treatment must be provided in accordance with the All movements site access arrangement, prepared by TTM, drawing no. 20BRT0073-14 (rev.A) sheet 2 of 3, dated 18 August 2021. Lane widths are to lip of kerb and channel, as per Austroads Guide to Road Design Part 4A section 6.5.1 as accepted in the Department of Transport and Main Roads' Road Planning and Design Manual 2 <sup>nd</sup> edition, Part 4A.	
		ii.	A painted centre median in accordance with the All movements site access arrangement prepared by TTM, drawing no. 20BRT0073-14 (rev.A), sheet 1 of 3 as amended in red by the Department of Transport and Main Roads on the 8 September 2021.	
	<ol> <li>Provide a crossover of sufficient width to cater to the largest design vehicle, which is identified as a 26 metre B-Double.</li> </ol>		largest design vehicle, which is identified as a 26	
		iv.	Erection of 'No Entry' signage (R2-4) on both sides of Permitted road access location 1 facing north in accordance with the Department of Transport and Main Roads' Manual of Uniform Traffic Control Devices (MUTCD).	
		V.	The road access works must be constructed in accordance with the Department of Transport and Main Roads' Road Planning and Design Manual 2 <sup>nd</sup> edition, standard drawings and specification.	
	b) Road access works must be provided at Permitted road access location 2 comprising:			
		i.	An access of sufficient width to cater to the largest design vehicle, which is identified as a 26 metre B-Double.	
		ii.	Erection of 'No Entry' signage (R2-4) on both sides of Permitted road access location 2 facing south in accordance with the Department of Transport and Main roads' Manual of Uniform Traffic Control Devices (MUTCD).	
		iii.	The road access works must be constructed in accordance with the Department of Transport and	

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No.	Conditions of Approval	Condition Timing		
	Main Roads' Road Planning and Design Manual 2 <sup>nd</sup> edition, standard drawings and specification.  iv. Relocate the electricity pole – solar identified on the Proposed Site Plan prepared by Verve dated 16.08.2021 reference 19115-DA01 (rev. P10) as amended by the Department of Transport and Main Roads on the 8 September 2021 to a suitable new location.  v. Relocate the heavy vehicle counter located at the proposed exit location to a suitable new location.  c) Remove all redundant road access works and reinstate new kerb and channel and verge, in accordance with Bundaberg Regional Council requirements.			
4	The road access works located between the sealed road shoulder and the property boundary must be maintained at no cost to the Department of Transport and Main Roads.	At all times.		
5	<ul> <li>a) The applicant must register reciprocal access easements on the titles of proposed lots 1 and 2 as shown on drawing titled Proposed Site Plan prepared by Verve dated 16.08.2021 reference 19115-DA01 (rev. P10) as amended in red by the Department of Transport and Main Roads on the 8 September 2021.</li> <li>b) The applicant must provide to the District Director (Wide Bay Burnett) Department of Transport and Main Roads, Locked Bag 486, Bundaberg Qld or by email to WBB.IDAS@tmr.qld.gov.au a copy of Registration Confirmation Statement/s and easement registration dealing number/s as evidence of the registration of the easement/s referred to in part (a) of this condition.</li> </ul>	(a) At the time of survey plan registration. (b) Within 20 business days of registration of the easements.		
6	Direct access is prohibited between the Bruce Highway and new lots 1 and 2 at any other location other than the permitted road access location described in Condition 1.	At all times.		

#### Reasons for the decision

The reasons for this decision are as follows:

- a) Access between a state-controlled road, Bruce Highway, and adjacent land is managed by the Department of Transport and Main Roads under the *Transport Infrastructure Act 1994* (TIA).
- b) To ensure the development does not adversely impact the safety, function and operational efficiency of the state-controlled road network.
- c) To enable efficient internal circulation and ensure safety of road users on the Bruce Highway through restriction of vehicle movements and types as stated in the conditions.
- d) To ensure the through function and through priority of the Bruce Highway is maintained and is not adversely impacted by the design for access or its operation.

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- e) To facilitate vehicles turning right from the Bruce Highway with an area to prop within while waiting for gaps in southbound through traffic on the Bruce Highway. Australian Road Rules permit vehicle to travel, up to 50metres, and prop within a line-marked median. The median treatment permits right turns into and out from the development without establishing a dedicated right turn lane into private property.
- f) To ensure access works to cater for approved access movements to/from the state-controlled road are constructed.
- ) To ensure that road access works cater for the largest vehicle type anticipated to require access being vehicles up to 26 metre B-double configurations.
- h) To minimise the potential for left turns and right turns out of the western access.
- i) To minimise the potential for left turns and right turns into the eastern access.
- j) To ensure traffic generated by the development up to the largest design vehicle can enter the site without reducing the operational safety or efficiency of the Bruce Highway.
- k) To ensure cyclists are catered for.
- I) To ensure only access locations assessed and supported for the development are used.
- m) To ensure maintenance responsibilities for the private road access works is stated.

Please refer to **Attachment A** for the findings on material questions of fact and the evidence or other material on which those findings were based.

#### Information about the Decision required to be given under section 67(2) of TIA

- There is no guarantee of the continuation of road access arrangements, as this depends on future traffic safety and efficiency circumstances.
- 2. In accordance with section 70 of the TIA, the applicant for the planning application is bound by this decision. A copy of section 70 is attached as **Attachment B**, as required, for information.
- 3. In addition to the statements above right turns into and out from the site are available under this decision. Road users are permitted to travel within and turn across the painted median. The department will monitor operation of the access. Under section 67(2) of the TIA the department reserves the right to restrict or change access arrangements in the future to address any emerging road safety issues including limitations on right turns into and/or out from the site.

#### Further information about the decision

- 1. In accordance with section 67(7) of TIA, this decision notice:
  - a) starts to have effect when the development approval has effect; and
  - b) stops having effect if the development approval lapses or is cancelled; and
  - c) replaces any earlier decision made under section 62(1) in relation to the land.
- 2. In accordance with section 485 of the TIA and section 31 of the *Transport Planning and Coordination Act 1994* (TPCA), a person whose interests are affected by this decision may apply for a review of this decision only within 28 days after notice of the decision was given under the TIA. A copy of the review provisions under TIA and TPCA are attached in **Attachment C** for information.
- 3. In accordance with section 485B of the TIA and section 35 of TPCA a person may appeal against a reviewed decision. The person must have applied to have the decision reviewed

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before an appeal about the decision can be lodged in the Planning and Environment Court. A copy of the Appeal Provisions under TIA and TPCA is attached in **Attachment C** for information.

#### **Further approvals**

The Department of Transport and Main Roads also provides the following information in relation to this approval:

1. Road Access Works Approval Required – Written approval is required from the department to carry out road works that are road access works (including driveways) on a state-controlled road in accordance with section 33 of the TIA. This approval must be obtained prior to commencing any works on the state-controlled road. The approval process may require the approval of engineering designs of the proposed works, certified by a Registered Professional Engineer of Queensland (RPEQ). Please contact the department to make an application.

#### 2. General advice:

a) It is recommended that you contact the Department of Transport and Main Roads through email to <u>Bundaberg.office@tmr.qld.gov.au</u> prior to relocation of the heavy vehicle counter referred to in Condition 2 c) e.

If further information about this approval or any other related query is required, Ms Andrea McPherson, Senior Town Planner should be contacted by email at WBB.IDAS@tmr.qld.gov.au or on (07) 4154 0208.

Yours sincerely

Andrea McPherson
Senior Town Planner

Attachments: Attachment A - Decision evidence and findings

Attachment B - Section 70 of TIA Attachment C - Appeal Provisions

Attachment D - Proposed Site Plan prepared by Verve dated 16.08.2021 reference 19115-DA01 (rev. P10) as amended by the Department of Transport and Main Roads on the 8 September 2021.

Attachment E - All movements site access arrangement, prepared by TTM, drawing no. 20BRT0073-14 (rev.A) sheet 2 of 3 amended by Department of Transport and Main Roads on the 8 September 2021.

Attachment F - All movements site access arrangement, prepared by TTM, drawing no. 20BRT0073-14 (rev.A) sheet 1 of 3 amended by Department of Transport and Main Roads on the 8 September 2021.

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#### Attachment A

#### **Decision Evidence and Findings**

Findings on material questions of fact:

- The objective of the Transport Infrastructure Act 1994(TIA) requires the establishment of a road network that is safe and efficient.
- Section 62 of the Transport Infrastructure Act 1994 allows the Department of Transport and Main Roads (the department) to make decisions about permitted road access locations between particular/adjacent land and a state-controlled road.
- 3. Section 62(1)(b) and (c) of the *Transport Infrastructure Act 1994* allows the department to place restrictions and conditions on the use of a permitted road access locations.
- Section 62(1)(g) of the Transport Infrastructure Act 1994 allows the Department of Transport and Main Roads to decide about road access works being a stated type, standard or extent or be constructed in a stated way.
- 5. To ensure the through function and through priority of the Bruce Highway is maintained and is not adversely impacted by the design for access or its operation.
- 6. Australian Road Rules permit vehicle to travel, up to 50 metres, and prop within a painted median. Provision of a dedicated right turn lane is not necessary to facilitate right turns into and right turns out from the development safely based on likely turning volumes at the site. The painted median area will provide sufficient area for right turning vehicles to slow and store clear of the through carriageway.
- Entry only movements to the new direct access (permitted road access location 1) will enable efficient internal circulation and ensure the operational efficiency and safety of the state-controlled road is maintained.
- 8. Exit only movements to the new direct access (permitted road access location 2) will enable efficient internal circulation and ensure the operational efficiency and safety of the state-controlled road is maintained.
- Erection of 'No Entry" signage (R2-4) at the Permitted access location 1 and 2 accesses will
  regulate internal and external traffic so that access to and from the site is controlled and
  regulation of that movement by police is enabled.
- 10. The proposed Auxiliary left turn treatment is an acceptable treatment that can cater for turn movements generated by the development for a 10-year design horizon from opening.
- 11. The Bruce Highway is an approved B-double route. Information submitted by the applicant indicates that service vehicles are intended to include B-double. The access arrangements must be able to safely cater for the largest design vehicle that is anticipated to access the site.

Evidence or other material on which findings were based:

Title of Evidence /	Prepared by	Date	Reference no.	Version/Issue
Material				
Transport and Parking	Applicant	for lodgement		
Code response				
Survey Plan	Landpartners	10/12/2019	BRLSbrls7690-0	
			00-16-1 Sheets	
			1 - 3	
Stormwater Report	S20210166	March 2021	S2021016	5
Traffic Engineering	TTM	31/03/2021	20	3
Report			BRT0073	

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Prelodgement Advice	State Assessment	23 October 2019	1910-13576SPL	
	Referral Agency			
SDAP Responses	Applicant	for lodgement		
(v2.2)				
Proposed	Landpartners	19/03/2021	BRLS7690-000-	
Reconfiguration Plan			18-4	
Planning Report	Place Design Group	April 2021	1620008	
Title Sheet	Verve	25.03.2021	19115 DA00	P5
Proposed Site Plan	Verve	17.03.2021	19115 DA01	P9
Building Elevations &	Verve	25.03.2021	19115 DA02	P6
Perspectives				
Building Elevations &	Verve	25.03.2021	19115 DA03	P7
Perspectives				
Signage Plans and	Verve	25.03.2021	19115 DA04	P4
Details				
Signage Details	Verve	03.03.2021	19115 DA05	P1
Building Floor Plan	Verve	25.03.2021	19115 DA06	P2
Technical Advice	State Assessment	27 April 2021	2104-22124SRA	
Request	Referral Agency			
Lot Plan Report	State Assessment	22/04/2021	Lot 3RP14425,	
	Referral Agency		2RP14425,	
			1RP14425	
DA Form 1	Applicant	for lodgement	1620008	
Confirmation Notice	Bundaberg Regional	19 April 2021	525.2021.23.1	
	Council	'		
Email: TMR21-03	TTM	7 May 2021	TMR21-032770	
2770		'		
Roads and Maritime	NSW Government	June 2013	13008	
Services: Trip				
Generation Surveys				
Fast Food Outlet				
Summary				
Email: Technical	State Assessment	28 June 2021	2104-22124SRA	
Advice Request	Referral Agency			
(Information Response				
received)				
Letter: Response to	Place Design Group	28 June 2021	1620008	
Information Request				
Traffic Engineering	TTM	25/05/2021	20	4
Report			BRT0073	
Proposal Plans	TTM	26 Mar 2021	20BRT0073-01,	С
			03 -05	
Proposal Plans	TTM	26 Mar 2021	20BRT0073-06	В
Proposal Plans	TTM	26 Mar 2021	20BRT0073-07,	Α
			12	
Proposal Plans	TTM	26 Mar 2021	20BRT0073-12	Α
			Sheet 1-3	
Trip Generation and	Bitzios Consulting	13 September	P2414.001	002
Parking Demand		2016		
Surveys of Fast Food		1		

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Roads and Maritime				
Services NSW.				
SARA Advice Notice	State Assessment	16 July 2021	2104-22124 SRA	
OAIVI Advice Notice	Referral Agency	10 duly 2021	2104-22124 0101	
Email: 28696 Bruce	State Assessment	23 July 2021	2104-22124 SRA	
Highway Childers	Referral Agency	20 0019 2021	2104 22124 0101	
amended traffic plan	r (ciciral / (gollo)			
(2104-22426 SRA)				
Email: Proposed	State Assessment	4 August 2021	2104-22124 SRA	
MCU/RAL at 28696	Referral Agency	4 / lugust 2021	2104 22124 0101	
Bruce Highway,	recicitar/igoney			
Childers				
(TMR21-032770)				
Email to SARA:	Department of	6 August 2021	TMR21-032770	
Proposed MCU/RAL at	Transport and Main	0 August 2021	TWIK21-032770	
28696 Bruce Highway -	Roads			
TMR21-032770	Roads			
(2104-22124SRA)				
Email: Applicant	Place Design Group	20 Aug 2021	2104-22124SRA	
response 28696 Bruce	Place Design Group	20 Aug 2021	2104-221245KA	
Highway, Childers				
(2104-22124 SRA)	TTM	19/08/21	20BRT0073	<i>-</i>
Traffic Engineering	I I IVI	19/08/21	20BR10073	5
Report	Mana	40 A	40445 DA04	P10
Proposed Site Plan	Verve	16 August 2021	19115-DA01	
Extension to timeframe	Queensland Government	30 August 2021	2104-22124SRA	
Road Planning and	Department of	2013		2 <sup>nd</sup> edition
Design Manual	Transport and Main			
	Roads			
Road Planning and	Department of	September 2020		2 <sup>nd</sup> edition
Design Manual	Transport and Main			
Edition 2: Volume 3	Roads			
Supplement to				
Austroads Guide to				
Road Design				
Part 4A: Unsignalised				
and Signalised				
Intersections.				
Guide to Traffic	Austroads	2020		
Management Part 2:				
Traffic Theory Concepts				
Guide to Road Design	Austroads	2017		
Part 4A: Unsignalised				
and Signalised				
		1		
Intersections				
Manual of Uniform	Department of	July 2021		
	Department of Transport and Main	July 2021		

#### Attachment B

#### Section 70 of TIA

Transport Infrastructure Act 1994
Chapter 6 Road transport infrastructure
Part 5 Management of State-controlled roads

### 70 Offences about road access locations and road access works, relating to decisions under s 62(1)

- (1) This section applies to a person who has been given notice under section 67 or 68 of a decision under section 62(1) about access between a State-controlled road and adjacent land.
- (2) A person to whom this section applies must not—
  - (a) obtain access between the land and the State-controlled road other than at a location at which access is permitted under the decision; or
  - (b) obtain access using road access works to which the decision applies, if the works do not comply with the decision and the noncompliance was within the person's control; or
  - (c) obtain any other access between the land and the road contrary to the decision; or
  - (d) use a road access location or road access works contrary to the decision; or
  - (e) contravene a condition stated in the decision; or
  - (f) permit another person to do a thing mentioned in paragraphs (a) to (e); or
  - (g) fail to remove road access works in accordance with the decision.

Maximum penalty—200 penalty units.

(3) However, subsection (2)(g) does not apply to a person who is bound by the decision because of section 68.

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#### Attachment C

#### **Appeal Provisions**

Transport Infrastructure Act 1994 Chapter 16 General provisions

#### 485 Internal review of decisions

- (1) A person whose interests are affected by a decision described in schedule 3 (the *original decision*) may ask the chief executive to review the decision.
- (2) The person is entitled to receive a statement of reasons for the original decision whether or not the provision under which the decision is made requires that the person be given a statement of reasons for the decision.
- (3) The Transport Planning and Coordination Act 1994, part 5, division 2—
  - (a) applies to the review; and
  - (b) provides—
    - (i) for the procedure for applying for the review and the way it is to be carried out;
    - (ii) that the person may apply to QCAT to have the original decision stayed.

#### 485B Appeals against decisions

- (1) This section applies in relation to an original decision if a court (the appeal court) is stated in schedule 3 for the decision.
- (2) If the reviewed decision is not the decision sought by the applicant for the review, the applicant may appeal against the reviewed decision to the appeal court.
- (3) The Transport Planning and Coordination Act 1994, part 5, division 3—
  - (a) applies to the appeal; and
  - (b) provides—
    - (i) for the procedure for the appeal and the way it is to be disposed of; and
    - that the person may apply to the appeal court to have the original decision stayed.
- (4) Subsection (5) applies if-
  - (a) a person appeals to the Planning and Environment Court against a decision under section 62(1) on a planning application that is taken, under section 62A(2), to also be an application for a decision under section 62(1); and

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- (b) a person appeals to the Planning and Environment Court against a decision under the Planning Act on the planning application.
- (5) The court may order—
  - (a) the appeals to be heard together or 1 immediately after the other; or
  - (b) 1 appeal to be stayed until the other is decided.
- (6) Subsection (5) applies even if all or any of the parties to the appeals are not the same.
- (7) In this section—

original decision means a decision described in schedule 3.

reviewed decision means the chief executive's decision on a review under section 485.

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Transport Planning and Coordination Act 1994
Part 5, Division 2 – Review of Original Decisions

#### 31 Applying for review

- (1) A person may apply for a review of an original decision only within 28 days after notice of the original decision was given to the person under the transport Act.
- (2) However, if-
  - (a) the notice did not state the reasons for the original decision; and
  - (b) the person asked for a statement of the reasons within the 28 days mentioned in subsection (1)

the person may apply within 28 days after the person is given the statement of the reasons.

- (3) In addition, the chief executive may extend the period for applying.
- (4) An application must be written and state in detail the grounds on which the person wants the original decision to be reviewed.

#### 32 Stay of operation of original decision

- (1) If a person applies for review of an original decision, the person may immediately apply for a stay of the decision to the relevant entity.
- (2) The relevant entity may stay the original decision to secure the effectiveness of the review and any later appeal to or review by the relevant entity.
- (3) In setting the time for hearing the application, the relevant entity must allow at least 3 business days between the day the application is filed with it and the hearing day.
- (4) The chief executive is a party to the application.
- (5) The person must serve a copy of the application showing the time and place of the hearing and any document filed in the relevant entity with it on the chief executive at least 2 business days before the hearing.
- (6) The stay—
  - (a) may be given on conditions the relevant entity considers appropriate; and
  - (b) operates for the period specified by the relevant entity; and
  - (c) may be revoked or amended by the relevant entity.
- (7) The period of a stay under this section must not extend past the time when the chief executive reviews the original decision and any later period the relevant entity allows the applicant to enable the applicant to appeal against the decision or apply for a review of the decision as provided under the QCAT Act.

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(8) The making of an application does not affect the original decision, or the carrying out of the original decision, unless it is stayed.

(9) In this section-

#### relevant entity means—

- (a) if the reviewed decision may be reviewed by QCAT—QCAT; or
- (b) if the reviewed decision may be appealed to the appeal court—the appeal court.

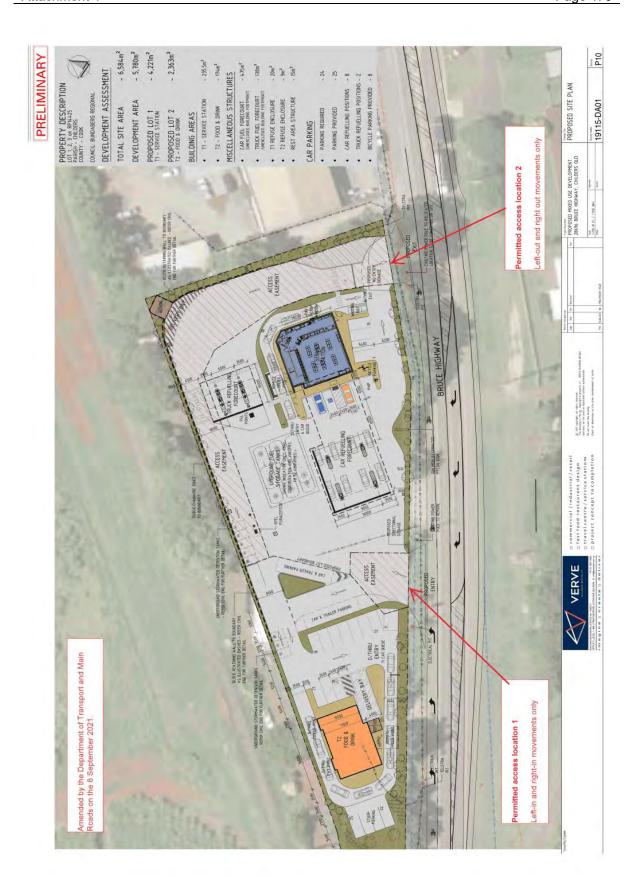
#### 35 Time for making appeals

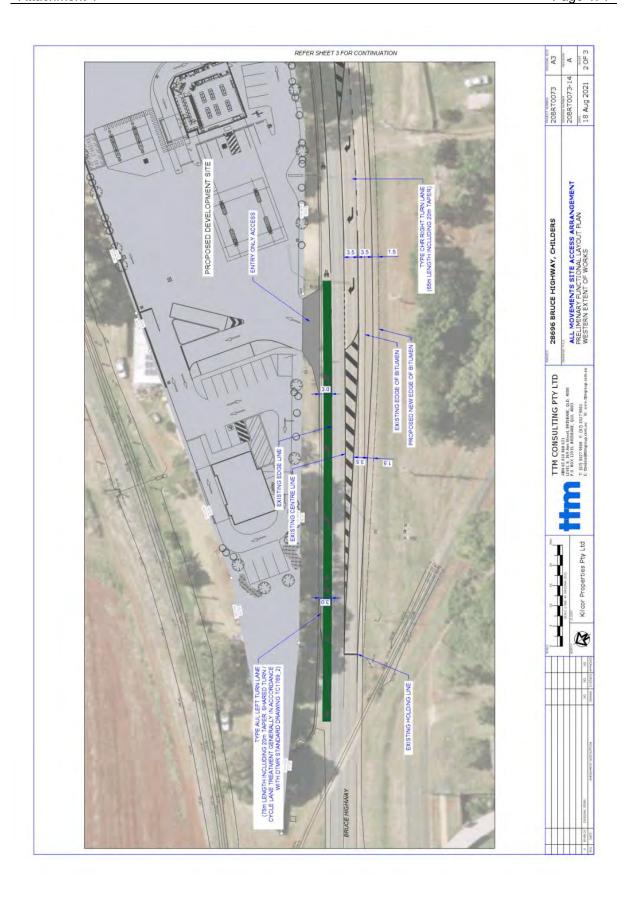
- (1) A person may appeal against a reviewed decision only within—
  - (a) if a decision notice is given to the person—28 days after the notice was given to the person; or
  - (b) if the chief executive is taken to have confirmed the decision under section 34(5)—56 days after the application was made.
- (2) However, if-
  - (a) the decision notice did not state the reasons for the decision; and
  - (b) the person asked for a statement of the reasons within the 28 days mentioned in subsection (1)(a);

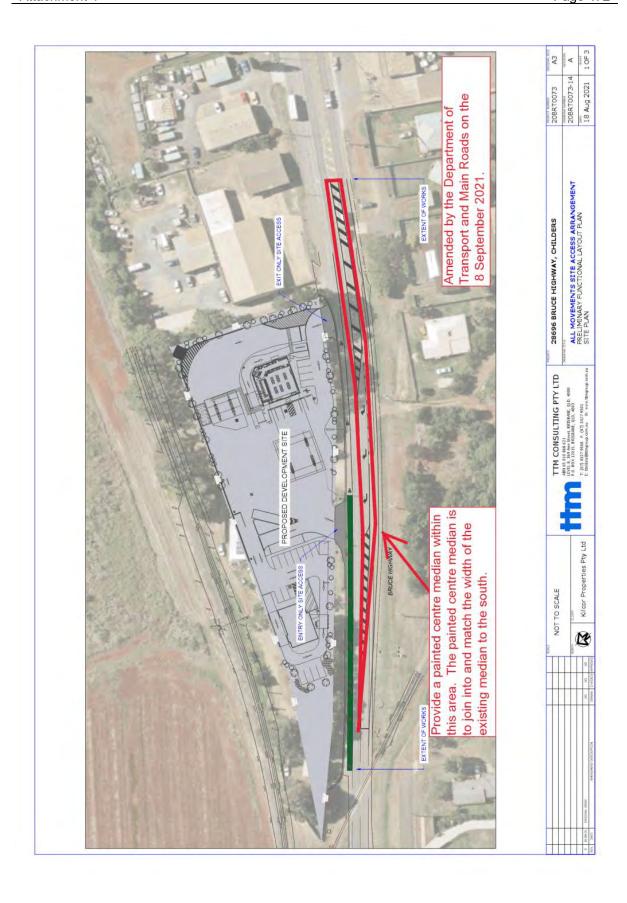
the person may apply within 28 days after the person is given a statement of the reasons.

(3) Also, the appeal court may extend the period for appealing.

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## **CONCEPTUAL STORMWATER MANAGEMENT PLAN**

## PROPOSED SERVICE STATION

28696 BRUCE HIGHWAY CHILDERS, QLD 4660

**KILCOR REAL ESTATE INVESTMENT MANAGEMENT** 

PLANS AND DOCUMENTS referred to in the REFERRAL AGENCY RESPONSE



SARA ref:

2104-22124 SRA

Date:

12 October 2021

Issue 5 - March 2021 Project No.: \$2021016

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PROJECT NO: S20210106

CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

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2	03/08/2020	For MCU Approval	DJG	PJS	GRP		
3	23/02/2021	For Approval	DJG	PJS	GRP		
4	09/03/2021	For Approval	DJG	PJS	GRP		
5	24/03/2021	For Approval	DJG	PJS	GRP		

Certification

Author/s: David Gegg

Approver: Grant Pendlebury RPEQ No.: 5356 Signature: Date: 24/03/2021

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ISSUE 5, MARCH 2021

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

## 1 INTRODUCTION & EXECUTIVE SUMMARY

Kehoe Myers Consulting Engineers has been engaged by Kilcor Real Estate Investment Management to prepare a Conceptual Stormwater Management Plan (CSWMP) as part of the design documentation in support of the Reconfiguring a Lot and Material Change of Use combined Development Application with the Bundaberg Regional Council (*BRC*) and Department of Transport and Main Roads (*DTMR*), for a New Service Station and Fash Food Outlet on a former Service Station/Van Park site at 28696 Bruce Highway, in Childers, Queensland.

This report seeks to address onsite stormwater management for the proposed development, and the following items will be addressed in this report:

- Hydraulic analysis to assess the required mitigation to ensure a case of 'non-worsening' or not incurring an actionable nuisance is achieved.
- Pollutant modelling to determine the required treatment train required to comply with BRC's pollutant reduction policy and the State Planning Policy (SPP).

From the below analysis it was determined that stormwater discharge conditions from the staged site can be maintained at or below pre-developed conditions by the provision of detention tanks within the development site for each new allotment. As such it is seen that the proposed development can achieve a case of no 'actionable nuisance' at the lawful points of discharge.

As a result of this analysis, it is then shown that the proposed development complies with the guidelines set by both the BRC and Queensland Urban Drainage Manual (QUDM). The report below details the achievement of these lawful points of discharge requirements.

The proposed development will also result in an increase in the export of gross pollutants, total suspended solids, total nitrogen and total phosphorus from the site and was assessed, in accordance with, the State Planning Policy. By using on-site stormwater quality devices, total pollutant loads can be reduced by the required amounts. The staged development will also be subject to construction phase stormwater quality management.

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

# **2 SITE DESCRIPTION**

The proposed development is located on a 0.66 hectare site located at 28696 Bruce Highway, Childers. The real property description is Lots 1, 2 and 3 on RP14425. A Locality Plan highlighting the proposed development site is shown below.

Refer Figure 1 below for site location with respect to adjoining roads and lots.



Figure 1 Aerial Photograph of the Proposed Development Site (Queensland Globe 2020)

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#### 2.1 EXISTING SITE CONDITIONS

From the detailed survey of the subject allotment by *LandPartners* (Project No. BRLS7690-000-16-1), attached in **Appendix A**, the site is currently seen to be a former Service Station that has been repurposed into a caravan park with existing driveway accesses to the Bruce Highway. The current allotment features numerous buildings and small structures consistent with a caravan park, including an office, cabins and amenities.

A snapshot of the Site survey of the proposed development site is shown below in Figure 2.



Figure 2 Detailed Site Survey (LandPartners Project No. BRLS7690-000-16-1)

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

#### 2.2 PROPOSED DEVELOPMENT

The proposed development layout has been developed in association with the Client and Verve Architects. From this liaison, the proposed two lot commercial development consisting of Stage 1 (Service Station) and Stage 2 (Fast Food Outlet), a development layout was created. With this layout, a preliminary stormwater network design was undertaken.

A snapshot of the proposed Site Layout of the development is shown below in **Figure 3** and a full plan of the proposed site is attached in **Appendix B**.

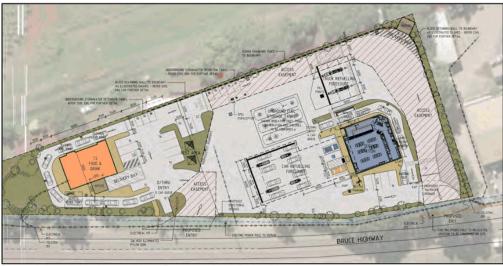


Figure 3 Overall Site Layout (Verve Drawing: 19115-DA01\_P9)

#### 3 HYDROLOGY

To enable the detailed hydraulic analysis of the stormwater management system, the development site has been assessed for both the Pre-developed and Post-development cases. This analysis has been undertaken to assure that the development achieves a case of not incurring an 'actionable nuisance' to any/all downstream properties and assets.

## 3.1 EXISTING SITE INFRASTRUCTURE

From the detailed survey of the subject allotment by *LandPartners* (Project No. BRLS7690-000-16-1), attached in **Appendix A**, the site is currently seen to be a former Service Station that has been repurposed into a caravan park, with driveway accesses to the Bruce Highway. The current allotment features numerous buildings and small structures consistent with a caravan park, including an office, cabins and amenities.

Topographically, the site is seen to fall from the south-eastern boundary to the north-western boundary of the site. The average gradient of the subject allotment is between 2% and 4%.

From the detailed survey, it is seen that all of the existing site currently falls towards the northern fence line then into an open channel that runs parallel to the train line, then into an existing gully pit and pipe system which runs perpendicular to the train line discharging via a headwall on the northern side of the track, as shown below in Error! Reference source not found..

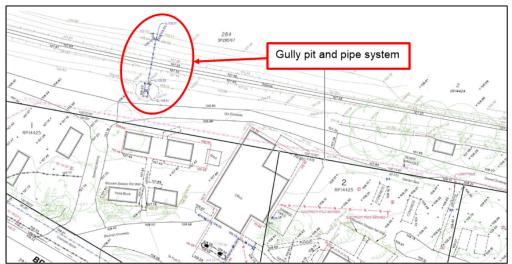


Figure 4 Existing Drainage Layout

#### 3.2 PRE-DEVELOPED CATCHMENTS

The existing catchment area is seen to fall generally north towards the Isis Central Sugar Mill rail line where it is collected by a drainage channel and flows to a gully inlet (Node A) located to the north of the development site.

From this analysis, pre-developed catchments were calculated for the development site. A snapshot of these determined pre-developments catchment is included in **Figure 5** below and a full plan is attached in **Appendix C**.



Figure 5 Pre-Developed Stormwater Catchment Plan (KMCE Drawing: S2021016-SWM01-P2)

From the site assessment all stormwater flows, one existing node of discharge has been identified. This point of discharge has been selected as point of confluence of the existing catchment that can then be analysed against post-development flows. This node of discharge is shown on the attached stormwater catchment plan in **Appendix C** and include:

A. Gully pit, existing channel north of proposed development within rail land

From the detailed assessment of the existing stormwater catchments, the design attributes have been determined and are presented in **Table 1** below.

Table 1 Pre-developed Sub-catchment Properties

Catchment Name	Area	Impervious	Pervious	Impervious	Pervious
Catchment Name	(Ha)	Tc (min)	Tc (min)	C10	C10
A	1.2111	10	10	0.9	0.65

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

## 3.3 POST-DEVELOPED CATCHMENTS

From the proposed development layout, as shown above in **Figure 3** and attached in **Appendix B**, the concept site stormwater network has been determined for the staged site. This proposed network has then been overlaid on the existing site layout to determine the developed network as seen below in Error! Reference source not found. Error! Reference source not found. and attached in **Appendix D**.

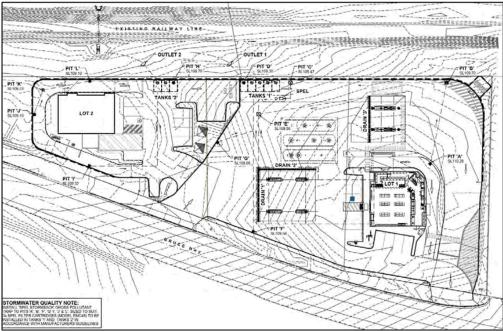


Figure 6 Preliminary Stormwater Drainage Layout (KMCE Drawing: S2021016-PR02-P5)

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From this assessment of the proposed staged development and preliminary stormwater design, post-developed catchments have been determined. These determined catchments are presented in **Figure 7** below and a full plan is attached in **Appendix E**.



Figure 7 Post-Developed Stormwater Catchment Plan (KMCE Drawing: S2021016-SWM02-P4

From the site assessment of all stormwater flows, one existing node of discharge has been identified as detailed in **Section 2.1** above. From the assessment of post-development catchments, it is seen that this discharge point has not changed location. This node of discharge is shown on the attached post-development stormwater catchment plan in **Appendix E** and includes:

A. Gully pit, existing channel north of proposed development in rail land

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

From the detailed assessment of the post-development catchments, the design attributes have been determined and are presented in **Table 2** below.

Table 2 Post-developed Sub-catchment Properties

Catchment Name	Area	Impervious	Pervious	Impervious	Pervious
Catchment Name	(Ha)	Tc (min)	Tc (min)	C10	C10
1	0.6431	10	10	0.9	0.65
2	0.0126	7	7	0.9	0.65
3	0.0031	5	5	0.9	0.65
4	0.0127	5	5	0.9	0.65
5	0.0258	5	5	0.9	0.65
6	0.0867	5	5	0.9	0.65
7	0.0604	5	5	0.9	0.65
8	0.0475	5	5	0.9	0.65
9	0.0795	5	5	0.9	0.65
10	0.0424	5	5	0.9	0.65
11	0.0325	5	5	0.9	0.65
12	0.0259	5	5	0.9	0.65
13	0.0130	5	5	0.9	0.65
14	0.0173	5	5	0.9	0.65
15	0.0909	5	5	0.9	0.65
16	0.0095	5	5	0.9	0.65
TOTAL	1.209				,

From the analysis of the above catchments, it can be seen that the overall area draining to stormwater discharge to Node A has remained the same. The staged site has however increased its fraction impervious areas.

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

## 4 HYDRAULIC MODELLING

Stormwater analysis for this report has been undertaken using *DRAINS*. *DRAINS* is an engineering software package for designing urban stormwater drainage systems. To enable modelling of the proposed 'stormwater detention tank', we have used the "Extended Rational Method" hydrology loss model to convert Australian Rainfall and Runoff (AR&R) Temporal Patterns and rainfall data into runoff Hydrographs.

In order to ascertain the rain event that would require the greatest volume of detention, a range of rainfall events were analysed in *DRAINS* for each model (5, 10, 15, 20, 25, 30, 45, 60, 90 & 120 minutes) under a range of Average Recurrence Intervals (ARI) or Annual Exceedance Probabilities (AEP). Values for rainfall intensity are based on the AR&R Maps (Skewness – G, F2 & F50). Analyses have been conducted within the catchments to determine Pre and Post development flows for the 2-year (39% AEP) to the 100-year (1% AEP) rainfall events. The detention system has been modelled for each storm event scenario to assist in establishing a maximum 2-year to 100-year discharge ( $Q_2$  to  $Q_{100}$ ).

From the below modelling and analysis it is proposed to provide attenuation of peak stormwater discharges by the use of two detention tanks within the development site. This proposed arrangement will be sized to provide the necessary attenuation of peak flows in all storm events.

#### 4.1 PRE-DEVELOPED MODEL

To enable direct comparison between the Pre-development and Post-development stormwater flows, the Pre-development catchment areas detailed in **Section 3.2** above were modelled within *DRAINS*. These results are then reported for each discharge node location as detailed above in **Section 2.1**.

The results of this Pre-Development model are hence presented below in Table 3.

Table 3 Peak Stormwater Pre-developed Modelling Results - Node A

Temporal Pattern	Minor ARI (AEP %) (m³/s)				Major ARI (AEP %) (m³/s)	
(minutes)	2 (39%)	5 (18%)	10 (10%)	20 (5%)	50 (2%)	100 (1%)
5	0.156	0.212	0.256	0.307	0.387	0.453
10	0.258	0.352	0.422	0.504	0.633	0.740
15	0.239	0.324	0.400	0.478	0.589	0.689
20	0.233	0.317	0.384	0.459	0.557	0.652
25	0.228	0.311	0.374	0.448	0.510	0.598
30	0.212	0.290	0.350	0.419	0.475	0.557
45	0.191	0.262	0.311	0.374	0.466	0.548
60	0.168	0.231	0.281	0.339	0.401	0.472
90	0.146	0.203	0.253	0.306	0.350	0.419
120	0.129	0.180	0.230	0.280	0.290	0.346

Note: The bold numbers represent the peak flow for each ARI.

CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

#### 4.2 DEVELOPED MODEL

Following the creation of the pre-developed model within *DRAINS*, the separate post-development catchments were modelled using the characteristics defined in **Section 3.2** above. From the first iteration of the design model, it was seen that stormwater discharges to Node A were increased due to the increases in the staged impervious areas of the overall catchment.

This model was then tasked to ascertain the amount of storage volume required to reduce the post-developed peak discharges to the discharge Node A to pre-developed discharge rates via detention volume within the proposed detention tanks for each allotment.

From several iterations of the design model, it was determined that appropriately sized detention tanks totalling capacity of 56kL within the proposed development areas could successfully attenuate the post-development stormwater flows to be below pre-development levels. When these selected detention parameters were input into the post-developed *DRAINS* model, the detailed detention amounts were seen to successfully attenuate peak stormwater flows to the existing channel north of proposed development.

The following Table 4, summarises the results obtained from the post-developed *DRAINS* model compared to the pre-developed reported in **Section 4.1** above for combined flow to each discharge node and for the worst-case storm events. The complete listing of the results is contained in **Appendix F**.

Table 4 Peak Stormwater Modelling Results - Node A

4.51	Tempora (mi		Peak Flo	Difference (m³/s)	
ARI (AEP)	Pre-developed	Post-developed	Pre-developed	Post-developed	
2 (39%)	10	10	0.258	0.227	-0.031
5 (18%)	10	10	0.352	0.299	-0.053
10 (10%)	10	15	0.422	0.352	-0.071
20 (5%)	10	10	0.504	0.466	-0.038
50 (2%)	10	10	0.633	0.588	-0.045
100 (1%)	10	10	0.740	0.732	-0.008

From the above-displayed table, it can be seen that the stormwater discharged to Node A, were decreased due to the combined 56kL detention volume modelled prior to discharge of stormwater to Node A, and the discharge is able to successfully detain peak flows to pre-developed peak flow levels within all storm events.

# 4.2.1 Developed Model Validation

From the QUDM guidelines, it is recommended that computer models are calibrated to flow data or "be 'compared' with the peak discharge derived for the same catchment using the Rational Method" (QUDM 2013).

However, as this report utilises the "Extended Rational Method" hydrology loss model, a 'comparison' back to the 'Rational Method' will be redundant as all 'peak discharge' catchment flows will be the same. As such no comparison of obtained hydrographs peak discharge is required.

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

#### 5 STORMWATER QUALITY MANAGEMENT

Stormwater Quality Management is required for the proposed development based on the requirements of the State Planning Policy as the site is within a within the Central Queensland Climate Region (South). The following is provided to demonstrate that the proposed development will meet the requirements of the State Planning Policy and Bundaberg Regional Council Planning Scheme.

A *SPEL* 'Puraceptor P040' will be used to treat any stormwater from fuel refuelling areas (under canopies) to remove any hydrocarbons to acceptable levels. The device can contain up to 9,000 Litres in the event of a fuel spill and contains an alarm when the tank is nearly full. When the alarm is activated, the operator will organise for a licenced contractor to dispose of any waste and hydrocarbons to an approved disposal facility. Also, the introduction of *SPEL* StormSacks and *SPEL* Filters to the system helps to reduce surface-based stormwater pollutants.

This strategy of dealing with refuelling areas is in accordance with ACAPMA 'Best Practise Guidelines' and is general industry practise throughout Australia in how hydrocarbons are dealt with at new service stations.

## 5.1 DESIGN OBJECTIVES

The State Planning Policy describes Water Quality Objectives (WQO's) to reduce the pollutant loads from each new allotment discharged to receiving waters from the urban development. The following minimum reductions in total pollutant load have been adopted to develop a strategy to manage stormwater quality for the proposed development within the 'Central Queensland (South)' climatic region:

- >= 85% reduction in total suspended solids load (TSS)
- >= 70% reduction in total phosphorus load (TP)
- >= 45% reduction on total nitrogen load (TN)
- >= 90% reduction in gross pollutant load.

#### 5.2 METHODOLOGY

MUSIC Version 6 was used to evaluate the effectiveness of a proposed treatment train with respect to the water quality objectives and to indicate sizing requirements for a single bio-retention basin, with the intention to provide a voluntary contribution towards a regional solution for stormwater quality.

#### 5.2.1 Meteorological Data

Meteorological data was taken as per the Water by Design's *MUSIC Modelling Guidelines* (2010). For this project, rainfall and evapotranspiration data was taken from the Bundaberg rainfall station (Station ID39128) and covers the historical region of 05/12/1996 to 14/12/2005. A full listing of the MUSIC model design parameters is given in **Appendix G**.

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#### 5.2.2 Catchment Characteristics

To determine the Water Quality catchment, the subject development was assessed for the total new pit catchments and proposed roof areas. The characteristics of the sub-catchments have been reproduced below in **Table 5**.

Table 5 Catchment Characteristics

Catchment Name	<b>Area</b> (Ha)	Land Use (Source Node)	Fraction Impervious (%)
Commercial – Roof	0.112	Roof	100%
Commercial – Roads	0.411	Commercial	100%
Commercial – Ground	0.030	Commercial	33%
Sum	0.553		

#### 5.2.3 Rainfall-Runoff Parameters

Rainfall runoff and pollutant export parameters for the land uses indicated above were adopted in accordance with Water by Design's *MUSIC Modelling Guidelines* (2010). These parameters have been reproduced and attached in **Appendix G.** 

#### 5.2.4 Treatment Train Stages

The proposed treatment train will consist of several treatment types for stormwater quality control. These types work as a whole to manage stormwater quality from the site.

- SPEL StormSacks: A SPEL StormSack will be placed in selected grated inlet pits to remove gross pollutants.
- SPEL Filter (EMC 45): Media cartridges placed in detention tank to filter TSS, TP and TN.
   Two separate nodes for treatment from detention tank and filter cartridges.
- Detention Tank: Detaining stormwater to allow for natural settling of pollutants.

#### 5.2.5 Developed Model

Adopting the above parameters and treatment train stages, a *MUSIC* model was created. This model was then tasked to ascertain the size and characteristics of the detention surface area and number of filter cartridges required to achieve the required Stormwater Quality Objectives.

From several iterations of the design model, an appropriately sized treatment system was determined. The resulting size and characteristics of the proposed Detention and SPEL Filter system are presented in **Table 6** and **Table 7** below.

Table 6 Detention Tank 1 Filter Properties

Filter Tank Properties	Value
Surface Area (m²)	35
Weir Height (m)	0.85
Number of Filter units	2
High Flow Bypass (m³/s)	0.00566

Table 7 Detention Tank 2 Filter Properties

Filter Tank Properties	Value
Surface Area (m²)	21
Weir Height (m)	0.85
Number of Filter units	1
High Flow Bypass (m³/s)	0.00283

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#### 5.3 MODEL RESULTS

The results of the *MUSIC* modelling are presented in Table 8 below. As below, it can be seen that the utilised treatment train will be effective in achieving the desired stormwater quality objectives.

Table 8 Treatment Train Effectiveness

Parameter	Sources	Residual Load	% Reduction	
rarameter			Required	Achieved
Flow (ML/yr)	3.74	3.74	N/A	0
Total Suspended Solids (kg/yr)	1180	144	85	87.8
Total Phosphorus (kg/yr)	2.14	0.632	70	70.5
Total Nitrogen (kg/yr)	11.8	5.47	45	53.8
Gross Pollutants (kg/yr)	87.9	0	90	100

From these results, it is proposed that 2 SPEL Filter EMC45 unit are installed in the Lot 1 Detention Tank, 1 x SPEL Filter EMC45 unit are installed in the Lot 2 Detention Tank and the system has a total detention surface area of  $56m^2$ .

#### 5.4 CONSTRUCTION PHASE STORMWATER QUALITY MANAGEMENT

While the development will ultimately comply with objectives of State Planning Policy - July 2017, Water Quality, Section 1, it is also required to comply with the requirements of Appendix 2 Table A: Construction Phase – Stormwater Management Design Objectives during the construction works.

Pollutants typically generated during the construction phase include:

- Litter
- Sediment
- Hydrocarbons
- Toxic Materials
- pH Altering Substances

During the detailed design and construction phase, an erosion and sediment control plan will be prepared for the site. The erosion and sediment control plan will be based on the ICEA document 'Best Practice Erosion and Sediment Control', International Erosional Control Association (Australasia) to achieve compliance under the Environmental Protection Act 1994.

The erosion and sediment control plan shall address the following:

- Use and location of sediment control devices including; sediment fencing and sediment traps for stormwater entry pits.
- Erosion control measures during earthworks, including any staging or sequencing of the works.

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

#### 6 CONCLUSION

This report summarises the conceptual stormwater management practices proposed to safely manage the adverse stormwater quantity and quality generated by the proposed staged development, in order to support the RAL & MCU Development Application for the proposed Service Station and Fast Food Outlet at 28696 Bruce Highway, in Childers, Queensland.

As detailed in the report above, it was determined that stormwater quantity discharge conditions from the sites can be maintained at or below pre-developed conditions by the provision of detention tanks within each lot of the proposed development site.

Therefore it is seen that development achieves a case of not incurring an 'actionable nuisance' to all downstream properties and assets. As a result of this analysis, it is then shown that the proposed development complies with the guidelines set by both the Bundaberg Regional Council, Department of Transport and Main Roads and Queensland Urban Drainage Manual (QUDM).

The development will also result in an increase in the export of total suspended solids, total nitrogen and total phosphorus from the site. The site was assessed to be within Central Queensland (South) climatic region as per the State Planning Policy, therefore, stormwater quality management is required for this development. Stormwater pollutant reduction targets for Central Queensland (South) as per the Queensland State Planning Policy are achieved by using 7 SPEL StormSacks and 3 SPEL Filters (EMC45) within the detention tank with a total surface area of 56m².

Further to stormwater quality, any refuelling areas beneath the canopy will drain through a *SPEL* 'Puraceptor' that will allow treated stormwater to pass to the downstream stormwater network and contain any hydrocarbons within its 9,000 Litre containment tank.

As such it is therefore seen that the proposed development of the Service Station at 28696 Bruce Highway will meet both the stormwater Quantity and Quality objectives as detailed within the Queensland State Planning Policy and the Bundaberg Regional Council's Planning Scheme.

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PROJECT NO: S20210106

CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

# 7 REFERENCES

## **Text References**

The Institution of Engineers, Australia 1987, Australian Rainfall & Runoff – A Guide to Flood Estimation, Vol 1-2, The Institution of Engineers, Australia, Barton

Bundaberg Regional Council 2015, Bundaberg Regional Council Planning Scheme 2015, Bundaberg Queensland

Queensland Department of Natural Resources and Water 2013, Queensland Urban Drainage Manual  $-3^{rd}$  Edition - provisional, Department of Natural Resources and Water, Brisbane

Queensland Government 2017, *State Planning Policy*, July 2017, Department of Infrastructure, Local Government Planning, Brisbane, Australia

Water by Design 2010, MUSIC Modelling Guidelines, SEQ Healthy Waterways Partnership, Brisbane Qld, ISBN 978-0-9806278-4-8

#### Software Used

MUSIC - Version 6.2.1

DRAINS - Version 2020.061 - 15 December 2020

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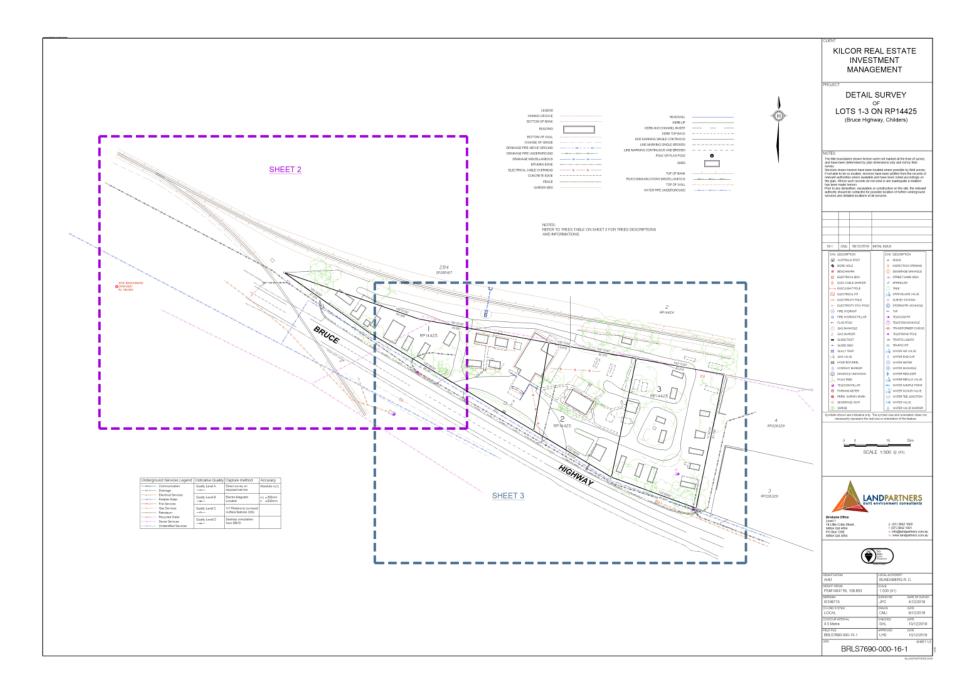
PAGE 16 OF 16

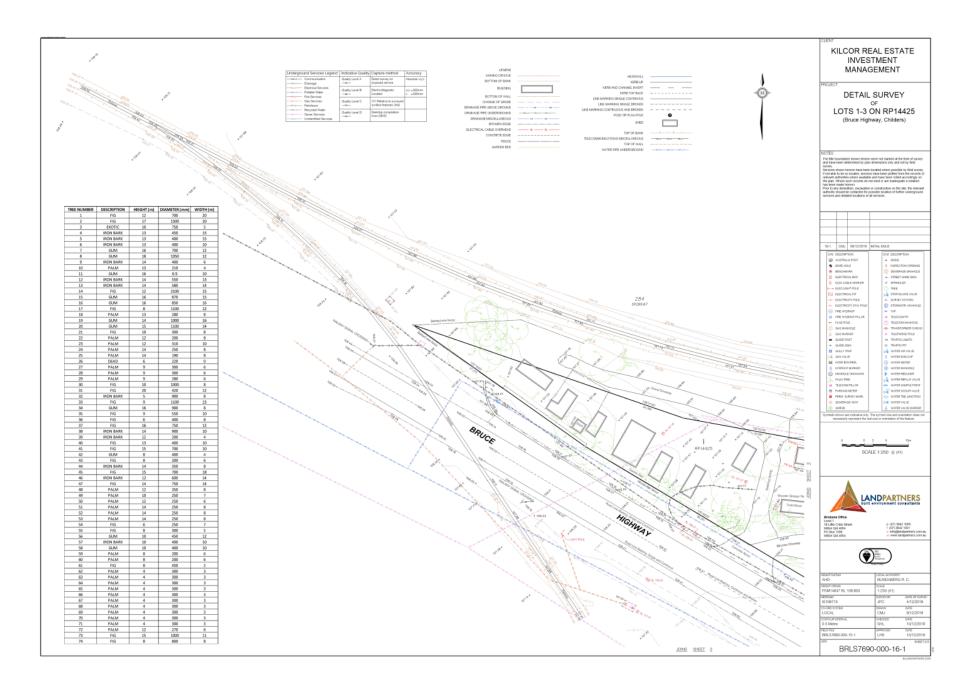
PROJECT NO: S20210106

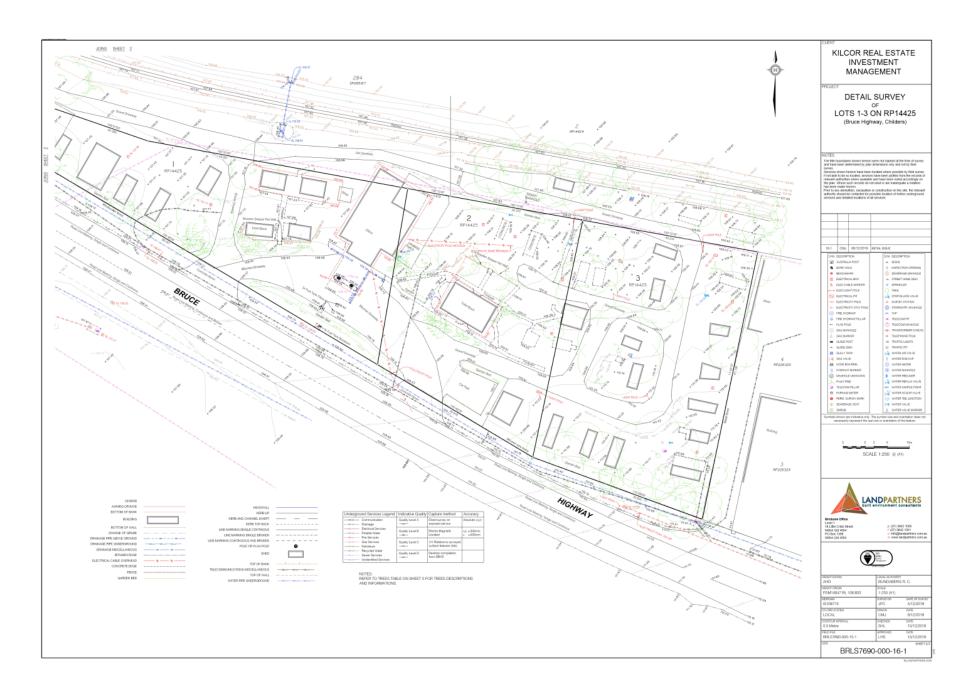
CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

# Appendix A. Detailed Site Survey (LandPartners Project No BRLS7690-000-16-1)

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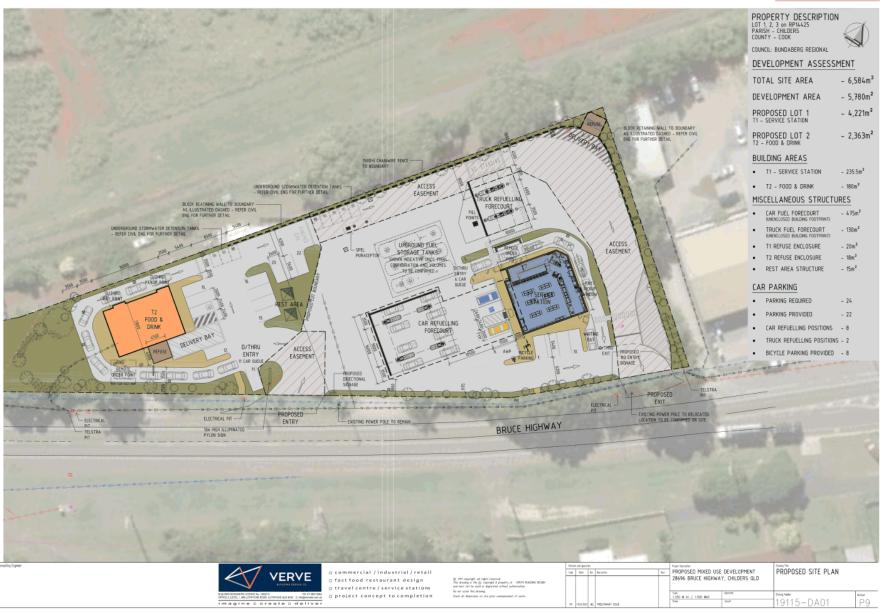
PROJECT NO: S20210106

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Appendix B. Approved Site Layout (Verve Drawing: 19115-DA01\_P9)

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# PRELIMINARY

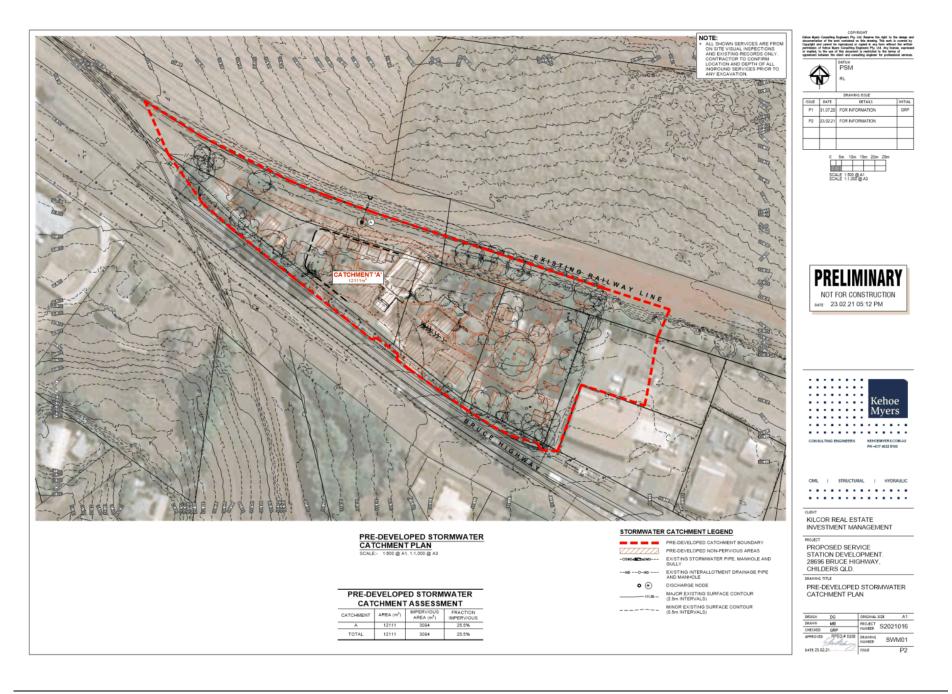


PROJECT NO: S20210106

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Appendix C. Pre-Developed Stormwater Catchment Plan (KMCE Drawing: S2020016-SWM01-P2)

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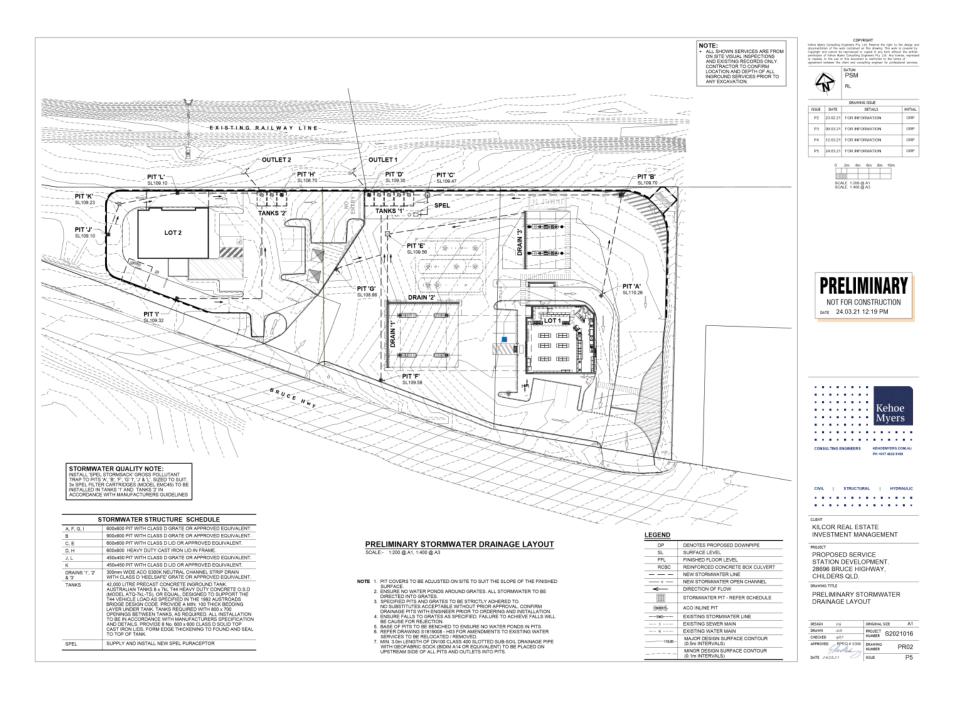


PROJECT NO: S20210106

CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

# Appendix D. Preliminary Stormwater Drainage Layout (KMCE Drawing: S2020016-PR02-P5)

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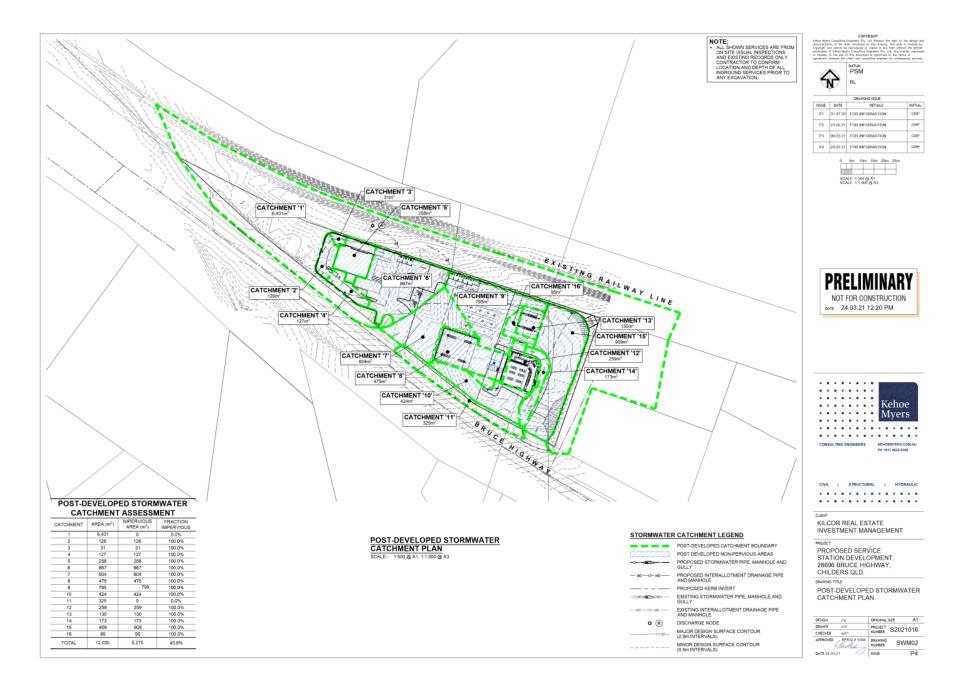


PROJECT NO: S20210106

CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

Appendix E. Post-Developed Stormwater Catchment Plan (KMCE Drawing: S2020016-SWM02-P4)

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

# Appendix F. DRAINS Model Results

ARI	Temporal Pattern	Pre-developed	Post-developed	Difference
(AEP %)	(min)	(m³/s)	(m³/s)	(m³/s)
	5	0.156	0.161	0.005
	10	0.258	0.227	-0.031
	15	0.239	0.220	-0.019
	20	0.233	0.211	-0.022
2	25	0.228	0.213	-0.016
(39%)	30	0.212	0.202	-0.010
	45	0.191	0.181	-0.010
	60	0.168	0.166	-0.002
	90	0.146	0.149	0.002
	120	0.129	0.130	0.001
	5	0.212	0.211	-0.001
	10	0.352	0.299	-0.053
	15	0.324	0.289	-0.035
	20	0.317	0.278	-0.039
5	25	0.311	0.281	-0.030
(18%)	30	0.290	0.269	-0.021
	45	0.262	0.242	-0.020
	60	0.231	0.223	-0.008
	90	0.203	0.203	0.000
	120	0.180	0.178	-0.002
	5	0.256	0.249	-0.007
	10	0.422	0.351	-0.072
	15	0.400	0.352	-0.048
	20	0.384	0.337	-0.047
10	25	0.374	0.320	-0.054
(10%)	30	0.350	0.317	-0.033
	45	0.311	0.283	-0.028
	60	0.281	0.262	-0.019
	90	0.253	0.242	-0.011
	120	0.230	0.218	-0.012

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CHILDERS SERVICE STATION - STORMWATER MANAGEMENT PLAN

ARI	Temporal Pattern	Pre-developed	Post-developed	Difference
(AEP %)	(min)	(m³/s)	(m³/s)	(m³/s)
	5	0.307	0.291	-0.016
	10	0.504	0.466	-0.038
	15	0.478	0.453	-0.025
	20	0.459	0.433	-0.026
20	25	0.448	0.402	-0.046
(5%)	30	0.419	0.409	-0.010
	45	0.374	0.366	-0.008
	60	0.339	0.312	-0.027
	90	0.306	0.288	-0.018
	120	0.280	0.260	-0.021
	5	0.387	0.380	-0.007
	10	0.633	0.588	-0.045
	15	0.589	0.584	-0.005
	20	0.557	0.542	-0.015
50	25	0.510	0.525	0.015
(2%)	30	0.475	0.491	0.016
(270)	45	0.466	0.469	0.003
	60	0.401	0.396	-0.005
	90	0.350	0.335	-0.015
	120	0.290	0.283	-0.007
	5	0.453	0.469	0.016
	10	0.740	0.732	-0.008
	15	0.689	0.686	-0.004
	20	0.652	0.645	-0.007
100	25	0.598	0.613	0.016
(1%)	30	0.557	0.582	0.025
	45	0.548	0.550	0.002
	60	0.472	0.463	-0.009
	90	0.419	0.419	0.000
	120	0.346	0.334	-0.012

# Appendix G. MUSIC Model Parameters

# Table 1 Meteorological Data & Rainfall Data

Input	Data Used
Rainfall Station	Bundaberg ID 33119
Time Step	6 min
Modelling Period	15/12/1996 – 14/12/2005
Average Annual Rainfall (mm)	786
Evapotranspiration (mm)	1629

# Table 2 Rainfall-Runoff Parameter Table

Parameter	Data Used
Landuse	Commercial
Rainfall Threshold (mm)	1
Soil Storage Capacity (mm)	18
Initial Storage (% of Capacity)	10
Field Capacity (mm)	80
Infiltration Capacity Coefficient – a	243
Infiltration Capacity Coefficient – b	0.6
Initial Depth (mm)	50
Daily Recharge Rate (%)	0
Daily Baseflow Rate (%)	31
Daily Deep Seepage Rate (%)	0

Table 3 Water Quality Parameters

		Total Suspended Solids		Total Phosphorus		Total Nitrogen	
Catchment	Flow Type	Mean (Log <sub>10</sub> mg/L)	σ (Log <sub>10</sub> mg/L)	Mean (Log <sub>10</sub> mg/L)	σ (Log <sub>10</sub> mg/L)	Mean (Log <sub>10</sub> mg/L)	σ (Log <sub>10</sub> mg/L)
Commercial - Ground	Base Flow	0.780	0.390	-0.600	0.500	0.320	0.300
level	Storm Flow	2.160	0.380	-0.390	0.340	0.370	0.340
Commercial – Roads	Base Flow	0.780	0.390	-0.600	0.500	0.320	0.300
Commercial – Roads	Storm Flow	2.43	0.380	-0.300	0.340	0.370	0.340
Commercial - Roof	Base Flow	N/A	N/A	N/A	N/A	N/A	N/A
Commercial - Roof	Storm Flow	1.3	0.38	-0.89	0.34	0.37	0.34

Estimation Method: Stochastically Generated

# Table 4 SPEL Filter Tank Properties

Filter Tank Properties	Value
Surface Area (m²)	56.0
Weir Height (m)	0.85
Number of Filter units	3
High Flow Bypass (m³/s)	0.00849

# Table 5 SPEL Stormsacks Properties

Stormsack Properties	Number
Number installed in surface pits	7

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# **Ashlee Dickinson**

From: No Reply <mydas-notifications-prod2@qld.gov.au>

Sent: Tuesday, 12 October 2021 4:44 PM

To: Development

Cc: lauren.s@placedesigngroup.com

**Subject:** 2104-22124 SRA application correspondence

Attachments: 2104-22124 SRA - SARA approved report - Stormwater Management Plan - 11102021.pdf;

DTMR TIA - Application decision - s62A (PA) - Approval\_1 (11102021)\_.pdf; 2104-22124 SRA - SARA approved plans.pdf; GE83-N Representations about a referral agency response.pdf;

2104-22124 SRA - SARA Referral Agency Response (conditions).pdf

Categories: Ashlee

Please find attached a notice regarding application 2104-22124 SRA

If you require any further information in relation to the application, please contact the State Assessment and Referral Agency on the details provided in the notice.

1

This is a system-generated message. Do not respond to this email. RA6-N



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**Item** 

**21 December 2021** 

Item Number: File Number: Part:

L2 522.2021.268.1 DEVELOPMENT ASSESSMENT

# **Portfolio:**

Planning & Development Services

# **Subject:**

Material Change of Use for Telecommunication Facility - 1A Kensington Street, Norville

# **Report Author:**

Dean Catorall, Para Planner

# **Authorised by:**

Michael Ellery, Group Manager Development

# **Link to Corporate Plan:**

Our infrastructure and development - 2.3 Sustainable development - 2.3.3 Review and consistently enforce the planning scheme to ensure sustainable environmental practices.

# **Summary**:

APPLICATION NO	522.2021.268.1		
PROPOSAL	Material Change of Use for Telecommunication		
PROPOSAL			
	Facility		
APPLICANT	Stilmark Holdings Pty Ltd		
OWNER	Wright Brothers Computers Pty Ltd & JA Wright		
PROPERTY DESCRIPTION	Lot 2 on RP96755		
ADDRESS	1A Kensington Street, Norville		
PLANNING SCHEME	Bundaberg Regional Council Planning Scheme		
	2015		
ZONING	Neighbourhood Centre Zone		
OVERLAYS	Acid Sulphate Soils Overlay		
	Airport and Aviation Facilities Overlay		
	Flood Hazard Overlay		
	Infrastructure Overlay		
LEVEL OF ASSESSMENT	Impact		
SITE AREA	319 m <sup>2</sup>		
CURRENT USE	Food and Drink Outlet		
PROPERLY MADE DATE	20 August 2021		
STATUS	The 35 business day decision period ends on 15		
	December 2021		
REFERRAL AGENCIES	Department of State Development, Manufacturing,		
	Infrastructure and Planning		

NO OF SUBMITTERS	Ten (10)
PREVIOUS APPROVALS	Not applicable
SITE INSPECTION	18 October 2021
CONDUCTED	
LEVEL OF DELEGATION	C2

# 1. INTRODUCTION

# 1.1 Proposal

The Applicant seeks a Development Permit for Material Change of Use for a Telecommunication Facility. The proposal includes a 17.3 m tall monopole which includes four (4) Optus 4G panel antennas and four (4) Optus 5G panel antennas stacked on top of the monopole giving an overall finished height of 22.5 m. The antennas will be enclosed in a shroud to be placed over the monopole which will screen them from view. The base of the facility will locate within the existing floor area of the fish and chip shop on the site, with the pole protruding from its roof. All wiring associated with the facility will be internal to the pole or ground level shop. The tenancy on which the proposed use will be located will cease to be used for a shop and will instead house infrastructure supporting the operation of the tower.

The Applicant states that "the facility will provide for new and improved Optus coverage to the suburbs of Norville, Svensson Heights and Walkervale as well as to the southern parts of the Bundaberg CBD. It will also improve the level of service to the Bundaberg TAFE complex and the Bundaberg Multiplex – two key outcomes sought from this project – as well as to the key transport thoroughfares of Walker Street and the North Coast rail corridor".

Pursuant to Table 5.4.8 of the Bundaberg Regional Council Planning Scheme 2015, the proposal requires Impact Assessment.

# 1.2 Site Description

The premises is located within the Neighbourhood Centre Zone with an area of 319 m² and a 21.12 m road frontage length to Kensington Street. The premises is currently improved by a commercial building which is currently/historically used for the purposes of a Shop (AMS Computer Services) and a Food and Drink Outlet (That Fish & Chip Shop). The premises features a driveway crossover to Kensington Street and a single car parking space on the southern side of the building.

Nearby premises directly adjacent to the Walker Street and Kensington Street intersection are improved by commercial premises such as a Service Station, two (2) Shops (Hairdressers) and Health Care Facilities. More broadly, the locality includes the Bundaberg TAFE approximately 180 m to the west, the Walker Street Craft Centre approximately 400 m to the north west, the Bundaberg Multiplex approximately 200 m to the north and Bundaberg State High School approximately 200 m to the north east. Other than these non-residential features of the locality, the surrounding land uses are predominantly low-rise residential activities which locate within the Low Density Residential Zone.

#### 2. ASSESSMENT PROVISIONS

#### 2.1. Assessment Benchmarks

The following are the benchmarks applying for this development:

Benchmarks applying for the development	Benchmark reference				
Zone Code: Neighbourhood Centre Zone	Bundaberg Regional Council Planning Scheme 2015				
Overlay Code	Bundaberg Regional Council				
Flood hazard overlay code	Planning Scheme 2015				
Use Code	Bundaberg Regional Council				
Telecommunications facility code	Planning Scheme 2015				
Other Development Code	Bundaberg Regional Council				
Landscaping code	Planning Scheme 2015				
Nuisance code					
Transport and parking code					
Works, services and infrastructure code					
Planning Scheme Policies	Bundaberg Regional Council				
Planning scheme policy for development works	Planning Scheme 2015				
Planning scheme policy for waste management					

#### 3. ISSUES RELEVANT TO THE APPLICATION

The following significant issues have been identified in the assessment of the application:

#### Land Use Zoning

The land locates within the Neighbourhood Centre Zone, the purpose of which is to provide for a small range of land uses and activities to support the basic convenience needs of local neighbourhoods or parts of neighbourhoods. The zone would regularly accommodate small-scale convenience shopping, offices, community activities and other uses which directly support the basic convenience needs of the immediate community. Specific Outcome 3.4.2.1(a) of the Strategic Framework of the Bundaberg Regional Council Planning Scheme 2015 provides a further description of the intent of Neighbourhood activity centres, stating the following:

"Neighbourhood activity centres typically service residential neighbourhoods or small towns and villages with small-scale convenience shopping that caters for day-to-day and top-up needs, locally servicing professional offices, community services and other activities of a local servicing nature.

Neighbourhood activity centres may also comprise existing standalone business or entertainment activities (such as service stations and hotels) that may otherwise

Meeting held: 21 December 2021

typically form part of a higher order centre. Neighbourhood activity centres located in urban settings commonly have a walking distance catchment."

It is noted that the existing use of the premises, small scale shop and food and drink outlet, are consistent with the intent and descriptors associated with a Neighbourhood Activity Centre.

In respect to the use of the site for the purpose of a Telecommunications Facility, the Applicant included in their development application an assessment against the Neighbourhood Centre Zone Code which simplified the relevant outcomes sought for development in the area. While it is recognised that the development would likely provide a greater service for the day-to-day needs of the surrounding catchment, it is not a retail/shopping need that is being fulfilled by the development as intended by the code. Furthermore, the development reduces the capacity of local shopping services in the locality by utilising an available tenancy for such services.

It is Council officer's views that the Applicant has failed to demonstrate compliance with Part 3.4.2 of the Strategic Framework or the purpose and outcomes of the Neighbourhood Centre Zone Code.

#### Built Form, Design and Proximity to Sensitive Land Uses

The proposal will feature a finished overall height of 22.5 m above ground level consisting of a monopole with shrouded antennas on top. The base of the pole, including the associated electrical equipment at ground level will locate within the existing building, with the pole protruding from the roof of the building.

It is acknowledged that the development locates on premises located in a commercial zone, however, it does directly adjoin residential premises along Walker Street, Kensington Street and Glenmorris Street.

The planning scheme through the Strategic Framework, Neighbourhood Centre Zone Code and Telecommunications Facilities Code sets parameters around the design of development in these areas to ensure that they are compatible with the intent of the zone and do not adversely impact on the surrounding locality. Part 3.6.5.1(c) of the Strategic Framework requires "telecommunications and information infrastructure to be integrated in a sustainable and attractive manner which does not unduly impact on the amenity or landscape qualities of the area". This part of the Strategic Framework feeds through to the Telecommunications facility code which requires for such facility to be visually integrated with its natural or townscape setting and does not adversely affect the amenity of surrounding sensitive land uses.

Telecommunications facilities are typically designed to have a similar height to surrounding structures or vegetation in order to demonstrate that they are able to visually integrate with the townscape setting. For reference, the Neighbourhood Centre Zone code requires development to have a low-rise built form that is compatible with the existing and intended scale and character of the streetscape and surrounding area, typically in the form of a maximum building height of 2 storeys and 8.5 m above natural ground level.

Acceptable Outcome 1.2 of the Telecommunications facility provides further guidance, in the form of minimum setback requirements, to ensure that such facilities are able to visually integrate with the townscape setting and not adversely impact on the amenity of surrounding sensitive land uses. These setbacks include a minimum distance of 400 m from a residential activity, 500 m from any childcare centre, community care

centre, educational establishment or park, 20 m from any public pathway and 1km from any other existing or approved telecommunications facility.

In comparison to the regular design parameters, the proposal includes a 22.5 m tall structure where the predominant building height is single storey, setback approximately 15 m from the nearest residential activity and approximately 200 m from two different Educational Establishments and a Community Use. While it is acknowledged that the setback criteria is just one way of achieving the intent of the Telecommunications facility code, the distance of the proposed development from nearby residential activities is extremely close noting the disparity between the height of the proposed facility and the predominant built form of the locality.

It should also be noted that the location of the subject site locates approximately 25m from the Walker & Kensington Street intersection. Walker Street, being a State controlled road, is a thoroughfare for public, private and active transport users. Two traffic counts taken in 2014 & 2020 on Walker Street adjacent to the railway line (BUN287 & Walker Street Ch1400) measured an average daily count of 13,731 and 14,110 vehicle trips respectively, each of which would view the development if it were to be constructed. Corridors, such as Walker Street, form much of the built character and place identity associated with particular suburbs or even towns for users of the corridors. Due to the proximity of the site to the Walker & Kensington Street intersection the proposed development would likely adversely impact on the visual amenity of the locality of Norville beyond those that live and work in the immediate vicinity of the proposal.

As a result of the design and location of the proposed Telecommunications Facility the development is unable to meet the criteria of the Strategic Framework, Telecommunications Facility Code and Neighbourhood Centre Zone as it is considered that it unduly and unreasonably impacts on the amenity qualities of the area and surrounding sensitive uses, is not visually integrated or compatible with its setting.

#### **Better Suited Locations**

A common theme throughout the submissions received by Council during the public notification period was that there are likely better suited locations in the locality in which the development could be sited where it would have lesser impacts on the surrounding locality. Suggested locations included the Bundaberg TAFE site as well as the Bundaberg Multiplex site.

Both of the suggested locations include established structures and landscaping that would suggest that a new telecommunications facility could more easily be visually integrated with the surrounding environment. Furthermore, these premises are able to provide greater setback distances from any proposed telecommunications facility to nearby residential activities.

The Applicant addressed alternate locations in their response to Council's Information Request by stating that "there are also no other more appropriate locations or zones available for the proposal", however, the author does not qualify this statement.

The use of established structures for the siting of telecommunications facilities in the Bundaberg Region, particularly in urban areas, is common. Examples of such facilities include the facility attached to the top of the water tower at 8 Heaps Street, Avenell Heights, the facility that sits on top of the Bundaberg Base Hospital and the facility attached to the professional offices at 142 Bourbong Street (the Whale Building) and

157A Bourbong Street (Telstra Building). These facilities utilise the existing built form of their environment in order to reduce the apparent bulk of the telecommunications facilities and are designed such that it is not immediately apparent that these premises are utilised for the purpose of telecommunication facilities.

There are other examples in the Bundaberg Region where telecommunications facilities have not been designed in the above manner. Such examples include the towers located at 74 Quay Street and 7 Takalvan Street where they are associated with current or former television studios, 258 Bourbong Street where it collocates with the QPS station and 73 George Street, adjacent to Rotary Park & the tennis complex. It is noted that these examples are associated with broadcasting studios, have been developed under State exemptions or are in limited development zones where future urban activities are not anticipated. Although some of these examples do directly adjoin residential activities, they are associated with a broader function of the premises – ie they do not directly adjoin residential activities unless they necessarily have to.

The proposed development differs to the existing examples in the urban setting of Bundaberg in that it does not utilise the existing urban built form to the extent required for it to visually integrate with the locality and is not required to locate on this particular premises due to some connection to associated business activities on the same site. Noting these differences, there are no limiting factors on where the proposed facility could locate, and therefore the suggestion that the facility could be moved to another site which has the benefit of taller buildings and existing vegetation in which the development can take advantage of is an accurate observation that the Applicant has not explored. For this reason, an argument that the development ought to be approved despite its visual and amenity impacts due to the provision of a higher level of services to the locality is not a sound justification without further investigation by the Applicant.

#### Electromagnetic Energy (EME)

A common theme among the submissions received during the public notification period included potential health impacts resulting from the proposed development once operational. The Applicant provided an Environmental EME Report for the development which identified that the maximum EME level calculated for the development is 4.18% out of 100% of the public exposure limit, 51 m from the development location (4.14% between 0 m -50 m).

It is noted that the proposed development intends to operate within the limits set by the Planning Scheme, in particular Acceptable Outcome 2 of the Telecommunications Facility Code which states that:

The telecommunications facility is designed and operated to restrict human exposure to electromagnetic radiation in accordance with the: -

- (a) Radio Communications (Electromagnetic Radiation Human Exposure) Standard 2003; and
- (b) Radio Protection Standard for Maximum Exposure Levels to Radiofrequency Fields.

It is considered that the development could comply or be conditioned to comply with these requirements.

#### Transport and Parking

There is limited onsite space for car parking and vehicle manoeuvring. The Applicant has stated that it will commission a construction management plan which incorporates an appropriate traffic management plan prior to any construction being undertaken. It is considered that such plan would be appropriate to alleviate any concerns regarding impact on the local road network. It is noted that the State has required a similar document as part of the Referral Agency Response to ensure that there will be no impact to traffic on the State Controlled Road (Walker Street).

Although there are no on-site car parks nominated for the proposed development, once operational it will require minimal attendance by the license carrier. As such, existing on-street car parking is deemed appropriate to service the proposed development and any traffic impacts could be adequately managed through the imposition of reasonable and relevant conditions.

#### **Public Notification**

Ten submissions were made to Council during the notification period, all objecting to the proposal. The following matters were raised by submitters:

Matters raised in any submissions	Description of how matters were dealt with in reaching the decision
The design and location of the proposed telecommunications facility will have a visual impact on the amenity of nearby dwellings and the locality.	It is agreed that the design and location of the proposal will impact on the amenity of nearby dwellings and the locality and is a reason for the development's refusal.
The development will reduce the property value of nearby dwellings.	Whilst the impact on property values of adjoining premises has not been quantified, given the significant impact on the amenity of surrounding area it is considered likely that if approved the use would have some effect on property values. Whilst this has not been relied upon in the assessment of the application as it is not linked to an assessment benchmark, this issue could potentially constitute a "relevant matter" pursuant to s 45(5)(b) of the <i>Planning Act 2016</i> .
The construction phase of the development will impact on the local transport network.	If the development were approved, impacts on the local transport network could be appropriately managed through the requirements to prepare a construction management plan and traffic management plan.
The telecommunications facility will have adverse health impacts to people residing or working within nearby premises.	The Applicant has provided an Environmental EME report which demonstrates that the development can operate within a safe level of public exposure limits.

Matters raised in any submissions	Description of how matters were dealt with in reaching the decision
There would be a privacy impact on nearby residents if cameras were to be installed on the tower.	If the development were approved, this issue could be resolved through the imposition of a condition ensuring that cameras could not be placed on the tower.
There are more suitable locations in the area that will have lesser amenity impacts on nearby residents.	It is agreed that the design and location of the proposal has not fully explored alternate options in the locality that may be more suitable for the development which has been discussed in this report.
The telecommunications facility will interfere with electronics in nearby dwellings.	This issue was a matter raised in Council's Information Request. The Applicant has provided advice recommending it would be unlikely for such impacts to occur, however, if they were to occur could be rectified easily. If the development were to be approved, appropriate conditions could be imposed requiring for the operator of the development to liaise with any affected land owner to rectify such issues.
Not all residents in the area were notified of the proposed development.	The planning legislation only requires for adjoining land owners to be notified of Impact Assessable development. The Applicant has confirmed by notice that they have complied with the public notification requirements.
Due to the proximity of the facility to nearby dwellings, the structure could potentially fall onto a dwelling in a natural disaster (in particular an earthquake)	If the development were approved, any such structure would be required to be designed and constructed in accordance with the relevant parts of the National Construction building codes. NCC 2019, Volume 1, Part BP1.1 requires the design of the structure to take into account, during the construction and use phase, the ability to perform adequately under all reasonable expected design actions. Such actions would include wind action and earthquake action among others.

# 4. REFERRALS

# 4.1 Internal Referrals

Advice was received from the following internal departments:

Internal department	Referral Comments Received
Development Assessment - Engineering	17 November 2021
Engineering Services	24 August 2021

Regulatory Services 23 August 2021
------------------------------------

Any significant issues raised in the referrals have been included in section 3 of this report.

### 4.2 Referral Agency

Referral Agency responses were received from the following State agencies:

Agency	Concurrence/ Advice	Date Received	Conditions Yes/No
Department of State Development, Manufacturing, Infrastructure and Planning	Concurrence	14 October 2021	Yes

Any significant issues raised have been included in section 3 of this report.

#### 5. PUBLIC NOTIFICATION

Pursuant to the *Planning Act 2016*, this application was advertised for 15 business days from 27 September 2021 until 26 October 2021.

The Applicant submitted documentation on 27 October 2021 advising that public notification had been carried out in accordance with the *Planning Act 2016*. Council received ten (10) submissions in relation to this development application during this period. Any significant issues raised have been included in section 3 of this report.

### **Communication Strategy:**

Communications Team consulted. A Communication Strategy is:

- ☐ Required

#### **Attachments:**

- 1 Locality Plan
- ↓2 Site Plan
- ## Proposal Plans
- 4 Referral Agency Response

#### **Recommendation:**

That the Development Application 522.2021.268.1 detailed below be decided as follows:

#### 1. Location details

Street address: 1A Kensington Street Norville

Real property description: Lot 2 on RP96755

Local government area: Bundaberg Regional Council

Meeting held: 21 December 2021

# 2. Details of the proposed development

Development Permit for Material Change of Use (Telecommunication Facility)

#### 3. Decision

Decision details: Refused

# 4. Referral agencies for the application

For an application involving	Name of referral agency	Advice agency or concurrence	Address
	agonoy	agency	
State-controlled road Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1	Department of State Development, Manufacturing, Infrastructure and Planning	Concurrence Agency	State Assessment and Referral Agency (SARA) E: WBBSARA@dilgp.qld.gov.au P: PO Box 979 Bundaberg Qld 4670
Development application for a material change of use, other than an excluded material change of use, that is assessable development under a local categorising instrument, if all or part of the premises— (a) are within 25m of a State transport corridor; or (b) are a future			Bandabolg and 1010
State transport corridor; or			
(c) are— (i) adjacent to a road that intersects with a State-controlled road; and (ii) within 100m of the intersection			

#### 5. Details of refusal

The Bundaberg Regional Council was not directed to refuse the application by a referral agency.

#### 6. Reasons for refusal

Under section 63(2)(f)(ii) of the *Planning Act 2016*, the Bundaberg Regional Council must set out reasons for the decision to refuse the application.

The reasons for this refusal are:

- 1. The proposed development does not comply with the provisions of the Bundaberg Regional Council Planning Scheme 2015, namely:
  - (a) The proposed development does not comply with specific outcome 3.6.2.1(e)(v) & (vi) and specific outcome 3.6.5.1(c)(ii) of the Infrastructure and Services Theme of the Strategic Framework, because:
    - (i) The development is greater than twice the height of any surrounding element of the built environment;
    - (ii) The development is setback as close as 15m to a neighbouring residential activity;
    - (iii) The development locates nearby a thoroughfare (Walker Street) and is a key location in the context of the Norville locality;
    - (iv) As a result of (i)-(iii), the development is not able to integrate in a sustainable and attractive manner, has not been designed to promote high quality urban design outcomes and will unduly impact on the amenity qualities of the area.
  - (b) The proposed development does not comply with specific outcome 3.4.2.1(a) of the Economic Development Theme of the Strategic Framework, because:
    - (i) The proposed development is for an "other use" in the Neighbourhood centre zone;
    - (ii) The Neighbourhood centre zone is to provide for small-scale convenience shopping that caters for the day-to-day and top-up needs of the immediate residential neighbourhood.
    - (iii) The development does represent a small-scale convenience shopping use:
    - (iv) As a result of (i)-(iii) the proposed development does not reflect or support the preferred pattern of settlement described by the Bundaberg Regional Council Planning Scheme 2015.
  - (c) The proposed development does not comply with the purpose of the Neighbourhood centre zone code, because:
    - The neighbourhood centre zone is to provide for a small range of land uses and activities that support the basic convenience needs of local neighbourhoods or parts of neighbourhoods;
    - (ii) The proposed development is for Telecommunications facility and does not represent a "basic convenience need";

- (iii) The proposed development removes an existing tenancy from the existing supply of commercial tenancies in the locality that are intended to provide for 'basic convenience needs'.
- (d) The proposed development does not comply with the overall outcomes of the Neighbourhood centre zone code, because:
  - (i) The development is not for a business activity that services the dayto-day needs of the local catchment;
  - (ii) The development comprises an overall height of 22.5 m, is physically distinct as a telecommunication tower and is setback as close as 15m to neighbouring residential activities;
  - (iii) As a result of (ii), the development does not have a low-rise built form and does not incorporate a high standard of architecture and urban design;
  - (iv) As a result of (ii) & (iii), the development is considered to be incompatible with and is not sympathetic to its local setting and context;
  - (v) As a result of (ii)-(iv), the development will unreasonably impact on the amenity of the surrounding premises.
- (e) The proposed development does not comply with the purpose of the Telecommunications facility code, because:
  - (i) The development comprises an overall height of 22.5 m, is physically distinct as a telecommunication tower;
  - (ii) The development is setback as close as 15 m to neighbouring residential activities:
  - (iii) As a result of (i) & (ii), the development does not protect the amenity of the surrounding premises.
- (f) The proposed development does not comply with the overall outcomes of the Telecommunications facility code, because:
  - (v) The development is greater than twice the height of any surrounding element of the built environment;
  - (vi) The development is setback as close as 15 m to a neighbouring residential activity;
  - (vii) The development locates nearby a thoroughfare (Walker Street) and is a key location in the context of the Norville locality;
  - (viii) As a result of (i)-(iii), the development is not able to visually integrate with its setting and will adversely affect the amenity of surrounding sensitive land uses.
- (g) The proposed development does not comply with the purpose or overall outcomes of the Landscaping code, because:
  - (i) The development is not located on a site that provides for opportunities to provide for landscaping in a manner consistent with the desired character and amenity of the Bundaberg Region.

#### Findings on material questions of fact

 The subject site is located in the Neighbourhood centre zone of the Bundaberg Regional Council Planning Scheme 2015;

- The development application was made for a Material Change of Use for a Telecommunications Facility;
- The subject site is located at 1A Kensington Street, properly described as Lot 2 on RP96755, locates adjacent to Kensington Street and comprises an area of 319 m<sup>2</sup>:
- Nearby land is predominantly located within the Low Density Residential zone and improved by residential activities commensurate to the intent of the zone. Nearby land immediately adjacent to the Walker Street and Kensington Street intersection are improved by commercial development for Health Care Services, Shop and Service Station.
- Bundaberg Regional Council, as the statutory Assessment Manager, undertook assessment of the development application against the applicable assessment benchmarks identified by the Local categorising instrument and the *Planning* Regulation 2017.

#### Evidence or other material on which the findings were based

- The development application;
- The Bundaberg Regional Council Planning Scheme 2015;
- The Planning Act 2016;
- The Planning Regulation 2017; and
- State Planning Policy 2017.

### 7. Properly made submissions

Properly made submissions were received from the following principal submitters:

Name of principal submitter	Residential or Business Address	Electronic Address
Kevin Megaw	100 Walker Street, Norville	esldrivingschool@yahoo.com
Deirdre & Chris Barraclough	98 Walker Street, Norville	Erinb04@live.com
Hannah Jonas	96 Walker Street, Norville	Hannah.rose.watson94@hotmail.com.au
Christine Cross	81 walker Street, Bundaberg West	Christinec656@gmail.com
Grant Morgan	98 Walker Street, Norville	redridgenursery@gmail.com
Carol Thompson	79 Walker Street, Norville	Carolthompson91151@gmail.com
Grace Scheuer	15 Glenmorris Street, Norville	-

Kay Thomas	47 Nott Street, Norville	Thomaskay7@gmail.com
Jeff & Leanne Bradley	7 Forsyth Street, Gin Gin	Bradleybunch68@gmail.com
Ross Dunn	27 Brand Street, Norville	rosszen@gmail.com

#### 8. Rights of appeal

The rights of applicants to appeal to a tribunal or the Planning and Environment Court against decisions about a development application are set out in Chapter 6, Part 1 of the *Planning Act 2016*. For particular applications, there may also be a right to make an application for a declaration by a tribunal (see Chapter 6, Part 2 of the *Planning Act 2016*).

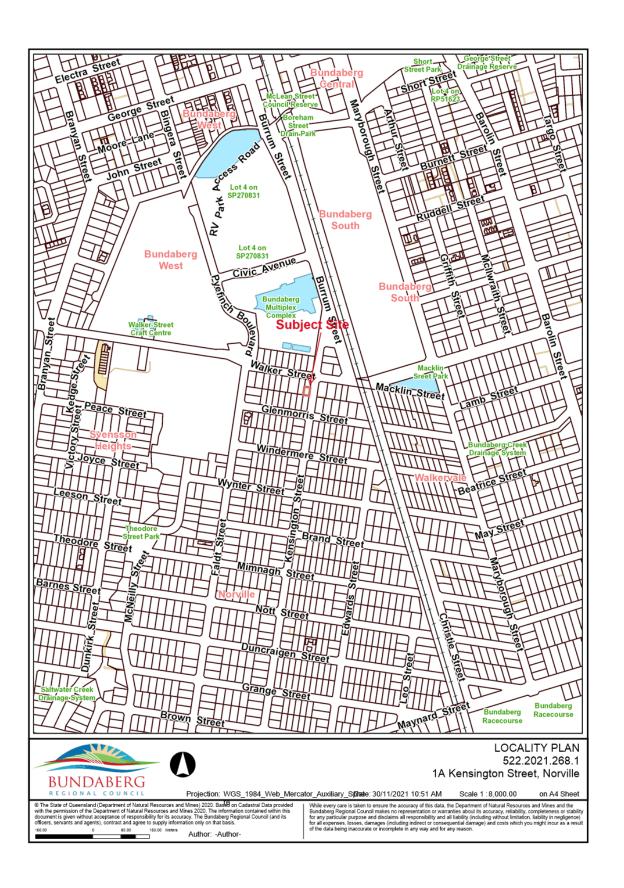
#### Appeal by an applicant

An applicant for a development application may appeal to the Planning and Environment Court against the following:

- the refusal of all or part of the development application
- a provision of the development approval
- the decision to give a preliminary approval when a development permit was applied for
- a deemed refusal of the development application.

The timeframes for starting an appeal in the Planning and Environment Court are set out in Section 229 of the *Planning Act 2016*.

<u>Schedule 1</u> is an extract from the *Planning Act 2016* that sets down the applicant's appeal rights.







SITE PLAN 522.2021.268.1 1A Kensington Street, Norville

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# **BUNDY STH**

1a KENSINGTON STREET, NORVILLE, QLD 4670

SITE ID: AQ4680-001



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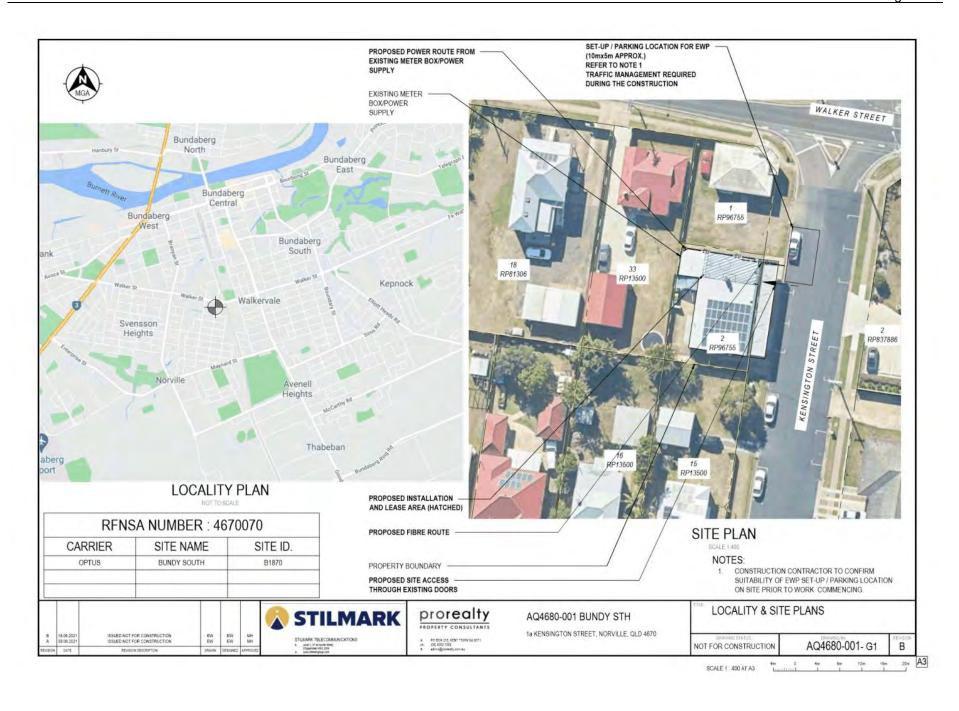
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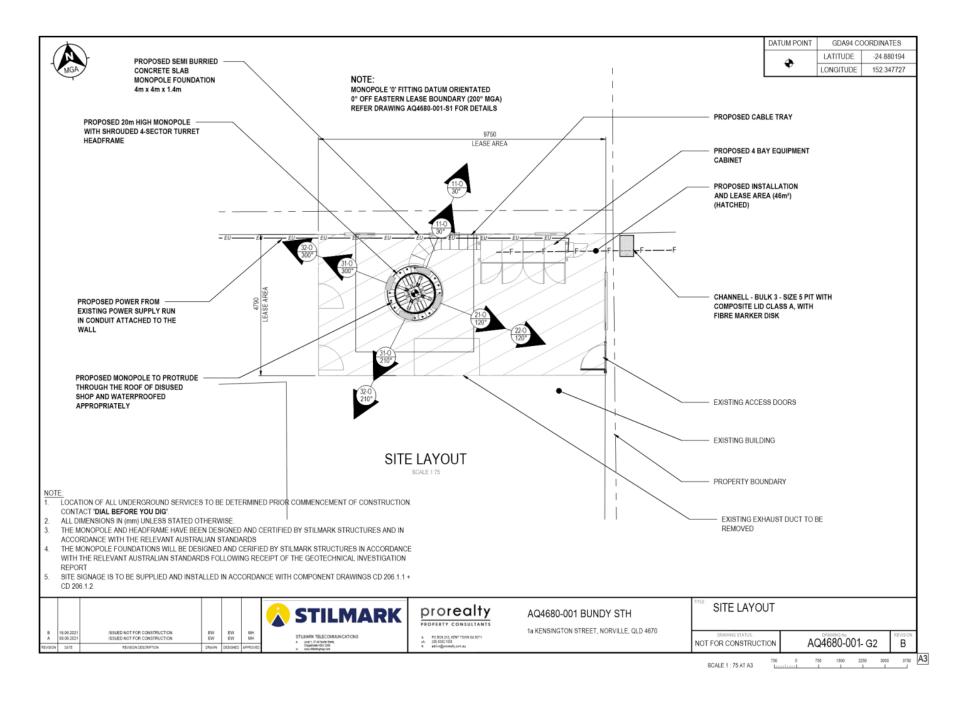
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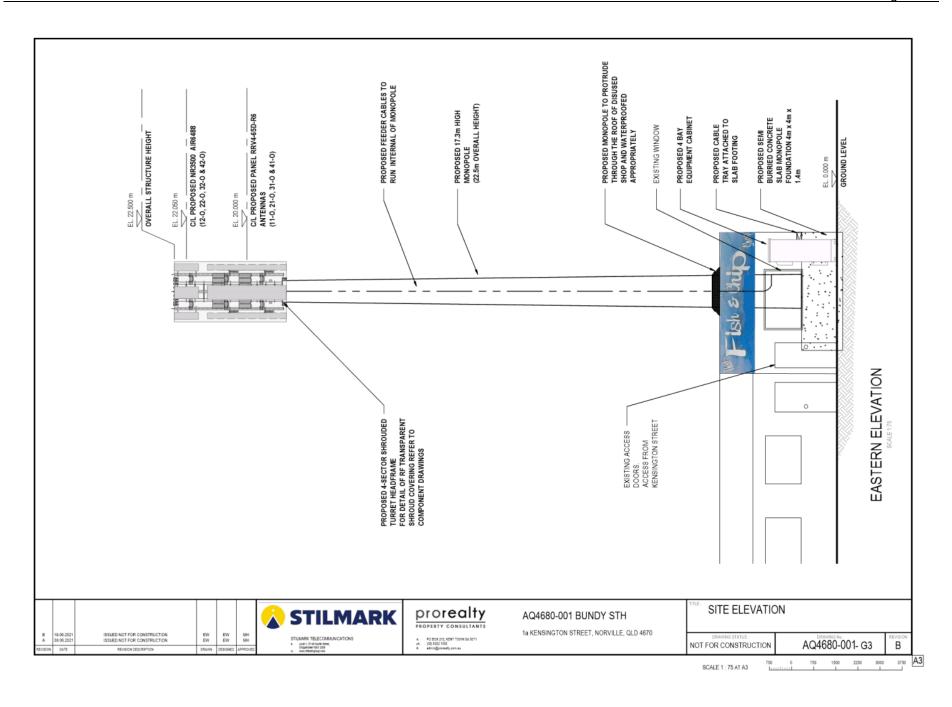
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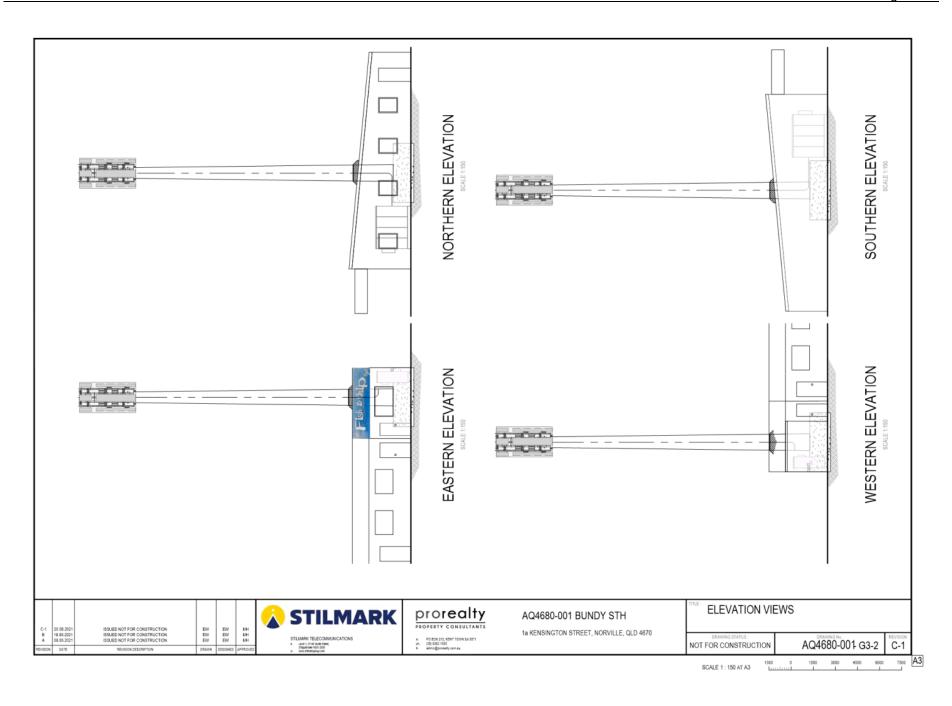
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# **Environmental EME Report**

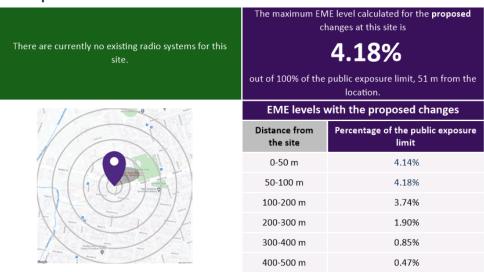
Location	1A Kensington Street, NORVILLE QLD 4670				
Date	17/06/2021	RFNSA No.	4670070		

#### How does this report work?

This report provides a summary of levels of radiofrequency (RF) electromagnetic energy (EME) around the wireless base station at 1A Kensington Street, NORVILLE QLD 4670. These levels have been calculated by WaveForm Global using methodology developed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). A document describing how to interpret this report is available at ARPANSA's website:

A Guide to the Environmental Report.

#### A snapshot of calculated EME levels at this site



For additional information please refer to the EME ARPANSA Report annexure for this site which can be found at <a href="http://www.rfnsa.com.au/4670070">http://www.rfnsa.com.au/4670070</a>.

#### Radio systems at the site

This base station currently has equipment for transmitting the services listed under the existing configuration. The proposal would modify the base station to include all the services listed under the proposed configuration.

		Existing	Proposed		
Carrier	Systems	Configuration	Systems	Configuration	
Optus			4G, 5G	LTE700 (proposed), LTE900 (proposed), LTE1800 (proposed), LTE2100 (proposed), NR3500 (proposed)	

Issued by: WaveForm Global, NAD (v1.0.114870.37848) Environmental EME report (v12.4 Feb 2021)

Produced with RF-Map 2.1 (Build 3.2)

#### An in-depth look at calculated EME levels at this site

This table provides calculations of RF EME at different distances from the base station for emissions from existing equipment alone and for emissions from existing equipment and proposed equipment combined. All EME levels are relative to 1.5 m above ground and all distances from the site are in 360° circular bands.

	Existing configuration		Proposed configuration			
Distance from the site	Electric field (V/m)	Power density (mW/m²)	Percentage of the public exposure limit	Electric field (V/m)	Power density (mW/m²)	Percentage of the public exposure limit
0-50m				12.26	398.37	4.14%
50-100m				12.36	405.49	4.18%
100-200m				9.68	248.47	3.74%
200-300m				6.85	124.41	1.90%
300-400m				4.58	55.54	0.85%
400-500m				3.41	30.81	0.47%

#### Calculated EME levels at other areas of interest

This table contains calculations of the maximum EME levels at selected areas of interest, identified through consultation requirements of the <u>Communications Alliance Ltd Deployment Code C564:2020</u> or other means. Calculations are performed over the indicated height range and include all existing and any proposed radio systems for this site.

#### Maximum cumulative EME level for the proposed configuration

Location	Height range	Electric field (V/m)	Power density (mW/m²)	Percentage of the public exposure limit
No locations identified				

Issued by: WaveForm Global, NAD (v1.0.114870.37848) Environmental EME report (v12.4 Feb 2021)

Produced with RF-Map 2.1 (Build 3.2)

Proposed Telecommunication Facility

1A Kensington Street, NORVILLE

DA: 522.2021.268.1

Photomontage Set

### **Photo points**



# View 1



View 2



View 3



RA6-N



SARA reference: 2108-24414 SRA
Council reference: 522.2021.268.1
Applicant reference: AQ4680-001 Bundy South

14 October 2021

Chief Executive Officer
Bundaberg Regional Council
PO Box 3130
BUNDABERG QLD 4670
development@bundaberg.qld.gov.au

Attention: Mr Dean Catorall

Dear Mr Catorall

### SARA response—1a Kensington Street, Norville

(Referral agency response given under section 56 of the Planning Act 2016)

The development application described below was confirmed as properly referred by the State Assessment and Referral Agency (SARA) on 14 September 2021.

#### Response

Outcome: Referral agency response – with conditions

Date of response: 14 October 2021

Conditions: The condition in **Attachment 1** must be attached to any

development approval

Advice: Advice to the applicant is in **Attachment 2** 

Reasons: The reasons for the referral agency response are in Attachment 3

#### **Development details**

Description: Development Permit Material Change of Use -

Telecommunications Facility

SARA role: Referral Agency

SARA trigger: Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1

(10.9.4.2.4.1) — Material change of use of premises within 25m of a state-controlled road and within 100m of a state-controlled road

intersection (Planning Regulation 2017)

SARA reference: 2108-24414 SRA

Wide Bay Burnett regional office Level 1, 7 Takalvan Street, Bundaberg PO Box 979, Bundaberg QLD 4670

Page 1 of 6

2108-24414 SRA

Assessment Manager: Bundaberg Regional Council
Street address: 1a Kensington Street, Norville

Real property description: Lot 2 on RP96755

Applicant name: Stilmark Holdings Pty Ltd C/- SAQ Consulting Pty Ltd

Applicant contact details: PO Box 50

CLAYFIELD QLD 4011 mark@saqconsulting.com.au

#### Representations

An applicant may make representations to a concurrence agency, at any time before the application is decided, about changing a matter in the referral agency response (s.30 *Development Assessment Rules*). Copies of the relevant provisions are in **Attachment 4**.

A copy of this response has been sent to the applicant for their information.

For further information please contact Jackie Larrarte, Senior Planning Officer, on 07 4122 0408 or via email WBBSARA@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely

Susan Kidd

Manager (Program Improvement)

cc Stilmark Holdings Pty Ltd C/- SAQ Consulting Pty Ltd, mark@saqconsulting.com.au

enc Attachment 1 - Referral agency conditions

Attachment 2 - Advice to the applicant Attachment 3 - Reasons for referral agency response

Attachment 4 - Representations about a referral agency response provisions

State Assessment and Referral Agency

Page 2 of 6

Page 538 Attachment 4

2108-24414 SRA

Attachment 1—Referral agency conditions
(Under section 56(1)(b)(i) of the *Planning Act 2016* the following condition must be attached to any development approval relating to this application)

No.	Conditions	Condition timing			
100m nomin author	10.9.4.2.4.1—Material change of use of premises within 25m of a state-controlled road and within 100m of a state-controlled road intersection—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Transport and Main Roads to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition:				
1.	<ul> <li>(a) A Construction Management Plan must be prepared by a suitably qualified and experienced expert and given to the District Director (Wide Bay Burnett) of the Department of Transport and Main Roads via WBB.IDAS@tmr.qld.ov.au or PO Box 486, Bundaberg, QLD 4670.</li> <li>(b) The Construction Management Plan must demonstrate that there will be no disruption to traffic on Walker Street during the course of construction.</li> </ul>	(a) and (b) Prior to obtaining development approval for building work or operational work, whichever occurs first			
	(c) The construction of the development must be undertaken in accordance with the Construction Management Plan.	(c) At all times during construction of the development			

State Assessment and Referral Agency

Page 3 of 6

2108-24414 SRA

#### Attachment 2—Advice to the applicant

#### General advice

Terms and phrases used in this document are defined in the *Planning Act 2016*, its regulation or the *State Development Assessment Provisions* (SDAP), version 2.6. If a word remains undefined it has its ordinary meaning.

State Assessment and Referral Agency

Page 4 of 6

2108-24414 SRA

#### Attachment 3—Reasons for referral agency response

(Given under section 56(7) of the Planning Act 2016)

#### The reasons for SARA's decision are:

The proposed development complies with State code 1: Development in a state-controlled road environment of the SDAP. Specifically, the development:

- · does not create a safety hazard for users of a state-controlled road
- does not compromise the structural integrity of state-controlled roads, road transport infrastructure or road works
- does not result in a worsening of the physical condition or operating performance of state-controlled roads and the surrounding road network
- does not compromise the state's ability to construct, or significantly increase the cost to construct state-controlled roads and future state-controlled roads
- does not compromise the state's ability to maintain and operate state-controlled roads, or significantly increase the cost to maintain and operate state-controlled roads
- does not compromise the structural integrity of public passenger transport infrastructure or compromise the operating performance of public passenger transport services.

#### Material used in the assessment of the application:

- · the development application material and submitted plans
- Planning Act 2016
- Planning Regulation 2017
- the SDAP (version 2.6), as published by SARA
- the Development Assessment Rules
- SARA DA Mapping system
- Human Rights Act 2019.

State Assessment and Referral Agency

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2108-24414 SRA

# Attachment 4—Representations about a referral agency response provisions

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State Assessment and Referral Agency

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# Development Assessment Rules—Representations about a referral agency response

The following provisions are those set out in sections 28 and 30 of the Development Assessment Rules¹ regarding representations about a referral agency response

# Part 6: Changes to the application and referral agency responses

#### 28 Concurrence agency changes its response or gives a late response

- 28.1. Despite part 2, a concurrence agency may, after its referral agency assessment period and any further period agreed ends, change its referral agency response or give a late referral agency response before the application is decided, subject to section 28.2 and 28.3.
- 28.2. A concurrence agency may change its referral agency response at any time before the application is decided if—
  - (a) the change is in response to a change which the assessment manager is satisfied is a change under section 26.1; or
  - (b) the Minister has given the concurrence agency a direction under section 99 of the Act; or
  - (c) the applicant has given written agreement to the change to the referral agency response.<sup>2</sup>
- 28.3. A concurrence agency may give a late referral agency response before the application is decided, if the applicant has given written agreement to the late referral agency response.
- 28.4. If a concurrence agency proposes to change its referral agency response under section 28.2(a), the concurrence agency must—
  - (a) give notice of its intention to change its referral agency response to the assessment manager and a copy to the applicant within 5 days of receiving notice of the change under section 25.1;
     and
  - (b) the concurrence agency has 10 days from the day of giving notice under paragraph (a), or a further period agreed between the applicant and the concurrence agency, to give an amended referral agency response to the assessment manager and a copy to the applicant.

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Pursuant to Section 68 of the Planning Act 2016

In the instance an applicant has made representations to the concurrence agency under section 30, and the concurrence agency agrees to make the change included in the representations, section 28.2(c) is taken to have been satisfied.

#### Part 7: Miscellaneous

#### 30 Representations about a referral agency response

30.1. An applicant may make representations to a concurrence agency at any time before the application is decided, about changing a matter in the referral agency response.3

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<sup>3</sup> An applicant may elect, under section 32, to stop the assessment manager's decision period in which to take this action. If a concurrence agency wishes to amend their response in relation to representations made under this section, they must do so in accordance with section 28.

#### **Marlaina Pickering**

From: No Reply <mydas-notifications-prod2@qld.gov.au>

Sent: Thursday, 14 October 2021 3:21 PM

To: WBBSARA@dsdilgp.qld.gov.au; RAP@dsdilgp.qld.gov.au; Development

Cc: mark@saqconsulting.com.au

**Subject:** 2108-24414 SRA application correspondence

Attachments: 2108-24414 SRA - Representations about a referral agency response provisions.pdf; 2108-24414

SRA - Response with conditions.pdf

Categories: Marlaina

Please find attached a notice regarding application 2108-24414 SRA

If you require any further information in relation to the application, please contact the State Assessment and Referral Agency on the details provided in the notice.

This is a system-generated message. Do not respond to this email.



Email Id: RFLG-1021-0012-0603

1



**Item** 

**21 December 2021** 

Item Number: File Number: Part:

L3 522.2020.229.1 DEVELOPMENT ASSESSMENT

#### **Portfolio:**

Planning & Development Services

#### Subject:

Material Change of Use for Service Station, Shopping Centre and Showroom - 60 Rifle Range Road, Bargara

#### **Report Author:**

Katrina Peardon, Planning Officer

#### **Authorised by:**

Michael Ellery, Group Manager Development

#### **Link to Corporate Plan:**

Our infrastructure and development - 2.3 Sustainable development - 2.3.3 Review and consistently enforce the planning scheme to ensure sustainable environmental practices.

#### **Summary**:

APPLICATION NO	522.2020.229.1	
PROPOSAL	Material Change of Use for Service Station, Shopping Centre	
	and Showroom	
APPLICANT	Bargara Village Pty Ltd	
OWNER	Bargara Village Pty Ltd	
PROPERTY DESCRIPTION	Lot 7 on SP228667	
ADDRESS	60 Rifle Range Road, Bargara	
PLANNING SCHEME	Bundaberg Regional Council Planning Scheme 2015	
ZONING	Local Centre Zone	
OVERLAYS	Acid sulphate soils	
	Sea turtle sensitive area	
LEVEL OF ASSESSMENT	Impact	
SITE AREA	1.942 ha	
CURRENT USE	Vacant	
PROPERLY MADE DATE	13 January 2021	
STATUS	The 35 business day decision period ends on 10 August 2021	
REFERRAL AGENCIES	Not applicable	
NO OF SUBMITTERS	Three (3)	
PREVIOUS APPROVALS	325.2007.50993.1 Development Permit for Material Change of	
	Use for General Business (Supermarket, Shops, Medical	
	Centre, Pharmacy, Commercial Premises/Catering Industries	
	(Fast Food)) via The Planning and Environment Court dated 1	
	June 2009	

	[Extension of time issued for an additional eight (8) years via the Planning and Environment Court dated 14 August 2015]
SITE INSPECTION	21 September 2021
CONDUCTED	
LEVEL OF DELEGATION	C2

#### 1. INTRODUCTION

#### 1.1. Proposal

The applicant seeks a Development Permit for a Material Change of Use for Shopping Centre, Service Station and Showroom over four (4) stages.

The proposed total Gross floor area (GFA) when complete will be 5,224.09 m<sup>2</sup>. The development is planned in four (4) stages as follows:

- Stage 1: Service Station with a GFA of 207 m<sup>2</sup> including a Café/Restaurant of 170.67 m<sup>2</sup> GFA with alfresco dining.
- Stage 2: Five (5) Speciality Shops with GFA between 214 m<sup>2</sup> 283 m<sup>2</sup>, six (6) Retail Stores with GFA between 84 m<sup>2</sup> 129 m<sup>2</sup> and a Café/Restaurant with a GFA of 216.5 m<sup>2</sup>.
- Stage 3a: Four (4) Bulky Goods shops with GFA between 305 m<sup>2</sup> 309 m<sup>2</sup>.
- Stage 3b: Limited line Supermarket with a GFA of 1,510.74 m<sup>2</sup>.

The proposal includes the following features:

- Maximum building height of 7.4 m
- Site cover of 26.9% (5,224.09 m<sup>2</sup>)
- Landscaped area of 16.41% (3,186.63 m<sup>2</sup>)
- 204 car parking spaces, including 10 persons with disability (PWD) spaces
- 42 bicycle parking spaces
- Left-in/left-out only via Hughes Road and two (2) separate crossovers from Rifle Range Road including a left-in only to the service station and a T-intersection further to the east allowing vehicle movements to the east and west.

The proposed stages of development are as follows:

Stage	Building	Gross Floor Area
1	Service Station	207 m <sup>2</sup>
	Café/Restaurant	170.67 m²
	Total	377.67 m <sup>2</sup>
2	Speciality Shop 1	255.23 m²
	Speciality Shop 2 (Bottle Shop)	214.14 m²
	Speciality Shop 3	233.55 m²
	Speciality Shop 4	282.20 m²
	Speciality Shop 5 (Gymnasium)	282.68 m²

	Retail 1	128.42 m²
	Retail 2	119.52 m²
	Retail 3	119.52 m²
	Retail 4	84.52 m <sup>2</sup>
	Retail 5	84.52 m <sup>2</sup>
	Retail 6	84.52 m²
	Café/Restaurant	216.58 m <sup>2</sup>
	Total	2,105.40 m <sup>2</sup>
3a	Bulky Goods 1	309.16 m <sup>2</sup>
	Bulky Goods 2	305.98 m <sup>2</sup>
	<b>Bulky Goods 3</b>	305.98 m <sup>2</sup>
	Bulky Goods 4	309.16 m <sup>2</sup>
	Total	1,230.28 m <sup>2</sup>
3b	Supermarket	1,510.74 m²
	Total	1,510.74 m²
	Stage 3a & 3b total	2,741.02 m <sup>2</sup>
	Total Site Building Area	5,224.09 m <sup>2</sup>

As part of the development application, the following reports were submitted:

- Service Station Economic Assessment prepared by Ethos Urban
- Showroom and Bulky Goods Economic Assessment prepared by Ethos Urban
- Traffic Impact Assessment prepared by RMA Engineers
- Waste Management Plan prepared by RMA Engineers
- Civil Services Engineering Report prepared by Intrax Engineers
- Landscape Concept Plan prepared by Saunders Havill Group
- Environmental Noise Impact Assessment Report prepared by CRG Acoustics Pty Ltd
- Stormwater Management Plan prepared by Storm Water Consulting Pty Ltd

The proposed development requires Impact assessment as per Table 5.4.7 of the Bundaberg Regional Council Planning Scheme 2015 due to the Service Station and Showroom use components.

# 1.2. Site Description

The subject site is located within the Local centre zone, with an area of 1.942 ha. The site is located on the corner of Hughes Road and Rifle Range Road, having a road frontage of 80 m and 150 m respectively.

The site is currently unimproved, containing no buildings, structures or infrastructure. The site previously contained a dwelling house, which was removed from the site in 2015 (Council reference: 301.2015.75689.1).

The site is predominantly flat, falling from the Hughes Road frontage (17.5 m AHD) to the eastern property boundary (16 m AHD). Council's sewer, water and stormwater infrastructure locate within the road reserve, with a 2.5 m wide pedestrian pathway located along the Hughes Road frontage of the site. No formal vehicle crossovers are currently provided to the site.

The site is surrounded by Low Density Residential zoned land to the north, east and south, mostly developed for residential lots. The site is directly adjoined by Lot 8 on SP228667, being a 4.93 ha vacant lot, which adjoins the Palm Lake Resort, containing aged care facility, health care centre and relocatable home park. Emerging Communities zoned land is located to the west of the site, predominantly undeveloped and Rural zoned land to the south-west being utilised for rural cropping activities.

# 1.3. Site History

A Development Permit for Material Change of Use for General Business (Supermarket, Shops, Medical Centre, Pharmacy, Commercial Premises/Catering Industries (Fast Food)) was issued for the site 1 June 2009, via the Planning & Environment Court (Council reference: 325.2007.50993.1). A change to the Consent Order was requested via the Planning & Environment Court, to extend the relevant period. An eight (8) year extension to the relevant period was issued 14 August 2015, extending the Development Permit to 14 August 2023.

#### 2. ASSESSMENT PROVISIONS

#### 2.1. Assessment Benchmarks

The following are the benchmarks applying for this development:

Benchmarks applying for the development	Benchmark reference
Zone Code: Local Centre Zone	Bundaberg Regional Council
	Planning Scheme 2015
Overlay Code	Bundaberg Regional Council
Sea Turtle Sensitive Area Code	Planning Scheme 2015
Use Code	Bundaberg Regional Council
Business Uses Code	Planning Scheme 2015
Service Station Code	
Other Development Code	Bundaberg Regional Council
Landscaping Code	Planning Scheme 2015
Nuisance Code	
Transport and Parking Code	
Works, Services and Infrastructure Code	
Planning Scheme Policies	Bundaberg Regional Council
<ul> <li>Planning scheme policy for development works</li> </ul>	Planning Scheme 2015
Planning scheme policy for waste management	
Local Plan Code	Bundaberg Regional Council
Central Coastal Urban Growth Area Local Plan	Planning Scheme 2015
Code	

Meeting held: 21 December 2021

#### 2.2. Relevant Matters

The following matters were given regard to or assessment carried out against, in undertaking the assessment of this development application.

# Other relevant matters to the assessment of the development under section 45(5)(b)

Development Approval - 325.2007.50993.1 - Material Change of Use for General Business (Supermarket, Shops, Medical Centre, Pharmacy, Commercial Premises/Catering Industries (Fast Food)

#### 3. ISSUES RELEVANT TO THE APPLICATION

The following significant issues have been identified in the assessment of the application:

# **Consistency with Strategic Planning Intent**

The proposed material change of use is subject to assessment against the Central coastal urban growth area structure plan and the relevant codes of the Planning Scheme to ensure that the proposed use will achieve the intended character for the locality. An assessment was provided by the applicant, which articulated that the proposal is able to comply the local plan provisions.

The Purpose and overall outcomes of the Central Coastal Urban Growth Area Structure Plan Code is to provide for the logical, orderly, efficient and sustainable development of the central coastal urban growth area in a manner that:

- (a) facilitates the creation of complete and vibrant communities comprising of interconnected residential neighbourhoods and supporting local services, community facilities and open space;
  - (i) development provides for any new activity centres to establish as vibrant, mixed use places with both residential and non-residential activities appropriate to their role and location, and displaying high quality urban design and landscaping;

The proposal is for a Shopping Centre, Service Station and Showroom use, providing for the surrounding coastal residential development.

The development provides for a total of 18 tenancies, including a limited line supermarket, four (4) small bulky goods stores, two (2) café/restaurants, five (5) speciality stores including a gymnasium and bottle shop, and six (6) retail stores. As discussed below, the proposed development is supported by economic assessment reports and justification for the

With reference to Performance outcome PO1 of the Central Coastal Urban Growth Area Local Plan Code for the pattern of settlement and land use structure, Figure 7.2.1 'Central Coastal Urban Growth Area Structure Plan Concept' shows the site being a Local Activity Centre.

The proposed development will deliver non-residential uses to support the surrounding residential development. The development proposes high quality urban design outcomes, with substantial landscaping along the site frontage and internal areas.

As discussed in detail below, the submitted needs assessment demonstrated that the proposed development would service the local area, with current gaps experienced by the surrounding community. The delivery of this centre will ensure that the surrounding residential neighbourhood is a complete and vibrant community, with many of the surrounding residents locating within easy walking distance to the proposed development.

It is considered that the proposal complied with the purpose, overall outcomes and performance outcomes of the Central Coastal Urban Growth Area Local Plan Code.

# **Planning Scheme Zoning**

The subject site is zoned Local Centre zone. The purpose of the zone is to:

- provide for a limited range of land uses and activities to meet the local level retail, business and community needs of coastal towns and their surrounding rural catchments and residential neighbourhoods within Bundaberg
- accommodate local shopping and commercial activities, cafes and dining, community services and residential development where it can integrate and enhance the fabric of the activity centre, but is not the predominant use
- be developed as well-designed, safe and visually attractive centres, predominantly in a low-rise building format, where significant off-site impacts are avoided
- complement and do not undermine the role and function of higher order activity centres

The following assessment against the role and function of the Local Centre zone supports that the development will provide for the needs of the surrounding coastal town, with a mix of retail, small footprint bulky goods and service station. The proposed development is of a low-rise building format, with lighting and noise impacts addressed through an environmental noise impact report and appropriate conditioning.

The submitted economic assessments conclude that the development will not undermine the role and function of higher order activity centres, with development to bridge current gaps in coastal development, with bulky goods component to be limited to an acceptable total footprint.

# **Business Uses Code**

The purpose of the Business Uses Code is to ensure that business uses and other centre activities are developed in a manner consistent with the Bundaberg Regional Activity Centre Network and are of a high quality design which reflects good centre design principles and appropriately responds to local character, environment and amenity considerations.

The purpose of the Business Uses Code is achieved through a number of overall outcomes which require business uses to be consistent with the role and function of the centre and intentions of the zone it's located in, incorporates building and landscape design that responds to the character of the particular local area, integrates into its surrounds and avoids or mitigates adverse impacts upon the amenity, privacy or environmental quality of nearby residential uses.

# Role and function of centre

Local activity centres provide for local shopping needs, function as local employment nodes and comprise a mix of commercial, cafes/dining, entertainment and community

services for a surrounding residential neighbourhood. They may have a small residential component including visitor accommodation.

Performance outcome PO1 of the code states that the business use is of a type, scale and intensity that is consistent with the role and function of the centre and the intentions of the zone it is located in. The Bundaberg Region Activity Centre Network is derived from the Economic Development theme within the Strategic Framework of the Planning Scheme. The subject site is identified as a Local Activity Centre within the Strategic Framework Map SFM-001 (Settlement pattern elements) and SFM-002 (Economic development elements. Section 3.4.2 of the Strategic Framework states the following intent for Bargara South Local activity centre:

Local activity centres provides for local shopping needs, function as local employment nodes and comprise a mix of commercial, cafes/dining, entertainment and community services for a surrounding residential neighbourhood. They may have a small residential component including visitor accommodation.

Specific outcomes for the Activity Centre Networks also states that "development does not undermine or compromise the activity centre network either by proposing centre activities outside of an activity centre or by proposing a higher order or larger scale of uses than intended for a particular activity centre".

The activity centre network in the Strategic Framework shows the central coastal area between Burnett Heads and Elliott Heads is serviced by a District Centre at Bargara Central, with Local Centres at Burnett Heads town centre, Bargara town centre, Bargara south (proposed; current DA) and Elliott Heads (proposed).

In this context, the proposed local centre at Bargara south is intended to service a residential neighbourhood roughly comprising the southern part of Bargara along with parts of Innes Park and Coral Cove. The proposed Shopping Centre is code assessable development in the Local Centre zone and is considered to be consistent with purpose and overall outcomes of the Local Centre Zone Code (in terms of scale of the proposed centre and its impact on the activity centre network).

The Service Station and Showroom uses are Impact Assessable uses in the Local Centre zone. These uses typically service a broader catchment and have potential to impact on the activity centre network and/or surrounding residential amenity. To support these components of the proposal, the applicant submitted a Service Station Economic Assessment and Showroom and Bulky Goods Economic Assessment, prepared by Ethos Urban.

The Service Station Economic Assessment supports that there is a current gap in the service station network in the study area, with service stations within the study area servicing a population of approximately 6,000 persons compared to the regional Queensland average of 3,230 persons per service station. Additionally, the report outlines the labour force participation rate in the study area is low compared to the average, and therefore the extent of community beyond the study area for work is not as high, resulting in the service station predominantly servicing the surrounding residential development. The proposed service station will service the southern Bargara area south to Elliott Heads, with the current and forecast demand for fuel sufficient to support the existing and proposed service station. The Service Station Economic Assessment shows there is current demand for the proposed Service

Station, and that it is not expected to adversely affect the viability of existing service stations in the broader central coastal area.

The Showroom and Bulky Goods Economic Assessment identifies that the specialised centre zone is intended to provide for bulky goods and showroom uses, as outlined in the purpose of the Local Centre Zone Code. A number of Specialised Centre zoned areas locate within the urban areas of Bundaberg, however no Specialised Centre zoned land is currently located within the trade area of the assessment (Burnett Heads to Elliott Heads). The assessment suggests that due to the limited floor space opportunities as part of the proposed development, the assessment suggests that the development us unlikely to have any significant competitive influence on existing retailers in precincts such as Johanna Boulevard/Takalvan Street given the critical mass of floorspace and range of anchor tenants provided within the existing precinct. The assessment outlines that continuing population and spending growth in the region will support the ongoing viability and development of larger bulky goods precincts in the urban areas of Bundaberg, and the use will provide trade area residents, businesses and visitors with improved convenience and accessibility to a limited range of bulky goods retail and showroom uses that would otherwise not be available in the trade area.

The Showroom and Bulky Goods Economic Assessment supports that there is demand for a limited amount of bulky goods/showroom uses to service the nominated trade area (which includes the broader central coastal area) and that the proposed 1,230 m<sup>2</sup> of bulky goods/showroom uses will not undermine the activity centre network.

Critically, the Central Coastal Urban Growth Area Local Plan Code (Overall outcome (k) and PO10) indicates that, subject to demonstrated need, an additional specialised activity centre/low impact industry area may be established at an appropriate location in the growth area to predominantly service residents in the broader central coastal area.

Its should also be noted that the proposed bulky goods tenancies are only a maximum of 309 m<sup>2</sup> each.

Regularly this is not large enough for large format style bulky goods stores such as furniture stores, large hardware stores, bulk stationary stores and the like to locate. It's anticipated that the uses of that will go in these tenancies will be of a size and scale to serve the local community.

In order to ensure that the Showroom component of the development does not impact higher order centre zones, it is recommended a condition be applied to limit the total floor area of the use to 1,231 m², and restrict each building to be individually tenanted, not permitting the amalgamation of tenancies. Additionally, if showroom uses are not proposed within the tenancies, the shopping centre use would extend over the full site, allowing for other uses to locate in the buildings.

Furthermore, advice given from Council's strategic planning team is that given the size and scale of the proposed Showroom uses, that these tenancies may have been able to fall within the definition of a 'shopping centre' being "The use of premises for an integrated shopping complex consisting mainly of shops". The proposed showroom uses account for 23.5% of the total GFA of the proposed shopping complex and may be used interchangeably for shops. Given that more than 75% of the shopping complex will be used for shops it is considered that these tenancies may have been able to fall under this definition.

# Relationship of building to streetscape and public realm

Performance outcome PO2 requires of the Business Uses Code requires business uses to locate in buildings that clearly defines, frames or encloses the street and other usable public and semi-public open space; has a front building line that is consistent with the existing or intended built form of the locality; and has a positive street front address and helps create or maintain an attractive and coherent local streetscape character.

The correlating acceptable outcome AO2.2 prescribes a 6 m setback for all buildings from the street frontage, and for main entrances of buildings to front the street. The proposed development provides a compliant 6 m setback for all buildings fronting Rifle Range Road. The proposed Bulky Goods store fronting Hughes Road provides a 6.7 m setback at the northern-most elevation, however due to the geometry of Hughes Road along the frontage approaching the roundabout from the north, the curvature of the road gradually reduces the southern-most elevation setback to 3.8 metres. The building line is therefore considered to be consistent when viewed from the street and will provide a consistent building setback line when the site to the north is developed, due to the curvature of Hughes Road. The applicant has also provided additional landscaping along the Hughes Road frontage along the Bulky Goods building façade. Car parking areas and buildings are located in a way to ensure that car parking areas do not dominate the streetscape. This is further assisting by the provision of landscaping along both frontages.

# **Building height**

Performance outcome PO8 of the Local Centre Zone Code requires that development, other than in the Burnett Heads and Bargara town centres, has a low-rise built form that is compatible with the existing and intended scale and character of the streetscape and surrounding area.

The corresponding Acceptable Outcome AO9 references a maximum building height of 2 storeys and 10 m. The proposal plans demonstrate the proposed development has a compliant maximum building height of 7.4 m, with building heights for each individual buildings as follows:

- Stage 1 Service Station canopy: 5.5 m
- Stage 1 Service Station building and Café/Restaurant: 7.2 m
- Stage 2 Café/ Restaurant & Retail Shops 1 6: 5.895 m
- Stage 2 Speciality Shops 1 5: 6.595 m
- Stage 3a Bulky Goods 1 4: 7.397 m
- Stage 3b Supermarket: 7.152 m

# Built form and urban design

Performance outcome PO11 of the Local Centre Zone Code and Performance Outcome PO7 of the Business Uses Code relate to built form, building features and articulation. The Performance Outcomes seek to achieve a high standard of architecture, urban design and landscaping that creates visual interest, attractive and functional buildings, streets and places.

The proposed buildings have articulated and textured facades, which include a variety of external finishes (including painted rendered walls, gloss paint, wall tiles, raw concrete panels and powder coated metal extrusions), pedestrian awnings, screening and glazed windows as shown on the proposal plans. The proposed buildings are

articulated and finished in a manner that positively attribute to the streetscape and creates visual interest through the design of façade facing both the Hughes Road and Rifle Range Road frontages. The rear elevations of the buildings facing the adjoining lot have been amended to include powder coated metal extrusions, attaching to the painted concrete panels, with alternate colours to be utilised. These building features ensures that no buildings contain an unbroken length longer than 15 m. The proposal also involves a large portion of the site to be landscaped (3,186 m²/16.41% of the site), with landscaping proposed along the full extent of both road frontages, along the side/rear boundaries of the site (except for the bin storage area along the northern boundary, where an acoustic fence is proposed for a length of approximately 16 m) and throughout the site, including shade trees within the car parking areas.

The proposed development has a site cover of 26.9% complying with the maximum site coverage of 70% as prescribed by Acceptable Outcome AO6.1 of the Business Uses Code.

All buildings are setback a minimum 3 m from all side boundaries containing a 2 m wide landscaping strip, compliant with Acceptable Outcome AO6.3 of the Business Uses Code.

### **Noise**

Performance outcome PO1 of the Nuisance Code states that development is located, designed, constructed and operated to ensure that noise emissions do not adversely impact upon surrounding sensitive land uses.

As part of the development application, an Environmental Noise Impact Report prepared by CRG Acoustics was submitted, with noise modelling and predictions of onsite commercial activity noise emissions supplied and recommendations regarding acoustic treatments to be provided. Each stage of development was individually assessed, with the completion of Stages 2 & 3 expected to minimise the impact of Stage 1 on land uses to the north.

The following recommendations were provided to mitigate onsite activity noise impacts:

- Limiting of hours of operation in accordance with those proposed in the development application.
- Construction of the acoustic barriers as detailed in Sketch 1 and Sketch 2 of Appendix A. Barriers are to be free of gaps and holes including between the base of the barriers and the ground. Typical materials include earth berms, 19mm lapped timber fence (40% overlap), 9 mm FC sheet, toughened glass, Perspex, masonry, or a combination of the above (a minimum surface mass of 11kg/m²).
- Driveway and car parking areas be finished with surface coatings which prevent tyre squeal (an uncoated unpolished concrete or bitumen surface is acceptable).
- Drainage grating over trafficable areas be well secured to prevent rattling.
- Mechanical plant for the development be designed and installed to comply with the noise criterion presented in Section 4. As final plant selection has not been completed, an assessment of plant should be conducted during the design phase.

- Based upon the assumed mechanical plant and source levels, outside condenser units and refrigeration compressors will likely require acoustic screens / enclosures and exhaust fans likely to require acoustic silencers/ attenuators.
- To minimise noise emissions and the acoustic treatment requirement, mechanical plant should be located as far as possible from the nearest offsite noise sensitive receivers, particularly the future residential uses to the immediate north and east.

To minimise visual impact to the adjoining residential lot, it is recommended that the acoustic barriers be conditioned to require any portion of the barrier exceeding 2 m to be constructed of Perspex or a similar clear material, with a minimum surface mass of 11km/m<sup>2</sup>.

Using a combination of the above recommendations, the proposed development is not expected to result in a negative impact to surrounding residential amenity. The proposed activities and operations are expected to meet the relevant noise criteria and objectives, with the exception of waste collection, truck movements and deliveries which will be limited to the hours of 7 am to 6 pm to minimise impacts on nearby residents.

The report concludes that based upon the proposed layout of the development, onsite activities can be designed and constructed to achieve acceptable levels of the adopted criterion subject to acoustic treatments and management controls as outlined above.

It is also noted that notwithstanding any condition of this development permit, all uses the subject of this development permit are required with the acoustic quality objectives of the Environmental Protection (Noise) Policy 2019.

# **Hours of operation**

Acceptable outcome AO9.1 of the Business Uses Code requires that undesirable visual, noise and odour impacts on public spaces and residential uses are avoided or reduced by, where appropriate, limiting the hours of operation of the business use to maintain acceptable levels of residential amenity relative to the site context and setting.

Proposed hours of operation of the Shopping Centre/Showroom use are as detailed below:

- Bulky Goods / Supermarket, 7 am 9 pm 7 days per week;
- Café / restaurants 7 am to 11 pm, 7 days per week;
- Bottle Shop in Specialty Shop 2, 10 am to 10 pm, 7 days per week;
- Gym (self serve style) in Specialty Shop 5, 24 hours, 7 days per week;
- Goods delivery and waste collection 7 am to 6 pm, 7 days per week.

The proposed development has been designed and sited to ensure that the proposed buildings locate along the perimeter of the site, allowing the development to orientate towards the centre of the site. The siting of buildings reduces the impact of the business use on the adjoining residential lot, with acoustic fencing to be provided between the two sections in which building breaks are proposed. The proposed acoustic fencing is to be provided in both Stage 2 and Stage 3b of the development where buildings do not locate along the site boundaries, as recommended by the Environmental Noise Impact Report prepared by CRG Acoustics Pty Ltd. The proposed acoustic barrier is to have a maximum height of 3.75 m, constructed of a

combination of a 2 m high masonry wall with a 1.75 m high Perspex above. All rear elevations of the proposed buildings include architectural features to ensure no unbroken length exceeds 15 m, combined with a landscaping buffer, and a compliant setback of 3 m to ensure visual amenity of the adjoining lot is not adversely impacted. The proposed loading bay to the northern boundary to service the proposed supermarket will be appropriately screened to ensure no adverse amenity impacts on existing and future residential development to the north.

Hours of operation for each use type, and deliveries, loading/unloading activities and refuse collection will be limited in accordance with the submitted Environmental Noise Impact Report. Additionally, a condition relating to amplified noise associated with the gym use (speciality shop 5) is to be restricted to 7 am to 8 pm Monday to Sunday.

Acceptable Outcome AO9 of the Service Station Code requires a 2 m high solid screen fence along all common boundaries where adjoining land included in a residential zone, and hours of operation limited to between 6.00 am and 10.00 pm. As the proposed development does not involve the construction of a 2 m high solid screen fence along the side boundaries, and proposes 24-hour operation, 7 days per week and as such assessment is required against the correlating Performance Outcome. Performance Outcome PO9 states that the service station ensures the amenity of existing or planned residential activities on adjoining premises is protected.

The proposed development has been designed to site the service station in the south-western corner of the site, with the fuel bowsers setback approximately 50 m and the associated service station building setback approximately 60 m from the northern property boundary. Currently the closest adjoining residential development is Palm Lake, with dwellings located an additional 55 m from the northern property boundary of the site, resulting in a separation distance exceeding 100 m.

As outlined above, the applicant has provided an Environmental Noise Impact Report outlining the proposed hours of operation in association with noise mitigation measures allows for each stage of development, including the service station for Stage 1 without acoustic fencing to meet acoustic quality objectives.

It is also noted that notwithstanding any condition of this development permit, all uses the subject of this development permit are required with the acoustic quality objectives of the Environmental Protection (Noise) Policy 2019.

# **Landscaping**

The purpose of the Landscaping Code is to ensure that landscaping is provided in a manner which is consistent with the desired character and amenity of the Bundaberg Region. Overall outcomes which will achieve this purpose are based upon landscaping that complements and integrates built environment and form, adds to the desired character, minimises energy and water consumption, encourages local plant species and is functional, durable, practical and considers personal safety.

As part of the development application, a Landscape Concept Design prepared by Saunders Havill Group was submitted. The Concept Design outlines the masterplan and variety of landscaping proposed to be utilised as part of the development. The proposed landscaping includes feature tiered landscaping of groundcovers, shrubs and small trees throughout the development, large feature shade trees, car park shade trees, car park low level planting and buffer planting along the site boundaries. It is recommended Council's standard condition be applied to require a full landscape plan

to be prepared in accordance with Council's Planning Scheme Policy for Development Works to be submitted for approval.

# **Lighting**

Performance Outcome PO7 of the Nuisance Code states development ensures that lighting and glare does not have any significant adverse amenity impacts or create nuisance to surrounding premises. Performance Outcome PO3 of the Sea Turtle Sensitive Area Overlay Code also seeks to ensure development minimises reflective glare that contributes to sky glow.

The proposed building materials consisting of painted rendered walls, wall tiles and raw concrete are of a low reflectivity. Paint colours to be utilised on rendered walls are of a grey and charcoal colour and are not considered to result in any reflectivity issues. Council's standard condition for lighting within a Sea Turtle Sensitive Area Overlay are recommended to be applied to the development. These conditions will require compliance with Australian Standards and ensure external lighting installed prevents the light from escaping upward and directs light down and away from the ocean.

# **Transport and Parking Code**

The purpose of the Transport and Parking Code is to ensure that transport infrastructure (including pathways, public transport infrastructure, roads, parking and service areas) is provided in a manner which meets the needs of the development, whilst maintaining a safe and efficient road network, promoting active and public transport use and preserving the character and amenity of the Bundaberg Region.

# Roadworks

It should be noted that Council has recently been successful in receiving funding through the TIDS program to upgrade Rifle Range Road and to link proposed works of the Palm Lake development with the Hughes Road/Rifle Range Road/Windermere Road roundabout. The works are proposed to be completed in the 2022 – 2023 financial year. Advice should be given regarding the Rifle Range Road frontage works so that it would allow flexibility that this work can be carried out by either Council or the developer, dependant on the timing of development or Council works. If Council do the works, it would not provide turning treatments etc, that are required for the development. It is recommended that this matter be discussed internally between Planning and Engineering staff at the operational works stage.

Recent Palm Lake Approval saw the conditioning of the widening of Rifle Range Road for the length of the development land to a half width Urban Road – Trunk Collector standard which involves a 7.7 m seal from the road centreline (526.2019.179.1). This road was trunk offsetable and it is envisioned the same will be arranged for this development. To provide complete connectivity along Rifle Range Road and avoid a missing portion between the two developments, it is recommended that the widening be constructed past the development boundary to meet up with the conditioned road widening at the Palm Lake development.

#### Pedestrian connectivity/Active transport

The recent Palm Lake Development Approval (526.2019.179.1) required a 2.5 m wide path on the northern side of Rifle Range Road, as indicated on Council's LGIP as a collector pathway (LGIP ID: P.FP.00055). This path was trunk offsetable and it is envisioned the same will be arranged for this development.

To provide complete connectivity along Rifle Range Road and avoid a missing portion between the two developments, it is recommended that the path be constructed past the development boundary to meet up with the conditioned path at the Palm Lake development.

# Access

A channelised left turn should be constructed at access 1 to minimise the impact on Hughes Road traffic (80 km/h road). With the internal parking areas located within close proximity to the entrance there is potential that vehicles manoeuvring in and out of parking bays (ones closer to Hughes Road) would affect Hughes Road traffic flows, particularly in the longer term when traffic volumes on the Hughes Road extension increase. The length of the turning lane required to service the development will be determined as part of the detailed design phase of Operational Works application, based on traffic modelling. It should be noted that the existing pathway along Hughes Road is located hard against the property boundary, advice is recommended noting services integration and finished levels should be closely checked at this location as there is limited space to make adjustments.

Swept paths for largest design vehicle in access 2 will be submitted and reviewed at detailed design stage of the Operational Works application process, incorporating any widening required. Detailed design of the channelised right and auxiliary left turn treatments (as proposed) should be conditioned for access 3.

Accesses are recommended to be conditioned in accordance with Council's Standard Drawing R1011 – Industrial and Commercial Driveway Slab.

# Internal manoeuvring

The bin store area and loading area in stage 3B will need to be amended as per option b in the applicant's response to Council's Information Request dated 29 April 2021.

The identified conflict point required careful consideration with the design, and it was recommended that an alternative design be considered to minimise the conflict of vehicles approaching head-on in opposing directions. This area also serves as a manoeuvring area for service vehicles and the safety impacts manoeuvring within a high conflict area should be reviewed. The applicant responded to Council's Information Request on 29 April 2021 and it is recommended that appropriate line marking be established at this area to avoid vehicle manoeuvring confusion. Detailed design is required to be completed as part of the Operational Works application.

# Car Parking

As part of the development a total of 204 on-site parking spaces are proposed, including 10 parking spaces for persons with disability (PWD) and dedicated loading area allowing for deliveries and waste collection. At the parking rates prescribed by Table 9.3.5.3.3 of the Transport and Parking Code, a total of 226 parking spaces would need to be provided to service the development. The proposal provides a total of 204, plus additional temporary parking at the service station fuel bowsers.

Due to the cross utilisation of car parking spaces allowing motorists to visit multiple tenancies, Council accept a 10-20% reduction in the total number of car parking spaces provided, specifically noting that the short fall of parking occurs as part of Stage 3b of the development.

It is also acknowledged that different tenancies will result in different peak parking demands. The following table outlines the prescribed minimum car parking requirements for each stage of development and parking spaces proposed:

Stage	Building	Gross Floor Area	Car parking ratio prescribed	Car parking proposed
1	Service Station	207 m <sup>2</sup>	1 space/20 m <sup>2</sup> GFA (when involving sale of goods) + 2 spaces / service bay	
	Café/Restaurant	170.67 m²	1 space/20 m² GFA	
	(Shopping centre)			
	Total	377.67 m²	19	18
2	Speciality Shops (5)	1,267.8 m <sup>2</sup>	1 space/20 m² GFA	
	Retail Shops (6)	621.02 m²	1 space/20 m² GFA	
	Café/Restaurant	216.58 m²	1 space/20 m² GFA	
	Total	2,105.40 m²	105	113
3а	Bulky Goods Stores (4)	1,230.28 m <sup>2</sup>	1 space/50 m² GFA	
	Total	1,230.28 m²	25	32
3b	Supermarket	1,510.74 m²	1 space/20 m² GFA	
	Total	1,510.74 m²	76	41
Total S	Site Building Area	5,224.09 m <sup>2</sup>	225	204

Car parking and manoeuvring areas are recommended to be constructed from unpolished concrete or bitumen sealed to help reduce negative noise impacts to surrounding residential amenity, in accordance with the Environmental Noise Impact Report prepared by CRG Acoustics Pty Ltd (dated 12 April 2021). It is recommended a condition be applied requiring asphalt sealing of all car parking and manoeuvring areas to help reduce noise given the close proximity of residential uses. Asphalt is quieter then sealed or concreted pavements. This also complies with the Planning Scheme Policy for Development Works section SC6.3.3.4.9.1(4) which requires pavement surfacing, at a minimum be equivalent to the road surface fronting the development, with Rifle Range Road being asphalt.

# Pedestrian and bicycle access and manoeuvring

As part of the development a total of 42 bicycle parking spaces are proposed. At the rates prescribed by Table 9.3.5.3.3 of the Transport and Parking Code, a total of 29 bicycle parking spaces would need to be provided to service the development. The proposal provides additional spaces to that required by the code, and are located through each stage of development, as indicated in the below table.

Stage	Building	Gross Floor Area	Bicycle parking ratio prescribed	Bicycle parking proposed
1	Service Station	207 m²	1 space / 400 m <sup>2</sup> GFA (minimum 6 spaces)	
	Café/Restaurant (Shopping centre)	170.67 m²	1 space/200 m <sup>2</sup> GFA	
	Total	377.67 m <sup>2</sup>	7	12
2	Speciality Shops (5)	1,267.8 m²	1 space/200 m <sup>2</sup> GFA	
	Retail Shops (6)	621.02 m²	1 space/200 m <sup>2</sup> GFA	
	Café/Restaurant	216.58 m²	1 space/200 m <sup>2</sup> GFA	
	Total	2,105.40 m²	11	18
3а	Bulky Goods Stores (4)	1,230.28 m <sup>2</sup>	1 space/400 m <sup>2</sup> GFA	
	Total	1,230.28 m²	3	6
3b	Supermarket	1,510.74 m²	1 space/200 m <sup>2</sup> GFA	
	Total	1,510.74 m²	8	6
Total Site Building Area		5,224.09 m <sup>2</sup>	29	42

#### Works, Services and Infrastructure Code

The purpose of the Works, Services and Infrastructure Code is to ensure that development works and the provision of infrastructure and services meets the needs of the development, and is undertaken in a professional and sustainable manner.

An assessment of the preliminary proposal against the applicable performance outcomes has demonstrated that the proposal either generally complies or can be conditioned to provide further information to demonstrate compliance with the requirements of the Code. The breakdown of various matters featured under this code is below.

# <u>Sewerage</u>

Applicant proposes point of connection to the existing 525 mm sewer main located along the Hughes Road frontage.

Connection to the main is located at the stage 1 boundary and it is proposed that internal connections for stage 2 and 3 be located at the shared boundaries with stage 1. The invert of the closest sewer manhole is RL14.14 which will service approximately 140 m of the site. An internal lift station is proposed to service the entire 170 m of the site.

The proposal is acceptable to Council, complying with the Works, Services and Infrastructure Code. Standard conditioning regarding sewerage required to service the development is recommended.

#### Water

Applicant proposes point of connection to the existing 100 mm water main crossing Rifle Range Road. Connection to the main is located at the stage 1 boundary and it is proposed that internal connections for stage 2 and 3 be located at the shared boundaries with stage 1. It is also proposed that a booster pump be installed at the boundary and also storage tanks if required given the firefighting requirements for the proposed buildings.

The proposal is acceptable to Council, advice note regarding sub-meters being installed in accordance with the relevant Acts and Codes is recommended.

#### Stormwater

The site is identified within two stormwater catchments, partly within the Palm Lake Resorts stormwater catchment (approximately 70% of the site) with the remaining catchment draining to Rifle Range Road.

The applicant's preference is to drain the whole of the subject site to the Palm Lake connection pipe to the north. As part of the Palm Lake development approval (325.2012.34663.1), it was conditioned that they continue to receive upstream stormwater flows. This option requires on-site detention via an underground detention tank to manage and limit the amount of discharge from the site to the catchment which only currently anticipates 70% of the stormwater discharge. It would also require infrastructure under easement within the northern parcel of land adjacent to the development. Negotiations with adjoining landowners in relation to obtaining this easement were not successful, therefore the applicant proposes to construct on-site detention with pump discharge to Rifle Range Road.

The applicant proposes to locate the detention basin and overflow basin within the stage 3B portion of land. While Council is agreeable to this solution, it is recommended to include conditioning which requests the applicant to provide an updated Stormwater Management Plan at the time of submitting an Operational Works application for this stage of development.

The submitted Stormwater Management Plan as response to Council's further advice letter dated 9 July 2021 notes the use of 3 x Ultraflow pumps (model: UMDZHF7500/100/3) to manage the discharge to Rifle Range Road. Council noted that the required pump out rate is 160L/s while the 3 pumps can provide 150 L/s. The applicant has been advised that detailed design of the pump out system will be required to be provided as part of the Operational Works application and is recommended to be conditioned.

With respect to stormwater quality, the applicant has advised in the Stormwater Management Plan that a standard pit and pipe system throughout the car parking will collect the surface runoff and downpipes from the roof drainage. Gross Pollutant Traps (GPT's) such as SPEL Stormsack baskets will be utilised in the stormwater pits. For the proposed Service Station, an underground fuel spill capture system (eg SPEL Puraceptor) is also proposed. This complies with the outcomes of the code, and it is recommended standard conditions be applied.

#### **Acid Sulfate Soils**

The purpose of the Acid Sulfate Soils Overlay Code is to ensure that the generation or release of acid and associated metal contaminants from acid sulfate soils (ASS)

does not have significant adverse effects on the natural environment, built environment, infrastructure or human health. The purpose of the code will be achieved through the following overall outcome:

- a. development ensures that the release of acid and associated metal contaminants into the environment is avoided by either:
  - (i) not disturbing acid sulfate soils (ASS) when excavating or otherwise removing soil or sediment, extracting groundwater or filling land; or
  - (ii) (ii) treating and, if required, undertaking ongoing management of any disturbed ASS and drainage waters.

It is recommended an Acid Sulfate Soil Management Plan be submitted as per advice given in the applicant's proposal (Town Planning Report, page 13). Through appropriate mitigation and management methods, these matters are generally dealt with at the time of construction, and as such, should be conditioned to be investigated and a management plan provided if present, as part of the operational works application.

# **Public Notification**

The following matters were raised by submitters:

Matters raised in any submissions	Description of how matters were dealt with in reaching the decision
The proposal involves a bottle shop retailer within the shopping centre component. The submitter raised concerns regarding alcohol issues within the community and wishes this use to be restricted	A 'Shop' use is consistent with the Local Centre zone code, with a Shopping Centre use not able to restrict the type of 'shop' uses occurring.
The site contains a large tree in which the submitter wishes the developer to retain as part of the proposal as it houses a variety of birds and is visible to the residents of Palm Lake	The site does not contain any Matters of State Environmental Significance for vegetation or wildlife habitat areas. The existing tree is identified on the proposal plans and would be required to be removed in order for the development of Stage 3a to occur.
Potential air quality issues for surrounding residential development	The development will be required to comply with the Air quality objectives contained in the Environmental Protection (Air) Policy 2008.
Submission in support of the development, recognising the current gap of services for fuel, retail and shopping for local residents. States the development will have a positive effect on the local and regional economy.	Noted

#### 3 REFERRALS

#### 4.1 Internal Referrals

Advice was received from the following internal departments:

Internal department	Referral Comments Received
Development Assessment - Engineering	9 November 2021
Water Services	27 January 2021
Health and Regulatory Services	2 February 2021
Infrastructure Services	22 January 2021

Any significant issues raised in the referrals have been included in section 3 of this report.

# 4.2 Referral Agency

Not Applicable

#### 4 PUBLIC NOTIFICATION

Pursuant to the *Planning Act 2016*, this application was advertised for 15 business days from 7 May 2021 until 31 May 2021. The Applicant submitted documentation on 1 June 2021 advising that public notification had been carried out in accordance with the *Planning Act 2016*. Council received three (3) submissions in relation to this development application during this period. Any significant issues raised have been included in section 3 of this report.

#### 5 DRAFT CONDITIONS

Draft conditions were issued to the Applicant on 22 November 2021.

The Applicant submitted representations to Council on 24 November 2021 relating to the following draft conditions:

Condition 2 (Staging)

After a review of the submitted representations, the following conditions have been amended:

Condition 2 (Staging) – Amended

#### 6 REASONS FOR DECISION

The reasons for this decision are:

- The development is located within the Local Centre zone and within the Central Coastal Urban Growth Area Local Plan identified as a Local Activity Centre.
- The development is consistent with strategic framework intent and supported by economic assessments.
- The development has a low rise-built form and landscaping sympathetic to the surrounding local setting.

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- An Environmental Noise Impact Assessment was submitted which supports the development and details recommendations that mitigate any potential offsite impacts to existing and future sensitive land uses
- The development is able to be provided with a level of infrastructure required to service the development.

The development can comply or can be conditioned to comply with the relevant benchmarks of the Bundaberg Regional Council Planning Scheme 2015.

# **Communication Strategy:**

Communications Team consulted. A Communication Strategy is:

☐ Required

# **Attachments:**

- ↓2 Site Plan

# **Recommendation:**

That the Development Application 522.2020.229.1 detailed below be decided as follows:

#### 1. Location details

Street address: 60 Rifle Range Road, Bargara

Real property description: Lot 7 on SP228667

Local government area: Bundaberg Regional Council

#### 2. Details of the proposed development

Development Permit for Material Change of Use for Service Station, Shopping Centre and Showroom

#### 3. Decision

Decision details: Approved in full with conditions. These conditions are set

out in <u>Schedule 1</u> and are clearly identified to indicate whether the assessment manager or a concurrence

agency imposed them.

The following approvals are given:

	Planning Regulation 2017 reference	Development Permit	Preliminary Approval
Development assessable under the planning scheme, a temporary local planning instrument, a master plan or a preliminary approval which includes a variation approval			

# 4. Approved plans and specifications

Copies of the following plans, specifications and/or drawings are enclosed.

Drawing title	Prepared by	Date	Reference no	Versio	
Aspect of development: Material Change of Use					
Stage Key Plan	Caddco Pty Ltd	25.3.21	052-2019 TP01	G	
Floor Plan	Caddco Pty Ltd	25.3.21	052-2019 TP02	G	
Elevations	Caddco Pty Ltd	25.3.21	052-2019 TP03	G	
Elevations	Caddco Pty Ltd	25.3.21	052-2019 TP04	G	
Plans & Elevations	Caddco Pty Ltd	25.3.21	052-2019 TP05	G	
Plans & Elevations	Caddco Pty Ltd	25.3.21	052-2019 TP06	G	
Plans & Elevations	Caddco Pty Ltd	25.3.21	052-2019 TP07	G	
Plans & Elevations	Caddco Pty Ltd	25.3.21	052-2019 TP08	G	
Plans & Elevations	Caddco Pty Ltd	25.3.21	052-2019 TP09	G	
Plans & Elevations	Caddco Pty Ltd	25.3.21	052-2019 TP10	G	
Environmental Noise Impact Report	CRG Acoustics Pty Ltd	12 April 2021	20157	Rev 2	
Stormwater Management Plan	Storm Water Consulting Pty Ltd	8 October 2021	J8670 v1.0	v1.0	
Waste Management Plan	RMA Engineers	14 December 2020	15908	0	

#### 5. Conditions

This approval is subject to the conditions in <u>Schedule 1</u>. These conditions are clearly identified to indicate whether the assessment manager or concurrence agency imposed them.

# 6. Further development permits

Please be advised that the following development permits are required to be obtained before the development can be carried out:

- All Building Work
- All Plumbing and Drainage Work
- All Operational Work

# 7. Properly made submissions

Properly made submissions were received from the following principal submitters:

Name of principal submitter	Residential or Business Address	Electronic Address
Palm Lake Works	PO Box 10479, Southport BC QLD 4215	AlexanderE@palmlake.com.au
Deb Annesley	Unknown	debannesley@hotmail.com
Jenny Tyler	378/39 Wearing Road, Bargara QLD 4670	ralphtyler@bigpond.com

# 8. Referral agencies for the application

Not applicable

# 9. Currency period for the approval

This development approval will lapse at the end of the period set out in section 85 of *Planning Act 2016*.

# 10. Agreements under Section 49(4)(b) or 66(2)(b) or (c) of the Planning Act 2016

There are no agreements about these matters.

#### 11. Conditions about infrastructure

The following conditions about infrastructure have been imposed under Chapter 4 of the *Planning Act 2016*:

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Condition/s	Provision under which the condition was imposed	
25, 28, 29, 30, 31, 33, 35, 37, 38	Section 145 – Non-trunk Infrastructure	
34, 43	Section 128 – Trunk Infrastructure	

# 12. Rights of appeal

The rights of applicants to appeal to a tribunal or the Planning and Environment Court against decisions about a development application are set out in Chapter 6, Part 1 of the *Planning Act 2016*. For particular applications, there may also be a right to make an application for a declaration by a tribunal (see Chapter 6, Part 2 of the *Planning Act 2016*).

# Appeal by an applicant

An applicant for a development application may appeal to the Planning and Environment Court against the following:

- the refusal of all or part of the development application
- a provision of the development approval
- the decision to give a preliminary approval when a development permit was applied for
- a deemed refusal of the development application.

An applicant may also have a right to appeal to the Development tribunal. For more information, see Schedule 1 of the *Planning Act 2016*.

# Appeal by a submitter

A submitter for a development application may appeal to the Planning and Environment Court against:

- any part of the development application for the development approval that required impact assessment
- a variation request.

The timeframes for starting an appeal in the Planning and Environment Court are set out in Section 229 of the *Planning Act 2016*.

<u>Schedule 2</u> is an extract from the *Planning Act 2016* that sets down the applicant's appeal rights and the appeal rights of a submitter.

# SCHEDULE 1 CONDITIONS AND ADVICES IMPOSED BY THE ASSESSMENT MANAGER

# PART 1A - CONDITIONS IMPOSED BY THE ASSESSMENT MANAGER

NO	CONDITION	TIMINIO			
NO.	CONDITION	TIMING			
	DEVELOPMENT IN STAGES				
1.	Development is to be carried out in accordance with the stages identified on the Approved plans.	As indicated			
2.	The development may be staged in accordance with the stage boundaries shown on the Approved plans. Staging must be completed sequentially in the stage order indicated on the Approved plans unless otherwise agreed to in writing by the Assessment Manager.	As indicated			
USE S	SPECIFIC				
3.	Provide informational and directional signage where necessary to direct cyclists to bicycle parking spaces and advise the public of their presence.	Prior to the commence-ment of the use and then to be maintained			
4.	The Showroom use (Bulky Goods $1-4$ ) on the site must not to exceed a maximum Gross floor area of 1,231 m <sup>2</sup> . Each showroom building must be individually tenanted, with the amalgamation of tenancies not permitted.	At all times			
5.	The Showroom use (Bulky Goods 1 – 4) may be used for the approved Shopping centre use.	At all times			
BUILD	OING WORK ASSOCIATED WITH THE MCU				
6.	Ensure all assessable building work is carried out in accordance with a valid Building development approval.	Prior to the commence-ment of work			
7.	Ensure all external finishes, including façade treatments and materials, are in accordance with the Approved plans.	Prior to the issue of a Certificate of classification/ final inspection and then to			

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		be maintained
AMEN	IITY	
DUST		
8.	Ensure dust emissions do not result in levels at sensitive land uses which exceed the Air quality objectives set out in the Environmental Protection (Air) Policy 2008 and do not cause environmental nuisance by dust deposition.	Prior to the commence-ment of the use and then to be maintained
HOUR	S OF OPERATION	
9.	Operating hours of the use are limited to:  a. Bulky Goods, Supermarket, Retail and Speciality Shop (where not specified) 7 am to 9 pm Monday to Sunday  b. Café/Restaurants 7 am to 11 pm Monday to Sunday  c. Bottle Shop (Specialty Shop 2) 10 am to 10 pm Monday to Sunday  d. Gym (Specialty Shop 5) 24 hours, Monday to Sunday  e. Service Station 24 hours, Monday to Sunday	At all times
10.	Deliveries, loading/unloading activities, and refuse collection must be undertaken between the hours of 7 am to 6 pm Monday to Sundays.	At all times
LIGHT	TING	
11.	During operating hours, all parking, pedestrian areas, and entrances/exists must be well lit with vandal resistant lighting and with intensities to satisfy the requirements of AS1158 – Public Lighting Code.	Prior to the commence-ment of the use and then to be maintained
12.	Design and install all external lighting in accordance with AS4282 – Control of the obtrusive effects of outdoor lighting so as not to cause nuisance to residents or obstruct or distract pedestrian or vehicular traffic.	Prior to the commence-ment of the use and then to be maintained
13.	Design and install all external lighting to be the most energy efficient, dark sky compliant (which prevents the light from escaping upward and direct light down and away from the	Prior to the commence-ment of the

	foreshore) and amber lighting available in the National Electricity Market Load Tables for Unmetered Connection Points (AEMO 2015).	use and then to be maintained	
NOISE			
14.	Noise levels from the use must achieve the acoustic environment and acoustic quality objectives for sensitive receiving environments set out in the Environment Protection (Noise) Policy 2008.	At all times	
15.	Work must be carried out in accordance with the recommendations contained within the Environmental Noise Impact Report prepared by CRG Acoustics Pty Ltd dated 12 April 2021 with the exception of the following:	Prior to the commence-ment of the use and then	
	a. The location of the acoustic barrier to be provided in Stage 3b must return into the site to screen the bin storage area, in accordance with the Response to Information Request prepared by Saunders Havill Group dated 29 April 2021.	to be maintained	
	b. Acoustic barriers exceed a height of 2 m, the part exceeding this height must utilise Perspex or similar clear materials which have a minimum surface mass of 11kg/m <sup>2</sup> .		
16.	Submit to the Assessment Manager certification from a suitably qualified person confirming the recommendations of the approved Acoustic report have been complied with.	Prior to the commence-ment of the use	
17.	Amplified noise associated within the approved Gym (Speciality Shop 5) use must not operate outside the hours of 7 am to 8 pm Monday to Sunday.	At all times	
	Note:		
	This condition does not apply to background pre-recorded music (eg music played through a stereo system) that does not emit audible noise beyond the boundary of the premises.		
SCRE	SCREENING OF PLANT AND SERVICES		
18.	Install and maintain suitable screening to all air conditioning, lift motor rooms, plant, service facilities, or similar equipment located on the rooftop or to an external face of the building. The screening structures must be constructed from materials that are consistent with materials used elsewhere on the building façade or as an architectural feature of and visually consistent with the profile of the building.	Prior to the commence-ment of the use and then to be maintained	

ODED	ATIONAL WORK ASSOCIATED WITH THE MOU	
	ATIONAL WORK ASSOCIATED WITH THE MCU	
19.	Ensure all Operational work that is Accepted development complies with the nominated assessment benchmarks or a Development application for Operational work is submitted to and approved by Council.	Prior to the commence-ment of work
	Note: Where Accepted development does not comply with a nominated requirement for accepted development, a Development application for Operational work must be submitted to Council.	
20.	Provide certification from a Registered Professional Engineer of Queensland (RPEQ) that any operational work that is Accepted development has been designed and constructed in accordance with the conditions of this Development approval and any other relevant approval issued by Council.	Prior to the commencement of the use
	Note: Council does not require the submission of an Operational works development application for work that is nominated as Accepted development where the works comply with the nominated requirements for Accepted development and are certified by a RPEQ.	
CONS	TRUCTION MANAGEMENT	
21.	Unless otherwise approved in writing by the Assessment Manager, ensure no audible noise from work is made:	At all times during
	a. on a business day or Saturday, before 6.30 am or after 6.30 pm	construction
	b. on any other day, at any time.	
	HWORKS	I
22.	Carry out all earthworks in accordance with the approved plans, the applicable Planning scheme codes, and the Planning scheme policy for development works.	At all times
	Note: Earthworks that comply with the applicable requirements for accepted development do not require the submission of an Operational works development application.	
	Where the applicable requirements for accepted development are not met, an Operational works development application must be submitted to Assessment Manager.	

23.	Provide to the Assessment Manager certification from a Registered Professional Engineer of Queensland (RPEQ) that the Earthworks have been designed and constructed in accordance with the conditions of this Development approval and any other relevant approval issued by the Assessment Manager.	Prior to the commence-ment of the use
EROS	ION AND SEDIMENT CONTROL	
24.	Prepare and implement an Erosion and sediment control (ESC) management plan for the site in accordance with the Environment Protection Agency's (EPA – Guideline – EPA Best Practice Urban Stormwater Management – Erosion and Sediment Control and International Erosion Control Association's (IECA) – Best Practice Erosion and Sediment Control, and the Queensland Urban Drainage Manual (QUDM).	Prior to site work commencing and at all times during construction
ACID	SUFLATE SOILS	
25.	Perform relevant investigation into the presence of Acid Sulfate Soils and if present, prepare an Acid Sulfate Soils treatment and management plan for the works, that facilitates compliance with the Bundaberg Regional Council's Acid Sulfate Soils Overlay Code performance outcomes. All works on site must be undertaken in accordance with appropriate ASS management practices.  Testing results and any subsequent management plan must	Prior to site work commencing
	be submitted to the Assessment Manager.	
STORMWATER		
26.	Carry out all stormwater drainage work in accordance with Storm Water Consulting's Stormwater Management Plan dated 8 October 2021.  Note: Submission of the stormwater management plan must form part of an Operational works application.	Prior to the commence-ment of the use and then to be maintained
27.	Prepare and submit for approval to the Assessment Manager, detailed design of the pump out system for the management of stormwater.  Note:	Prior to the site work commencing
	Submission of the detailed design may form part of an Operational works application.	
28.	Prepare and submit for approval to the Assessment Manager an updated Stormwater management plan in accordance	As indicated

	with the applicable Planning scheme codes and the Planning scheme policy for development works.	
	The plan is to include, but not be limited to the following:	
	<ul> <li>a. the detail design and layout of all necessary stormwater drainage systems and stormwater quality management systems for the whole of the development including stage 3B;</li> </ul>	
	<ul> <li>the provision of any required on-site detention/retention necessary to limit discharge to pre-development generated peak levels up to and including the Q100 ARI return interval (or 1% AEP);</li> </ul>	
	c. the provision of stormwater quality improvement devices; and	
	<ul> <li>d. demonstration that the development will not result in actionable nuisance on upstream or downstream properties.</li> </ul>	
	All stormwater drainage work must be carried out in accordance with the approved Stormwater management plan.	
	Note:	
	Submission of the stormwater management plan must form part of the Operational works application for Stage 3B.	
29.	Maintain the stormwater management pump out system as per the inspection regime noted in Storm Water Consulting's Stormwater Management Plan dated 8 October 2021.	At all times
	A detailed log of all maintenance activities of the system is to be recorded and retained for submission to Council when requested.	
WATE	R	
30.	Provide a reticulated water supply service in accordance with the applicable Planning scheme codes and the Planning scheme policy for development works.	Prior to the commence-ment of the use and then to be maintained
31.	Provide a metered water service, and internal infrastructure as required, to satisfy the firefighting and water supply demands of the development.	Prior to the commence-ment of the
	Note:	use and then to be
	Water infrastructure must be designed by an appropriately qualified hydraulic consultant to assess the suitability of the	maintained

water supply system to cater for the proposed development, including firefighting requirements in accordance with AS2419 – Fire hydrant installation.	
ERAGE	
Provide a reticulated sewerage service in accordance with the applicable Planning scheme codes and Planning scheme policy for development works.	Prior to the commence-ment of use
All sewerage infrastructure must be clear of all proposed and existing buildings.	At all times
OWORKS, ACCESS, AND CAR PARKING	
Design and construct the site accesses and driveways in accordance with Bundaberg Regional Council's standard drawing R1011, the Approved plans, applicable Planning scheme codes, and the Planning scheme policy for development work.	Prior to the commence-ment of the use and then to be
Note: Detailed design must be determined from swept path analysis for the largest design vehicle and incorporated as part of the assessment for Operational works for each stage incorporating the access.	maintained
Provide pavement widening including but not limited to, underground drainage, kerb and channel, 2.5 m wide pedestrian path and street trees to the Rifle Range Road frontage of the development site in accordance with the Planning scheme policy for development works and the following requirements:  a. Rifle Range Road must be widened on the side fronting the development to an Urban Road — Trunk Collector standard;  b. Rifle Range Road roadway must be paved to a minimum half width of 7.7 metres measured from the invert of the kerb and channel to road centreline; and  c. The overall design for Rifle Range Rd must incorporate channelised right and auxiliary left turn treatments as generally shown in RMA's Traffic Impact Assessment Report, dated 15 December 2020.  Note:  Detailed design of the overall road upgrade must be determined as part of the assessment for Operational works at the first stage of development, however construction may	As indicated
	including firefighting requirements in accordance with AS2419 – Fire hydrant installation.  RAGE  Provide a reticulated sewerage service in accordance with the applicable Planning scheme codes and Planning scheme policy for development works.  All sewerage infrastructure must be clear of all proposed and existing buildings.  NWORKS, ACCESS, AND CAR PARKING  Design and construct the site accesses and driveways in accordance with Bundaberg Regional Council's standard drawing R1011, the Approved plans, applicable Planning scheme codes, and the Planning scheme policy for development work.  Note:  Detailed design must be determined from swept path analysis for the largest design vehicle and incorporated as part of the assessment for Operational works for each stage incorporating the access.  Provide pavement widening including but not limited to, underground drainage, kerb and channel, 2.5 m wide pedestrian path and street trees to the Rifle Range Road frontage of the development site in accordance with the Planning scheme policy for development works and the following requirements:  a. Rifle Range Road must be widened on the side fronting the development to an Urban Road – Trunk Collector standard;  b. Rifle Range Road roadway must be paved to a minimum half width of 7.7 metres measured from the invert of the kerb and channel to road centreline; and  c. The overall design for Rifle Range Rd must incorporate channelised right and auxiliary left turn treatments as generally shown in RMA's Traffic Impact Assessment Report, dated 15 December 2020.  Note:  Detailed design of the overall road upgrade must be determined as part of the assessment for Operational works

Note:  Detailed design must be determined as part of the assessment for Operational works for the first stage of the development.  Remove all disused or redundant vehicular crossings, kerb drainage outlets, and footpath crossovers and reinstate kerb and channel, and footpaths as required.  Prior to the commend manoeuvring areas in accordance with the Approved plans, applicable Planning scheme codes, and the Planning scheme policy for development work.  Car parking, access, and manoeuvring areas must:  a. provide a minimum of 204 car parking spaces staged as per table 7.2 in RMA's Traffic Impact Assessment Report, dated 15 December 2020  b. provide a minimum of 42 bicycle parking spaces staged as per table 7.3 in RMA's Traffic Impact Assessment Report, dated 15 December 2020  c. be designed and constructed in accordance with AS2890 Parking facilities – off-street car parking d. provide parking spaces for people with a disability in accordance with the Building Code of Australia and AS2890.6 Off-street parking for people with disabilities e. provide on-site loading, unloading, and manoeuvring for all necessary service vehicles f. allow all design vehicles to enter and exit the site in a forward gear g. be constructed and sealed with asphalt h. be signed and delineated in accordance with the Queensland manual of uniform traffic control devices i. allow for the provision of fill and/or boundary retaining walls and the containment and management of site stormwater drainage j. be drained to a legal point of discharge k. be available free of charge to staff and customers during operating hours	36.	Provide a dedicated left turning lane along Hughes Rd for access 1. The length of this lane is to be determined from further traffic modelling.	As indicated
assessment for Operational works for the first stage of the development.  37. Remove all disused or redundant vehicular crossings, kerb drainage outlets, and footpath crossovers and reinstate kerb and channel, and footpaths as required.  38. Design and construct off-street car parking, access, and manoeuvring areas in accordance with the Approved plans, applicable Planning scheme codes, and the Planning scheme policy for development work.  Car parking, access, and manoeuvring areas must:  a. provide a minimum of 204 car parking spaces staged as per table 7.2 in RMA's Traffic Impact Assessment Report, dated 15 December 2020  b. provide a minimum of 42 bicycle parking spaces staged as per table 7.3 in RMA's Traffic Impact Assessment Report, dated 15 December 2020  c. be designed and constructed in accordance with AS2890 Parking facilities – off-street car parking d. provide parking spaces for people with disabilities e. provide on-site loading, unloading, and manoeuvring for all necessary service vehicles f. allow all design vehicles to enter and exit the site in a forward gear g. be constructed and sealed with asphalt h. be signed and delineated in accordance with the Queensland manual of uniform traffic control devices i. allow for the provision of fill and/or boundary retaining walls and the containment and management of site stormwater drainage j. be drained to a legal point of discharge k. be available free of charge to staff and customers during operating hours			
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manoeuvring areas in accordance with the Approved plans, applicable Planning scheme codes, and the Planning scheme policy for development work.  Car parking, access, and manoeuvring areas must:  a. provide a minimum of 204 car parking spaces staged as per table 7.2 in RMA's Traffic Impact Assessment Report, dated 15 December 2020  b. provide a minimum of 42 bicycle parking spaces staged as per table 7.3 in RMA's Traffic Impact Assessment Report, dated 15 December 2020  c. be designed and constructed in accordance with AS2890 Parking facilities – off-street car parking  d. provide parking spaces for people with a disability in accordance with the Building Code of Australia and AS2890.6 Off-street parking for people with disabilities e. provide on-site loading, unloading, and manoeuvring for all necessary service vehicles  f. allow all design vehicles to enter and exit the site in a forward gear  g. be constructed and sealed with asphalt  h. be signed and delineated in accordance with the Queensland manual of uniform traffic control devices  i. allow for the provision of fill and/or boundary retaining walls and the containment and management of site stormwater drainage  j. be drained to a legal point of discharge  k. be available free of charge to staff and customers during operating hours	37.	drainage outlets, and footpath crossovers and reinstate kerb	Prior to the commence-ment of the use
a. provide a minimum of 204 car parking spaces staged as per table 7.2 in RMA's Traffic Impact Assessment Report, dated 15 December 2020 b. provide a minimum of 42 bicycle parking spaces staged as per table 7.3 in RMA's Traffic Impact Assessment Report, dated 15 December 2020 c. be designed and constructed in accordance with AS2890 Parking facilities – off-street car parking d. provide parking spaces for people with a disability in accordance with the Building Code of Australia and AS2890.6 Off-street parking for people with disabilities e. provide on-site loading, unloading, and manoeuvring for all necessary service vehicles f. allow all design vehicles to enter and exit the site in a forward gear g. be constructed and sealed with asphalt h. be signed and delineated in accordance with the Queensland manual of uniform traffic control devices i. allow for the provision of fill and/or boundary retaining walls and the containment and management of site stormwater drainage j. be drained to a legal point of discharge k. be available free of charge to staff and customers during operating hours	38.	manoeuvring areas in accordance with the Approved plans, applicable Planning scheme codes, and the Planning	Prior to the commence-ment of use and then to
<ul> <li>a. provide a minimum of 204 car parking spaces staged as per table 7.2 in RMA's Traffic Impact Assessment Report, dated 15 December 2020</li> <li>b. provide a minimum of 42 bicycle parking spaces staged as per table 7.3 in RMA's Traffic Impact Assessment Report, dated 15 December 2020</li> <li>c. be designed and constructed in accordance with AS2890 Parking facilities – off-street car parking</li> <li>d. provide parking spaces for people with a disability in accordance with the Building Code of Australia and AS2890.6 Off-street parking for people with disabilities</li> <li>e. provide on-site loading, unloading, and manoeuvring for all necessary service vehicles</li> <li>f. allow all design vehicles to enter and exit the site in a forward gear</li> <li>g. be constructed and sealed with asphalt</li> <li>h. be signed and delineated in accordance with the Queensland manual of uniform traffic control devices</li> <li>i. allow for the provision of fill and/or boundary retaining walls and the containment and management of site stormwater drainage</li> <li>j. be drained to a legal point of discharge</li> <li>k. be available free of charge to staff and customers during operating hours</li> </ul>		Car parking, access, and manoeuvring areas must:	pe maintained
I. provide shade trees in car parking areas at a minimum ratio of one (1) tree for every six (6) parking spaces.  Note:  Where there is any conflict between the Approved plans and the Planning Scheme provisions, the Approved plans prevail.		per table 7.2 in RMA's Traffic Impact Assessment Report, dated 15 December 2020  b. provide a minimum of 42 bicycle parking spaces staged as per table 7.3 in RMA's Traffic Impact Assessment Report, dated 15 December 2020  c. be designed and constructed in accordance with AS2890 Parking facilities – off-street car parking  d. provide parking spaces for people with a disability in accordance with the Building Code of Australia and AS2890.6 Off-street parking for people with disabilities  e. provide on-site loading, unloading, and manoeuvring for all necessary service vehicles  f. allow all design vehicles to enter and exit the site in a forward gear  g. be constructed and sealed with asphalt  h. be signed and delineated in accordance with the Queensland manual of uniform traffic control devices  i. allow for the provision of fill and/or boundary retaining walls and the containment and management of site stormwater drainage  j. be drained to a legal point of discharge  k. be available free of charge to staff and customers during operating hours  l. provide shade trees in car parking areas at a minimum ratio of one (1) tree for every six (6) parking spaces.  Note:  Where there is any conflict between the Approved plans and	mamtamed

39.	Repair any damaged kerb and channel, footpath, or road (including removal of concrete slurry from footpath, roads, kerb and channel, and stormwater gullies and drainlines) and reinstate existing traffic signs and pavement markings that have been removed or damaged during any works carried out in association with the approved development.	Prior to the commence-ment of the use
40.	Dedicate all new road, including widening and truncations, as road reserve.  Prior to comm ment of use	
41.	Amend the bin store area and loading area in Stage 3B as per option B in the applicant's response to Council's Information Request, dated 29 April 2021.  Detail must be determined as part of the assessment for Operational works for Stage 3B.	Prior to the commence-ment of the use
42.	Provide appropriate line marking at the internal conflict area in stage 3B as identified in Council's Information Request, generally in accordance with the applicant's response to Council's Information Request, dated 29 April 2021, to avoid vehicle manoeuvring confusion.	Prior to the commence-ment of the use
	Detail must be determined as part of the assessment for Operational works for stage 3B.	
43.	Ensure all existing and proposed utility services and connections (eg electricity, telecommunications, water, and sewerage) are wholly located within the site or within a suitable easement to the satisfaction of the Assessment Manager.	Prior to the commence-ment of the use
PEDESTRIAN AND CYCLIST PATHS		
44.	Provide a 2.5m wide pathway for the full frontage of the site along Rifle Range Road, extending to the eastern boundary of Lot 2 on RP812670.  Note:	Prior to the commence-ment of the use
	Submission of the detail design must form part of an Operational works application for the first stage of development.	
	E MANAGEMENT	
45.	Maintain and operate an adequate waste disposal service in accordance with the submitted Waste Management Plan and the Planning Scheme Policy for Waste Management, including the maintenance of refuse bins and associated storage areas so as not to cause an environmental nuisance.	At all times

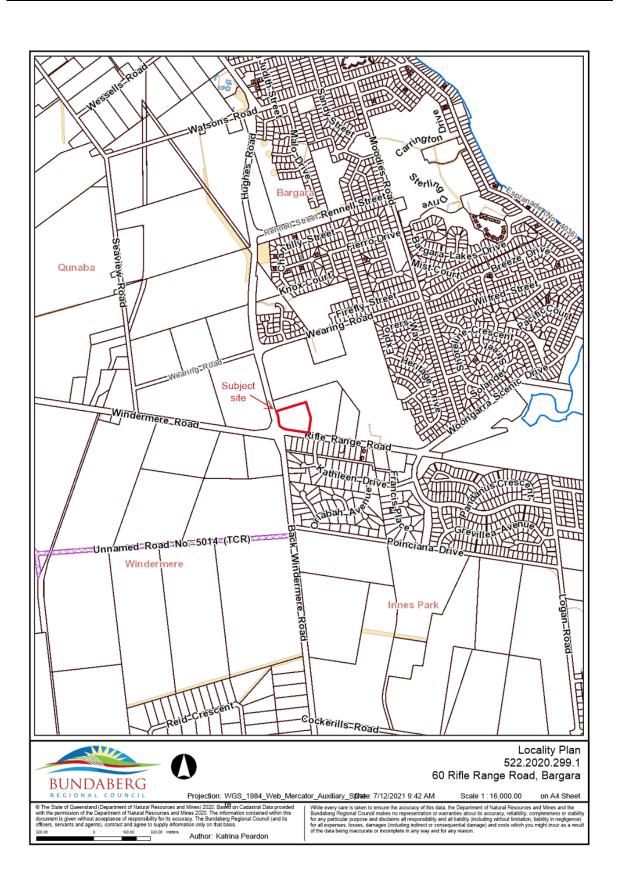
# **PART 1B - ADVICE NOTES**

NO.	ADVICE	TIMING	
INFRA	INFRASTRUCTURE CHARGES		
1.	Infrastructure charges notice (331.2021.1260.1) applicable to the development is attached to this Development approval.	At all times	
ENVIF	RONMENTAL HARM		
2.	The Environmental Protection Act 1994 states that a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm. Environmental harm includes environmental nuisance.	At all times	
	In this regard persons and entities, involved in the civil, earthworks, construction, and operational phases of this development, are to adhere to their 'general environmental duty' to minimise the risk of causing environmental harm. Environmental harm is defined by the Act as any adverse effect, or potential adverse effect whether temporary or permanent and of whatever magnitude, duration or frequency on an environmental value and includes environmental nuisance. Therefore, no person should cause any interference with the environment or amenity of the area by reason of the emission of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, wastewater, waste products, grit, sediment, oil, or otherwise, or cause hazards likely in the opinion of the administering authority to cause undue disturbance or annoyance to persons or affect property no connected with the use.		
GENERAL			
3.	An audit check of the Operational Works drawings has been undertaken in relation to the proposed works. A detailed check of the calculations and drawings has not been undertaken, as they have been certified by a Registered Professional Engineer of Queensland (RPEQ).	At all times	
	The RPEQ bears full responsibility for all aspects of the engineering design, including the identification and resolution of any design faults that may arise throughout the course of the Operational works. The Assessment Manager reserves the right to require further amendments and/or additions at a later date should design errors become apparent.		

4.	Inspections by Council are independent of, and do not negate, the Registered Professional Engineer of Queensland (RPEQ) inspections that ensure compliance with the decision notice for Operational work.	At all times
AMEN	IITY	
5.	Ensure the development does not cause environmental nuisance or environmental harm as per the Environmental Protection Act 1994.	At all times
6.	Storage of flammable and /or combustible liquids must comply with the minor storage provisions of AS1940 – the storage and handling of flammable and combustible liquids.	At all times
WATE	R AND SEWERAGE	
7.	In order for agreed Council work to be performed on existing live water and sewer infrastructure:  a. ensure a detailed design proposal is submitted to the Assessment Manager, marked 'For construction'  b. complete a Notice to Service Provider application at https://www.bundaberg.qld.gov.au/water-sewer-connections  c. pay the applicable lodgment fee  d. if necessary, a quote will be prepared by Council's Water Service section once the detailed design proposal is approved  e. follow instructions provided with the quotation and pay the quoted fee  Note:  The Notice to Service Provider application can cater for both water and sewer connection requirements in the one	Prior to commence-ment of the use
	application. The applicable lodgment fee will be adjusted at the time of lodgment according to the features requested.	
8.	Connection to water or sewer infrastructure is subject to further approvals. For further information about these requirements, please contact Council's Water Services section on 1300 883 699.	Prior to commence-ment of the use
	No plumbing and drainage works are to commence prior to the issuing of the Plumbing and Drainage Approval by the Council.	
9.	Sub-meters shall be installed in accordance with the relevant Acts and Codes. Arrangements for the installation of any metered service and sub-meters, or removal of an existing service, are to be made with Council's Water Services section. All works are to be undertaken by Council at the Developer's expense.	Prior to commence- ment of the use

ROAD	ROADWORKS	
10.	It should be noted that the existing pathway along Hughes Rd is located hard against the property boundary. Due to this, widening of the road reserve in this location should be considered. At a minimum, service integration and finished levels should be closely checked at this location due to limited room to make adjustments.	Prior to construction works commencing
11.	Council's Roads and Drainage Department have secured funding for the upgrade of a portion of Rifle Range Rd. The applicant is encouraged to work collaboratively with Council when undertaking the detailed design for submission of the operational works application with regards to the conditioned works required in Rifle Range Rd, to ensure clashes are mitigated.	As indicated
TRAF	TRAFFIC MANAGEMENT	
12.	Council requires the use of Asignit software for documentation and reporting of Traffic management control plans. Developers, Principal Contractors, Sub-contractors, and Suppliers are required to use Asignit software.	At all times
	Council provides Asignit software and training free of charge. Contact Asignit directly at adfmin@asignit.com for the software to be delivered to your business.	
	Following uploading your Traffic management control plan to the Asignit system, confirmation is to be sent to development@bundaberg.qld.gov.au.	
NATU	NATURE AND EXTENT OF THE APPROVED DEVELOPMENT	
13.	This decision notice does not represent an approval to commence Building work.	At all times

Attachment 1 Page 580



Page 581 Attachment 2





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es and Mines) 2020. Badel on Cadastral Data provided
and Mines 2020. The information contained within this
acouracy. The Bundaberg Regional Council (and its
information only on that basis. Author: Katrina Peardon

While every care is taken to ensure the accuracy of this data, the Department of Natural Resources and Mines and the Bundaberp Regional Council makes no representation or warrantes about its accuracy, reliability, completeness or stable for any particular purpose and disclaims all responsibility and all liability (including without initiation, liability in negligenor for all oppenses, losses, damages (including indirect or consequential damages) and costs which you might mour as a set of the data being inaccurate or incomplete in any way and for any reason.

Attachment 3 Page 582

# PROPOSED DEVELOPMENT



The state of the s	MADE WILL
COMMERCIAL BUILDING AREA	S
Overall site area	19418.44 sqm.
Stage 1	
Site area for Stage 1	4079.77sqm.
Service Station -	207.00 sqm
Cafe' / Restaurant -	170.67 sqm
Total Build Area (stage 1) -	377.67 sqm
Stage 2	
Site area for Stage 2	8581.95sqm.
Speciality Shop 1 -	255.23 sqm
Speciality Shop 2 -	214.14 sqm
Speciality Shop 3 -	233.55 sqm
Speciality Shop 4 -	282.20 sqm
Speciality 5 / Gymnasium -	282.68 sqm
Retail 1 -	128.42 sqm
Retail 2 -	119.52 sqm
Retail 3 -	119.52 sqm
Retail 4 -	84.52 sqm
Retail 5 -	84.52 sqm
Retail 6 -	84.52 sqm
Cafe' / Restaurant -	216.58 sqm
Total Build Area (stage 2) -	2105.40 sqm
Stage 3	
Site area for Stage 3a	2383.72sqm.
Site area for Stage 3b	4373.49sqm.
Supermarket -	1510.74 sqm
Bulky Goods 1 -	309.16 sqm
Bulky Goods 2 -	305.98 sqm
Bulky Goods 3 -	305.98 sqm
Bulky Goods 4 -	309.16 sqm
Total Build Area (stage 3) -	2741.02 sqm
TOTAL BUILDING AREA	5224.09 sqm.
Building site coverage (overall are	a) 26.90%.
Total Car Parking Provided	204 spaces
Total bicycle Parking Provided	42 spaces
Landscaped areas	3186.63 sqm
landscaped site coverage	16.41%.



LANDSCAPING Landscaping to be in accordance with the Design Guidelines & to the requirements of Local City Council. Refer to Landscape consultant's drawings and specifications for full details.
LIGHTING External lighting must be designed, battled and located so as to prevent any adverse effect on adjoining land to the satisfaction of the Responsible Authority.
DISABLED ACCESS Building entrancies are in accordance with the Australian Standard 1428-2009 - Design Rule for Access by the Disabled.
CAR PARKING Disabled car parking spaces to be 4900mm long x 2400mm wide and be in accordance with A.S. 2890.1 (2004). Car parking spaces to be 4900mm long x 2600mm wide and be in accordance with A.S. 2890.1 (2004). All car parking bays to be line marked in 80mm wide white washerproof paint in accordance with A.S. 2890.1 (2004).
VEHICLE CROSSINGS All new crossings shall be to the requirements of the relevant Statutory Authority.
LOADING BAYS All loading bays to be 7600mm long x 3600mm wide and linemarked in accordance with A.S. 2890.1 (2004).





**STAGE KEY PLAN** 

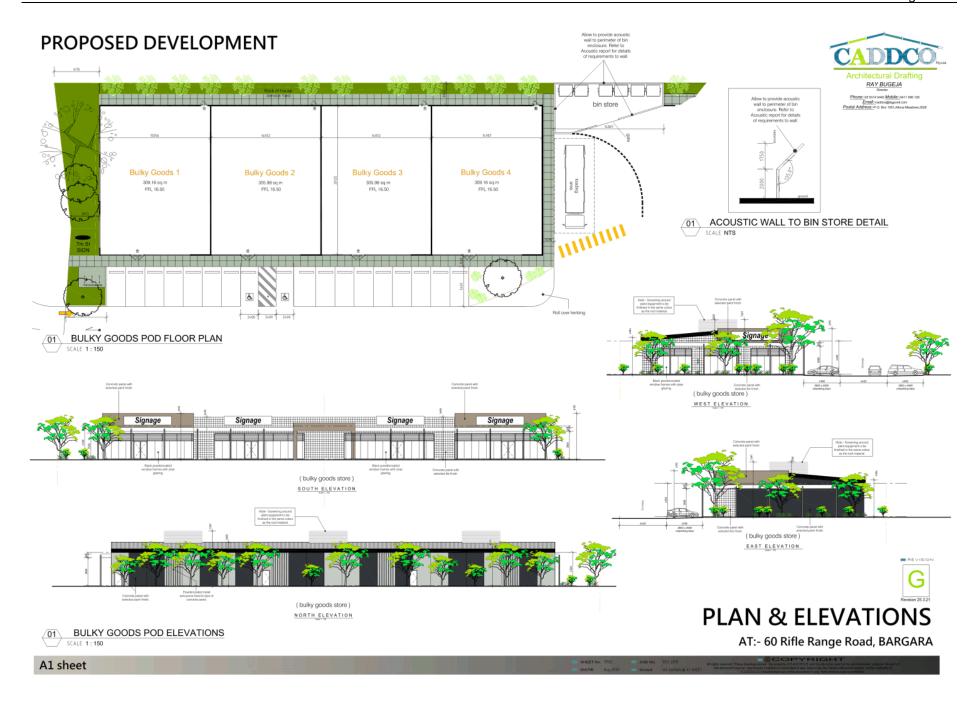
AT:- 60 Rifle Range Road, BARGARA

A1 sheet



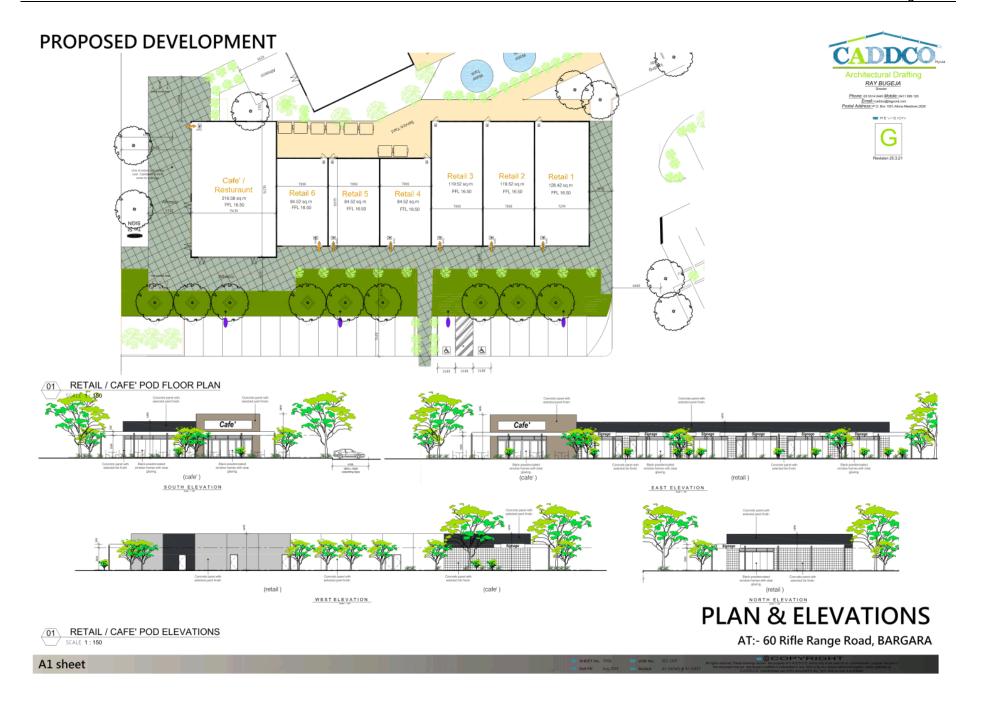
# PROPOSED DEVELOPMENT Architectural Drafting RAY BUGEJA Phone:-cs 5014 0445 Mobile:-0411 895 125 Email:-caddooglospord.com Postal Address:-#.O. Box 1891.Abova Meadews,302 ( speciality shops ) SOUTH ELEVATION SOUTH ELEVATION ( speciality shops ) EAST ELEVATION (bin store / amenities) ( supermarket ) EAST ELEVATION EAST ELEVATION ( supermarket ) NORTH ELEVATION **ELEVATIONS** STREETSCAPE ELEVATIONS SCALE 1: 150 AT:- 60 Rifle Range Road, BARGARA A1 sheet

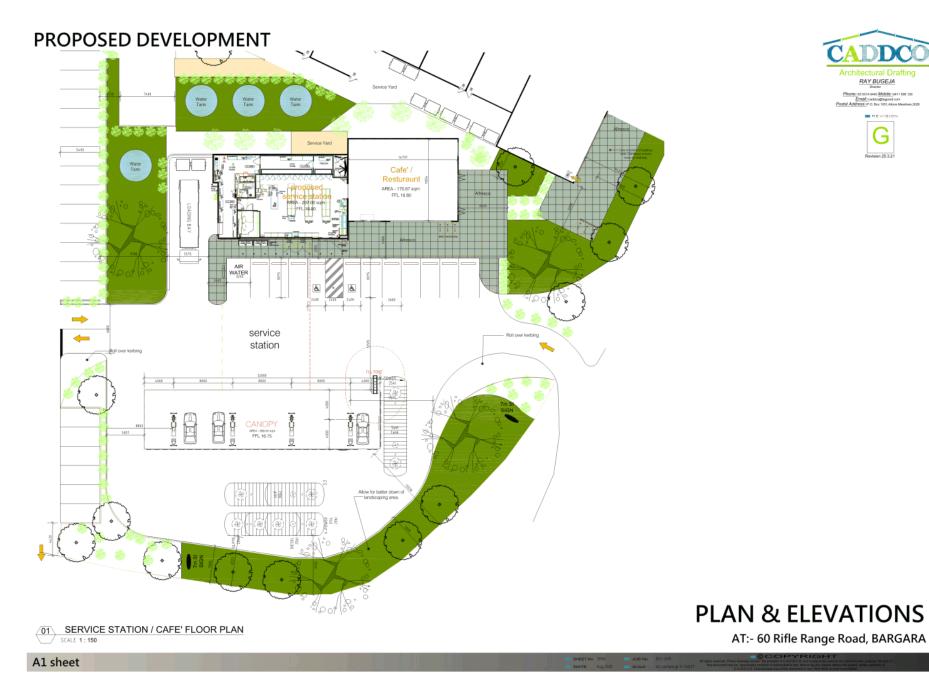


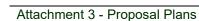




## PROPOSED DEVELOPMENT RAY BUGEJA Phone: -03 9314 0445 Mobile: -0411 936 128 Email: -caddoogbiggood com Postal Address: # O. Dos 1931 Alons Masdows; G Speciality 5 Speciality Shop Speciality Shop Speciality Shop Speciality Shop 282.68 sq.m FFL 16.20 282.20 sq.m FFL 16.20 233.55 sq.m FFL 16.20 214.14 sq.m FFL 16.20 255.23 sq.m FFL 16.20 7m SI SIGN 01 SPECIALITY SHOP POD FLOOR PLAN Black powderor window flames w glasing. ( speciality shops ) ( speciality shops ) WEST ELEVATION SOUTH ELEVATION (bin store / amenities) EAST ELEVATION ( speciality shops ) EAST ELEVATION **PLAN & ELEVATIONS** 01 SPECIALITY SHOP POD ELEVATIONS AT:- 60 Rifle Range Road, BARGARA SCALE 1:150 A1 sheet







## PROPOSED DEVELOPMENT











## **PLAN & ELEVATIONS**

AT:- 60 Rifle Range Road, BARGARA

RAY BUGEJA



Material Change of Use for Shopping Centre, Service Station & Showroom 60 Rifle Range Road, Bargara

(Lot 7 on SP228667)

#### ENVIRONMENTAL NOISE IMPACT REPORT

Prepared for

Bargara Village Pty Ltd

**12 April 2021** crgref: 20157 report Rev 2



#### 1.0 INTRODUCTION

This report is in response to a request from Bargara Village Pty Ltd for an environmental noise impact assessment of a Material Change of Use for Shopping Centre, Service Station and Showroom. In undertaking the noise assessment, noise modelling was created, and predictions of onsite commercial activity noise emissions were produced. Based upon the predicted noise impact levels, recommendations regarding acoustic treatment to the development have been provided.

It is noted that the subject site currently holds a development approval (dated 14th August 2014) for a Mixed Use development comprising a Supermarket, Shops, Medical Centre, and two Fast Food tenancies.

This report is a revision to a previous assessment and is required to respond to the Item 1 of the Information Request from Bundaberg Regional Council dated 10<sup>th</sup> February 2021 as presented below:

#### Acoustic fence

1. The submitted Environmental Noise Impact Report prepared by CRG Acoustics recommends a 3.75m high acoustic barrier to be constructed for a length of approximately 48m along the eastern property boundary as part of Stage 2 and for a length of approximately 28.5m along the northern property boundary as part of Stage 3A. Acceptable outcome AO9.2 prescribes 'where the business use requires the use of acoustic attenuation measures to mitigate adverse impacts on nearby sensitive land uses, such measures are designed and constructed to be compatible with the local streetscape'. The proposal does not adequately address the Performance outcome PO9, ensuring that the acoustic fence is compatible with the local streetscape and may result in unreasonable amenity impacts to the surrounding residential area. It is requested that compliance with Performance outcome PO9 be demonstrated. If the proposed acoustic measures were revised to reduce the overall height of the acoustic barrier located on the property boundary or alternatively revise bin storage location and opportunities for the loading bay to be enclosed with a shutting door, it is considered that Performance outcome PO9 may be achieved.

In response to Item 1, to minimise overall amenity impact of the acoustic barriers on the adjacent receivers we have recommended that the barriers (i.e. eastern barrier between Stages 2 and 3B) be constructed of a combination of materials being a 2.0m high masonry wall (typical acoustic barrier height) with a transparent 1.75m high Perspex barrier above (overall total height of 3.75m). Further, for the northern acoustic barrier between Stages 3A and 3B we have recommended a kinked barrier, with a 2.0m boundary wall height and a further kinked section 1.75m in height (at a 45° degree incline away from the boundary). These treatments will lessen the overall amenity impact of the recommended acoustic barriers.



#### 2.0 DESCRIPTION OF THE DEVELOPMENT

The site is described as 60 Rifle Range Road, Bargara (Lot 7 on SP228667) and is in a "Local Centre" zone. The site is bounded by Rifle Range Road to the south, Hughes Road to the west and undeveloped land (zoned "Low Density Residential") to the north and east. The topography of the site and surrounding land is generally flat. For site location refer to Appendix A.

The proposal is to construct a Mixed Use Commercial development over three stages as detailed below. For the development plan refer to Appendix B.

Stage 1: A service station with café / restaurant at the southwest corner of the subject site fronting both Rifle Range Road and Hughes Road. The service station yard stand areas and refuelling area will be at the western end of Stage 1 with the onsite building at the eastern end. The café / restaurant will be positioned at the southern end of the onsite building and include alfresco dining areas. The loading bay and bin storage area is positioned along the northern side of the building.

Stage 2: A retail site comprising a restaurant / café tenancy, six retail tenancies and five Specialty Shop tenancies at the southeast corner of the subject site. The restaurant / café tenancy and six retail tenancies will be positioned along the western side of Stage 2 with carparking through the centre and the five Specialty Shop tenancies along the eastern end.

Stage 3: A supermarket tenancy and three Bulky Goods tenancies along the northern end of the subject site. The supermarket tenancy will be positioned at the northeast end of Stage 3 with the three Bulky Goods tenancies positioned at the southwest end of Stage 3. Carparking is proposed along the southern and central areas of Stage 3, with the main loading dock and bin storage areas between the Supermarket and Bulky Goods tenancies along the northern boundary.

Hours of operation are proposed as follows:

- Bulky Goods / Supermarket, standard commercial hours, 7am 9pm 7 days per week.
- Service Station 24 hours, 7 days per week.
- Café / Restaurants 7am to 11pm, 7 days per week.
- Bottle Shop in Specialty Shop 2, 10am to 10pm, 7 days per week.
- Gym (self serve style) in Specialty Shop 5, 24 hours, 7 days per week
- Goods delivery and waste collection 7am to 6pm, 7 days per week.

Proposed commercial activities have been assessed to ensure acceptable acoustical amenity can be achieved at the nearest potentially affected offsite noise sensitive receivers. The nearest noise sensitive receivers include existing and future residential dwellings to the immediate north and east, with existing dwellings to the south across Rifle Range Road. It is noted that the future residential properties to the immediate north and east (zoned "Low Density Residential") are assumed to be single storey only, given the existing residential dwellings further to the north and east are all single storey. For offsite receiver locations refer to Figure 2 in Appendix A.

Further, each Stage of development has been assessed individually, with Stage 1 assessed in the absence of Stage 2 and 3 built structures; Stage 2 assessed in the absence of Stage 3 built structures (assumed Stage 1 is constructed); and Stage 3 assessed with both Stage 2 and Stage 3 structures constructed. Therefore, once Stage 3 is constructed, predicted noise impacts from Stages 1 and 2 will be reduced further at the northern and eastern receivers from those presented in Sections 5.1 and 5.2.



#### 3.0 AMBIENT NOISE SURVEY

#### 3.1 Instrumentation

The following equipment was used to record ambient noise levels in the locale

- Rion NC 73 Calibrator; and
- Rion NL 21 Environmental Noise Logger.

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

#### 3.2 Background Measurement Methodology

A logger was located at the southeast corner of subject site. The microphone was in a free-field location, approximately 1.2m above ground. Refer to Figure 2 in Appendix A for the logger location.

The logger was set to record noise statistics in 15-minute blocks continually between Friday 30/10/2020 and Friday 6/11/2020.

All measurements were conducted generally in accordance with Australian Standard AS 1055:1997 – "Acoustics-Description and measurement of environmental noise". 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 Bundaberg weather station. Weather conditions during the noise monitoring period were fine, a temperature range between 15 to 33 °C, and a relative humidity between 20 and 70%.

#### 3.3 Background Measurement Results

Table 1 below presents the Rating Background noise levels (RBLs) calculated from the logger. The RBL for each period was calculated in accordance with the methodology detailed in the QLD EPA guideline "Planning for noise control". Graphical presentation of the measured noise levels is presented in the Appendix C.

Background Noise Descriptor	Time Period	Measured Level dB(A)
RBL Daytime	7am to 6pm	42
RBL Evening	6pm to 10pm	39
RBL Late Evening	10pm to 11pm	38
RBL Night-time	10pm to 7am	31

Table 1: Rating Background noise levels calculated from measured background noise levels.



#### 4.0 NOISE ASSESSMENT CRITERION

There is no set criterion set out in Section SC6.5.3.2 "Acoustic Assessment Report" of Bundaberg Regional Council's Planning Scheme 2015, however, reference is made to the Environmental Protection Act 1994 and Environmental Protection (Noise) Policy1997 (EPP Noise). The EPP (Noise) 1997 has been superseded therefore the proposed development has been assessed against the specific noise limits pursuant to the Environmental Protection (Noise) Policy 2019 to ensure the proposed development meets the requirements of the Environmental Protection Act 1994 (as amended).

Section 6 of the Environmental Protection (Noise) Policy 2019 provides the following framework for environmental values to be enhanced or protected:

#### 6 Environmental values

The environmental values to be enhanced or protected under this policy are—

- the qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems; and
- (b) the qualities of the acoustic environment that are conducive to human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to do any of the following—
  - (i) sleep;
  - (ii) study or learn;
  - (iii) be involved in recreation, including relaxation and conversation; and
- (c) the qualities of the acoustic environment that are conducive to protecting the amenity of the community.

Section 9 of the Environmental Protection (Noise) Policy 2019 provides the following framework for management intent for noise:

#### 9 Management intent for noise

 This section states the management intent for an activity involving noise that affects, or may affect, an environmental value to be enhanced or protected under this policy.

Note-

See section 35 of the Environmental Protection Regulation 2019.

- (2) To the extent it is reasonable to do so, noise must be dealt with in a way that ensures—
  - the noise does not have any adverse effect, or potential adverse effect, on an environmental value under this policy; and
  - (b) background creep in an area or place is prevented or minimised.
- (3) Despite subsection (2)(b), if the acoustic quality objectives for an area or place are not being achieved or maintained, the noise experienced in the area or place must, to the extent it is reasonable to do so, be dealt with in a way that progressively improves the acoustic environment of the area or place.
- (4) In this section-

background creep, for noise in an area or place, means a gradual increase in the total amount of background noise in the area or place as measured under the document called the 'Noise measurement manual' published on the department's website.

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Schedule 1 of the Environmental Protection (Noise) Policy 2019 provides the following specific "Acoustic Quality Objectives" to ensure that the above is achieved:

Column 1	olumn 1 Column 2 Column 3						
Sensitive receptor	Time of day	Acoustic (measured	Acoustic quality objectives (measured at the receptor) dB(A)				
	L <sub>Aeq,adj,1hr</sub>	L <sub>A10,adj,1hr</sub>	L <sub>A1,adj,1hr</sub>				
residence (for outdoors)	daytime and evening	50	55	65	health and wellbeing		
residence (for indoors)	daytime and evening	35	40	45	health and wellbeing		
	night-time	30	35	40	health and wellbeing, in relation to the ability to sleep		

Table 2: Criterion from Schedule 1 of the Environmental Protection (Noise) Policy 2019.

It is noted that the EPP Noise 2019 provides no numeric criteria for control of background creep. For this reason, we have applied the previous criteria applied under the EPP Noise 2008, as follows. Based upon the measured RBL levels presented in Section 3.3, the "Background Creep" criterion (as previously defined under the Environmental Protection (Noise) Policy 2008) equates to the following levels at the nearest offsite receivers:

Time Varying Noise Source	Noise Limit, SPL dB(A) L <sub>eq</sub>
Day 7am to 6pm	47 (RBL level 42 + 5 dB)
Evening 6pm to 10pm	44 (RBL level 39 + 5 dB)
Late Evening 10pm to 11pm	43 (RBL level 38 + 5 dB)
Night-time 10pm to 6am	36 (RBL level 31 + 5 dB)
Continuous Noise Source	Noise Limit, SPL dB(A) L <sub>90</sub>
Day 7am to 6pm	42 (RBL level 42 + 0 dB)
Evening 6pm to 10pm	39 (RBL level 39 + 0 dB)
Late Evening 10pm to 11pm	38 (RBL level 38 + 0 dB)
Night-time 10pm to 6am	31 (RBL level 31 + 0 dB)

Table 3: Noise limit criterion for "Background Creep".

The above criteria has been accepted by Bundaberg Regional Council in 2019 for a Fast Food outlet in East Bundaberg, and student accommodation in the Bundaberg CBD.



#### 5.0 PREDICTED ONSITE ACTIVITY NOISE IMPACTS

#### 5.1 Stage 1 Predicted Noise Emissions

RMA Engineering provided a traffic generation rates of 65 movements in and 65 movements out per peak hour for Stage 1. The generation rates have been used for modelling daytime and evening car movements (as shown in the point calculation sheets presented in Appendix C).

All noise source levels used in the assessment have been collected from similar assessments. 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 Stage 1 uses and have been assessed within this report.

	Assumed	Event No	ise Level,	SPL dB(A	) @ lm
Activity / Noise Source	Duration (secs.)	Leq 15 min	Leq 1hr	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>
Car door closures	1.5	75	80*	82*	85*
Car engine start-ups	3	73	73	74	75
Car movements in – RMA Traffic rate	22	68	68	70	73
Car movements out – RMA Traffic rate	22	68	68	70	73
Truck engine start-ups at loading bay	3	78	78	81	83
Truck movements	45	87	87	89	90
Truck with refrigeration unit at loading bay	900	81	81	82	83
Truck airbrakes	2	90	95*	103*	107*
Deliveries at loading bay	900	75	80*	85*	87*
Group of people talking outside	600	62	62	70	73
Waste collection at loading bay	180	92	97*	102*	107*
Alfresco Dining	720	75	75	78	82

<sup>\*</sup> 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 Stage 1 uses.

With regards to the  $L_{\rm A10~1hr}$  and  $L_{\rm A01~1hr}$  levels, in many cases, particularly during the night-time period, noise events such as car door closures may not register as  $L_{\rm A10}$  or  $L_{\rm A01}$  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  $L_{\rm A10}$ , and 36 times during a one hour period to register as an  $L_{\rm A01}$  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.

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For the  $L_{Aeq}$  levels we 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  $L_{Aeq}$  15 minute duration levels.

Based upon the location of the onsite activities in relation to the surrounding noise sensitive receivers (building façades, inside rooms with windows open and outside at the childcare play space areas), 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.

	Predicted Noise Impact, SPL dB(A)								
Fluctuating Noise Source	Nearest	Façade / Ou	tdoor Privat	e Space	Inside Windows Open				
	Leq 15 min	L <sub>eq 1hr</sub>	L <sub>10 lhr</sub>	L <sub>01 1hr</sub>	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>		
R1: Existing single-storey dwellings to the	ne north								
Car door closures at building (DAY)	20	25	N/A	46	17	N/A	38		
Car door closures at bowser (DAY)	23	28	N/A	47	21	N/A	39		
Car door closures at building (NIGHT)	15	19	N/A	N/A	<15	N/A	N/A		
Car door closures at bowser (NIGHT)	17	21	N/A	N/A	<15	N/A	N/A		
Car engine starts at building (DAY)	19	18	N/A	36	<15	N/A	28		
Car engine starts at bowser (DAY)	23	21	N/A	37	<15	N/A	29		
Car engine starts at building (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car engine starts at bowser (NIGHT)	15	<15	N/A	N/A	<15	N/A	N/A		
Car movement to site (DAY)	24	24	30	33	16	22	25		
Car movement from site (DAY)	27	27	33	36	20	26	29		
Car movement to site (NIGHT)	19	18	N/A	33	<15	N/A	25		
Car movement from site (NIGHT)	22	21	N/A	36	<15	N/A	29		
Truck engine starts loading bay	15	17	N/A	N/A	<15	N/A	N/A		
Truck movement to site	37	34	N/A	50	26	N/A	42		
Truck movement from site	40	37	N/A	53	30	N/A	46		
Trucks with refrigeration unit	43	40	44	45	32	36	37		
Truck airbrakes hard stand	31	35	N/A	N/A	28	N/A	N/A		
Truck airbrakes loading bay	28	30	N/A	N/A	22	N/A	N/A		
Deliveries at loading bay	37	42	47	49	34	39	41		
Group of people talking outside	21	21	31	34	<15	24	27		
Waste collection of metal bin	47	46	N/A	69	38	N/A	61		
Alfresco dining	34	39	43	47	31	35	39		
Applicable Criterion	B. Creep		A	coustic Qual	ity Objective	es			
Daytime / Evening Criterion	47 / 44	50	55	65	35	40	45		
Late Evening Criterion 10pm – 11pm	43	NA	NA	NA	30	35	40		
Night Criterion	36	NA	NA	NA	30	35	40		

Table 5: Predicted Stage 1 short duration noise impact levels at noise sensitive receivers.

## **CRG**ACOUSTICS

	Predicted Noise Impact, SPL dB(A)								
Fluctuating Noise Source	Nearest	Façade / Ou	tdoor Privat	e Space	Insid	le Windows	Open		
	Leq 15 min	$\mathbf{L}_{eq\ 1hr}$	L <sub>10 lhr</sub>	L <sub>01 1hr</sub>	L <sub>eq 1hr</sub>	L <sub>10 lhr</sub>	L <sub>01 1hr</sub>		
R2: Future dwellings to the immediate n	orth (assumed	as single-sto	rey)						
Car door closures at building (DAY)	26	31	N/A	52	23	N/A	44		
Car door closures at bowser (DAY)	30	35	N/A	53	27	N/A	46		
Car door closures at building (NIGHT)	21	25	N/A	N/A	17	N/A	N/A		
Car door closures at bowser (NIGHT)	24	28	N/A	N/A	20	N/A	N/A		
Car engine starts at building (DAY)	25	24	N/A	42	16	N/A	34		
Car engine starts at bowser (DAY)	29	28	N/A	43	20	N/A	36		
Car engine starts at building (NIGHT)	20	18	N/A	N/A	<15	N/A	N/A		
Car engine starts at bowser (NIGHT)	21	20	N/A	N/A	<15	N/A	N/A		
Car movement to site (DAY)	29	29	35	38	21	27	30		
Car movement from site (DAY)	36	36	42	45	28	34	37		
Car movement to site (NIGHT)	24	22	N/A	38	15	N/A	30		
Car movement from site (NIGHT)	30	29	N/A	45	22	N/A	37		
Truck engine starts loading bay	21	23	N/A	N/A	15	N/A	N/A		
Truck movement to site	42	39	N/A	55	31	N/A	47		
Truck movement from site	49	46	N/A	62	38	N/A	54		
Trucks with refrigeration unit	49	46	50	51	38	42	43		
Truck airbrakes hard stand	40	44	N/A	N/A	36	N/A	N/A		
Truck airbrakes loading bay	34	36	N/A	N/A	29	N/A	N/A		
Deliveries at loading bay	43	48	53	55	40	45	47		
Group of people talking outside	27	27	37	40	20	29	32		
Waste collection of metal bin	53	52	N/A	75	44	N/A	67		
Alfresco dining	38	43	47	51	36	40	44		
R3: Existing single-storey dwellings to the	ne east								
Car door closures at building (DAY)	<15	<15	N/A	26	<15	N/A	19		
Car door closures at bowser (DAY)	<15	18	N/A	36	<15	N/A	28		
Car door closures at building (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car door closures at bowser (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car engine starts at building (DAY)	<15	<15	N/A	16	<15	N/A	<15		
Car engine starts at bowser (DAY)	<15	<15	N/A	26	<15	N/A	18		
Car engine starts at building (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car engine starts at bowser (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car movement to site (DAY)	15	15	21	24	<15	<15	17		
Car movement from site (DAY)	15	15	21	24	<15	<15	17		
Car movement to site (NIGHT)	<15	<15	N/A	24	<15	N/A	17		
Car movement from site (NIGHT)	<15	<15	N/A	24	<15	N/A	17		
Truck engine starts loading bay	<15	<15	N/A	N/A	<15	N/A	N/A		
Truck movement to site	28	25	N/A	41	18	N/A	34		
Truck movement from site	28	25	N/A	41	18	N/A	34		
Trucks with refrigeration unit	33	30	34	35	22	26	27		
Truck airbrakes hard stand	19	23	N/A	N/A	16	N/A	N/A		
Truck airbrakes loading bay	18	20	N/A	N/A	<15	N/A	N/A		
Deliveries at loading bay	27	32	37	39	24	29	31		
Group of people talking outside	<15	<15	22	25	<15	<15	17		
Waste collection of metal bin	37	36	N/A	59	28	N/A	51		
Alfresco dining	26	31	35	39	23	27	31		
Applicable Criterion	B. Creep		A	coustic Qual	lity Objective	es			
Daytime / Evening Criterion	47 / 44	50	55	65	35	40	45		
Late Evening Criterion 10pm – 11pm	43	NA	NA	NA	30	35	40		
Night Criterion	36	NA	NA	NA	30	35	40		

Table 5 (Cont.): Predicted Stage 1 short duration noise impact levels at noise sensitive receivers.

## **CRG**ACOUSTICS

	Predicted Noise Impact, SPL dB(A)								
Fluctuating Noise Source	Nearest	Façade / Ou	tdoor Privat	e Space	Insid	le Windows	Open		
	Leq 15 min	L <sub>eq 1hr</sub>	L <sub>10 lhr</sub>	L <sub>01 1hr</sub>	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>		
R4: Future dwellings to the immediate e	ast (assumed a	s single-stor	ey)						
Car door closures at building (DAY)	<15	16	N/A	37	<15	N/A	30		
Car door closures at bowser (DAY)	22	27	N/A	46	20	N/A	38		
Car door closures at building (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car door closures at bowser (NIGHT)	16	20	N/A	N/A	<15	N/A	N/A		
Car engine starts at building (DAY)	<15	<15	N/A	27	<15	N/A	20		
Car engine starts at bowser (DAY)	21	20	N/A	36	<15	N/A	28		
Car engine starts at building (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car engine starts at bowser (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car movement to site (DAY)	26	26	32	35	18	24	27		
Car movement from site (DAY)	25	25	31	34	17	23	26		
Car movement to site (NIGHT)	21	19	N/A	35	<15	N/A	27		
Car movement from site (NIGHT)	19	18	N/A	34	<15	N/A	26		
Truck engine starts loading bay	15	17	N/A	N/A	<15	N/A	N/A		
Truck movement to site	39	36	N/A	52	28	N/A	44		
Truck movement from site	38	35	N/A	51	27	N/A	43		
Trucks with refrigeration unit	43	40	44	45	32	36	37		
Truck airbrakes hard stand	30	34	N/A	N/A	26	N/A	N/A		
Truck airbrakes loading bay	28	30	N/A	N/A	23	N/A	N/A		
Deliveries at loading bay	37	42	47	49	34	39	41		
Group of people talking outside	24	24	33	36	16	26	29		
Waste collection of metal bin	47	46	N/A	69	38	N/A	61		
Alfresco dining	37	42	46	50	34	38	42		
R5: Existing dwellings to the south acros	ss Rifle Range l	Road							
Car door closures at building (DAY)	24	29	N/A	50	22	N/A	43		
Car door closures at bowser (DAY)	26	31	N/A	49	24	N/A	42		
Car door closures at building (NIGHT)	20	23	N/A	N/A	16	N/A	N/A		
Car door closures at bowser (NIGHT)	20	24	N/A	N/A	16	N/A	N/A		
Car engine starts at building (DAY)	24	22	N/A	40	15	N/A	33		
Car engine starts at bowser (DAY)	25	24	N/A	39	17	N/A	32		
Car engine starts at building (NIGHT)	18	17	N/A	N/A	<15	N/A	N/A		
Car engine starts at bowser (NIGHT)	17	16	N/A	N/A	<15	N/A	N/A		
Car movement to site (DAY)	31	31	37	40	24	30	33		
Car movement from site (DAY)	26	26	33	36	19	25	28		
Car movement to site (NIGHT)	26	25	N/A	40	17	N/A	33		
Car movement from site (NIGHT)	21	20	N/A	36	<15	N/A	28		
Truck engine starts loading bay	15	17	N/A	N/A	<15	N/A	N/A		
Truck movement to site	44	41	N/A	57	34	N/A	50		
Truck movement from site	40	36	N/A	53	29	N/A	45		
Trucks with refrigeration unit	43	40	44	45	32	36	37		
Truck airbrakes hard stand	35	39	N/A	N/A	32	N/A	N/A		
Truck airbrakes loading bay	28	30	N/A	N/A	23	N/A	N/A		
Deliveries at loading bay	37	42	47	49	34	39	41		
Group of people talking outside	27	27	37	40	20	29	32		
Waste collection of metal bin	47	46	N/A	69	38	N/A	61		
Alfresco dining	39	44	48	52	37	40	44		
Applicable Criterion	B. Creep	33 11 10 32 37 10 1							
Daytime / Evening Criterion							45		
Late Evening Criterion 10pm – 11pm	4//44	NA	NA	NA	30	35	45		
	10								
Night Criterion	36	NA	NA	NA	30	35	40		

Table 5 (Cont.): Predicted Stage 1 short duration noise impact levels at noise sensitive receivers.

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Continuous activity noise source levels have been compiled from similar previous investigations. All noise levels have been corrected for impulsiveness or tonality as per Australian Standard AS 1055:1997 – "Acoustics-Description and measurement of environmental noise".

It should be stressed that mechanical plant selections have yet to be undertaken, for this reason; we have applied noise levels from other similar commercial sites as follows:

- · Rooftop kitchen exhaust fans each generating 62 dB(A) at 3m.
- Rooftop toilet exhaust fans each generating 52 dB(A) at 3m.
- Eastern services yard air conditioner units each generating 60 dB(A) at 3m
- Eastern services yard refrigeration compressor units each generating 62 dB(A) at 3m.

Based upon the assumed locations of the onsite mechanical plant in relation to the surrounding noise sensitive receivers (building façades, inside rooms with windows open and outside at the childcare play space areas), we predict the following noise impact levels as presented in Table 6.

As a worst case scenario we have assumed that all mechanical plant in Stage 1 will be running at the same time

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.

	Predicted Noise Im	pact, SPL L <sub>90</sub> dB(A)
Continuous Noise Source	Nearest Façade / Outdoor Private Space	Inside Windows Open
R1: Existing single-storey dwellings to the north		
Combined mech. plant	26	19
R2: Future dwellings to the immediate north (assumed	as single-storey)	
Combined mech. plant	31	24
R3: Existing single-storey dwellings to the east		
Combined mech. plant	18	<15
R4: Future dwellings to the immediate east (assumed a	s single-storey)	
Combined mech. plant	29	21
R5: Existing dwellings to the south across Rifle Range	Road	
Combined mech. plant	30	22
Daytime / Evening Criterion	42 / 39	35
Late Evening Criterion 10pm – 11pm	38	30
Night-time Criterion	31	30

Table 6: Predicted Stage 1 continuous noise impact levels at noise sensitive receivers.



#### 5.2 Stage 2 Predicted Noise Emissions

RMA Engineering provided a traffic generation rates of 40 movements in and 40 movements out per peak hour for Stage 2. The generation rates have been used for modelling daytime and evening car movements (as shown in the point calculation sheets presented in Appendix C).

All noise source levels used in the assessment have been collected from similar assessments. 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 Stage 2 uses and have been assessed within this report.

	Assumed	Event Noise Level, SPL dB(A) @ 1m				
Activity / Noise Source	Duration (secs.)	Leq 15 min	Leq 1hr	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>	
Car door closures	1.5	75	80*	82*	85*	
Car engine start-ups	3	73	73	74	75	
Car movements in – RMA Traffic rate	22	68	68	70	73	
Car movements out – RMA Traffic rate	22	68	68	70	73	
Truck engine start-ups at loading bay	3	78	78	81	83	
Truck movements	80	87	87	89	90	
Truck with refrigeration unit at loading bay	900	81	81	82	83	
Truck airbrakes	2	90	95*	103*	107*	
Deliveries at loading bay	900	75	80*	85*	87*	
Group of people talking outside	600	62	62	70	73	
Waste collection	180	92	97*	102*	107*	
Alfresco Dining	720	75	75	78	82	

<sup>\*</sup> Denotes + 5 dB correction for impulsiveness in accordance with AS1055. \*\* Denotes + 5 dB correction for tonality in accordance with AS1055

Table 7: Typical noise source levels associated with the proposed Stage 2 uses.

With regards to the  $L_{A10~1hr}$  and  $L_{A01~1hr}$  levels, in many cases, particularly during the night-time period, noise events such as car door closures may not register as  $L_{A10}$  or  $L_{A01}$  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  $L_{A10}$ , and 36 times during a one hour period to register as an  $L_{A01}$  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 8.

**CRG**ACOUSTICS

For the  $L_{Aeq}$  levels we 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  $L_{Aeq}$  15 minute duration levels.

Based upon the location of the onsite activities in relation to the surrounding noise sensitive receivers (building façades, inside rooms with windows open and outside at the childcare play space areas), we predict the following noise impact levels as presented in Table 8.

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.

			Predicted No	oise Impact,	SPL dB(A)		
Fluctuating Noise Source	Nearest	Façade / Ou	tdoor Privat	e Space	Inside Windows Open		
	Leq 15 min	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>
R1: Existing single-storey dwellings to th	e north						
Car door closures near carpark (DAY)	23	28	N/A	48	21	N/A	40
Car door closures far carpark (DAY)	21	26	N/A	45	18	N/A	38
Car door closures near carpark (NIGHT)	18	22	N/A	N/A	15	N/A	N/A
Car door closures far carpark (NIGHT)	16	20	N/A	N/A	<15	N/A	N/A
Car engine starts near carpark (DAY)	21	20	N/A	38	<15	N/A	30
Car engine starts far carpark (DAY)	18	17	N/A	35	<15	N/A	28
Car engine starts near carpark (NIGHT)	18	17	N/A	38	<15	N/A	30
Car engine starts far carpark (NIGHT)	15	<15	N/A	35	<15	N/A	28
Car movement to site (DAY)	24	24	32	35	17	25	28
Car movement from site (DAY)	22	22	30	33	<15	22	25
Car movement to site (NIGHT)	21	20	N/A	35	<15	N/A	28
Car movement from site (NIGHT)	19	18	N/A	33	<15	N/A	25
Truck engine starts loading bay	15	17	N/A	N/A	<15	N/A	N/A
Truck movement to site	41	38	N/A	51	30	N/A	44
Truck movement from site	41	35	N/A	51	27	N/A	44
Truck airbrakes hard stand	30	33	N/A	N/A	26	N/A	N/A
Truck airbrakes loading bay	29	31	N/A	N/A	23	N/A	N/A
Deliveries at loading bay	37	42	47	49	35	40	42
Group of people talking outside	21	21	31	34	<15	23	26
Trucks with refrigeration unit	43	40	44	45	33	37	38
Waste collection of metal bin	47	46	N/A	69	39	N/A	42
Alfresco dining	31	36	40	44	29	33	37
Applicable Criterion	B. Creep		A	coustic Qual	ity Objective	es	
Daytime / Evening Criterion	47 / 44	50	55	65	35	40	45
Late Evening Criterion 10pm – 11pm	43	NA	NA	NA	30	35	40
Night Criterion	36	NA	NA	NA	30	35	40

Table 8: Predicted Stage 2 short duration noise impact levels at noise sensitive receivers.

## **CRG**ACOUSTICS

	Predicted Noise Impact, SPL dB(A)								
Fluctuating Noise Source	Nearest 1	Façade / Ou	tdoor Privat	e Space	Insid	le Windows (	Open		
	Leq 15 min	L <sub>eq lhr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>		
R2: Future dwellings to the immediate n									
Car door closures near carpark (DAY)	31	36	N/A	55	28	N/A	48		
Car door closures far carpark (DAY)	26	31	N/A	50	23	N/A	43		
Car door closures near carpark (NIGHT)	26	30	N/A	N/A	22	N/A	N/A		
Car door closures far carpark (NIGHT)	21	25	N/A	N/A	17	N/A	N/A		
Car engine starts near carpark (DAY)	28	27	N/A	45	20	N/A	38		
Car engine starts far carpark (DAY)	23	22	N/A	40	15	N/A	33		
Car engine starts near carpark (NIGHT)	25	24	N/A	45	17	N/A	38		
Car engine starts far carpark (NIGHT)	20	19	N/A	40	<15	N/A	33		
Car movement to site (DAY)	31	31	39	42	24	32	35		
Car movement from site (DAY)	27	27	35	38	19	27	30		
Car movement to site (NIGHT)	28	27	N/A	42	19	N/A	35		
Car movement from site (NIGHT)	24	22	N/A	38	15	N/A	30		
Truck engine starts loading bay	22	24	N/A	N/A	17	N/A	N/A		
Truck movement to site	47	44	N/A	57	36	N/A	50		
Truck movement from site	47	41	N/A	57	33	N/A	50		
Truck airbrakes hard stand	35	39	N/A	N/A	32	N/A	N/A		
Truck airbrakes loading bay	35	37	N/A	N/A	30	N/A	N/A		
Deliveries at loading bay	44	49	54	56	41	46	48		
Group of people talking outside	27	27	37	40	19	29	32		
Trucks with refrigeration unit	50	47	51	52	39	43	44		
Waste collection of metal bin	54	53	N/A	76	45	N/A	68		
Alfresco dining	35	40	44	48	33	37	41		
R3: Existing single-storey dwellings to th	e east								
Car door closures near carpark (DAY)	<15	<15	N/A	25	<15	N/A	18		
Car door closures far carpark (DAY)	<15	<15	N/A	29	<15	N/A	21		
Car door closures near carpark (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car door closures far carpark (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car engine starts near carpark (DAY)	<15	<15	N/A	15	<15	N/A	<15		
Car engine starts far carpark (DAY)	<15	<15	N/A	19	<15	N/A	<15		
Car engine starts near carpark (NIGHT)	<15	<15	N/A	15	<15	N/A	<15		
Car engine starts far carpark (NIGHT)	<15	<15	N/A	19	<15	N/A	<15		
Car movement to site (DAY)	<15	<15	<15	<15	<15	<15	<15		
Car movement from site (DAY)	<15	<15	<15	<15	<15	<15	<15		
Car movement to site (NIGHT)	<15	<15	N/A	<15	<15	N/A	<15		
Car movement from site (NIGHT)	<15	<15	N/A	<15	<15	N/A	<15		
Truck engine starts loading bay	<15	<15	N/A	N/A	<15	N/A	N/A		
Truck movement to site	22	19	N/A	33	<15	N/A	25		
Truck movement from site	22	16	N/A	33	<15	N/A	25		
Truck airbrakes hard stand	<15	15	N/A	N/A	<15	N/A	N/A		
Truck airbrakes loading bay	<15	<15	N/A	N/A	<15	N/A	N/A		
Deliveries at loading bay	18	23	28	30	15	20	22		
Group of people talking outside	<15	<15	<15	17	<15	<15	<15		
Trucks with refrigeration unit	24	21	25	26	<15	18	19		
Waste collection of metal bin	39	38	N/A	61	31	N/A	54		
Alfresco dining	<15	16	20	24	<15	<15	17		
Applicable Criterion	B. Creep								
Daytime / Evening Criterion	47 / 44	50	55	65	35	40	45		
Late Evening Criterion 10pm – 11pm	43	NA.	NA	NA	30	35	40		
Night Criterion	36	NA.	NA.	NA.	30	35	40		
Night Criterion	30	NA	NA	NA	30		40		

Table 8 (Cont.): Predicted Stage 2 short duration noise impact levels at noise sensitive receivers.

## **CRG**ACOUSTICS

	Predicted Noise Impact, SPL dB(A)								
Fluctuating Noise Source	Nearest	Façade / Ou	tdoor Privat	e Space	Inside Windows Open				
	Leg 15 min	L <sub>eq 1hr</sub>	L <sub>10 lhr</sub>	L <sub>01 1hr</sub>	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>		
R4: Future dwellings to the immediate ea	ast (assumed as		ey)						
Car door closures near carpark (DAY)	29	34	N/A	53	26	N/A	45		
Car door closures far carpark (DAY)	<15	18	N/A	37	<15	N/A	29		
Car door closures near carpark (NIGHT)	24	27	N/A	N/A	20	N/A	N/A		
Car door closures far carpark (NIGHT)	<15	<15	N/A	N/A	<15	N/A	N/A		
Car engine starts near carpark (DAY)	26	25	N/A	43	17	N/A	35		
Car engine starts far carpark (DAY)	<15	<15	N/A	27	<15	N/A	19		
Car engine starts near carpark (NIGHT)	23	22	N/A	43	<15	N/A	35		
Car engine starts far carpark (NIGHT)	<15	<15	N/A	27	<15	N/A	19		
Car movement to site (DAY)	17	17	25	28	<15	18	21		
Car movement from site (DAY)	<15	<15	20	23	<15	<15	15		
Car movement to site (NIGHT)	<15	<15	N/A	28	<15	N/A	21		
Car movement from site (NIGHT)	<15	<15	N/A	23	<15	N/A	15		
Truck engine starts loading bay	18	20	N/A	N/A	<15	N/A	N/A		
Truck movement to site	44	41	N/A	55	34	N/A	47		
Truck movement from site	44	38	N/A	55	31	N/A	47		
Truck airbrakes hard stand	33	37	N/A	N/A	29	N/A	N/A		
Truck airbrakes loading bay	31	33	N/A	N/A	26	N/A	N/A		
Deliveries at loading bay	40	45	50	52	37	42	44		
Group of people talking outside	19	19	29	32	<15	21	24		
Trucks with refrigeration unit	46	43	47	48	35	40	41		
Waste collection of metal bin	66	65	N/A	88	57	N/A	80		
Alfresco dining	25	30	34	38	22	26	30		
R5: Existing dwellings to the south acros	s Rifle Range l	Road							
Car door closures near carpark (DAY)	30	35	N/A	54	27	N/A	47		
Car door closures far carpark (DAY)	25	30	N/A	49	22	N/A	42		
Car door closures near carpark (NIGHT)	25	28	N/A	N/A	21	N/A	N/A		
Car door closures far carpark (NIGHT)	20	23	N/A	N/A	16	N/A	N/A		
Car engine starts near carpark (DAY)	27	26	N/A	44	19	N/A	37		
Car engine starts far carpark (DAY)	22	21	N/A	39	<15	N/A	32		
Car engine starts near carpark (NIGHT)	24	23	N/A	44	16	N/A	37		
Car engine starts far carpark (NIGHT)	19	18	N/A	39	<15	N/A	32		
Car movement to site (DAY)	32	32	40	43	24	32	35		
Car movement from site (DAY)	26	26	34	37	18	27	30		
Car movement to site (NIGHT)	29	27	N/A	43	20	N/A	35		
Car movement from site (NIGHT)	23	22	N/A	37	<15	N/A	30		
Truck engine starts loading bay	<15	16	N/A	N/A	<15	N/A	N/A		
Truck movement to site	49	46	N/A	60	39	N/A	52		
Truck movement from site	49	46	N/A	60	39	N/A	52		
Truck airbrakes hard stand	38	42	N/A	N/A	34	N/A	N/A		
Truck airbrakes loading bay	27	29	N/A	N/A	22	N/A	N/A		
Deliveries at loading bay	36	41	46	48	33	38	40		
Group of people talking outside	29	29	39	42	21	31	34		
Trucks with refrigeration unit	42	39	43	44	31	35	36		
Waste collection of metal bin	46	45	N/A	68	37	N/A	60		
Alfresco dining	43	48	52	56	40	44	48		
Applicable Criterion	B. Creep Acoustic Quality Objectives								
Daytime / Evening Criterion	47 / 44	50	55	65	35	40	45		
Late Evening Criterion 10pm – 11pm	43	NA.	NA.	NA NA	30	35	40		
Night Criterion	36	NA	NA.	NA.	30	35	40		

Table 8 (Cont.): Predicted Stage 2 short duration noise impact levels at noise sensitive receivers.

**CRG**ACOUSTICS

Continuous activity noise source levels have been compiled from similar previous investigations. All noise levels have been corrected for impulsiveness or tonality as per Australian Standard AS 1055:1997 – "Acoustics-Description and measurement of environmental noise".

It should be stressed that mechanical plant selections have yet to be undertaken, for this reason; we have applied noise levels from other similar commercial sites as follows:

- Rooftop kitchen exhaust fans at café / restaurant each generating 62 dB(A) at 3m.
- Rooftop toilet exhaust fans at café / restaurant each generating 52 dB(A) at 3m.
- Rooftop air conditioner units each generating 60 dB(A) at 3m.
- Rooftop refrigeration compressor units each generating 62 dB(A) at 3m.

Based upon the assumed locations of the onsite mechanical plant in relation to the surrounding noise sensitive receivers (building façades, inside rooms with windows open and outside at the childcare play space areas), we predict the following noise impact levels as presented in Table 9.

As a worst case scenario we have assumed that all mechanical plant in Stage 2 will be running at the same time

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.

	Predicted Noise Impact, SPL L90 dB(A)							
Continuous Noise Source	Nearest Façade / Outdoor Private Space	Inside Windows Open						
R1: Existing single-storey dwellings to the north								
Combined mech. plant	26	18						
R2: Future dwellings to the immediate north (assumed	as single-storey)							
Combined mech. plant	31	23						
R3: Existing single storey dwellings to the east	R3: Existing single storey dwellings to the east							
Combined mech. plant	20	<15						
R4: Future dwellings to the immediate east (assumed a	s single-storey)							
Combined mech. plant	34	27						
R5: Existing dwellings to the south across Rifle Range Road								
Combined mech. plant	32	25						
Daytime / Evening Criterion	42 / 39	35						
Late Evening Criterion 10pm – 11pm	38	30						
Night-time Criterion	31	30						

Table 9: Predicted Stage 2 continuous noise impact levels at noise sensitive receivers.



#### 5.3 Stage 3 Predicted Noise Emissions

RMA Engineering provided a traffic generation rates of 129 movements in and 129 movements out per peak hour for Stage 3. The generation rates have been used for modelling daytime and evening car movements (as shown in the point calculation sheets presented in Appendix C).

All noise source levels used in the assessment have been collected from similar assessments. 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 Stage 3 uses and have been assessed within this report.

Assumed	Event Noise Level, SPL dB(A) @ 1m			
Duration (secs.)	Leq 15 min	Leq 1hr	L <sub>10 1hr</sub>	L <sub>01 1h</sub>
1.5	75	80*	82*	85*
3	73	73	74	75
35	68	68	70	73
35	68	68	70	73
3	78	78	81	83
85	87	87	89	90
900	81	81	82	83
2	90	95*	103*	107*
900	75	80*	85*	87*
600	62	62	70	73
180	92	97*	102*	107*
	Duration (secs.)  1.5  3  35  35  35  900  2  900  600	Duration (secs.)   Leq 15 min	Duration (secs.)         Leq 18 min         Leq 1hr           1.5         75         80*           3         73         73           35         68         68           35         68         68           3         78         78           85         87         87           900         81         81           2         90         95*           900         75         80*           600         62         62	Duration (secs.)         Leq 15 min         Leq 1hr         L10 1hr           1.5         75         80*         82*           3         73         73         74           35         68         68         70           35         68         68         70           3         78         78         81           85         87         87         89           900         81         81         82           2         90         95*         103*           900         75         80*         85*           600         62         62         70

Table 10: Typical noise source levels associated with the proposed Stage 3 uses.

With regards to the  $L_{\rm A10~1hr}$  and  $L_{\rm A01~1hr}$  levels, in many cases, particularly during the night-time period, noise events such as car door closures may not register as  $L_{\rm A10}$  or  $L_{\rm A01}$  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  $L_{\rm A10}$ , and 36 times during a one hour period to register as an  $L_{\rm A01}$  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 10.

For the  $L_{Aeq}$  levels we 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  $L_{Aeq}$  15 minute duration levels.

**CRG**ACOUSTICS

Based upon the location of the onsite activities in relation to the surrounding noise sensitive receivers (building façades, inside rooms with windows open and outside at the childcare play space areas), we predict the following noise impact levels as presented in Table 10.

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.

	Predicted Noise Impact, SPL dB(A)							
Fluctuating Noise Source	Nearest Façade / Outdoor Private Space			Inside Windows Open				
	L <sub>eq 15 min</sub>	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>	
R1: Existing single-storey dwellings to t								
Car door closures near carpark	18	23	N/A	39	15	N/A	31	
Car door closures far carpark	16	21	N/A	37	<15	N/A	30	
Car engine starts near carpark	16	16	N/A	29	<15	N/A	21	
Car engine starts far carpark	<15	<15	N/A	27	<15	N/A	20	
Car movement to site	21	21	23	26	<15	16	19	
Car movement from site	19	19	21	24	<15	<15	16	
Truck engine starts loading bay	<15	<15	N/A	N/A	<15	N/A	N/A	
Truck movement to site	33	30	N/A	44	23	N/A	36	
Truck movement from site	33	30	N/A	44	23	N/A	36	
Truck airbrakes hard stand	23	28	N/A	N/A	21	N/A	N/A	
Truck airbrakes loading bay	21	26	N/A	N/A	18	N/A	N/A	
Deliveries at loading bay	26	31	36	38	24	29	31	
Group of people talking outside	<15	<15	24	27	<15	16	19	
Trucks with refrigeration unit	33	30	34	35	23	27	28	
Waste collection	46	48	63	68	41	56	61	
R2: Future dwellings to the immediate	north (assumed	as single-sto	rey)					
Car door closures near carpark	22	27	N/A	44	20	N/A	36	
Car door closures far carpark	17	22	N/A	38	15	N/A	31	
Car engine starts near carpark	20	20	N/A	34	<15	N/A	26	
Car engine starts far carpark	15	15	N/A	28	<15	N/A	21	
Car movement to site	24	24	26	29	17	19	22	
Car movement from site	19	19	21	24	<15	<15	16	
Truck engine starts loading bay	21	23	N/A	N/A	15	N/A	N/A	
Truck movement to site	42	39	N/A	53	32	N/A	45	
Truck movement from site	42	39	N/A	53	32	N/A	45	
Truck airbrakes hard stand	32	37	N/A	N/A	30	N/A	N/A	
Truck airbrakes loading bay	34	39	N/A	N/A	31	N/A	N/A	
Deliveries at loading bay	40	45	50	52	37	42	44	
Group of people talking outside	19	19	29	32	<15	21	24	
Trucks with refrigeration unit	46	43	47	48	35	39	40	
Waste collection	57	59	74	79	52	67	72	
R3: Existing single-storey dwellings to t	he east							
Car door closures near carpark	<15	<15	N/A	29	<15	N/A	21	
Car door closures far carpark	<15	<15	N/A	28	<15	N/A	21	
Car engine starts near carpark	<15	<15	N/A	19	<15	N/A	<15	
Car engine starts far carpark	<15	<15	N/A	18	<15	N/A	<15	
Car movement to site	<15	<15	<15	16	<15	<15	<15	
Car movement from site	<15	<15	<15	15	<15	<15	<15	
Truck engine starts loading bay	<15	<15	N/A	N/A	<15	N/A	N/A	
Truck movement to site	23	20	N/A	34	<15	N/A	26	
Truck movement from site	23	20	N/A	34	<15	N/A	26	
Truck airbrakes hard stand	<15	18	N/A	N/A	<15	N/A	N/A	
Truck airbrakes loading bay	<15	<15	N/A	N/A	<15	N/A	N/A	
Deliveries at loading bay	<15	18	23	25	<15	15	17	
Group of people talking outside	<15	<15	<15	15	<15	<15	<15	
Trucks with refrigeration unit	19	16	20	21	<15	<15	<15	
Waste collection	30	32	47	52	24	39	44	
Applicable Criterion	B. Creep	32		Acoustic Qual			_ ++	
**							45	
Daytime / Evening Criterion	47 / 44	50	55	65	35	40	45	

Table 10: Predicted Stage 3 short duration noise impact levels at noise sensitive receivers.

## **CRG**ACOUSTICS

	Predicted Noise Impact, SPL dB(A)						
Fluctuating Noise Source	Nearest Façade / Outdoor Private Space				Inside Windows Open		
	Leq 15 min	L <sub>eq 1hr</sub>	L <sub>10 lhr</sub>	L <sub>01 1hr</sub>	L <sub>eq 1hr</sub>	L <sub>10 1hr</sub>	L <sub>01 1hr</sub>
R4: Future dwellings to the immediate ea	ast (assumed as	single-store	ey)				
Car door closures near carpark	18	23	N/A	39	15	N/A	31
Car door closures far carpark	<15	17	N/A	33	<15	N/A	26
Car engine starts near carpark	16	16	N/A	29	<15	N/A	21
Car engine starts far carpark	<15	<15	N/A	23	<15	N/A	16
Car movement to site	21	21	23	26	<15	15	18
Car movement from site	17	17	19	22	<15	<15	<15
Truck engine starts loading bay	<15	<15	N/A	N/A	<15	N/A	N/A
Truck movement to site	28	25	N/A	39	18	N/A	31
Truck movement from site	28	25	N/A	39	18	N/A	31
Truck airbrakes hard stand	18	23	N/A	N/A	16	N/A	N/A
Truck airbrakes loading bay	21	26	N/A	N/A	18	N/A	N/A
Deliveries at loading bay	26	31	36	38	24	29	31
Group of people talking outside	28	28	38	41	21	30	33
Trucks with refrigeration unit	32	29	33	34	22	26	27
Waste collection	44	46	61	66	38	53	58
R5: Existing dwellings to the south acros	s Rifle Range I	Road	•				
Car door closures near carpark	25	30	N/A	46	22	N/A	39
Car door closures far carpark	23	28	N/A	45	21	N/A	37
Car engine starts near carpark	23	23	N/A	36	15	N/A	29
Car engine starts far carpark	21	21	N/A	35	<15	N/A	27
Car movement to site	29	29	31	34	22	24	27
Car movement from site	28	28	30	33	20	22	25
Truck engine starts loading bay	15	17	N/A	N/A	<15	N/A	N/A
Truck movement to site	40	37	N/A	50	29	N/A	42
Truck movement from site	40	37	N/A	50	29	N/A	42
Truck airbrakes hard stand	29	34	N/A	N/A	27	N/A	N/A
Truck airbrakes loading bay	28	33	N/A	N/A	25	N/A	N/A
Deliveries at loading bay	33	38	43	45	31	36	38
Group of people talking outside	22	22	31	34	<15	24	27
Trucks with refrigeration unit	39	36	40	41	29	33	34
Waste collection	44	46	61	66	38	53	58
Applicable Criterion	B. Creep		A	coustic Qual	ity Objective	28	
Daytime / Evening Criterion	47 / 44	50	55	65	35	40	45

Table 10 (Cont.): Predicted Stage 3 short duration noise impact levels at noise sensitive receivers.

**CRG**ACOUSTICS

Continuous activity noise source levels have been compiled from similar previous investigations. All noise levels have been corrected for impulsiveness or tonality as per Australian Standard AS 1055:1997 – "Acoustics-Description and measurement of environmental noise".

It should be stressed that mechanical plant selections have yet to be undertaken, for this reason; we have applied noise levels from other similar commercial sites as follows:

- Rooftop toilet exhaust fans each generating 52 dB(A) at 3m.
- Rooftop air conditioner units each generating 60 dB(A) at 3m.
- Rooftop refrigeration compressor units each generating 62 dB(A) at 3m.

Based upon the assumed locations of the onsite mechanical plant in relation to the surrounding noise sensitive receivers (building façades, inside rooms with windows open and outside at the childcare play space areas), we predict the following noise impact levels as presented in Table 11.

As a worst case scenario we have assumed that all mechanical plant in Stage 3 will be running at the same time.

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.

	Predicted Noise Impact, SPL L <sub>90</sub> dB(A)						
Continuous Noise Source	Nearest Façade / Outdoor Private Space	Inside Windows Open					
R1: Existing single-storey dwellings to the north							
Combined mech. plant	26	18					
R2: Future dwellings to the immediate north (assumed	as single-storey)						
Combined mech. plant	39	32					
R3: Existing single-storey dwellings to the east							
Combined mech. plant	<15	<15					
R4: Future dwellings to the immediate east (assumed as single-storey)							
Combined mech. plant	39	32					
R5: Existing dwellings to the south across Rifle Range Road							
Combined mech. plant	19	<15					
Daytime / Evening Criterion	42 / 39	35					

Table 11: Predicted Stage 3 continuous noise impact levels at noise sensitive receivers.

**CRG**ACOUSTICS

#### 6.0 RECOMMENDED ACOUSTIC TREATMENTS

We recommend that the following acoustic treatments and management controls be incorporated into the development to mitigate onsite activity noise impacts:

- Hours of operation be limited to as follows:
  - Bulky Goods / Supermarket, standard commercial hours, 7am 9pm 7 days per week.
  - Service Station 24 hours, 7 days per week.
  - Café / Restaurants 7am to 11pm, 7 days per week
  - Bottle Shop in Specialty Shop 2, 10am to 10pm, 7 days per week.
  - Gym (self serve style) in Specialty Shop 5, 24 hours, 7 days per week.
  - Goods delivery and waste collection 7am to 6pm, 7 days per week.
- Construction of the acoustic barriers as detailed in Sketch 1 and Sketch 2 of Appendix A. Barriers are to be free of gaps and holes including between the base of the barriers and the ground. Typical materials include earth berms, 19mm lapped timber fence (40% overlap), 9mm FC sheet, toughened glass, Perspex, masonry, or a combination of the above (a minimum surface mass of 11kg/m²). To minimise visual impact to the future adjacent residential lots we recommend that the barrier/s be constructed of a combination of materials (i.e. standard 2.0m high masonry wall, with 1.75m high of Perspex above).
- Driveway and car parking areas be finished with surface coatings which prevent tyre squeal (an
  uncoated unpolished concrete or bitumen surface is acceptable).
- Drainage grating over trafficable areas be well secured to prevent rattling.
- Mechanical plant for the development be designed and installed to comply with the noise criterion presented in Section 4. As final plant selection has not been completed, an assessment of plant should be conducted during the design phase.
  - Based upon the assumed mechanical plant and source levels, outside condenser units and refrigeration compressors will likely require acoustic screens / enclosures and exhaust fans likely to require acoustic silencers / attenuators.
  - To minimise noise emissions and the acoustic treatment requirement, mechanical plant should be located as far as possible from the nearest offsite noise sensitive receivers, particularly the future residential uses to the immediate north and east.

**CRG**ACOUSTICS

#### 7.0 DISCUSSION

The proposal is to construct a Mixed Use Commercial development over three stages. Each Stage has been assessed individually, with Stage 1 assessed in the absence of Stage 2 and 3 built structures; Stage 2 assessed in the absence of Stage 3 built structures (assumed Stage 1 is constructed); and Stage 3 assessed with both Stage 2 and Stage 3 structures constructed. Therefore, once Stage 3 is constructed, predicted noise impacts from Stages 1 and 2 will be reduced further at the northern and eastern receivers from those presented in Sections 5.1 and 5.2. As an indication, both the building shells and acoustic barrier treatments of Stages 2 and 3 would give a minimum 10 to 15 dB reduction to the northern and eastern offsite receivers to the levels presented in Sections 5.1. and 5.2.

For Stage 1, based upon the assumed onsite operations and recommended acoustic treatments and management controls, onsite activity noise emissions are predicted to impact the façades of the nearest offsite noise sensitive receivers generally within the relevant "Acoustic Quality Objective" criterion except for waste collection, truck movements, refrigeration trucks and alfresco dining. Noise emissions activities are predicted generally within the "Background Creep" criterion (which is based upon the measured background levels at the logger location) for the relevant period (i.e. deliveries within the daytime period between 7am and 6pm), except for waste collection, truck movements and refrigeration trucks at the future dwellings to the immediate north at 2 dB above the daytime "Background Creep" criterion. As noted above, once Stages 2 and 3 are constructed noise impacts from the service station are expected to be compliant with the "Acoustic Quality Objective" and "Background Creep" criterion at the northern and eastern receivers except for waste collection.

For Stage 2, based upon the assumed onsite operations and recommended acoustic treatments and management controls, onsite activity noise emissions are predicted to impact the façades of the nearest offsite noise sensitive receivers generally within the relevant "Acoustic Quality Objective" criterion except for waste collection, truck movements, refrigeration trucks, deliveries and alfresco dining. Noise emissions activities are predicted generally within the "Background Creep" criterion for the relevant period (i.e. deliveries within the daytime period between 7am and 6pm), except for waste collection, truck movements (at 2 dB above the criterion) and refrigeration trucks. As noted above, once Stage 3 is constructed noise impacts from the service station are expected to be compliant with the "Acoustic Quality Objective" and "Background Creep" criterion at the northern receivers except for waste collection

For Stage 3, based upon the assumed onsite operations and recommended acoustic treatments and management controls, onsite activity noise emissions are predicted to impact the façades of the nearest offsite noise sensitive receivers within the relevant "Acoustic Quality Objective" criterion except for waste collection, and deliveries activities at 2 dB above the indoor "Acoustic Quality Objective" criterion at the future dwellings to the north. As the average person cannot typically detect a 3 dB variation in sound pressure level a 2 dB rise is unlikely to be detectable. Activities are predicted within the "Background Creep" criterion for the relevant period (i.e. deliveries within the daytime period between 7am and 6pm), except for waste collection.

To minimise the potential for annoyance we have recommended that deliveries and waste collection (the main predicted noise exceedances) be limited to the daytime period between 7am to 6pm. As waste collection and delivery activities are typically of short duration and of an infrequent nature such activities are unlikely to cause annoyance.

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Further, to minimise overall amenity impact of the acoustic barriers on the adjacent receivers we have recommended that the barriers (i.e. eastern barrier between Stages 2 and 3B) be constructed of a combination of materials being a 2.0m high masonry wall (typical acoustic barrier height) with a transparent 1.75m high Perspex barrier above (overall total height of 3.75m). Further, for the northern acoustic barrier between Stages 3A and 3B we have recommended a kinked barrier, with a 2.0m boundary wall height and a further kinked section 1.75m in height (at a 45° degree incline away from the boundary). These treatments will lessen the overall amenity impact of the recommended acoustic barriers.

We have 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. Based upon the assumed mechanical plant and source levels, outside condenser units and refrigeration compressors are likely to require acoustic screens / enclosures and exhaust fans likely to require acoustic silencers / attenuators.

#### 8.0 CONCLUSIONS

This report is in response to a request from Bargara Village Pty Ltd for an environmental noise impact assessment of a Material Change of Use for Shopping Centre, Service Station and Showroom.

This report is a revision to a previous assessment and is required to respond to the Item 1 of the Information Request from Bundaberg Regional Council dated 10<sup>th</sup> February 2021.

Overall, based upon the proposed layout of the development, onsite activities can be designed and constructed to achieve acceptable levels of the adopted criterion subject to acoustic treatments and management controls detailed in Section 6 of this report incorporated into the development.

Report Reviewed By:

JAY CARTER BSc

Director

Report Compiled by:

Matthew Lopez BEng

Consultant

CR	GA	CO	UST	CS

#### APPENDIX A

Subject Site, Measurement Location, Surrounding Noise Sensitive Receivers and Acoustical Sketches



Figure No. 1: Subject Site Location (Google Maps).



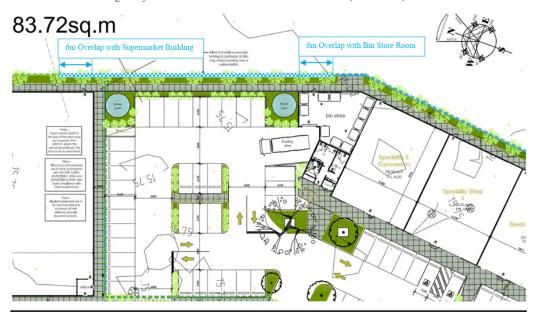
CRGACOUSTICS

Figure No. 2: Subject Site, Logger Location and Surrounding Noise Sensitive Receivers (QLD Globe).



### **CRG**ACOUSTICS

Sketch No. 1: Stage 2 layout and recommended acoustic barrier treatments (Not to Scale).



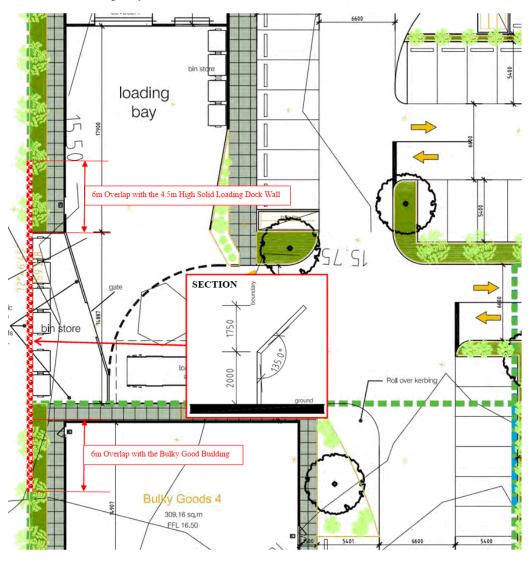
#### ACOUSTIC TREATMENT LEGEND

Recommended 3.75m high acoustic barrier constructed above existing ground or the finished carpark hardstand, whichever is higher. To be constructed at Stage 2, given the adjacent carpark and loading dock form part of Stage 2.

Barriers are to be free of gaps and holes including between the base of the barriers and the ground. To minimise visual impact to the future adjacent residential lots we recommend that the barrier be constructed of a combination of 2.0m high masonry wall with 1.75m high of Perspex above (a minimum surface mass of 11kg/m² required).

#### **CRG**ACOUSTICS

Sketch No. 2: Stage 3 layout and recommended acoustic barrier treatments (Not to Scale).



#### ACOUSTIC TREATMENT LEGEND

Recommended 3.75m high acoustic kinked barrier constructed above existing ground or the finished carpark hardstand, whichever is higher. The barrier is to connect with the proposed solid loading bay wall (eastern extent) and the Bulky Goods 4 building (western extent). To be constructed at Stage 3 works, given the adjacent loading docks form part of Stage 3.

Barriers are to be free of gaps and holes including between the base of the barriers and the ground. Typical materials include earth berms, 19mm lapped timber fence (40% overlap), 9mm FC sheet, toughened glass, Perspex, masonry, or a combination of the above (a minimum surface mass of 11kg/m²).

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		-	$\sim$

APPENDIX B

Development Plans

#### PROPOSED DEVELOPMENT



COMMERCIAL BUILDING AREAS Overall site area 19418.44 sqm. Stage 1 Site area for Stage 1 Service Station -207,00 sqm 170.67 sqm Stage 2 Site area for Stage 2 Speciality Shop 1 -Speciality Shop 2 -255,23 sqm 214.14 sqm Speciality Shop 3 -Speciality Shop 4 -282.20 sqm Speciality 5 / Gymnasium -Retall 1 -128.42 sqm 119.52 sqm Retail 3 -119.52 sqm 84.52 sqm Retail 5 -84.52 sqm 84.52 sqm Cafe' / Resta 216.58 sqm Stage 3 Site area for Stage 3a Site area for Stage 3b 2383,72sqm. 4373,49sqm. Supermarket -Bulky Goods 1 -Bulky Goods 2 -Bulky Goods 3 -1510.74 sqm 309.16 sqm 305.98 sqm 305,98 sqm Bulky Goods 4 -309.16 sqm Building site coverage (overall area) 26.90%. Total Car Parking Provided 204 spaces Total bicycle Parking Provided 42 spaces Landscaped areas 3186.63 sqn



LANDICAPNIG 
Landiscaping to be in accordance with the Design Guidelines & to 
the requirements of Local City Council. Refer to Landiscape 
constituting design and specifications for the design. 
LICHTING 
External lighting must be designed, balfied and located so as to 
prevent any adverse effect on adjoining fund to the satisfaction of 
the Responsible American 
External Lighting and the Responsible American 
LICHTING 
DISABLE DA CKESS 
Undesign continues are in accordance with the Australian Standard 
14520-2001. Design Rule for Access by the Disablest. 
LICHTING 
CREATER 
CREAT





STAGE KEY PLAN

AT:- 60 Rifle Range Road, BARGARA

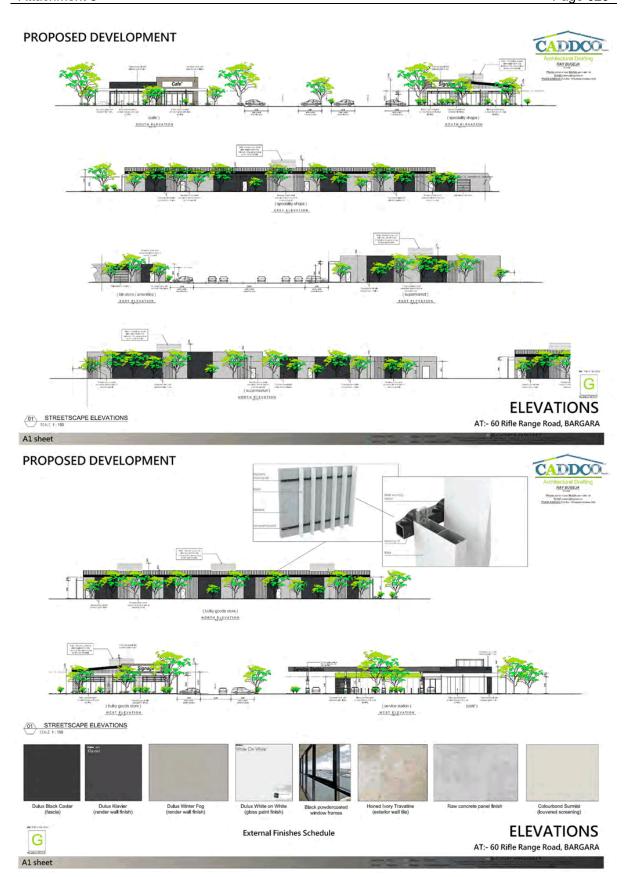
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landscaped site coverage

16.41%.











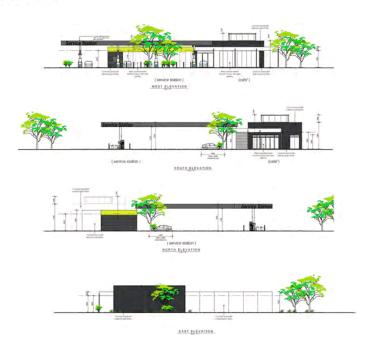
**PLAN & ELEVATIONS** 

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#### PROPOSED DEVELOPMENT



01 SERVICE STATION / CAFE' FLOOR PLAN

**PLAN & ELEVATIONS** 

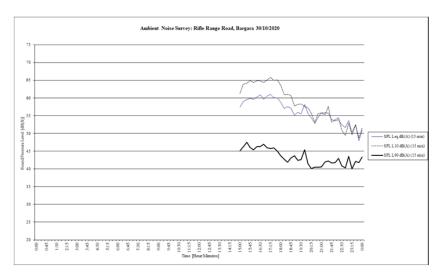
AT:- 60 Rifle Range Road, BARGARA

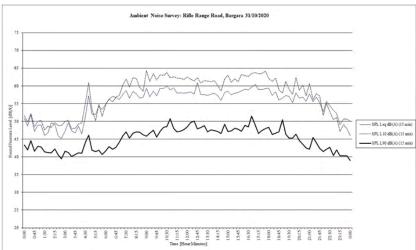
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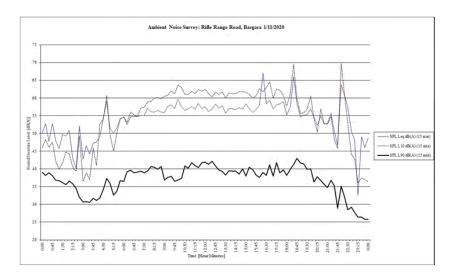
APPENDIX C

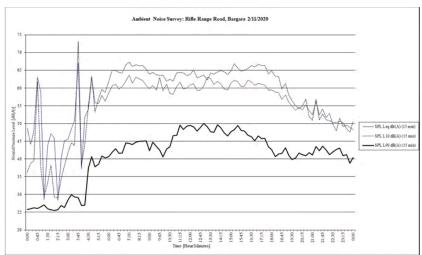
Measurement Results and Model Calculations / Predictions



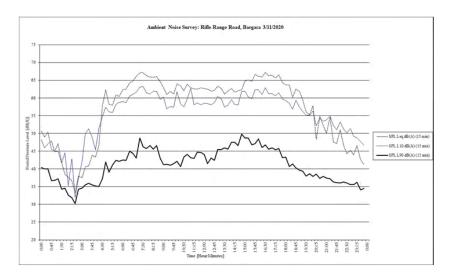


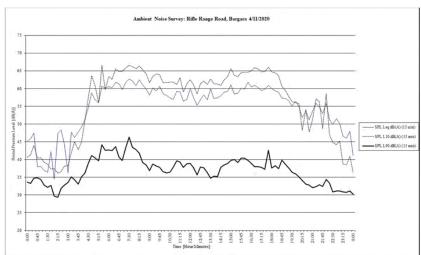
Page 37



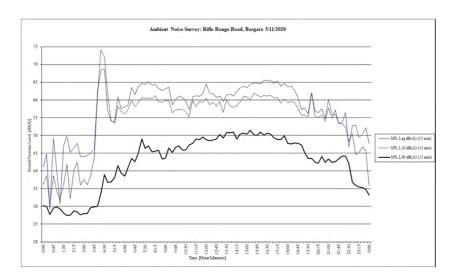


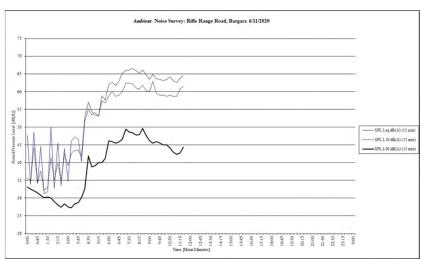
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STAGE 1 ACTIVITY NOISE PREDICTION CALCU	LATIONS	(L <sub>A19 thr</sub> a	nd L <sub>x01 the l</sub>	kveh are rep	resented as	N/A if the duration of events do not occur for 10% or 19	oof the 1 h	our period	)		
R1: Existing Single-storey dwellings to the north						R2: Future dwelling: to the immediate north					-
CAR DOOR CLOSURE near building DAY / EVEN	Creep LAeq	Acoustic LAeq	Quality C	Dbjectives LA01		CAR DOOR CLOSURE near building DAY / EVEN	Creep LAeq	Acoustic	Quality C	LA01	-
Noise source level for single event Duration of single event	7	75	77	80	dB(A) Seconds	Noise source level for single event Duration of single event		75	77	80	6B(A) Seconds
Number of events in the measurement period	15		60		Events	Number of events in the measurement period	15	<del></del>	60		Events
Total time duration of combined events	22.5		90.0		Seconda	Total time duration of combined events	22.5		90.0		Seconds
	LAeq	LAeq lhr	LA10 1hr				LAeq			LA01 lhr	
Noise source level for assessment time period	59	59	N/A	\$0	(B(A)	Noise source level for assessment time period	59	59	N/A	\$0	dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	0	Ь,	5 19		άB	Tonality / Impulsiveness correction Minimum distance to receiver	0	L .	5		άB
Distance attenuation (-6 dB per doubling of distance)	_		42		m m	Distance attenuation (-6 dB per doubling of distance)	_		3.6		en
Barrier screening		-	1.0		/B	Barrier screening		- 0	.0		dB.
Façade reflection		2	1.5		άB	Façade reflection		2	.5		éB.
Impact at nearest façade	20	25	N/A	46	dB(A)	Impact at nearest façade	26	31	N/A	52	dB(A)
Reduction through open window (also minus 2.5 dB faç	sde)	-7.5	-7.5	-7.5	6B	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	dB.
Impact inside open window	F 00 07413	17	N/A	38	dB(A)	Impact inside open window	1 420 9429	23	N/A	44	dB(A)
	Creep	Aconsti	Quality C	biactions	$\overline{}$		Creep	Aconctic	Quality C	Phiactima	_
CAR DOOR CLOSURE at bowsers DAY / EVEN	LAeq	LAeq	LA10	LA01	1 1	CAR DOOR CLOSURE at bowsers DAY / EVEN	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	7	75	77	80	iB(A)	Noise source level for single event	22.004	75	77	80	iB(A)
Duration of single event		1	5		Seconds	Duration of single event		1	.5		Seconds
Number of events in the measurement period	28		110		Events	Number of events in the measurement period	28		110		Events
Total time duration of combined events	41.3		165.0		Seconds	Total time duration of combined events	41.3		165.0		Seconds
	LAeq			LA01 lbr	$\Box$		LAeq			LA01 lhr	
Noise source level for assessment time period	62	62	N/A	80	dB(A)	Noise source level for assessment time period	62	62	N/A	80	dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	0	Ц,	5		4B	Tonality / Impulsiveness correction Minimum distance to receiver	U U	Ь.	5		έB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_		09 41		ri.	At immum distance to receiver Distance attenuation (-6 dB per doubling of distance)	<del>                                     </del>		34		m dB
Barrier screening			1.0		433	Barrier screening	_		1.0		6B
Façade reflection			1.5		6B	Façade reflection			.5		éB
Impact at nearest façade	23	28	N/A	47	dB(A)	Impact at nearest façade	30	35	N/A	53	dB(A)
Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	έB	Reduction through open window (also minus 2.5 dB fac	nde)	-7.5	-7.5	-7.5	άB
Impact inside open window		21	N/A	39	dB(A)	Impact inside open window		27	N/A	46	dB(A)
	216.9344	686.0068					953.1796	3014.219			
CAR DOOR CLOSURE near building NIGHT	Creep		Quality C	LA01	1 1	CAR DOOR CLOSURE near building NIGHT	Creep		Quality C		4
Noise source level for single event	LAeq	LAeq	77	80 80		Noise source level for single event	LAeq	LAeq	1A10	LA01 80	-
Duration of single event	_	13	5	80	dB(A) Seconds	Duration of single event	_	/3	5	80	6B(A) Seconds
Number of events in the measurement period	5		15		Events	Number of events in the measurement period	- 5	т '	15		Events
Total time duration of combined events	7.5	_	22.5		Seconds	Total time duration of combined events	7.5		22.5		Seconda
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	54	53	N/A	N/A	(B(A)	Noise source level for assessment time period	54	53	N/A	N/A	(B(A)
Tonality / Impulsiveness correction	0		5		άB	Tonality / Impulsiveness correction	0		5		άB
Minimum distance to receiver			19		n	Minimum distance to receiver			52		
Distance attenuation (-6 dB per doubling of distance)	$\vdash$		42		6B	Distance attenuation (-6 dB per doubling of distance)			36		4B
Barrier screening	$\vdash$		1.0		dB	Barrier screening			.0		dB.
Façade reflection Impact at nearest façade	15	19	N/A	N/A	dB(A)	Façade reflection Impact at nearest façade	21	25	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	6B(A)	Reduction through open window (also minus 2.5 dB fac		-7.5	-7.5	-7.5	dB (A)
Impact inside open window	nacy .	11	N/A	N/A	dB(A)	Impact inside open window	y	17	N/A	N/A	dB(A)
	33.09214	78.4849					121.9089	289 1323			
CAR DOOR CLOSURE at bowsers NIGHT	Стеер		Quality C			CAR DOOR CLOSURE at bowsers NIGHT	Creep		Quality (		
	LAeq	LAeq	LA10	LA01			LAeq	LAeq	LA10	LA01	
Noise source level for single event	7	75	77	80	dB(A)	Noise source level for single event		75	77	\$0	dB(A)
Duration of single event	- 7	- 1	.5		Seconds	Duration of single event	2	1	.5		Seconds
Number of events in the measurement period Total time duration of combined events	10.5	_	31.5		Events Seconds	Number of events in the measurement period Total time duration of combined events	10.5	_	31.5		Events
A STORE SAME SHARE OF COMMUNICAL SPEEDS	LAeg	LAga lbr		LA01 lbr	Seconds.	a one rame distance of committee events	LAeq	LAsa lbr		LA01 1hr	Seconds
Noise source level for assessment time period	56	54	N/A	N/A	4B(A)	Noise source level for assessment time period	56	54	N/A	N/A	4B(A)
Tonality / Impulsiveness correction	0		5		6B	Tonality / Impulsiveness correction	0		5		dB.
Minimum distance to receiver			09		f1.	Minimum distance to receiver			52		es
Distance attenuation (-6 dB per doubling of distance)			41		άB	Distance attenuation (-6 dB per doubling of distance)			34		άB
Barrier screening			1.0		4B	Barrier screening			.0		63
Façade reflection			1.5		6B	Façade reflection		-	.5		6B
Impact at nearest façade	17	21	N/A	N/A -7.5	dB(A)	Impact at nearest façade	24	28	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç	xae)	-7.5 14	-7.5 N/A	-7.5 N/A	éB	Reduction through open window (also minus 2.5 dB fac	nae)	-7.5 20	-7.5 N/A	-7.5 N/A	έB
Impact inside open window	55.21047	130 0640	D/A	NA	dB(A)	Impact inside open window	242 6225	575.4412	DVA.	NA	dB(A)
CAR PAGE OF AREA	Creep	Acoustic	Quality C	Dijectives		CAR PAGENT OF ANYTON	Creep	Acoustic	Quality C	bjectives	_
CAR ENGINE STARTS at building DAY/EVEN	LAeq	LAeq	LA10	LA01	1 1	CAR ENGINE STARTS at building DAY / EVEN	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	7	73	74	75	dB(A)	Noise source level for single event	1	73	74	75	dB(A)
			3		Seconds	Duration of single event			3		Seconds
Duration of single event	10		30		Events	Number of events in the measurement period	10		30		Eventx
Duration of single event Number of events in the measurement period		1	90.0	Tr	Seconds	Total time duration of combined events	30.0		90.0	Ix	Seconda
Duration of single event	30.0			HA01 lhr	$\Box$	Naise comes hard for our	LAeq	LAeq lhr		LA01 lhr	
Duration of single event Number of events in the measurement period Total time duration of combined events	30.0 LAeq	LAeq lhr		2.4							(B(A)
Duration of single event  Number of events in the measurement period  Total time duration of combined events  Noise source level for assessment time period	30.0 LAeq 58	LAeq lhr 57	N/A	75	dB(A)	Noise source level for assessment time period	58	57	N/A	75	
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	30.0 LAeq	57	N/A 0	75	dB(A) dB	Tonality / Impulsiveness correction	0	57	0	75	dB
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	30.0 LAeq 58	57	N/A 0	75	dB(A) dB	Tonality / Impulsiveness correction Minimum distance to receiver			0	75	dB m
Duration of single event Number of events in the insestment period Tool time duration of combined events Notice source level for assessment time period Toolity / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance)	30.0 LAeq 58	57	N/A 0 19 42	75	dB(A) dB m dB	Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)		-	0 52 36	75	dB m dB
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 Timp ulstreams: correction Minimum distream to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening	30.0 LAeq 58	57 1	N/A 0	75	dB m dB	Tonality / Impulsiveness correction Mamnam distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening		0	0	75	dB m
Duration of single event  Number of events in the measurement period  Total time duration of combined events  Noise source level for assessment time period  Totality / limpulcityments correction  Administrate to receiver  Distance attreasation (-6 dB per doubling of distance)  Barries creening  Fayable reflection	30.0 LAeq 58	57 1	N/A 0 19 42	75	dB m dB	Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Feacher reflection		0	0 52 36	75	dB m dB
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 Timp ulstreams: correction Minimum distream to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Fayable reflection Impact at nearest fixede	30.0 LAeq 58 0	57 1	N/A 0 19 42 10	75	dB m dB dB dB	Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	25	0 2	0 52 36 .0	75 42 -7.5	6B 6B 6B 6B
Duration of single sevent  Number of events in the measurement period  Total time duration of combined events  Noise source level for acsessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries screening  Fapode reflection	30.0 LAeq 58 0	57 1 	N/A 0 19 42 10	75	dB m dB dB dB	Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Feacher reflection	25	0 2	0 32 36 .0 .5 .5		eB eB eB eB

		,				N/A if the duration of events do not occur for 10% or 19		our perrou,			
R1: Existing Single-storey dwellings to the north						R2: Future dwelling: to the immediate north					
CAR ENGINE STARTS at bowsers DAY/EVEN	Creep LAeq	Acoustic LAeq	Quality O	bjectives LA01		CAR ENGINE STARTS at bowsers DAY / EVEN	Creep LAeq	Acoustic LAeq	Quality C	bjectives LA01	-
Noise source level for single event Duration of single event		3	74	75	dB(A) Seconds	Noise source level for single event Duration of single event		3	74	75	dB(A) Seconds
Number of events in the measurement period	18		55		Events	Number of events in the measurement period	18		55		Events
Total time duration of combined events	55.0		165.0		Seconda	Total time duration of combined events	55.0		165.0		Seconds
	LAeq	LAeq lhr		LA01 lhr			LAeq			LA01 lhr	
Noise source level for assessment time period	61	60	N/A 0	75	(B(A)	Noise source level for assessment time period	61	60	N/A 0	75	(B(A)
Tonality / Impulsiveness correction Minimum distance to receiver	-	10			dB	Tonality / Impulsiveness correction Minimum distance to receiver	, ·		2		dB
Distance attenuation (-6 dB per doubling of distance)					6B	Distance attenuation (-6 dB per doubling of distance)		-3	14		6B
Barrier screening		0	0		ćB	Barrier screening		0.	0		άB
Façade reflection	23	21	5 N/A	37	έB	Façade reflection	20	28	5 N/A	43	έB
Impact at nearest façade Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	6B(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	dB(A)
Impact inside open window	rate)	14	N/A	29	dB(A)	Impact inside open window	nacj	20	N/A	36	dB(A)
•	182.5018	136.8764					801.8876	601.4157			
CAR ENGINE STARTS at building NIGHT	Creep		Quality O			CAR ENGINE STARTS at building NIGHT	Creep		Quality C		-
Noise source level for single event	LAeq	LAeq	LA10 74	LA01	(B(A)	Noise source level for single event	LAeq	LAeq	LA10 74	LA01 75	(B(A)
Duration of single event	_	,	- 7	- //	Seconda	Duration of single event	<del>-                                    </del>	,	-7-	- 12	Seconda
Number of events in the measurement period	3		9		Events	Number of events in the measurement period	3		9		Events
Total time duration of combined events	9.0		27.0		Seconds	Total time duration of combined events	9.0		27.0		Seconds
Naise course bred for securior at time a mind	LAeq 53	LAeq lhr	LA10 1hr	LA01 lhr N/A		Maira course level for accommentation a soled	LAeq 53	LAeq lhr		LA01 lhr N/A	
Noise source level for assessment time period Tonality / Impulsiveness correction	0.0	52	N/A 0	N/A	dB(A)	Noise source level for assessment time period Tonality / Impulsiveness correction	33	52	N/A 0	N/A	dB(A)
Minimum distance to receiver	-	1			n.	Minimum distance to receiver	Ť	6			n n
Distance attenuation (-6 dB per doubling of distance)			12		έB	Distance attenuation (-6 dB per doubling of distance)		-3	16		άB
Barrier screening		0			éB	Barrier screening		0.			éB.
Façade reflection	14	13		N/A	ćΒ	Façade reflection	20	18	5 N/A	N/A	ĕВ
Impact at nearest façade Reduction through open window (also minus 2.5 dB faç		-7.5	N/A -7.5	-7.5	6B(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	dB(A)
Impact inside open window	MC)	5	N/A	N/A	dB(A)	Impact inside open window	inac)	11	N/A	N/A	dB(A)
•	25.05567	18.79175					92.30317	69.22738			
CAR ENGINE STARTS at bowsers NIGHT	Creep		Quality O			CAR ENGINE STARTS at bowsers NIGHT	Creep		Quality C		
Noise source level for single event	LAeq	LAeq	LA10 74	LA01 75	$\vdash$	Noise source level for single event	LAeq	LAeq	LA10 74	LA01 75	-
Noise source sevel for single event  Duration of single event	- /	3	/*	/3	6B(A) Seconds	Duration of single event		3	/+	.13	6B(A) Seconds
Number of events in the measurement period	3		9		Events	Number of events in the measurement period	3		9		Events
Total time duration of combined events	9.0		27.0		Seconds	Total time duration of combined events	9.0		27.0		Seconds
	LAeq	LAeq lhr	LA10 1hr				LAeq	LAeq lhr			
Noise source level for assessment time period	53	52	N/A 0	N/A	(B(A)	Noise source level for assessment time period	53	52	N/A 0	N/A	(B(A)
Tonality / Impulsiveness correction Minimum distance to receiver	-	10			ZB	Tonality / Impulsiveness correction Minimum distance to receiver	, ·				έB
Distance attenuation (-6 dB per doubling of distance)					6B	Distance attenuation (-6 dB per doubling of distance)		-3	14		48
Barrier screening		0	0		ćB.	Barrier screening		0.	0		dB.
Façade reflection		2			ďΒ	Façade reflection		2			έB
Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	15	-7.5	N/A -7.5	N/A -7.5	dB(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç	21	-7.5	N/A -7.5	N/A -7.5	dB(A)
Impact inside open window	Me)	6	N/A	N/A	dB(A)	Impact inside open window	nae)	12	N/A	N/A	dB(A)
ampire raine open mann	29.86393	22.39795	2.02	1011		angine and open many	131.218	98.41348		1012	and (m)
CAR MOVEMENT TO DAY	Creep		Quality O			CAR MOVEMENT TO DAY	Creep		Quality C		
	LAeq	LAeq	LA10 70	LA01	$\vdash \vdash \vdash$		LAeq	LAeq	LA10 70	LA01	$\vdash$
Noise source level for single event	- 6	-	70	73	6B(A)	Noise source level for single event	-	S 2		73	éB(A)
Duration of single event	16		45		Seconds Events	Duration of single event			65		Seconds Events
enumper of events in the measurement period	10 1	ı					16				Seconds
Number of events in the measurement period Total time duration of combined events	357.5		1430.0		Seconds	Number of events in the measurement period Total time duration of combined events	357.5		1430.0		
Total time duration of combined events	357.5 LAeq	LAeq lhr	LA10 1hr	LA01 1hr	Seconds	Total time duration of combined events	357.5 LAeq		LA10 1hr		
Total time duration of combined events  Noise source level for assessment time period	357.5 LAeq 64	LAeq lhr	<b>LA10 1hr</b> 70	<b>LA01 1hr</b> 73		Total time duration of combined events  Noise source level for assessment time period	357.5 LAeq 64	LAeq lhr 64	<b>LA10 1hr</b> 70	LA01 1hr 73	éB(A)
Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction	357.5 LAeq	64	TA10 1hr 70 0		Seconds	Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction	357.5 LAeq	64	LA10 1hr		
Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver	357.5 LAeq 64	64	TA10 1hr 70 0		Seconds	Total time duration of combined events  Noise source level for assessment time period Totality / Impulsiveness correction Minimum distance to receiver	357.5 LAeq 64	64	70 0 8		έΒ(A)
Total time duration of combined events  Noise source level for assessment time period  Totality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)	357.5 LAeq 64	11	70 0 35 33 0		Seconds	Total time duration of combined events  Noise source Jevel for assessment time period  Totality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening.	357.5 LAeq 64	64 7 -3	70 0 8 8 8		éB(A) éB
Total time duration of combined events  Notice source level for assessment time period  Tonality 'Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fragide reflection	357.5 LAeq 64 0	0 1: 0 2	70 0 35 13 0 5	73	Seconds  dB(A)  dB  m  dB  dB  dB	Total time duration of combined events  Noise source level for assessment time period  Totality / Impulsiveness correction Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Pagda Perfection	357.5 LAeq 64 0	7 -3 0. 2	70 0 8 8 8 0 5	73	6B(A) 6B 61 6B 6B
Total time duration of combined events  Notes source level for assessment time period  Tonality   Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fayda reflection  Impact at nearest facade	357.5 LAeq 64 0	11	TA10 1hr 70 0 35 35 30 5 30	73	Seconds  dB(A)  dB  dB	Total time duration of combined events  Notes source level for assessment time period Totality. Impulsiveness correction Maintenan distance to receive Distance streamston (-6 dB per doubling of distance) Barrier screening Facade reflection Impact at nearest facade	357.5 LAeq 64 0	64 7 -3	70 0 8 8 8		6B(A) 6B 6B 6B 6B(A)
Total time duration of combined events  Notice source level for assessment time period  Tomality - limpuistmenss correction  Maintanum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening.  Façade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç	357.5 LAeq 64 0	0 0 2 24 -7.5	TA10 1hr 70 0 35 i3 0 5 30 -7.5	73 33 -7.5	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	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  Fogode reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB fog	357.5 LAeq 64 0	7 -3 0 2 29 -7.5	TA10 1hr 70 0 8 8 8 8 0 5 35 -7.5	73 38 -7.5	6B(A) 6B 6B 6B 6B (A) 6B
Total time duration of combined events  Noise source level for assessment time period  Tonality? Thynulsiveness correction  Manimum distance for receiver  Distance artemation (-6 dB per doubling of distance)  Bernier screening  Fepade reflection  Impact at anewart façade  Reduction through open window (elso minus 2 5 dB fog.	357.5 LAeq 64 0	0 1: 0 2	TA10 1hr 70 0 35 35 30 5 30	73	Seconds  dB(A)  dB  m  dB  dB  dB	Total time duration of combined events  Notes source level for assessment time period Totality. Impulsiveness correction Maintenan distance to receive Distance streamston (-6 dB per doubling of distance) Barrier screening Facade reflection Impact at nearest facade	357.5 LAeq 64 0	7 -3 0. 2	70 0 8 8 8 0 5	73	6B(A) 6B 6B 6B 6B(A)
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)  Barries recenting  Frequel reflection  Imputed at nearest farade  Reduction through open window (also minus 2.5 dB for Imputed at the period open window).	357.5 LAeq 64 0 0 24 ade)	11:	TA10 1hr 70 0 35 i3 0 5 30 -7.5 22	73 33 -7.5 25	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events' Notice source level for assessment time period Toosility: Impulsiveness correction Mainteaus distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Faughe reflection Impact at an arrest facade Reduction through open window (also minus 2.5 dB for Impact taxide open window	357.5 LAeq 64 0 29 ade) 732.5619	7 -3 0. 2 29 -7.5 21 732.5619 Acoustic	IA10 1hr 70 0 8 8 8 0 5 35 -7.5 27  Quality C	38 -7.5 30	dB(A) dB m dB dB dB dB dB(A)
Total time duration of combined events  Notice source level for assessment time period  Tonality   Impulsiveness correction  Mamman distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries screening  Tought effection  Imputed at nearest façade  Reduction through open window (also minus 2.5 dB fig- Impact inside open window  CAR MOVEMENT FROM DAY	357.5 LAeq 64 0 24 ade)	11: 44 00 22 24 -7.5 16 244.5491 Acoustic LAeq	LA10 1hr 70 0 85 43 0 5 30 -7.5 22  Quality O LA10	33 -7.5 25 bjectives LA01	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events'  Notice source level for assessment time period Foosility: Impulsiveness correction Mamman distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Facçale reflection Impact at asserts facade Reduction through open window (sloo minuss 2.5 dB for Impact in side open window CAR MOVEMENT FROM DAY	357.5 LAeq 64 0	77 -3 0. 22 29 -7.5 21 732.5619	LA10 1hr 70 0 8 8 8 8 0 5 35 -7.5 27  Quality C	38 -7.5 30 bjectives LA01	6B(A) 6B
Total time duration of combined owers  Notice source level for assessment time period  Tonality. Tamplativeness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Sogade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB fog  Impact and open window  CAR MOVEMENT FROM DAV  Notice source level for single event	357.5 LAeq 64 0 0 24 ade)	11: 40 0 2 24 -7.5 16 244.5491 Acoustic LAeq	LA10 lhr 70 0 35 35 30 -7.5 22  Quality O LA10 70	73 33 -7.5 25	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Totality: Impaistments correction  Minimum distance to receive  Distance attenuation (+6 dB) per doubling of distance)  Bearine screening  Fagade reflection  Impair at an arrest façade  Reduction through open window (also minus 2.5 dB fag  Impair at low period of the second of the combined of t	357.5 LAeq 64 0 29 ade) 732.5619	7 -3 0. 2 29 -7.5 21 732.5619 Acoustic	IA10 1hr 70 0 8 8 8 0 5 35 -7.5 27  Quality C	38 -7.5 30	6B(A) 6B
Total time duration of combined events  Notice source level for assessment time period  Tonality. Impulsiveness correction  Manizum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries rocennig  Frequie reflection  Imputed at nearest factade  Reduction through open window (also minus 2.5 dB for,  Impact inside open vindow  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event	357.5 LAeq 64 0 24 24 5491 Creep LAeq 6	11: 40 0 2 24 -7.5 16 244.5491 Acoustic LAeq	LA10 1hr 70 0 85 43 0 5 30 -7.5 22  Quality O LA10	33 -7.5 25 bjectives LA01	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined event's  Notice source level for assessment time period Totality: Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Facular effection Impact at a searest facade Reduction through open window (also minus 2.5 dB for Impact in side open window (also minus 2.5 dB for Impact misside open window (also minus 2.5 dB for Impact misside open window (also minus 2.5 dB for Impact source level for single event Distance of single event	357.5 LAeq 64 0 29 29 ade) Creep LAeq	7 -3 0. 2 29 -7.5 21 732.5619 Acoustic	LA10 1hr 70 0 8 8 8 8 0 5 35 -7.5 27  Quality C	38 -7.5 30 bjectives LA01	6B(A) 6B
Total time duration of combined owers  Notice source level for assessment time period  Tonality. Tamplativeness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Sogade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB fog  Impact and open window  CAR MOVEMENT FROM DAV  Notice source level for single event	357.5 LAeq 64 0 24 ade)	11: 40 0 2 24 -7.5 16 244.5491 Acoustic LAeq	LA10 lhr 70 0 35 43 0 5 30 -7.5 22  Quality O LA10 70 2	33 -7.5 25 bjectives LA01	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Totality: Impaistments correction  Minimum distance to receive  Distance attenuation (+6 dB) per doubling of distance)  Bearine screening  Fagade reflection  Impair at an arrest façade  Reduction through open window (also minus 2.5 dB fag  Impair at low period to the control of	357.5 LAeq 64 0 29 ade) 732.5619	7 -3 0. 2 29 -7.5 21 732.5619 Acoustic	IA10 1hr 70 0 8 8 8 0 5 35 -7.5 27 Quality 0 IA10 70	38 -7.5 30 bjectives LA01	6B(A) 6B 6B 6B 6B 6B 6B 6B 6B 6B(A)
Total time duration of combined owents  Notes source level for assessment time period  Totally 'Impubativeness correction  Minimum distance to receive  Distance attreastion (-6 dB per doubling of distance)  Barrier screening  Togde reflection  Impute at a rearset façade  Reduction through open window (also minus 2.5 dB for  Jungate in side open window  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Duration of single event  Duration of single event  Car time duration of combined events	357.5 LAeq 64 0 24 sde) 244.5491 Creep LAeq 6 16 9000 LAeq	11:	LA10 lhr 70 0 85 83 0 5 30 -7.5 22 Quality O LA10 70 2	73  33  -7.5  25  bjectives  LA01  73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Totality? Impulsiveness correction  Minimum dutance to receive  Distance attentation (-6 dB per doubling of distance)  Berrier screening  Founds reflection  Impact at an earest façade  Reduction through open window (also minus 2.5 dB for  Impact in also pen window  CAR MOVEMENT FROM DAY  Noise source level for single event  Duration of single event  Duration of single event  Duration of single event  Total time duration of combined events	357.5 LAeq 64 0 29 sde) Creep LAeq 6 16 900 LAeq	7 -3 0. 2 29 -7.5 21 732.5619 Acoustic	I.Al0 lhr 70 0 8 8 8 9 5 35 -7.5 27  Quality C I.Al0 70 2 65 1430.0	38 -7.5 30 bjectives LA01 73	dB(A)  dB  dB  dB  dB  dB  dB(A)  dB(A)  dB(A)  dB(A)
Total time duration of combined events  Notice source level for assessment time period  Tonality / Impulsiveness correction  Maintonan distance to receiver  Distance streamston (-6 dB per doubling of distance)  Retries reseming  Frequée reflection  Impact at nearest façade  Reduction through open window (also minuss 2 5 dB faç  Impact inside open window  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Number of swents in the insessment period  Total time duration of combined events  Notice source level for assessment time period	357.5 LAeq 64 0 24 ade)  Creep LAeq 6 16 900 LAeq 64	11:	LA10 lbr 70 0 0 35 13 30 -7.5 22	73  33  -7.5  25  bjectives  LA01  73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events'  Notes source level for assessment time period  Totality / Impulsiveness correction  Maintama distance to incenter  Distance attenuation (4 dB per doubling of distance)  Barrier screening  Fonde reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB fac  Impact at inside open window  CAR MOVEMENT FROM DAY  Notes source level for single event  Diration of single event  Number of events in the measurement period  Total time duration of combined events'  Notes source level for assessment time period	357.5 LAeq 64 0 29 29 ade) Creep LAeq 6 16 900 LAeq 64	64  7 -3 0 2 29 -7.5 21 -32 5510 Acoustic LAeq 8	LA10 lhr 70 0 8 8 8 8 0 5 35 -7,5 27  Quality C LA10 70 2 65 1430.0  LA10 lhr 70	38 -7.5 30 bjectives LA01 73	dB(A)  dB  dB  dB  dB  dB  dB(A)  dB(A)  dB(A)  dB(A)
Total time duration of combined owents  Notice source level for assessment time period  Totality Timp laberwess correction  Manituma distance to receiver  Distance attreasation (-6 dB per doubling of distance)  Betries corening  Betries corening  Fooda cedication  Impact as a nearest façade  Reduction through open window (also minus 2.5 dB for  Impact taside open vindow  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Totally time duration of combined events  Notice source level for assessment time period  Totally Time duration of combined events	357.5 LAeq 64 0 24 sde) 244.5491 Creep LAeq 6 16 9000 LAeq	11: 00 22 24 -7.5 16 244 5401 Acoustic LAeq 8 2 LAeq lbr 64	LA10 lbr 70 0 0 35 30 -7.5 22 Quality O LA10 70 2 65 1430.0 LA10 lbr 70 0 0	73  33  -7.5  25  bjectives  LA01  73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Notes cource level for assessment time period  Totality? Impulsiveness correction  Minimum dutance to receive  Distance attentation (-6 dB per doubling of distance)  Berries cereating  Façade reflection  Berries creening  Façade reflection  Impured at an area't façade  Reduction through upon window (also minus 2.5 dB for  Impart inside open window  CAR MOVEMENT FROM DAY  Noise source level for single event  Duration of single event  Duration of single event  Nomber of events in the measurement period  Total time duration of combined events  Noise source level for assessment time period  Totalit time duration of combined events	357.5 LAeq 64 0 29 sde) Creep LAeq 6 16 900 LAeq	77 -33 00 2 29 -7.5 21 -32.5010 Acoustic LAeq S 2 LAeq lhr 64	LA10 lhr 70 0 8 8 8 8 8 8 7 7 7 7  Quality C LA10 70 2 65 1430.0  LA10 lhr 70 0	38 -7.5 30 bjectives LA01 73	dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  (A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d
Total time duration of combined events  Notes ource level for assessment time period  Tonality / Impulsiveness correction  Mainman distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Bettiers creening  Fragda reflection  Impact in assess fragda  Reduction through open window (sloo minuse 2.5 dB fog  Impact inside open window  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Totality / Impulsiveness correction  Minimum distance to receiver	357.5 LAeq 64 0 24 ade)  Creep LAeq 6 16 900 LAeq 64	11:	LA10 lbr 70 0 55 33 0 -7.5 22 Cuality O LA10 70 2 65 1430.0 LA10 lbr 70 0 2	73  33  -7.5  25  bjectives  LA01  73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events'  Notes source level for assessment time period  Totality: Impulsiveness correction  Maintaine distance to incenter  Distance estimatation (4 dB per doubling of distance)  Barrier screening  Fragade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB fag  Impact in side open window  CAR MOVEMENT FROM DAY  Notes source level for single event  Distance of winds in the measurement period  Total time deution of combined events'  Notes source level for assessment time period  Total time deution of combined events  Notes source level for assessment time period  Total time deution of combined events  Notes source level for assessment time period  Total time deution of combined events  Notes source level for assessment time period  Totality /Impulsiveness correction	357.5 LAeq 64 0 29 29 ade) Creep LAeq 6 16 900 LAeq 64	64  7  -3  0  2  29  -7.5  21  732 5019  Acoustic LAeq S  2  LAeq lhr 64	LA10 1hr 70 0 8 8 8 8 7 7 7 8 8 8 7 7 8 8 8 9 0 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	38 -7.5 30 bjectives LA01 73	EB(A)  EB  EB  EB  EB  EB  EB  EB  EB(A)  EB  EB(A)  EB(A)  EB(A)  EVENTS  Seconds  EVENTS  Seconds
Total time duration of combined ovents  Notice source level for assessment time period  Tonality Impulsiveness correction  Minimum distance to receive  Distance attenuation (4 dB per doubling of distance)  Berries crossing  Berries de doubling of distance)  Berries crossing  Berries de doubling of distance  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Mumber of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Totally 'Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)	357.5 LAeq 64 0 24 ade)  Creep LAeq 6 16 900 LAeq 64	11:	LA10 1hr 70 0 35 13 0 -7.5 22 Quality O LA10 70 2 65 1430.0 LA10 1hr 70 0 2	73  33  -7.5  25  bjectives  LA01  73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for necessement time period  Totality? Impusitiveness correction  Minimum distance to receive  Distance attentation (-6 dB per doubling of distance)  Berrier screening  Founds reflection  Impact at an exert façade  Reduction through open window (also minus 2.5 dB for  Impact in also pen window  CAR MOVEMENT FROM DAY  Noise source level for single event  Duration of single event  Duration of single event  Noise source level for single event  Total time duration of combined events  Noise source level for sessessment time period  Total time duration of combined events  Noise source level for assessment time period  Total time duration of combined for the period  Distance attention of combined events  Distance attention of combined period  Distance attention of combined events  Distance attention of combined period  Distance attention of cB per doubling of distance)	357.5 LAeq 64 0 29 29 ade) Creep LAeq 6 16 900 LAeq 64	77 -33 00 2 29 -7.5 21 -32.5010 Acoustic LAeq S 2 LAeq lhr 64	LA10 lhr 70 0 8 88 80 0 5 -7.5 27  Quality C LA10 70 2 65 1430.0  LA10 lhr 70 0 5	38 -7.5 30 bjectives LA01 73	dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  (A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d
Total time duration of combined owents  Notice source level for assessment time period  Tonality Impulsiveness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Berries crossing  Cada MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Duration of single event  Duration of single event  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Totally Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries crossing  Barries crossing	357.5 LAeq 64 0 24 ade)  Creep LAeq 6 16 900 LAeq 64	11: 40 0 0 2 24 47.5 16 244 5491 Acoustic LAeq 8 2 2 LAeq lbr 64	LA10 1hr 70 0 55 13 0 55 30 -7.5 22 Quality O LA10 70 25 65 1430 0 1hr 70 0 1.410 1hr 70 0 0	73  33 -7.5 25  bjectives  LA01 73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events'  Notes source level for assessment time period  Totality: Impulsiveness correction  Maintaine distance to incenter  Distance estimatation (4 dB per doubling of distance)  Barrier screening  Fragade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB fag  Impact in side open window  CAR MOVEMENT FROM DAY  Notes source level for single event  Distance of winds in the measurement period  Total time deution of combined events'  Notes source level for assessment time period  Total time deution of combined events  Notes source level for assessment time period  Total time deution of combined events  Notes source level for assessment time period  Total time deution of combined events  Notes source level for assessment time period  Totality /Impulsiveness correction	357.5 LAeq 64 0 29 29 ade) Creep LAeq 6 16 900 LAeq 64	64  7  -3  0  2  9  -7.5  21  732 5619  Acoustic  LAeq lhr  64	LA10 1hr 70 0 8 8 88 0 5 35 -7.5 27 Quality C LA10 70 2 65 1430.0   LA10 1hr 70 0 5 5 10 0	38 -7.5 30 bjectives LA01 73	EB(A) EB EB EB EB EB(A) EB EB(A) EB(A) EB(A) EVents Events Events EB(A) EB(A) EB(A)
Total time duration of combined events  Notice source level for assessment time period  Tonality / Empulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Berrier screening  Fragda rediction  Imager at nearest façade  Rediction through open window (also minus 2.5 dB fag  Imager at materia façade  CAR MOVEMENT FROM DAY  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  Total time duration of combined events  Noise source level for assessment time period  Total time duration of combined events  Noise source level for assessment time period  Total time duration of combined events  Noise source level for assessment time period  Total time duration of Gombined events  Noise source level for assessment time period  Total time duration of Gombined events  Noise source level for dependent of time duration of GB per doubling of distance)  Barrier screening  Façade reflection  Imager at nearest façade	357.5 LAeq 64 0  24 ade)  244 5491 Creep LAeq 6 16 500 LAeq 64 0	1: 0 2 24 -7.5 16 24 540 Acoustic LAeq S 2 LAeq Ihr 64 9	LA10 1hr 70 0 35 35 30 -7.5 22 Quality O LA10 70 2 65 1430 0 LA10 1hr 70 0 0 33 33 33	73  33 -7.5 25  bjectives  LA01 73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Notes source level for assessment time period  Totality / Impulsiveness correction  Minimum distance to receive  Distance attenuation (+6 dB) per doubling of distance)  Barrier screening  Franch reflection  Impact at an earest façade  Reduction through open window (also minus 2.5 dB fac  Impact as taside open window  CAR MOVEMENT FROM DAY  Notes source level for single event  Duration of single event  Duration of single event  Duration of single sevent  Duration of single sevent  Distance are seven for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period	357.5 LAeq 64 0 29 29 side) Creep LAeq 6 16 500 LAeq 64 0	77 -3 0 2 29 -7.5 21 33 Second LAeq 8 2 LAeq lhr 64 3 3 -3	LA10 1hr 70 0 8 8 88 0 5 35 -7.5 27 Quality C LA10 70 2 65 1430.0   LA10 1hr 70 0 5 5 10 0	38 -7.5 30 bjectives LA01 73	EB(A) EB EB EB EB EB(A) EB EB(A) EB(A) EB(A) EVents Events Events EB(A) EB(A) EB(A)
Total time duration of combined owents  Notice source level for assessment time period  Totality Timp butwests correction  Maintain distance to receiver  Distance attreastion (-6 dB per doubling of distance)  Betries creening  Foods evidention  Impact as a rearset façade  Reduction through open window (also minus 2.5 dB for  Impact tastice open vindow  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Notice source level for single event  Duration of single event  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Totality Timp butwesses correction  Maintain distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Faculte reflection	357.5 LAeq 64 0  24 ade)  244 5491 Creep LAeq 6 16 500 LAeq 64 0	1: 0 2 24 -7.5 16 24 540 Acoustic LAeq S 2 LAeq Ihr 64 9	LA10 1hr 70 0 35 35 30 -7.5 22 Quality O LA10 70 2 65 1430 0 LA10 1hr 70 0 2 2 99 0 5	73  33 -7.5 25  bjectives  LA01 73  LA01 lhr 73	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  dB(A)  dB(A)  dB(A)  dB(A)  dB(A)  dB  dB(A)  dB  dB(A)  dB  dB(A)	Total time duration of combined events  Notes ource level for assessment time period  Totality! Impulsiveness correction  Minimum distance to receiver  Distance astreamation 1-6 dB per doubling of distance)  Barries creening  Façade reflection  Impact as an areat façade  Reduction through open window (also mines 2-5 dB for  limpact tails of pen window (also mines 2-5 dB for  CAR MOVEMENT FROM DAY  Noise source level for single event  Duration of single event  Noise source level for single event  Noise source level for for source level for the combined events  Noise source level for assessment time period  Total time duration of combined events  Noise source level for assessment time period  Totality Impulsiveness correction  Minimized distance to receiver  Distance astreamation (-6 dB per doubling of distance)  Barries screening  Barries screening	357.5 LAeq 64 0 29 29 side) Creep LAeq 6 16 500 LAeq 64 0	7 -3 0 0 2 29 -7.5 21 12 2019 Acoustic LAeq S 2 LAeq Ihr 64 3 -3 3 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3	LA10 lbr 70 0 8 8 8 8 5 5 35 -7.5 27 Quality C LA10 70 65 1430.0 LA10 lbr 70 5 5 11 0 5 5	73  38 -7.5 30  bijectives LA01 73  LA01 lhr 73	EB(A) EB

STAGE I ACTIVITY NOISE PREDICTION CALCU	LATIONS	(LA19 lbr 2	nd L <sub>x01 the</sub> 1	evel are rep	resented as	N/A if the duration of events do not occur for 10% or 19	oof the 1 h	our period	)		
R1: Existing Single-storey dwellings to the north						R2: Future dwellings to the immediate north					
CAR MOVEMENT TO NIGHT	Creep	Acoustic	Quality C	bjectives		CAR MOVEMENT TO NIGHT	Creep	Acoustic	Quality C	Objectives	$\overline{}$
	LAeq	LAeq	LA10	LA01			LAeq	LAeq	LA10	LA01	1
Noise source level for single event  Duration of single event	-	58	70	73	dB(A)	Noise source level for single event Duration of single event		58	70	73	dB(A)
Duration of single event Number of events in the measurement period	- 5		15		Seconds Events	Duration of single event Number of events in the measurement period	- 5		15		Seconds Events
Total time duration of combined events	110.0		330.0		Seconds	Total time duration of combined events	110.0		330.0		Seconds
	LAeq			LA01 lbr			LAeq			LA01 lhr	
Noise source level for assessment time period	59	58	N/A	73	6B(A)	Noise source level for assessment time period	59	58	N/A	73	6B(A)
Tonality / Impulsiveness correction Minimum distance to receiver		Ь,	0 35		dB	Tonality / Impulsiveness correction Minimum distance to receiver	l °	Ь.,	0		éB.
Distance attenuation (-6 dB per doubling of distance)	_		43		43	Distance attenuation (-6 dB per doubling of distance)	_		38		43
Barrier screening			.0		6B	Barrier screening		0	.0		éВ
Façade reflection	10	18	.5 N/A	33	dB	Façade reflection	2.4	22	.5 N/A	38	dB.
Impact at nearest façade Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	dB(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	dB(A)
Impact inside open window	inac)	10	N/A	25	6B(A)	Impact inside open window	inac)	15	N/A	30	dB(A)
	75.24586	56,4344					225,4037	169,0527			
CAR MOVEMENT FROM NIGHT	Creep		Quality C			CAR MOVEMENT FROM NIGHT	Creep	Acoustic	Quality C	Objectives	1
Noise source level for single event	LAeq	LAeq	LA10	73	(B(A)	Noise source level for single event		LAeq 58	70	73	dB(A)
Duration of single event	Η,	2	12	1 /3	dB(A) Seconds	Duration of single event	<del>  '</del>	- 1	12	13	dB(A) Seconds
Number of events in the measurement period	- 5		15		Events	Number of events in the measurement period	5		15		Events
Total time duration of combined events	110.0	V 4	330.0	IV 102 22	Seconds	Total time duration of combined events	110.0		330.0	Ix sec	Seconds
Noise source level for assessment time period	LAeq 59		LAI0 1hr N/A	LA01 1hr		Noise source level for assessment time period	LAeq 59		LA10 1hr N/A	LA01 1hr 73	
Noise source level for assessment time period Tonality / Impulsiveness correction	0	58	N/A 0	/5	dB(A)	Noise source level for assessment time period Tonality / Impulsiveness correction	39	58	0 0	/3	dB(A)
Minimum distance to receiver			12		п	Minimum distance to receiver			35		п
Distance attenuation (-6 dB per doubling of distance)			39		άB	Distance attenuation (-6 dB per doubling of distance)			31		άB
Barrier screening		v	5		ďΒ	Barrier screening		v	5		άB
Façade reflection Impact at nearest façade	22	21	N/A	36	dB(A)	Façade reflection Impact at nearest façade	30	29	N/A	45	dB (A)
Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	6B(A)	Reduction through open window (also minus 2.5 dB fac		-7.5	-7.5	-7.5	eB(A)
Impact inside open window		13	N/A	29	dB(A)	Impact inside open window		22	N/A	37	dB(A)
	162.0222	121.5166					1119.474	839.6056			
TRUCK ENGINE STARTS Loading bay	Creep		Quality C			TRUCK ENGINE STARTS Loading bay	Creep		Quality C		4
Noise source level for single event	LAeq	LAeq /8	LA10 81	LA01 83	(B(A)	Noise source level for single event		LAeq /8	LA10 81	83	6B(A)
Duration of single event		, ,	3	- 0.7	Seconds	Duration of single event		, ,	3	- 0.7	Seconds
Number of events in the measurement period	1		2		Events	Number of events in the measurement period	1		2		Events
Total time duration of combined events	3.0		6.0		Seconds	Total time duration of combined events	3.0		6.0		Seconds
	LAeq	LAeq lhr		LA01 lbr			LAeq		LA10 1hr	LA01 lhr	
Noise source level for assessment time period Tonality / Impulsiveness correction	53	50	N/A	N/A	(B(A)	Noise source level for assessment time period	53	50	N/A	N/A	(B(A)
Minimum distance to receiver	l	1	12		dB	Tonality / Impulsiveness correction Minimum distance to receiver	L ·		15		dB
Distance attenuation (-6 dB per doubling of distance)			<del>1</del> 1		413	Distance attenuation (-6 dB per doubling of distance)		-	35		48
Barrier screening			.0		6B	Barrier screening			.0		dB.
Façade reflection		17	.5		dB	Façade reflection			.5		dB.
Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	15	-7.5	N/A	N/A -7.5	dB(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç	21	23	N/A	N/A -7.5	dB(A)
Impact inside open window	nue)	9	N/A	N/A	6B(A)	Impact inside open window	nue)	15	N/A	N/A	dB(A)
TRUCK MOVEMENT TO SITE	Creep		Quality C			TRUCK MOVEMENT TO SITE	Creep	Acoustic	Quality C		
	LAeq	LAeq	LA10 89	LA01 90			LAeq	LAeq	LA10 89	LA01 90	-
Noise source level for single event  Duration of single event	-	57	15	90	6B(A) Seconds	Noise source level for single event Duration of single event	<del>  '</del>	57	15	90	6B(A) Seconds
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	90.0		180.0		Seconds	Total time duration of combined events	90.0		180.0		Seconds
	LAeq	LAeq lhr		LA01 lhr			LAeq			LA01 lhr	
Noise source level for assessment time period	77	74	N/A	90	dB(A)	Noise source level for assessment time period	77	74	N/A	90	dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	<u> </u>	35	0 1	35	4B	Tonality / Impulsiveness correction Minimum distance to receiver	·	78	0	78	43
Distance attenuation (-6 dB per doubling of distance)		43		43	dB	Distance attenuation (-6 dB per doubling of distance)		38		38	dB.
Barrier screening	0	1.0	-	1.0	άB	Barrier screening		1.0	-	0.0	éB-
Façade reflection		. 2	5		4B	Façade reflection		. 2	.5		413
Impact at nearest façade	37	-7.5	N/A	-7.5	6B(A)	Impact at nearest façade	42	-7.5	N/A	55	dB(A)
Reduction through open window (also minus 2.5 dB faç Invaset inside open window	ade)	-7.5	-7.5 N/A	42	(B(A)	Reduction through open window (also minus 2.5 dB fac Impact inside open window	ade)	-7.5	N/A	-7.5 47	(B)
Impact inside open window		- 20			n B (A)	разрам панае ореа нация					pan(A)
TRUCK MOVEMENT FROM SITE	Creep	Acoustic	Quality C	bjectives		TRUCK MOVEMENT FROM SITE	Creep	Acoustic	Quality C	Objectives	
	LAeq	LAeq	LA10		$\square$		LAeq	LAeq		LA01	1
Noise source level for single event	1 8	87	89	90	iB(A)	Noise source level for single event	1	5/	89	90	iB(A)
Duration of single event Number of events in the measurement period	2		4		Seconds Events	Duration of single event Number of events in the measurement period	2		4		Seconds Events
Total time duration of combined events	90.0		180.0		Seconds	Total time duration of combined events	90.0		180.0		Seconds
	LAeq	LAeq lhr		LA01 lbr			LAeq	LAeq lhr		LA01 lhr	
Noise source level for assessment time period	77	74	N/A	90	(B(A)	Noise source level for assessment time period	77	74	N/A	90	(B(A)
Tonality / Impulsiveness correction	0		0		ćB	Tonality / Impulsiveness correction	0		0	16	dB.
Minimum distance to receiver		72 30		72 39	n (n	Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)		35 31		35 31	m em
Dietance attenuation ( 6 dD dealthing of die		22			eB						4B
Distance attenuation (-6 dB per doubling of distance)  Barrier screening	-	1.0		1.0	4B			1.0		0.0	
Barrier screening	0	1.0	.5	1.0	6B 6B	Barrier screening Façade reflection	-	1.0	.5	0.0	4B
Barrier screening Façade reflection Impact at nearest façade	40	2 37	.5 N/A	53	dB dB(A)	Façade reflection Impact at nearest façade	49	1.0 2 46	.5 N/A	62	dB dB(A)
Barrier screening Façade reflection	40	2	.5		6B 6B(A) 6B(A)	Façade reflection	49	2	.5		

Nt. Walantee Clarks arranged 201						N/A if the duration of events do not occur for 10% or 10					
R1: Existing Single-storey dwellings to the north TRUCKS WITH REFRIGERATION UNIT	Creep		Quality C			R2: Future dwelling: to the immediate north TRUCKS WITH REFRIGERATION UNIT	Creep		Quality C		
Noise source level for single event	LAeq	LAeq	LA10 82	LA01		Noise source level for single event	LAeq	LAeq	LA10 82	LA01	
Duration of single event	<del>-</del>		00	83	dB(A) Seconds	Duration of single event	<b>-</b>	91		53	dB(A) Seconds
Number of events in the measurement period	1		2		Events	Number of events in the measurement period	1		2		Events
Total time duration of combined events	900.0		1800.0		Seconda	Total time duration of combined events	900.0		1800.0		Seconda
	LAeq	LAeq lhr	LA10 1hr				LAeq	LAeq lhr		LA01 lhr	
Noise source level for assessment time period	\$1	78	82	\$3	(B(A)	Noise source level for assessment time period	\$1	78	82	\$3	(B(A)
Tonality / Impulsiveness correction	0		0		έB	Tonality / Impulsiveness correction	0	L .	0		έB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_		41 41		n	Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)	_		35		11
Refrigeration unit truck directivity / screening	_		0		6B	Refriseration unit truck directivity / screening	_				48
Barrier screening		-			dB	Barrier screening	_	0			éB.
Façade reflection		2	5		4B	Façade reflection		2	.5		410
Impact at nearest façade	43	40	44	45	6B(A)	Impact at nearest façade	49	46	50	51	dB(A)
Reduction through open window (also minus 2.5 dB faça	sde)	-7.5	-7.5	-7.5	ćB	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	ďΒ
Impact inside open window		32	36	37	dB(A)	Impact inside open window		38	42	43	dB(A)
											-
TRUCK AIRBRAKES	Creep		Quality C			TRUCK AIRBRAKES	Creep		Quality (		4
Noise source level for single event	LAeq	LAeq	LA10 98	LA01 102		Noise source level for single event	LAeq	LAeq	LA10 98	LA01 102	+
Noise source level for single event Duration of single event	٠	~	3 25	102	dB(A) Seconds	Noise source level for single event  Duration of single event	٠ ,		3/2	102	dB(A)
Number of events in the measurement period	3		0		Seconds Events	Number of events in the measurement period	3		0		Events
Total time duration of combined events	6.0		18.0		Seconds	Total time duration of combined events	6.0		18.0		Seconds
Allen or comment or case	LAeq	LAeq lbr	LA10 1hr	LA01 lbr			LAeq	LAeg lbr		LA01 1hr	
Noise source level for assessment time period	6S	67	N/A	N/A	dB(A)	Noise source level for assessment time period	68	67	N/A	N/A	6B(A)
Conality / Impulsiveness correction	0		5		άB	Tonality / Impulsiveness correction	0		5		ďВ
Minimum distance to receiver		5				Minimum distance to receiver		3			
Distance attenuation (-6 dB per doubling of distance)			39		é13	Distance attenuation (-6 dB per doubling of distance)					613
Barrier screening		0			6B	Barrier screening		0			éΒ
Façade reflection			.5		ćΒ	Façade reflection		. 2			éB.
Impact at nearest façade	31	35	N/A	N/A	dB(A)	Impact at nearest façade	40	44	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	43	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	£13
Impact inside open window	_	28	N/A	N/A	6B(A)	Impact inside open window	_	36	N/A	N/A	dB(A)
	Creep	Aconstic	Quality 0	Minetime			Creep	Aconstic	Quality C		-
TRUCK AIRBRAKES at loading bay	LAeq	LAeq		LA01	1	TRUCK AIRBRAKES at loading bay	LAeq	LAeq	LA10		-
Noise source level for single event		0 LARRY	98	102	(B(A)	Noise source level for single event		0 Lared	98	102	(B(A)
Duration of single event	<del>-</del>	~	2	102	Seconds	Duration of single event	<u> </u>		2 20	102	Second:
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	4.0		\$.0		Seconds	Total time duration of combined events	4.0		\$.0		Seconds
	LAeq	LAeq lhr	LA10 1hr	LA01 lbr			LAeq	LAeq lhr	LA10 1hr	LA01 1hr	
Noise source level for assessment time period	66	63	N/A	N/A	iB(A)	Noise source level for assessment time period	66	63	N/A	N/A	iB(A)
Fonality / Impulsiveness correction	0		5		418	Tonality / Impulsiveness correction	0		5		419
Minimum distance to receiver		1			п	Minimum distance to receiver		5			п
Distance attenuation (-6 dB per doubling of distance)			<b>41</b>		ďΒ	Distance attenuation (-6 dB per doubling of distance)		-			έB
Barrier screening		0			έB	Barrier screening	_	0			έB
Façade reflection	- 20	30	5	1 2714	6B	Façade reflection	- 14			2714	£13
Impact at nearest façade Reduction through open window (also minus 2.5 dB faça	28	30	N/A	N/A	dB(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç	34	36	N/A	N/A	dB(A)
	scre)	22	N/A	N/A	dB(A)		ace)	29	N/A	N/A	dB (A)
Impact inside open window		22	IV/A	NA	dB(A)	Impact inside open window		29	N/A	NA	dB(A)
	Creep	Aconstic	Quality C	Dhiectives			Creep	Aconstic	Quality C	hiectives	-
TRUCK UNLOADING at loading bay	LAeq		LA10	LA01	1	TRUCK UNLOADING at loading bay	LAeq	LAeq	LA10		1
Noise source level for single event	1	5	80	82	dB(A)	Noise source level for single event	7	5	80	82	6B(A)
Duration of single event		9	00		Seconds	Duration of single event		9	00		Second
Number of events in the measurement period	1		4		Events	Number of events in the measurement period	1		4		Events
Total time duration of combined events	900.0		3600.0		Seconds	Total time duration of combined events	900.0		3600.0		Seconds
	LAeq	LAeq lbr	LA10 1hr				LAeq	LAeq lhr		LA01 1hr	
Noise source level for assessment time period	75	75	80	82	6B(A)	Noise source level for assessment time period	75	75	80	82	dB(A)
Conality / Impulsiveness correction	0	1	5		άB	Tonality / Impulsiveness correction	0	L .	5		έB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	$\vdash$		12 41		11	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_		35		in.
Distance attenuation (-0 dB per doubling of distance)  Barrier screening	_	- 0			43	Barrier screening	$\vdash$	-:			eB en
Façade reflection			5		CB	Façade reflection	-	2			eB eB
Impact at nearest façade	37	42	47	19	dB(A)	Impact at nearest façade	43	48	53	55	eB(A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	(B (A)	Reduction through open window (also minus 2.5 dB fac		-7.5	-7.5	-7.5	6B(A)
Impact inside open window	-/	34	39	41	6B(A)	Impact inside open window	,	40	45	47	dB(A)
				- "	- 1-7					-	1111
PEOPLE TALKING OUTSIDE	Стеер	Acoustic	Quality C	Dijectives		PEOPLE TALKING OUTSIDE	Creep	Acoustic	Quality C	bjectives	
	LAeq	LAeq	LA10	LA01	1		LAeq	LAeq	LA10	LA01	1
Voise source level for single event		52	70	73	(B(A)	Noise source level for single event		2	70	73	(B(A)
Duration of single event		6	00		Seconds	Duration of single event		. 6	00		Second
Number of events in the measurement period	1		4		Events	Number of events in the measurement period	1		4		Events
Fotal time duration of combined events	600.0		2400.0	In case or	Seconds	Total time duration of combined events	600.0		2400.0		Seconds
	LAeq	LAeq lhr	LA10 1hr				LAeq	LAeq lhr			
Noise source level for assessment time period	60	60	70	73	dB(A)	Noise source level for assessment time period	60	60	70	73	dB(A)
Conality / Impulsiveness correction	0	Ь.	0		6B	Tonality / Impulsiveness correction	0	L .	0		415
			18 41		rt.	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_	-3			III.
Minimum distance to receiver			*1		68	Provider attenuation (-o qB bet donotting of distance)	1		20		éB-
Distance attenuation (-6 dB per doubling of distance)			n		rn.	Parrier acrossing		0	n		
Distance attenuation (-6 dB per doubling of distance) Barrier screening		0	0		éB	Barrier screening Excede reflection		0	.0		dB cu
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest facade	21	0	5	34	dB dB	Façade reflection	27	27	.5	I 40	en en
Distance attenuation (-6 dB per doubling of distance) Barrier screening			5 31 -7.5	34	dB dB dB(A) dB		27 ade)	2	.5	40	dB dB dB(A)

R1: Existing Single-storey dwellings to the north						R2: Future dwelling: to the immediate north					
WAS TE COLLECTION INDUSTRIAL BIN - Service	Creep	Acoustic	Quality O	hiectives			Creep	Acoustic	Quality C	biectives	
WAS TE COLLECTION INDUSTRIAL BIN - Service	LAeq	LAeq	LA10	LA01	1	WAS TE COLLECTION INDUSTRIAL BIN - Service	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	9	92	97	102	6B(A)	Noise source level for single event		92	97	102	6B(A)
Duration of single event	$\overline{}$	1	80	•	Seconds	Duration of single event		1	02	•	Seconds
Number of events in the measurement period	1		1		Events	Number of events in the measurement period	1		1		Events
Total time duration of combined events	180.0		180.0		Seconds	Total time duration of combined events	180.0		180.0		Seconda
	LAeq	LAeg lhr	LA10 1hr	LA01 1hr			LAeq	LAeg lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	85	79	N/A	102	(B(A)	Noise source level for assessment time period	85	79	N/A	102	4B(A)
Fonality / Impulsiveness correction	0		5	•	ďΒ	Tonality / Impulsiveness correction	0		- 5	•	éB.
Minimum distance to receiver	$\overline{}$	1	12		n	Minimum distance to receiver			5		
Distance attenuation (-6 dB per doubling of distance)	$\overline{}$		1		6B	Distance attenuation (-6 dB per doubling of distance)		-3	35		dB.
Barrier screening			)		ćB	Barrier screening		-	0		dB.
Façade reflection		2	2.5			Façade reflection		2	.5		éB.
Inspact at nearest façade	47	46	N/A	69	dB(A)	Impact at nearest façade	53	52	N/A	75	dB(A)
Reduction through open window (also minus 2.5 dB faça	ide)	-7.5	-7.5	-7.5	6B	Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	éB.
Impact inside open window		38	N/A	61	dB(A)	Impact inside open window		44	N/A	67	dB(A)
	Cours	1	Quality O	Nei a stissa			Creep	1	Ouality C	this stiess	_
ALFRES CO DINING	Creep LAeq	LAeg	LA10	LA01	-	ALFRES CO DINING	LAeq	LAeg	LA10	LA01	1
Noise source level for single event		75 LARQ	78	\$2		Noise source level for single event		75 LAEQ	78	\$2	_
Noise source seven for single event  Duration of single event	_		20	8.2	řB(A)	Duration of single event			20	82	iB(A)
Number of events in the measurement period	_		20		Seconds	Number of events in the measurement period	,	- 6	20		Seconda
Number of events in the measurement period Total time duration of combined events	720.0	_	2880.0		Events	Number of events in the measurement period  Total time duration of combined events	720.0	_	2880.0		Events
I of at time duration of combined events	LAeq	T A 11	LA10 1hr	IT 403 33-	Seconds	1 orac time duration of combined events		T A 13		LA01 lhr	Seconds
			LAIO IBF		1		LAeq			82 82	_
Nation common level for accommentations as said		74	70			Maine causes land for accommon time a mind	7.4				4B(A)
	74	74	78	\$2	dB(A)	Noise source level for assessment time period	74	74	78		
Tonality / Impulsiveness correction			5	\$2	4B(A) 4B	Tonality / Impulsiveness correction	74		5		ďΒ
Tonality / Impulsiveness correction Minimum distance to receiver	74	1	5	82	dB m	Tonality / Impulsiveness correction Minimum distance to receiver			5		n.
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	74	1	5 10 13	\$2	éB és éB	Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)		8	5 3 38		rs dB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	74	1 0	5 40 43 .0	\$2	dB m	Tonality / Impulsiveness correction Mainium distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening		-3 0	5 3 38 .0		rs dB dB
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection	74	1 0 2	5 10 13 0 5		6B fs dB dB	Tonality / Impulsiveness correction M'minism distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection	0	9 -: 0 2	5 33 38 0		es dB dB dB
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	74 0	1 0	5 40 43 .0	82 47 -7.5	éB és éB	Tonality / Impulsiveness correction Mainium distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	38	-3 0	5 3 38 .0	51 -7.5	rs dB dB

STAGE 1 ACTIVITY NOISE PREDICTION CALCU	LATIONS	(L <sub>A10 lbr</sub> s	nd L <sub>x01 the</sub>	kveh are rep	resented as	N/A if the duration of events do not occur for 10% or 1%	of the 1 h	our period	)		
R3: Existing dwellings to the east						R4: Future dwellings to the immediate east					
CAR DOOR CLOSURE near building DAY / EVEN	Creep		Quality C			CAR DOOR CLOSURE near building DAY / EVEN	Creep		Quality C		$\overline{}$
Noise source level for single event	LAeq	LAeq 5	1A10 77	LA01 80	dB(A)	Noise source level for single event	LAeq	LAeq 75	1A10 77	LA01 S0	6B(A)
Duration of single event		. 1	.5		Seconds	Duration of single event		. 1	.5		Seconds
Number of events in the measurement period	15		60		Events	Number of events in the measurement period	15		60		Events
Total time duration of combined events	22.5		90.0		Seconds	Total time duration of combined events	22.5		90.0		Seconda
	LAeq	LAeq lhr	LA10 1hr		$\vdash$		LAeq		LA10 1hr		_
Noise source level for assessment time period	59	59	N/A	\$0	(B(A)	Noise source level for assessment time period	59	59	N/A	\$0	(B(A)
Tonality / Impulsiveness correction	0	Щ,	61		άB	Tonality / Impulsiveness correction	0	Щ,	5 05		άB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_		51		11	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)			40		
	_		0.0		6B				0.0		€B ∉B
Onsite building screening Façade reflection	_		2.5		48	Onsite building screening Façade reflection			.5		6B
Impact at nearest façade	0	T 5	N/A	26	6B(A)	Impact at nearest façade	11	16	N/A	37	6B(A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	(B)	Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-75	(B)
Impact inside open window	enery.	-2	N/A	19	6B(A)	Impact inside open window	racj	9	N/A	30	dB(A)
ampact manacopen manon	1.078762	3.411345	41128		0.0 (A)	лиристилие орен пинол	12.7515	40 3238	11/12	- 00	EB(X)
	Сгеер	Acoustic	Quality C	Diectives	$\overline{}$		Creep	Acoustic	Ouality C	biectives	$\overline{}$
CAR DOOR CLOSURE at bowsers DAY / EVEN	LAeq	LAeq	LA10		1 1	CAR DOOR CLOSURE at bowsers DAY / EVEN	LAeq	LAeq	LA10	LA01	1
Noise source level for single event		15	77	80	iB(A)	Noise source level for single event		75	77	80	iB(A)
Duration of single event		1	.5		Seconds	Duration of single event		1	.5		Seconds
Number of events in the measurement period	28		110		Events	Number of events in the measurement period	28		110		Events
Total time duration of combined events	41.3		165.0		Seconds	Total time duration of combined events	41.3		165.0		Seconds
	LAeq		LA10 1hr				LAeq			LA01 lhr	
Noise source level for assessment time period	62	62	N/A	80	4B(A)	Noise source level for assessment time period	62	62	N/A	80	dB(A)
Tonality / Impulsiveness correction	0		5		6B	Tonality / Impulsiveness correction	0		5		ĕВ
Minimum distance to receiver			77		11	Minimum distance to receiver			25		es.
Distance attenuation (-6 dB per doubling of distance)			52		άB	Distance attenuation (-6 dB per doubling of distance)			42		άB
Barrier screening			0.0		43	Barrier screening			.0		413
Façade reflection	L		2.5		6B	Façade reflection			.5		ćΒ
Impact at nearest façade	13	18	N/A	36	dB(A)	Impact at nearest façade	22	27	N/A	46	dB(A)
Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB faça	vde)	-7.5	-7.5	-7.5	άB
Impact inside open window		10	N/A	28	fB(A)	Impact inside open window		20	N/A	38	dB(A)
	18 13421	57.34542					164,9535	521 6286	0.111.0		_
CAR DOOR CLOSURE near building NIGHT	Creep		c Quality C		1 1	CAR DOOR CLOSURE near building NIGHT	Creep		Quality C		4
	LAeq	LAeq	LA10	LA01	$\vdash$		LAeq	LAeq		LA01	$\vdash$
Noise source level for single event	1	75	77	80	6B(A)	Noise source level for single event	,	/5	77	80	(B(A)
Duration of single event	-	- 1	1.5		Seconds	Duration of single event		- 1	.5		Seconds
Number of events in the measurement period	75	_	22.5		Events	Number of events in the measurement period	75	_	22.5		Events
Total time duration of combined events	7.19	7.4 33		Iv 403 31	Seconds	Total time duration of combined events		T 4 - 33		IT 403 33	Seconds
Notes and the second se	LAeq 54		LA10 1hr		-	National Action Company of the Compa	LAeq 54			LA01 lhr N/A	-
Noise source level for assessment time period	0	53	N/A 5	N/A	(B(A)	Noise source level for assessment time period	0	53	N/A 5	N/A	(B(A)
Tonality / Impulsiveness correction Minimum distance to receiver	_ ·	Щ,	61		4B	Tonality / Impulsiveness correction Minimum distance to receiver	·	Щ,	05		éB.
	_		51		"		_		40		
Distance attenuation (-6 dB per doubling of distance) Onsite building screening	_		0.0		4B	Distance attenuation (-6 dB per doubling of distance) Onsite building screening			0.0		dB dB
Façade reflection	_		1.5		48	Facade reflection	_	-1	0.0		68
Impact at nearest façade	-4	-1	N/A	N/A	dB(A)	Impact at nearest façade	- 6	10	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	(D)	Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	4B
Impact inside open window	ane)	-8	N/A	N/A	6B(A)	Impact inside open window	nei)	3	N/A	N/A	dB(A)
параст палог ореа птасоп	I n 350587	0.852836	11/25	1000	0.5(A)	impact in rice open stincos	4.250501	10.02005	11/25	1024	EB(A)
	Creen	Aconsti	Quality C	)hiectives			Creen	Acoustic	Onality C	hiectives	$\overline{}$
CAR DOOR CLOSURE at bowsers NIGHT	LAeq	LAeq	LA10	LA01	1 1	CAR DOOR CLOSURE at bowsers NIGHT	LAeg	LAeq	LA10	LA01	1
Noise source level for single event		75	77	80	dB(A)	Noise source level for single event		75	77	80	dB(A)
Duration of single event		1	.5		Seconds	Duration of single event		1	.5		Seconda
Number of events in the measurement period	7		21		Events	Number of events in the measurement period	7		21		Events
Total time duration of combined events	10.5		31.5		Seconds	Total time duration of combined events	10.5		31.5		Seconds
	LAeq	LAeq lhr	LA10 1hr	LA01 lbr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	56	54	N/A	N/A	4B(A)	Noise source level for assessment time period	56	54	N/A	N/A	dB(A)
Tonality / Impulsiveness correction	0		5		6B	Tonality / Impulsiveness correction	0		5		éB.
Minimum distance to receiver			77		11	Minimum distance to receiver			25		es
Distance attenuation (-6 dB per doubling of distance)			52		έB	Distance attenuation (-6 dB per doubling of distance)			42		άB
Barrier screening			).0		43	Barrier screening			.0		613
Façade reflection			2.5		6B	Façade reflection			.5		6B
Impact at nearest façade	7	10	N/A	N/A	dB(A)	Impact at nearest façade	16	20	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB faça	vde)	-7.5	-7.5	-7.5	άB
Impact inside open window		3	N/A	N/A	dB(A)	Impact inside open window		12	N/A	N/A	dB(A)
	4.615982	10.94776		N. C.	$\vdash$		41 98815	99.58365		A Control	_
CAR ENGINE STARTS at building DAY / EVEN	Creep		Quality C		1 1	CAR ENGINE STARTS at building DAY / EVEN	Creep	Acoustic	Quality C	Djectives	4
_	LAeq	LAeq	LA10 74	LA01	$\vdash$	-	LAeq	LAeq	74	LA01	-
Noise source level for single event	1	3	74	75	dB(A)	Noise source level for single event	1	3	74	75	dB(A)
Duration of single event	10		3 30		Seconds	Duration of single event	10		30		Seconds
Number of events in the measurement period	30.0		90.0		Events	Number of events in the measurement period	30.0	_	90.0		Events
Total time duration of combined events		T 1 11		Ir 101 15	Seconds	Total time duration of combined events		T to - 12		T 401 15	Seconds
Naisa saurea larul fau accass	LAeq 58	LAeq thr		LA01 1hr 75	-	Naira campa land for area	LAeq 58	LAeq ihr		LA01 lhr	
Noise source level for assessment time period Tonality / Impulsiveness correction	58	37	N/A	/3	(B(A)	Noise source level for assessment time period	58	3/	N/A	- 0	(B(A)
	l °	Щ,	61		άB	Tonality / Impulsiveness correction	,	Щ,	05		έB
Minimum distance to receive			51			Minimum distance to receiver  Distance attenuation (-6 dB was doubling of distance)	_		40		
Minimum distance to receiver					еВ	Distance attenuation (-6 dB per doubling of distance)					έB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_		0.0								dB.
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Onsite building screening		-1	0.0		dB	Onsite building screening			0.0		
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Onsite building screening Façade reflection	^	-1	2.5	14	άB	Façade reflection	10	2	.5	27	άB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Onsite building screening Façade reflection Impact at nearest façade	0	-1 2	N/A	16	dB dB(A)	Façade reflection Impact at nearest façade	10	9	5 N/A	27	dB dB(A)
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Onsite building screening Façade reflection		-1	2.5	16 -7.5 9	άB	Façade reflection		2	.5	27 -7.5 20	άB

			mer m/601 life i			N/A if the duration of events do not occur for 10% or 19		our perrou			
R3: Existing dwellings to the east						R4: Future dwelling: to the immediate east					
CAR ENGINE STARTS at bowsers DAY/EVEN	Creep LAeq	Acoustic LAeq	Quality O	bjectives LA01		CAR ENGINE STARTS at bowsers DAY / EVEN	Creep LAeq	Acoustic LAeq	Quality C	bjectives LA01	-
Noise source level for single event Duration of single event		3	74	75	dB(A) Seconds	Noise source level for single event Duration of single event		3	74	75	dB(A) Seconds
Number of events in the measurement period	18		55		Events	Number of events in the measurement period	18		55		Events
Total time duration of combined events	55.0		165.0		Seconda	Total time duration of combined events	55.0		165.0		Seconda
	LAeq	LAeq lhr		LA01 lhr			LAeq			LA01 lhr	
Noise source level for assessment time period	61	60	N/A	75	(B(A)	Noise source level for assessment time period	61	60	N/A	75	dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	0	Щ,	0		έB	Tonality / Impulsiveness correction Minimum distance to receiver	0	1	0		έB
Distance attenuation (-6 dB per doubling of distance)		- 3	52		n on	Distance attenuation (-6 dB per doubling of distance)	_	1.			en en
Barrier screening		0	.0		ćB	Barrier screening		0	.0		dB-
Façade reflection		2	5		ďΒ	Façade reflection		2	.5		éB-
Impact at nearest façade	12	11	N/A	26	dB(A)	Impact at nearest façade	21	20	N/A	36	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	ćΒ	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	éB.
Impact inside open window	1.35.05580	3	N/A	18	dB(A)	Impact inside open window	1 330 2212	13	N/A	28	dB(A)
	Creep	Aconstic	Quality O	hiections	$\overline{}$		Creep	Aconstic	Quality C	thiactions	_
CAR ENGINE STARTS at building NIGHT	LAeq	LAeq	LA10	LA01	1 1	CAR ENGINE STARTS at building NIGHT	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	22004	3	74	75	(B(A)	Noise source level for single event	7	3	74	75	iB(A)
Duration of single event			3		Seconds	Duration of single event			3		Seconds
Number of events in the measurement period	3		9		Events	Number of events in the measurement period	3		9		Events
Total time duration of combined events	9.0		27.0		Seconds	Total time duration of combined events	9.0		27.0		Seconds
V	LAeq	LAeq lhr	LA10 1hr		$\vdash$	27-1	LAeq	LAeq lhr		LA01 lhr	
Noise source level for assessment time period	53	52	N/A 0	N/A	4B(A)	Noise source level for assessment time period	53	52	N/A 0	N/A	dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	٠,		61		ćB	Tonality / Impulsiveness correction Minimum distance to receiver	L °	1			éB.
Distance attenuation (-6 dB per doubling of distance)			51		eB.	Distance attenuation (-6 dB per doubling of distance)	_	- 1			en eB
Onsite building screening		-1	0.0		6B	Onsite building screening			0.0		63
Façade reflection			.5		ćΒ	Façade reflection		2			éВ
Impact at nearest façade	-6	-7	N/A	N/A	6B(A)	Impact at nearest façade	5	4	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	ďΒ	Reduction through open window (also minus 2.5 dB fac	nde)	-7.5	-7.5	-7.5	άB
Impact inside open window		-14	N/A	N/A	fB(A)	Impact inside open window		-4	N/A	N/A	dB(A)
	0.272261	0.204196	0 11 0		-		3.218262	2.413697	0 11/- 0		_
CAR ENGINE STARTS at bowsers NIGHT	Creep LAeq		Quality O	LA01		CAR ENGINE STARTS at bowsers NIGHT	Creep LAeq		Quality C	LA01	-
Noise source level for single event	Lateq	LAeq	74	75	6B(A)	Noise source level for single event	LARQ	LAeq	74	75	6B(A)
Duration of single event	<del>-</del>	,	3 77	7.5	Seconds	Duration of single event		,	3 77	15	Seconds
Number of events in the measurement period	3		9		Events	Number of events in the measurement period	3		9		Events
Total time duration of combined events	9.0		27.0		Seconds	Total time duration of combined events	9.0		27.0		Seconda
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 1hr	
Noise source level for assessment time period	53	52	N/A	N/A	(B(A)	Noise source level for assessment time period	53	52	N/A	N/A	(B(A)
Tonality / Impulsiveness correction	0		0		έB	Tonality / Impulsiveness correction	0		0		άB
Minimum distance to receiver		3			n	Minimum distance to receiver		1			
Distance attenuation (-6 dB per doubling of distance)			52		ćB	Distance attenuation (-6 dB per doubling of distance)					éB.
Barrier screening			5		ćB	Barrier screening		0			dB.
Façade reflection Impact at nearest façade	-	3	N/A	N/A	dB(A)	Façade reflection Impact at nearest façade	14	12	N/A	N/A	(B(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	6B(A)	Reduction through open window (also minus 2.5 dB fac		-7.5	-7.5	-7.5	dB (A)
Impact inside open window		-5	N/A	N/A	dB(A)	Impact inside open window		- 5	N/A	N/A	dB(A)
	2.496418	1.872313					22.70806	17.03104			
CAR MOVEMENT TO DAY	Creep		Quality O			CAR MOVEMENT TO DAY	Creep		Quality C		
	LAeq	LAeq	LA10	LA01			LAeq	LAeq	LA10	LA01	
Noise source level for single event	- 0	-	70	73	dB(A)	Noise source level for single event		-	70	73	dB(A)
Duration of single event	16		12		Seconds	Duration of single event	16	2	12		Seconds
Number of events in the measurement period  Total time duration of combined events	357.5		1430.0		Events Seconds	Number of events in the measurement period  Total time duration of combined events	357.5	_	1430.0		Events
a communication of compliant events	LAeq	LAeq lhr		LA01 1hr	seconds	To the finite distribution of confidence events	LAeq	LAca lbr		LA01 1hr	Seconds
Noise source level for assessment time period	64 64	64	70	73	éB(A)	Noise source level for assessment time period	64	64	70	73	dB(A)
							0		0		48
Tonality / Impulsiveness correction	0		0		433	Tonality / Impulsiveness correction					п
Minimum distance to receiver	0		69		éB FL	Tonality / Impulsiveness correction Minimum distance to receiver	Ľ	1			éB.
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	0		69 51		dB es dB	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	Ľ	-	41		
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	0	-	69 51 .0		4B 6B 4B	M'nimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening	Ů	0	0		έB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection		0	69 51 .0		4B	Minimum distance to receiver Distance artennation (-6 dB per doubling of distance) Barrier screening Façade reflection		0 2	0 5		éB éB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	15	0 2	69 51 .0	24	6B 6B 6B 6B 6B(A)	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	26	0	0	35	dB dB dB(A)
Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Façade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç	15	0	69 51 0 .5 21 -7.5	-7.5	4B 6B(A) 4B	M'minum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Façade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB fax	26	0 2 26 -7.5	0 5 32 -7.5	-7.5	dB dB dB(A) dB
Mainizam distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	15	0 2 15 -7.5	69 51 .0		4B	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	26	0 2	0 5	35 -7.5 27	dB dB dB(A)
Maintum distance to receiver Distance attenuation (-6 dB per doubling of distance) Sertier screening Segade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window)	15 ade)	0 2 15 -7.5 8	69 51 0 .5 21 -7.5 14	-7.5 17	4B 6B(A) 4B	Minimum distance to reserver Distance attentation (-6 Bb per doubling of distance) Barrier screening Fryade reflection Impact at nearest façade Raduction through open window (disc minus 2.5 dB faç Impact inside open window	26 ade)	26 -7.5 18	0 5 32 -7.5 24	-7.5 27	dB dB dB(A) dB
Maintum distance to receiver Distance attenuation (-6 dB per doubling of distance) Bettier screening Fragder reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç. Impact inside open window CAR MOVEMENT FROM DAY	15	0 2 15 -7.5 8	69 51 0 5 21 -7.5 14 Quality O	-7.5 17 Dijectives	4B 6B(A) 4B	Minimum distance to receiver Distance estimation (cf dB per doubling of distance) Barries screening Façade reflection Imagest at nearest façade Reduction through open window (also minus 2.5 dB faç Imagest inside open window CAR MOVEMENT FROM DAY	26	26 -7.5 18	0 5 32 -7.5 24 Quality C	-7.5 27 Dijectives	dB dB dB(A) dB
Minimum distance to receiver Distance attenuation of 4B per doubling of distance) Barrier screening Fende reflection Impact at nearest figade Reduction through open window (also minus 2.5 dB fag/ Impact inside open window CAR MOVEMENT FROM DAY Notice source level for single event	15 ade)	0 2 15 -7.5 8 Acoustic	69 51 .0 .5 21 .7.5 14	-7.5 17 Objectives	4B 6B(A) 4B	Minimum distance to receiver Distance estimation (= dB per doubling of distance) Barries screening Fayde reflection Impact at a warrest facade Reduction through open window (side minuse 2.5 dB for Impact table open window  CAR MOVEMENT FROM DAY  Notes source level for single event	26 nde)	0 26 -7.5 18 368.3394 Acoustic	0 5 32 -7.5 24 Quality C	-7.5 27 Objectives	dB dB dB(A) dB
Maintama distance to receiver Distance attenuation (-6 dB per doubling of distance) Berrier screening Pagade reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB faç Impact inside open window CAR MOVEMENT FROM DAY Notice source level for single event Duration of single event	15 sde) 32.73262 Creep LAeq	0 2 15 -7.5 8 Acoustic LAeq	69 51 00 5 21 -7.5 14 Quality O LA10 70	-7.5 17 Dijectives	6B (A) 6B (A)	Maintaine distance to reserver Distance attentation (-6 dB per doubling of distance) Barrier screening Foxole reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fox Impact it aisside open window CAR MOVEMENT FROM DAY Noise source sieved for single event Duration of single event	26 ade) Creep LAeq	0 26 -7.5 18 368.3394 Acoustic	32 -7.5 24 Quality C LAI0 70	-7.5 27 Dijectives	dB dB dB(A) dB dB(A)
Minimum distance to receiver  Distance attenuation of dB per doubling of distance)  Berties creening  Pende reflection  Impact at nearest façade  Reddiction through open window (also minus 2.5 dB fig.)  CAR MOVEMENT FROM DAY  Noise source level for single event  Duration of single event  Duration of single event	15 side)  32.73262  Creep  LAeq  6	0 2 15 -7.5 8 Acoustic LAeq	69 51 0 .5 21 -7.5 14 Quality O LA10 70	-7.5 17 Dijectives	dB (A) dB (A) dB (A) dB (A) Seconds	Affinitized distance to receiver Distance estimation (= dB per doubling of distance) Barries screening Fundar effection Impact at awarest facade Reduction through open window (olso minus 2.5 dB for Impact taside open window  CAR MOVEMENT FROM DAY  Noise source level for single event Duration of single event Duration of single event Duration of single event	26 ade)  308.3394  Creep LAeq	0 26 -7.5 18 368.3394 Acoustic	41 0 5 32 -7.5 24 Quality C LA10 70	-7.5 27 Dijectives	dB dB(A) dB(A) dB dB(A) Seconds Events
Maintama distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier streening Pragade reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB faç. Impact aid open window CAR MOVEMENT FROM DAY Notice source slevel for single event Duration of single event	15 side)  32.73202  Creep  LAeq 6	00 22 15 -7.5 8 32.73202 Acoustic LAeq 8	69 51 0 5 21 -7.5 14 Quality O LA10 70 12 65 1430.0	-7.5 17 Dijectives LA01 73	dB (A)  dB (A)  dB (A)  dB (A)	Maintaine distance to reserver Distance attentation (-6 dB per doubling of distance) Barrier screening Foxole reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fox Impact it aisside open window CAR MOVEMENT FROM DAY Noise source sieved for single event Duration of single event	26 ade)  388.3394  Creep  LAeq 6	0 22 26 -7.5 18 308 3394 Acoustic LAeq	11 0 0 5 32 -7.5 24 Quality Quality Quality Quality G 1430.0	-7.5 27 bijectives LA01 73	dB dB (A) dB (A) dB (B) dB (A) Seconds Events Seconds
Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Batries creening  Batries creening  Bradde reflection  Impact at nearest façade  Rediction through open window (also minus 2.5 dB façi  Impact inside open window  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Duration of single event  Number of events in the measurement period  Total time duration of combined events	15 Creep LAeq 16 900 LAeq	00 2 15 -7.5 8 32-73202 Acoustic LAeq 8	69 51 0 5 21 -7.5 14 -7.5 14 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	-7.5 17 Dijectives LA01 73	dB (A)  dB (A)  dB (A)  dB(A)  EB(A)  Seconds  Events  Seconds	Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Barries screening Facçale reflection Imagest at nearest facade Reduction through open window (also minus 2.5 dB for Impact inside open window  CAR MOVEMENT FROM DAY  Noise source level for single event Duration of single event Duration of single event Total time duration of combined events	26 ade) 388.3394 Creep LAeq 16 900 LAeq	0 2 26 -7.5 18 363394 Acoustic LAeq S	11 0 5 5 32 -7.5 24	-7.5 27 bijectives LA01 73	dB dB dB(A) dB(A) dB dB(A)  Seconds Events Seconds
Minimum distance to receiver Distance attenuation (4 dB per doubling of distance) Barrier screening Sogdie reflection Impact at nearest facade Reduction through open window (siso minus 2.5 dB facility) Impact and search minus (1 de facade) Reduction through open window  CAR MOVEMENT FROM DAY  Notice source level for single event Duration of single event Number of events in the measurement period  Tool time duration of combined events  Notice source level for assessment time period	15 sde)  Creep LAeq  16  900 LAeq  64	00 22 15 -7.5 8 32.73202 Acoustic LAeq 8	69 51 0 5 21 -7.5 14 Quality O LA10 70 12 65 1430.0 LA10 lbr 70	-7.5 17 Dijectives LA01 73	dB (A) dB (A) dB (A) dB (A) Seconds	Maintume distance to receiver Distance estimation (= dB per doubling of distance) Barries screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB for Impact inside open window CAR MOVEMENT FROM DAY Notes source level for single event Duration of single sevent Duration of single sevent Duration of single sevent Total time duration of combined events Notes to source level for assessment time period	26 363 3194 Creep LAeq 66 16 900 LAeq 64	0 22 26 -7.5 18 308 3394 Acoustic LAeq	11 0 5 5 32 -7.5 24	-7.5 27 bijectives LA01 73	dB dB (A) dB (A) dB (B) dB (A) Seconds Events Seconds
Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Batties screening Fendle reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window CAR MOVEMENT FROM DAY Notice source level for single event Direction of single event Number of events in the measurement period Total time duration of combined events Notice source level for assessment time period Totally Time duration of combined events	15 Creep LAeq 16 900 LAeq	0 2 15 -7.5 8 8 8 8 Acoustic LAeq 8 8 LAeq 1hr 64	69 51 0 5 21 -7,5 14 LA10 70 12 65 1430.0 1LA10 1hr 70 0	-7.5 17 Dijectives LA01 73	dB (A)  dB (A)  dB (A)  dB(A)  EB(A)  Seconds  Events  Seconds	Minimum distance to receiver Distance estimation (= dB per doubling of distance) Barries screening Façoise reflection Impact at nearest facual Impact in side open window (also minus 2 5 dB for Impact in side open window  CAR MOVEMENT FROM DAY  Noise source level for single event Duration of single event Duration of single event Total time duration of combined events  Noise source level for sisessment time period  Total time duration of combined events  Noise source level for assessment time period  Total time duration of combined events	26 ade) 388.3394 Creep LAeq 16 900 LAeq	0 2 26 -7.5 18 368 3304 Acoustic LAeq lbr 64	11 0 5 5 32 -7.5 24	-7.5 27 bijectives LA01 73	dB dB dB(A) dB(A) dB dB(A)  Seconds Events Seconds
Minimum distance to receiver Distance attenuation (4 dB per doubling of distance) Betries carening Boyade effection Impact at nearest facade Reduction through open window (siso minus 2.5 dB facility) Impact and selection through open window CAR MOVEMENT FROM DAY Noise source level for single event Duration of single event Duration of single event Noise source level for combined events Noise source level for mine duration of combined events Noise source level for assessment time period Total from duration of combined events Noise source level for assessment time period Totality (Impulsiveness correction Minimum distance to receiver	15 sde)  Creep LAeq  16  900 LAeq  64	0 2 15 -7.5 8 Acoustic LAeq 1br 64 3	69 51 0 5 21 -7,5 14 Quality O LA10 70 12 65 1430.0 LA10 lbr 70 0	-7.5 17 Dijectives LA01 73	dB (A)  dB (A)  dB (A)  dB(A)  EB(A)  Seconds  Events  Seconds	Maintume distance to receiver Distance estimation (= dB per doubling of distance) Barries screening Façade reflection Impact at mearest façade Reduction through open window (also minus 2.5 dB for Impact inside open window CAR MOVEMENT FROM DAY Notes source level for single event Duration of single event Duration of 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 Total time duration of combined events Noise source level for assessment time period Total time duration of combined events Noise source level for assessment time period Total time duration of combined events	26 363 3194 Creep LAeq 66 16 900 LAeq 64	0 2 26 -7.5 18 368 3394 Acoustic LAeq lbr 64	11 0 0 5 5 32 -7.5 24 Quality C LA10 70 2 65 1430.0 LA10 lbr 70 0 25	-7.5 27 bijectives LA01 73	dB dB (A) dB(A) dB(A) Seconds Seconds dB(A) dB (A)
Minimum distance to receive  Distance attenuation (4 dB per doubling of distance)  Batries creening  Batries creening  Batries creening  Reade reflection  Impact at nearest façade  CAR MOVEMENT FROM DAY  Notice source level for single event  Duration of single event  Duration of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for single event  Notice source level for sees summent time period  Total time duration of combined events  Notice source level for assessment time period  Totally Timp buttenues correction  Minimum distance to receiver  Distance attenuation (4 dB per doubling of distance)	15 sde)  Creep LAeq  16  900 LAeq  64	0 2 15 -7.5 8 -7.5 8 -2.2 Acoustic LAeq S 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	69 51 0 5 21 -7,5 14 LA10 70 12 65 1430.0 1LA10 1hr 70 0	-7.5 17 Dijectives LA01 73	dB (A)  dB (A)  dB (A)  dB(A)  EB(A)  Seconds  Events  Seconds	Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Barries screening Façoise reflection Impact at nearest facade Impact in side open window (olso minus 2.5 dB for Impact in side open window CAR MOVEMENT FROM DAY Noise source level for single event Duration of single event Duration of single event Outside of the side of th	26 363 3194 Creep LAeq 66 16 900 LAeq 64	0 2 26 -7.5 18 368 3394 Acoustic LAeq lbr 64	11 0 0 5 5 32 -7.5 24	-7.5 27 bijectives LA01 73	dB dB dB(A) dB(A) dB(A) Seconds Events Seconds
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries crienting Barries crienting Brade reflection Impact at a nearest façade Rediscition through open window (also minus 2.5 dB fac) Impact make open window CAR MOVEMENT FROM DAY Notes source level for single event Duration of single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes source level for assessment time period Totally "Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creening	15 sde)  Creep LAeq  16  900 LAeq  64	0 2 15 -7.5 8 Acoustic LAeq 8 LAeq 1hr 64 0 0	69 51 0 -7.5 14 -7.5 14 -7.6 LA10 70 12 65 1430.0 LA10 1hr 70 0 69	-7.5 17 Dijectives LA01 73	dB (A)  dB (A)  dB (A)  dB(A)  EB(A)  Seconds  Events  Seconds	Minimum distance to receiver Distance estimation (= 6 dB per doubling of distance) Barries screening Fragde reflection Impact at a warrest facade Reduction through open window (side minuse 2.5 dB for Impact inside open window  CAR MOVEMENT FROM DAY  Notes source level for single event Duration of single event Duration of single event Reduction of single event Notice source level for single event Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events	26 363 3194 Creep LAeq 66 16 900 LAeq 64	0 2 26 -7.5 18 368 3394 Acoustic LAeq SS 2 LAeq Ibr 64	11 0 0 5 5 24 24 24 25 65 1430.0 LA10 lbr 70 0 25 5 25 25 20 0	-7.5 27 bijectives LA01 73	EB E
Minimum distance to receiver Distance attenuation (4 off per doubling of distance) Barries craeming CAR MOVEMENT FROM DAY Noise source level for single event Duration of single event Duration of single event Duration of single event Noise source level for single event Carries craeming Barries craeming Totali Time duration of combined events Noise source level for accessment time period Totali Time duration of combined events Monitoration distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creening Barries creening	15 sde)  Creep LAeq  16  900 LAeq  64	0 2 15 -7.5 8 Acoustic LAeq 8 LAeq 1hr 64 0 0	69 51 0 0 5 21 -7.5 14  Quality O LA10 70 12 65 14300 1br 70 0 59 59	-7.5 17 Dijectives LA01 73	dB (A)  dB (A)  dB (A)  dB(A)  EB(A)  Seconds  Events  Seconds	Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Barries screening Façode reflection Imagent at nearest façade Reduction through open window (diso minus 2.5 dB for, Imagent inside open window (diso minus 2.5 dB for, Imagent inside open window (diso minus 2.5 dB for, Imagent inside open window Notice source level for single event Dearston of single event Dearston of single event Notice source level for single event Notice source level for successment time period Torist time duration of combined events Notice source level for assessment time period Toristime distribution of the period Distribution of the source of the source of the source level for assessment time period Distribution of the source of the	26 363 3194 Creep LAeq 66 16 900 LAeq 64	0 2 26 -7.5 18 363394 Acoustic LAeq S 2 LAeq 1hr 64 11	11 0 0 5 5 24 24 24 25 65 1430.0 LA10 lbr 70 0 25 5 25 25 20 0	-7.5 27 bijectives LA01 73	EB E
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creening Barries creening Bredie reflection Impact at a searest facade Reduction through open window (also minus 2.5 dB fac) Impact in side open window CAR MOVEMENT FROM DAY Noise source level for single event Duration of 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 Total time duration of combined events Noise source level for assessment time period Totally 1. Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creening	15 side)  Creep LAeq 66 16 5000 LAeq 64 0	0 2 15	699 51 0 1 7 5 21 7 7 14  Quality O 12 22 65 1430.0  LA10 lbr 70 0 699 51 0 5	-7.5 17 bjectives LA01 73 LA01 lhr 73	dB (A) dB (B) dB (A) dB dB (A) Seconds Events Seconds dB (A) dB	Minimum distance to receiver Distance estimation (= 6 dB per doubling of distance) Barries screening Fragde reflection Impact at a warrest facade Reduction through open window (side minuse 2.5 dB for Impact inside open window  CAR MOVEMENT FROM DAY  Notes source level for single event Duration of single event Duration of single event Reduction of single event Notice source level for single event Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events  Notice source level for assessment time period Total time duration of combined events	26 ade)  Creep LAeq 66 6900 LAeq 64 0	0 2 26 -7.5 18 -7.5 18 LAeq lbr 64 11 -7.5 12 12 12 12 12 12 12 12 12 12 12 12 12	11 0 5 5 32 -7.5 24 24 LA10 70 22 65 1430.0 1LA10 1hr 70 0 25 5 5 5	-7,5 27 27 LA01 73 LA01 1hr	EB E

STAGE 1 ACTIVITY NOISE PREDICTION CALCU	LATIONS	(LAND BE S	nd L <sub>x01 the</sub>	kvrh are rep	resented as	N/A if the duration of events do not occur for $10\%$ or $1$	of the 1 h	our period	)		
R3: Existing dwellings to the east CAR MOVEMENT TO NIGHT	Creep		Quality C	Objectives		R4: Future dwelling: to the immediate east  CAR MOVEMENT TO NIGHT	Creep		Quality C	Objectives	
Noise source level for single event	LAeq	LAeq	TA10 70	LA01	dB(A)	Noise source level for single event	LAeq	LAeq 68	TA10 70	LA01 73	dB(A)
Duration of single event	<del>'</del>	,	22	7.5	Seconds	Duration of single event	_		22	13	Seconds
Number of events in the measurement period	- 5		15		Seconds Events	Number of events in the measurement period	- 5		15		Events
Total time duration of combined events	110.0	_	330.0		Seconds	Total time duration of combined events	110.0	_	330.0		Seconds
	LAeq	LAeg lhr	LA10 1hr	LA01 1hr			LAeq	LAeg lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	59	58	N/A	73	6B(A)	Noise source level for assessment time period	59	58	N/A	73	4B(A)
Tonality / Impulsiveness correction	0		0		4B	Tonality / Impulsiveness correction	0		0		dB-
Minimum distance to receiver		3	69		**	Minimum distance to receiver		1	10		
Distance attenuation (-6 dB per doubling of distance)			51		413	Distance attenuation (-6 dB per doubling of distance)			41		613
Barrier screening			1.0		6B	Barrier screening			).0		dB.
Façade reflection			1.5		dB	Façade reflection			1.5		ďΒ
Impact at nearest façade	10	9	N/A	24	dB(A)	Impact at nearest façade	21	19	N/A	35	dB(A)
Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	413	Reduction through open window (also minus 2.5 dB fa	(ade)	-7.5	-7.5	-7.5	éB
Impact inside open window	1.10.03170	1	N/A	17	(B(A)	Impact inside open window	I 333 3373	12	N/A	27	(B(A)
	Creen	Aconsti	Onalitu C	Nia etiene	_		Creen	Aconsti	Onelite	Na estima	_
CAR MOVEMENT FROM NIGHT	Creep LAeq		Quality C		1 1	CAR MOVEMENT FROM NIGHT	Creep LAeq		Quality C		-
Noise source level for single event		SS	70	73		Noise source level for single event		6S	70	73	en can
Noise source seves for single event  Duration of single event	Η,	,	22	/3	dB(A) Seconds	Duration of single event	_		22		dB(A) Seconds
Number of events in the measurement period	5		15		Events	Number of events in the measurement period	5	<del></del>	15		Events
Total time duration of combined events	110.0	_	330.0		Seconds	Total time duration of combined events	110.0	_	330.0		Seconds
	LAeq	LAea lhr	LA10 1hr	LA01 lbr		The second second second	LAeq	LAeg lbr		LA01 1hr	
Noise source level for assessment time period	59	58	N/A	73	iB(A)	Noise source level for assessment time period	59	58	N/A	73	dB(A)
Tonality / Impulsiveness correction	0		0		418	Tonality / Impulsiveness correction	0		0		48
Minimum distance to receiver		3	69		n.	Minimum distance to receiver		1	25		ri.
Distance attenuation (-6 dB per doubling of distance)			51		άB	Distance attenuation (-6 dB per doubling of distance)			42		dB-
Barrier screening			1.0		ďΒ	Barrier screening			0.0		άB
Façade reflection			1.5		ź3	Façade reflection			1.5		éB
Impact at nearest façade	10	9	N/A	24	6B(A)	Impact at nearest façade	19	18	N/A	34	dB(A)
Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB fa	(ade)	-7.5	-7.5	-7.5	ćΒ
Impact inside open window		1	N/A	17	dB(A)	Impact inside open window		11	N/A	26	dB(A)
	10.07158	7.553682					87.76678	65.82508			
TRUCK ENGINE STARTS Loading bay	Creep		Quality C			TRUCK ENGINE STARTS Loading bay	Creep		Quality C		1
	LAeq	LAeq	LA10		$\vdash$		LAeq	LAeq		LA01	-
Noise source level for single event	7	78	81	83	4B(A)	Noise source level for single event	_	78	81	83	6B(A)
Duration of single event			3		Seconds	Duration of single event	<b>.</b>		3		Seconds
Number of events in the measurement period	1	_	2		Events	Number of events in the measurement period	1 20	_	2		Events
Total time duration of combined events	3.0		6.0	1	Secondo	Total time duration of combined events	3.0		6.0	1	Seconds
	LAeq		LAI0 Ihr	LA01 lbr		N	LAeq	LAeq Ihr	LAI0 Ihr	LA01 lhr	
Noise source level for assessment time period	53	50	N/A	N/A	(B(A)	Noise source level for assessment time period	53	50	N/A	N/A	6B(A)
Tonality / Impulsiveness correction Minimum distance to receiver	٠,	Щ,	50		4B	Tonality / Impulsiveness correction Minimum distance to receiver	٠,	Ь,	10		dB.
Distance attenuation (-6 dB per doubling of distance)	_		51			Distance attenuation (-6 dB per doubling of distance)	-		41		-
Barrier screening	_		10		4B	Barrier screening	-		1.0		4B 4B
Façade reflection	_		1.0		68	Facade reflection	-		1.0		4B
Impact at nearest façade	- 5	7	N/A	N/A	dB(A)	Impact at nearest façade	15	17	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	48	Reduction through open window (also minus 2.5 dB fa		-7.5	-7.5	-7.5	48
Impact inside open window		-1	N/A	N/A	6B(A)	Impact inside open window		9	N/A	N/A	dB(A)
											-
TRUCK MOVEMENT TO SITE		Acoustic				TRUCK MOVEMENT TO SITE		Acoustic		Dijectives	
	LAeq	LAeq	LA10	LA01				LAeq	LA10	LA01	
Noise source level for single event		87	89	90	6B(A)	Noise source level for single event		\$7	89	90	6B(A)
Duration of single event			15		Seconds	Duration of single event			45		Seconds
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	90.0		180.0	In care or	Seconds	Total time duration of combined events	90.0		180.0	Ix and an	Seconds
N	LAeq			LA01 1hr			LAeq		LA10 lhr	LA01 1hr	
Noise source level for assessment time period	77	74	N/A	90	dB(A)	Noise source level for assessment time period	77	74	N/A	90	dB(A)
Tonality / Impulsiveness correction		69	0	69	43	Tonality / Impulsiveness correction	-	.10	0	10	43
Minimum distance to receiver		69 51		51	n.	Minimum distance to receiver  Distance attenuation (-6 dB rest doubling of distance)		41		10 41	es are
Distance attenuation (-6 dB per doubling of distance)  Barrier screening		51		0.0	cB cB	Distance attenuation (-6 dB per doubling of distance)		0.0		10	éB éB
Barner screening Façade reflection	<del>- '</del>	.0			dB dB	Barrier screening Façade reflection	<del>+ '</del>	1.0			6B
Façade reflection Impact at nearest façade	28	25	N/A	1 41	6B(A)	Impact at nearest façade	30	36	N/A	52	dB(A)
mapact at nearest raçade Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	eB(A)	Reduction through open window (also minus 2.5 dB fa		-7.5	-7.5	-7.5	dB(A)
Jupact inside open window Impact inside open window	etj	18	N/A	34	dB(A)	Impact inside open window	,ecy	28	N/A	-7.12	dB(A)
		10	. 1/25		- M (.v.)			20	21/25		Profes.
TOTAL SALES AND TOTAL SALES	Creep	Acoustic	Quality C	Diectives		THE CALL OF THE CA	Creep	Acoustic	Quality C	Diectives	$\overline{}$
TRUCK MOVEMENT FROM SITE	LAeq	LAeq	LA10	LA01	1 I	TRUCK MOVEMENT FROM SITE	LAeq	LAeq	LA10		1
Noise source level for single event		37	89	90	iB(A)	Noise source level for single event		87	89	90	iB(A)
Duration of single event		-	15		Seconds	Duration of single event		4	45		Seconds
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	90.0		180.0		Seconds	Total time duration of combined events	90.0		180.0		Seconds
	LAeq	LAeq lhr	LA10 1hr				LAeq	LAeq lhr		LA01 lhr	
Noise source level for assessment time period	77	74	N/A	90	6B(A)	Noise source level for assessment time period	77	74	N/A	90	(B(A)
	0		0		dB	Tonality / Impulsiveness correction	0		0		dB.
Tonality / Impulsiveness correction		69		69		Minimum distance to receiver		25		25	
Tonality / Impulsiveness correction Minimum distance to receiver						Distance attenuation (-6 dB per doubling of distance)	1	42		4.5	415
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)		51		51	413	Distance distanced (*o ab yet dodoing or distance)				42	
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening		51		51	6B 6B	Barrier screening		0.0		1.0	έB
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection	- 0	1.0	.5	0.0	6B 6B	Barrier screening Façade reflection		0.0	1.5	0.0	dB.
Tonality / Impulsiveness correction Minimum distance to receiver Distance artesuation (-6 dB per doubling of distance) Barrier screening Fayade reflection Impact at nearest façade	28	25	.5 N/A	41	éB éB(A)	Barrier screening Façade reflection Impact at nearest façade	38	2 35	1.5 N/A	51	dB dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection	28	1.0	.5	0.0	6B 6B	Barrier screening Façade reflection	38	0.0	1.5	0.0	άB

STAGE 1 ACTIVITY NOISE PREDICTION CALCU	LAHONS							our periou			
R3: Existing dwellings to the east						R4: Future dwellings to the immediate east					
TRUCKS WITH REFRIGERATION UNIT	Creep LAeq	Acoustic LAeq	Quality O			TRUCKS WITH REFRIGERATION UNIT	Creep	Acoustic	Quality C	bjectives LA01	
Noise source level for single event		1	82	\$3	6B(A)	Noise source level for single event		31	82	\$3	6B(A)
Duration of single event	<u> </u>	91	00		Seconds	Duration of single event	<u> </u>	9	00		Seconds
Number of events in the measurement period	900.0		1800.0		Events	Number of events in the measurement period	900.0		1800.0		Events
Total time duration of combined events		T 1		LA01 lhr	Seconda	Total time duration of combined events	900.0 LAeq	T to		LA01 1hr	Seconda
	LAeq	LAeq lhr			$\vdash$						
Noise source level for assessment time period	81	78	82	83	(B(A)	Noise source level for assessment time period	\$1 0	78	82	\$3	(B(A)
Tonality / Impulsiveness correction	0	Щ,	50		έB	Tonality / Impulsiveness correction	U .	Ь,	0		άB
Minimum distance to receiver	_		50		п	Minimum distance to receiver	-	1	10		in .
Distance attenuation (-6 dB per doubling of distance)			0		6B	Distance attenuation (-6 dB per doubling of distance)	-				6B
Refrigeration unit truck directivity / screening Barrier screening	_	0			4B	Refrigeration unit truck directivity / screening Barrier screening	-	0			dB.
	_	2			dB dB	Barrier screening	_	2			48
Façade reflection Impact at nearest façade	33	30	34	35	6B(A)	Façade reflection Impact at nearest façade	43	40	44	45	
Reduction through open window (also minus 2.5 dB faça		7.5	7.5	7.5	68(A)	Reduction through open window (also minus 2.5 dB faç		7.5	7.5	7.6	dB(A)
Impact inside open window	nue)	22	26	27	(B(A)	Impact inside open window	acae)	32	36	37	dB(A)
mapact made open amnow		- 44	20	47	6.B (A.)	mapact mistae open atmosa		32	30	37	EB(A)
	Creen	Acomotic	Ouality O	Minetime	_		Creep	Aconotic	Onelity (	Minetiane	_
TRUCK AIRBRAKES	Creep LAeq	LAeq	LA10	LA01	1	TRUCK AIRBRAKES	LAeq	LAeq	Quality C	T AOI	-
Noise source level for single event		LANG	08	102		Noise source level for single event		) LANG		102	-
	٠,	nu ,	3/8	10.2	dB(A)		١ ،	nu ,	98	102	dB(A)
Duration of single event Number of events in the measurement period	1	,	2 0		Seconds	Duration of single event Number of events in the measurement period	3		0		Seconds
Number of events in the measurement period  Total time duration of combined events	6.0	_	18.0		Events	Number of events in the measurement period  Total time duration of combined events	6.0	-	18.0		Events
1 Olds Time and drivin of Committee events	LAeg	T Aso I'm	LA10 1hr	IT A01 15-	Seconds	1 Orac time distribut of combined events	LAeg	I Ann Ibr		LA01 lhr	Seconds
Noise source level for assessment time period	6S	67	N/A	N/A	6B(A)	Noise source level for assessment time period	6S 6S	67	N/A	N/A	6B(A)
Tonality / Impulsiveness correction	0.5	37	N/A	MA	ed(A)	Tonality / Impulsiveness correction	05	97	15/A	NA	68(A)
Minimum distance to receiver	<del>-</del>		50		cd	Minimum distance to receiver	+ °	1	10		CB.
Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)	_		51			Distance attenuation (-6 dB per doubling of distance)	_		10		en en
Distance attenuation (-0 dB per doubling of distance)  Barrier screening	_	-:			e 0	Distance attenuation (-0 dB per doubling of distance)  Barrier screening	_	0			eB
Façade reflection	-	2			CB CB	Facade reflection	-	2			4B
Impact at nearest façade	10	23	N/A	N/A	6B	Impact at nearest façade	30	34	N/A	N/A	6.17
Reduction through open window (also minus 2.5 dB faça		2.5	7.5	7.5	dB(A)	Reduction through open window (also minus 2.5 dB fac		7.5	7.5	7.6	dB(A)
	nae)	16	N/A	N/A	413	Impact inside open window  [Asso minus 2.5 dis 18]	acae)	26	N/A	N/A	413
Impact inside open window	_	10	N/A	NA	6B(A)	impact inside open window		20	N/A	NA	(B(A)
	C		01:60	Li. dia.	_		Course		O1it C	Main addance	_
TRUCK AIRBRAKES at loading bay	Creep		Quality O		1 1	TRUCK AIRBRAKES at loading bay	Creep		Quality C		-
	LAeq		LA10		$\vdash$			LAeq			-
Noise source level for single event	,	10	98	102	(B(A)	Noise source level for single event	,	20	98	102	(B(A)
Duration of single event	_		2 4		Secondo	Duration of single event	-		1 1		Seconds
Number of events in the measurement period	4.0		\$.0		Events	Number of events in the measurement period	4.0		\$.0		Events
Total time duration of combined events				1	Seconds	Total time duration of combined events				1	Seconds
	LAeq		LA10 1hr		$\vdash$		LAeq		LA10 1hr	LA01 1hr	
Noise source level for assessment time period	66	63	N/A	N/A	řB(A)	Noise source level for assessment time period	66	63	N/A	N/A	iB(A)
Tonality / Impulsiveness correction	U U		50		43	Tonality / Impulsiveness correction	0	L .	10		633
Minimum distance to receiver					п	Minimum distance to receiver	_				п
Distance attenuation (-6 dB per doubling of distance)			51		dB .	Distance attenuation (-6 dB per doubling of distance)	_		¥1		ćB.
Barrier screening		0			έB	Barrier screening	-	0			άB
Façade reflection	18	20		N/A	4B	Façade reflection	28	30		N/A	dB
Impact at nearest façade		-2.5	N/A	N/A	dB(A)	Impact at nearest façade		30	N/A	-7.5	dB(A)
Reduction through open window (also minus 2.5 dB faça	sde)	-7.5	-7.5	-7.5	éB	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-719	₫B
Impact inside open window		13	N/A	N/A	dB(A)	Impact inside open window	_	23	N/A	N/A	dB(A)
	6		0	N. I. atlana	_		6		016-6	N. I. allana	_
TRUCK UNLOADING at loading bay	Creep		Quality O			TRUCK UNLOADING at loading bay	Creep	Acoustic	Quality (		4
National Action and Associate and	LAeq	LAeq	LA10	LA01	$\vdash$	Notes a construction of the construction of th	LAeq	LAeq	LA10		-
Noise source level for single event	-	0	80	82	dB(A)	Noise source level for single event	1 7	13	80	82	dB(A)
Duration of single event	<b>-</b> -	91	00		Seconds	Duration of single event	H .	9	00		Seconds
Number of events in the measurement period Total time duration of combined events	900.0		3600.0		Events	Number of events in the measurement period Total time duration of combined events	900.0	-	3600.0		Events
1 orac ratio duration of complified events		T An - 11		IT 401 11	Seconds	1 olds time duration of combined events	LAeq	T An - 33		T 401 11	Seconds
Noise source level for assessment time period	LAeq 75	LARQ IBT	SO SO	LA01 1hr 82	6B(A)	Noise source level for assessment time period	LAeq 75	LARQ IBT	80 BD	LA01 1hr 82	4B(A)
Noise source sevel for assessment time period Tonality / Impulsiveness correction	75	./3	80	62	68(A)	Noise source sever for assessment time period Tonality / Impulsiveness correction	75	./3	50	52	6B(A)
Tonality / Impulsiveness correction  Minimum distance to receiver	l °		50		cB	Minimum distance to receiver	<u> </u>		10		dB.
			51		11		_		10		
					419	Distance attenuation (-6 dB per doubling of distance)	-		.0		eB
Distance attenuation (-6 dB per doubling of distance)	-	^							U		4B
Barrier screening		0			6B	Barrier screening	_		c		dB.
Barrier screening Façade reflection	27	2	.5	T 20	6B 6B	Façade reflection	2.5	2		40	
Barrier screening Façade reflection Impact at nearest façade	27	32		39	6B 6B(A)	Façade reflection Impact at nearest façade	37		5 47	49	dB(A)
Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç		32 -7.5	.5 -7.5	-7.5	dB(A)	Façade reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB faç		42 -7.5	47 -7.5	-7.5	dB(A)
Barrier screening Façade reflection Impact at nearest façade		32	37		0.07	Façade reflection Impact at nearest façade		2	47		dB(A)
Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç. Impact inside open window	nde)	32 -7.5 24	37 -7.5 29	-7.5 31	dB(A)	Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window	ade)	42 -7.5 34	47 -7.5 39	-7.5 41	dB(A)
Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	creep	32 -7.5 24	37 -7.5 29 Quality O	-7.5 31 Objectives	dB(A)	Façade reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB faç	nde)	42 -7.5 34	47 -7.5 39 Quality C	-7.5 41 Objectives	dB(A)
Barries crieming Façade reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE	Creep	2 32 -7.5 24 Acoustic LAeq	.5 .7.5 .7.5 .29 .Quality O	-7.5 31 Objectives	dB(A) dB dB(A)	Faxabe reflection Impact at nearest faxade Reduction through open window (also minus 2.5 dB fax Impact in suide open window PEOPLE TALKING OUTSIDE	Creep	42 -7.5 34 Acoustic LAeq	47 -7.5 39 Quality C	-7.5 41 Objectives LA01	dB(A) dB dB(A)
Barries creening Façode reflection Impact at nearest façade Rediction through open window (also minus 2 5 dB façi Impact inside open window PEOPLE TALKING OUTSIDE Notice source level for single event	Creep	2 32 -7.5 24 Acoustic LAeq	37 -7.5 29 Quality O LA10 70	-7.5 31 Objectives	dB (A) dB dB (A)	Førder reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB fag Impact inside open window PEOPLE TAIKING OUTSIDE Noise source level for single event	Creep	2 42 -7.5 34 Acoustic LAeq	47 -7.5 39 Quality C LA10 70	-7.5 41 Objectives	6B(A) 6B(A) 6B(A)
Barries creening Façade reflection Impact at a earest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event	Creep	2 32 -7.5 24 Acoustic LAeq	.5 .7.5 .7.5 .29 .Quality O	-7.5 31 Objectives	dB(A) dB(A) dB(A)	Facado reflection Impact at learest facade Reduction through open window (also minus 2 5 dB for Impact it niside open window PEOPLE TAILING OUTSIDE Notice source level for simple event Duration of simple event	Creep	2 42 -7.5 34 Acoustic LAeq	47 -7.5 39 Quality C	-7.5 41 Objectives LA01	dB(A) dB dB(A) dB(A)
Barries creening Façode refliction Impact at nearest façade Rediction through open window (also minus 2 5 dB façi Impact inside open window PEOPLE TALKING OUTSIDE Notice source level for single event Duratino of single event Number of events in the insourcement period	Creep LAeq	2 32 -7.5 24 Acoustic LAeq	37 -7.5 29 Quality O LA10 70	-7.5 31 Objectives	dB(A) dB dB(A)  dB(A)  dB(A)  Seconds Events	Facade reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB fac Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Duration of single event	Creep LAeq	2 42 -7.5 34 Acoustic LAeq	47 -7.5 39 Quality C LA10 70	-7.5 41 Objectives LA01	dB(A) dB dB(A) dB(A)
Barries creening Façade reflection Impact at a earest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event	Creep LAeq 1 600.0	2 32 -7.5 24 Acoustic LAeq 52 61	37 -7.5 29 Quality O LA10 70 00 4 2400.0	-7.5 31 Dijectives LA01 73	dB(A) dB(A) dB(A)	Facado reflection Impact at learest facade Reduction through open window (also minus 2 5 dB for Impact it niside open window PEOPLE TAILING OUTSIDE Notice source level for simple event Duration of simple event	Creep LAeq 1 600.0	2 42 -7.5 34 Acoustic LAeq 52 6	47 -7.5 39 Quality C LA10 70 00 4 2400.0	-7.5 41 Dbjectives LA01 73	dB(A) dB(A) dB(A) dB(A) Seconds Events Seconds
Barries creening Façode refliction Impact at nearest façade Radaction through open window (also minus 2.5 dB faç. Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events	Creep LAeq 1 600.0 LAeq	2 32 -7.5 24 Acoustic LAeq 2 6	37 -7.5 29 Quality O LA10 70 00 4 2400.0 LA10 1hr	-7.5 31 Dijectives LA01 73	dB (A) dB (A) dB (A)  dB (A)  CB(A)  Seconds  Events  Seconds	Facado reflection Impact at an areast facade Reduction through open window (also minus 2.5 dB for Impact inside open window PEOPLE TALKING OUTSIDE Notes source level for single event Duration of single even Duration of single event Total time duration of combined events	Creep LAeq 1 600.0 LAeq	2 42 -7.5 34 Acoustic LAeq 52 6	47 -7.5 39 Quality C IAI0 70 00 4 2400.0 IAI0 Ihr	-7.5 41 Objectives LA01 73	dB(A) dB dB(A)  dB(A)  dB(A)  Seconds Events Seconds
Barries creening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window FEOPLE TALKING OUTSIDE Notes cource level for single event Duration of single event Number of events in the measurement period Tord time duration of combined events Notes cource level for assessment time period	Creep LAeq 1 600.0 LAeq 60	2 32 -7.5 24 Acoustic LAeq 52 61	37 -7.5 29 Quality O LA10 70 00 4 2400 0 LA10 lbr	-7.5 31 Dijectives LA01 73	dB(A) dB dB(A)  dB(A)  dB(A)  Seconds Events	Facade reflection Impact at nearest facade Raduction through open window (also minus 2 5 dB fsp Impact inside open window PEOPLE TALKING OUTSIDE Notice source level for simple event Dizention of simple event Dizention of simple event Number of events in the measurement period Total time desiration of combined events Notice source level for assessment time period	Creep LAeq 1 600.0 LAeq 60	2 42 -7.5 34 Acoustic LAeq 52 6	47 -7.5 39 Quality C IAI0 70 00 4 2400.0 IAI0 Ihr 70	-7.5 41 Dbjectives LA01 73	dB(A) dB(A) dB(A) dB(A) Seconds Events Seconds
Barries creening Façode reflection Impact at nearest façade Redaction through open window (also minus 2.5 dB faç. Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Durstino of single event Durstino of single event Tombro of sevent in the measurement period Total time duration of combined events Noise source level for assessment time period Total time duration of combined events	Creep LAeq 1 600.0 LAeq	2 32 -7.5 24 Acoustic LAeq 52 66 LAeq 1hr 60	5 37 -7.5 29 Quality O LA10 70 00 4 2400.0 LA10 1br 70 0	-7.5 31 Dijectives LA01 73	dB (A) dB (A) dB (A)  dB (A)  CB(A)  Seconds  Events  Seconds	Facade reflection Impact at a nearest facade Reduction through open window (also minus 2.5 dB for Impact in side open window FEOPLE TALKING OUTSIDE 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 sessessment time period Total course for events events Noise source level for sessessment time period Total time duration of continued events	Creep LAeq 1 600.0 LAeq	2 42 -7.5 34 Acoustic LAeq 52 66	47 -7.5 39 Quality ( LA10 70 00 4 2400.0 LA10 lhr 70 0	-7.5 41 Objectives LA01 73	dB(A) dB dB(A)  dB(A)  dB(A)  Seconds Events Seconds
Barries creening Façade refliction Impact at searest façade Impact at searest façade Impact mistide open window (also minus 2.5 dB façi Impact mistide open window PEOPLE TALKING OUTSIDE Notes cource level for single even Duration of single even Duration of single even Tourston of single even Notes cource level for some period Total time duration of combined events Notes cource level for assessment time period Tonality / Impulsiveness correction Minimacun distance to receive	Creep LAeq 1 600.0 LAeq 60	2 32 -7.5 24 Acoustic LAeq 1br 60 3:	.5 .37 7.5 .29 .Quality O LA10 .70 .00 .4 .2400.0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	-7.5 31 Dijectives LA01 73	dB (A) dB (A) dB (A)  dB (A)  CB(A)  Seconds  Events  Seconds	Facade reflection  Impact at nearest facade Raduction through open window (also minus 2 5 dB for Impact is inside open window  FEOPLE TALKING OUTSIDE  Notice source level for simple event Duration of simple event Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Totality Impulsiveness correction  Minimum distance to teceiver	Creep LAeq 1 600.0 LAeq 60	2 42 -7.5 34 Acoustic LAeq 1br 60	47 -7.5 39 Quality ( LA10 70 00 4 2400.0 LA10 1hr 0	-7.5 41 Objectives LA01 73	dB(A) dB dB(A)  dB(A)  dB(A)  Seconds Events Seconds
Barries creening Façode reflection Impact at nearest façade Redaction through open window (also minus 2.5 dB faç- Impact inside open window PEOPLE TALKING OUTSIDE Notice course level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notice ource level for accessment time period Total time duration of combined events Mosice source level for accessment time period Totalmy Timpulsiveness correction Minimized distance to receiver Distance arteriosation (-6 dB) per doubling of distance)	Creep LAeq 1 600.0 LAeq 60	2 32 -7.5 24 Acoustic LAeq 1br 60 33 -1	.5 .37 .7.5 .29 	-7.5 31 Dijectives LA01 73	dB (A) dB (A) dB (A)  dB (A)  CB(A)  Seconds  Events  Seconds	Facade reflection Impact at an earest facade Reduction through open window (also minus 2 5 dB for Impact in itside open window PFOPLETALKING OUTSIDE Noise source level for simple event Dumber of events in the measurement period Total time duration of combined events 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 referent	Creep LAeq 1 600.0 LAeq 60	2 42 -7.5 34 Acoustic LAeq 1br 60	47 -7.5 39 Quality C 1A10 70 00 4 2400.0 1A10 1hr 70 0	-7.5 41 Objectives LA01 73	dB(A) dB dB(A)  dB(A)  dB(A)  Seconds Events Seconds
Barries exceeding Fagode refliction Impact at nearest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window PEOPLE TALKING OUTSIDE Notes course level for single event Duration of single event Duration of single event Total time duration of combined events Notes course level for assessment time period Total time duration of combined events Notes course level for assessment time period Totality Timpulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries receivenia.	Creep LAeq 1 600.0 LAeq 60	2 32 -7.5 24 Acoustic LAeq 52 60 50 50 50 50 50 50 50 50 50 50 50 50 50	37 -7.5 29 Quality O LA10 70 00 4 2400.0 LA10 lbr 70 0 50	-7.5 31 Dijectives LA01 73	dB(A)  dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB(A)  dB  dB  dB  dB	Facade reflection Impact at nearest facade Reduction through open window (also minus 2 5 dB for Impact inside open window FEOPLE TALKING OUTSIDE Notes source level for simple event Duration of simple event Number of events in the measurement period Total time duration of combined events Notes source level for assessment time period Total time duration of combined events Notes source level for assessment time period Totality / Impulsiveness correction Minimum distance to teceiver Distance attenuation (4 dB per doubling of distance) Barties screening	Creep LAeq 1 600.0 LAeq 60	2 42 -7.5 34 Acoustic LAeq 52 60 50 50 50 50 50 50 50 50 50 50 50 50 50	47 -7.5 39 LA10 70 00 4 2400.0 LA10 1hr 70 0	-7.5 41 Objectives LA01 73	dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB(A)
Barries creening Façade refliction Impact at nearest façade Rediction (November 1) Impact at nearest façade Rediction (November 1) Impact inside open window (slice minus 2.5 dB faç Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events  Notice ource level for accessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Façade reflection	Creep LAeq 1 600.0 LAeq 60 0	2 32 -7.5 24 Acoustic LAeq 52 66 1 LAeq 1hr 60 3:	37 -7.5 29 Quality O LA10 70 00 4 2400 0 LA10 lbr 70 0 50 51	-7.5 31 bjectives LA01 73 LA01 lhr 73	dB(A)  dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB  dB  dB  dB	Facade reflection Impact at learnest facade Reduction through open window (also minus 2 5 dB for Ringact inside open window PEOPLE TALKING OUTSIDE Notice source level for simple event Dumber of events in the measurement period Total time duration of combined events Notice source level for sissessment time period Total time duration of combined events Notice source level for issessment time period Totality / Impulsiveness correction Maintonan distance to receive Distance extremation (-6 dB per doubling of distance) Barrier screening Barrier screening	Creep   LAeq	2 42 -7.5 34 Acoustic LAeq 52 66 LAeq 1hr 60 9 -1 10 0 2	47 -7.5 39 LA10 70 00 4 2400.0 LA10 1hs 70 0 0 0 0 5	7.5 41 Objectives LA01 73 LA01 lhr	dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB(A)
Barries exceeding Fagode refliction Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Duration of single event Total time duration of combined events Noise source level for assessment time period Total time duration of combined events Noise source level for assessment time period Total time duration of combined events Distance streamston (-6 dB per doubling of distance) Barries recenting Façade refliction Impact at searest façade	Creep LAeq  1 600.0 LAeq 60 0	2 32 -7.5 24 Acoustic LAeq 52 66 12 12 12	5 37 -7.5 29 29 LA10 70 00 4 2400.0 LA10 1br 70 0 50 50 51 0 5 5 22	7.5 31 Dejectives LA01 73 LA01 lhr 73	dB(A)  dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB(A)  dB  dB  dB  dB	Facade reflection  Impact at nearest facade Reduction through open window (also minus 2 5 dB for Impact inside open window  PEOPLE TALKING OUTSIDE  Notes cource level for simple event Duration of simple event Duration of simple event Number of events in the measurement period Total time duration of combined events  Notice source level for assessment time period Totality Impulsivements correction Minimum distance to receive the Distance attenuation (4 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	Creep LAeq 60 0	2 42 -7.5 34 Acoustic LAeq 52 66	47 -7.5 39 Quality C IA10 70 00 4 2400.0 LA10 1hr 70 0 0 0 5 39	7.5 41  Dijectives  LA01  73  LA01 lbr  73	dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB(A)
Barries creening Façade refliction Impact at nearest façade Rediction (November 1) Impact at nearest façade Rediction (November 1) Impact inside open window (slice minus 2.5 dB faç Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events  Notice ource level for accessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Façade reflection	Creep LAeq  1 600.0 LAeq 60 0	2 32 -7.5 24 Acoustic LAeq 52 66 1 LAeq 1hr 60 3:	37 -7.5 29 Quality O LA10 70 00 4 2400 0 LA10 lbr 70 0 50 51	-7.5 31 bjectives LA01 73 LA01 lhr 73	dB(A)  dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB  dB  dB  dB	Facade reflection Impact at learnest facade Reduction through open window (also minus 2 5 dB for Ringact inside open window PEOPLE TALKING OUTSIDE Notice source level for simple event Dumber of events in the measurement period Total time duration of combined events Notice source level for sissessment time period Total time duration of combined events Notice source level for issessment time period Totality / Impulsiveness correction Maintonan distance to receive Distance extremation (-6 dB per doubling of distance) Barrier screening Barrier screening	Creep LAeq 60 0	2 42 -7.5 34 Acoustic LAeq 52 66 LAeq 1hr 60 9 -1 10 0 2	47 -7.5 39 LA10 70 00 4 2400.0 LA10 1hs 70 0 0 0 0 5	7.5 41 Objectives LA01 73 LA01 lhr	dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB(A)

R3: Existing dwellings to the east						R4: Future dwelling: to the immediate east					
WAS TE COLLECTION INDUSTRIAL BIN - Service	Creep	Acoustic	Quality C	bjectives		WASTE COLLECTION INDUSTRIAL BIN - Service	Creep	Acoustic	Quality C	bjectives	
	LAeq	LAeq	LA10	LA01	1		LAeq	LAeq	LA10	LA01	1
Noise source level for single event	9	92	97	102	6B(A)	Noise source level for single event		92	97	102	6B(A)
Duration of single event		1	\$0		Seconds	Duration of single event		1	80		Seconds
Number of events in the measurement period	1		1		Events	Number of events in the measurement period	1		1		Events
Total time duration of combined events	180.0		180.0		Seconda	Total time duration of combined events	180.0		180.0		Seconda
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	85	79	N/A	102	(B(A)	Noise source level for assessment time period	85	79	N/A	102	(B(A)
Tonality / Impulsiveness correction	0		5		άB	Tonality / Impulsiveness correction	0		5		άB
Minimum distance to receiver		3	50		n	Minimum distance to receiver		1	10		
Distance attenuation (-6 dB per doubling of distance)		-	51		6B	Distance attenuation (-6 dB per doubling of distance)			41		éB.
Barrier screening			0		éB.	Barrier screening			0		dB.
Façade reflection		2	5		έB	Façade reflection		2	.5		éB-
Impact at nearest façade	37	36	N/A	59	dB(A)	Impact at nearest façade	47	46	N/A	69	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	6B	Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	6B
Impact inside open window		28	N/A	51	dB(A)	Impact inside open window		38	N/A	61	dB(A)
	Creep	Aconstic	Ouality C	hiections			Creep	Aconstic	Ouality C	hiectives	_
ALFRES CO DINING	LAeg	LAeg	LA10	LA01	1	ALFRES CO DINING	LAeq	LAeg	LA10	LA01	1
Noise source level for single event		75	78	82	(B(A)	Noise source level for single event		75	78	82	(B(A)
Duration of single event	_		20	0.5	Seconds	Duration of single event			20	0.0	Seconda
Number of events in the measurement period	1		4		Events	Number of events in the measurement period	1	<del></del>	4		Events
Total time duration of combined events	720.0	_	2880.0		Seconds	Total time duration of combined events	720.0	_	2880.0		Seconds
Total table document of contonical events	LAeq	LAeg lhr	LA10 1hr	I.A01 1hr		Total falls distributed of companies of the s	LAeq	LAeg lhr	LA10 1hr	LA01 1hr	
Noise source level for assessment time period	74	74	78	82	(B(A)	Noise source level for assessment time period	74	74	78	82	(B(A)
Tonality / Impulsiveness correction	0		- 5		4B	Tonality / Impulsiveness correction	0		5		éB.
Minimum distance to receiver		3	50		**	Minimum distance to receiver			15		
Distance attenuation (-6 dB per doubling of distance)		-	51		ďΒ	Distance attenuation (-6 dB per doubling of distance)		-	40		éB-
Barrier screening		0	.0		413	Barrier screening		0	.0		en-
		2	.5		6B	Façade reflection		2	.5		ďВ
Façade reflection											_
	26	31	35	39	dB(A)	Impact at nearest façade	37	42	46	50	dB(A)
Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	dB(A) dB	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	dB(A) dB

STAGE 1 ACTIVITY NOISE PREDICTION CALCU	LATIONS	: (L <sub>A10 lbr</sub> a	nd L <sub>sot the</sub>	kveb are rep	resented as	STAGE 1 ACTIVITY NOISE PREDICTION CALCU	LATIONS	(L <sub>A19 lbr</sub> a	nd L <sub>ast the</sub>	nck are rep	presente
RS: Existing dwellings to the south across Rifle Rang	e Road					R5: Existing dwellings to the south across Rifle Ran	ge Road				
AR DOOR CLOSURE near building DAY / EVEN	Creep LAeq	Acoustic LAeq	Quality C	LA01		CAR ENGINE STARTS at bowsers DAY/EVEN	Creep LAeq	Acoustic LAeq	Quality C	LA01	
Voise source level for single event	Lary	5	77	80	dB(A)	Noise source level for single event	Lineq	3	74	75	48(A)
uration of single event	15	1	.5		Seconds	Duration of single event	18		55		Seconds
umber of events in the measurement period otal time duration of combined events	22.5	_	90.0		Events	Number of events in the measurement period Total time duration of combined events	55.0		165.0		Events
oral time duration of complined events	LAeq	T.Aeg 1hr		LA01 1hr	Seconds	1 otal time diffation of comomed events	LAeq	LAca lhr	LA10 1hr	II.A01 1hr	Seconda
Toise source level for assessment time period	59	59	N/A	80	dB(A)	Noise source level for assessment time period	61	60	N/A	75	48(A)
onality / Impulsiveness correction	0		5		dB	Tonality / Impulsiveness correction	0		0		49
dinimum distance to receiver			72		re.	Minimum distance to receiver			0		6
Distance attenuation (-6 dB per doubling of distance)			37		dB	Distance attenuation (-6 dB per doubling of distance)			38		dB
Onsite building screening Façade reflection			.0		dB	Barrier screening Façade reflection	_		.0		415
mpact at nearest façade	24	29	N/A	50	dB (A)	Impact at nearest façade	25	24	N/A	39	68 (A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	dB	Reduction through open window (also minus 2.5 dB fac		-7.5	-7.5	-7.5	48
mpact inside open window		22	N/A	43	dB(A)	Impact inside open window		17	N/A	32	48 (A)
	271.1908	857,5807					338,7975	254.0981			
AR DOOR CLOSURE at bowsers DAY / EVEN	Creep	Acoustic	Quality C	LA01	1 1	CAR ENGINE STARTS at building NIGHT	Creep LAeq	Acoustic LAeq	Quality C	LA01	-
Toise source level for single event	2000	5	77	80	dB(A)	Noise source level for single event		3	74	75	dB(A)
Ouration of single event		1	.5		Seconds	Duration of single event			3		Secondo
lumber of events in the measurement period	28		110		Events	Number of events in the measurement period	3		9		Events
otal time duration of combined events	41.3		165.0	Tw	Seconds	Total time duration of combined events	9.0	* * * * *	27.0	T 101 1	Secondi
Joing course level for accomment time a mind	LAeq 62	LAeq 1hr		LA01 lhr		Naire corres level for approximant time period	LAeq	LAeq lhr	LA10 1hr N/A	LA01 lhr N/A	_
Joise source level for assessment time period 'onality / Impulsiveness correction	02	02	N/A	50	dB(A)	Noise source level for assessment time period Tonality / Impulsiveness correction	0	32	N/A 0	NA	48(A)
Cinimum distance to receiver	,		0 0		m	Minimum distance to receiver	Ť	-	12		60
Distance attenuation (-6 dB per doubling of distance)			38		dB	Distance attenuation (-6 dB per doubling of distance)		-	37		dB
arrier screening			.0		dB	Onsite building screening			.0		433
açade reflection			.5		dΒ	Façade reflection			.5		43
mpact at mearest façade	26	31	N/A	49	dB(A)	Impact at nearest façade	18	-7.5	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faça	ide)	-7.5 24	-7.5 N/A	-7.5 42	dB	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5 N/A	-7.5 N/A	dB (A)
inpact inside open window	402.7184	1073 507	NA	42	dB(A)	Impact inside open window	68 44304	51 33206	N/A	D/A	eB(A)
AD DOOD CLOSIDE build - NICHT	Creep	Acoustic	Quality C	bjectives		CAR ENGINE STARTS at bowsers NIGHT	Creep	Acoustic	Quality C	bjectives	-
CAR DOOR CLOSURE near building NIGHT	LAeq	LAeq	LA10	LA01	1 I	CARENGINE STARTS III DOWSELS NIGHT	LAeq	LAeq	LA10	LA01	1
Voise source level for single event	1	5	77	80	dB(A)	Noise source level for single event	7	3	74	75	dB(A)
Duration of single event		1	.5		Seconds	Duration of single event	L.		3		Secondo
lumber of events in the measurement period	7.5		22.5		Events	Number of events in the measurement period	9.0		27.0		Events
otal time duration of combined events	LAeq	T Acc 1hr		LA01 lhr	Seconds	Total time duration of combined events	LAeq	I Asa lbr	LA10 lhr	T 401 1br	Secondi
Voise source level for assessment time period	54 54	53	N/A	N/A	dB/A)	Noise source level for assessment time period	53	52	N/A	N/A	48(A)
onality / Impulsiveness correction	0		5		dB	Tonality / Impulsiveness correction	0		0		49
Linimum distance to receiver			2		m	Minimum distance to receiver			0		81
Distance attenuation (-6 dB per doubling of distance)			37		dB	Distance attenuation (-6 dB per doubling of distance)			38		4B
Onsite building screening			.0		dΒ	Barrier screening	_		.0		dB
Façade reflection	20	23	.5 N/A	N/A	dB (A)	Façade reflection Impact at nearest façade	17	16	N/A	N/A	48 (A)
impact at mearest façade Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	4B(A)
mpact inside open window	uc)	16	N/A	N/A	dB(A)	Impact inside open window	.macy	9	N/A	N/A	dB(A)
	90.39695	214.3952					55.43959	41.57969			
CAR DOOR CLOSURE at bowsers NIGHT	Creep		Quality C		. 1	CARMOVEMENT TO DAY	Creep		Quality C		
Noise source level for single event	LAeq	LAeq	1A10	LA01 80	dB(A)	Noise source level for single event	LAeq	LAeq S	TA10 70	LA01 73	(B(A)
Ouration of single event	· ·	1	.5	30	dB(A) Seconds	Duration of single event	Η,		12	13	dB(A) Seconds
Sumber of events in the measurement period	7	Г.	21		Events	Number of events in the measurement period	16		65		Events
otal time duration of combined events	10.5		31.5		Seconds	Total time duration of combined events	357.5		1430.0		Seconda
	LAeq	LAeq lhr		LA01 lhr			LAeq		LA10 1hr	LA01 lhr	
Joise source level for assessment time period	56 0	54	N/A	N/A	dB(A)	Noise source level for assessment time period	64	64	70	73	dB(A)
onality / Impulsiveness correction  Inimum distance to receiver	U	Щ,	5		dB	Tonality / Impulsiveness correction Minimum dictance to receiver	-	L	0 8		dB
Distance attenuation (-6 dB per doubling of distance)			38		in.	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_		35		la
arrier screening			.0		dB	Barrier screening			.0		43
açade reflection		2	.5		dΒ	Façade reflection		2	.5		dB
mpact at mearest façade	20	24	N/A	N/A	dB(A)	Impact at nearest façade	31	31	37	40	48 (A)
leduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	dB	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	43
mpact inside open window	103-5101	243 1241	N/A	N/A	dB(A)	Impact inside open window	1304 002	1304 883	30	33	dB(A)
	Creep	Acoustic	Quality C	hiectives	$\vdash$		Creep	Acoustic	Quality C	biectives	1
AR ENGINE STARTS at building DAY / EVEN	LAeq	LAeq	LA10	LA01	1 1	CAR MOVEMENT FROM DAY	LAeq	LAeq	LA10	LA01	1
oise source level for single event	7	73	74	75	dB(A)	Noise source level for single event		S	70	73	4B(A)
turation of single event			3		Seconds	Duration of single event		2	12		Secondi
umber of events in the measurement period	10		30		Events	Number of events in the measurement period	16		65		Events
otal time duration of combined events	30.0	T A 11	90.0	T 401 7	Seconda	Total time duration of combined events	900	T 1 12	1430.0	T 101 Y	Secondo
	LAeq 58	LAeq 1hr		LA01 1hr		Naise course land for accessment time period	LAeq 64	LAeq lhr 64	LA10 1hr 70		1
	58	37	N/A 0	/3	dB(A)	Noise source level for assessment time period Tonality / Impulsiveness correction	04	04	70	73	MB(A)
		٠.	12		m .	Minimum distance to receiver	Ť	1	00		110
onality / Impulsiveness correction			37		dB	Distance attenuation (-6 dB per doubling of distance)			40		48
onality / Impulsiveness correction Immum distance to receiver vistance attenuation (-6 dB per doubling of distance)		-				Barrier screening	_				48
onality / Impulsiveness correction  Iminum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Insite building screening		0	.0		dB	Darret screening		0	.0		
'onality / Impulsiveness correction (Iminum distance to receiver Distance attenuation (-6 dB per doubling of distance) Distance attenuation (-8 dB per doubling of distance) Distance building screening (acade reflection		0	.5		dB	Façade reflection		2	.5		43
Ooise source level for assessment time period roality / Impulsiveness correction (Immuna distance to receiver Distance attenuation (-6 dB per doubling of distance) Distance attenuation (-6 dB per doubling of distance) Distance published of distance pointe building screening regade reflection impact at nearest façade	24	22	.5 N/A	40		Façade reflection Impact at nearest façade	26	26	33	36	dB dB(A)
'onality / Impulsiveness correction (Iminum distance to receiver Distance attenuation (-6 dB per doubling of distance) Distance attenuation (-8 dB per doubling of distance) Distance building screening (acade reflection		0	.5	40 -7.5 33	dB	Façade reflection		2	.5	36 -7.5 28	dB dB(A) dB

S: Existing dwellings to the south across Rifle Ran						R5: Existing dwellings to the south across Rifle Ran	ge Road				
CAR MOVEMENT TO NIGHT	Creep LAeq	Acoustic LAeg	Quality C	Dijectives LA01	-	TRUCKS WITH REFRIGERATION UNIT	Creep LAeq	Acoustic LAeq	Quality C		-
Noise source level for single event		S S	70	73	dB(A)	Noise source level for single event		l Larry	82	83	dB(A)
Ouration of single event	<del>-</del>		2		Seconds	Duration of single event		9	00		Secon
lumber of events in the measurement period	- 5		15		Events	Number of events in the measurement period	1		2		Events
otal time duration of combined events	110.0		330.0		Seconds	Total time duration of combined events	900.0		1800.0		Secon
	LAeq		LA10 lhr				LAeq	LAeq lhr		LA01 lhr	
loise source level for assessment time period	59	58	N/A	73	dB(A)	Noise source level for assessment time period	81	78	82	83	dB(A)
onality / Impulsiveness correction	0		0		dB	Tonality / Impulsiveness correction	0	L	0		dB
diminum distance to receiver	_	5			m	Minimum distance to receiver		1			m
Distance attenuation (-6 dB per doubling of distance)			35		dB	Distance attenuation (-6 dB per doubling of distance)	_	-	41		dΒ
arrier screening	—	2	0		dB	Refrigeration unit truck directivity / screening			.0		dB dB
açade reflection	26	25	N/A	40	dB	Barrier screening Façade reflection	_	2			dB
mpact at nearest façade Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	dB(A)	Impact at nearest façade	43	40	44	45	dB(A
mpact inside open window (also minus 2.5 dis taç.	state)	17	N/A	33	dB(A)	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	dB
inpact inside open vindow	107.6563	305.7400	IV/A	33	dB(A)	Impact inside open window	inde)	32	36	37	dB(A
	Creen	Acoustic	Quality O	hiactives		ampret made open made n				-	Paradis.
CAR MOVEMENT FROM NIGHT	LAeq	LAeq	IA10	LA01	1	TRUCK AIRBRAKES	Creep	Acoustic	Ouality C	Diectives	-
Voise source level for single event	Lineq /	8	70	73	dB(A)	TRUCK AIRBRAKES		LAeq			1
Ouration of single event	<del>—</del> "		2		Seconds	Noise source level for single event		0	98	102	dB(A)
Tumber of events in the measurement period	5		15		Events	Duration of single event			2		Secon
otal time duration of combined events	110.0		330.0		Seconds	Number of events in the measurement period	3		9		Events
	LAeq	LAeq lhr	LA10 1hr	LA01 1hr	- COLUMNS	Total time duration of combined events	6.0		18.0		Secon
loise source level for assessment time period	59	58	N/A	73	dB(A)		LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
onality / Impulsiveness correction	0		0		dB dB	Noise source level for assessment time period	68	67		N/A	dB(A)
Inimum distance to receiver		1			m	Tonality / Impulsiveness correction	0		5		dΒ
Distance attenuation (-6 dB per doubling of distance)			10		dB	Minimum distance to receiver			8		m
arrier screening	$\overline{}$		.0		dB	Distance attenuation (-6 dB per doubling of distance)			35		dB
açade reflection		2	5		dB	Barrier screening			.0		dΒ
mpact at mearest façade	21	20	N/A	36	dB(A)	Façade reflection		2	.5		dΒ
Reduction through open window (also minus 2.5 dB faça	ade)	-7.5	-7.5	-7.5	dB	Impact at nearest façade	35	39	N/A	N/A	dB(A
mpact inside open window		13	N/A	28	dB(A)	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	dB
and the second s	137.1356	102.8517	2.022	2.0	(A)	Impact inside open window		32	N/A	N/A	dB(A
TOTAL CONTROL OF ADDRESS AND A STATE OF A DECEMBER OF A DE	Creep	Acoustic	Quality C	bjectives							
RUCK ENGINE STARTS Loading bay	LAeq	LAeq	LA10	LA01	1	TRUCK AIRBRAKES at loading bay	Creep	Acoustic	Quality C	Objectives	$\Box$
Joise source level for single event	7	8	81	83	dB(A)		LAeq	LAeq	LA10	LA01	1
Ouration of single event	-		3		Seconds	Noise source level for single event	9	0	98	102	dB(A)
Sumber of events in the measurement period	1		2		Events	Duration of single event			2		Secon
otal time duration of combined events	3.0		6.0		Seconds	Number of events in the measurement period	2		4		Events
	LAeq	LAeq lhr	LA10 lhr	LA01 1hr		Total time duration of combined events	4.0		8.0		Secon
Noise source level for assessment time period	53	50	N/A	N/A	dB(A)		LAeq	LAeq lhr		LA01 lhr	
onality / Impulsiveness correction	0		5		dB	Noise source level for assessment time period	66	63	N/A	N/A	dB(A)
Cinimum distance to receiver	$\overline{}$	1	07		m	Tonality / Impulsiveness correction	0		5		dΒ
Distance attenuation (-6 dB per doubling of distance)		-	11		dB	Minimum distance to receiver		1			m.
Barrier screening		0	.0		dB	Distance attenuation (-6 dB per doubling of distance)			41		dB
açade reflection		2	.5		dB	Barrier screening			.0		dΒ
mpact at nearest façade	15	17	N/A	N/A	dB(A)	Façade reflection		2			dB
leduction through open window (also minus 2.5 dB faça	ade)	-7.5	-7.5	-7.5	dB	Impact at nearest façade	28	30	N/A	N/A	dB(A
mpact inside open window		10	N/A	N/A	dB(A)	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	dΒ
						Impact inside open window		23	N/A	N/A	dB(A
RUCK MOVEMENT TO SITE	Creep	Acoustic	Quality 0								-
	LAeq	LAeq	LA10	LA01		TRUCK UNLOADING at loading bay	Creep		Quality C		4
Voise source level for single event	8		89	90	dB(A)		LAeq	LAeq	LA10	LA01	1
Ouration of single event		. 4	5		Seconds	Noise source level for single event	1	2	SO SO	\$2	dB(A)
lumber of events in the measurement period	2		4		Events	Duration of single event	,	- 9	00		Secon
otal time duration of combined events	90.0		180.0		Seconds	Number of events in the measurement period	900.0	<del></del>	3600.0		Event
	LAeq	LAeq lhr		LA01 1hr		Total time duration of combined events	P - 0	T As - 11	2000.0	IT AOT TO	Secon
loise source level for assessment time period	77	74	N/A	90	dB(A)	Noise source level for assessment time period	LAeq 75	LANG INT	LAI0 Ihr	LA01 lhr	
onality / Impulsiveness correction	0		0		dB		10	/3	- 50	52	dB(A)
finimum distance to receiver		8		8	m	Tonality / Impulsiveness correction	U	1	07		d15
Distance attenuation (-6 dB per doubling of distance)		35		35	dB	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	-		41		m. dB
Barrier screening	0	.0	_ 0	1.0	dB		_		+1		dis .
açade reflection	<u> </u>	2	.5		dB	Barrier screening	_	2			2115
mpact at nearest façade	44	41	N/A	57	dB(A)	Façade reflection Impact at nearest façade	37	42	47	49	dB dB(A
teduction through open window (also minus 2.5 dB faç	Mie)	-7.5	-7.5	-7.5	dΒ	Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	dB(A
mpact inside open window		34	N/A	50	dB(A)	Impact inside open window (also minus 2.5 dis raç	out)	34	39	41	dB(A
	Const	A	0	N. Continue		angust annue open mason		- 54	33	**	Part A
RUCK MOVEMENT FROM SITE	Creep	Acoustic	Quality 0		4		Creep	Aconstic	Ouality C	Dhiectives	-
City and the state of the state	LAeq	LAeq	LA10	LA01 90		PEOPLE TALKING OUTSIDE	LAeq	LAeq			1
loise source level for single event	F 8	17	89	90	dB(A)	Noise source level for single event		2	70	73	dB(A)
turation of single event	-	-	5		Seconds	Duration of single event	<del></del>		00		Secon
umber of events in the measurement period	90.0		180.0		Events	Number of events in the measurement period	1	ı –	4		-
otal time duration of combined events		74		T 402	Seconds	Total time duration of combined events	600.0		2400.0		Event Secon
	LAeq	LAeq 1hr	LA10 lhr	LA01 1hr		To the name detector of contoured events	LAeq	I Asa lbr		LA01 lhr	
oise source level for assessment time period	77	74	N/A	90	dB(A)	Noise source level for assessment time period	60 60	LANG IBT	70	73	dB(A)
	0		0		dB		0	- 00	0	13	dB(A)
onality / Impulsiveness correction		00		00	m	Tonality / Impulsiveness correction Minimum distance to receiver	, v	ь.	U 50		elB
Imimum distance to receiver		40		40	dB	Distance attenuation (-6 dB per doubling of distance)	_		36		m dB
Amimum distance to receiver Distance attenuation (-6 dB per doubling of distance)					dB		1				-
finimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	0	.0	0	1.0	GR				0		
(mimmm distance to receiver Distance attenuation (-6 dB per doubling of distance) larrier screening açade reflection	0	2	.5		dB	Barrier screening			.0		dB
"onality / Impulsiveness correction diminum distance to receive bistance attenuation (-6 dB per doubling of distance) larrier screening grade reflection impact at nearest façade	40	36	5 N/A	53	dB dB(A)	Façade reflection	25	2	5	Ι 40	dΒ
(mimmm distance to receiver Distance attenuation (-6 dB per doubling of distance) larrier screening açade reflection	40	2	.5		dB		27			40	-

R5: Existing dwellings to the south across Rifle Rang	re Pond				
-	6	Acoustic	Quality Q	hiectives	
WAS TE COLLECTION INDUSTRIAL BIN - Service	LAeq	LAea	LA10	T.A01	1
Noise source level for single event		92	97	102	4B(A)
Duration of single event		1	80		Seconds
Number of events in the measurement period	1		1		Events
Total time duration of combined events	180.0		180.0		Seconde
	LAeq	LAeq lhr	LA10 lhr	LA01 lhr	
Noise source level for assessment time period	85	79	N/A	102	dB(A)
Tonality / Impulsiveness correction	0		5		415
Minimum distance to receiver		1	07		ю
Distance attenuation (-6 dB per doubling of distance)		-	<b>1</b> 1		48
Barrier screening			0		dB
Façade reflection		2	.5		419
Impact at nearest façade	47	46	N/A	69	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	dB
Impact inside open window		38	N/A	61	48 (A)
ALFRES CO DINING	Creep	Acoustic	Quality O	bjectives	_
ALFRESCO BEVING	LAeq	LAeq	LA10	LA01	1
Noise source level for single event		75	78	82	48(A)
Duration of single event		7.	20		Seconds
Number of events in the measurement period	1		4		Events
Total time duration of combined events	720.0		2880.0		Seconde
	LAeq	LAeq lhr	LA10 lhr	LA01 lhr	
Noise source level for assessment time period	74	74	78	82	dB(A)
Tonality / Impulsiveness correction	0		5		dB
Minimum distance to receiver		7	15		11
Distance attenuation (-6 dB per doubling of distance)			38		48
Barrier screening			.0		dΒ
		2	.5		435
Façade reflection					
Impact at nearest façade	39	44	48	52	4B(A)
Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open window		-7.5 37	-7.5	-7.5 44	4B(A) 4B

STAGE 1 MECH PLANT NOISE PREDICTION CALCUL	ATIONS:				
R1: Existing Single-storey dwellings to the north			R2: Future dwellings to the immediate north		
Kitchen exhaust fan units	62	dB(A) @ 3m	Kitchen exhaust fan units	62	dB(A) @ 3n
Number of units	2	units	Number of units	2	units
Foilet Exhaust Units	52	dB(A) @ 3m	Toilet Exhaust Units	52	dB(A) @ 3n
Number of units	4	umits	Number of units	4	units
l'otal noise level	66	dB(A) @ 3m	Total noise level	66	dB(A) @ 3r
Distance to receiver	135	m	Distance to receiver	78	m
Distance attenuation (-6 dB per doubling of distance)	-33	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-28	dB(A)
Acoustic attenuator	-12	dB(A)	Acoustic attenuator	-12	dB(A)
Roof screening	0	dB(A)	Roof screening	0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
inpact at façade	23	dB(A)	Impact at façade	28	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	16	dB(A)	Impact inside open window	21	dB(A)
A/C Units	60	dB(A) @ 3m	A/C Units	60	dB(A) @ 31
Number of units	2	units	Number of units	2	units
Refrig Units	62	dB(A) @ 3m	Refrig Units	62	dB(A) @ 31
Number of units	1	units	Number of units	1	units
Cotal noise level	66	dB(A) @ 3m	Total noise level	66	dB(A) @ 31
Distance to receiver	130	m	Distance to receiver	73	m
Distance attenuation (-6 dB per doubling of distance)	-33	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-28	dB(A)
Acoustic barrier / enclosure	-12	dB(A)	Acoustic barrier / enclosure	-12	dB(A)
Barrier screening	0.0	dB(A)	Barrier screening	0.0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
mpact at façade	23	dB(A)	Impact at façade	28	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
mpact inside open window	16	dB(A)	Impact inside open window	21	dB(A)
Combined impact at façade	26	dB(A)	Combined impact at façade	31	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	19	dB(A)	Impact inside open window	24	dB(A)

STAGE 1 MECH PLANT NO ISE PREDICTION CALCUL.	ATIONS:				
R3: Existing dwellings to the east			R4: Future dwellings to the immediate east		
Kitchen exhaust fan units	62	dB(A) @ 3m	Kitchen exhaust fan units	62	dB(A) @ 3r
Number of units	2	umits	Number of units	2	units
Toilet Exhaust Units	52	dB(A) @ 3m	Toilet Exhaust Units	52	dB(A) @ 31
Number of units	4	umits	Number of units	4	units
Total noise level	66	dB(A) @ 3m	Total noise level	66	dB(A) @ 31
Distance to receiver	345	m	Distance to receiver	95	m
Distance attenuation (-6 dB per doubling of distance)	-41	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-30	dB(A)
Acoustic attenuator	-12	dB(A)	Acoustic attenuator	-12	dB(A)
Roof screening	0	dB(A)	Roof screening	0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
inpact at façade	15	dB(A)	Impact at façade	26	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	8	dB(A)	Impact inside open window	19	dB(A)
A/C Units	60	dB(A) @ 3m	A/C Units	60	dB(A) @ 3:
Number of units	2	umits	Number of units	2	units
Refrig Units	62	dB(A) @ 3m	Refrig Units	62	dB(A) @ 31
Number of units	1	umits	Number of units	1	units
l'otal noise level	66	dB(A) @ 3m	Total noise level	66	dB(A) @ 3:
Distance to receiver	345	m	Distance to receiver	100	m
Distance attenuation (-6 dB per doubling of distance)	-41	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-30	dB(A)
Acoustic barrier / enclosure	-12	dB(A)	Acoustic barrier / enclosure	-12	dB(A)
Barrier screening	0.0	dB(A)	Barrier screening	0.0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
mpact at façade	15	dB(A)	Impact at façade	26	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
impact inside open window	7	dB(A)	Impact inside open window	18	dB(A)
Combined impact at façade	18	dB(A)	Combined impact at façade	29	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	10	dB(A)	Impact inside open window	21	dB(A)

STAGE 1 MECH PLANT NOISE PREDICTION CALCUL		
R5: Existing dwellings to the south across Rifle Range	Road	
Kitchen exhaust fan units	62	dB(A) @ 3m
Number of units	2	units
Toilet Exhaust Units	52	dB(A) @ 3m
Number of units	4	units
T otal noise level	66	dB(A) @ 3m
Distance to receiver	85	m
Distance attenuation (-6 dB per doubling of distance)	-29	dB(A)
Acoustic attenuator	-12	dB(A)
Roof screening	0	dB(A)
Façade reflection	2.5	dB(A)
Impact at façade	27	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	20	dB(A)
A/C Units	60	dB(A) @ 3m
Number of units	2	units
Refrig Units	62	dB(A) @ 3m
Number of units	1	units
T otal noise level	66	dB(A) @ 3m
Distance to receiver	95	m
Distance attenuation (-6 dB per doubling of distance)	-30	dB(A)
Acoustic barrier / enclosure	-12	dB(A)
Barrier screening	0.0	dB(A)
Façade reflection	2.5	dB(A)
Impact at façade	26	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	19	dB(A)
Combined impact at façade	30	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	22	dB(A)

N. Weinder Glock street 2 22						Do Water desilion of the No.					-
CI: Existing Single-storey dwellings to the north	Creep	Aconstic	Quality O	hiections		R2: Future dwelling: to the immediate north	Creep	Aconstic	Onelity (	Objectives	-
CAR DOOR CLOSURE near carpark DAY / EVEN	LAeq		LA10	LA01		CAR DOOR CLOSURE near carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1_
Noise source level for single event		5	77	80	6B(A)	Noise source level for single event	1	75	77	80	6B(A)
Ouration of single event	23	1	.5		Seconds	Duration of single event	23	. 1	.5		Secon
Number of events in the measurement period	33.8		135.0		Events	Number of events in the measurement period	33.8	_	135.0		Events
Total time duration of combined events	LAeq	T Aso lbr	LA10 1hr	IT A01 1hr	Seconds	Total time duration of combined events	LAeq	T Aso lbr		LA01 1hr	Secon
Noise source level for assessment time period	61	61	N/A	80	(B(A)	Noise source level for assessment time period	61 61	61	N/A	80	(B(A)
Conality / Impulsiveness correction	0		5	- 00	(B	Tonality / Impulsiveness correction	0	- 01	5	- 00	(B
Cinimum distance to receiver		9			ED	Minimum distance to receiver	Ť	-	1		
Distance attenuation (-6 dB per doubling of distance)			40		6B	Distance attenuation (-6 dB per doubling of distance)			32		éB.
Barrier screening		0	.0		ćB	Barrier screening		0	.0		dB.
açade reflection		2			ćB	Façade reflection		2	.5		éB-
impact at mearest façade	23	28	N/A	48	dB(A)	Impact at nearest façade	31	36	N/A	55	dB(A
Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	ćΒ	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	éB.
mpact inside open window		21	N/A	40	(B(A)	Impact inside open window		28	N/A	48	dB(A
	219.5731	694.3511	0 17 0	N. Continue			1254.479	3967.012	0 - 116 - 6	N. Continue	-
CAR DOOR CLOSURE far carpark DAY / EVEN	Creep		Quality O	LA01		CAR DOOR CLOSURE far carpark DAY / EVEN	Creep		Quality (	LA01	4
Tains seemes level for single mans	LAeq	LAeq	LA10	S0	(B(a)	Noise source level for single event	LAeq	LAeq	LA10	S0	dB/A
Noise source level for single event Ouration of single event	-	2	5 77	20	110/14/	Noise source level for single event  Duration of single event	-	12	5 //	80	1000
Juration of single event Jumber of events in the measurement period	23	<del>'</del>	90		Seconds Events	Number of events in the measurement period	23	<del>- '</del>	90		Secon
otal time duration of combined events	33.8		135.0		Events Seconds	Total time duration of combined events	33.8	_	135.0		Secon
The same of the sa	LAeq	LAeg 1hr	LA10 1hr	LA01 1hr		time december of contributed evens	LAeq	LAeg 1hr		LA01 lhr	
Noise source level for assessment time period	61	61	N/A	80	6B(A)	Noise source level for assessment time period	61	61	N/A	80	48(A)
onality / Impulsiveness correction	0		5		6B	Tonality / Impulsiveness correction	0		5		éВ
Minimum distance to receiver		1	30		"	Minimum distance to receiver			13		es.
Distance attenuation (-6 dB per doubling of distance)			42		άB	Distance attenuation (-6 dB per doubling of distance)		-			άB
Barrier screening		0	.0		ćB	Barrier screening			.0		613
açade reflection			.5		6B	Façade reflection		. 2			ćВ
mpact at nearest façade	21	26	N/A	45	dB(A)	Impact at nearest façade	26	31	N/A	50	dB (A
Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	έB	Reduction through open window (also minus 2.5 dB fac	nde)	-7.5	-7.5	-7.5	άB
mpact inside open window		18	N/A	38	dB(A)	Impact inside open window		23	N/A	43	an (A
	124.7799	394.5886					395.7178	1251.369			-
CAR DOOR CLOSURE near carpark NIGHT	Creep		Quality O			CAR DOOR CLOSURE near carpark NIGHT	Creep		Quality C		4
•	LAeq	LAeq	LA10				LAeq	LAeq	LA10	LA01	-
Noise source level for single event	7	5	77	80	(B(A)	Noise source level for single event		75	77	80	6B(A)
Duration of single event		1	21		Seconds	Duration of single event	-		.)		Secon
Number of events in the measurement period Total time duration of combined events	10.5		31.5		Events	Number of events in the measurement period Total time duration of combined events	10.5	_	31.5		Event
total tittle duration of contollied events	LAeq	T Aso The		LA01 lhr	Seconds.	I otal time duration of combined events	LAeq	T Aso The		LA01 1hr	Seco
Noise source level for assessment time period	56 56	54	N/A	N/A	(B(A)	Noise source level for assessment time period	56 56	54	N/A	N/A	dB(A)
Conality / Impulsiveness correction	0	- 74	5	N/A	(B(A)	Tonality / Impulsiveness correction	0	- 71	5	I NA	dB (A)
Aminum distance to receiver	_		18			Minimum distance to receiver	Ť	_	1		-
Distance attenuation (-6 dB per doubling of distance)			40		cB	Distance attenuation (-6 dB per doubling of distance)	-	-	32		dB.
Barrier screening		0			dB.	Barrier screening		0			dB.
acade reflection		2	5		έB	Façade reflection		2	.5		άB
nipact at nearest façade	18	22	N/A	N/A	dB(A)	Impact at nearest façade	26	30	N/A	N/A	dB (A
Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	6B	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	éB.
mpact inside open window		15	N/A	N/A	dB(A)	Impact inside open window		22	N/A	N/A	dB(A
	68.31163	162.0153					390.2825	925.6362			
CAR DOOR CLOSURE far carpark NIGHT	Creep		Quality O			CAR DOOR CLOSURE far carpark NIGHT	Creep			Objectives	4
·	LAeq	LAeq	LA10	LA01	$\vdash$	· ·	LAeq	LAeq	LA10	LA01	₩
Noise source level for single event	1	)		80	έB(A)	Noise source level for single event	-	75		80	dB(A)
Duration of single event	- 2	1	.5		Seconds	Duration of single event	2	1	.5		Secon
Number of events in the measurement period	10.5		31.5		Events	Number of events in the measurement period	10.5	_	31.5		Event
otal time duration of combined events	LAeq	LAeq lhr		LA01 lhr	Seconds	Total time duration of combined events	LAeq	LAeg lhr		LA01 1hr	Secon
Voise source level for assessment time period	LAeq 56	LAeq Ibr	N/A	N/A	éB(A)	Noise source level for assessment time period	LAeq 56	LAeq Inr	N/A	N/A	4B(A)
onse source sever for assessment time period onality / Impulsiveness correction	0	.,,	N/A	INTA.	(B	Tonality / Impulsiveness correction	0	- 77	5 5	AGA	éB(A)
disimum distance to receiver	-	1	30		0.0	Minimum distance to receiver	Ť	-	13		60
Distance attenuation (-6 dB per doubling of distance)			42		dB	Distance attenuation (-6 dB per doubling of distance)		-	37		dB.
Barrier screening		0			633	Barrier screening		0			633
açade reflection		2	5		6B	Façade reflection		2	.5		éB.
mpact at nearest façade	16	20	N/A	N/A	dB(A)	Impact at nearest façade	21	25	N/A	N/A	dB (A
Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	έB	Reduction through open window (also minus 2.5 dB fac	nde)	-7.5	-7.5	-7.5	άB
inpact inside open window		12	N/A	N/A	fB(A)	Impact inside open window		17	N/A	N/A	dB (A
	38 82041	92.07068					123.1122	291 9862			
AR ENGINE STARTS near carpark DAY / EVEN	Creep		Quality O		1 7	CAR ENGINE STARTS near carpark DAY / EVEN	Creep		Quality C		1
	LAeq	LAeq	LA10	LA01	$\vdash$		LAeq	LAeq	LA10	LA01	₩
Toise source level for single event	7	5	74	75	fB(A)	Noise source level for single event		/5	74	75	4B(A)
uration of single event	10		30		Seconds	Duration of single event	10		30		Secon
lumber of events in the measurement period	10 30.0		30 90.0		Events	Number of events in the measurement period	10 30.0	-	30 90 0		Event
otal time duration of combined events	90.0	Y 4 12 -		IT 401 15 -	Seconds	Total time duration of combined events	90.0	T to - 11	F 0.4	IT 401 75	Secon
Toise source level for assessment time period	LAeq 58	Lareq Inr	LA10 1hr N/A	25 Inr	-	Noise source level for assessment time period	LAeq 58	Laneq Int	N/A	LA01 lhr	
	0	31	N/A	/3	(B(A)		0	37	N/A	1 10	dB(A)
onality / Impulsiveness correction	-		18		2.0	Tonality / Impulsiveness correction Minimum distance to receiver	<del>-</del>	- 4	11		en-
Cinimum distance to receiver			40			Distance attenuation (-6 dB per doubling of distance)	_		32		en en
											0.0
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening		- 0			dB.	Barrier screening		0			dB.
		0			éB éB	Barrier screening Façade reflection			.0		dB dB
Distance attenuation (-6 dB per doubling of distance) Barrier screening	21	0	.0	38	dB dB dB(A)	Barrier screening	28	0	.0	45	dB dB dB(A

RI: Exiting Single-storey dwelling; to the north CAR ENGINE STARTS far carpark DAY/EVEN Notice source level for single event Duration of single event Notice source level for single event Notice source level for single event Notice source level for nasesument period Tords Inne duration of combined events Notice source level for assessment time period Tonality /Impulsiveness correction Manituma distance to receiver Distance estimation (-6 dB per doubling of distance) Barries screening Fayde reflection Impact at nearest façade Impact at nearest façade	Creep LAeq 10 30.0 LAeq		Quality O			N/A if the duration of events do not occur for 10% or 10  R2: Future dwellings to the immediate north  CAR ENGINE STARTS far carpark DAY / EVEN	Creep LAeq		Quality C	Objectives	
CAR ENGINE STARTS far carpark DAY / EVEN Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes source level for assessment time period Totality almosticeness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Fagida reflection Impact at hearest fagade	10 30.0		LA10			CAR ENGINE STARTS far carpark DAY / EVEN					
Noise source level for single event Duration of 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 1 Impulsiveness correction Maintona distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at hearest façade	10 30.0	LAeq 3		TA01 75		-	LAeq	LAeq	LA10	LA01	
Duration of single event  Number of event in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Tomality : Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Faguda reflection  Impact at hearest façade	30.0	_	1 77			Noise source level for single event		72	74	75	éB(A)
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 Dustance attenuation (-6 dB per doubling of distance) Berrier screening Fagular endlection Impured at hearest fagade	30.0	_			dB(A) Seconds	Duration of single event	_		3	13	Seconds
Notice source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at hearest façade		1	30		Events	Number of events in the measurement period	10		30		Events
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Façade reflection Imputed at nearest façade	LAeq		90.0		Seconds	Total time duration of combined events	30.0		90.0		Seconds
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Façade reflection Imputed at nearest façade		LAeq lhr	LA10 1hr	LA01 lbr			LAeq	LAeq lhr		LA01 lhr	
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	58	57	N/A 0	75	6B(A)	Noise source level for assessment time period	58	57	N/A 0	75	6B(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade		1	30		dB	Tonality / Impulsiveness correction Minimum distance to receiver	l	_	13		dB.
Barrier screening Façade reflection Impact at nearest façade			42		43	Distance attenuation (-6 dB per doubling of distance)			37		6B
Impact at nearest façade			1.0		6B	Barrier screening		0	.0		4B
			1.5		dB.	Façade reflection					άB
	18	-7.5	N/A	35	dB(A)	Impact at nearest façade	23	22	N/A	-7.5	dB(A)
Impact inside open window	de)	-7.5	-7.5 N/A	-7.5	6B (A)	Reduction through open window (also minus 2.5 dB fac Impact inside open window	ade)	15	N/A	33	6B(A)
mapact tastae open waadow	60.08202	52.48710	IN/AL	20	6B(A)	impact inside open window	221.0387	166.454	N/A	33	dB(A)
CAR TWOTER OF ARTS	Creep	Acoustic	Quality O	bjectives		CAR PAGENT CTARTS	Creep	Acoustic	Quality C	Dijectives	-
CAR ENGINE STARTS near carpark NIGHT	LAeq		LA10		1 1	CAR ENGINE STARTS near carpark NIGHT	LAeq	LAeq	LA10		1
Noise source level for single event	7	3	74	75	(B(A)	Noise source level for single event		73	74	75	(B(A)
Duration of single event			3		Seconds	Duration of single event			3		Seconds
Number of events in the measurement period	5 15.0		15 45.0		Events	Number of events in the measurement period	5 15.0	_	15 45.0		Events
Total time duration of combined events	LAeq	T As a Thir	45.0 LA10 1hr	IT A01 15-	Seconds	Total time duration of combined events	LAeq	T As a Thir		LA01 1hr	Seconds
Noise source level for assessment time period	LAeq 55	LAeq Ihr	N/A	75	(B(A)	Noise source level for assessment time period	LAeq 55	LAeq Ihr	N/A	75	dB(A)
Tonality / Impulsiveness correction	0	-74	0	- "	4B(A)	Tonality / Impulsiveness correction	0	- 7	0	- 12	4B(A)
Minimum distance to receiver	,		98		п	Minimum distance to receiver	<u> </u>	4			m.
Distance attenuation (-6 dB per doubling of distance)			40		άB	Distance attenuation (-6 dB per doubling of distance)			32		dВ
Barrier screening			1.0		ďΒ	Barrier screening			.0		άΒ
Façade reflection	18	17	1.5 N/A	38	<b>43</b>	Façade reflection	25	24	.5 N/A	45	éB.
Impact at nearest façade		-7.5	N/A	-7.5	dB(A)	Impact at nearest façade		-7.5	N/A	-7.5	dB(A)
Reduction through open window (also minus 2.5 dB faças Impact inside open window	de)	-7.5	N/A	30	dB(A)	Reduction through open window (also minus 2.5 dB fac Impact inside open window	ade)	17	N/A	38	dB (A)
impact inside open window	61 57380	46 18042	N/A	30	dB(A)	Impact inside open window	351 788	263.841	N/A	33	dB(A)
CAD ENGINE CTARGE ( INTERE	Creep	Acoustic	Quality O	bjectives		CAR PAGENE CTARGE (	Creep	Acoustic	Quality C	bjectives	$\overline{}$
CAR ENGINE STARTS far carpark NIGHT	LAeq	LAeq	LA10	LA01	1 1	CAR ENGINE STARTS far carpark NIGHT	LAeq	LAeq		LA01	1
Noise source level for single event	7	3	74	75	dB(A)	Noise source level for single event		73	74	75	dB(A)
Duration of single event			3		Seconds	Duration of single event			3		Seconds
Number of events in the measurement period	5		15		Events	Number of events in the measurement period	5		15		Events
Total time duration of combined events	15.0	7.4 11	45.0	I + + + 1 1 1 1	Seconds	Total time duration of combined events	15.0	7.4 33	45.0	T 403 33	Seconds
Noise source level for assessment time period	LAeq 55	LAeq Inr	N/A	LA01 lbr		Noise source level for assessment time period	LAeq 55	LAeq Inr	N/A	LA01 1hr 75	
Tonality / Impulsiveness correction	0	24	0 0	/3	(B(A)	Tonality / Impulsiveness correction	0	24	0 0	./3	dB(A)
Minimum distance to receiver	_	1	30			Minimum distance to receiver	<del>'</del>	-	13		
Distance attenuation (-6 dB per doubling of distance)		-	42		418	Distance attenuation (-6 dB per doubling of distance)		-3	37		433
Barrier screening		0	1.0		6B	Barrier screening		0	.0		4B
Façade reflection			1.5		dB .	Façade reflection		2	10		dB.
Impact at nearest façade	15	14	N/A	35	dB(A)	Impact at nearest façade	20	19	N/A	40	dB(A)
Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5 N/A	-7.5 28	43	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5 12	-7.5 N/A	-7.5 33	43
Impact inside open window	34 00146	26.24350	N/A	28	dB(A)	Impact inside open window	110 0403	92 22701	N/A	33	dB(A)
CAR MOVEMENT TO DAY	Стеер	Acoustic	Quality O	biectives		CARACON MATERIAL PAR	Creep	Acoustic	Ouality C	Diectives	-
CAR MOVEMENT TO DAY	LAeq	LAeq	LA10	LA01	1 I	CAR MOVEMENT TO DAY		LAeq		LA01	1
Noise source level for single event	6	S	70	73	dB(A)	Noise source level for single event		38	70	73	dB(A)
Duration of single event			22		Seconds	Duration of single event			22		Seconds
Number of events in the measurement period	10		40		Events	Number of events in the measurement period	10		40		Events
Total time duration of combined events	220.0	V 4 32	\$\$0.0	Ix 103 3:	Seconds	Total time duration of combined events	220.0	F 4 31	\$\$0.0	T 103 7:	Seconds
Noise source level for assessment time period	LAeq 62	LAeq 1hr 62	LA10 1hr 70	TA01 1hr	dB(A)	Noise source level for assessment time period	LAeq 62	LAeq lhr 62	TA10 1hr	LA01 1hr 73	iB(A)
Noise source level for assessment time period  Tonality / Impulsiveness correction	0.2	0.2	1/0	/3	eB(A)	Tonality / Impulsiveness correction	02	0.2	70	73	éB(A)
Minimum distance to receiver		1	03		n	Minimum distance to receiver	Ť	- 4	16		m
Distance attenuation (-6 dB per doubling of distance)			40		dB	Distance attenuation (-6 dB per doubling of distance)			33		dB.
Barrier screening			LO		ďΒ	Barrier screening		0			άΒ
Façade reflection			1.5		413	Façade reflection			.5		éB
Impact at nearest façade	24	24	32	35	6B(A)	Impact at nearest façade	31	31	39	42	dB(A)
Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	ćB	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	άB
Impact inside open window	250 5250	17	25	28	dB(A)	Impact inside open window	1106100	24	32	35	dB(A)
	Стеер	Aconstic	Quality O	biectives			Creep	Acoustic	Quality C	Diectives	_
CAR MOVEMENT FROM DAY	LAeq	LAeq	LA10		1 I	CAR MOVEMENT FROM DAY		LAeq			1
Noise source level for single event	6		70	73	(B(A)	Noise source level for single event		SS	70	73	(B(A)
Duration of single event		2	22		Seconds	Duration of single event		2	12		Seconds
Number of events in the measurement period	10		40		Events	Number of events in the measurement period	10		40		Events
Total time duration of combined events	220.0		\$\$0.0		Seconds	Total time duration of combined events	220.0		\$80.0		Seconds
	LAeq		LA10 1hr	LA01 lbr	$\Box$		LAeq			LA01 lhr	
	62	62	70	73	dB(A)	Noise source level for assessment time period	62	62	70	73	dB(A)
Noise source level for assessment time period	0	Щ.	0		6B	Tonality / Impulsiveness correction	0	Ь.	0		dB.
Tonality / Impulsiveness correction			35		n	Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)	_		38		en eB
Tonality / Impulsiveness correction Minimum distance to receiver											1615
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)			43		dB dB		_				(B
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening			43 1.0		dB dB	Barrier screening			.0		éB éB
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	22			33	4B 4B 4B 6B(A)	Barrier screening Façade reflection	27			38	6B 6B(A)
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection		2	1.0	33 -7.5	4B 6B	Barrier screening		0	.0	38 -7.5	éB.

STAGE 2 ACTIVITY NOISE PREDICTION CALCU	LATIONS	LAN the M		kuch are rep			ooi me i n	our period;	,		
RI: Existing Single-storey dwellings to the north CAR MOVEMENT TO NIGHT	Creep	Acoustic	Quality C	Objectives		R2: Future dwelling: to the immediate north  CAR MOVEMENT TO NIGHT	Creep		Quality C	Dijectives	
Noise source level for single event	LAeq	LAeq	LA10 70	LA01	éB(A)	Noise source level for single event	LAeq	LAeq	TA10 70	LA01 73	dB(A)
Duration of single event	Η,		12	/3	Seconds	Duration of single event	<del>  '</del>	2	2	/3	Seconds
Number of events in the measurement period	5		15		Events	Number of events in the measurement period	- 5		15		Events
Total time duration of combined events	110.0		330.0		Seconds	Total time duration of combined events	110.0		330.0		Seconds
	LAeq	LAeq lhr		LA01 lbr			LAeq			LA01 lhr	
Noise source level for assessment time period	59	58	N/A	73	6B(A)	Noise source level for assessment time period	59	58	N/A	73	6B(A)
Tonality / Impulsiveness correction Minimum distance to receiver	0	Щ,	0		dB	Tonality / Impulsiveness correction Minimum distance to receiver	0	Ь,	0		dВ
Distance attenuation (-6 dB per doubling of distance)	_		40		n (3	Distance attenuation (-6 dB per doubling of distance)	-		33		63
Barrier screening	_		.0		/B	Barrier screening	_	0			4B
Façade reflection			.5		4B	Façade reflection		2	5		4B
Impact at nearest façade	21	20	N/A	35	dB(A)	Impact at nearest façade	28	27	N/A	42	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	418	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	419
Impact inside open window		12	N/A	28	6B(A)	Impact inside open window		19	N/A	35	dB(A)
	129,2634	96.94758	0	N	_		648,0888	486.0666	0-11-6	No. in a section of	_
CAR MOVEMENT FROM NIGHT	Creep		Quality C		1 1	CAR MOVEMENT FROM NIGHT	Creep	LAeq	Quality C		1
Noise source level for single event		S	70	73	fB(A)	Noise source level for single event		S	70	73	(B(A)
Duration of single event	Ь "		2	/3	dB(A) Seconds	Duration of single event	Η,	2	2	- 19	dB(A) Seconds
Number of events in the measurement period	5		15		Events	Number of events in the measurement period	5		15		Events
Total time duration of combined events	110.0		330.0		Seconds	Total time duration of combined events	110.0		330.0		Seconds
	LAeq	LAeq lhr	LA10 1hr				LAeq	LAeq lhr		LA01 lhr	
Noise source level for assessment time period	59	58	N/A	73	(B(A)	Noise source level for assessment time period	59	58	N/A	73	(B(A)
Tonality / Impulsiveness correction	0		0		ďΒ	Tonality / Impulsiveness correction	0		0		άB
Minimum distance to receiver			35		п	Minimum distance to receiver		7	8		
Distance attenuation (-6 dB per doubling of distance)			43		6B	Distance attenuation (-6 dB per doubling of distance)	_		38		éB.
Barrier screening			.0		dB	Barrier screening	-	0	U		dB.
Façade reflection Impact at nearest façade	10	18	N/A	33	dB(A)	Façade reflection Impact at nearest façade	24	22	.5 N/A	38	dB (A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB fac		-7.5	-7.5	-7.5	dB(A)
Impact inside open window	ue)	10	N/A	25	dB(A)	Impact inside open window	aue)	15	N/A	30	dB(A)
impact in rice open trincom	75 24586	56.4344	11/25	20	65(A)	impact taxor open mason	225 4037	169.0527	11/25	50	65(4)
TRUCK ENGINE STARTS Loading bay	Creep	Acoustic	Quality C	Diectives	$\overline{}$	TRUCK ENGINE STARTS Loading bay	Creep	Acoustic	Quality C	Diectives	$\overline{}$
	LAeq	LAeq	LA10		1 1	1	LAeq	LAeq	LA10		1
Noise source level for single event		'S	81	83	(B(A)	Noise source level for single event		78	81	83	(B(A)
Duration of single event			3	•	Seconds	Duration of single event			3		Seconds
Number of events in the measurement period	1		2		Events	Number of events in the measurement period	1		2		Events
Total time duration of combined events	3.0		6.0		Seconds	Total time duration of combined events	3.0		6.0		Seconds
	LAeq	LAeq lbr		LA01 lbr	$\overline{}$		LAeq			LA01 lhr	
Noise source level for assessment time period	53	50	N/A	N/A	dB(A)	Noise source level for assessment time period	53	50	N/A 5	N/A	dB(A)
Tonality / Impulsiveness correction	0	Ь,	05		6B	Tonality / Impulsiveness correction	, ·	Ь.	2		6B
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)			40		11	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	-		8 34		es dB
Barrier screening	_		.0		6B	Barrier screening	_		0		68
Façade reflection	_		5		49	Façade reflection	_	2			en
Impact at nearest façade	15	17	N/A	N/A	6B(A)	Impact at nearest façade	22	24	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	άB
Impact inside open window		10	N/A	N/A	dB(A)	Impact inside open window		17	N/A	N/A	dB(A)
TRUCK MOVEMENT TO SITE	Creep		Quality C		. 7	TRUCK MOVEMENT TO SITE	Creep		Quality C		1
	LAeq	LAeq	LA10	LA01	$\vdash$		LAeq	LAeq			—
Noise source level for single event	S	11	89	90	4B(A)	Noise source level for single event	1 3	5.7	89	90	dB(A)
Duration of single event Number of events in the measurement period	-		10 4		Seconds Events	Duration of single event Number of events in the measurement period	-	1	10 4		Seconds Events
Total time duration of combined events	160.0	-	320.0		Events Seconds	Total time duration of combined events	160.0	_	320.0		Seconds
a one must account of Compliant evens	LAeq	LAcaller		LA01 lhr	SVE0 803	A STATE THE MEDITAL OF COMMING STATES	LAeg	I Aeg 1hr		LA01 lhr	avrends
Noise source level for assessment time period	79	76	N/A	90	iB(A)	Noise source level for assessment time period	79	76	N/A	90	(B(A)
Tonality / Impulsiveness correction	0		0		48	Tonality / Impulsiveness correction	0		0		48
			_		-	the state of the s	-	S		58	es
Minimum distance to receiver	- 1			15	rs.	Minimum distance to receiver				35	dB.
At minum distance to receiver Distance attenuation (-6 dB per doubling of distance)	-4	41	-	41	rs. dB	Distance attenuation (-6 dB per doubling of distance)		35			
Distance attenuation (-6 dB per doubling of distance) Barrier screening	-4		-		rs dB dB	Distance attenuation (-6 dB per doubling of distance)  Barrier screening		35		1.0	£13
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection	0	41 .0 2	.5	41	ćB	Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Façade reflection		.0	.5	0.0	έB
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	0	41 .0 2	.5 N/A	51	6B 6B(A)	Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	47	2	.5 N/A.	57	dB dB(A)
Distance attenuation (-6 dB per doubling of distance) Barner screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça	0	41 .0 2 38 -7.5	.5 N/A -7.5	41 0.0 51 -7.5	6B 6B(A) 6B	Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	47	.0 2 44 -7.5	.5 N/A -7.5	.0 57 -7.5	6B 6B(A) 6B
Distance attenuation (-6 dB per doubling of distance) Barner screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça	0	41 .0 2	.5 N/A	51	6B 6B(A)	Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	47	2	.5 N/A.	57	dB dB(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open window	41 sde)	41 .0 2 38 -7.5 30	-7.5 N/A -7.5 N/A	41 0.0 51 -7.5 44	6B 6B(A) 6B	Distance attenuation (-6 dB per doubling of distance) Barrier screening Payade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact isside open window	47 ade)	2 44 -7.5 36	5 N/A -7.5 N/A	57 -7.5 50	6B 6B(A) 6B
Distance attenuation (-6 dB per doubling of distance) Barner screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça	41 ade)	41 0 2 38 -7.5 30 Acoustic	5 N/A -7.5 N/A	41 0.0 51 -7.5 44 Objectives	6B 6B(A) 6B	Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	47 ade)	.0 2 44 -7.5 36	5 N/A -7.5 N/A Quality C	57 -7.5 50	6B 6B(A) 6B
Distance attenuation (-6 dB per doubling of distance) Barrier stremmig Fayade reflection Impact at nearest façade Rediction through open window (also minus 2.5 dB faça Impact inside open window TRUCK MOVEMENT FROM SITE	41 sde)	41 .0 2 38 -7.5 30	-7.5 N/A -7.5 N/A	41 0.0 51 -7.5 44 Objectives	6B 6B(A) 6B 6B(A)	Distance attenuation (-6 dB per doubling of distance) Barrier screening Fegade reflection Impact at a nearest façade Reduction through open window (sloe minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE	47 ade)  Creep LAeq	2 44 -7.5 36	5 N/A -7.5 N/A Quality C	57 -7.5 50	68 6B(A) 6B 6B(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façada reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event	41 ade)	41 .00 2 38 -7.5 30 Acoustic LAeq	5 N/A -7.5 N/A Quality O	51 -7.5 44 Dbjectives	6B 6B(A) 6B 6B(A)	Distance attenuation (-6 dB per doubling of distance) Barrier screening Fequile refliction Impact at mearest façade Reduction through open window (siso minus 2.5 dB faç Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event	47 ade)  Creep LAeq	2 44 -7.5 36 Acoustic LAeq	5 N/A -7.5 N/A Quality C	57 -7.5 50 Dijectives	6B 6B(A) 6B 6B(A)
Distance attenuation (4 dB per doubling of distance) Barries streaming Façade reflection Impact at search façade Reduction through open window (also minus 2.5 dB faça Impact at suide open window TRUCK MOVEMENT PROM SITE Notes ource level for single event Duration of single event	41 ade)  Creep LAeq S	41 .00 2 38 -7.5 30 Acoustic LAeq	N/A   -7.5   N/A	51 -7.5 44 Dbjectives	dB (A) dB (A) dB (A) dB (A) Seconds	Distance attenuation (-6 dB per doubling of distance) Barrier screening Facade reflection Facade reflection Impact at nearest facade Reduction through open window (also minus 2.5 dB for Impact in inside open window TRUCK MOVEMENT FROM SITE Notes source level for single event Duration of single event	47 ade)  Creep LAeq  2	2 44 -7.5 36 Acoustic LAeq	5 N/A -7.5 N/A Quality C LA10 89 0 2	57 -7.5 50 Dijectives	68 6B(A) 6B 6B(A)
Distance attenuation (-5 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event	41 ade)  Creep LAeq  8	41 .0 2 38 -7.5 30 Acoustic LAeq	0 5 5 N/A -7.5 N/A -7.5 N/A LA10 89 10 2 160.0	41 0.0 51 -7.5 44 Dijectives LA01 90	dB (A) dB (A) dB (A) dB (A) Seconds Events Seconds	Distance attenuation (-6 dB per doubling of distance) Barrier screening Fequile refliction Impact at mearest façade Reduction through open window (siso minus 2.5 dB faç Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event	47 ade)  Creep LAeq 2 160.0	2 44 -7.5 36 Acoustic LAeq 37	5 N/A -7.5 N/A Quality C LA10 89 10 2 160.0	97 -7.5 -80 Dijectives LA01 90	dB dB(A) dB dB(A) dB dB(A) dB(A) dB(A) Seconds Events Seconds
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façada reflection Impact at nearest façade Reduction through open window (olso minus 2.5 dB faça Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event Duration of single event Duration of single event	41 ade)  Creep LAeq S	41 .0 2 38 -7.5 30 Acoustic LAeq	0 5 5 N/A -7.5 N/A -7.5 N/A LA10 89 10 2 160.0	51 -7.5 44 Dbjectives	dB (A) dB (A) dB (A) dB (A) Seconds Events Seconds	Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window TRUCK MOVEMENT FROM SITE Notes source level for single event Deartion of single event Deartion of single event	47 ade)  Creep LAeq  2	2 44 -7.5 36 Acoustic LAeq 37	5 N/A -7.5 N/A Quality C LA10 89 10 2 160.0	57 -7.5 50 Dijectives	dB (A) dB (B(A)) dB dB(A) dB(A) dB(A) Seconds Events Seconds
Distance streamation (-6 dB per doubling of distance) Barrier streaming Fayade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB foot Impact at side open window (also minus 2.5 dB foot Impact at nearest façade Reduction through open window (also minus 2.5 dB foot Impact tailed open window (also minus 2.5 dB foot Impact tailed open window (also minus 2.5 dB foot Impact tailed open window (also minus 2.5 dB foot Impact at one foot Impact at one of combined event Vanisher of events in the measurement period Total time duration of combined events Notice source level for assessment time period	Creep LAeq 2 160.0 LAeq 79	41 .0 2 38 -7.5 30 Acoustic LAeq	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	41 0.0 51 -7.5 44 Dijectives LA01 90	dB (A) dB (A) dB (A) dB (A) Seconds Events Seconds	Distance attenuation (-6 dB per doubling of distance) Barrier screening Facake reflection Reduction through open window (also minus 2.5 dB for Impact at nearest facade Reduction through open window (also minus 2.5 dB for Impact this company of the company of th		2 44 -7.5 36 Acoustic LAeq 37	5 N/A -7.5 N/A Quality C LA10 89 0 2 160.0 LA10 lbr	97 -7.5 -80 Dijectives LA01 90	dB (A) dB (B(A)) dB dB(A) dB(A) dB(A) Seconds Events Seconds
Distance attenuation (-6 dB per doubling of distance) Barries craeming. Fexade reflection Impact at nearest facade Rediction through open window (also minus 2.5 dB face Impact inside open window) TRUCK MOVEMENT FROM SITE Noise source level for single event Duration of single event Number of events in the measurement period Tord time duration of combined events Noise source level for surges tented to the control of combined events Noise source level for surges tented to the control of combined events Noise source level for surges tented to reasily / Impulsiveness correction	Creep LAeq  2 160.0 LAeq 79	41 .0 2 38 -7.5 30 Acoustic LAeq 57 57 58	N/A   -7.5   N/A     Quality 0   LA10   89   10   2   160.0   LA10 lbr   N/A   0	41 0.0 51 -7.5 44  Dijectives LA01 90  LA01 lhr	dB (A) dB (A) dB dR (A) dB dR (A) Seconds Events	Distance attenuation (-6 dB per doubling of distance) Barrier screening Feçade reflection Impact at a nearest façade Reduction through open window (-800 minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event Duration of single event Number of events in the measurement period Tools time duration of combined events Noise source level for savessment time period Tools trouve for assessment time period Tools trouve for for assessment time period Tools trouve level for assessment time period		2 44 -7.5 36 Acoustic LAeq 37 8	5 N/A -7.5 N/A Quality 0 LA10 89 0 2 160.0 LA10 lbr N/A 0	57 -7.5 -50 Dejectives LA01 90 LA01 lhr 90	dB dB(A) dB (A) dB (A) dB (A) Seconds Seconds
Distance retremation (-6 dB per doubling of distance) Barries streeming. Fayade rediction Impact at nearest façade Rediction through open window (also minus 2.5 dB fxxx Impact minister open vindow) TRUCK MOVEMENT FROM SITE  Notice source level for single event Dization of single event Number of events in the measurement period Total time duration of combined events  Notice source level for assessment time period Totaliny // Impulsiveness correction Monitor of the period Totaliny // Impulsiveness correction	Creep LAeq  2 160.0 LAeq 79 0	41 .0 2 38 -7.5 30 Acoustic LAeq 1hr 73	N/A	41 0.0  51 -7.5 44    Dijectives   LA01   90    LA01 lhr   90	dB (A) dB (A) dB (A) dB (A) Seconds Events Seconds	Distance attenuation (-6 dB per doubling of distance) Barrier screening Facade reflection Facade reflection Impact at an exercit facade Reduction through open window (also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE Notice source levels for single event Distance of city of might event Distance of city of might event Trotal time duration of combined events Notice source level for assessment time period Totality / Impulsiveness correction Manimum distance to receiver		2 44 -7.5 36 Acoustic LAeq 37 8 LAeq lhr 73	5 N/A -7.5 N/A Quality 0 LA10 2 2 160.0 LA10 1hr N/A 0	57 -7.5 50 bjectives LA01 90 LA01 lhr 90	dB (A) dB (A) dB (A) dB (A) Seconds Events Seconds dB (A)
Distance attenuation (-6 dB per doubling of distance) Barries streaming Façade reflection Impact at nearest façade Rediction through open window (also minus 2.5 dB faça Impact inside open window) TRUCK MOVEMENT FROM SITE 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 single event Discussion of combined events Noise source level for noises timent time period Tonality / Impulsiveness correction Minimum distance to receiver Minimum distance to receiver Minimum distance to receiver	Creep LAeq S 2 160.0 LAeq 79 0	41 2 2 387.5 30 Acoustic LAeq 2 4 2 2	N/A	41 0.0  51 -7.5 44  Dispectives LA01 190  LA01 lhr 90  15	dB (A) dB (A) dB (A) dB (A) Seconds Events Seconds	Distance attenuation (-6 dB per doubling of distance) Barries screening Feçade reflection Impact at a nearest façade Reduction through open window (also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event Duration of single event Number of events in the neasurement period Total time distantion of combined events Noise source level for assessment time period Totality in Impulsiveness correction Maintanus distance to receiver Distance est energents (-6 dB per doubling of distance)		2 44 -7.5 36 Acoustic LAeq 11-73 S	5 N/A -7.5 N/A Quality ( LA10 89 0 2 160.0 LA10 1hr N/A 0	57 -7.5 50 Dijectives LA01 90 LA01 lhr 90	dB (A) dB (A) dB (A) Seconds Events Seconds dB (A) dB (B)
Distance attenuation (-6 dB per doubling of distance) Barries (creaming) Façade reflection Impact at nearest façade Reduction through open window (slee minus 2.5 dB faça Impact inside open window TRUCK MOVEMENT FROM SITE Notice source level for single event Duration of single event Number of events in the measurement period Tord time duration of combined events Notice source level for accessment time period Tord time duration of combined events Notice source level for accessment time period Tord time duration of combined reverts Motive source level for accessment time period Tordity / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creening	Creep LAeq S 2 160.0 LAeq 79 0	41 .0 2 38 -7.5 30 Acoustic LAeq 1hr 73	N/A	41 0.0  51 -7.5 44    Dijectives   LA01   90    LA01 lhr   90	6B 6B(A) 6B 6B(A) 6B 6B(A) Seconds Events Seconds 6B(A) 6B 11 6B 6B	Distance attenuation (4 dB per doubling of distance) Barrier screening Radab reflection Impact at nearest facade Reduction through open window (slos minus 2 3 dB for Impact in sixide open window) Impact in sixide open window ITRUCK MOVEMENT FROM SITE Notice source levels for timple event Distance of simple event Number of events in the measurement period Total time duration of combined events Notice source level for assessment time period Totality : Impulsiveness correction Maintained shinter to reactive Distance attenuation (4 dB per doubling of distance) Barrier screening		2 44 -7.5 36 Acoustic LAeq 37 8 LAeq lhr 73	5 N/A -7.5 N/A Quality ( LA10 89 0 2 160.0 LA10 1hr N/A 0	57 -7.5 50 bjectives LA01 90 LA01 lhr 90	dB(A) dB(A) dB(A)  dB(A) Soconds Evests Seconds dB(A) dB(B) dB(B) dB(B)
Distance attenuation (-6 dB per doubling of distance) Barries screening Façale reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact miside open window TRUCK MOVEMENT FROM SITE Notes ource level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes ource level for assessment time period Total time duration of combined events Monitor of events in the measurement period Total time duration of combined events Monitor divaries to receiver Distance attenuation of dB per doubling of distance) Barries creening Barries creening Barries creening	Creep LAeq  2 160.0 LAeq 79 0 1	41 .0 2 38 -7.5 30 Acoustic LAeq 17 2 LAeq 1hr 73 15 41 .0	5 N/A -7.5 N/A -7.5 N/A -7.5 N/A S9 10 2 150.0 LA10 lbr N/A 0 1 0 5	S1   -7.5   44	6B dB(A) dB dB(A)  dB dB(A)  dB(A)  Seconds  Events Seconds  dB(A) dB dB dB dB	Distance attenuation (-6 dB per doubling of distance) Barrier screening Facade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT TROM SITE Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes source level for assessment time period Totally Impulsiveness correction Minimum distance to receiver Distance extremation (-6 dB per doubling of distance) Barrier screening Barrier screening Barrier screening	2 160.0 LAeq 0	2 44 44 -7.5 36 Acoustic LAeq S77 8 LAeq Ihr 73 88 85 5.0	5 N/A -7.5 N/A Quality C LA10 S9 0 LA10 lbr N/A 0	57 -7.5 50 bjectives LA01 90 LA01 1hr 90	eB  dB(A)  dB  dB(A)  eB(A)  Seconds  Evento  Seconds  dB(A)  dB  dB  dB  eB  eB
Distance attenuation (-6 dB per doubling of distance) Barries screening Façade reflection Impact at nearest façade Reduction through open window (sies minus 2.5 dB faça Impact at niside open vindow TRUCK MOVEMENT FROM SITE Noise source level for single event Duration of single event Number of events in the massurement period Torol time duration of combined events Noise source level for assessment time period Toroliny / Impulsivaness correction Minimized distance to receive Distance attenuation (-6 dB per doubling of distance) Barries screening Façade reflection Impact at nearest facade	Creep LAeq 2 160.0 LAeq 79 0 1 41	10 2 38 -7.5 30 Acoustic LAeq 1hr 73 15 41 0.0 2 35 35	5 N/A -7.5 N	S1   -7.5   44	6B 6B(A) 6B 6B(A) 6B 6B(A) Seconds Events Seconds 6B(A) 6B 11 6B 6B	Distance attenuation (-6 dB per doubling of distance) Barries screening Radab reflection Impact at nearest facade Reduction through open window (slos minus 2.5 dB for Impact in sixide open window) ITRUCK MOVEMENT FROM SITE Notice source levels for timple event Distance of winds in the measurement period Torol time deution of combined events Notice source level for assessment time period Torolismy Impulsiveness correction Minimum distance to reactive correction Distance attenuation (-6 dB per doubling of distance) Barries screening Fagada reflection Impact at nearest façade		2 44 44 -7.5 36 Acoustic LAeq 37 8 LAeq 1hr 73 88 35 .0 2	5 N/A -7.5 N/A Quality C LA10 S9 0 LA10 lbr N/A 0 5 N/A	57 -7.5 50  Dijectives LA01 90  LA01 1hr 90  S8 350	eB  dB(A)  dB  dB(A)  eB(A)  Seconds  Events  Seconds  dB(A)  dB  dB(A)
Distance attenuation (-6 dB per doubling of distance) Barries screening Façale reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact miside open window TRUCK MOVEMENT FROM SITE Notes ource level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes ource level for assessment time period Total time duration of combined events Monitor of events in the measurement period Total time duration of combined events Monitor divaries to receiver Distance attenuation of dB per doubling of distance) Barries creening Barries creening Barries creening	Creep LAeq 2 160.0 LAeq 79 0 1 41	41 .0 2 38 -7.5 30 Acoustic LAeq 17 2 LAeq 1hr 73 15 41 .0	5 N/A -7.5 N/A -7.5 N/A -7.5 N/A S9 10 2 150.0 LA10 lbr N/A 0 1 0 5	S1   -7.5   44	6B dB(A) dB dB(A)  dB dB(A)  dB(A)  Seconds  Events Seconds  dB(A) dB dB dB dB	Distance attenuation (-6 dB per doubling of distance) Barrier screening Facade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT TROM SITE Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes source level for assessment time period Totally Impulsiveness correction Minimum distance to receiver Distance extremation (-6 dB per doubling of distance) Barrier screening Barrier screening Barrier screening		2 44 44 -7.5 36 Acoustic LAeq S77 8 LAeq Ihr 73 88 85 5.0	5 N/A -7.5 N/A Quality C LA10 S9 0 LA10 lbr N/A 0	57 -7.5 50 bjectives LA01 90 LA01 1hr 90	eB  dB(A)  dB  dB(A)  eB(A)  Seconds  Evento  Seconds  dB(A)  dB  dB  dB  eB  eB

STAGE 2 ACTIVITY NOISE PREDICTION CALCU		C-Stream -		Section of the Park				em person			
R1: Existing Single-storey dwellings to the north	_					R2: Future dwelling: to the immediate north					
	Creep	Aconstic	Quality C	hiactions			Creep	Aconstic	Ouality C	hiactions	_
TRUCK AIRBRAKES	LAeq	LAeq	LA10	LA01	1 1	TRUCK AIRBRAKES	LAeq	LAeq	LA10	LA01	1
Noise source level for single event		90	98	102	6B(A)	Noise source level for single event		0	98	102	6B(A)
Duration of single event	-		2		Seconds	Duration of single event			2	112	Seconds
Number of events in the measurement period	3		9		Events	Number of events in the measurement period	3		9		Events
Total time duration of combined events	6.0		18.0		Seconda	Total time duration of combined events	6.0		18.0		Seconds
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	68	67	N/A	N/A	(B(A)	Noise source level for assessment time period	6S	67	N/A	N/A	(B(A)
Tonality / Impulsiveness correction	0		5		άB	Tonality / Impulsiveness correction	0		5		έB
Minimum distance to receiver			15		11	Minimum distance to receiver			8		n .
Distance attenuation (-6 dB per doubling of distance)			41		6B	Distance attenuation (-6 dB per doubling of distance)	_		35		4B
Barrier screening	—		1.0		dB	Barrier screening	_		5		dB.
Façade reflection Inspact at nearest facade	30	33	N/A	N/A	(B(A)	Façade reflection Impact at nearest façade	35	39	N/A	N/A	(B (B(A)
Impact at nearest taçade Reduction through open window (also minus 2.5 dB fac		-7.5	7.5	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB fac		-7.5	7.5	7.6	dB(A)
Impact inside open window (also minus 2.5 dis 18)	nae)	26	N/A	N/A	(B(A)	Impact inside open window  Assorting the control of	ncae)	32	N/A	N/A	dB(A)
impact inside open window		20	25/26	N/A	68(A)	impact inside open window		32	19/24	NA	(B(A)
	Стеер	Aconstic	Quality C	hiectives			Creep	Aconstic	Quality C	hiectives	
TRUCK AIRBRAKES at loading bay	LAeq	LAeq	LA10	LA01	1 1	TRUCK AIRBRAKES at loading bay	LAeq	LAeq	LA10	LA01	1
Noise source level for single event		20	98	102	(B(A)	Noise source level for single event		0	98	102	(B(A)
Duration of single event	<del></del>		2		Seconds	Duration of single event	<del>- '</del>		2		Seconda
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	4.0		8.0		Seconds	Total time duration of combined events	4.0		8.0		Seconds
	LAeq	LAeg lhr	LA10 1hr	LA01 lbr	-		LAeq	LAeg lhr	LA10 1hr	LA01 1hr	1
Noise source level for assessment time period	66	63	N/A	N/A	68(A)	Noise source level for assessment time period	66	63	N/A	N/A	4B(A)
Tonality / Impulsiveness correction	0		- 5		ZB.	Tonality / Impulsiveness correction	0		- 5		éB.
Minimum distance to receiver		1	05		**	Minimum distance to receiver		-	IS.		
Distance attenuation (-6 dB per doubling of distance)	-		40		dB.	Distance attenuation (-6 dB per doubling of distance)			34		dB-
Barrier screening	-	0	1.0		éB	Barrier screening		0	.0		413
Facade reflection	-	2	.5		6B	Facade reflection		2	.5		éB.
Impact at nearest façade	29	31	N/A	N/A	dB(A)	Impact at nearest façade	35	37	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	éB.
Impact inside open window		23	N/A	N/A	dB(A)	Impact inside open window		30	N/A	N/A	dB(A)
TRUCK UNLOADING at loading bay	Creep		Quality C			TRUCK UNLOADING at loading bay	Creep		Quality C		
TRUCK CITEOADETO III TORULUG DII)	LAeq	LAeq	LA10	LA01	1 1	0 /	LAeq	LAeq	LA10	LA01	
Noise source level for single event	7	75	80	82	fB(A)	Noise source level for single event	1	75	80	82	éB(A)
Duration of single event		9	00		Seconds	Duration of single event		9	00		Seconds
Number of events in the measurement period	1		4		Events	Number of events in the measurement period	1		4		Events
Total time duration of combined events	900.0		3600.0		Seconds	Total time duration of combined events	900.0		3600.0		Seconds
	LAeq	LAeq lbr	LA10 1hr	LA01 lbr			LAeq	LAeq lhr	LA10 1hr		
Noise source level for assessment time period	75	75	80	82	fB(A)	Noise source level for assessment time period	75	75	80	82	fB(A)
Tonality / Impulsiveness correction	0		5		6B	Tonality / Impulsiveness correction	0		5		6B
Minimum distance to receiver			05		f1	Minimum distance to receiver			8		es.
Distance attenuation (-6 dB per doubling of distance)			40		έB	Distance attenuation (-6 dB per doubling of distance)			34		άB
Barrier screening	_		1.0		413	Barrier screening	_		.0		43
Façade reflection			1.5		63	Façade reflection			.5		49
Impact at nearest façade	37	42	47	49	(B(A)	Impact at nearest façade	44	49	54	56	dB(A)
											dB.
Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	dB .	Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	-
Reduction through open window (also minus 2.5 dB faç Impact inside open window				-7.5 42	dB dB(A)			-7.5 41	-7.5 46	48	dB(A)
Impact inside open window	ade)	-7.5 35	-7.5 40	42		Reduction through open window (also minus 2.5 dB faç Impact inside open window	ade)	41	46	48	dB(A)
	ade)	-7.5 35	-7.5 40 Quality 0	42 Objectives		Reduction through open window (also minus 2.5 dB faç	creep	41 Acoustic	46 Quality C	48 bjectives	dB(A)
Impact inside open window PEOPLE TALKING OUTSIDE	Creep	-7.5 35 Acoustic	-7.5 40 Quality O	42 Objectives LA01	dB(A)	Reduction through open window (also minus 2.5 dB fac Impact inside open window PEOPLE TALKING OUTSIDE	Creep	Acoustic	46 Quality C	48 bjectives LA01	
Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event	Creep	-7.5 35 Acoustic LAeq	-7.5 40 Quality 0 LA10	42 Objectives	6B(A)	Reduction through open window (also minus 2.5 dB fag Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event	Creep	Acoustic LAeq	Quality C	48 bjectives	dB(A)
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event  Duration of single event	Creep	-7.5 35 Acoustic LAeq	-7.5 40 Quality C LA10 70	42 Objectives LA01	dB(A) dB(A) Seconds	Reduction through open window (also mims 2.5 dB for Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event  Duration of single event	Creep LAeq	Acoustic LAeq	46 Quality C LA10 70	48 bjectives LA01	dB(A) Seconds
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event  Duration of single event  Number of events in the measurement period	Creep LAeq	-7.5 35 Acoustic LAeq	-7.5 40 Quality C LA10 70	42 Objectives LA01	dB(A) dB(A) Seconds Events	Reduction through open window (also minus 2.5 dB for Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Number of events in the measurement period	Creep LAeq	Acoustic LAeq	46 Quality C LA10 70	48 bjectives LA01	dB(A) Seconds Events
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event  Duration of single event	Creep LAeq 1 600.0	-7.5 35 Acoustic LAeq	-7.5 40 Quality C LA10 70 00 4 2400.0	42 Objectives LA01 73	dB(A)  dB(A)  Soconds  Events  Seconds	Reduction through open window (also mims 2.5 dB for Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event  Duration of single event	Creep LAeq 1 600.0	Acoustic LAeq 52	46 Quality C LA10 70 00 4 2400.0	48 Objectives LA01 73	dB(A) Seconds Events Seconds
Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events	Creep LAeq 1 600.0 LAeq	Acoustic LAeq 52 6 LAeqlhr	-7.5 40 • Quality 0 LA10 70 00 4 2400.0 LA10 1hr	42 Dbjectives LA01 73	dB(A)  dB(A)  Seconds  Events  Seconds	Reduction through open window (also minus 2 5 dB for Impact taxife open window  PROPLE TALKING OUTSIDE Notes source level for single event Duration of single event Number of events in the measurement period Toris time duration of combined events	Creep LAeq 1 600.0 LAeq	Acoustic LAeq 22 6 LAeq lhr	46   Quality C   LA10   70   00   4   2400.0   LA10 1hr	bjectives LA01 73 LA01 lbr	dB(A) Seconds Events Seconds
Impact inside open window  PEOPLE TALKING OUTSIDE  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	Creep LAeq 1 600.0 LAeq 60	-7.5 35 Acoustic LAeq	-7.5 40 2 Quality C LA10 70 00 4 2400.0 LA10 1hr	42 Objectives LA01 73	dB(A) Seconds Events Seconds dB(A)	Reduction through open window (also minus 2.5 dB for Impact inside open window  PPOPLE TAILNING OUTSIDE  Noise source level for single event  Direction of single event  Number of events in the measurement period  Total time duration of combined events  Noise source level for assessment time period  Noise source level for assessment time period	Creep LAeq 1 600.0 LAeq 60	Acoustic LAeq 52	46   LA10   70   70   4   2400.0   LA10 lhr   70   70   70   70   70   70   10   70   7	48 Objectives LA01 73	dB(A) Seconds Events Seconds
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event Duration of single event Number of events in the measurement period Torid time duration of combined events  Noise source level for assessment time period Torality Tangulstveness corrections	Creep LAeq 1 600.0 LAeq	-7.5 35 Acoustic LAeq 52 6 LAeq lhr 60	-7.5 40 LA10 70 00 4 2400.0 LA10 1hr 70 0	42 Dbjectives LA01 73	dB(A)  dB(A)  Seconds  Events  Seconds	Reduction through open window (siso minus 2 5 dB for Impact taside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Number of events in the measurement period Total time duration of consistent events Noise source level for onsistenties the period Totality impulsiveness correction	Creep LAeq 1 600.0 LAeq	Acoustic LAeq 22 6 LAeq lhr 60	46 Quality C LA10 70 00 4 2400.0 LA10 1hr 70 0	bjectives LA01 73 LA01 lbr	dB(A) Seconds Events Seconds
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event Duration of single event Duration of single event Outside of single event Total time duration of combined events Noise source level for assessment time period Tonality / Impulsiveness correction Minimized distance to receive	Creep LAeq 1 600.0 LAeq 60	-7.5 35 Acoustic LAeq 52 6 LAeq lhr 60	-7.5 40 LAl0 70 00 4 2400.0 LAl0 lbr 70 0	42 Dbjectives LA01 73	dB(A) Seconds Events Seconds dB(A) dB m	Reduction through open window (also minus 2.5 dB for Impact inside open window (also minus 2.5 dB for Impact inside open window  PPOPLE TAILNING OUTSIDE  Notice source levels for tingle event  Direction of single event  Number of events in the massurement period  Total time drivers in the massurement period  Total time drivers in the massurement time period  Total time for the control of combined events  Notice source level for assessment time period  Totality / Impulsiveness correction  Maintained distance to receiver	Creep LAeq 1 600.0 LAeq 60	Acoustic LAeq S2 6 LAeq Ihr 60	46   LA10   70   00   4   2400.0   LA10 lhr   70   0   0   0   0   0   0   0   0	bjectives LA01 73 LA01 lbr	dB(A) Seconds Events Seconds dB(A) dB
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event Duration of single event Number of events in the inessurement period Total time duration of combined events  Noise ource level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation of 6 dB per doubling of distance)	Creep LAeq 1 600.0 LAeq 60	Acoustic LAeq  LAeq lhr  60	-7.5 40 LA10 70 00 4 2400.0 LA10 1hr 70 0	42 Dbjectives LA01 73	dB(A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB  m	Reduction through open window (sloo minus 2 5 dB for Impact inside open window)  PEOPLE TAINING OUTSIDE  Noise source level for single event Dumber of swith in the measurement period  Totals time duration of combined events  Number of events in the measurement period  Totals time duration of combined eventine period  Totals used outre level for moises attent time period  Totality in the proposition of the period  Totality in the proposition of the period  Totality in the proposition of the period  Distance extensions of 6 dB period outpling of distance)  Distance extensions of 6 dB period outpling of distance)	Creep LAeq 1 600.0 LAeq 60	Acoustic LAeq S2 60 LAeq lhr 60	46  Quality 0  LA10  70  00  4  2400.0  LA10 lbr  70  0  63  36	bjectives LA01 73 LA01 lbr	dH(A) Scoonds Events Scoonds dB(A) dB
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event Duration of 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 A minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening	Creep LAeq 1 600.0 LAeq 60	7.5 35 Acoustic LAeq 52 6 LAeq lhr 60	-7.5 40 LA10 70 00 4 2400.0 LA10 lbr 70 0	42 Dbjectives LA01 73	dB(A) Seconds Events Seconds dB(A) dB(A) dB dB dB	Reduction through open window (disc minus 2.5 dB for Impact inside open window (disc minus 2.5 dB for Impact inside open window (POPP). The POPP is the POPP POPP TALKING OUTSIDE Notice source level for timple event Number of events in the massurement period Torist time during of combined events Notice source level for assessment time period Toristing / Impulsiveness correction Maintained distance to receive Distance attenuation (4 dB per doubling of distance) Barrier screening.	Creep LAeq 1 600.0 LAeq 60	Acoustic LAeq 122 6 6 LAeq 1hr 60 60	Quality C LA10 70 00 4 2400.0 LA10 1hr 70 0 63 3 6 0 0	bjectives LA01 73 LA01 lbr	ell(A) Soconds Events Soconds dB(A) dB dB
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event Deration of single event Number of events in the insessirement period Total time duration of combined events  Noise our ce level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Barries creening	Creep   LAeq	7.5 35 Acoustic LAeq 52 6 LAeq lhr 60	7.5 40  LA10 70 00  4 2400.0  LA10 1hr 70 0  20 42	d2 Dbjectives LA01 73 LA01 lhr 73	dB(A)  seconds  Events  Seconds  dB(A)  dB  dB  dB  dB  dB	Reduction through open window (also minus 2.5 dB for Impact inside open window)  PEOPLE TAIRING OUTSIDE  Noise source level for tingle event Duration of single event Number of events in the measurement period  Totalites outer level for insidest events  Totalites outer level for insidest events  Totalites outer level for insidest events  Totality Impulsiveness correction Minimum distance to receiver  Distance estimation (-6 dB) per doubling of distance)  Barries creening  Barries creening	Creep   LAeq   ()	Acoustic LAeq  LAeq lhr  60	Quality C   LA10   70   00   4   2400.0   LA10 1hr   70   0   33   36   0   .5	48 bjectives LA01 73 LA01 lhr 73	dB(A) Soconds Events Soconds dB(A) dB m dB dB dB
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event Duration of 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 Tondity / Impulsiveness correction Affinizing distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Fayde reflection Impact at a search fayde	Creep   LAeq	7.5 35 Acoustic LAeq 32 6 LAeq lhr 60 1	-7.5 40  LA10 TA0  1 LA10 TO  00  4 2400.0  LA10 1hr  70 0 20 42	42   Dijectives   LA01   73     LA01   Ibr   73     34	dB(A) Seconds Events Seconds dB(A) dB(A) dB dB dB	Reduction through open window (disc minus 2.5 dB for Impact inside open window)  PPOPLE TAINING OUTSIDE  Notice source level for single event Dicarions of single event Number of events in the measurement period  Tools time desired of combined events  Notice source level for assessment time period  Tools time desired or combined events  Notice source level for assessment time period  Tools time desired for assessment time period  Tools time desired to forestere  Distance attenuation (4 dB per doubling of distance)  Barrier screening  Faughe reflection  Impact at anearest façade	Creep   LAeq	Acoustic   LAeq   LAeq   lhr   60	46  Quality C  LA10  70  00  4  2400.0  LA10 1hr  70  0  33  64  0  1  37	48 bjectives LA01 73 LA01 lhr 73	dB(A) Seconds Events Seconds dB(A) dB dB dB dB dB dB(A)
Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event Deration of single event Number of events in the insessirement period Total time duration of combined events  Noise our ce level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Barries creening	Creep   LAeq	7.5 35 Acoustic LAeq 52 6 LAeq lhr 60	7.5 40  LA10 70 00  4 2400.0  LA10 1hr 70 0  20 42	d2 Dbjectives LA01 73 LA01 lhr 73	dB(A)  seconds  Events  Seconds  dB(A)  dB  dB  dB  dB  dB	Reduction through open window (also minus 2.5 dB for Impact inside open window)  PEOPLE TAIRING OUTSIDE  Noise source level for tingle event Duration of single event Number of events in the measurement period  Totalites outer level for insidest events  Totalites outer level for insidest events  Totalites outer level for insidest events  Totality Impulsiveness correction Minimum distance to receiver  Distance estimation (-6 dB) per doubling of distance)  Barries creening  Barries creening	Creep   LAeq	Acoustic LAeq  LAeq lhr  60	Quality C   LA10   70   00   4   2400.0   LA10 1hr   70   0   33   36   0   .5	48 bjectives LA01 73 LA01 lhr 73	dB(A) Soconds Events Soconds dB(A) dB m dB dB dB

R1: Existing Single-storey dwellings to the north						R2: Future dwelling: to the immediate north					-
	Creep	Aconstic	Quality C	hisetime			Creep	Aconstic	Quality C	hisetime	_
TRUCKS WITH REFRIGERATION UNIT	LAeq	LAea	LA10	LA01	1 1	TRUCKS WITH REFRIGERATION UNIT	LAeg	LAea	LA10	LA01	+
Noise source level for single event	22.04		82	83	6B(A)	Noise source level for single event		S1	82	83	6B(A)
Duration of single event			00		Seconds	Duration of single event	_		00	- 0,	Seconds
Number of events in the measurement period	1		2		Events	Number of events in the measurement period	1		2		Events
Fotal time duration of combined events	900.0		1800.0		Seconda	Total time duration of combined events	900.0		1800.0		Seconda
	LAeq	LAea lhr	LA10 1hr	LA01 1hr			LAeq	LAeg lhr	LA10 1hr	LA01 1hr	
Noise source level for assessment time period	S1	78	82	83	(B(A)	Noise source level for assessment time period	81	78	82	23	(B(A)
Conality / Impulsiveness correction	0		0		éB.	Tonality / Impulsiveness correction	0		0		dB.
Minimum distance to receiver		1	05		n	Minimum distance to receiver		- 4	8		
Distance attenuation (-6 dB per doubling of distance)		-	40		ćB.	Distance attenuation (-6 dB per doubling of distance)		-3	34		éB.
Refrigeration unit truck directivity / screening			0		/B	Refrigeration unit truck directivity / screening			0		dB.
Barrier screening		0	0		dB.	Barrier screening		0	.0		dB.
Facade reflection			5		63	Façade reflection			.5		69
Impact at nearest façade	43	40	44	45	6B(A)	Impact at nearest façade	50	47	51	52	dB(A)
Reduction through open window (also minus 2.5 dB faça	de)	-7.5	-7.5	-7.5	/B	Reduction through open window (also minus 2.5 dB face	nde)	-7.5	-7.5	-7.5	dB.
Impact inside open window		33	37	38	6B(A)	Impact inside open window	nacy .	30	43	44	6B(A)
			-		()						
	Creep	Acoustic	Ouality C	biectives			Creep	Acoustic	Ouality C	Diectives	-
WAS TE COLLECTION INDUSTRIAL BIN - Service	LAeq	LAeq	LA10	LA01	1 1	WAS TE COLLECTION INDUSTRIAL BIN - Service	LAeq	LAeg	LA10	LA01	1
Noise source level for single event	zzwą c		97	102	(B(A)	Noise source level for single event		92	97	102	(B(A)
Duration of single event			80		Seconds	Duration of single event	<del>-</del>		80	102	Second
Number of events in the measurement period	1		1		Events	Number of events in the measurement period	1	T	1		Events
Total time duration of combined events	180.0		180.0		Seconds	Total time duration of combined events	180.0	_	180.0		Second
to the table distinct of Commission evens	LAea	I Aso lbr		LA01 1hr		Total lane desired of combined every	LAea	I Asa lbr		LA01 1hr	
Noise source level for assessment time period	85	79	N/A	102	6B(A)	Noise source level for assessment time period	85	79	N/A	102	dB(A)
Conality / Impulsiveness correction	0		- 5	10.0	(B	Tonality / Impulsiveness correction	0		- 5	102	dB.
Minimum distance to receiver		1	05			Minimum distance to receiver	<del>'</del>	-	8		
Distance attenuation (-6 dB per doubling of distance)			40		(3)	Distance attenuation (-6 dB per doubling of distance)			14		625
Barrier screening			0		4B	Barrier screening			0		éB.
Facade reflection			5		/B	Facade reflection		2	.5		éB.
Impact at mearest facade	47	46	N/A	69	dB(A)	Impact at nearest facade	54	53	N/A	76	dB(A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	en (x)	Reduction through open window (also minus 2.5 dB face		-7.5	-7.5	-7.5	60
Impact inside open window	us.)	30	N/A	62	6B(A)	Impact inside open window	mac)	45	N/A	68	dB(A)
aupiter in rice open minoon		- 55	21126	- 0.2	0.5 (.4.)	ampiet tariot open matorn			11121	- 00	e.b(x)
	Стеер	Aconstic	Ouality C	hiectives	$\overline{}$		Creep	Aconstic	Ouality C	Phiechines	_
ALFRES CO DINING	LAeq	LAeq	LA10	LA01	1 1	ALFRES CO DINING	LAeq	LAeq	LA10	LA01	+
Noise source level for single event	2244		78	82	(B(A)	Noise source level for single event		75	78	82	(B(A)
Duration of single event			20	0.0	Seconds	Duration of single event	_		20	9.5	Seconds
Number of events in the measurement period	1		4		Events	Number of events in the measurement period	1		4		Events
Total time duration of combined events	720.0		2880.0		Seconds	Total time duration of combined events	720.0	_	2880.0		Seconds
to the table document of commence evens	LAeq	LAca lbr	LA10 1hr	II A01 1hr	3010103	Total lane districts of complified events	LAeg	LAca lbr	T A10 1hr	LA01 1hr	
Noise source level for assessment time period	74	74	78	82	(B(A)	Noise source level for assessment time period	74	74	78	82	(B(A)
Conality / Impulsiveness correction	0	.74	5		(B(A)	Tonality / Impulsiveness correction	0	- /-7	5	0.2	4B
Minimum distance to receiver	-	1	02			Minimum distance to receiver	Ť	1	15		-
Distance attenuation (-6 dB per doubling of distance)			45		rs rs	Distance attenuation (-6 dB per doubling of distance)			¥1		/B
			0		dB dB	Barrier screening	-		.0		dB
Barrier creaming						presses resociating					len
Barrier screening					679	Facada reflection		2	5		471
Façade reflection	31	2	5	1 44	48	Façade reflection Turnert at negrout facade	35		5	48	dB dBchi
	31			-7.5	6B (A)	Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça	35	40 -7.5	.5 -7.5	48 -7.5	6B (A)

STAGE 2 ACTIVITY NOISE PREDICTION CALCU	THIONS	LAN Br &	20,001 He	Sections of the Paris			301 IMC 1 M	our periou,	1		
R3: Existing dwellings to the east						R4: Future dwellings to the immediate east					
CAR DOOR CLOSURE near carpark DAY / EVEN	Creep LAeq	Acoustic LAeq	Quality C	LA01		CAR DOOR CLOSURE near carpark DAY / EVEN	Creep LAeq	Acoustic LAeq	Quality C	LA01	-
Noise source level for single event Duration of single event	7	75	5 77	80	dB(A) Seconds	Noise source level for single event Duration of single event	-	75	5 77	80	dB(A) Seconds
Number of events in the measurement period	23		90		Events	Number of events in the measurement period	23		90		Events
Total time duration of combined events	33.8		135.0		Seconda	Total time duration of combined events	33.8		135.0		Seconda
	LAeq		LA10 1hr				LAeq			LA01 lhr	
Noise source level for assessment time period	61	61	N/A	\$0	(B(A)	Noise source level for assessment time period	61	61	N/A	\$0	(B(A)
Tonality / Impulsiveness correction	0	Щ,	5		έB	Tonality / Impulsiveness correction	0	L	. 5		éB.
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)			91		n	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_	7.	.5		
Barrier screening	_		4.1		6B	Barrier screening	_		7.1		dB dB
Facade reflection			5		dB.	Facade reflection	_	2	5		dB.
Impact at nearest façade	1	6	N/A	25	dB(A)	Impact at nearest façade	29	34	N/A	53	dB(A)
Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	6B	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	6B
Impact inside open window		-1	N/A	18	6B(A)	Impact inside open window		26	N/A	45	dB(A)
	1.314695	4.15743			$\overline{}$		728,4062	2303,423			
CAR DOOR CLOSURE far carpark DAY / EVEN	Стеер		Quality C			CAR DOOR CLOSURE far carpark DAY / EVEN	Creep			bjectives	4
Noise source level for single event	LAeq	LAeq	LA10	LA01 S0		Noise source level for single event	LAeq	LAeq	LA10	LA01 80	
Duration of single event	_	1	5 //	80	dB(A) Seconds	Duration of single event	_	1	5 //	80	dB(A) Seconda
Number of events in the measurement period	23	<del>- '</del>	90		Events	Number of events in the measurement period	23	<del>, '</del>	90		Events
Total time duration of combined events	33.8		135.0		Seconds	Total time duration of combined events	33.8		135.0		Seconds
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	61	61	N/A	80	dB(A)	Noise source level for assessment time period	61	61	N/A	80	dB(A)
Tonality / Impulsiveness correction	0		5		6B	Tonality / Impulsiveness correction	0		5		éB.
Minimum distance to receiver			00		f1.	Minimum distance to receiver			7		es.
Distance attenuation (-6 dB per doubling of distance)			50		άB	Distance attenuation (-6 dB per doubling of distance)			35		άB
Barrier screening			).3		éB	Barrier screening		-1			á13
Façade reflection		-	.5		ćΒ	Façade reflection			.5		éB
Impact at nearest façade	4	9	N/A	29	6B(A)	Impact at nearest façade	13	18	N/A	37	dB(A)
Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5 N/A	-7.5 21	έB	Reduction through open window (also minus 2.5 dB fac	nde)	-7.5 10	-7.5 N/A	-7.5 29	άB
Impact inside open window	1 222 600	0.400011	N/A	21	dB(A)	Impact inside open window	10.27460	20 10227	N/A	29	dB(A)
	Creep	Aconetic	Quality C	hiections	-		Creep	Aconstic	Quality C	hiactions	_
CAR DOOR CLOSURE near carpark NIGHT	LAeg	LAeq	LA10	LA01	1 1	CAR DOOR CLOSURE near carpark NIGHT	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	Lowey	15	77	80	(B(A)	Noise source level for single event	Lawy	75	77	80	(B(A)
Duration of single event		1	5	- 00	Seconds	Duration of single event		1	5	- 50	Seconds
Number of events in the measurement period	7		21		Events	Number of events in the measurement period	7		21		Events
Total time duration of combined events	10.5		31.5		Seconds	Total time duration of combined events	10.5		31.5		Seconda
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	56	54	N/A	N/A	(B(A)	Noise source level for assessment time period	56	54	N/A	N/A	(B(A)
Tonality / Impulsiveness correction	0		5		έB	Tonality / Impulsiveness correction	0		5		dB.
Minimum distance to receiver			50		n	Minimum distance to receiver		7.	.5		
Distance attenuation (-6 dB per doubling of distance)			4S		6B	Distance attenuation (-6 dB per doubling of distance)			1S		éB.
Barrier screening			4.1		ćB	Barrier screening			7.1		₫B.
Façade reflection	<b>.</b>	T 0	5	3714	έB	Façade reflection	24	27		3714	άB
Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	-4	-7.5	N/A -7.5	N/A -7.5	dB(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç		-7.5	N/A -7.5	N/A -7.5	dB(A) dB
Impact inside open window	sae)	-7.5	N/A	N/A	6B (A)	Impact inside open window (also minus 2.5 dis lac	nae)	20	N/A	N/A	dB(A)
impact inside open stindoss	I n 400016	0 0 0 0 0 0 0 0 0 7	19/26	DOA.	6B(A)	impact inside open window	I 226 6153	537.4653	11/24	NA	dB(A)
CAR POOR CLOSUPE CO	Стеер	Acoustic	Quality C	bjectives	$\overline{}$	CAR BOOR CLOSURE (	Creep	Acoustic	Quality (	) Diectives	
CAR DOOR CLOSURE far carpark NIGHT	LAeq	LAeq	LA10	LA01	1 1	CAR DOOR CLOSURE far carpark NIGHT	LAeq	LAeq		LA01	1
Noise source level for single event	1	15	77	80	dB(A)	Noise source level for single event		75	77	80	dB(A)
Duration of single event		1	5		Seconds	Duration of single event		1	.5		Seconda
Number of events in the measurement period	7		21		Events	Number of events in the measurement period	7		21		Events
Total time duration of combined events	10.5		31.5		Seconds	Total time duration of combined events	10.5		31.5		Seconds
L	LAeq			LA01 lbr	$\vdash$	L	LAeq			LA01 lhr	
Noise source level for assessment time period Tonality / Impulsiveness correction	56	54	N/A	N/A	éB(A)	Noise source level for assessment time period Tonality / Impulsiveness correction	56	54	N/A	N/A	dB(A)
11 Onday / and distreness correction									,		éB
			00								P <sup>4</sup>
Minimum distance to receiver			00 50		n	Minimum distance to receiver		5			em.
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)		- 3	00 50		es dB	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)		-	35		éB éB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening		-9	50		68 48	Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening		-	5.5		éB éB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	1	-9	50	I N/A	68 68 68 68 68	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest facade	8	-1:	5.5	l N/A	6B 6B 6B(A)
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	-1	-: -9 2	50 0.3 .5 N/A -7.5	-7.5	# dB	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest facade		-1 -1 2	5.5 5 N/A -7.5	-7.5	4B
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection	-1	-9	50 0.3			Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection		-1 -1 2	5.5 .5 .5 .N/A	N/A -7.5 N/A	dB dB(A)
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Reduction through open window (also minus 2.5 dB faç	-1 nde)	3 -7.5 -4	50 0.3 5 N/A -7.5 N/A	-7.5 N/A	έB	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	<b>nde)</b> 5 71654	-1: 2 11 -7.5 4	5.5 5 N/A -7.5 N/A	-7.5 N/A	6B 6B(A) 6B
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Fayable reflection Impact at nearest façade Reduction through open window (siso minus 2.5 dB fay Impact inside open window)	0.847062 Creep	2 3 -7.5 -4 2.008984	50 0.3 .5 N/A -7.5 N/A	-7.5 N/A Objectives	έB	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Fepale reflection Impact at nearest façade Reduction through open window (distance) as the factor of the factor	ode) 5 71654 Creep	-1: 2 11 -7.5 4 13:55797 Acoustic	5.5 5 N/A -7.5 N/A Quality C	-7.5 N/A Objectives	6B 6B(A) 6B
Manusam distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Ilmpact at nearest façade Reduction through open window (siso minus 2.5 dB faç Impact inside open window CAR ENGINE STARTS near carpark DAY / EVEN	0.847062	3 -7.5 -4 2.008984	50 3.3 .5 N/A -7.5 N/A Quality O	-7.5 N/A Objectives LA01	έB	Minimum distance to receiver Distance at remarktion (-6 dB per doubling of distance) Barrier screening Fraçade reflection Impact at nearest façade Reduction through open window (diso minus 2.5 dB faç Impact in saide open window CAR ENGINE STARTS near carpark DAY / EVEN	<b>nde)</b> 5 71654	-1: 2 11 -7.5 4	5.5 5.5 N/A -7.5 N/A Quality C	-7.5 N/A Objectives LA01	6B 6B(A) 6B
Maintam distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Engale rediction Impact at a nearest façade Reduction through open window (siso minus 2.5 dB for Impact matie open window CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event	0.847062 Creep	2 3 -7.5 -4 2.008984	50 0.3 .5 N/A -7.5 N/A	-7.5 N/A Objectives	dB dB(A)	Minimum distance to receiver Distance attentation (-6 dB per doubling of distance) Barrie screening Façade rediction Impact at a nevert façade Rediction through open window (also minus 2.5 dB for Impact tails per a window (also minus 2.5 dB for Impact tails per a window CARENCES TARTS near carpark DAY / EVEN Notes source level for single event	ode) 5 71654 Creep	-1: 2 11 -7.5 4 13:55797 Acoustic	5.5 5 N/A -7.5 N/A Quality C	-7.5 N/A Objectives	6B 6B(A) 6B 6B(A)
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Fayable reflection Impact at nearest façade Reduction through open window (siso minus 2.5 dB faç Impact inide open window CAR ENGINE STARTS near carpark DAY/EVEN Noise source level for single event	Creep LAeq	2 3 -7.5 -4 2.008984	50 5 N/A -7.5 N/A Quality 0 LA10 74	-7.5 N/A Objectives LA01	dB dB(A) dB(A) dB(A) Seconds	Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Barrier screening Fraçade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window CAR ENGINE STARTS near caspark DAY / EVEN Notes source level for tingle event Duration of single event	S 71654 Creep LAeq	-1: 2 11 -7.5 4 13:55797 Acoustic	5.5 5.5 N/A -7.5 N/A Quality C LA10 74	-7.5 N/A Objectives LA01	dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Manimum distance to receiver Distance artenanci (=6 dB per doubling of distance) Barries creening Engule rediction Impact at a nearest façade Reduction through open window (siso minus 2.5 dB for Impact matie open window CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Duration of single event	Creep LAeq	2 3 -7.5 -4 2.008984	50 0.3 5 N/A -7.5 N/A Quality O LA10 74 3	-7.5 N/A Objectives LA01	dB dB(A)  dB(A)  Seconds  Events	Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Burirs screening Fexale reflection Impact at mererst façade Reduction through open window (also minus 2.5 dB for Impact task open window) CAR ENCINE STARTS mear carparic DAY / EVEN Notes source level for single event Duration of single event Duration of single event	Creep LAeq	-1: 2 11 -7.5 4 13:55797 Acoustic	35 5.5 5 N/A -7.5 N/A Quality C LA10 74 3	-7.5 N/A Objectives LA01	dB (A) dB (A) dB (A) dB (A) dB (A) Seconds
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Fayable reflection Impact at nearest façade Reduction through open window (siso minus 2.5 dB faç Impact initie open window CAR ENGINE STARTS near carpark DAY/EVEN Noise source level for single event	Creep LAeq 10 30.0	-5 2 3 -7.5 -4 2 008984 Acoustic LAeq	50 1.3 5 N/A -7.5 N/A Quality 0 LA10 74 3 30 90.0	-7.5 N/A Dijectives LA01 75	dB dB(A) dB(A) dB(A) Seconds	Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Barrier screening Fraçade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window CAR ENGINE STARTS near caspark DAY / EVEN Notes source level for tingle event Duration of single event	571654 Creep LAeq 10 30.0	-1: 2 11 -7.5 4 13 55 97 Acoustic LAeq	55 55 55 55 57 57 57 57 67 67 67 67 67 67 67 67 67 6	-7.5 N/A Dbjectives LA01 75	dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Minimum distance to receiver Distance arternation (= dB per doubling of distance) Barries (scienning Barries	Creep LAeq 10 30.0 LAeq	-5 2 3 -7.5 -4 2 008984 Acoustic LAeq	50 3 3 5 N/A -7.5 N/A   -7.5 N/A   LA10   LA10   3 3 30 90.0   LA10 1hr	-7.5 N/A Dijectives LA01 75	dB dB(A)  dB(A)  Seconds  Events  Seconds	Maintame distance to receiver Distance estimation (-6 dB per doubling of distance) Barries creening Barries creening Fexicle reflection Impart at a nearest facade Reduction through open window (olso minus 2.5 dB for Impart inside open window  CAR ENGINE STARTS near caspark DAY / EVEN Notice source level for tingle event Duration of single event  Number of events in the measurement period Toris time duration of combined events	Creep LAeq  10 30.0 LAeq	-1: 2 11 -7.5 4 13 55 97 Acoustic LAeq	55 5.5 5.5 5.5 5.5 N/A -7.5 N/A LA10 74 3 30 90.0 LA10 lhr	-7.5 N/A Objectives LA01	dB dB(A) dB dB(A) dB dB(A) dB(A) Seconds Events
Minimum distance to receiver Distance attenuant (-6 dB per doubling of distance) Barrier screening Fajade reflection Ilmpact at nearest fajade Reduction through open window (also minus 2 5 dB fag Impact inside open window CAR ENGINE STARTS near carpark DAY/EVEN Noise source level for single event Duration of single event Number of events in the measurement period Tool time duration of combined events Number of events in the measurement period Tool time duration of combined events Noise source level for successionent measurement period	10 30.0 LAeq 58	-5 2 3 -7.5 -4 2 008984 Acoustic LAeq	50 3 5 N/A -7.5 N/A -7.5 N/A LA10 T4 3 30 90.0 LA10 1hr N/A	-7.5 N/A Dijectives LA01 75	dB dB(A)  dB(A)  Seconds  Events	Minimum distance to receiver Distance attentation (-6 dB per doubling of distance) Barrier screening Fraçade reflection Impact at nearest façade Reduction through open window (Also minus 2.5 dB faç Impact inside open window CAR ENGINE STARTS mear carpark DAY / EVEN Notice source level for single event Dieziston of single event Dieziston of single event Torial time desiration of combined events Notice source level for assessment period Torial time desiration of combined events Notice source level for assessment time period	Creep LAeq  10 30.0 LAeq 58	-1: 2 11 -7.5 4 13 55 97 Acoustic LAeq	55 5.5 5.5 5.5 5.5 5.5 N/A -7.5 N/A Quality C LA10 74 3 30 90.0 LA10 lbr	-7.5 N/A Dbjectives LA01 75	dB (A) dB (A) dB (A) dB (A) dB (A) Seconds Events Seconds
Minimum distance to receiver Distance attenuant of 4 BB per doubling of distance) Barrier screening Façade refliction Impact at nearest façade Rediction through open window (skio minus 2.5 dB for Impact inside open window (skio minus 2.5 dB for Impact inside open window CAR ENGINE STARTS near carpark DAY / EVEN Notice source level for single event Duration of single event Total time duration of combined events Notice ource level for sensessment time period Total time duration of combined events Notice time the senses of the sens	Creep LAeq 10 30.0 LAeq	2 2 3 -7.5 -4 Acoustic LAeq lhr 57	50 3 3 5 N/A -7.5 N/A   -7.5 N/A   LA10   LA10   3 3 30 90.0   LA10 1hr	-7.5 N/A Dijectives LA01 75	dB dB(A)  dB(A)  Seconds  Events  Seconds	Maintame distance to receiver Distance estimation (-6 dB per doubling of distance) Barries creening Packed reflection Impact at a nearest facade Reduction through open window (olso minus 2.5 dB for Impact inside open window  CAR ENGINE STARTS near carpark DAY / EVEN Notice source level for single event Direction of single event Total time duration of combined events Notice source level for suspensive event Total time duration of combined events Notice source level for suspensive period Total time duration of combined events	Creep LAeq  10 30.0 LAeq	-1: 2 11 -7.5 4 13 \$5707 Acoustic LAeq 73	55 5.5 5.5 5.5 5.5 N/A -7.5 N/A LA10 74 3 30 90.0 LA10 lhr	-7.5 N/A Dbjectives LA01 75	dB dB(A) dB dB(A) dB dB(A) dB(A) Seconds Events
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Figuda reflection Impact at nearest figuda Reduction through open window (also minus 2.5 dB fog Impact at nearest faguda Reduction through open window CAR ENGINE STARTS near carpark DAY / EVEN Noise source sewel for single event Duration of single event Number of events in the measurement period Tool time duration of combined wents Noise source level for noisessment time period Tools in y Impulsiveness correction Minimum distance to receiver	10 30.0 LAeq 58	2 3 3 -7.5 -4	50 0.3 5 N/A -7.5 N/A Quality 0 LA10 74 3 30 90.0 LA10 lbr N/A	-7.5 N/A Dijectives LA01 75	dB dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds	Minimum distance to receiver Distance attention (-6 dB per doubling of distance) Barries creening Flogale reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB for Impact at sixtle open window  CAR ENGINE STARTS near carpark DAY/EVEN Noise source level for single event Dearston of single event Number of events in the measurement period Tools time distantion of combined events  Noise source level for assessment time period Tools time distantion of combined events  Noise source level for assessment time period Tools time distantion of combined events	Creep LAeq  10 30.0 LAeq 58	-1: -2: -1: -2: -1: -2: -1: -2: -2: -2: -2: -2: -2: -2: -2: -2: -2	55 5.5 5.5 5.5 N/A -7.5 N/A Quality 0 LA10 74 3 30 90.0 LA10 1hr N/A 0	-7.5 N/A Dbjectives LA01 75	6B 6B(A) 6B(A) 6B 6B(A) 6B(A) 6B(A) 6B(A) 6B(A) 6B(A) 6B
Minimum distance to receiver Distance attenuant of 4 BB per doubling of distance) Barrier screening Façade refliction Impact at nearest façade Rediction through open window (skio minus 2.5 dB for Impact inside open window (skio minus 2.5 dB for Impact inside open window CAR ENGINE STARTS near carpark DAY / EVEN Notice source level for single event Duration of single event Total time duration of combined events Notice ource level for sensessment time period Total time duration of combined events Notice time the senses of the sens	10 30.0 LAeq 58	2 3 3 -7.5 -4 2008984 Acoustic LAeq 1hr 57	50 2.3 5 N/A -7.5 N/A Quality 0 LA10 74 3 30 90.0 LA10 1hr N/A	-7.5 N/A Dijectives LA01 75	dB dB(A)  dB(A)  dB(A)  Seconds  Events  Seconds	Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Barrie screening Packed reflection Impact at a nearest facade Reduction through open window (olso minus 2.5 dB for Impact inside open window  CAR ENGINE STARTS near carpark DAY / EVEN Notice source level for single event Direction of single event Direction of single event Notice source level for single event Total time duration of combined events  Notice source level for assessment time period Total time duration of combined or continued or continued in the continued of the contin	Creep LAeq  10 30.0 LAeq 58	-1: 2 11 -7.5 4 13:55597 Acoustic LAeq 73	55 5.5 5.5 5.5 5.5 5.5 5.5 5.5	-7.5 N/A Dbjectives LA01 75	dB (A) dB (A) dB (A) dB (A) dB (A) Seconds Events Seconds
Minimum distance to receiver Distance artenance (-6 dB per doubling of distance) Barries crossning Barries crossning Barries crossning Façade reflection Impact at a nearest façade Reduction through open window (siso minus 2.5 dB fag Impact minde open window CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Unarties of single event Noise source level for assessment time period Totally Timpulstveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries crossning.	10 30.0 LAeq 58	-5 2 3 3 -7.5 -4 200854 Acoustic LAeq 1br 57 2 2 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	50 13 5 N/A -7.5 N/A Quality O LA10 74 3 30 90.0 LA10 lbr N/A 0 50	-7.5 N/A Dijectives LA01 75	dB (A)  dB(A)  Seconds Events Seconds dB(A)  dB(A)	Minimum distance to receiver Distance attentation (= 6 db per doubling of distance) Barrie screening Barrie screening Barrie screening Federiction Impact at a nearest façade Redistrion through open window (also minus 2.5 dB for Impact inside open window  CARENCINE STARTS near carparic DAY / EVEN Noise source level for single event Duration of single event Duration of single event Outside open window  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of receiver Minimum distance to receiver Distance attenuation (= 6 dB per doubling of distance) Barries screening	Creep LAeq  10 30.0 LAeq 58	-1: 2 -1: 2 -1: 4 -7:5 -4 -1: 55597 -Acoustic LAeq -7: 57 -7: -1: -1: -1: -1: -1: -1: -1: -1: -1: -1	555 5.55 5 N/A -7.5 N/A Quality C LA10 74 3 30 90.0 LA10 lhr N/A 0 5	-7.5 N/A Dbjectives LA01 75	eB (A) eB (A) eB (B(A) eB (A) eB (A) Seconds Events Seconds eB (A) eB (B) eB (B
Minimum distance to receiver Distance artenance (-6 dB per doubling of distance) Barries creening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fag Impact at nearest façade Reduction through open window CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Duration of single event Noise source level for single event Noise source level for single event Noise source level for assessment time period Totalliny / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Façade reflection Impact at nearest facade	10 30.0 LAeq 58 0	2 3 3 -7.5 -4 2 008984	50 33 5 N/A -7.5 N/A 1.Al0 74 3 30 90.0 1.Al0 1hr N/A 0 50 48 4.1	-7.5 N/A Dijectives LA01 75	dB (A)  dB(A)  Seconds Events Seconds dB(A)  dB(A)	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrie screening Façade reflection Impact at a server façade Rediction through open window (also minus 2.5 dB for Impact inside open window  CARENCINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Duration of single event Outside open window  Noise source level for single event Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Packet Reflection  Nationard distance to receive greater Barries screening Façade reflection  Impact at a nearest façade	10 30.0 LAeq 58 0	-1: 2 11 -7.5 4 15.55797 Acoustic LAeq 1hr 57	55 5.5 5.5 N/A -7.5 N/A Quality C LA10 74 3 30 90.0 LA10 lhr N/A 0 5 18 18 18 18 18 18 18 18 18 18	-7.5 N/A Dbjectives LA01 75	eB (A) eB (A) eB (B(A) eB (A) eB (A) Seconds Events Seconds eB (A) eB (B) eB (B
Minimum distance to receiver Distance artenance (-6 dB per doubling of distance) Barries creening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fag Impact at nearest façade Reduction through open window CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Duration of single event Noise source level for single event Noise source level for single event Noise source level for assessment time period Totalliny / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Façade reflection Impact at nearest facade	10 30.0 LAeq 58 0	-5 2 3 3 -7.5 -4 200854 Acoustic LAeq 1br 57 2 2 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	50 0.3 5 N/A -7.5 N/A LA10 74 3 30 90.0 LA10 lbr N/A 0 50 48 4.1	7.5 N/A Dijectives LA01 75 LA01 lhr 75	dB dB(A)  dB(A)  Seconds Events  Seconds  dB(A)  dB  ss  dB  dB  dB  dB	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrie screening Façade reflection Impact at a server façade Rediction through open window (also minus 2.5 dB for Impact inside open window  CARENCINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Duration of single event Outside open window  Noise source level for single event Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Packet Reflection  Nationard distance to receive greater Barries screening Façade reflection  Impact at a nearest façade	10 30.0 LAeq 58 0	-1: 2 -1: 2 -1: 4 -7:5 -4 -1: 55597 -Acoustic LAeq -7: 57 -7: -1: -1: -1: -1: -1: -1: -1: -1: -1: -1	55 5.5 5 N/A -7.5 N/A Quality C LA10 1 A10 1 A10	7.5 N/A Dijectives LA01 75 LA01 lhr	eB  eB(A)  eB  eB(A)  eB  eB(A)  cut  cut  cut  cut  cut  cut  cut  cu
Minimum distance to receiver Distance attenuant of 4 dB per doubling of distance) Barries screening Façade refliction Impact at nearest façade Rediction through open window (skio minus 2.5 dB faç Impact taited open window  CAR ENGINE STARTS near carpark DAY / EVEN 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 nesessiment time period Total time duration of combined events Noise one level for nesessiment imperiod Total time duration of combined events Distance attenuant of of dB per doubling of distance) Barries creening Barries creening Barries creening	10 30.0 LAeq 58 0	2 3 3 -7.5 -4 2 008984	50 0.3 5 N/A -7.5 N/A LA10 74 3 30 90.0 LA10 lbr N/A 0 50 48 4.1	7.5 N/A  Dijectives  LA01 75  LA01 lhr 75	dB dB(A)  dB(A)  Seconds Events  Seconds  dB(A)  dB  ss  dB  dB  dB  dB	Maintame distance to receiver Distance estimation (-6 dB per doubling of distance) Barrie screening Packde reflection Impact at a nearest facade Reduction through open window (skso minus 2.5 dB for Impact inside open window  CAR ENGINE STARTS near carpark DAY / EVEN Notice source level for timple event Direction of single event Notice source level for timple event Total time duration of combined events Notice source level for assessment time period Total time duration of combined events Notice source level for assessment time period Totality Impulsiveness correction Maintanus distance to receiver Distance estimation (-6 dB per doubling of distance) Barries creening Barries creening Barries creening	10 30.0 LAeq 58 0	-1: 2 11 -7.5 4 15.55797 Acoustic LAeq 1hr 57	55 5.5 5.5 N/A -7.5 N/A Quality C LA10 74 3 30 90.0 LA10 lhr N/A 0 5 18 18 18 18 18 18 18 18 18 18	7.5 N/A  Dipictives LA01 75  LA01 lhr 75	cB dB(A) cB dB(A)  cB dB(A)  Scoods Eventx Scoods  cB(A) cB cc dB(A) cB cB cB cB(A)

						N/A if the duration of events do not occur for 10% or 10					
R3: Existing dwellings to the east						R4: Future dwellings to the immediate east					
CAR ENGINE STARTS far carpark DAY / EVEN	Creep LAeq	Acoustic LAeq	Quality C	Dbjectives LA01	- 1	CAR ENGINE STARTS far carpark DAY / EVEN	Creep LAeq	Acoustic	Quality C	Dbjectives LA01	-
Joise source level for single event	7	3	74	75	dB(A)	Noise source level for single event	Lang	73	74	75	dB(A)
Ouration of single event			3		Seconds	Duration of single event			3		Second
lumber of events in the measurement period	10		30		Events	Number of events in the measurement period	10		30		Events
otal time duration of combined events	30.0		90.0		Secondo	Total time duration of combined events	30.0		90.0		Second
	LAeq	LAeq lhr	LA10 1hr	LA01 lbr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
loise source level for assessment time period	58	57	N/A	75	6B(A)	Noise source level for assessment time period	58	57	N/A	75	6B(A)
onality / Impulsiveness correction	0		0		άB	Tonality / Impulsiveness correction	0		0		έB
Inimum distance to receiver			00		**	Minimum distance to receiver			7		
Distance attenuation (-6 dB per doubling of distance)			50		43	Distance attenuation (-6 dB per doubling of distance)					613
Barrier screening			).3		6B	Barrier screening			5.5		éB.
açade reflection			.5		4B	Façade reflection	10	2		27	άB
mpact at nearest façade	2	1	N/A	19	dB(A)	Impact at nearest façade		-7.5	N/A	27	dB(A)
deduction through open window (also minus 2.5 dB faça	nde)	-7.5	-/.5 N/A	-/.5	6B(A)	Reduction through open window (also minus 2.5 dB fac Impact inside open window	Mae)	-/.5	N/A	19	dB (A)
mpact inside open window	1.507000	1.148971	IN/A	11	6B(A)	impact inside open window	10.20541	2.720052	D/A	19	dB(A)
	Creep	Aconstic	Quality C	biactions	$\overline{}$		Creep	Aconstic	Quality C	Dhiactisms	_
AR ENGINE STARTS near carpark NIGHT	LAeq	LAeq	LA10	LA01	1 1	CAR ENGINE STARTS near carpark NIGHT	LAeq	LAeq	LA10	T AO1	-
Joise source level for single event	Lineq	Lineq	74	75	em co.	Noise source level for single event	Lineq	73	74	75	en con
Ouration of single event	_	,	2 /7	//	(B(A)		_	13	2 /7	13	4B(A)
Juration of single event Jumber of events in the measurement period			15		Seconds Events	Duration of single event Number of events in the measurement period	-		15		Events
otal time duration of combined events	15.0		45.0		Events Seconds	Total time duration of combined events	15.0	_	45.0		Second
Over these was directly of Companied events	LAeq	I Ago The	LAI0 1hr	II A01 11	Swee Eds	A STORE THESE GREENINGS OF CONTINUES OF SERVICE	LAeq	LAga lbr		LA01 1hr	
Voise source level for assessment time period	55	54	N/A	75	(B(A)	Noise source level for assessment time period	55	54	N/A	75	dB(A)
	22		0 0	7.5	dB(A)		33	.,4	0 0	13	dB(A)
onality / Impulsiveness correction  dinimum distance to receiver	L.	- 1	50		-0	Tonality / Impulsiveness correction Minimum distance to receiver	<del>-</del>		5		60
Distance attenuation (-6 dB per doubling of distance)	_		4S		ri ZB	Distance attenuation (-6 dB per doubling of distance)	_		18		en en
Barrier screening	_		4.1		dB dB	Barrier screening	_		7.1		dB dB
arner screening açade reflection	_		4.1		4B 4B	Façade reflection	_	-1			éB éB
mpact at nearest façade	-4	-6	N/A	15	dB(A)	Impact at nearest façade	23	22	I N/A	43	dB(A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	6B(A)	Reduction through open window (also minus 2.5 dB fac		-7.5	-7.5	-7.5	dB (A)
inpact inside open window	nue)	-13	N/A	8	dB(A)	Impact inside open window	nae)	14	N/A	35	dB(A)
inpact tustue open window	0.349474	0.076505	IN/AL		dB(A)	пираст пізне орен мінюм	1 204 2437	153.1077	19/2K	35	es(A)
	Creep	Aconstic	Quality C	Dhiactisms			Creep	Aconstic	Quality C	Dhiactivas	_
CAR ENGINE STARTS far carpark NIGHT	LAeq	LAeq	LA10		1 1	CAR ENGINE STARTS far carpark NIGHT	LAeq	LAeq		LA01	-
Voise source level for single event	Loweq	Larry	74	75	(B(A)	Noise source level for single event	Loweq	72	74	75	(B(A)
	_	,	/+	/3	_		_	//	/+	/2	_
Ouration of single event Jumber of events in the measurement period	- 5		15		Seconds	Duration of single event Number of events in the measurement period			15		Second
Cotal time duration of combined events	15.0		45.0		Events	Total time duration of combined events	15.0	-	45.0		Events
oral time duration of combined events	LAeq	7 to - 11-	T 410 15-	LA01 lbr	Seconds	I oral time duration of combined events	LAeq	T 4 11	T 410.15-	LA01 1hr	Second
Noise source level for assessment time period	55	LARGIE	N/A	26	-	Noise source level for assessment time period	LARQ	54	N/A	2/	
Conality / Impulsiveness correction	0	24	0	/3	(B(A)	Tonality / Impulsiveness correction	0	24	0 0	/3	(B(A)
Containty / impulsiveness correction  Continuum distance to receiver	,	٠,	00		4B	Minimum distance to receiver	ı °				ćB.
	_		50		"		-	-	35		-
Distance attenuation (-6 dB per doubling of distance)  Barrier screening	_		33		4B	Distance attenuation (-6 dB per doubling of distance)  Barrier screening	_		5.5		4B
Facade reflection	_		5		4B	Facade reflection	_	-1:			4B
				19	dB(A)			6	N/A	27	dB(A)
											4B (A)
impact at nearest façade	-1	7.5	N/A			Impact at nearest façade	7				43
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	43	Reduction through open window (also minus 2.5 dB fac	7 ade)	-7.5	-7.5	-7.5 10	
impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open window	-1 ade)	-7.5 -10				impact at nearest tagade Reduction through open window (also minus 2.5 dB fag Impact inside open window	7 ade)			-7.5 19	dB(A)
Reduction through op en window (also minus 2.5 dB faça impact inside open window	0.763514	-10 0.572636	-7.5 N/A	-7.5 11	43	Reduction through open window (also minus 2.5 dB fac Impact inside open window	5.152705	-7.5 -2 3.864528	-7.5 N/A	19	dB(A)
Reduction through op en window (also minus 2.5 dB faça impact inside open window	0.763514 Creep	-10 0.572636 Acoustic	-7.5 N/A Quality 0	-7.5 11 Objectives	43	Reduction through open window (also minus 2.5 dB fac	Creep	-7.5 -2 3.864528 Acoustic	-7.5 N/A Quality C	19 Objectives	dB(A)
Reduction through open window (also minus 2.5 dB faça impact inside open window CAR MOVEMENT TO DAY	0.763514 Creep	-10 0.572636	-7.5 N/A	-7.5 11	dB(A)	Reduction through open window (also minus 2.5 dB for Impact inside open window  CAR MOVEMENT TO DAY	Creep LAeq	-7.5 -2 3.864528	-7.5 N/A Quality C	19	
Reduction through open window (also minus 2.5 dB fign inpact inside open window CAR MOVEMENT TO DAY Voice source level for single event	0.763514 Creep	-10 0.572636 Acoustic	-7.5 N/A Quality 0	-7.5 11 Objectives	dB(A)	Reduction through open window (also minus 2.5 dB for Impact invide open window  CAR MOVEMENT TO DAY  Noise source level for single event	Creep LAeq	-7.5 -2 3.864528 Acoustic	-7.5 N/A Quality C	19 Objectives	(B(A)
Reduction through open window (also mims 2.5 dB faça impact inside open window CAR MOVEMENT TO DAY Noise source level for single event Duration of single event	0.763514 Creep	-10 0.572636 Acoustic	-7.5 N/A Quality 0	-7.5 11 Objectives	dB(A)  dB(A)  Seconds	Reduction through open window (also minus 2.5 dB for Impact inside open window  CAR MOVEMENT TO DAY	Creep LAeq	-7.5 -2 3.864528 Acoustic	-7.5 N/A Quality C	19 Objectives	dB(A) Second
Reduction through open window (doo minus 2.5 dB fign impact inside open window  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Unation of single event	0.763514 Creep LAeq	-10 0.572636 Acoustic	-7.5 N/A Quality 0 LA10 70	-7.5 11 Objectives	dB(A)	Reduction through open window (also minus 2.5 dB for Impact inxide open window CARMOVEMENT TO DAY Noise source level for single event Duration of single event	Creep LAeq	-7.5 -2 3.864528 Acoustic	-7.5 N/A Quality C LA10 70	19 Objectives	(B(A)
Reduction through open window (doo minus 2.5 dB fign impact inside open window  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Unation of single event	0.763514 Creep LAeq 6	-10 0.572636 Acoustic LAeq S	-7.5 N/A Quality 0 LA10 70 12 40 880.0	-7.5 11 Dbjectives LA01 73	dB(A)  dB(A)  dB(A)  Seconds  Events	Reduction through open window (also minus 2.5 dB for Impact inside open window  CAR MOVEMENT TO DAY  Noise source level for single event Dearston of single event Dearston of single event Number of events in the measurement period	Creep LAeq 10 220.0	-7.5 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	-7.5 N/A Quality C LA10 70 22 40 880.0	19 Objectives LA01 73	éB(A) Second Events
Aedaction through open window (diso mimus 2.5 dB fact impact inside open window  AR MOVEMENT TO DAY  **Once source level for single event  Variation of single event  Variation of single event  Variation of single event  variation of combined events  **Once the single event  **Once the single eve	Creep LAeq 6	-10 0.572636 Acoustic LAeq S	-7.5 N/A Quality 0 LA10 70 12 40 880.0	-7.5 11 Objectives	dB (A)  dB(A)  Seconds  Events  Seconds	Reduction through open window (also minus: 2 5 dB for Impact in side open window X  CAR MOVEMENT TO D  Notes ource level for single sevent  Duration of single sevent  Number of swints in the measurement period  Total time duration of combined events	Creep LAeq	-7.5 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	-7.5 N/A Quality C LA10 70 22 40 880.0	19 Objectives	dB(A) Second Events Second
Reduction through open window (sloo minus 2.5 dB fig- mipner inside open window  ARM MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Variation of single event  Variation of single ovent  Combined events on the measurement period  The direct of combined events  Noise source level for assessment time period	0.763514 Creep LAeq 6 10 220.0 LAeq	-10 0.572636 Acoustic LAeq S	-7.5 N/A Quality 0 LA10 70 12 40 \$80.0 LA10 1hr	-7.5 11 Dijectives LA01 73	dB(A)  dB(A)  dB(A)  Seconds  Events	Reduction through open window (sies minus 2 5 dB for Impact inside open window  CAR MOVEMENT TO DAY  Duration of single event  Duration of single event  Number of events in the measurement period  Total time duration of combined events  Notes source level for assessment time period	Creep LAeq 10 220.0 LAeq	-7.5 -2 Acoustic LAeq SS	-7.5 N/A Quality C LA10 70 12 40 \$80.0 LA10 1hr	Dbjectives LA01 73 LA01 lhr	éB(A) Second Events
Aedaction through open window (sloo minus 2.5 dB figurance) inside open window  AR MOVEMENT TO DAY  ARMOVEMENT TO DAY  Unation of single event  For the development of the period  For the development of the period  For the single event window, and the period  For the single event window, and the period  For the single event of the period of the single event window, and the period  For the single event of the single event window, and the period  For the single event of the single event window, and the period  For	0.763514 Creep LAeq 6 10 220.0 LAeq 62	-10 0.572636 Acoustic LAeq S LAeq lbr 62	-7.5 N/A Quality 0 LA10 70 12 40 880.0 LA10 1hr	-7.5 11 Dijectives LA01 73	dB (A)  dB(A)  Seconds  Events  Seconds	Reduction through open window (also minus: 2 5 dB for Impact in side open window X  CAR MOVEMENT TO D  Notes ource level for single sevent  Duration of single sevent  Number of swints in the measurement period  Total time duration of combined events	Creep LAeq 10 220.0 LAeq 62	-7.5 -2 3.86+2.8 Acoustic LAeq 58 2 LAeq lhr 62	-7.5 N/A Quality C LA10 70 22 40 \$80.0 LA10 1hr	Dbjectives LA01 73 LA01 lhr	dB(A) Second Events Second
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Addation through open window (diso minus 2.5 dB for impact inside open window (diso minus 2.5 dB for impact inside open window (diso minus 2.5 dB for impact inside open window (diso minus 2.5 dB for impact of window).  AR MOVEMENT TO DAY  ARMOVEMENT TO DAY  AR	0.763514 Creep LAeq 6 10 220.0 LAeq 62	-10 0.572636 Acoustic LAeq 8 LAeq lbr 62	-7.5 N/A  Quality 0  LA10  70  12  40  \$\$0.0  LA10 lhr  70  0	-7.5 11 Dijectives LA01 73	dB (A)  dB(A)  Seconds  Events  Seconds	Reduction through open window (also minus 2 5 dB for Impact inside open window?  CAR MOVEMENT TO DAY  Noise source level for single event Duration of single event Number of events in the measurement period Total time duration of the measurement period Total time duration of or assessment time period Totality and the period of assessment time period Tonality Timpulsiveness correction Minimum distance to receiver Distance estimation (-6 dB per doubling of distance)	Creep LAeq 10 220.0 LAeq 62	-7.5 -2 Acoustic LAeq SS  LAeq lhr 62	7.5 N/A  Quality C  IA10  70  22  40  \$\$80.0  IA10 1hr  70  33  30	Dbjectives LA01 73 LA01 lhr	dB(A) Second Events Second dB(A) dB
Reduction through open window (sloo minus 2.5 dB fac- man in side open window  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Variable of events in the insurement period  of single event  Variable of combined events  Noise source level for assessment time period  condity. Himplistveness correction  (A minum distance to receiver  Distance attenuation (d dB per doubling of distance)  Barriers (sciencing	0.763514 Creep LAeq 6 10 220.0 LAeq 62	-10 Us 72036 Acoustic LAeq S LAeq lhr 62	-7.5 N/A  Quality 0  LA10  70  12  40  \$80.0  LA10 1hr  70  0  555	-7.5 11 Dijectives LA01 73	dB (A)  dB(A)  Seconds  Events  Seconds	Reduction through open window (also minus 2 5 dB for Impact inside open window   CAR MOVEMENT TO DAY  Notice source level for single event Duration of single event Number of events in the insumement period Total time duration of combined events  Notice source level for assessment time period Totality / Impulsiveness correction Minimized Michaece to receiver	Creep LAeq 10 220.0 LAeq 62	7.5 -2 364433 Acoustic LAeq SS 2 LAeq Ihr 62 3	7.5 N/A Quality C LA10 70 22 40 \$\$0.0 LA10 lbr 70 0 33	Dbjectives LA01 73 LA01 lhr	dB(A) Second Events Second dB(A) dB
Reduction through open window (sloo minus 2.5 dB Sectionary in the open window)  ARM MOVEMENT TO DAY  Assessment best for single event  Austration of single per doubling of distance)  Barrier screening  Apple events	0.763514 Creep LAeq 6 10 220.0 LAeq 62	-10 Us 72036 Acoustic LAeq S LAeq lhr 62	-7.5 N/A  Quality 0  LA10  70  12  40  \$80.0  LA10 lbr  70  0  55  48  3.4	-7.5 11 Dijectives LA01 73	dB (A)  dB (A)  Seconds Events Seconds  dB(A)  dB(A)  dB(A)  dB  dB  dB  dB	Reduction through open window (also minus: 2 5 dB for Impact inside open window?  CAR MOVEMENT TO DAY  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 Total time duration of combined time period Total time duration of the period Total time and time to receiver Distance estimation (-6 dB per doubling of distance) Barries screening Fapple reflection	Creep LAeq 10 220.0 LAeq 62	-7.5 -2 3 864518 Acoustic LAeq 58  2  LAeq lhr 62	7.5 N/A  Quality C  LA10  70  22  40  \$\$80.0  LA10 lbr  70  0  33  30  6.7	Dbjectives LA01 73 LA01 lhr	6B(A) Second Events Second 6B(A) 6B 6B 6B
Reduction through open window (sloo minus 2.5 dB fig- mapnet inside open window)  CAR MOVEMENT TO DAY  Notes source level for single event  Duration of single event  Vamber of events in the measurement period  ord time duration of combined events  Notes source level for assessment time period  conditry. Timpulsiveness correction  (animum distrate of section of conditions)  Sistence attenuation (-f dB per doubling of distance)  Brigger effection  mapnet at nearest façade	Creep LAeq 6 10 220.0 LAeq 62 0	-10 0.7 2036 Acoustic LAeq \$ LAeq lhr 62 2 -1 2	7.5 N/A  Quality 0  LA10 70  22  40 \$\$0.0  LA10 lbr 70 0  55 48 3.4	7.5 11 2bjectives LA01 73 LA01 lhr 73	eB (A)  6B(A)  Seconds  Events  Seconds  6B(A)  6B  6B  6B  6B	Reduction through open window (siso mimus 2 5 dB for Impact inside open window)  CAR MOVEMENT TO DAY  Noise source level for single event Direction of single event Number of events in the insubarization period Total time during of combined events  Noise source level for assessment time period Totality / Impulsiveness correction Minimum distinct to receiver Distince attenuation (4 dB per doubling of distance) Barrier screening Fangle reflection Impact at an aerest façade	Creep   LAeq	-7.5 -2 3 8645 38 Acoustic LAeq 58  2 LAeq lhr 62 -1:	7.5 N/A  Quality C  LA10 70 22 40 \$\$0.0  LA10 1hr 70 0 33 30 6.7	19 Dbjectives LA01 73 LA01 lhr 73	dB(A) Second Events Second dB(A) dB dB
Ackached through open window (doo minus 2.5 dB for minus 1.5 the form through open window (doo minus 2.5 dB for minus 1.5 the form through open window (doo minus 2.5 dB for single event lumino of single event lumber of events in the measurement period of the devents in the measurement period of the devents of the devents of the measurement period of the devents of	Creep LAeq 6 10 220.0 LAeq 62 0	-10 Acoustic LAeq S LAeq lhr 62 2 2 3	-7.5 N/A  Quality 0 1 A10 70 12 40 880.0  LA10 1br 70 0 55 48 3.4 5	7.5 11 Dipictives LA01 73 LA01 lhr 73	eB (A)  6B(A)  Seconds  Events  Seconds  6B(A)  6B  6B  6B  6B	Reduction through open window (also mimus 2 5 dB for Impact inside open window)  CAR MOVEMENT TO DAY  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 accessment time period Total time duration of combined events  Noise source level for accessment time period Totality / Impulsiveness correction Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Barrie screening Fapide reflection Impact at nearest fapide Reduction through open window (also mimus 2 5 dB for Reduction through open window (also mimus 2 5 dB for	Creep   LAeq	-7.5 -2 3 8645 38 Acoustic LAeq 58  2 LAeq lhr 62 -1:	-7.5 N/A  I LA10  TO  12  40  \$80 0  LA10 1br  70  0  33  30  6.7  5  25  -7.5	19 Dbjectives LA01 73 LA01 lhr 73	dB(A) Second Events Second dB(A) dB dB dB dB
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addation through open window (diso minus 2.5 dB factoring and inside open window (diso minus 2.5 dB factoring and the diso open window (diso minus 2.5 dB factoring and disolated window).  ARK MOVEMENT TO DAY  To the control of the	0.763514 Creep LAeq 6 10 220.0 LAeq 62 0 3 ade)	-10 0 573616 Acoustic LAeq 8 LAeq lbr 62 2 2 3 -7.5	7.5 N/A  Quality 0  LA10  70  12  40  \$\$80.0  LA10 1hr  70  0  55  48  3.4  5  11  -7.5  3	7.5 11   14   7.5   6	dB (A)  dB(A)  Seconds Events Seconds eB(A) dB	Reduction through open window (slee minus 2 5 dB for Impact inside open window)  CAR MOVEMENT TO DAY  Notice source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events  Notice source level for assessment time period Totaliny /Impulsiveness correction Minimum distance to receiver Distance attenuation (4 dB per doubling of distance) Barries screening Fagule artlesten Impact at attenut facade Reduction through open window (slee minus 2 5 dB for Impact at saide open window)	S   S   S   S   S   S   S   S   S   S	-7.5 -2 -2 -300-300-300 -7.5 -2 -300-300-300 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5	-7.5 N/A Quality C LA10 70 122 40 \$\$0.0 LA10 1hr 70 0 33 30 6.7 5 25 -7.5 18	19 Dbjectives L401 73 L401 lbr 73  28 -7.5 21	dB(A) Second Events Second dB(A) dB dB dB dB
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addation through open window (diso minus 2.5 dB factoring and inside open window)  AR MOVEMENT TO DAY  lost source level for single event murbers of single event murbers of single event murbers of single event murbers of single event murber of events in the measurement period of ontil time duration of combined events foliose source level for assessment time period consility. Timpulsiveness correction Graining of the receiver instruct activation of combined events between the events instructed and the events	Creep LAeq  10 220.0 LAeq 62 0  13 ade)	-10 0 572616 Acoustic LAeq 8 2 LAeq lhr 62 2 2 3 -7.5 -5 191844 Acoustic LAeq	7.5 N/A  Quality 0  LA10  70  2  40  \$80.0 lt.A10 ltr  70  0  LA10 ltr  70  1  1  1  1  -7.5  3  Quality 0  LA10 ltr  70  Cuality 0  LA10 ltr	-7.5   11   14   -7.5   6   1401   1401   1501	dB (A)  Seconds Events Seconds Events Seconds dB (A) dB (A) dB dB (A) dB dB (A)	Reduction through open window (slee minus 2 5 dB for Impact inside open window)  CAR MOVEMENT TO DAY  Notice source level for single event Duration of single event Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Totality / Impulsiveness correction Minimum distance to receiver  Distance atternation (-6 dB per doubling of distance)  Barrier screening  Facilie to the through open window (slee minus 2 5 dB for Impact at a warset façade  Reduction through open window  CAR MOVEMENT FROM DAY  CAR MOVEMENT FROM DAY	Creep LAeq 10 220.0 LAeq 62 0 17 ade) 54 16519 Creep LAeq	-7.5 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	7.5 N/A  Quality C  LA10  70  22  40  \$80 0  LA10 1hr  70  0  33  6.7  5  25  -7.5  18  Quality C  LA10 C  LA10 C	19 Dbjectives L401 73 L401 lbr 73  28 -7.5 21	dB(A) Second Events Second dB(A) dB dB dB dB dB dB dB(A)
Leduction through open window (slos minus 2.5 dB forging in the open window (slos minus 2.5 dB forging in the open window).  CAR MOVEMENT TO DAY  **Color source level for single event  **Duration of combined events  **Color source level for assessment time period  orall vine duration of combined events  **Color source level for assessment time period  orall vine duration of combined events  **Color source level for assessment time period  orall vine duration of combined events  **Color source level for necessary and color source level vine  **Special vine duration of combined events  **Color source level for single event  **Color source level for single event	Creep LAeq  10 220.0 LAeq 62 0  13 ade)	-10 0 577816 Acoustic LAeq 8 LAeq lhr 62 2 3 -7.5 -5 -5 Acoustic Acoustic Acoustic Acoustic Acoustic Acoustic Acoustic Acoustic	7.5 N/A  Quality 0  LA10  70  12  40  \$\$0.0  LA10 lbr  70  0  55  48  3.4  5  11  -7.5  3	-7.5   11   11   12   12   13   14   -7.5   6   14   -7.5   6   15   16   17   17   17   17   17   17   17	#B (A)  #B(A)  Seconds  Events  Seconds  #B(A)  #B  #B  #B  #B  #B  #B  #B  #B  #B  #	Reduction through open window (siso minus 2 5 dB for Impact inside open window)  CAR MOVEMENT TO DAY  Noise source level for single event Destricts of single event Destricts of single event Sumber of events in the measurement period Total time direction of combined events  Noise source level for assessment time period Total time direction of combined events  Noise source level for assessment time period Total time direction to receive Distance attenuation (4 dB per doubling of distance) Barrier screening Facular reflection Impact at arrest facade Reduction through open window (siso minus 2 5 dB for Impact at inside open window)  CAR MOVEMENT FROM DAY  Noise source level for single event	Creep LAeq 10 220.0 LAeq 62 0 17 ade) 54 16519 Creep LAeq	-7.5 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	-7.5 N/A  Quality C  LA10  70  12  40  \$\$0.0  LA10 1hr  70  0  33  30  6.7  5  25  -7.5  18	19   19   19   19   19   19   19   19	dB(A)  cB(A)  cB(A)  cB  cB  cB  cB  cB  cB  cB  cB  cB  c
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Reduction through open window (sloo minus 2.5 dB fag- maper inside open window  CAR MOVEMENT TO DAY  Notice source level for single event  Direction of single event  Visible of events in the measurement period  of other medical of combined events  Notice source level for assessment time period  roadiny. Timpulsaveness correction  Mamman distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fagular effection  Impact at nearest façade  Reduction through open window (sloo minus 2.5 dB faça  maper inside open window  CAR MOVEMENT FROM DAY  Notice source level for single event  Daration of single event  Daration of single event  Visible of events in the measurement period  for time duration and of events  Notice source level for combined events  Notice source level for assessment time period  for direction direction of combined events  Notice source level for assessment time period  for making. Timpulsaveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Distance attenuation (-6 dB per doubling of distance)	Creep LAeq  10 220.0 LAeq 62 0 3 ade) Creep LAeq 62 10 10 10 10 10 10 10 10 10 10 10 10 10	-10	-7:5 N/A Quality C Quality C S S S S S S S S S S S S S S S S S S S	-7.5   11   11   11   12   12   13   14   14   -7.5   6   15   14   17   15   15   15   15   15   15   15	dB (A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Reduction through open window (ske minus 2 5 dB for Impact inside open window)  CAR MOVEMENT TO DAY  Noise source level for single event Direction of single event Number of events in the measurement period Tool time durino of combined events  Noise source level for assessment time period Toolatily /Impulsiveness correction Minimum chance to receive or assessment time period Toolatily /Impulsiveness correction Minimum chance to receiver Distance attenuation (4 dB per doubling of distance) Barries received Fraction through open window (ske minus 2 5 dB for Impact at a areast façade Reduction through open window (ske minus 2 5 dB for Impact at a carest façade Reduction through open window CAR MOVEMENT FROM DAY  Noise source level for single event Distance of single event Distance of single event Number of events in the measurement period Toolatily /Impulsiveness correction Noise source level for assessment time period Toolatily /Impulsiveness correction Minimum chance to receiver Distance attenuation (4 dB per doubling of distance) Barries screening	Creep   LAeq	-7.5 -2 -2 -3.804938 Acoustic LAeq SS -2 -2 -2 -2 -1:1 -7.5 -10 -7.5 -10 -7.5 -10 -1:1 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5	7.5 N/A  Quality C  1 LA10  70  122  40  \$\$800  33  30  66 7  75  18  LA10 La10  LA10 La10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  10  10  10  10  10  10  10  10  10	19 bbjectives LA01 73 LA01 lbr 73  28 -7.5 20 bbjectives LA01 73	eB(A) Second Events Second eB(A) eB eB eB eB eB eB eB eB eB eB(A) Second Events Second Events Second Events Second eB
Reduction through open window (sloo minus 2.5 dB fact minus and the control of th	Creep LAeq  10 220.0 LAeq 62 0 3 ade) Creep LAeq 62 10 10 10 10 10 10 10 10 10 10 10 10 10	-10  Acoustic Laeq lbr 62  2 2 2 2 3 3 -7.5 -5  Laeq lbr 62  Laeq lbr 62  2 2 2 2	-7:5 N/A Quality C 122 40 8800 70 55 148 55 11 -7:5 3 1-7:5 3 40 LAlo lhr 70 Quality C LAlo	-7.5   11   14   17.3   14   14   -7.5   6   15   16   16   17.3   16   17.3	DE ANTON DE CONTROL DE	Reduction through open window (siso minus 2 5 dB for Impact inside open window)  CAR MOVEMENT TO DAY  Notes source level for single event Duration of single event Duration of single event Duration of single event Sumber of events in the measurement period Total time duration of combined events  Notes source level for assessment time period Total time duration of combined events  Notes source level for assessment time period Totally: Impactiveness correction Minimum distance to receive Distance attenuation (4 dB per doubling of distance) Berrier screening Franche reflection Impact in side pen window (side minus 2 5 dB for Impact inside pen window  CAR MOVEMENT FROM DAY  Noise source level for single event Duration of single event Duration of single event Duration of single event Noise source level for single event Noise source level for single event Total time duration of combined events  Noise source level for assessment time period Totalit time duration of combined events  Distance attenuation (4 dB per doubling of distance) Burrier screening Burrier screening	Creep   Laeq	-7.5   -7.5	7.5 N/A N/A Quality C 122 40 \$\$0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LA01 lb	dB(A) Second Eyests Second dB(A) dB
Reduction through open window (slos minus 2.5 dB fact minutes) and the open window (slos minus 2.5 dB fact minutes) and the open window (slos minutes) and the open window (slos minutes) and the open window of centre	Creep   Lac   Creep   Lac   Creep   Lac   Creep   Creep   Lac   Creep   Lac   Creep   Lac   Creep   Lac   Creep   Lac   Creep   Lac   Creep   Creep	-10	7:5 N/A Quality C 1 LA10 70 12:2 40 \$\$00 70 12:40 \$\$00 55 18 3 3 41 55 11 17:75 3 3 40 8\$00 LA10 Ihr 70 0 0 940 940	-7.5   11   11   11   12   12   13   14   14   -7.5   6   15   14   17   15   15   15   15   15   15   15	dB (A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Reduction through open window (ske minus 2 5 dB for Impact inside open window)  CAR MOVEMENT TO DAY  Noise source level for single event Direction of single event Number of events in the measurement period Tool time durino of combined events  Noise source level for assessment time period Toolatily /Impulsiveness correction Minimum chance to receive or assessment time period Toolatily /Impulsiveness correction Minimum chance to receiver Distance attenuation (4 dB per doubling of distance) Barries received Fraction through open window (ske minus 2 5 dB for Impact at a areast façade Reduction through open window (ske minus 2 5 dB for Impact at a carest façade Reduction through open window CAR MOVEMENT FROM DAY  Noise source level for single event Distance of single event Distance of single event Number of events in the measurement period Toolatily /Impulsiveness correction Noise source level for assessment time period Toolatily /Impulsiveness correction Minimum chance to receiver Distance attenuation (4 dB per doubling of distance) Barries screening	Creep   LAeq	-7.5   -2.5	7.5 N/A  Quality C  1 LA10  70  122  40  \$\$80.0  33  30  66.7  7.5  18  LA10 La10  LA10 La10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  LA10  10  0  15  15  16	19 bbjectives LA01 73 LA01 lbr 73  28 -7.5 20 bbjectives LA01 73	cB(A) Second Events Second dB(A) dB dB dB dB dB cB(A) Second dB(A) dB cB(A) dB

	LAHONS	LAN the M	nd L <sub>x01 the l</sub>	<sub>eveh</sub> are rep		N/A if the duration of events do not occur for 10% or 1	eoof the 1 h	our period;	)		
R3: Existing dwellings to the east CAR MOVEMENT TO NIGHT	Creep	Acoustic	Quality C	bjectives		R4: Future dwelling: to the immediate east  CAR MOVEMENT TO NIGHT	Creep		Quality C	Objectives	
Noise source level for single event	LAeq	LAeq	LA10 70	LA01	éB(A)	Noise source level for single event	LAeq	LAeq	TA10 70	LA01 73	éB(A)
Duration of single event	Η,		12	/3	Seconds	Duration of single event	<del>  '</del>	2	2	13	EB(A) Seconds
Number of events in the measurement period	5		15		Events	Number of events in the measurement period	5		15		Events
Total time duration of combined events	110.0		330.0		Seconds	Total time duration of combined events	110.0		330.0		Seconds
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	59	58	N/A	73	(B(A)	Noise source level for assessment time period	59	58	N/A	73	6B(A)
Tonality / Impulsiveness correction	0		0		₫B	Tonality / Impulsiveness correction	0		0		éB.
Minimum distance to receiver			55		11	Minimum distance to receiver			3		
Distance attenuation (-6 dB per doubling of distance)			48		433	Distance attenuation (-6 dB per doubling of distance)	_		30		en en
Barrier screening		-1	3.4		6B	Barrier screening	_	-1	5.7		ев
Façade reflection	0	-1	N/A	14	dB (A)	Façade reflection Impact at nearest façade	14	13	N/A	28	dB (A)
Impact at nearest façade Reduction through open window (also minus 2.5 dB faça		-7.5	7.5	7.5	dB(A)	Reduction through open window (also minus 2.5 dB fas		7.5	7.5	7.5	68 (A)
Impact inside open window	sue)	-9	N/A	6	6B(A)	Impact inside open window	aue)	6	N/A	21	dB(A)
mapact tastoe open wantow	0.050224	0.719418	11/24	-	68(A)	ampact tastae open window	1 27 08250	20.31194	14/24		es(A)
CAR MOVEMENT FROM NIGHT	Creep	Acoustic	Quality C	biectives	$\overline{}$	CAR MOVEMENT FROM NIGHT	Creep	Acoustic	Quality C	Diectives	
CAR MOVEMENT FROM NIGHT	LAeq		LAIO		1 1	CAR MOVEMENT FROM NIGHT		LAeq			1
Noise source level for single event	- 6	S	70	73	(B(A)	Noise source level for single event	1	58	70	73	(B(A)
Duration of single event		- 2	12		Seconds	Duration of single event		2	2		Seconds
Number of events in the measurement period	5		15		Events	Number of events in the measurement period	5		15		Events
Total time duration of combined events	110.0		330.0		Seconds	Total time duration of combined events	110.0		330.0		Seconds
	LAeq		LA10 1hr				LAeq			LA01 lhr	
Noise source level for assessment time period	59	58	N/A	73	(B(A)	Noise source level for assessment time period	59	58	N/A	73	(B(A)
Tonality / Impulsiveness correction	0	Щ.	0		έB	Tonality / Impulsiveness correction	0	Щ.	0		έB
Minimum distance to receiver			90		n	Minimum distance to receiver	-	- 6			
Distance attenuation (-6 dB per doubling of distance)	_		49 3.4		6B	Distance attenuation (-6 dB per doubling of distance)	-		36 5.7		6B
Barrier screening Façade reflection	_	-1	2.9		ćB	Barrier screening Façade reflection	+	-1	0.7		dB.
Façane renection Impact at nearest façade	-1	-3	N/A	13	dB(A)	Impact at nearest façade	8	1 7	N/A	23	dB(A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	(D	Reduction through open window (also minus 2.5 dB fas		-7.5	-7.5	-7.5	en(A)
Impact inside open window	auri)	-10	N/A	5	dB(A)	Impact inside open window	presey	0	N/A	15	dB(A)
anjust instant open innaosi	0.74166	0.556245			a a (x)	ampare turner open mason	1 6 980 578	5.235434		- 10	eD(x)
TRUCK ENGINE STARTS Loading bay	Creep	Acoustic	Quality C	bjectives	$\overline{}$	TRUCK ENGINE STARTS Loading bay	Creep	Acoustic	Quality (	Dijectives	
	LAeq	LAeq	LA10		1 I	1	LAeq	LAeq	LA10		1
Noise source level for single event		'S	81	83	éB(A)	Noise source level for single event		78	81	83	(B(A)
Duration of single event			3	•	Secondo	Duration of single event			3		Seconds
Number of events in the measurement period	1		2		Events	Number of events in the measurement period	1		2		Events
Total time duration of combined events	3.0		6.0		Seconds	Total time duration of combined events	3.0		6.0		Seconds
	LAeq	LAeq lbr		LA01 lbr	$\Box$		LAeq			LA01 lhr	
Noise source level for assessment time period	53	50	N/A	N/A	(B(A)	Noise source level for assessment time period	53	50	N/A 5	N/A	fB(A)
Tonality / Impulsiveness correction	0	L .	55		6B	Tonality / Impulsiveness correction	٠,	Ь,	2		ćВ
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)			48		11	Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)	+		22		es dB
Barrier screening	_		1.6		63	Barrier screening	_		6.1		63
Façade reflection	_	2			(9	Façade reflection	_	2			en -
Impact at nearest façade	-4	-2	N/A	N/A	(B(A)	Impact at nearest façade	18	20	N/A	N/A	(B(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	ďΒ	Reduction through open window (also minus 2.5 dB far	(ade)	-7.5	-7.5	-7.5	éB.
Impact inside open window		-9	N/A	N/A	fB(A)	Impact inside open window		13	N/A	N/A	dB(A)
TRUCK MOVEMENT TO SITE	Creep		Quality C			TRUCK MOVEMENT TO SITE	Creep		Quality (		
	LAeq	LAeq	LA10	LA01	$\perp$		LAeq	LAeq	LA10		
Noise source level for single event	- 8	7	89	90	dB(A)	Noise source level for single event	1 3	37	89	90	dB(A)
Duration of single event	L .		10		Seconds	Duration of single event	<b>—</b>		10		Seconds
Number of events in the measurement period	160.0	<u> </u>	320.0		Events	Number of events in the measurement period	160.0		320.0		Events
Total time duration of combined events		Y 4 12 -		I	Seconds	Total time duration of combined events		T 4 31		T 401 11	Seconds
Noise source level for assessment time period	LAeq 79	LAeq 1hr	N/A	LA01 1hr 90		Noise source level for assessment time period	LAeq 79	LAeq lhr	N/A	LA01 1hr 90	
Noise source level for assessment time period Tonality / Impulsiveness correction	79	/0	N/A 0	90	dB(A)		79	/0	N/A	90	dB(A)
1 onamy / impuisiveness correction Minimum distance to receiver	_	55		55		Tonality / Impulsiveness correction Minimum distance to receiver	٠,	12		12	en en
Distance attenuation (-6 dB per doubling of distance)		18		48	en en	Distance attenuation (-6 dB per doubling of distance)	1	22		22	dB.
per downing of distance)				1.6	6B	Barrier screening		6.1		6.1	410
	-1								.5		dB
Barrier screening	-1	2	5		ćΒ		$\overline{}$	2			dB(A)
Barrier screening Façade reflection	-1	19	5 N/A	33	6B 6B(A)	Façade reflection	44	41	N/A	55	
Barrier screening Façade reflection Impact at nearest façade	22	2	N/A -7.5	33 -7.5	dB dB(A) dB	Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fa		41 -7.5	N/A -7.5	-7.5	dВ
Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça	22	19	2.00			Façade reflection					dB dB(A)
Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça	22 nde)	19 -7.5 12	-7.5 N/A	-7.5 25	άB	Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fa	ade)	-7.5 34	-7.5 N/A	-7.5 47	
Barries screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open window	22 nde)	2 19 -7.5 12 Acoustic	-7.5 N/A Quality 0	-7.5 25 Objectives	άB	Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fa/ Impact inside open window	(nde)	-7.5 34 Acoustic	-7.5 N/A Quality C	-7.5 47 Objectives	
Barries streening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open vindow TRUCK MOVEMENT FROM SITE	22 nde)	19 -7.5 12	-7.5 N/A Quality C	-7.5 25 Objectives LA01	dB dB(A)	Façada reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB facilitation through open window TRUCK MOVEMENT FROM SITE	Creep	-7.5 34 Acoustic	-7.5 N/A Quality C	-7.5 47 Objectives LA01	dB(A)
Barnes creening  Royde reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact taside open window  TRUCK MOVEMENT PROM SITE Noise source level for single event	22 nde)	2 19 -7.5 12 Acoustic LAeq	-7.5 N/A Quality C LA10	-7.5 25 Objectives	dB (A)	Fands erflection Impact at nearest façade Reduction through open window (sloo minus 2.5 dB fas Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event	Creep	-7.5 34 Acoustic LAeq	-7.5 N/A Quality C LA10	-7.5 47 Objectives	dB(A)
Barries streening Fe, Acide reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window TRUCK MOVEMENT FROM SITE Notice source level for single event Duration of single event	22 nde)	2 19 -7.5 12 Acoustic LAeq	-7.5 N/A Quality C	-7.5 25 Objectives LA01	dB dB(A) dB(A) Seconds	Facule reflection Impact at narest facade Reduction through open window (Also minus 2.5 dB for Impact tail tailed open window TRUCK MOVEMENT FROM SITE Notes source level for single event Duration of single sevent	Creep	-7.5 34 Acoustic LAeq	-7.5 N/A Quality C	-7.5 47 Objectives LA01	dB(A)
Barnes creening  Reade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB faça  Impact taside open window  TRUCK MOVEMENT PROM SITE  Noise source level for single event  Duration of single event  Number of wents in the measurement period	22 nde) Creep LAeq	2 19 -7.5 12 Acoustic LAeq	Quality C LA10 89	-7.5 25 Objectives LA01	dB(A)  dB(A)  Seconds  Events	Fands erflection Impact at a seriest façade Reduction through open window (also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event Deutston of single event Deutston of single event	Creep LAeq	-7.5 34 Acoustic LAeq	Quality C LA10 89	-7.5 47 Objectives LA01	dB(A)  dB(A)  Seconds  Events
Barries streening Fe, Acide reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window TRUCK MOVEMENT FROM SITE Notice source level for single event Duration of single event	22 sde) Creep LAeq 8	2 19 -7.5 12 Acoustic LAeq	-7.5 N/A Quality C LA10 89 10 2 160.0	-7.5 25 Dijectives LA01 90	dB dB(A) dB(A) Seconds	Facule reflection Impact at narest facade Reduction through open window (Also minus 2.5 dB for Impact tail tailed open window TRUCK MOVEMENT FROM SITE Notes source level for single event Duration of single sevent	Creep LAeq 2 160.0	-7.5 34 Acoustic LAeq	-7.5 N/A Quality C LA10 89 0 2 160.0	-7.5 47 Dijectives LA01 90	dB(A)  dB(A)  Seconds  Events  Seconds
Barnes creening  Royade reflection Impact at nearest façade Reduction through open window (slee minus 2.5 dB façi Impact inside open window  TRUCK MOVEMENT FROM SITE  Noise source level for single event Duration of single event  Number of events in the measurement period  Total time duration of combined events	22 ade)  Creep LAeq  2 160.0 LAeq	2 19 -7.5 12 Acoustic LAeq	-7.5 N/A Quality C LA10 89 10 2 160.0 LA10 1hr	-7.5 25 Dijectives LA01 90	dB dB(A)  dB(A)  Seconds  Events  Seconds	Faude reflection Impact at nearest facade Reduction through open window (Also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events	Creep LAeq 2 160.0 LAeq	-7.5 34 Acoustic LAeq	-7.5 N/A Quality C LA10 89 0 2 160.0 LA10 Ihr	-7.5 47 Objectives LA01 90	dB(A)  dB(A)  Seconds  Events  Seconds
Barries creening Façade reflection Impact at nearest façade Rediction through open window (also minus 2.5 dB façi Impact maide open window TRUCK MOVEMENT FROM SITE Notes source level for single event Duration of single event Number of events in the measurement period Torst time duration of combined events Notes source level for assessment time period	22 sde)  Creep LAeq  8 2 160.0 LAeq 79	2 19 -7.5 12 Acoustic LAeq	-7.5 N/A Quality C LA10 89 10 2 160.0 LA10 1hr N/A	-7.5 25 Dijectives LA01 90	dB (A)  dB(A)  Seconds  Events  Seconds  dB(A)	Faculty ereflection Impact at nearest facade Reduction through open window (also minus 2.5 dB for Impact it inside open window TRUCK MOVEMENT FROM SITE Notice source level for single event Dicartion of single event Number of events in the measurement period Total time deuration of combined events Notice source level for assessment time period	Creep LAeq 2 160.0 LAeq 79	-7.5 34 Acoustic LAeq	-7.5 N/A Quality C LA10 89 0 2 160.0 LA10 lbr N/A	-7.5 47 Dijectives LA01 90	dB(A) Seconds Events Seconds
Barnes creening  Royale reflection Impact at nearest façade Reduction (trough open window (slee minus 2.5 dB faç. Impact inside open vindow  TRUCK MOVEMENT FROM SITE  Notice source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events  Notice source level for accessment time period Total time duration of combined events  Notice source level for accessment time period  Totally Transity / Impactiveness correction	22 sde)  Creep LAeq  8 2 160.0 LAeq 79 0	2 19 -7.5 12 Acoustic LAeq	-7.5 N/A Quality O LA10 89 10 2 160.0 LA10 1hr N/A 0	-7.5 25 25 LA01 90 LA01 lhr 90	dB dB(A)  dB(A)  Seconds  Events  Seconds	Faude reflection Impact at nearest facade Reduction through open window (Also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events	2 160.0 LAeq 79	-7.5 34 Acoustic LAeq	-7.5 N/A  Quality C  LA10  89  0  2  160.0  LA10 1hr  N/A  0	-7.5 47 Objectives LA01 90	dB(A)  dB(A)  Seconds  Events  Seconds
Barries creening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window TRUCK MOVEMENT FROM SITE 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 distinuer to receiver	22 dde)  Creep LAeq  2 160.0 LAeq 79 0 2:	2 19 -7.5 12 12 Acoustic LAeq 77 5 12 LAeq 1hr 73	77.5 N/A  Quality 0  LA10  89  10  2  160.0  LA10 1hr  N/A  0	-7.5 25 Dijectives LA01 90	dB (A)  dB(A)  Seconds  Events  Seconds  dB(A)	Faculty reflection Impact at nearest facade Reduction through open window (also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE Notice source level for single event Dieurison of single event Number of events in the measurement period Total time deurison of combined events Notice source level for assessment time period Total time deurison of combined events Notice source level for assessment time period Totality / Impulsiveness correction Minimum distinct to receiver	2 160.0 LAeq 79 0	Acoustic LAeq S7	7.5 N/A  Quality 0  LA10  89  0  2  160.0  LA10 lhr  N/A  0	-7.5 47 Dijectives LA01 90 LA01 1hr 90	dB(A) Seconds Events Seconds dB(A) dB(A)
Barnes creening  Royale reflection Impact at nearest façade Reduction (trough open window (slee minus 2.5 dB faç. Impact inside open uindow  TRUCK MOVEMENT FROM SITE  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 accessment time period Total time duration of combined events  Noise source level for accessment time period Totally Time duration of combined events  Maintagna distance to receiver  Distance articulation (-6 dB per doubling of distance)	22 dde)  Creep LAeq  2 160.0  LAeq  79 0	2 19 -7.5 12 Acoustic LAeq 77 S	-7.5 N/A Quality 0 LA10 89 10 2 160.0 LA10 1hr N/A 0	-7.5 25 Dijectives LA01 90 LA01 lbr 90	dB (A)  dB(A)  Seconds  Events  Seconds  dB(A)	Facular effection Impact at narrest facade Reduction through open window (Also minus 2.5 dB for Impact it inside open window TRUCK MOVEMENT FROM SITE Noise source level for single event Dumber of events in the measurement period Total time duration of combined events Noise source level for assessment time period Total time duration of combined events Noise source level for assessment time period Totality in Implicity measurement period Totality in Implicity measurement period Distance of terestation of cdB per doubling of distance)	Creep   LAeq	Acoustic LAeq 37 S LAeq lhr 73	-7.5 N/A Quality C LA10 89 0 2 160.0 LA10 1hr N/A	-7.5 47 Dbjectives LA01 90 LA01 lbr 90	dB(A)  dB(A)  Soconds  Events  Seconds
Barries creening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window TRUCK MOVEMENT FROM SITE 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 distinuer to receiver	22 dde)  Creep LAeq  2 160.0  LAeq  79 0	2 19 -7.5 12 -	-7.5 N/A Quality 0 LA10 89 10 2 160.0 LA10 1hr N/A 0	25 25 25 LA01 90 LA01 lhr 90	dB dB(A) Seconds Events Seconds 68(A) dB m	Faculty reflection Impact at nearest facade Reduction through open window (also minus 2.5 dB for Impact inside open window TRUCK MOVEMENT FROM SITE Notice source level for single event Dieurison of single event Number of events in the measurement period Total time deurison of combined events Notice source level for assessment time period Total time deurison of combined events Notice source level for assessment time period Totality / Impulsiveness correction Minimum distinct to receiver	Creep   LAeq	Acoustic LAeq TAeq lhr 73	-7.5 N/A Quality C LA10 89 0 2 160.0 LA10 1hr N/A	-7.5 47 bbjectives LA01 90 LA01 lhr 90	dB(A) Seconds Events Seconds dB(A) dB
Barries screening Reade reflection Impact at nearest facade Impact as nearest facade Impact misside open window (also minus 2.5 dB facilitation through open window TRUCK MOVEMENT FROM SITE Noise source level for single event Duration of single event Duration of single event Duration of single event Outstein of single event Total time duration of combined events Noise source level for assessment time period Total time duration of combined events Noise source level for assessment time period Totally "Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Regide reflection Impact at nearest facade	22 sde)  Creep LAeq 8 2 160.0 LAeq 79 0 2:	2 19 -7.5 12 -	-7.5 N/A Quality 0 LA10 89 10 2 160.0 LA10 1hr N/A 0	25 25 25 LA01 90 LA01 lhr 90	dB dB(A)  Seconds Events Seconds  6B(A)  dB  dB  dB  dB  dB  dB	Facular erflection Impact at narest facade Reduction through open window (Also minus 2.5 dB for Impact that the open window Also minus 2.5 dB for Impact that de open window TRUCK MOVEMENT FROM SITE Notes source level for single event Dumber of events in the measurement persod Total time duration of combined events Notes source level for assessment time period Total time duration of combined events Notes source level for assessment time period Totality Impulsiveness correction Minimum distance to receiver Distance estimation (-6 dB per doubling of distance) Barrier screening Barrier screening	Creep   LAeq	Acoustic LAeq TAeq lhr 73	-7.5 N/A Quality C LA10 89 0 2 160.0 LA10 1hr N/A	-7.5 47 bbjectives LA01 90 LA01 lhr 90	dB(A) Seconds Events Seconds dB(A) dB m dB
Barnes creening  Royale reflection Impact at nearest façade Reduction through open window (olso minus 2.5 dB faç Impact inside open vindow  TRUCK MOVEMENT FROM SITE  Notice source level for single event Duration of single event Number of events in the measurement period Torid time duration of combined events  Notice source level for single event  Motion of the control of the period Torid time duration of combined events  Notice source level for successment time period Torially 'Impulsivemenses correction Manimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Barries creening	22 sde)  Creep LAeq 8 2 160.0 LAeq 79 0 2:	2 19 -7.5 12 12 Acoustic LAeq 7.7 5 12 LAeq 1hr 73 18 1.6 2	7.7.5 N/A Quality 0 LA10 89 10 2 160.0 LA10 1hr N/A 0 2 -15	-7.5 25 25 LA01 90 LA01 lhr 90	AB (A)  AB(A)  Seconds  Events  Seconds  AB(A)  AB  AB  AB  AB	Faculty reflection Impact at nearest facade Reduction through open window (also minus 2.5 dB for Impact in sixide open window Impact inside open window TRUCK MOVEMENT FROM SITE Notice source level for single event Duration of single event Number of events in the measurement period Tool time deution of combined events Notice source level for assessment time period Toolship* / Impulsiveness correction Minimum distance to receiver Distance atternation (4 dB per doubling of distance) Barries screening	Creep LAeq 2 160.0 LAeq 79 0 1 -1	-7.5 34 Acoustic LAeq 37 8 LAeq lhr 73 22 22 6.1	-7.5 N/A Quality C LA10 89 0 2 160.0 LA10 lbr N/A 0	-7.5 47 48 LA01 90 LA01 lhr 90	dB(A) Seconds Events Seconds dB(A) dB dB dB

STAGE 2 ACTIVITY NOISE PREDICTION CALCU									,	-	_
R3: Existing dwellings to the east		-			_	R4: Future dwelling: to the immediate east					-
	Creep	Aconstic	Quality C	hiectives	$\overline{}$		Creep	Aconstic	Ouality C	thiectives	
TRUCK AIRBRAKES	LAeq	LAeq	LA10	LA01	1 1	TRUCK AIRBRAKES	LAeq	LAeq	LA10	LA01	1
Noise source level for single event		90	98	102	6B(A)	Noise source level for single event		0	98	102	6B(A)
Duration of single event			2		Seconds	Duration of single event			2		Seconds
Number of events in the measurement period	3		9		Events	Number of events in the measurement period	3		9		Events
Total time duration of combined events	6.0		18.0		Seconds	Total time duration of combined events	6.0		18.0		Seconda
	LAeq		LA10 1hr				LAeq			LA01 1hr	
Noise source level for assessment time period	68	67	N/A	N/A	(B(A)	Noise source level for assessment time period	6S	67	N/A	N/A	(B(A)
Tonality / Impulsiveness correction	0	Ь.	5		έB	Tonality / Impulsiveness correction	0		5		έB
Minimum distance to receiver	_		55			Minimum distance to receiver			12		
Distance attenuation (-6 dB per doubling of distance)			48 1.6		69	Distance attenuation (-6 dB per doubling of distance)	-22 -161				dB.
Barrier screening Façade reflection	_	-1.			4B	Barrier screening Façade reflection			5		dB dB
Inspace renection Impact at mearest facade	11	15	N/A	N/A	(B (A)	Impact at nearest façade	33	37	N/A	N/A	(B(A)
Reduction through open window (also minus 2.5 dB fac		-7.5	-7.5	-7.5	4B (A)	Reduction through open window (also minus 2.5 dB fac-		-7.5	-7.5	-7.5	dB(A)
Impact inside open window	sae)	7	N/A	N/A	6B(A)	Impact inside open window	илеј	29	N/A	N/A	dB(A)
majact minde open titados		-	11/25	200	0.B (A.)	impact inside open stations		2.9	11/25	10.0	es(A)
THEORY ATTITUDE AND ALL AND AL	Стеер	Acoustic	Quality C	biectives		TOTAL ATTORNATION AND ALL AND A SAME	Стеер	Acoustic	Quality C	biectives	$\overline{}$
TRUCK AIRBRAKES at loading bay	LAeq	LAeq	LA10	LA01	1 l	TRUCK AIRBRAKES at loading bay	LAeq	LAeq	LA10	LA01	1
Noise source level for single event		90	98	102	éB(A)	Noise source level for single event		0	98	102	(B(A)
Duration of single event			2		Seconds	Duration of single event			2		Seconds
Number of events in the measurement period	2	$\overline{}$	4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	4.0		8.0		Seconds	Total time duration of combined events	4.0		8.0		Seconds
	LAeq	LAeq lhr	LAI0 1hr	LA01 lhr	$\Box$		LAeq	LAeg lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	66	63	N/A	N/A	dB(A)	Noise source level for assessment time period	66	63	N/A	N/A	4B(A)
Tonality / Impulsiveness correction	0	$\overline{}$	5		éB.	Tonality / Impulsiveness correction	0		5		dB.
Minimum distance to receiver		2	55		11	Minimum distance to receiver			12		61
Distance attenuation (-6 dB per doubling of distance)			48		άB	Distance attenuation (-6 dB per doubling of distance)			22		άB
Barrier screening		-1	1.6		6B	Barrier screening		-1	6.1		613
Façade reflection		2	1.5		ćB	Façade reflection		2	.5	5	
Impact at nearest façade	9	11	N/A	N/A	6B(A)	Impact at nearest façade	31	33	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	έB	Reduction through open window (also minus 2.5 dB faça	vde)	-7.5	-7.5	-7.5	άB
Impact inside open window		4	N/A	N/A	dB(A)	Impact inside open window		26	N/A	N/A	dB(A)
		-									
TRUCK UNLOADING at loading bay	Creep		Quality C			TRUCK UNLOADING at loading bay	Creep		Quality C		1
	LAeq	LAeq	LA10	LA01	$\vdash$	0 /	LAeq	LAeq	LA10	LA01	
Noise source level for single event	7	75	80	82	fB(A)	Noise source level for single event	7	15	80	82	fB(A)
Duration of single event	<u> </u>	9	00		Seconds	Duration of single event		9	00		Seconds
Number of events in the measurement period	900.0	—	4		Events	Number of events in the measurement period	900.0		3600.0		Events
Total time duration of combined events			3600.0	1	Seconda	Total time duration of combined events					Seconds
	LAeq		LA10 1hr	LA01 lbr	$\perp$		LAea		LA10 1hr	1LA01 1hr	4
Noise source level for assessment time period	75	75									
Tonality / Impulsiveness correction		/3	80	82	dB(A)	Noise source level for assessment time period	75	75	80	82	fB(A)
	0		5	82	6B(A)	Tonality / Impulsiveness correction		75	80 5		
Minimum distance to receiver	0	2	5	82	6B m	Tonality / Impulsiveness correction Minimum distance to receiver	75	75	80 5		68(A) 68
Distance attenuation (-6 dB per doubling of distance)	0	2:	5 55 48	82	6B(A) 6B 68 6B	Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	75	75	80 5 12 22		EB(A) EB EB
Distance attenuation (-6 dB per doubling of distance)  Barrier screening	0	2:	5 55 48 1.6	82	68 m 48	Tonality / Impulsiveness correction Maintam distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	75	75	80 5		4B(A) 4B B 4B 4B
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection		2: -1: 2:	5 55 48 1.6		68 68 48 48	Tonainty / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection	75 0	75	80 5 12 22 6.1	82	4B(A) 4B 61 4B 4B 4B
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	18	-1: -2: -1: 2: -23	5 55 48 1.6 1.5	30	68 68 48 48 68 68(A)	Tonality / Impulsiveness correction Mainimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	75 0	75	80 5 12 22 6.1 .5	82 52	6B(A) 6B 81 6B 6B 6B(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	18	2: -1: 2 23 -7.5	5 55 48 1.6 1.5 28 -7.5	30 -7.5	68 68 48 48 68 68(A)	Tonahity / Impulsiveness carrection Minimum distance to reactive Distance attenuation (-d dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (sloe minus 2.5 dB fag.	75 0	75 -1 2 45 -7.5	80 5 12 22 6.1 .5 <b>50</b> -7.5	\$2 -7.5	6B(A) 6B 6B 6B 6B 6B(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	18	-1: -2: -1: 2: -23	5 55 48 1.6 1.5	30	68 68 48 48 68 68(A)	Tonality / Impulsiveness correction Mainimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	75 0	75	80 5 12 22 6.1 .5	82 52	6B(A) 6B 81 6B 6B 6B(A)
Distance attenuation (-6 dB per doubling of distance) Barries creening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window	18 ade)	2: -1: 2 23 -7.5 15	5 55 48 1.6 5 28 -7.5 20	30 -7.5 22	68 68 48 48 68 68(A)	Tonality / Impulsiveness carrection Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creeming Façade reflection Imputs at a next st façade Reduction through open window (sloe minus 2.5 dB faç- Imputs inside open window)	75 0 40 sde)	75 -1 2 45 -7.5 37	80 5 22 22 6.1 .5 .5 .5 .5 .42	52 -7.5 44	6B(A) 6B 6B 6B 6B 6B(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	18 nde)	2: -1: 2 23 -7.5 15	5 55 48 1.6 5 28 -7.5 20	30 -7.5 22 Objectives	68 68 48 48 68 68(A)	Tonahity / Impulsiveness carrection Minimum distance to reactive Distance attenuation (-d dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (sloe minus 2.5 dB fag.	75 0 40 de)	75 -1 -1 2 45 -7.5 37	80 5 22 22 6.1 .5 .5 .5 .5 .7.5 .42	52 -7.5 44 Objectives	6B(A) 6B 6B 6B 6B 6B(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at awarest façade Reduction through open window (Asso minus 2.5 dB faç Impact inxide open window PEOPLE TALKING OUTSIDE	18 nde) Creep LAeq	2: -1: 2 23 -7.5 15 Acoustic	5 55 48 1.6 1.5 28 -7.5 20 : Quality C	30 -7.5 22 Objectives	6B 6B 6B 6B 6B 6B(A) 6B 6B(A)	Tonality / Impulsiveness carrection Minimum distance to receiver Distance attenuation (-6 dB per desibling of distance) Barrier screening Peache reflection Imputer at nearest façade Reduction through open window (also miniss 2.5 dB fac) Imputer inside open window PROPLE TALKING OUTSIDE	75 0 40 xde) Creep LAeq	75 -1 2 45 -7.5 37 Acoustic	80 5 22 22 6.1 .5 .5 .5 .5 .7.5 .42 .Quality C	52 -7.5 44 Objectives LA01	6B(A) 6B 6B 6B 6B(A) 6B(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Fayde reflection Impact at nearest façade Redukton through open window (sio minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event	18 nde) Creep LAeq	23 -7.5 15 Acoustic LAeq	5 55 48 1.6 5 28 -7.5 20 Quality O LA10 70	30 -7.5 22 Objectives	6B 6B 6B 6B 6B 6B 6B 6B 6B 6B	Tonality /Impulsiveness carrection Minimum distance to receiver Distance streamation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction tonality open window (diso minus 2.5 dB faç Impact itaside open window PEOPLE TALKING OUTSIDE Noise source level for single event	75 0 40 xde) Creep LAeq	75 -1 2 45 -7.5 37 Acoustic LAeq	80 5 22 22 6.1 .5 80 -7.5 42 Quality C	52 -7.5 44 Objectives	#B(A) #B
Distance attenuation (-6 dB per doubling of distance) Barries crossning: Façade reflection Impact at a searest façade Reduction through open window (Asio minus 2.5 dB faç Impact miside open window (Asio minus 2.5 dB faç Impact miside open window) PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event	18 nde) Creep LAeq	23 -7.5 15 Acoustic LAeq	5 55 48 1.6 1.5 28 -7.5 20 : Quality C	30 -7.5 22 Objectives	dB  ss dB  dB  dB  dR(A)  dB  dB(A)  Soconds	Tonality / Impulsiveness carrection Minimum distance to receiver Distance attenuation (-6 dB per desibiling of distance) Batties accessing Feogda reflection Impact at a nearest façade Redistrion through open window (also minus 2.5 dB fag/ Impact inside open window PEOPLE TALKING OUTSIDE Notes source levels for single event Distance of single event	75 0 40 xde) Creep LAeq	75 -1 2 45 -7.5 37 Acoustic LAeq	80 5 22 22 6.1 .5 .5 .5 .5 .7.5 .42 .Quality C	52 -7.5 44 Objectives LA01	6B(A) 6B 6B 6B 6B 6B 6B 6B 6B 6B(A) 6B 6B(A) 6B 6B(A) 6B 6B(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Fagade reflection Impact at nearest fagade Reduction through open window (also minus 2.5 dB fag Impact inside open window PEOPLE TALKING OUTSIDE Notes source level for single event Duration of single event Number of wents in the measurement period	18 nde) Creep LAeq	23 -7.5 15 Acoustic LAeq	5 555 48 1.6 .5 28 -7.5 20 • Quality 0 LA10 70	30 -7.5 22 Objectives	dB  dB  dB  dB  dB  dB  dB  (dB  (dB)  dB  (A)  dB  dB  (A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Tonality /Impulsiveness carrection Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Fegade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window PPOPLE TAIKING OUTSIDE Noise source level for tingle event Duration of single event Durations of single event	75 0 40 40 Creep LAeq	75 -1 2 45 -7.5 37 Acoustic LAeq	80 5 22 22 6.1 .5 5 -7.5 42 •••••••••••••••••••••••••••••••••••	52 -7.5 44 Objectives LA01	dB(A)  dB  m  dB  dB  dB  dB  dB  dB  dB  (A)  dB  dB  (A)  dB  dB  (A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d
Distance attenuation (-6 dB per doubling of distance) Barries crossning: Façade reflection Impact at a searest façade Reduction through open window (Asio minus 2.5 dB faç Impact miside open window (Asio minus 2.5 dB faç Impact miside open window) PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event	18 ade)  Creep LAeq 6	2: -3: -1: -2 23 -7:5 15 15 Acoustic LAeq 62 66	5 555 48 1.6 1.5 28 -7.5 20 20 1.410 70 00 4 2400.0	30 -7.5 22 bjectives LA01 73	dB	Tonality / Impulsiveness carrection Minimum distance to receiver Distance attenuation (-6 dB per desibiling of distance) Batties accessing Feogda reflection Impact at a nearest façade Redistrion through open window (also minus 2.5 dB fag/ Impact inside open window PEOPLE TALKING OUTSIDE Notes source levels for single event Duzation of single event	75 0 40 40 de)	75 1 -1 2 45 -7.5 37 Acoustic LAeq 2	80 5 22 22 22 6.1 5 80 -7.5 42 2 Quality 0 1 LA10 70 00 4	\$2 -7.5 44 Dijectives LA01 73	ell(A)  ell  ell  ell  ell  ell  ell  ell  e
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façado reflection Impact at a earest façade Rediction through open window (also minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Duration of single event Total time duration of combined events Total time duration of combined events	Creep LAeq  1 600.0 LAeq	22 -11 -21 23 -7.5 15 Acoustic LAeq 61	5 555 48 1.6 1.5 28 -7.5 20 20 1.410 70 00 4 2400.0 1.410 1hr	30 -7.5 22 bjectives LA01 73	dB d	Tonably / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries screening Façade reflection Impact at mearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Notice source level for simple event Duration of simple event Number of events in the measurement period Torist time duration of combined events	75 0 40 40 de) Creep LAeq 1 600.0 LAeq	75	80 5 22 26.61 .5 50 -7.5 42 Quality Q LA10 70 00 4 2400.0	\$2 -7.5 44 Dejectives LA01 1hr	ell(A)  ell  ell  ell  ell  ell  ell  ell  e
Distance attenuation (-6 dB per doubling of distance) Barries creening Façale selfaction Impact at searce if scade Reduction through open window (slice minus 2.5 dB for Impact at inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Number of events in the measurement period Tools time duration of combined events Number of events in the measurement period Tools time duration of combined events Noise source level for accessment time period	18 18 Creep LAeq 60 LAeq 60	2: -3: -1: -2 23 -7:5 15 15 Acoustic LAeq 62 66	5 55 48 48 1.6 1.5 28 -7.5 20 1 Lali0 70 00 4 2400.0 1 Lali0 lbr 70	30 -7.5 22 bjectives LA01 73	dB	Tonality / Impulsiveness carrection Minimum distance to receiver Distance attenuation (4 dB per doubling of distance) Barries creening Façade reflection Impact at an artest façade Reduction through open window (siko minists 2 5 dB façi Impact inside open window PEOPLE TALKING OUTSIDE Notice source level for tingle event Distance of single event Number of events in the measurement period Total time destroof combined events Notice source level for assessment time period	75 0 40 dde) Creep LAeq 600.0 LAeq 60	75 1 -1 2 45 -7.5 37 Acoustic LAeq 2	80 5 12 2 2 2 6.61 5 5 6 4 2 1 2 4 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	\$2 -7.5 44 Dijectives LA01 73	ell(A) ell ell ell ell ell ell ell ell ell el
Distance attenuation (-6 dB per doubling of distance) Barrier corening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Notes ource level for single event Duration of single event Number of event in the measurement period Total time duration of combined events Notes ource level for accessment ince period Totality Time duration of combined events Notes ource level for accessment time period Tomality / Impulsiveness correction	Creep LAeq  1 600.0 LAeq	2: -1: -23 -7.5 15 Acoustic LAeq 60 LAeq lbr 60	5 55 48 48 1.6 5 28 7.5 20 LA10 70 00 4 2400.0 1 LA10 1 hr 70 0 0	30 -7.5 22 bjectives LA01 73	dB (B dB	Tonality /Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creening Fegade reflection Impact at a nearest façade Reduction through open window (also miniss 2 5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Notes course level for single event Distancion of single event Number of events in the measurement period Torst time duration of combined events Notes source level for sessessment time period Torst time duration of combined events Notes source level for resessment time period Torst time duration of combined events Notes source level for resessment period Torst time duration of combined events	75 0 40 40 de) Creep LAeq 1 600.0 LAeq	75	80 5 22 22 6.1 .5 50 -7.5 42 2400.0 1 LA10 70 00 1 LA10 1hr 70	\$2 -7.5 44 Dejectives LA01 1hr	eB(A)  eB  eB  eB  eB  eB  eB(A)  eB  eB(A)  eB  eB(A)  eB  eB(A)
Distance attenuation (-6 dB per doubling of distance) Barries screening Fagale selfaction Impact at searce façade Reduction through open window (also minus 2.5 dB for Impact at siste open window PEOPLE TALKING OUTSIDE Notes our to level for single event Duration of single event Number of events in the measurement period Took time duration of combined events Notes our toe level for accessment time period Took time duration of combined events Notes our toe level for accessment time period Tooking / Impulsiveness correction Minimum distinct to receiver	18 18 Creep LAeq 60 LAeq 60	2:	5 55 48 1.6 1.5 28 -7.5 20 1.410 70 00 4 2400.0 1.410 1br 70 0 65	30 -7.5 22 bjectives LA01 73	dB m dB dB dB (A) dB dB (A) dB dB (A) dB (A) dB (A) Seconds Events CB (A) dB (B (B (A) dB (B (B (A) dB (B	Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (4 dB per doubling of distance) Barries creening Façade reflection Impact at a nearest façade Reduction through open window (side minimas 2 5 dB faç Impact in tailer open window (side minimas 2 5 dB faç Impact in tailer open window Distance of through open window Distance of the	75 0 40 dde) Creep LAeq 600.0 LAeq 60	75  1 1 2 45 -7.5 37  Acoustic LAeq 1 LAeq lhr 60	80 5 222 26.1 50 -7.5 42 2400.0 LA10 lbr 70 0 055	\$2 -7.5 44 Dejectives LA01 1hr	eB(A)  eB  eB  eB  eB  eB  eB  eB  eB  eB  e
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at a searest façade Reduction through open window (sivo minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event Number of events in the measurement period Total time distantion of combinated events Number of events in the measurement period Total time distantion of combinated events Number of events in the measurement period Total time distantion of combinated events Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	18 18 Creep LAeq 60 LAeq 60	2:	5 5 5 5 4 48 1.1.6 1.5 28 -7.5 20 LA10 70 00 4 2400.0 LA10 1br 70 0 6 5 48	30 -7.5 22 bjectives LA01 73	dB ts dB dB dB dB dB (A) dB dB (A) dB dB (A) dB dB (A) Seconds Events Seconds	Tonality /Impulsiveness carrection Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creening Pegade reflection Impact at a nearest façade Reduction through open window (sloo miniss 2 5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes source level for sessessment time period Total time duration of combined events Notes source level for sessessment time period Totality Impulsiveness correction Minimum distance to receiver Distance est research (-6 dB per doubling of distance)	75 0 40 dde) Creep LAeq 600.0 LAeq 60	75 -1 -1 -2 -45 -7.5 -37	80 5 22 22 6.1 -5 80 -7.5 42 1.410 70 00 1.410 lbr 70 0 15	\$2 -7.5 44 Dejectives LA01 1hr	dB(A)  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  dB  dB(A)  dB(A)  dB(A)  dB(A)
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façale refliction Impact at searce façade Reduction through open window (skio minus 2.5 dB for Impact at size open window PEOPLE TALKING OUTSIDE Notes cource level for single event Duration of single event Number of events in the insessurement period Tord time duration of combined ewer's Notes cource level for accessment time period Tord time duration of combined ovents Notes cource level for accessment time period Tord time duration of combined ovents Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening	18 18 Creep LAeq 60 LAeq 60	2:	5 5 5 5 4 8 1.16 1.5 28 -7.5 20 70 10 10 10 10 10 10 10 10 10 10 10 10 10	30 -7.5 22 bjectives LA01 73	dB  rs dB dB dB dB (A) dB dB (A) dB dB (A) dB	Toosity / Impulsiveness correction Minimum distance to receiver Distance attenuation (d dB per doubling of distance) Barries correcting Façade reflection Reduction through open window (olso minus 2 5 dB fag Impact at neverst facade Reduction through open window (olso minus 2 5 dB fag Impact at neverst facade Reduction through open window PEOPLE TALKING OUTSIDE Notice source levels for timple event Dication of simple event Number of events in the measurement period Toosi time duration of combined events Notice source level for assessment time period Toosiality / Impulsiveness correction Minimum distance to receiver Distance attenuation (d dB per doubling of distance) Barries screening	75 0 40 dde) Creep LAeq 600.0 LAeq 60	75 -1 2 45 -7.5 37 Acoustic LAeq 12 60 LAeq lhr 60	S0   5   22   22   22   22   22   24   24	\$2 -7.5 44 Dejectives LA01 1hr	## (A) ## (B) ##
Distance attenuation (-6 dB per doubling of distance) Barries crossning: Façade reflection Impact at a searest façade Reductions through open window (sive minus 2.5 dB fog Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for sugge event Duration of single event Number of events in the measurement period Torist time distration of combined events  Noise source level for assessment time period Torist intended to the compact of the com	18 18 Creep LAeq 60 LAeq 60	2:	5 5 5 5 4 48 1.1.6 1.5 28 -7.5 20 LA10 70 00 4 2400.0 LA10 1br 70 0 6 5 48	30 -7.5 22 bjectives LA01 73	6B H GB	Tonality /Impulsiveness carrection Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Feache reflection Impact at a search facade Reduction through open window (also miniss 2.5 dB for, Impact taxifde open window PROPLE TALKING OUTSIDE Notes course level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Number of events in the properties of the control of the c	75 0 40 dde) Creep LAeq 600.0 LAeq 60	75 -1 2 45 -7.5 37 Acoustic LAeq 12 60 LAeq lhr 60	80 5 22 22 6.1 -5 80 -7.5 42 1.410 70 00 1.410 lbr 70 0 15	\$2 -7.5 44 Dejectives LA01 1hr	dB(A)  dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  dB  dB(A)  dB  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d
Distance attenuation (-6 dB per doubling of distance) Barrier screening Façale refliction Impact at searce façade Reduction through open window (skio minus 2.5 dB for Impact at inside open window PEOPLE TALKING OUTSIDE Notes course level for single event Duration of single event Number of events in the inside event Total time duration of combined owers Notes course level for assessment time period Total time duration of combined owers Notes course level for assessment time period Totality. Jimpulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at a searces façade	18 ade)  Creep LAeq 600.0 LAeq 60	2: -1: -2 23 -7.5 15 -15 -16 -17.5 15 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	5 5 5 48 1.16 28 -7.5 20 2400.0 1 LA10 1br 70 0 65 48 0.1 5.5	30 -7.5 22 Dijectives LA01 73	dB  rs dB dB dB dB (A) dB dB (A) dB dB (A) dB	Toosity / Impulsiveness correction Minimum distance to receiver Distance attenuation (6 dB per doubling of distance) Barries correcting Façade reflection Impact at a nevert facade Reduction through open window (olso minus 2 5 dB fag Impact at inset open window (olso minus 2 5 dB fag Impact at inset open window PEOPLE TALKING OUTSIDE Notice source levels for timple event Distance of simple event Number of events in the measurement period Toosity / Impulsiveness correction Notice source level for assessment time period Toosity / Impulsiveness correction Minimum distance to receiver Distance attenuation (4 dB per doubling of distance) Barries screening Façade reflection Impact at nearest façade	75 0 40 vde) Creep LAeq 60 0 0	75 -1 -1 2 45 -7.5 37 -Acoustic LAeq 1 -60	\$0 5 22 22 6.1 -5.5 42 -7.5 42 -7.0 00 4 2400.0 LA10 1hr 70 0 15 28 5.7	\$2 -7.5 44 bjectives LA01 73 LA01 1hr 73	## (A) ## (B) ##
Distance attenuation (-6 dB per doubling of distance) Barries (screening) Fogade reflection Impact at a nearest façade Rediction through open window (also minus 2.5 dB fog Impact inside open window  PEOPLE TALKING OUTSIDE  Noise source level for single event Dumber of events for single event Dumber of events in the measurement period Total time duration of combined events  Number of events in the measurement period Total time duration of combined events  Number of events in the measurement ment of Total time duration of combined events  Moise source level for assessment time period Totality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Barries screening	18 ade)  Creep LAeq 600.0 LAeq 60	2: -1: -2 23 -7.5 15 Acoustic LAeq 52 60 LAeq lbr 60 -1: -1: -2 4	5 5 5 5 48 1.6 5 28 7.5 20	30 -7.5 22 bjectives LA01 1br 73	6B H GB	Tonality /Impulsiveness carrection Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Feache reflection Impact at a search facade Reduction through open window (also miniss 2.5 dB for, Impact taxifde open window PROPLE TALKING OUTSIDE Notes course level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Number of events in the properties of the control of the c	75 0 40 vde) Creep LAeq 60 0 0	75 -1 2 45 -7.5 37 -1 LAeq lbr 60 -1 2 19	\$0 5 5 22 22 22 6.1 5 50 -7.5 42 12 12 12 12 12 12 12 12 12 12 12 12 12	\$2   -7.5   44   LA01   73   LA01   Ihr   73	ell(A) ell ell ell ell ell ell ell ell ell el

R3: Existing dwellings to the east						R4: Future dwelling: to the immediate east					
	Creep	Acoustic	Quality C	biectives			Creep	Acoustic	Quality C	Diectives	-
TRUCKS WITH REFRIGERATION UNIT	LAeq	LAea	LA10	LA01	1	TRUCKS WITH REFRIGERATION UNIT	LAeq	LAea	LA10	LA01	1
Noise source level for single event		1	82	83	6B(A)	Noise source level for single event		1	82	83	6B(A)
Duration of single event		9	00		Seconds	Duration of single event		9	00		Seconds
Number of events in the measurement period	1		2		Events	Number of events in the measurement period	1		2		Events
Total time duration of combined events	900.0		1800.0		Seconda	Total time duration of combined events	900.0		1800.0		Second
	LAea	LAea lhr	LA10 1hr	LA01 1hr			LAea	LAeg lhr	LA10 1hr	LA01 lb	
Noise source level for assessment time period	81	78	82	83	(B(A)	Noise source level for assessment time period	\$1	78	82	23	(B(A)
Conality / Impulsiveness correction	0		0		éB-	Tonality / Impulsiveness correction	0		0		éB-
Cinimum distance to receiver		2	55		n	Minimum distance to receiver			2		10
Distance attenuation (-6 dB per doubling of distance)		-	48		4B	Distance attenuation (-6 dB per doubling of distance)			22		dB.
Refrigeration unit truck directivity / screening			0		ćB.	Refrigeration unit truck directivity / screening			0		dB.
Sarrier screening		-1	0.9		/B	Barrier screening		-1	5.9		dB.
Facade reflection			5		43	Façade reflection			.5		68
mpact at nearest facade	24	21	25	26	6B(A)	Impact at nearest facade	46	43	47	48	(B(A)
Reduction through open window (also minus 2.5 dB face		-7.5	-7.5	-7.5	/B	Reduction through open window (also minus 2.5 dB face	ide)	-7.5	-7.5	-7.5	en (st)
mpact inside open window		14	18	19	6B(A)	Impact inside open window	racy .	35	40	41	6B(A)
mpact intract open manys					E II ( 14)	ampiret turriet open manori			- 41		le in ( in )
	Creep	Aconstic	Ouality C	hiectives			Creep	Aconstic	Ouality C	hiertises	-
WAS TE COLLECTION INDUSTRIAL BIN - Service	LAeq	LAeq	LAIO	LA01	1 1	WAS TE COLLECTION INDUSTRIAL BIN - Service	LAeq	LAeg	LA10	LA01	-
Voise source level for single event		2	97	102	(B(A)	Noise source level for single event		22	97	102	48(A)
Ouration of single event	-			102	Seconds	Duration of single event	-		80	102	Second
Jumber of events in the measurement period	1				Seconds Events	Number of events in the measurement period	1 1 1			Events	
Total time duration of combined events	180.0	1 180.0			Seconds	Total time duration of combined events	180.0 180.0			Second	
total tittle duration of complined events	LAea	T As a The		LA01 1hr		Total time duration of combined events	LAea	T As a liber		LA01 lh	
Voise source level for assessment time period	S5	79	N/A	102	(B(A)	Noise source level for assessment time period	85 85	79	N/A	102	6B(A)
onality / Impulsiveness correction	0	19	N/A	102	6B(A)	Tonality / Impulsiveness correction	0	/9	N/A	102	dB(A)
Cinimum distance to receiver	· ·		55		éB.	Minimum distance to receiver	·	Щ,	2		4B
Distance attenuation (-6 dB per doubling of distance)	_		48		ri ca	Distance attenuation (-6 dB per doubling of distance)			22		en.
Sarrier screening	_		0		4B	Barrier screening			0		
Facade reflection	_		.5		6B	Facade reflection		2			₫B ₫B
inpact at nearest facade	30	38	N/A	61	0.17	Impact at nearest facade	66	65	N/A	SS	
		-7.5	-7.5	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB face		-7.5	-7.5	-7.5	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	31	N/A		£13		Vale)	-7.5		-7.5	413
impact inside open window		31	N/A	54	6B(A)	Impact inside open window		57	N/A	80	GB(A)
											+
ALFRES CO DINING	Creep		Quality C		- 1	ALFRES CO DINING	Creep		Quality C		4
	LAeq	LAeq	LA10	LA01			LAeq	LAeq	LA10	LA01	-
loise source level for single event	7	5	78	\$2	(B(A)	Noise source level for single event	-	75	78	\$2	(B(A)
Ouration of single event	, .	7.	20		Secondo	Duration of single event	,	7,	20		Second
Jumber of events in the measurement period	720.0		2880.0		Events	Number of events in the measurement period	720.0		4 2880.0		Events
otal time duration of combined events	12000			I	Seconds	Total time duration of combined events				Ir	Second
	LAeq		LA10 1hr				LAeq			LA01 lh	
loise source level for assessment time period	74	74	78	82	iB(A)	Noise source level for assessment time period	74	74	78	82	iB(A)
onality / Impulsiveness correction	0	L	5		413	Tonality / Impulsiveness correction	0	Ь.	5		418
Aminum distance to receiver			30		п	Minimum distance to receiver			S		п
Distance attenuation (-6 dB per doubling of distance)			50		dB	Distance attenuation (-6 dB per doubling of distance)					έB
Onsite building screening			5.0		άB	Onsite building screening			5.0		άB
açade reflection			.5		413	Façade reflection		. 2			415
mpact at nearest façade	11	16	20	24	dB(A)	Impact at nearest façade	25	30	34	38	dB(A)
Reduction through open window (also minus 2.5 dB faç:	ade)	-7.5	-7.5 13	-7.5 17	άB	Reduction through open window (also minus 2.5 dB faça	vde)	-7.5	-7.5	-7.5 30	άB
Impact inside open window		0			dB(A)	Impact inside open window		22	26		an (A)

STAGE 2 ACTIVITY NOISE PREDICTION CALCU	LATIONS	: (L <sub>A10 lbr</sub> a	nd LAST BE	evel are rep	resented as	STAGE 2 ACTIVITY NOISE PREDICTION CALCU	LATIONS	: (L <sub>x10 Br</sub> a	nd Last the t	are rep	resented a
R5: Existing dwellings to the south across Rifle Rang	re Road					R5: Existing dwellings to the south across Rifle Ran	e Road				
CAR DOOR CLOSURE near carpark DAY / EVEN	Creep	Acoustic	Quality C	bjectives		CAR ENGINE STARTS far carpark DAY / EVEN	Creep		Quality C		
Noise source level for single event	LAeq	LAeq	LA10 77	LA01 80	dB(A)	Noise source level for single event	LAeq	LAeq	LA10 74	LA01 75	dB(A)
Duration of single event		1	.5		Seconds	Duration of single event		-	3		Seconds
Number of events in the measurement period	23		90		Events	Number of events in the measurement period	10		30		Events
Total time duration of combined events	33.8 LAeq	T Asa Ibr	135.0 LA10 1hr	T 401 1be	Seconds	Total time duration of combined events	30.0 LAeq	T A 11-	90.0	T 101 11-	Seconds
Noise source level for assessment time period	61	61	N/A	80	dB(A)	Noise source level for assessment time period	5S 5S	LAMP INT	N/A	LA01 lhr 75	dB(A)
Tonality / Impulsiveness correction	0		5		dB	Tonality / Impulsiveness correction	0		0		dB
Minimum distance to receiver			17		m	Minimum distance to receiver					m
Distance attenuation (-6 dB per doubling of distance)			33		dB dB	Distance attenuation (-6 dB per doubling of distance)		-:			dB
Barrier screening Façade reflection			5		dB dB	Barrier screening Façade reflection	_	2			dB dB
Impact at nearest façade	30	35	N/A	54	dB(A)	Impact at nearest façade	22	21	N/A	39	dB(A)
Reduction through open window (also minus 2.5 dB faça	rde)	-7.5	-7.5	-7.5	dΒ	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	dB
Impact inside open window	071.733	27	N/A	47	dB(A)	Impact inside open window		13	N/A	32	dB(A)
	Creep	Acoustic	Ouality C	Phiactives			Creep	125.7134 Accuratio	Quality C	Nia etime	
CAR DOOR CLOSURE far carpark DAY / EVEN	LAeq	LAeq	LA10		1	CAR ENGINE STARTS near carpark NIGHT	LAeq		LA10		1
Noise source level for single event	. 1	15	77	80	dB(A)	Noise source level for single event		3	74	75	dB(A)
Duration of single event	23	1	.5		Seconds	Duration of single event			3		Seconds
Number of events in the measurement period Total time duration of combined events	23 33.8	<del></del>	90 135.0		Events Seconds	Number of events in the measurement period	5 15.0		15 45.0		Events
1 Old thre district of combined events	LAeq	LAea lbr		LA01 lhr	seconas	Total time duration of combined events	LAeq	LAga lbr		LA01 1hr	Seconds
Noise source level for assessment time period	61	61	N/A	80	dB(A)	Noise source level for assessment time period	55 55	54	N/A	75	dB(A)
Tonality / Impulsiveness correction	0		5		dB	Tonality / Impulsiveness correction	0		0		dB
Minimum distance to receiver			14		m	Minimum distance to receiver		4			m
Distance attenuation (-6 dB per doubling of distance)  Barrier screening			38		dB dB	Distance attenuation (-6 dB per doubling of distance)	_	-:	3		dB
Façade reflection			.5		dB	Barrier screening Façade reflection	_	2	5		dB
Impact at nearest façade	25	30	N/A	49	dB(A)	Impact at nearest façade	24	23	N/A	44	dB(A)
Reduction through open window (also minus 2.5 dB faça	ide)	-7.5	-7.5	-7.5	dB	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	dB
Impact inside open window	200 0424	22	N/A	42	dB(A)	Impact inside open window	1 000 0000	16	N/A	37	dB(A)
CAR DOOR CLOSURE near carpark NIGHT	Creep	Acoustic	Quality C	bjectives			Creep	Acoustic	Quality C	biectives	
·	LAeq	LAeq	LA10	LA01	1	CAR ENGINE STARTS far carpark NIGHT	LAeq	LAeq	LA10		1
Noise source level for single event	7	15	77	80	dB(A)	Noise source level for single event		13	74	75	dB(A)
Duration of single event Number of events in the measurement period	,	- 1	.5		Seconds	Duration of single event	L.		15		Seconds
Total time duration of combined events	10.5	_	31.5		Events Seconds	Number of events in the measurement period Total time duration of combined events	15.0		45.D		Events
2 Old Talle discussed of Colleged College	LAeq	LAeg lhr	LA10 1hr	LA01 1hr	.accoma	1 oral time duration of combined events	LAeq	LAcq 1hr		LA01 1hr	Seconds
Noise source level for assessment time period	56	54	N/A	N/A	dB(A)	Noise source level for assessment time period	55	54	N/A	75	dB(A)
Tonality / Impulsiveness correction	0		5		dΒ	Tonality / Impulsiveness correction	0		0		dB
Minimum distance to receiver		-	33		m	Minimum distance to receiver		8			n
Distance attenuation (-6 dB per doubling of distance)  Barrier screening			.0		dB dB	Distance attenuation (-6 dB per doubling of distance)  Barrier screening	_	- 0	88		dB dB
Façade reflection		2	.5		dB	Façade reflection	_	2			dB
Impact at nearest façade	25	28	N/A	N/A	dB(A)	Impact at nearest façade	19	18	N/A	39	dB(A)
Reduction through open window (also minus 2.5 dB faca	vde)	-7.5	-7.5	-7.5	dB	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	dB
Impact inside open window	204 0041	21	N/A	N/A	dB(A)	Impact inside open window	1 03 00003	10	N/A	32	dB(A)
CAR DOOR CLOSURE far carpark NIGHT	Creep	Acoustic	Quality C	biectives		1	Creep	Acoustic	Quality C	hiections	
	LAeq	LAeq	LA10	LA01	1	CAR MOVEMENT TO DAY	LAeq	LAeq	LA10		1
Noise source level for single event		15	77	80	dB(A)	Noise source level for single event		is s	70	73	dB(A)
Duration of single event Number of events in the measurement period	-	1	.5		Seconds	Duration of single event		. 2			Seconds
Total time duration of combined events	10.5		31.5		Events Seconds	Number of events in the measurement period Total time duration of combined events	10 220.0		40 880.0		Events
	LAeq	LAeq lhr	LA10 1hr			Town time diffusion of complised events	LAeq	LAen 1br		LA01 lhr	Seconds
Noise source level for assessment time period	56	54		N/A	dB(A)	Noise source level for assessment time period	62	62	70	73	dB(A)
Tonality / Impulsiveness correction	0		5		dΒ	Tonality / Impulsiveness correction	0		0	•	dB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_		38		m. dB	Minimum distance to receiver		4			m
Distance attenuation (-o dis per douoling of distance)  Barrier screening			.0		dB dB	Distance attenuation (-6 dB per doubling of distance)	_	-:			dB dB
Façade reflection			.5		dB	Barrier screening Façade reflection	_	2			dB
Impact at nearest façade	20	23	N/A	N/A	dB(A)	Impact at nearest façade	32	32	40	43	dB(A)
Reduction through open window (also minus 2.5 dB faça	rde)	-7.5	-7.5	-7.5	dΒ	Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	dB
Impact inside open window		200 5008	N/A	N/A	dB(A)	Impact inside open window	I 2 102 2 10	24	32	35	dB(A)
пирист пальне орем тамиот	00.07070	-20-7200	Quality 0	bjectives			Creep	Acoustic	Quality C	hiectives	
	Creep	Acoustic			1	CAR MOVEMENT FROM DAY	LAeq	LAeq	LA10		1
CAR ENGINE STARTS near carpark DAY/EVEN	Creep LAeq	Acoustic LAeq	LA10	1.7401						_	dB(A)
CAR ENGINE STARTS near carpark DAY/EVEN Noise source level for single event			TA10 74	75	dB(A)	Noise source level for single event		is s	70	73	
CARENGINE STARTS near carpark DAY/EVEN Noise source level for single event Duration of single event	LAeq		74	75	Seconds	Duration of single event	(	18	2	73	Seconds
CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Number of events in the measurement period	LAeq 10		74 3 30	75	dB(A) Seconds Events	Duration of single event Number of events in the measurement period	10	18	2 40	73	Seconds Events
CARENGINE STARTS near carpark DAY/EVEN Noise source level for single event Duration of single event	10 30.0	LAeq 3	74 3 30 90.0	75	Seconds Events Seconds	Duration of single event	10 220.0	2	2 40 880.0		Seconds Events Seconds
CAR ENGINE STARTS near carpark DAY / EVEN Note cource level for single event Duration of single event Number of sevens in the measurement period Total time duration of combined events Notes cource level for assessment time period	10 30.0 LAeq 58	LAeq 3	74 3 30 90.0 LA10 1hr N/A	75 LA01 1hr	Seconds Events Seconds	Duration of single event Number of events in the measurement period Total time duration of combined events	10 220.0 LAeq	S 2 LAeq lhr	2 40 880.0 LA10 1hr	73 LA01 1hr	Seconds Events Seconds
CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Number of sevents in the measurement period Total time duration of combined events Noise source level for assessment time period Tonality / Impulsiveness correction	10 30.0 LAeq	LAeq 1hr	74 3 30 90.0 LA10 1hr N/A 0	75 LA01 1hr	Seconds Events Seconds	Duration of single event Number of events in the measurement period	10 220.0	2	2 40 880.0		Seconds Events Seconds
CAR ENGINE STARTS near carpark DAY / EVEN 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 Municand states to receive	10 30.0 LAeq 58	LAeq lbr	74 3 30 90.0 LA10 lhr N/A 0	75 LA01 1hr	Seconds Events Seconds dB(A) dB	Dutation of single event  Number of events in the neasurement period  Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver	10 220.0 LAeq 62	LAeq lhr	2 40 880.0 <b>LA10 lhr</b> 70 0		Seconds Events Seconds
CAR ENGINE STARTS near carpark DAY/EVEN Noise source level for single event Duration of single event Number of sevents in the measurement period Total time duration of combined events Total time duration of combined events Noise source level for assessment time period Tonality / Impulsiveness correction Minitum distance to receive Distance attenuation (-6 dB per doubling of distance)	10 30.0 LAeq 58	LAeq lhr	74 3 30 90.0 LA10 lhr N/A 0	75 LA01 1hr	Seconds Events Seconds dB(A) dB m dB	Duration of single event Number of event is the measurement period Total time duration of combined events Notice source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance a tension (of 6B per doubling of distance)	10 220.0 LAeq 62	2 LAeq 1hr 62	2 40 880.0 <b>LA10 lhr</b> 70 0 4		Seconds Events Seconds dB(A) dB m dB
CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Duration of single event Number of events in the measurement period Tool time duration of combined events Noise source level for assessment time period Toolaity / Impulsiveness correction Municarm distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening	10 30.0 LAeq 58	LAeq lhr	74 3 30 90.0 LA10 lhr N/A 0	75 LA01 1hr	Seconds Events Seconds dB(A) dB	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 / Ingulativaness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier streaming	10 220.0 LAeq 62	1 LAeq 1hr 62 8	2 40 880.0 <b>LA10 1hr</b> 70 0 4 88 0		Seconds Events Seconds dB(A) dB
CAR ENGINE STARTS near carpark DAY / EVEN Noise source level for single event Duration of single event Duration of single event Number of events in the measurement period Total time duration of concluded events Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Epople reflection Imputed at nearest facinde	10 30.0 LAeq 58 0	LAeq lhr	74 3 30 90.0 LA10 lhr N/A 0 7 33 0 5 N/A	75 LA01 1hr	Seconds Events Seconds dB(A) dB m dB dB	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 An immum distance to neceiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Pacide reflection	10 220.0 LAeq 62 0	1 LAeq 1hr 62 S -: 0 0 2	2 40 880.0 <b>LA10 lhr</b> 70 0 44 68 0 5	LA01 1hr 73	Seconds Events Seconds dB(A) dB m dB dB dB dB
CAR ENGINE STARTS near carpark DAY/EVEN Noise source level for single event Duration of single event Sumber of sevents in the measurement period Total time duration of combined events Noise source level for assessment time period Tonality / Impulsiveness correction Maintann distance to receive Distance attension of 6B per doubling of distance) Barries creening Fapide reflection	10 30.0 LAeq 58 0	LAeq   1	74 3 30 90.0 LA10 lhr N/A 0 47 33 .0	75 LA01 1hr 75	Seconds Events Seconds dB(A) dB m dB dB dB	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 / Ingulativaness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier streaming	10 220.0 LAeq 62 0	1 LAeq 1hr 62 8	2 40 880.0 <b>LA10 1hr</b> 70 0 4 88 0		Seconds Events Seconds dB(A) dB m dB

STAGE 2 ACTIVITY NOISE PREDICTION CALCU						STAGE 2 ACTIVITY NOISE PREDICTION CALCU					
R5: Existing dwellings to the south across Rifle Ran	ge Road					R5: Existing dwellings to the south across Rifle Ran	e Road				
	Creep	Acoustic	Quality C	Diectives			Creep	Acoustic	Quality C	Diectives	
CAR MOVEMENT TO NIGHT	LAeq	LAeq	LA10	LA01		TRUCK AIRBRAKES	LAeq	LAeq	LA10	LA01	1_
Noise source level for single event		58	70	73	dB(A)	Noise source level for single event	- 5	90	98	102	dB(A)
Ouration of single event			12		Seconds	Duration of single event			2		Second
lumber of events in the measurement period	5		15		Events	Number of events in the measurement period	3		9		Events
l'otal time duration of combined events	110.0		330.0		Seconds	Total time duration of combined events	6.0		18.0		Second
	LAeq	LAeq lhr		LA01 lhr			LAeq	LAeq 1hr		LA01 1hr	
Voise source level for assessment time period	59	58	N/A	73	dB(A)	Noise source level for assessment time period	68	67	N/A	N/A	dB(A)
onality / Impulsiveness correction	0		0		dB	Tonality / Impulsiveness correction	0		5		dB
Linimum distance to receiver		- 4	13			Minimum distance to receiver			13		m
Distance attenuation (-6 dB per doubling of distance)			33		-0	Distance attenuation (-6 dB per doubling of distance)			33		dB
Barrier screening			0			Barrier screening			0		dB
Façade reflection			5		UD UD	Façade reflection			5		dB.
inpact at nearest façade	20	27	N/A	43	4B (A)	Impact at nearest façade	38	42	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç		2.5	27	7.5	dB(A)	Debate desirest inches		27	27	2.6	
	ide)	20	N/A	-7.3	dB	Reduction through open window (also minus 2.5 dB face	kae)	-7.3	-/.5	-7.5	dΒ
mpact inside open window		20	N/A	35	dB(A)	Impact inside open window		34	N/A	N/A	dB(A)
	741.6744	556.2558									_
AR MOVEMENT FROM NIGHT	Creep		Quality C			TRUCK AIRBRAKES at loading bay	Creep		Quality C		1
	LAeq	LAeq	LA10	LA01		¥ /	LAeq	LAeq	LA10		L
loise source level for single event	- 6	SS	70	73	dB(A)	Noise source level for single event	9	90	98	102	dB(A)
Ouration of single event	$\overline{}$	- :	22		Seconds	Duration of single event			2		Second
Jumber of events in the measurement period	- 5		15		Events	Number of events in the measurement period	2		4		Events
otal time duration of combined events	110.0	_	330.0			Total time duration of combined events	4.0	-	8.0		Second
orar raise auration or combined events		T 4 31		T AOL T	Seconds	1 oral ratie duration of comomed events		T 4 1*		T 401 11	second
	LAeq		LA10 lhr				LAeq		LA10 lhr		-
Voise source level for assessment time period	59	58	N/A	73	dB(A)	Noise source level for assessment time period	66	63	N/A	N/A	dB(A)
onality / Impulsiveness correction	0		0		dB	Tonality / Impulsiveness correction	0		5		dB
Linimum distance to receiver	$\overline{}$	5	14		m	Minimum distance to receiver		1	25		m
Distance attenuation (-6 dB per doubling of distance)			38		dB.	Distance attenuation (-6 dB per doubling of distance)			42		dB
Barrier screening			.0		10	Barrier screening			.0		dB
Façade reflection	_		5		0.0				5		dB dB
		-	-2		dB	Façade reflection					
mpact at nearest façade	23	22	N/A	37	dB(A)	Impact at nearest façade	27	29	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faça	sde)	-7.5	-7.5	-7.5	dB	Reduction through open window (also minus 2.5 dB faça	ide)	-7.5	-7.5	-7.5	dB
mpact inside open window		14	N/A	30	dB(A)	Impact inside open window		22	N/A	N/A	dB(A)
· · ·	194.3532	145.7649									
	Creep	Aconstic	Quality C	Diections			Creep	Aconstic	Quality C	biactivar	_
TRUCK ENGINE STARTS Loading bay			LA10	LA01	- 1	TRUCK UNLOADING at loading bay	Creep	ALOUSTIC			4
	LAeq	LAeq			-		LAeq	LAeq	LA10	LA01	_
Noise source level for single event	- 7	78	81	83	dB(A)	Noise source level for single event		75	\$0	82	dB(A)
Ouration of single event			3		Seconds	Duration of single event		9	00		Seconds
Number of events in the measurement period	1		2		Events	Number of events in the measurement period	1		4		Events
Total time duration of combined events	3.0		6.0		Seconds	Total time duration of combined events	900.0		3600.0		Seconds
	LAeq	I Asa lbr	I A10 1hr	LA01 lhr			LAeq	LAeq 1hr	LA10 lhr	LA01 1hr	
Noise source level for assessment time period	53	50	N/A	N/A	dB(A)	N	75				_
	0	,,,		24/25	dB(A)	Noise source level for assessment time period		75	\$0	82	dB(A)
Conality / Impulsiveness correction	0		- 5		dB	Tonality / Impulsiveness correction	0		5		dΒ
Minimum distance to receiver			25		m	Minimum distance to receiver			25		m
Distance attenuation (-6 dB per doubling of distance)			42		dB	Distance attenuation (-6 dB per doubling of distance)		-	42		dB
Barrier screening		0	.0		dB	Barrier screening		0	.0		dB
			5		dB.	Façade reflection			.5		dB
Facade reflection	1	2			dB (A)	Impact at nearest façade				48	
	14		N/A	N/A			36	41			
impact at mearest façade	14	16	N/A	N/A	40(%)	impact at nearest taçade	36	41	46		dB(A)
impact at menrest façade Reduction through open window (also minus 2.5 dB faça		16 -7.5	-7.5	-7.5	dB	Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	dΒ
impact at menrest façade Reduction through open window (also minus 2.5 dB faça			N/A -7.5 N/A	-7.5 N/A	dB dB(A)	Reduction through open window (also minus 2.5 dB faça Impact inside open window					
impact at menrest façade Reduction through open window (also minus 2.5 dB faça	ade)	16 -7.5 8	-7.5 N/A	-7.5 N/A	dB	Reduction through open window (also minus 2.5 dB faça		-7.5 33	-7.5 38	-7.5 40	dΒ
inpact at nearest façade Reduction through open window (also minus 2.5 dB faç inpact inside open window	creep	16 -7.5 8	-7.5 N/A Quality C	-7.5 N/A Objectives	dB	Reduction through open window (also minus 2.5 dB faço Impact inside open window	ide)	-7.5 33	-7.5	-7.5 40	dΒ
mpact at nearest façade Reduction through open window (elso minus 2 5 dB faç mpact inside open window TRUCK MOVEMENT TO SITE	ade)	16 -7.5 8	-7.5 N/A Quality C	-7.5 N/A Objectives LA01	dB	Reduction through open window (also minus 2.5 dB faça	de) Creep	-7.5 33	-7.5 38 Quality C	-7.5 40 Objectives	dΒ
mpact at nearest façade Reduction through open window (elso minus 2 5 dB faç mpact inside open window TRUCK MOVEMENT TO SITE	creep	16 -7.5 8 Acoustic	-7.5 N/A Quality C	-7.5 N/A Objectives	dB	Reduction through open window (also minus 2.5 dB façi Impact inside open window PEOPLE TALKING OUTSIDE	Creep	-7.5 33 Acoustic	-7.5 38 Quality C	-7.5 40 Objectives	dB dB(A)
impact at nearest façade  kediaxton through open window (also minus 2 5 dB façi impact inside open window  FRUCK MOVEMENT TO SITE  Noise source level for single event	Creep	16 -7.5 8 Acoustic LAeq	-7.5 N/A Quality C LA10	-7.5 N/A Objectives LA01	dB dB(A) dB(A)	Reduction through open window (also mims: 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event	Creep	-7.5 33 Acoustic LAeq	-7.5 38 Quality C LA10 70	-7.5 40 Objectives	dB(A)
mpact at nearest façade  eduction through open window (also minus 2.5 dB façi mpact inside open window  RRUCK MOVEMENT TO SITE  focus source lestel for single event hurstion of single event	Creep	16 -7.5 8 Acoustic LAeq	-7.5 N/A Quality C	-7.5 N/A Objectives LA01	dB dB(A) dB(A) Seconds	Reduction through open window (also minus 2.5 dB fac Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event	Creep	-7.5 33 Acoustic LAeq	-7.5 38 Quality C LA10 70	-7.5 40 Objectives	dB dB(A) dB(A) Seconds
unpact at nearest facade dediction through open window (skso minus 2 5 dB fac) mapact inside open window RECK MOVEMENT TO SITE louis source level for single event turation of single event turation of single event turation of single event	Creep LAeq S	16 -7.5 8 Acoustic LAeq	-7.5 N/A Quality C LA10 89	-7.5 N/A Objectives LA01	dB (A)  dB(A)  dB(A)  Seconds  Events	Reduction through open window (also minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Notes source level for single event Duration of single event Duration of single event	Creep LAeq	-7.5 33 Acoustic LAeq	-7.5 38 Quality C LA10 70	-7.5 40 Objectives	dB dB(A) dB(A) Seconds Events
impact at nearest facede deattoon through open window (ske minus 2.5 dB fac impact inside open window  IRUCK MOVEMENT TO SITE  Noise source level for single event  Justicion of single event  Justicion of single event  Justicion of single event  Justicion of single event	Creep LAeq 8	16 -7.5 8 Acoustic LAeq	-7.5 N/A Quality C LA10 S9 0 4 320.0	-7.5 N/A Dbjectives LA01 90	dB dB(A) dB(A) Seconds	Reduction through open window (also minus 2.5 dB fac Impact inside open window PEOPLE TALKING OUTSIDE Noise source level for single event Duration of single event	Creep LAeq	-7.5 33 Acoustic LAeq 52	-7.5 38 Quality C LA10 70 00 4 2400.0	-7.5 40 Dbjectives LA01 73	dB dB(A) dB(A) Seconds
unpact at nearest facade dediction through open window (skso minus 2.5 dB fac, mapact inside open window (skso minus 2.5 dB fac, mapact inside open window  IRUCK MOVEMENT TO SITE losis source level for single event turation of single event turation of single event must be developed to the second oral time duration of combined events	Creep LAeq S 2 160.0 LAeq	16 -7.5 8 Acoustic LAeq	-7.5 N/A Quality C LA10 89 80 4 320.0	-7.5 N/A Dbjectives LA01 90	dB (A)  dB(A)  dB(A)  Seconds  Events	Reduction through open window (also minus 2.5 dB faç Impact inside open window PEOPLE TALKING OUTSIDE Notes source level for single event Duration of single event Duration of single event	Creep LAeq	-7.5 33 Acoustic LAeq 52	-7.5 38 Quality C LA10 70 00 4 2400.0	-7.5 40 Objectives	dB dB(A) dB(A) Seconds Events
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unpact at nearest facade dediction through open window (ske minus 2 5 dB fagi mapact inside open window (ske minus 2 5 dB fagi mapact inside open window  IRUCK MOVEMENT TO SITE fores source level for simple event luvation of simple event luvation of simple event luvation of simple event forest in the measurement period orld time duration of combined events fores source level for assessment time period	Creep LAeq S 2 160.0 LAeq	Acoustic LAeq  LAeq  LAeq  LAeq lhr	-7.5 N/A Quality C LA10 89 80 4 320.0	-7.5 N/A Dbjectives LA01 90	dB (A)  dB(A)  Seconde  Events  Seconde	Reduction through open window (also mimus 2.5 dB fac Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for tingle event Duration of tingle event Duration of tingle event Total time duration of combined events  Notice source level for assessment period  Total time duration of combined events  Notice source level for assessment time period	Creep LAeq 1 600.0 LAeq 60	Acoustic LAeq 52 6 LAeq 1hr	-7.5 38 Quality C LA10 70 00 4 2400.0 LA10 lhr 70	-7.5 40 Dbjectives LA01 73	dB(A)  dB(A)  Seconds  Events Seconds
impact at aearst factor  detaction through goes mixedow (also minus 2.5 dB fact impact inside open window (also minus 2.5 dB fact impact inside open window  IRUCK MOVEMENT TO SITE  Voice source level for single event uritized or level for single event uritized or level for single event  uritized or feet in the measurement period  Total time direction of combined events  Voice source level for assessment time period  Voice source level for assessment time period  Voice source level for assessment time period	Creep LAeq S 160.0 LAeq 79 0	Acoustic LAeq ST	-7.5 N/A Quality C LA10 S9 0 4 320.0 LA10 1hr N/A 0	-7.5 N/A Dbjectives LA01 90	dB (A)  dB(A)  Seconde  Events  Seconde	Reduction through open window (also mimus 2.5 dB fag Impact inside open window PEOPLE TAILKING OUTSIDE Noise source level for single execut Dumber of events in the newturement period Total me of the measurement period Total time duration of combined events Noise source level for assessment time period Tomality. Impublishments correction	Creep LAeq 1 600.0 LAeq	Acoustic LAeq 52 6 LAeq lhr 60	-7.5 38 Quality C LA10 70 00 4 2400.0 LA10 lhr 70 0	-7.5 40 Dbjectives LA01 73	dB(A)  dB(A)  Seconds  Events  Seconds
impact at nearest factable deaction through open window (also minus 2.5 dB fag- impact inside open window (also minus 2.5 dB fag- impact inside open window  FRUCK MOVEMENT TO SITE  Noise source level for single event  Variation of single event  Variation of single event  Variation of single event  Value of event in the measurement period  Total time duration of combined events  Noise source level for assessment time period  consility Timpulsaveness correction  Canimum distincts of receiver	Creep LAeq 8 2 160.0 LAeq 79 0 4	16	-7.5 N/A Quality C LA10 89 00 4 320.0 LA10 lbr N/A 0	-7.5 N/A Dbjectives LA01 90 LA01 lhr 90	dB (A)  dB(A)  Seconde  Events  Seconde	Reduction through open window (also mimus 2.5 dB for Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for single event Duration of single event Number of events in the nessurement period Tools are deress in the nessurement period Tools are deress in the nessurement period Tools are deress of consistent of combined events  Notice source level for assessment trans period Toolshy 'Impulsiveness correction Maintaine distance to receive	Creep LAeq 1 600.0 LAeq 60	Acoustic LAeq 62 64 LAeq lhr 60	-7.5 38 Quality C LA10 70 00 4 2400.0 LA10 lhr 70 0	-7.5 40 Dbjectives LA01 73	dB (A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB  m
unpact at nearest façade dediction through open window (sks minus 2 5 dB faç impact inside open window (sks minus 2 5 dB faç impact inside open window  IRUCK MOVEMENT TO SITE  Cities cource lawl for single event  Desiration of single event  Number of event in the insistaumment period orial time duration of continued events  Continued duration of continued events  Continued state of event in the period continued state of the section of the period continued state of the section of the period Continued state of the period continued of the period Continued state of the period continued of the period Continued state of the period continued of the period Continued state of the period continued of the period Continued state of the period continued	Creep LAeq  2 160.0 LAeq 79 0 4	16 -7.5 8 Acoustic LAeq 11-76	-7.5 N/A Quality C LA10 89 10 4 320.0 LA10 1hr N/A	-7.5 N/A Dijectives LA01 90 LA01 lhr 90	dB (A)  dB(A)  Seconde  Events  Seconde	Reduction through open window (also mimus 2.5 dB fac Impact inside open window  PEOPLE TAILKING OUTSIDE  Noise source level for single event  Number of events in the measurement period  Total true duration of combined events  Total time source level for assessment time period  Total time source level for assessment time period  Tonality Impulsiveness correction  Minimum distance to receives	Creep LAeq 1 600.0 LAeq 60	Acoustic LAeq  LAeq lbr  60	-7.5 38 2 Quality C LA10 70 00 4 2400.0 LA10 lhr 70 0 60	-7.5 40 Dbjectives LA01 73	dB(A)  dB(A)  Seconds  Events Seconds
unpact at nearest facede dediction through open window (ske minus 2 5 dB fag impact inside open window (ske minus 2 5 dB fag impact inside open window IRUCK MOVEMENT TO SITE loose source level for single event buration of single event buration of single event buration of single event or single event or single event contains of events in the measurement period orial time duration of combined events loose source level for assessment time period condity. Impaistive tons corrected output Jungstäteve tons corrected	Creep LAeq  2 160.0 LAeq 79 0 4	16	-7.5 N/A Quality C LA10 89 10 4 320.0 LA10 1hr N/A	-7.5 N/A Dbjectives LA01 90 LA01 lhr 90	dB (A)  dB(A)  Seconde  Events  Seconde	Reduction through open window (also minus 2.5 dB for Impact inside open window   PEOPLE TALKING OUTSIDE  Notice source level for single event Duration of single event Number of events in the nessurement period Total time duration of combined events  Notice source level for assessment time period Totality. Impulsiveness correction Animum distance to receive  Distance attenuation (6 dB per doubling of distance) Batter screening.	Creep LAeq 1 600.0 LAeq 60	-7.5 33 Acoustic LAeq 52 6 LAeq lhr 60	77.5 38 LA10 70 00 4 2400.0 LA10 lhr 70 0 60	-7.5 40 Dbjectives LA01 73	dB (A)  dB(A)  Seconds  Events  Seconds  dB(A)  dB  m
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impact at aearst factele detaction through open window (ske minus 2 5 dB fac, impact inside open window (ske minus 2 5 dB fac, impact inside open window  FRUCK MOVEMENT TO SITE  Solite source level for single sevent  Further of single sevent  Variable of sevents in the measurement period  food time duration of combined events  Good time duration of combined events  Good source level for assessment time period  consistency Impacts exercised of the period  consistency Impacts exercised of the period  consistency in the massiment time period  consistency in the sevents  Continuous attenuation of of the period  consistency in the sevents  papert at a newest factor  mapnert at a newest factor  mapner at the combined ovents  CRICK MOVEMENT ROWS SITE  Vouestource level for single event  Variable of events in the measurement period  foot in the duration combined events  Voice source level for assessment time period	Creep   LAeq	16 -7.5 Acoustic LAeq 1br 76 -33 -33 -0 -2 46 -7.5 -39 -4 -7.5 -39 -4 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5 -7.5	7.5 N/A Quality C LA10 S9 10 4 320.0 LA10 1hr N/A 0 0 S5 N/A -7.5 N/A -7.5 N/A -7.5 N/A -7.5 N/A 10 10 10 10 10 10 10 10 10 10 10 10 10	7.5 N/A Dijectives LA01 90 LA01 lhr 90 43 33 0.0 60 -7.5 52 Dijectives LA01 90	dB(A)  Seconds  Events  dB(A)  dB(A)  dB(A)  dB(A)  dB(A)  dB(A)  dB(A)  dB(A)	Reduction through open window (also mimus 2.5 dB fac Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for single event  Dumbor of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Totality. Impublishments correction  Minimum distance to receive  Distrace attenuation (-6 dB per doubling of distance)  Bestries covening  Peaple reflection  Impact at meanerst facade  Reduction through open window (also mimus 2.5 dB face	Creep LAeq 1 600.0 LAeq 60 0	-7.5 33 Acoustic LAeq 52 6 LAeq lhr 60 2 2 29	-7.5 38 Quality C LA10 70 00 4 2400.0 lbr 70 0 60 34 .0 .5 39 -7.5	-7.5 40 bipictives LA01 1hr 73 LA01 1hr 73	dB dB(A) Seconds Events Seconds dB(A) dB dB dB dB dB
impact at aearst factable deattion through goes window (also minus 2.5 dB fact impact inside open window (also minus 2.5 dB fact impact inside open window IRUCK MOVEMENT TO SITE  Note source level for single event Duration of single event Duration of single event Duration of single event united of events in the measurement period Oral Time duration of combined events  Notes source level for assessment time period Oral time duration of combined events  Notes source level for assessment time period Database attendation to receive Database attendation to receive Database attendation to receive Database attendation Database attendation to receive Institute of the single event  Visit open window (also minus 2.5 dB fact impact inside open win	Creep   LAeq   S	16 -7.5 8 Acoustic LAeq Ibra 76 -76 -33 -33 -33 -46 -7.5 -39 -39 -39 -39 -39 -39 -39 -39 -39 -39	-7:5 N/A Quality C LA10 S9 10 LA10 1br N/A 320 0 LA10 1br N/A -7:5 N/A	7.5 N/A Sobjectives LA01 lhr 90 43 33 30 00 60 47.5 52 LA01 lhr 90 LA01 lhr 90	JB (A)  JB (A)  JE confis  Seconfis  JB (A)   Reduction through open window (also mimus 2.5 dB fac Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for single event  Dumbor of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Totality. Impublishments correction  Minimum distance to receive  Distrace attenuation (-6 dB per doubling of distance)  Bestries covening  Peaple reflection  Impact at meanerst facade  Reduction through open window (also mimus 2.5 dB face	Creep LAeq 1 600.0 LAeq 60 0	-7.5 33 Acoustic LAeq 52 6 LAeq lhr 60 2 2 29	-7.5 38 Quality C LA10 70 00 4 2400.0 lbr 70 0 60 34 .0 .5 39 -7.5	-7.5 40 bipictives LA01 1hr 73 LA01 1hr 73	dB dB(A) Seconds Events Seconds dB(A) dB dB dB dB dB	
impact at aearset factable deatation through gone window (also minus 2.5 dB for, impact inside open window (also minus 2.5 dB for, impact inside open window  FRUCK MOVEMENT TO SITE  Solita source level for single sevent  Fruction of single sevent  FRUCK MOVEMENT FROM SITE  Footes source level for single sevent  Fruction of single sevent  Fruction of single sevent  Fruction of single sevent  Fruction through of combined events  Fruction of single sevent  Fruction of single sevent  Fruction through consultation of single sevent  Fruction of single sevent  Fruction of single sevent  Fruction through consultation of combined events  Fruction of single events  Fruction through consultation of combined events  Fruction through consultation of combined events  Fruction through consultation of combined events  Fruction of comb	Creep LAeq  2 160.0 LAeq 79 0 4 -: 0 Creep LAeq 2 160.0 LAeq 4 -: 160.0 LAeq 8 2 160.0 LAeq 8	16 -7.5 8  Acoustic Laeq lbr 76 133 33 30 0 2 46 -7.5 39  Acoustic Laeq lbr 77 5 14 15 15 15 15 15 15 15 15 15 15 15 15 15	-7:5 N/A Quality C LA10 S9 10 4 320.0 bt 4 320.0 bt N/A 0 0 5 N/A -7:5 N/A -7:5 N/A 160.00 160.00 160.00 LA10 ILA10 ILA 0 LA10 ILA 0 LA10 ILA 0	-7.5 N/A	JB (A)  JB (A)  JE confis  Seconfis  JB (A)   Reduction through open window (also mimus 2.5 dB fac Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for single event  Dumbor of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Totality. Impublishments correction  Minimum distance to receive  Distrace attenuation (-6 dB per doubling of distance)  Bestries covening  Peaple reflection  Impact at meanerst facade  Reduction through open window (also mimus 2.5 dB face	Creep LAeq 1 600.0 LAeq 60 0	-7.5 33 Acoustic LAeq 52 6 LAeq lhr 60 2 2 29	-7.5 38 Quality C LA10 70 00 4 2400.0 lbr 70 0 60 34 .0 .5 39 -7.5	-7.5 40 bipictives LA01 1hr 73 LA01 1hr 73	dB dB(A) Seconds Events Seconds dB(A) dB dB dB dB dB	
Founds reflection Impact at nearest facade Reduction through open window (also minus 2.5 dB fac Impact inside open window (also minus 2.5 dB fac Impact inside open window ITRUCK MOVEMENT TO SITE  Noise source level for single event Duration of single event Duration of single event Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Totality :Impulsiveness correction Manimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Bernier screening Pacification Impact in side open window ITRUCK MOVEMENT FROM SITE  Noise source level for single event Duration of single event Duration of single event Nousber of events in the measurement period Total time duration of combined events  Noise source level for single event  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of combined events  Noise source level for assessment time period Total time duration of delb per doubling of distance)	Creep   LAeq	16 -7.5 8  Aconstitute 1 Laeq Ibr 76 1333 33	-7.5 N/A Quality C LA10 S9 S9 S9 LA10 1hr N/A 0 LA10 1hr	7.5   N/A	JB (A)  JB (A)  JE confis  Seconfis  JB (A)   Reduction through open window (also mimus 2.5 dB fac Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for single event  Dumbor of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Totality. Impublishments correction  Minimum distance to receive  Distrace attenuation (-6 dB per doubling of distance)  Bestries covening  Peaple reflection  Impact at meanerst facade  Reduction through open window (also mimus 2.5 dB face	Creep LAeq 1 600.0 LAeq 60 0	-7.5 33 Acoustic LAeq 52 6 LAeq lhr 60 2 2 29	-7.5 38 Quality C LA10 70 00 4 2400.0 lbr 70 0 60 34 .0 .5 39 -7.5	-7.5 40 bipictives LA01 1hr 73 LA01 1hr 73	dB dB(A)  Seconds Events Seconds dB(A) dB dB dB dB dB dB dB	
Impact at nearest façade Rediction through open window (sloo minus 2.5 dB faç Impact inside open window  TRUCK MOVEMENT TO SITE  Noise source level for single event  Duration of single event  Duration of single event  Duration of events in the massurement period  Total time duration of combined events  Noise source level for assessment time period  Total time duration of combined events  Noise source level for assessment time period  Totaliny : Impulsiveness correction  Maintann distance to receive  Maintann distance to receive  Berrier screening  Segade reflection  Impact at nearest façade  Rediction through open window (sloo minus 2.5 dB facilimpact inside open window)  TRUCK MOVEMENT FROM SITE  Noise source level for single event  Duration of single event  Number of events in the massurement period  Totaliny : Impulsiveness correction  Noise source level for assessment time period  Totaliny : Impulsiveness correction  Maintann distance to receiver	Creep   LAeq	16 -7.5 8  Acoustic Laeq lbr 76 133 33 30 0 2 46 -7.5 39  Acoustic Laeq lbr 77 5 14 15 15 15 15 15 15 15 15 15 15 15 15 15	-7.5 N/A Quality C LA10 S9 S9 S9 LA10 1hr N/A 0 LA10 1hr	-7.5 N/A	JB (A)  JB (A)  JE confis  Seconfis  JB (A)   Reduction through open window (also mimus 2.5 dB fac Impact inside open window  PEOPLE TALKING OUTSIDE  Notice source level for single event  Dumbor of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Totality. Impublishments correction  Minimum distance to receive  Distrace attenuation (-6 dB per doubling of distance)  Bestries covening  Peaple reflection  Impact at meanerst facade  Reduction through open window (also mimus 2.5 dB face	Creep LAeq 1 600.0 LAeq 60 0	-7.5 33 Acoustic LAeq 52 6 LAeq lhr 60 2 2 29	-7.5 38 Quality C LA10 70 00 4 2400.0 lbr 70 0 60 34 .0 .5 39 -7.5	-7.5 40 bipictives LA01 1hr 73 LA01 1hr 73	dB(A)  dB(A)  Second  Events  Second  dB(A)  dB  m  dB  dB  dB  dB  dB  dB  dB	

R5: Existing dwellings to the south across Rifle Rang	e Road							
	Стеер	Acoustic	Quality C	Diectives				
TRUCKS WITH REFRIGERATION UNIT	LAeq	LAeq	LA10	LA01	1			
Noise source level for single event		1	82	83	4B(A)			
Duration of single event		90	00		Second			
Number of events in the measurement period	1		2		Events			
Total time duration of combined events	900.0		1800.0		Second			
	LAeq	LAeg lhr	LA10 1hr	LA01 1hr				
Noise source level for assessment time period	81	78	82	83	dB(A)			
Conality / Impulsiveness correction	0		0		43			
Minimum distance to receiver		12	25					
Distance attenuation (-6 dB per doubling of distance)	-42							
Refrigeration unit truck directivity / screening		(	)		4B			
Barrier screening		0.	0		48			
Facade reflection		2	5		48			
Impact at mearest façade	42	39	43	44	dB(A)			
Reduction through open window (also mims 2.5 dB faça		-7.5	-7.5	-7.5	45			
Impact inside open window	,	31	35	36	4B(A)			
					e.o. (.e.)			
	Creep	Acoustic	Quality C	Diectives				
WAS TE COLLECTION INDUSTRIAL BIN - Service	LAeq	LAeq	LA10	LA01	1			
Noise source level for single event		2	97	102	(B(A)			
Duration of single event		- 19	80		Second			
Number of events in the measurement period	1		1		Events			
Total time duration of combined events	180.0							
	LAeg	LAeq LAeq lhr LA10 lhr LA01 lhr			Second			
Noise source level for assessment time period	85	79	N/A	102	dB(A)			
Tonality / Impulsiveness correction	0		5		43			
Minimum distance to receiver		12	25					
Distance attenuation (-6 dB per doubling of distance)		-4	12		dB			
Barrier screening		(	)		43			
Facade reflection		2	5		48			
Impact at nearest façade	46	45	N/A	68	(B(A)			
Reduction through open window (also minus 2.5 dB face	de)	-7.5	-7.5	-7.5	4B			
Impact inside open window		37	N/A	60	4B(A)			
ALFRES CO DINING	Creep	Acoustic	Quality C	Diectives				
ALFRESCO DINING	LAeq	LAeq	LA10	LA01	1			
Noise source level for single event		5	78	82	4B(A)			
Duration of single event		77	20		Second			
Number of events in the measurement period	1		4		Events			
Total time duration of combined events	720.0		2880.0		Second			
	LAeq	LAeg 1hr	LA10 1hr	LA01 1hr				
Noise source level for assessment time period	74	74	78	82	(B(A)			
Tonality / Impulsiveness correction	0		5		40			
Minimum distance to receiver		- 5						
Distance attenuation (-6 dB per doubling of distance)					43			
Barrier screening		0			48			
Facade reflection		2			45			
Impact at nearest façade	43	48	52	56	4B(A)			
Reduction through open window (also mims 2.5 dB faça	rda)	-7.5	-7.5	-7.5	dB.			

R1: Existing Single-storey dwellings to the north			R2: Future dwellings to the immediate north		
Kitchen exhaust fan units	62	dB(A) @ 3m	Kitchen exhaust fan units	62	dB(A) @ 31
Number of units	2	umits	Number of units	2	units
Toilet Exhaust Units	52	dB(A) @ 3m	Toilet Exhaust Units	52	dB(A) @ 31
Number of units	4	units	Number of units	4	units
Total noise level	66	dB(A) @ 3m	T otal noise level	66	dB(A) @ 31
Distance to receiver	165	m	Distance to receiver	108	m
Distance attenuation (-6 dB per doubling of distance)	-35	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-31	dB(A)
Acoustic attenuator	-12	dB(A)	Acoustic attenuator	-12	dB(A)
Roof screening	0	dB(A)	Roof screening	0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
Impact at façade	21	dB(A)	Impact at façade	25	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	14	dB(A)	Impact inside open window	18	dB(A)
A/C Units	60	dB(A) @ 3m	A/C Units	60	dB(A) @ 31
Number of units	2	umits	Number of units	2	units
Refrig Units	62	dB(A) @ 3m	Refrig Units	62	dB(A) @ 31
Number of units	1	umits	Number of units	1	units
T otal noise level	66	dB(A) @ 3m	T otal noise level	66	dB(A) @ 3:
Distance to receiver	120	m	Distance to receiver	63	m
Distance attenuation (-6 dB per doubling of distance)	-32	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-26	dB(A)
Acoustic barrier / enclosure	-12	dB(A)	Acoustic barrier / enclosure	-12	dB(A)
Barrier screening	0.0	dB(A)	Barrier screening	0.0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
Impact at façade	24	dB(A)	Impact at façade	30	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	17	dB(A)	Impact inside open window	22	dB(A)
Combined impact at façade	26	dB(A)	Combined impact at façade	31	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	18	dB(A)	Impact inside open window	23	dB(A)

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R3: Existing dwellings to the east			R4: Future dwellings to the immediate east		
Kitchen exhaust fan units	62	dB(A) @ 3m	Kitchen exhaust fan units	62	dB(A) @ 3n
Number of units	2	units	Number of units	2	units
Toilet Exhaust Units	52	dB(A) @ 3m	Toilet Exhaust Units	52	dB(A) @ 31
Number of units	4	units	Number of units	4	units
Cotal noise level	66	dB(A) @ 3m	T otal noise level	66	dB(A) @ 31
Distance to receiver	335	m	Distance to receiver	75	m
Distance attenuation (-6 dB per doubling of distance)	-41	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-28	dB(A)
Acoustic attenuator	-12	dB(A)	Acoustic attenuator	-20	dB(A)
Roof screening	0	dB(A)	Roof screening	0	dB(A)
açade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
mpact at façade	15	dB(A)	Impact at façade	20	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
impact inside open window	8	dB(A)	Impact inside open window	13	dB(A)
A/C Units	60	dB(A) @ 3m	A/C Units	60	dB(A) @ 3:
Number of units	2	units	Number of units	2	units
Refrig Units	62	dB(A) @ 3m	Refrig Units	62	dB(A) @ 31
Number of units	1	units	Number of units	1	units
Cotal noise level	66	dB(A) @ 3m	Total noise level	66	dB(A) @ 31
Distance to receiver	255	m	Distance to receiver	15	m
Distance attenuation (-6 dB per doubling of distance)	-39	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-14	dB(A)
Acoustic barrier / enclosure	-12	dB(A)	Acoustic barrier / enclosure	-20	dB(A)
Barrier screening	0.0	dB(A)	Barrier screening	0.0	dB(A)
açade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
mpact at façade	17	dB(A)	Impact at façade	34	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
mpact inside open window	10	dB(A)	Impact inside open window	27	dB(A)
Combined impact at façade	20	dB(A)	Combined impact at façade	34	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	12	dB(A)	Impact inside open window	27	dB(A)

R5: Existing dwellings to the south across Rifle Range I	Road	
Kitchen exhaust fan units	62	dB(A) @ 3m
Number of units	2	units
Toilet Exhaust Units	52	dB(A) @ 3m
Number of units	4	units
T otal noise level	66	dB(A) @ 3m
Distance to receiver	65	m
Distance attenuation (-6 dB per doubling of distance)	-27	dB(A)
Acoustic attenuator	-12	dB(A)
Roof screening	0	dB(A)
Façade reflection	2.5	dB(A)
Impact at façade	30	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	22	dB(A)
A/C Units	60	dB(A) @ 3m
Number of units	2	units
Refrig Units	62	dB(A) @ 3m
Number of units	1	units
T otal noise level	66	dB(A) @ 3m
Distance to receiver	65	m
Distance attenuation (-6 dB per doubling of distance)	-27	dB(A)
Acoustic barrier / enclosure	-12	dB(A)
Barrier screening	0.0	dB(A)
Façade reflection	2.5	dB(A)
Impact at façade	29	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	22	dB(A)
Combined impact at façade	32	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	25	dB(A)

						N/A if the duration of events do not occur for $10\%$ or $1\%$	of the 1 h	our period	)		
		V-200 III -						,			
RI: Existing Single-storey dwellings to the north	6		0 111 0	1.1		R2: Future dwelling: to the immediate north	6		0 11/- 0	N	_
CAR DOOR CLOSURE near carpark DAY / EVEN	Creep LAeq	LAeq	Quality C	LA01		CAR DOOR CLOSURE near carpark DAY / EVEN	Creep LAeq	LAeq		Dbjectives LA01	
Noise source level for single event	7	15	77	\$0	(B(A)	Noise source level for single event		75	77	80	(B(A)
Duration of single event		1	.5		Seconds	Duration of single event		1			Seconds
Number of events in the measurement period	45		180		Events	Number of events in the measurement period	45		180		Events
Total time duration of combined events	67.5		270.0		Seconds	Total time duration of combined events	67.5		270.0		Seconds
	LAeq	LAeq lhr	LA10 1hr				LAeq	LAeq lhr	LA10 1hr		
Noise source level for assessment time period	64	64	N/A	80	iB(A)	Noise source level for assessment time period	64	64	N/A	80	iB(A)
Tonality / Impulsiveness correction	0		- 5		413	Tonality / Impulsiveness correction	0		- 5		619
Minimum distance to receiver		_	19		ri.	Minimum distance to receiver		2	12		m.
Distance attenuation (-6 dB per doubling of distance)		-	38		4B	Distance attenuation (-6 dB per doubling of distance)		-	27		dB-
Barrier screening		-1	0.7		άB	Barrier screening		-1	7.1		éB-
Façade reflection		2	.5		43	Façade reflection		2	.5		633
Impact at nearest façade	18	23	N/A	39	6B(A)	Impact at nearest façade	22	27	N/A	44	dB(A)
Reduction through open window (also minus 2.5 dB faça	ade)	-7.5	-7.5	-7.5	/B	Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	₫B.
Impact inside open window		15	N/A	31	dB(A)	Impact inside open window		20	N/A	36	dB(A)
	57 18035	180.8265					168 6197	533,0000			
	Creen	Acoustic	Quality C	hiectives	$\overline{}$		Creen	Acoustic	Quality (	hiectises	_
CAR DOOR CLOSURE far carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1 I	CAR DOOR CLOSURE far carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	Lowey ?	S Activity	77	80	4B(A)	Noise source level for single event	Trans.	75	77	80	48(A)
Duration of circle sense	_	- 1	5	30		Duration of single event	_	- 1	. //	80	
Duration of single event	45		180		Seconds		,,,	1	180		Seconds
Number of events in the measurement period	67.5		270.0		Events	Number of events in the measurement period	67.5		270.0		Events
Total time duration of combined events				1	Seconds	Total time duration of combined events				1	Seconds
	LAeq		LA10 1hr				LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	64	64	N/A	80	6B(A)	Noise source level for assessment time period	64	64	N/A	80	6B(A)
Tonality / Impulsiveness correction	0		5		4B	Tonality / Impulsiveness correction	0		5		dB.
Minimum distance to receiver			17			Minimum distance to receiver			0		
Distance attenuation (-6 dB per doubling of distance)			40			Distance attenuation (-6 dB per doubling of distance)	_		32		éB
	_	-1			4B	Barrier screening	_	-:	7.1		4B
Barrier screening	_	-1			68	Barrier screening	_	-1			6.0
Façade reflection					4B	Façade reflection					ćВ
Impact at nearest façade	16	21	N/A	37	dB(A)	Impact at nearest façade	17	22	N/A	38	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	43	Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	618
Impact inside open window		13	N/A	30	6B(A)	Impact inside open window		15	N/A	31	(B(A)
	37.92912	119,9424					51.00745	161.2997			
CAR PROPERTY OF AREA	Creep	Acoustic	Quality C	bjectives		CAR THEORY OF AREA	Creep	Acoustic	Quality (	Objectives	
CAR ENGINE STARTS near carpark DAY / EVEN	LAeq	LAeq	LAIO	LA01	1 I	CAR ENGINE STARTS near carpark DAY/EVEN	LAeq	LAeq		LA01	1
Noise source level for single event		2	74	75	(B(A)	Noise source level for single event		22	74	75	(B(A)
	_	,		- //			_				
Duration of single event	23	_	90		Seconds	Duration of single event	22		90		Seconds
Number of events in the measurement period					Events	Number of events in the measurement period		_			Events
Total time duration of combined events	67.5		270.0		Seconds	Total time duration of combined events	67.5		270.0		Seconds
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	62	62	N/A	75	iB(A)	Noise source level for assessment time period	62	62	N/A	75	iB(A)
Tonality / Impulsiveness correction	0		0	•	4B	Tonality / Impulsiveness correction	0		0		433
Minimum distance to receiver	$\overline{}$		19			Minimum distance to receiver			12		
Distance attenuation (-6 dB per doubling of distance)			38		/B	Distance attenuation (-6 dB per doubling of distance)			27		éB.
Barrier screening		-1			10	Barrier screening	-	-1			dB.
	-	-1			6B				5		
Façade reflection	16	16		20		Façade reflection	20	20	N/A	34	£13
Impact at nearest façade		10	N/A	29	6B(A)	Impact at nearest façade		20	N/A	34	dB(A)
Reduction through open window (also minus 2.5 dB faça	sde)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	dB.
Impact inside open window		S	N/A	21	dB(A)	Impact inside open window		13	N/A	26	dB(A)
	36.07963	36.07963					106.3918	106.3918			
CAR ENCINE STARTS for corned, DAY (FIFN	Стеер	Acoustic	Quality C	bjectives		CAD ENCINE STADES for cornect DAY (EVEN	Стеер	Acoustic	Quality 0	Objectives	
CAR ENGINE STARTS far carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1 1	CAR ENGINE STARTS far carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1
Noise source level for single event		3	74	75	(B(A)	Noise source level for single event		73	74	75	dB(A)
Duration of single event		-	3 77	- //	Seconds	Duration of single event	_	-	1 7		Seconds
	23	_	90				23	_	90		_
Number of events in the measurement period			270.0		Events	Number of events in the measurement period	67.5		270.0		Events
					Seconds			1		Ix 10" "	Seconds
Total time duration of combined events	67.5	V 4		I	Seconds	Total time duration of combined events		T 4			1
	LAeq		LA10 1hr	LA01 lbr			LAeq	LAeq lhr		12401 1111	
Noise source level for assessment time period	LAeq 62	LAeq lhr 62	LA10 1hr N/A	<b>LA01 lbr</b> 75	dB(A)	Noise source level for assessment time period	LAeq 62	LAeq lhr 62	N/A	75	dB(A)
	LAeq	62	LA10 1hr N/A	1.A01 lbr 75		Noise source level for assessment time period Tonality / Impulsiveness correction	LAeq	62	N/A 0	75	6B(A)
Noise source level for assessment time period	LAeq 62		LA10 1hr N/A	1.A01 lbr 75		Noise source level for assessment time period	LAeq 62	62	N/A	75	_
Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver	LAeq 62	62	LA10 1hr N/A	LA01 lbr 75		Noise source level for assessment time period Tonality / Impulsiveness correction Maintain distance to receiver	LAeq 62	62	N/A 0	75	_
Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	LAeq 62	62	N/A 0 0 7	LA01 1hr 75		Noise source level for assessment time period Tonality / Impulsiveness correction Maintana distance to receiver Distance attenuation (-6 dB per doubling of distance)	LAeq 62	62	N/A 0 0 32	75	_
Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	LAeq 62	62	N/A 0 0 7 40 0.7	<b>LA01 1hr</b> 75	4B(A) 4B 48 4B 4B	Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	LAeq 62	62 4 -:	N/A 0	75	68 m 68 63
Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance artemation (-6 dB per doubling of distance) Barner screening Façade reflection	62 0	62 5  -1 2	IA10 1hr N/A 0 77 40 0.7	75	6B(A) 6B fs 6B 6B 6B	Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to scenere Distance attenuation (-6 dB per doubling of distance) Barries screening Fapide reflection	62 0	62 4 -: -1 2	N/A 0 0 32 7.1	75	eB eB eB eB
Noise sour ce level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenantion (-6 dB per doubling of distance) Battries cereening Fayake reflection Imputed at searces fayake	62 0	62 -1 -1 2	LA10 1hr N/A 0 17 40 0.7 .5 N/A	75	6B(A) 6B 6B 6B 6B 6B	Noise source level for assessment time period Tonshiry: Impulsiveness correction Maintaine distance to receive Distance estimation (-6 dB per doubling of distance) Barrier screening Fagular effection Impact at nearest façade	62 0	62 	N/A 0 0 0 32 7.1 5 N/A	75	6B m 6B 6B 6B(A)
Notes source lavel for assessment time period Tonality /Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB) per doubling of distance) Barries creening Façade reflection Impact at nearest façade Rediction through open window (slico minus 2 5 dB faç.	62 0	-1 2 14 -7.5	LA10 1hr N/A 0 17 40 0.7 .5 N/A -7.5	75 27 -7.5	6B(A) 6B 6B 6B 6B 6B 6B 6B(A)	Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Fegade reflection Impact at nearest façade Reduction through goes window (site minus 2.5 dB fag.	62 0	62 4 -1 -1 2 15 -7.5	N/A 0 0 32 7.1 5 N/A -7.5	75 28 -7.5	6B 6B 6B 6B 6B(A)
Noise source level for assessment time period Tonality /Impulsaveness correction Minimum distance to receiver Distance streamston (-6 dB per doubling of distance) Barries creening Fayder reflection Impact at nearest façade Reduction through open window («lso minus 2.5 dB fog.	62 0	62 -1 -1 2	LA10 1hr N/A 0 17 40 0.7 .5 N/A	75	6B(A) 6B 6B 6B 6B 6B	Noise source level for assessment time period Tonshiry: Impulsiveness correction Maintaine distance to receive Distance estimation (-6 dB per doubling of distance) Barrier screening Fagular effection Impact at nearest façade	62 0	62 	N/A 0 0 0 32 7.1 5 N/A	75	6B m 6B 6B 6B(A)
Noise source level for assessment time period Tonality /Impulsaveness correction Minimum distance to receiver Distance streamston (-6 dB per doubling of distance) Barries creening Fayder reflection Impact at nearest façade Reduction through open window («lso minus 2.5 dB fog.	14 ade)	62 -1 2 14 -7.5 6	IA10 1hr N/A 0 17 40 0.7 .5 N/A -7.5 N/A	27 -7.5 20	6B(A) 6B 6B 6B 6B 6B 6B 6B(A)	Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Fegade reflection Impact at nearest façade Reduction through goes window (site minus 2.5 dB fag.	15 ade)	62 4 -1 -1 2 15 -7.5 8	N/A 0 0 32 7.1 .5 N/A -7.5 N/A	28 -7.5 21	6B 6B 6B 6B 6B(A)
Noise sour ce level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenantion (-6 dB per doubling of distance) Battries cereening Fayake reflection Imputed at searces fayake	14 ade)	62 	LA10 1hr   N/A   0   0   0   0   0   0   0   0   0   0	27 -7.5 20	6B(A) 6B 6B 6B 6B 6B 6B 6B(A)	Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Fegade reflection Impact at nearest façade Reduction through goes window (site minus 2.5 dB fag.	15 ade)	62 4 -3 -1 2 15 -7.5 8 32 18353 Acoustic	N/A 0 0 32 7.1 .5 N/A -7.5 N/A	28 -7.5 21 Dijectives	6B 6B 6B 6B 6B(A)
Noise source lavel for nosessment time period Tonality. Jimpulsiveness correction Minimum distinct to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Fayder reflection (-6 dB per doubling of distance) Regular reflection Impact at a searest façade Reduction through open window (also minus 2.5 dB faylimpact inside open window (CAR MOVEMENT TO DAY	14 ade)  23 93166  Creep 1Aeq	62 	LA10 1hr   N/A	27 -7.5 20	dB(A) dB es dB dB dB dB dB dB(A) dB dB(A)	Noise source level for assessment time period Totality / Impubitiveness cerretion Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries screening Pengde reflection Impact at hearest façade Reduction through open window (also minus 2.5 dB for, Impact inside open window CAR MOVEMENT TO DAY	15 de)  Creep LAeq	62 -4 -3 -1' 2 15 -7.5 8 32 18353 Acoustic LAeq	N/A 0 0 32 7.1 .5 N/A -7.5 N/A Quality C	28 -7.5 21 Dbjectives LA01	6B m 6B 6B 6B 6B(A) 6B 6B(A)
Notes source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (4 dB per doubling of distance) Barries creening Fapide reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB façi Impact inside open vindow CAR MOVEMENT TO DAY Notes source level for single event	14 ade)	62 	LA10 1hr   N/A   0   0   0   0   0   0   0   0   0   0	27 -7.5 20	6B(A) 6B 6B 6B 6B 6B 6B 6B(A)	Noise source level for assessment time period Tonality / Impulsiveness correction Maintaina distance to receive Distance estimation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2 5 dB faç Impact inside open window CAR MOVEMENT TO DAY Noise source level for simple event	15 de)  Creep LAeq	62 4 -3 -1 2 15 -7.5 8 32 18353 Acoustic	N/A 0 0 32 7.1 .5 N/A -7.5 N/A	28 -7.5 21 Dijectives	6B 6B 6B 6B 6B(A)
Noise source lavel for nosessment time period Tonality. Jimpulsiveness correction Minimum distinct to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Fayder reflection (-6 dB per doubling of distance) Regular reflection Impact at a searest façade Reduction through open window (also minus 2.5 dB faylimpact inside open window (CAR MOVEMENT TO DAY	LAeq 62 0 14 ade) 23 93166 Creep LAeq 6	62 	LA10 1hr N/A 0 17 40 0.77 5 N/A -7.5 N/A -2.5 N/A LA10 70 18	27 -7.5 20	dB(A) dB es dB dB dB dB dB dB(A) dB dB(A)	Noise source level for assessment time period Totality / Impubitiveness cerretion Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries screening Pengde reflection Impact at hearest façade Reduction through open window (also minus 2.5 dB for, Impact inside open window CAR MOVEMENT TO DAY	15   15   15   15   15   16   17   17   17   17   17   17   17	62 -4 -3 -1' 2 15 -7.5 8 32 18353 Acoustic LAeq	N/A 0 0 0 52 7.1 5 N/A -7.5 N/A Quality 0 LA10 70	28 -7.5 21 Dbjectives LA01	6B m 6B 6B 6B 6B(A) 6B 6B(A)
Noise source lavel for nosessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Façado reflection Impact at a searest façade Rediction tirough open window (sico minus 2.5 dB fog/ Impact inside open window  CAR MOVEMENT TO DAY  Noise source lavel for single event	LAeq 62 0 14 ade) 23 93166 Creep LAeq 6	62 	LA10 1hr   N/A	27 -7.5 20	## (A)  ## ## ## ## ## ## ## ## ## ## ## ## ##	Noise source level for assessment time period Totality. Impulsiveness correction Minimum distance to receive Distance attenuate to receive Distance attenuation (-6 dB per doubling of distance). Barrier screening. Popule reflection. Impact at an extent façade. Reduction through open window (also minimas 2.5 dB façi Impact inside open window). CAR MOVEMENT TO DAY. Noise source level for timple event. Distance in timple event. Distance in timple event.	15   15   15   15   15   16   17   17   17   17   17   17   17	62 -4 -3 -1' 2 15 -7.5 8 32 18353 Acoustic LAeq	N/A 0 0 32 7.1 .5 N/A -7.5 N/A Quality C	28 -7.5 21 Dbjectives LA01	dB d
Notes cource lavel for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (4 dB per doubling of distance) Barries creening Façade reflection Impact at a nearest façade Reduction through open window (sloo minus 2 5 dB faç, Impact inside open window  CAR MOVEMENT TO DAY  Notes source lavel for single event Duratino of single event Duratino of single event	14 ade)  12 93166  Creep  LAeq  6  32	62 	LA10 1hr N/A 0 77 40 0.7 5 N/A -7.5 N/A Quality 0 LA10 70 88	27 -7.5 20	4B(A)  6B  10  6B  6B  6B  6B  6B(A)  6B  6B(A)  6B  6B(A)	Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to tective Distance estimation (-6 db per doubling of distance) Barrier screening Fegade reflection Impact at an earest façade Reduction through pean window (siso minus 2.5 dB faç Impact inside open window  CAR MOVEMENT TO DAY  Noise source level for tingle event Distantion of single event Distantion of single event	15 dde)  15 LAeq  62 0  15 Laeq  Creep  LAeq  63 18 33 32	62 -4 -3 -1' 2 15 -7.5 8 32 18353 Acoustic LAeq	N/A 0 0 0 52 7.1 5 N/A -7.5 N/A Quality C LA10 70 8	28 -7.5 21 Dbjectives LA01	EB
Noise source lavel for nosessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Façado reflection Impact at a searest façade Rediction tirough open window (sico minus 2.5 dB fog/ Impact inside open window  CAR MOVEMENT TO DAY  Noise source lavel for single event	LAeq 62 0 14 ade) 23 93166 Creep LAeq 6 32 993.0	62 -1 2 14 -7.5 6 23 03100 Acoustic LAeq	LA10 1hr N/A 0 07 7 40 0.7 5 N/A -7.5 N/A -7.5 N/A 120 120 129 3612.0	27 -7.5 20 Dejectives LA01 73	## (A)  ## ## ## ## ## ## ## ## ## ## ## ## ##	Noise source level for assessment time period Totality. Impulsiveness correction Minimum distance to receive Distance attenuate to receive Distance attenuation (-6 dB per doubling of distance). Barrier screening. Popule reflection. Impact at an extent façade. Reduction through open window (also minimas 2.5 dB façi Impact inside open window). CAR MOVEMENT TO DAY. Noise source level for timple event. Distance in timple event. Distance in timple event.	1.Aeq 62 0 15 mde) 32 18553 Creep LAeq 62 32 903.0	4 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	N/A 0 0 0 32 7.1 5 N/A -7.5 N/A Quality 0 LA10 70 8 129 3612.0	28 -7.5 21 Dijectives LA01 73	dB  m dB dB dB dB dB dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Noise source level for assessment time period Tonality 'Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries creening Fayade reflection Impact at a nearest façade Reduction through open window (sloo minus 2 5 dB faç Impact inside open window  CAR MOVEMENT TO DAY  Noise source level for single event Duration of single event Duration of single event Tomber of write in the measurement period Total time duration of combined events	1.4 ade)  12.93166  Creep 1.4eq 6  32.993.0 1.4eq	621-2 147.5 623 93106 Acoustic LAeq lhr	LA10 lbr N/A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	27 -7.5 20	dB(A) dB re dB dB dB dB dB dB(A) dB dB(A) dB dB(X) Seconds	Noise source level for assessment time period Tonality / Impubitswenses correction Minimum distance to receive Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening Fregular reflection Impact at an earest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window  CAR MOVEMENT TO DAY Noise source level for single event Duration of single event Duration of single event	1.Aeq 62 0 15 ode) 15 ode) 2 18393 Creep LAeq 32 903.0 LAeq	4	N/A 0 0 0 32 7.1 5 N/A -7.5 N/A Quality 0 LA10 70 8 129 3612.0	28 -7.5 21 Dijectives LA01 1hr	dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  EB  dB(A)  Seconds
Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fig/ Impact at inside open window CAR MOVEMENT TO DAY Noise source level for single event Duration of single event Duration of single event Number of events in the measurement period Torid time duration of combined events Noise source level for assessment time period	14 14 ade)  12 93166  Creep 1.Aeq 63 32 903.0 1.Aeq 68	62 -1 2 14 -7.5 6 23 03100 Acoustic LAeq	LA10 lbr N/A 0 17 440 0.7 5 N/A -7.5 N/A LA10 70 129 129 3612.0 LA10 lbr 70	27 -7.5 20 Dejectives LA01 73	4B(A)  6B  10  6B  6B  6B  6B  6B(A)  6B  6B(A)  6B  6B(A)	Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance) Barries creening Façale reflection Impact at an envest façade Reduction through open window (olso minus 2.5 dB façi Impact inside open window CAR MOYEMENT TO DAY Noise source level for tingle event Distance of single event Distance of single event Tonality in distance of combined events Number of events in the measurement period Tonality in distance of combined events Noise source level for assessment time period	15 dde)  15 LAeq  62 0  15 Laeq  62 0  15 LAeq  68 68	4 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	N/A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	28 -7.5 21 Dijectives LA01 73	dB  m dB dB dB dB dB dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Notes source level for assessment time period Tonality /Impulsiveness correction Minimum distance to receiver Distance streamston (-6 dB per doubling of distance) Barries creening Fayder reflection Impact at an earest façade Reduction through open window (sloo minus 2 5 dB faç Impact inside open window  CAR MOVEMENT TO DAY  Notes source level for single event Duration of single event Duration of single event Tonal time duration of combined events  Notes event level for single event Tonal time duration of combined events  Notes ource level for single event Tonal time duration of combined events	1.4 ade)  12.93166  Creep 1.4eq 6  32.993.0 1.4eq	62 -1 -1 -2 -14 -7.5 -6	LA10 lbr N/A 0 177 - 140 - 177 - 15	27 -7.5 20 Dejectives LA01 73	dB(A) dB re dB dB dB dB dB dB(A) dB dB(A) dB dB(X) Seconds	Noise source level for assessment time period Tonality / Impubitsveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Fraçade reflection Impact at me arest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window  CAR MOVEMENT TO DAY Noise source level for tingle event Duration of single event Number of events in the measurement period Torst time duration of combined events Noise source level for assessment time period Torst time duration of combined events  Noise source level for assessment time period Torst time duration of combined events	1.Aeq 62 0 15 ode) 15 ode) 2 18393 Creep LAeq 32 903.0 LAeq	62   4   4   1   1   1   1   1   1   1   1	N/A 0 0 0 52 7.1 5 N/A -7.5 N/A -7.8 129 3612.0 LA10 lbr 70 0	28 -7.5 21 Dijectives LA01 1hr	dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  EB  dB(A)  Seconds
Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creaming Façade reflection Impact at a nearest façade Reduction through open window (also minus 2.5 dB façi Impact inside open window  CAR MOVEMENT TO DAY  Noise source level for single event Duration of single event Duration of single event Number of events in the measurement period Tord time duration of combined events  Noise source level for assessment time period Tord time duration of combined events  Noise source level for assessment time period Tord time duration of combined events  Noise source level for assessment time period Tord time duration of combined control time period Tord time duration of combined time period Tord time duration of time time period	14 14 ade)  12 93166  Creep 1.Aeq 63 32 903.0 1.Aeq 68	62  5  -1  2  14  -7.5  6  23.99106  LAeq lhr  68	LA10 lbr N/A 0 0 17 140 0.7 5 N/A -7.5 N/A -7.5 N/A 129 3612.0 LA10 lbr 70 166	27 -7.5 20 Dejectives LA01 73	dB(A) dB re dB dB dB dB dB dB(A) dB dB(A) dB dB(X) Seconds	Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (4 dB per doubling of distance) Barries creening Façale reflection Impact at nearest façade Reduction through open window (sloo minus 2 5 dB faç Impact inside open window CAR MOYEMENT TO DAY Noise source levels for tingle event Distance of single event Distance of single event Number of events in the measurement period Tonality / Impulsiveness correction Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive	15 dde)  15 LAeq  62 0  15 Laeq  62 0  15 LAeq  68 68	62   4   -1   -1   2   15   5   5   15   5   15   5   15   5	N/A 0 0 0 52 7.1 5 N/A -7.5 N/A  Quality C LA10 70 8 129 3612.0 LA10 1hr 70 9	28 -7.5 21 Dijectives LA01 1hr	dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  EB  dB(A)  Seconds
Notes cource lavel for assessment time period Tonality / Impulsiveness correction Minimized distance to receiver Minimized distance to receiver Minimized distance to receiver Minimized distance to receiver Minimized distance of receiver Minimized assessment Minimized assessment Minimized assessment time distance Minimized assessment time period Tonality / Impulsiveness correction Moses source level for single event Monimized distance in the measurement period Tonal time duration of combined events Moses source level for assessment time period Tonality / Impulsiveness correction	14 14 ade)  12 93166  Creep 1.Aeq 63 32 903.0 1.Aeq 68	62  5  -1  2  14  -7.5  6  23.99106  LAeq lhr  68	LA10 lbr N/A 0 177 - 140 - 177 - 15	27 -7.5 20 Dejectives LA01 73	dB(A) dB re dB dB dB dB dB dB(A) dB dB(A) dB dB(X) Seconds	Noise source level for assessment time period Tonality / Impubitsveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Fraçade reflection Impact at me arest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window  CAR MOVEMENT TO DAY Noise source level for tingle event Duration of single event Number of events in the measurement period Torst time duration of combined events Noise source level for assessment time period Torst time duration of combined events  Noise source level for assessment time period Torst time duration of combined events	15 dde)  15 LAeq  62 0  15 Laeq  62 0  15 LAeq  68 68	62   4   -1   -1   2   15   5   5   15   5   15   5   15   5	N/A 0 0 0 52 7.1 5 N/A -7.5 N/A -7.8 129 3612.0 LA10 lbr 70 0	28 -7.5 21 Dijectives LA01 1hr	dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  EB  dB(A)  Seconds
Notes source level for nosessment time period Tonality / Impulsiveness correction Minimized distance to receive Distance attenuation (-6 dB per doubling of distance) Barries creening Fayabe reflection Impact at a nearest façade Reduction through open window (also minus 2.5 dB faç) Impact inside open window  CAR MOVEMENT TO DAY Notes cource level for single event Duration of single event Number of events in the measurement period Tords time duration of combined events Notes ource level for assessment time period Tonality / Impulsiveness correction Minimized distance to receiver Minimized distance to receiver Minimized distance to receiver Minimized distance to receiver	14 14 ade)  12 93166  Creep 1.Aeq 63 32 903.0 1.Aeq 68	62  5  -1  2  14  -7.5  6  23.99106  LAeq lhr  68	LA10 lbr N/A 0 077 40 0.7 5 N/A -7.5 N/A -7.5 N/A -7.5 N/A -7.5 LA10 -70 48 129 0 LA10 lbr 70 66 69 99	27 -7.5 20 Dejectives LA01 73	dB(A)  dB  dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  EB  dB(A)  Seconds  Events  Seconds  dB(A)  dB(A)	Noise source level for assessment time period Tonality / Impubitsveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Berries coreaing Fengale reflection Impact at an errest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window  CAR MOVEMENT TO DAY Noise source level for single event Distantion of single event Number of events in the measurement period Total time distantion of combined events Noise source level for single research Total time distantion of combined events Noise source level for sassessment time period Total time distantion of combined events Distance of research of the period Total time distantion of combined by the period Distance of the content of the period Distance extension (-6 dB per doubling of distance)	15 dde)  15 LAeq  62 0  15 Laeq  62 0  15 LAeq  68 68	62   4   -1   -1   2   15   -7.5   8   37   18353   Acoustic LAeq   LAeq lhr   68   -2   -2   -2   -2   -2   -2   -2   -	N/A 0 0 0 52 7.1 5 N/A -7.5 N/A  Quality C LA10 70 8 129 3612.0 LA10 1hr 70 9	28 -7.5 21 Dijectives LA01 1hr	dB d
Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barrier screening. Façale reflection Impact at search façale Reduction through open window (also minus 2.5 dB fig. Impact at inside o	14 14 ade)  12 93166  Creep 1.Aeq 63 32 903.0 1.Aeq 68	62  -1 2 14 -7.5 6 25 95106 Acoustic LAeq lbr 68	LA10 lbr N/A 0 077 440 0.77 5 N/A -7.5 N/A 70 129 3612.0 LA10 lbr 70 0 66 66 66 69 0.7	27 -7.5 20 Dejectives LA01 73	dB(A)  dB  dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  EB  dB(A)  Seconds  Events  Seconds  dB(A)  dB(A)	Noise source level for assessment time period Tonality / Impubitiveness correction Minimum distance to receiver Distance attenuation (6 dB per doubling of distance) Barries creening Façale reflection Impact at an areast facade Reduction through open window (olso minus 2 5 dB fag- Impact taxide open window CAR MOVEMENT TO DAY Noise source levels for tingle event Distance of tingle event Distance of tingle event Number of events in the measurement period Tonality / Impubitiveness correction Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (6 dB per doubling of distance) Distance attenuation (6 dB per doubling of distance) Barries screening	15 dde)  15 LAeq  62 0  15 Laeq  62 0  15 LAeq  68 68	62   4	N/A 0 0 0 52 7.1 5 N/A -7.5 N/A LA10 70 8 129 3612.0 LA10 1hr 70 0 9	28 -7.5 21 Dijectives LA01 1hr	dB d
Noise source lavel for nosessment time period Tonality / Impulsiveness correction Minimizan distract to receive Distracte attenuation (-6 dB per doubling of distance) Barries creening Fayder reflection Impact at a earest façade Rediction through open window (also minus 2.5 dB faç Impact inside open window  CAR MOVEMENT TO DAY  Noise source lavel for single event Duration of single event Number of events in the measurement period Total time duration of combined events  Noise to use level for excessment time period Total time duration of combined events  Motion out the for single event Minimizer of events in the measurement period Total time duration of combined events  Motion out to level for single event Minimizer distance to receiver Minimizer distance to receiver  Barries creening Barries creening Barries creening	1.4 ade)  21.93166  Creep 1.Aeq 6 32 903.0 1.Aeq 68 0	62	LA10 lbr N/A 0 77 40 0.7 5 N/A -7.5 N/A -7.5 N/A 129 3612.0 LA10 lbr 70 0.66 89 0.7 5 5	27 -7.5 20 bjectives LA01 73 LA01 lhr 73	## (A)  ## (B)  ## (B)  ## (B)  ## (B)  ## (B)  ## (A)  ## (A)  Seconds  Uvento  Seconds  (B)  ## (B)  ## (B)  ## (B)  ## (B)  ## (B)  ## (B)	Noise source level for assessment time period Tonality / Impubitiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries screening Pengale reflection Impact at an erest façade Reduction through pens window (also minus 2.5 dB fag.) Impact inside open window  CAR MOVEMENT TO DAY Noise source level for timple event Duration of single event Number of events in the measurement period Total time duration of combined events Noise source level for to sessument time period Total time duration of combined events Noise source level for to sessument time period Total time duration of combined events Minimum distance to receive Distance extremation (-6 dB per doubling of distance) Barries creening Barries creening Barries creening Barries creening	15 de) 15 de) 32 18353 Creep LAeq 68 68 0	62   4	N/A 0 0 0 32 7.1 5 N/A -7.5 N/A -7.5 N/A  Quality 0 129 3612.0 LA10 1hr 70 0 99	28 -7.5 21 Dijectives LA01 73	eB
Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening. Façale reflection Impact at asserts façale Radiction through open window (also minus 2.5 dB façilingset taisaide open window (also minus 2.5 dB façilingset at season of combined weats) Toral time duration of combined weats  Noise source level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façale effection Impact at a searces façale	14 ade)  14 ade)  23 93166  Creep LAeq 6 32 903.0 LAeq 68 0	62	LA10 lbr N/A 0 077 440 0.77 5 N/A -7.5 N/A 70 129 3612.0 LA10 lbr 70 0 66 66 66 69 0.7	27 -7.5 20 Dejectives LA01 73	## (A)  ## (B)  ## (B)  ## (B)  ## (B)  ## (B)  ## (B)  ## (A)  **Seconds  **Director  **Director  ## (B)   Noise source level for assessment time period Tonality / Impubitiveness correction Minimum distance to receiver Distance attenuation (6 dB per doubling of distance) Barries receiver Fraction of the period of distance Reduction through open window (also minus 2 5 dB fag- Impact at an anext facade Reduction through open window CAR MOVEMENT TO DAY Noise source level for timple event Duration of single event Duration of single event 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) Barries received Fagures reflection Fagures reflection Impact at nearest fagade	15 ode)  15 LAeq  15 LAeq  Creep LAeq  32 903.0 LAeq 68 0	62   4   -1   -1   15   -7.5   S   11888   Acoustic LAeq   LAeq lhr   68   -2   -1   -2   2   -1   2   2   -1   -1	N/A 0 0 0 52 7.1 5 N/A -7.5 N/A LA10 70 8 129 3612.0 LA10 1hr 70 0 99	28 -7.5 21 Dejectives LA01 73	6B	
Noise source lavel for nosessment time period Tonality / Impulsiveness correction Minimizan distract to receive Distracte attenuation (-6 dB per doubling of distance) Barries creening Fayder reflection Impact at a earest façade Rediction through open window (also minus 2.5 dB faç Impact inside open window  CAR MOVEMENT TO DAY  Noise source lavel for single event Duration of single event Number of events in the measurement period Total time duration of combined events  Noise to use level for excessment time period Total time duration of combined events  Motion out the for single event Minimizer of events in the measurement period Total time duration of combined events  Motion out to level for single event Minimizer distance to receiver Minimizer distance to receiver  Barries creening Barries creening Barries creening	14 ade)  14 ade)  23 93166  Creep LAeq 6 32 903.0 LAeq 68 0	62	LA10 lbr N/A 0 0 0 0 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	27 -7.5 20 bijectives LA01 73	## (A)  ## (B)  ## (B)  ## (B)  ## (B)  ## (B)  ## (A)  ## (A)  Seconds  Uvento  Seconds  (B)  ## (B)  ## (B)  ## (B)  ## (B)  ## (B)  ## (B)	Noise source level for assessment time period Tonality / Impubitiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Barries screening Pengale reflection Impact at an erest façade Reduction through pens window (also minus 2.5 dB fag.) Impact inside open window  CAR MOVEMENT TO DAY Noise source level for timple event Duration of single event Number of events in the measurement period Total time duration of combined events Noise source level for to sessument time period Total time duration of combined events Noise source level for to sessument time period Total time duration of combined events Minimum distance to receive Distance extremation (-6 dB per doubling of distance) Barries creening Barries creening Barries creening Barries creening	15 ode)  15 LAeq  15 LAeq  Creep LAeq  32 903.0 LAeq 68 0	62   4   -1   -1   15   -7.5   S   11888   Acoustic LAeq   LAeq lhr   68   -2   -1   -2   2   -1   2   2   -1   -1	N/A 0 0 0 1 32 7.1 5 N/A -7.5 N/A -7.5 N/A 129 3612.0 LA10 lbr 70 0 9 129 7.1 5 26	28   -75   21	eB

STAGE 3 ACTIVITY NOISE PREDICTION CALCU	LATIONS	LAN BE	nd L <sub>sot the</sub>	kwa are rep	resented as	N/A if the duration of events do not occur for $10\%$ or $1\%$	of the 1 h	our period	)		
R1: Existing Single-storey dwellings to the north						R2: Future dwellings to the immediate north					
CAR MOVEMENT FROM DAY	Creep	Acoustic				CAR MOVEMENT FROM DAY		Acoustic		Objectives	
Noise source level for single event	LAeq	LAeq	1A10 70	1A01 73		Noise source level for single event		LAeq SS	LA10 70		1
Noise source sever for single event  Duration of single event	<del>- '</del>		28	/3	dB(A) Seconds	Duration of single event	<del>- '</del>	28	18	73	dB(A) Seconds
Number of events in the measurement period	32		129		Events	Number of events in the measurement period	32		129		Events
Total time duration of combined events	903.0		3612.0		Seconda	Total time duration of combined events	903.0		3612.0		Seconda
	LAeq			LA01 lhr			LAeq			LA01 lhr	
Noise source level for assessment time period	68	68	70	73	(B(A)	Noise source level for assessment time period	68	68	70	73	(B(A)
Tonality / Impulsiveness correction Minimum distance to receiver	, ·	L .	10		έB	Tonality / Impulsiveness correction Minimum distance to receiver	- ·	L .	0		éB.
Distance attenuation (-6 dB per doubling of distance)	_		41		rs	Distance attenuation (-6 dB per doubling of distance)	_		34		en en
Barrier screening		-1	0.7		6B	Barrier screening		-1	7.1		dB.
Façade reflection			1.5		έB	Façade reflection		2	.5		éB.
Impact at nearest façade	19	19	21	24	dB(A)	Impact at nearest façade	19	19	21	24	dB(A)
Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	6B	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	69
Impact inside open window	1 70 73530	11	13	16	dB(A)	Impact inside open window	1 72 66075	11	13	16	dB(A)
	Стеер	Aconsti	Quality C	Ohiectises	$\overline{}$		Creep	Aconstic	Quality C	Ohiectises	-
TRUCK ENGINE STARTS Loading bay	LAeq		LA10		1 1	TRUCK ENGINE STARTS Loading bay		LAeq			1
Noise source level for single event		'S	\$1	\$3	(B(A)	Noise source level for single event		78	\$1	\$3	(B(A)
Duration of single event			3		Seconds	Duration of single event			3		Seconds
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	6.0	T A = 11	12.0	IT ACT 11	Seconds	Total time duration of combined events	6.0 TAGE	T As - 33	12.0 IT 410.1b-	IT ACT TO	Seconds
Noise source level for assessment time period	LAeq 56	LAeq lhr	N/A	LA01 lbr N/A	(B(A)	Noise source level for assessment time period	LAeq 56	LAeq 1hr	LA10 1hr	LA01 lhr N/A	(BHA)
Tonality / Impulsiveness correction	0	23	N/A	NA	4B(A)	Tonality / Impulsiveness correction	0		5 5	NA	dB(A)
Minimum distance to receiver	<u> </u>	٠.,	55		n	Minimum distance to receiver	Ť	_	s		n
Distance attenuation (-6 dB per doubling of distance)			36		ďΒ	Distance attenuation (-6 dB per doubling of distance)			18		άB
Barrier screening			5.0		<b>43</b>	Barrier screening			9.9		έB
Façade reflection			1.5		6B	Façade reflection	L		.5		ćВ
Impact at nearest façade	8	-7.5	N/A	N/A -7.5	dB(A)	Impact at nearest façade	21	23	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	N/A	N/A	dB (A)	Reduction through open window (also minus 2.5 dB fac Impact inside open window	acie)	15	N/A	-7.5 N/A	dB dB(A)
Impact inside open window			D/A	NA	4B(A)	impact inside open window		15	IN/A	NA	dB(A)
TRUCKS MOVEMENT TO SEE	Creep	Acoustic	Quality C	Dijectives		TRECE A COURT CASE TO CITE	Creep	Acoustic	Quality C	Objectives	-
TRUCK MOVEMENT TO SITE	LAeq	LAeq	LA10		1 I	TRUCK MOVEMENT TO SITE	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	1 8	7	89	90	dB(A)	Noise source level for single event		37	89	90	fB(A)
Duration of single event			35		Seconds	Duration of single event			15		Seconds
Number of events in the measurement period	170.0	_	4 340.0		Events	Number of events in the measurement period	170.0	_	340.0		Events
Total time duration of combined events		T 1 11		IT 103 33-	Seconds	Total time duration of combined events		T 4 33		IT 403 33-	Seconds
Noise source level for assessment time period	LAeq 80	LAeq Ihr	N/A	LA01 1hr	(B(A)	Noise source level for assessment time period	LAeq 80	LAeq Ihr	N/A	LA01 1hr 90	
Tonality / Impulsiveness correction	0	- //	0	90	(B(A)	Tonality / Impulsiveness correction	0	- //	0	90	dB(A)
Minimum distance to receiver	1	10		70	0	Minimum distance to receiver	-	13		13	
Distance attenuation (-6 dB per doubling of distance)		37		37	άB	Distance attenuation (-6 dB per doubling of distance)		22		22	éB-
Barrier screening	-1	2.0	-1	12.0	43	Barrier screening	-1	7.6	-1	7.6	619
Façade reflection		2	1.5		6B	Façade reflection		2	.5		dB.
Impact at nearest façade	33	-7.5	N/A	-7.5	dB(A)	Impact at nearest façade	42	-7.5	N/A	-7.5	dB(A)
Reduction through open window (also minus 2.5 dB faç Impact inside open window	nae)	23	N/A	36	(B (A)	Reduction through open window (also minus 2.5 dB fac Impact inside open window	MORE)	32	N/A	45	(B (A)
anapact inside open minoon		20	41124		an(x)	ampact tastae open window		52	24/24	40	BB(X)
TRUCK MOVEMENT FROM SITE	Creep	Acoustic	Quality C	Dbjectives	-	TRUCK MOVEMENT FROM SITE	Creep		Quality C	Objectives	$\overline{}$
	LAeq	LAeq		LA01	1 1		LAeq	LAeq	LA10	LA01	1
Noise source level for single event	- 8	7	89	90	dB(A)	Noise source level for single event		\$7	89	90	dB(A)
Duration of single event			35		Seconds	Duration of single event	_		15		Seconds
Number of events in the measurement period Total time duration of combined events	170.0	<del></del>	340.0		Events	Number of events in the measurement period Total time duration of combined events	170.0	-	340.0		Events
1 over 1996 and gripping of companied seems	LAeq	LAeg 1hr		LA01 lbr	Seconds	Loron time distribution of combined events	LAeq	LAeg 1hr		LA01 1hr	Seconds
Noise source level for assessment time period	S0 S0	77	N/A	90	dB(A)	Noise source level for assessment time period	S0 S0	77	N/A	90	6B(A)
Tonality / Impulsiveness correction	0		0		dB.	Tonality / Impulsiveness correction	0		0		dB.
Minimum distance to receiver		70		70		Minimum distance to receiver		13		13	
Distance attenuation (-6 dB per doubling of distance)		37		-37	<b>6</b> B	Distance attenuation (-6 dB per doubling of distance)		22		22	613
Barrier screening	-1	2.0	<u> </u>	2.0	ćΒ	Barrier screening	-1	7.6	<u>-</u> -1	7.6	άB
Façade reflection	22	20	15 No. 15	144	άB	Façade reflection	- 42	30	5	F 29	άB
Impact at nearest façade Reduction through open window (also minus 2.5 dB faç	33 ada)	-7.5	N/A -7.5	-7.5	dB(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç	42 ade)	-7.5	N/A -7.5	-7.5	dB(A)
Impact inside open window	nut)	23	N/A	36	dB(A)	Impact inside open window (also minus 2.5 dis fac	orać)	32	N/A	45	6B(A)
		20	- 1125	- 50				32	2465		200(4)
TRUCK AIRBRAKES	Сгеер		Quality C			TRUCK AIRBRAKES	Creep	Acoustic			
	LAeq	LAeq	LA10	LA01	I		LAeq	LAeq	LA10	LA01	
Noise source level for single event	9	0	98	102	(B(A)	Noise source level for single event	1	70	98	102	(B(A)
Duration of single event	4	_	2 16		Seconds	Duration of single event	4	_	16		Seconds
Number of events in the measurement period	8.0	_	32.0		Events	Number of events in the measurement period	8.0	-	32.0		Events
Total time duration of combined events	LAeq	LAeg lhr	22.0	LA01 1hr	Seconds	Total time duration of combined events	LAeq	I Asa lbs	20.0	LA01 1hr	Seconds
Noise source level for assessment time period	69	LAeq Inr	N/A	N/A	(B(A)	Noise source level for assessment time period	69	LANG INF	N/A	N/A	dB(A)
Tonality / Impulsiveness correction	0		5		48	Tonality / Impulsiveness correction	0	-	5		48
Minimum distance to receiver			70		п	Minimum distance to receiver			.3		п
		-	37		άB	Distance attenuation (-6 dB per doubling of distance)			22		dB.
Distance attenuation (-6 dB per doubling of distance)											T
Barrier screening		-1	2.0		433	Barrier screening		-1	7.6		435
Barrier screening Façade reflection			1.5		4B 6B	Façade reflection		2	.5		ďΒ
Barrier screening Façade reflection Impact at nearest façade	23	28	N/A	N/A	6B 6B(A)	Façade reflection Impact at nearest façade	32	37	.5 N/A	N/A	dB dB(A)
Barrier screening Façade reflection			1.5	N/A -7.5 N/A		Façade reflection		2	.5	N/A -7.5 N/A	ďΒ

R1: Existing Single-storey dwellings to the north	6		0 11 0		$\overline{}$	R2: Future dwellings to the immediate north	6		0 11/- 0		_
RUCK AIRBRAKES at loading bay	Creep LAeq	LAeq	Quality O LA10	LA01	1 1	TRUCK AIRBRAKES at loading bay	Creep LAeq	LAeq	Quality C	LA01	1
loise source level for single event		0	98	102	6B(A)	Noise source level for single event	9		98	102	6B(A)
Ouration of single event			16		Seconds	Duration of single event			16		Secon
Number of events in the measurement period	4 S.0		32.0		Events	Number of events in the measurement period	4 S.0		32.0		Events
Cotal time duration of combined events	LAeq	T As a The	12.0 LA10 1hr	IT 401 1b-	Seconds	Total time duration of combined events		T As a 1hr		LA01 1hr	Secon
Noise source level for assessment time period	69	69 69	N/A	N/A	(B(A)	Noise source level for assessment time period	LAeq 69	60	N/A	N/A	(B(A)
onality / Impulsiveness correction	0	- 03	5	1074	(8	Tonality / Impulsiveness correction	0	- 0,5	5	100	(B
Linimum distance to receiver			15		n.	Minimum distance to receiver			3		
Distance attenuation (-6 dB per doubling of distance)		-	36		dB	Distance attenuation (-6 dB per doubling of distance)		-	S		dB.
arrier screening			5.0		άB	Barrier screening		-19			dB.
açade reflection			.5		43	Façade reflection		2			633
nipact at nearest façade	21	26	N/A	N/A	6B(A)	Impact at nearest façade	34	39	N/A	N/A	dB(A
Reduction through open window (also minus 2.5 dB faça	ide)	-7.5	-7.5	-7.5	dB .	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	éB.
mpact inside open window	_	18	N/A	N/A	dB(A)	Impact inside open window	_	31	N/A	N/A	dB(A
	Creep	Aconstic	Quality O	hiections			Creep	Aconstic	Quality C	thiactions	_
RUCK UNLOADING at loading bay	LAeq		LA10		1 1	TRUCK UNLOADING at loading bay	LAeq		LA10		-
Toise source level for single event	Loreq	5	80	\$2	(B(A)	Noise source level for single event	Loseq 7	5 LANG	80	82	(B(A)
Ouration of single event		- 0	00	32	Seconds	Duration of single event	<del>- '</del>	9		34	Secon
Jumber of events in the measurement period	1		4		Seconds Events	Number of events in the measurement period	1		4		Events
otal time duration of combined events	900.0		3600.0		Seconds	Total time duration of combined events	900.0		3600.0		Secon
	LAeq	LAeq lbr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 1hr	
Noise source level for assessment time period	75	75	80	\$2	dB(A)	Noise source level for assessment time period	75	75	80	82	dB(A)
Conality / Impulsiveness correction	0		5		413	Tonality / Impulsiveness correction	0		5		411
Linimum distance to receiver			15		п	Minimum distance to receiver					ri.
Distance attenuation (-6 dB per doubling of distance)			36		άB	Distance attenuation (-6 dB per doubling of distance)		-			άB
Barrier screening			5.0		ďΒ	Barrier screening		-1			άB
açade reflection			5		433	Façade reflection		2			éB.
nipact at nearest façade	26	31	36	38	dB(A)	Impact at nearest façade	40	45	50	52	dB(A
Reduction through open window (also minus 2.5 dB faça	ide)	-7.5	-7.5	-7.5	4B	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	ćΒ
mpact inside open window	_	24	29	31	dB(A)	Impact inside open window	_	37	42	44	dB(A
	Creep	Aconstis	Quality O	hisotimo			Creep	Aconstis	Quality C	this etime	_
EOPLE TALKING OUTSIDE	LAeq		LA10	LA01	1 1	PEOPLE TALKING OUTSIDE	LAeq	LAeq	LA10	LA01	1
Joise source level for single event		2	70	73	dB(A)	Noise source level for single event		2	70	73	éB(A)
Ouration of single event			00		Seconds	Duration of single event	<u> </u>	- 6		- 12	Secon
Jumber of events in the measurement period	1		4		Events	Number of events in the measurement period	1		4		Evente
Total time duration of combined events	600.0		2400.0		Seconds	Total time duration of combined events	600.0		2400.0		Secon
	LAeq	LAeq lbr	LA10 1hr	LA01 lbr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Voise source level for assessment time period	60	60	70	73	dB(A)	Noise source level for assessment time period	60	60	70	73	fB(A)
onality / Impulsiveness correction	0		0		4B	Tonality / Impulsiveness correction	0		0		éB.
Linimum distance to receiver			8			Minimum distance to receiver		2			
Distance attenuation (-6 dB per doubling of distance)			38		418	Distance attenuation (-6 dB per doubling of distance)			6		635
Barrier screening		-1	5		6B	Barrier screening		-1	7.1		ćΒ
açade reflection	14	14	.5	27	dB	Façade reflection	10	10	20	32	dB.
impact at mearest façade Reduction through open window (also minus 2.5 dB faça		2.6	24	2.5	dB(A)	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç		7.5	29	32	dB(A)
inpact inside open window	ME)	7	16	19	(B(A)	Impact inside open window	nae)	12	21	24	dB(A)
mpart manus open manon	26 13211	26.13211			0.0 (14)	ampast tarret open states s	82 44465	82,44465			0.0 ( 10
RUCKS WITH REFRIGERATION UNIT	Стеер	Acoustic	Quality O	bjectives		TRUCKS WITH REFRIGERATION UNIT	Creep	Acoustic	Quality C	bjectives	$\overline{}$
	LAeq	LAeq	LA10	LA01	1 I		LAeq	LAeq		LA01	1
loise source level for single event		1	82	\$3	6B(A)	Noise source level for single event	- 8	1	82	\$3	6B(A)
Ouration of single event		9	00		Seconds	Duration of single event		9	00		Secon
lumber of events in the measurement period	1		2		Events	Number of events in the measurement period	1		2		Event
otal time duration of combined events	900.0		1800.0		Seconds	Total time duration of combined events	900.0		1800.0		Secon
	LAeq	LAeq lhr	LA10 1hr				LAeq	LAeq lhr	LA10 1hr	LA01 1hr	
loise source level for assessment time period	S1 0	78	82	\$3	dB(A)	Noise source level for assessment time period	81	78	82	\$3	dB(A)
onality / Impulsiveness correction	U	Щ.	D 15		éB	Tonality / Impulsiveness correction	0		_		άB
finimum distance to receiver distance attenuation (-6 dB per doubling of distance)			36		ri.	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	<b>—</b>		IS		es dB
defrigeration unit truck directivity / screening	-		D		/B	Refrigeration unit truck directivity / screening	<b>-</b>	-			dB dB
arrier screening			3.8		6B	Barrier screening		-1			eB eB
açade reflection			.5		6B	Façade reflection		2	5		dB.
mpact at mearest façade	33	30	34	35	6B(A)	Impact at nearest façade	46	43	47	48	dB (A
deduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	έB	Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5	-7.5	éB.
mpact inside open window		23	27	28	dB(A)	Impact inside open window		35	39	40	dB(A
ASTE COLLECTION INDUSTRIAL BIN - Service	Creep		Quality O			WAS TE COLLECTION INDUSTRIAL BIN - Service	Creep		Quality C		1
	LAeq	LAeq	LA10	LA01	$\vdash$		LAeq	LAeq		LA01	-
oise source level for single event	9	2	97	102	dB(A)	Noise source level for single event	9	2	97	102	dB(A)
turation of single event fumber of events in the measurement period	-	1	80		Seconds	Duration of single event	١,	1	30		Secon
umber of events in the measurement period otal time duration of combined events	180.0		360.0		Events	Number of events in the measurement period Total time duration of combined events	180.0		360.0		Evest
over time emission of complined events	LAeq	T Age 11-	LA10 1hr	T 401 11-	Neconds .	T OWN THING ORGANION OF COMMINED GRANTS		LAeq lhr		T 401 11-	Secon
loise source level for assessment time period	LAeq 25	T-red TBL	97	102	(B(A)	Noise source level for assessment time period	LAeq 85	T-red rut	97	102	dB(A)
onality / Impulsiveness correction	85	92	4/	102	eB(A)	Noise source level for assessment time period Tonality / Impulsiveness correction	85	9.2	5	102	dB(A)
Cinimum distance to receiver	Ť	<del></del>	3			Minimum distance to receiver	Ť		,		-
transmin distance to receiver distance attenuation (-6 dB per doubling of distance)			36		6B	Distance attenuation (-6 dB per doubling of distance)		-	2		en en
arrier screening			5		éB	Barrier screening		-			dB.
açade reflection			.5		ďΒ	Façade reflection		2			άB
olive terrerrott					-		57				dB (A
nipact at nearest façade	46	48	63	68	dB(A)	Impact at nearest façade		59	74	79	dB(A
		-7.5	-7.5 56	-7.5 61	6B(A) 6B	Impact at nearest façade  Reduction through open window (also minus 2.5 dB faç		-7.5	-7.5 -7.5	-7.5 -7.5	dB (A

						N/A if the duration of events do not occur for 10% or 1%	of the 1 h	our period	)		
		Ç-ARIM -						,			
R3: Existing dwellings to the east	Creep	Acomotic	Quality C	Note estimate	_	R4: Future dwellings to the immediate east	Creep		On alita	Objectives	_
CAR DOOR CLOSURE near carpark DAY / EVEN	LAeq	LAeq	LA10	LA01		CAR DOOR CLOSURE near carpark DAY / EVEN		LAeq		LA01	
Noise source level for single event	7	5	77	80	(B(A)	Noise source level for single event	7	75	77	\$0	(B(A)
Duration of single event		1	.5		Secondo	Duration of single event		1	.5		Seconds
Number of events in the measurement period	45		180		Events	Number of events in the measurement period	45		180		Events
Total time duration of combined events	67.5		270.0		Seconds	Total time duration of combined events	67.5		270.0		Seconds
	LAeq		LA10 1hr		$\Box$		LAeq		LA10 1hr		
Noise source level for assessment time period	64	64	N/A	80	iB(A)	Noise source level for assessment time period	64	64	N/A	80	iB(A)
Tonality / Impulsiveness correction	0		5		413	Tonality / Impulsiveness correction	0		5		635
Minimum distance to receiver		2			FI.	Minimum distance to receiver			15		m.
Distance attenuation (-6 dB per doubling of distance)			49		4B	Distance attenuation (-6 dB per doubling of distance)		-	33		dB.
Barrier screening		-9	1.7		άB	Barrier screening		-1	5.5		éB.
Façade reflection		2	.5		43	Façade reflection		2	.5		410
Impact at nearest façade	7	12	N/A	29	6B(A)	Impact at nearest façade	18	23	N/A	39	dB(A)
Reduction through open window (also minus 2.5 dB faça	ade)	-7.5	-7.5	-7.5	4B	Reduction through open window (also minus 2.5 dB faç	rde)	-7.5	-7.5	-7.5	dB.
Impact inside open window		5	N/A	21	dB(A)	Impact inside open window		15	N/A	31	dB(A)
	5.526748	17.47711					58.14555	183.8724			
CAR DOOR CLOSUPE for commit DAY (FIFTY	Creep	Acoustic	Quality C	bjectives		CAR DOOR CLOSURE (or consult DAY (FIEN	Creep	Acoustic	Quality (	Objectives	
CAR DOOR CLOSURE far carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1 1	CAR DOOR CLOSURE far carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	7	5	77	80	4B(A)	Noise source level for single event	2004	75	77	80	4B(A)
Duration of single event	_	1	5		Seconds	Duration of single event		1	5		Seconds
Number of events in the measurement period	45	<del>- '</del>	180		Sozonds Events	Number of events in the measurement period	45	<del>, '</del>	180		Seconds Events
	67.5		270.0				67.5		270.0		-
Total time duration of combined events		T to - 1"		IT 401 11	Seconds	Total time duration of combined events		T 4 1"		T 401 11	Seconds
	LAeq		LA10 1hr		$\vdash$		LAeq	LAeq lhr	LA10 1hr	LA01 lhr	_
Noise source level for assessment time period	64	64	N/A	80	6B(A)	Noise source level for assessment time period	64	64	N/A	\$0	dB(A)
Tonality / Impulsiveness correction	0		5		άB	Tonality / Impulsiveness correction	0		5		ćΒ
Minimum distance to receiver		3	30		71.	Minimum distance to receiver			38		m.
Distance attenuation (-6 dB per doubling of distance)			50		631	Distance attenuation (-6 dB per doubling of distance)			39		£13
Barrier screening			1.9		6B	Barrier screening			5.4		dB.
Façade reflection		2			65	Façade reflection			5		dB.
Impact at nearest façade	-	12	N/A	28	GB .	Impact at nearest façade	12	17	N/A	33	_
Impact at nearest raçade	7	-7.5		-7.5	dB(A)			-7.5	-7.5	-7.5	dB(A)
Reduction through open window (also minus 2.5 dB faça	sde)		-7.5		<i>6</i> B	Reduction through open window (also minus 2.5 dB faç	vde)				633
Impact inside open window		- 5	N/A	21	6B(A)	Impact inside open window		9	N/A	26	dB(A)
	5.037801	15,93092					15.70981	49,67877			
CAR ENCINE CTARTS DAY (FIEN	Creep	Acoustic	Quality C	bjectives	$\Box$	CAR ENGINE STARTS DAY (EVEN	Creep	Acoustic	Quality C	Objectives	
CAR ENGINE STARTS near carpark DAY / EVEN	LAeq	LAeq	LAIO	LA01	1 I	CAR ENGINE STARTS near carpark DAY/EVEN	LAeq		LAIÓ		1
Noise source level for single event		2	74	75	(B(A)	Noise source level for single event		22	74	75	(B(A)
	_	,		- //					2 /4		
Duration of single event	23	_	90		Seconds	Duration of single event	22	_	90		Seconds
Number of events in the measurement period					Events	Number of events in the measurement period					Events
Total time duration of combined events	67.5		270.0		Seconds	Total time duration of combined events	67.5		270.0		Seconds
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	62	62	N/A	75	iB(A)	Noise source level for assessment time period	62	62	N/A	75	iB(A)
Tonality / Impulsiveness correction	0		0	•	4B	Tonality / Impulsiveness correction	0		0		433
Minimum distance to receiver	-	2	87			Minimum distance to receiver		_	15		
Distance attenuation (-6 dB per doubling of distance)			49		/B	Distance attenuation (-6 dB per doubling of distance)		-	33		éB.
Barrier screening		-9			10	Barrier screening	_	-1			dB.
	-	-5			6B		_		5		
Façade reflection	5	5		10		Façade reflection	16	16	N/A	20	48
Impact at nearest façade			N/A	19	6B(A)	Impact at nearest façade		10	N/A	29	dB(A)
Reduction through open window (also minus 2.5 dB faça	sde)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB faç:	vde)	-7.5	-7.5	-7.5	dB-
Impact inside open window		-2	N/A	11	dB(A)	Impact inside open window		S	N/A	21	dB(A)
	3.487142	3.487142					36.68736	36.68736			
CAR ENCINE CTARTS for corned, DAY (EVEN	Creep	Acoustic	Quality C	bjectives		CAD ENCINE CTADES for cornect DAY (FUEN	Creep	Acoustic	Quality C	Objectives	
CAR ENGINE STARTS far carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1 1	CAR ENGINE STARTS far carpark DAY / EVEN	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	7	3	74	75	(B(A)	Noise source level for single event		73	74	75	dB(A)
Duration of single event		-	3	- //	Seconds	Duration of single event		-	3		Seconds
			90		Seconds Events		23	_	9 00		_
NA	22										Events
Number of events in the measurement period	23					Number of events in the measurement period		_			Seconds
Number of events in the measurement period Total time duration of combined events	67.5		270.0		Seconds	Number of events in the measurement period Total time duration of combined events	67.5		270.0	In case of	-
Total time duration of combined events	67.5 LAeq		270.0 LA10 1hr	LA01 lhr		Total time duration of combined events	67.5 LAeq		LA10 1hr	LA01 1hr	
Total time duration of combined events  Noise source level for assessment time period	67.5 LAeq 62	LAeq lhr	270.0 LA10 1hr N/A	<b>LA01 lbr</b>		Total time duration of combined events  Noise source level for assessment time period	67.5 LAeq 62	LAeq 1hr 62	LA10 1hr N/A	1.A01 1hr	6B(A)
Total time duration of combined events	67.5 LAeq	62	270.0 LA10 1hr N/A 0	<b>LA01 lhr</b> 75	Seconds	Total time duration of combined events  Noise source level for assessment time period Tonality / Impulsiveness correction	67.5 LAeq	62	LA10 1hr N/A	1.A01 lhr 75	
Total time duration of combined events  Noise source level for assessment time period	67.5 LAeq 62	62	270.0 LA10 1hr N/A	<b>LA01 lhr</b> 75	Seconds	Total time duration of combined events  Noise source level for assessment time period	67.5 LAeq 62	62	LA10 1hr N/A	75	fB(A)
Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver	67.5 LAeq 62	62	270.0 LA10 1hr N/A 0	<b>LA01 1hr</b> 75	Seconds	Total time duration of combined events  Noise source level for assessment time period  Tonality: Impulsiveness correction  Minimum distance to receiver	67.5 LAeq 62	62	LA10 1hr N/A	1401 1hr 75	fB(A)
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)	67.5 LAeq 62	62	270.0 LA10 1hr N/A 0 30	LA01 1hr 75	Seconds  dB(A)  dB  dB	Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Maintanan distance to receiver  Distance attenuation (-6 dB per doubling of distance)	67.5 LAeq 62	62	N/A 0 8 39	1.A01 1hr 75	dB(A) dB m dB
Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barrier screening	67.5 LAeq 62	62 3 	270.0 LA10 1hr N/A 0 30 50 1.9	LA01 lhr 75	Seconds  dB(A)  dB  dB  dB  dB  dB	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)  Barries received.	67.5 LAeq 62	62 ! -1	N/A 0 88 39 5.4	1.A01 1hr 75	6B(A) 6B m 6B 6B
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)  Barries corening  Façade reflection	67.5 LAeq 62	62	270.0 LAI0 1hr N/A 0 30 50 1.9	75	4B(A) 6B # 6B # 6B	Total time duration of combined events  Noise source level for assessment time period  Fosilary /Impulsiveness correction  Mainterme distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Façada reflection	67.5 LAeq 62 0	62 5  -1 2	IA10 1hr N/A 0 08 39 5.4	75	6B(A) 6B m 6B 6B
Total time duration of combined events  Notes source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver  Distance streamston (-6 dB per doubling of distance)  Barrier screening  Fayake reflection  Impact at nearest façade	67.5 LAeq 62 0	3 	270.0 LA10 1hr N/A 0 30 50 1.9 .5	75	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB	Total time duration of combined events  Notes source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receive  Distance stremation (-6 dB per doubling of distance)  Barrier screening  Facular reflection  Impact at nearest facade	67.5 LAeq 62 0	62 	LA10 1hr N/A 0 18 39 5.4 .5 N/A	75	6B(A) 6B 6B 6B 6B(A)
Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Maintama distance to receiver  Distance streumation (-6 dB per doubling of distance)  Barrier screening  Façada reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB faça	67.5 LAeq 62 0	62 3 	270.0 LA10 1hr N/A 0 30 50 1.9 .5 N/A -7.5	75 18 -7.5	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Tonality 'Implicaveness correction  Mainteam distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fegola reflection  Impact at a nearest façade  Reduction through open window (siso minus 2.5 dB fox	67.5 LAeq 62 0	62 5  -1 2	IA10 1hr N/A 0 18 39 5.4 .5 N/A -7.5	75 23 -7.5	6B(A) 6B 6B 6B 6B 6B(A)
Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Maintama distance to receiver  Distance streumation (-6 dB per doubling of distance)  Barrier screening  Façada reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB faça	67.5 LAeq 62 0	3 	270.0 LA10 1hr N/A 0 30 50 1.9 .5	75	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB	Total time duration of combined events  Notes source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receive  Distance stremation (-6 dB per doubling of distance)  Barrier screening  Facular reflection  Impact at nearest facade	67.5 LAeq 62 0	62 	LA10 1hr N/A 0 18 39 5.4 .5 N/A	75	6B(A) 6B 6B 6B 6B(A)
Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Maintama distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Façada reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB faça	67.5 LAeq 62 0 5 ade)	5 -7.5 -2 3.178637	270.0 LA10 1hr N/A 0 30 50 1.9 .5 N/A -7.5 N/A	18 -7.5 11	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Tonality 'Implicaveness correction  Mainteam distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fegola reflection  Impact at a nearest façade  Reduction through open window (siso minus 2.5 dB fox	67.5 LAeq 62 0 10 ode)	62 	IA10 1hr N/A 0 18 39 5.4 .5 N/A -7.5 N/A	75 23 -7.5 16	6B(A) 6B 6B 6B 6B 6B(A)
Total time duration of combined events  Notes cource level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries recening  Fapida exfliction  Impact at nearest fapide  Reduction through open window (also minus 2.5 dB fapilings at the period of the	67.5 LAeq 62 0 0 5 ade)	62 3 	270.0  LA10 1hr N/A 0 30 50 1.9 5 N/A -7.5 N/A Quality Q	75 18 -7.5 11	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Notice source level for assessment time period  Totality: Impulsiveness correction  Minimum distance to receive  Distance attentation (-6 dB per doubling of distance)  Barrier screening  Faughe reflection  Impact at narest facade  Reduction through open window (also minus 2.5 dB fag  Impact taxide open window	67.5 LAeq 62 0	62 	IA10 1hr N/A 0 88 39 5.4 .5 N/A -7.5 N/A	23 -7.5 16	6B(A) 6B 6B 6B 6B 6B(A)
Total time duration of combined events  Noise source level for assessment time period  Tonality / Impulsiveness correction  Maintama distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Façada reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB faça	67.5 LAeq 62 0 0 5 ade)	5 -7.5 -2 3.178637	270.0 LA10 1hr N/A 0 30 50 1.9 .5 N/A -7.5 N/A	18 -7.5 11	Seconds  dB(A)  dB  es  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Tonality 'Implicaveness correction  Mainteam distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fegola reflection  Impact at a nearest façade  Reduction through open window (siso minus 2.5 dB fox	67.5 LAeq 62 0	62 	IA10 1hr N/A 0 18 39 5.4 .5 N/A -7.5 N/A	23 -7.5 16	6B(A) 6B 6B 6B 6B 6B(A)
Total time duration of combined events  Notice source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries screening  Façade reflection  Impact at a rearest façade  Reduction through open window (also minus 2.5 dB faça  Impact miside open window  CAR MOVEMENT TO DAY	67.5 LAeq 62 0 5 ade)	5 -7.5 -2 3.178637 Acoustic LAeq	270.0  LA10 1hr N/A 0 30 50 1.9 5 N/A -7.5 N/A Quality Q	75 18 -7.5 11	Seconds  dB(A)  dB  rs  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Notice source level for assessment time period  Tosality: Impulsiveness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Faught ereflection  Impact at narrest facade  Reduction through open window (olso minus 2.5 dB fag-  Impact in side open window  CAR MOVEMENT TO DAY	67.5 LAeq 62 0 10 de)	62 	IA10 1hr N/A 0 88 39 5.4 .5 N/A -7.5 N/A	23 -7.5 16	6B(A) 6B m 6B 6B 6B 6B 6B 6B 6B 6B
Total time duration of combined owners  Notes source level for nesessment time period  Tonality 'Impulsiveness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fagada reflection  Imputed at nearest façade  Reduction through open window (siso minus 2.5 dB fog/  Impact at learners of the combined of t	67.5 LAeq 62 0	5 -7.5 -2 3.178637 Acoustic LAeq	270.0  LA10 1hr N/A 0 30 50 1.9 5 N/A -7.5 N/A Quality O	75 18 -7.5 11	Seconds  6B(A)  6B  n  6B  6B  6B  6B  6B  6B  6B  6B	Total time duration of combined events  Noise source level for assessment time period  Totality / Impulsiveness correction  Minimum durance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fagale reflection  Impact at an earest façade  Reduction through open window (also minus 2.5 dB for impact at the control of	67.5 LAeq 62 0 10 de)	62 	LA10 1hr   N/A   0   0   8   39   5.4   .5   N/A   -7.5   N/A     Quality Q	23 -7.5 16 Dbjectives LA01	6B(A) 6B 6B 6B 6B 6B 6B(A) 6B 6B(A)
Total time duration of combined events  Notes source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries recenne;  Façade reflection  Impact at searcs if façade  Reduction through open window (also minus 2.5 dB faç.  Impact miside open window  CAR MOVEMENT TO DAY  Notes ource level for single event  Duration of single event	67.5 LAeq 62 0 0 5 sade) Creep LAeq 6	5 -7.5 -2 3.178637 Acoustic LAeq	270.0  LA10 1hr N/A 0 30 50 1.9 5 N/A -7.5 N/A Quality 0 LA10 70	75 18 -7.5 11	Seconds  4B(A)  4B  4B  4B  4B  4B  6B  6B  6B  6B  6A)  6B  6B  6A)	Total time duration of combined events  Notes source level for assessment time period  Totality: Impulsivements correction  Minimum distance to receive  Distance effection  Fraçale reflection  Fraçale reflection  Impact at answert façade  Reduction through open window (also minus 2.5 dB for Impact in sixile open window)  CAR MOVEMENT TO DAY  Notes source level for single event  Duration of single event	67.5 LAeq 62 0 10 10 ade) 9.912218 Creep LAeq	62 	LA10 1hr N/A 0 18 39 5.4 -5 N/A -7.5 N/A -2.5 N/A LA10 70 18	23 -7.5 16 Dbjectives LA01	6B(A) 6B
Total time duration of combined owers  Noise source lavel for nesessment time period  Tonahly 'Impulsiveness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Berries croening  Façade reflection  Impute at a search façade  Rediscriots through open window (also minus 2.5 dB façi  Impact taids open window  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Duration of single event	67.5 LAeq 62 0 5 mde) 5 LAeq 62 1 7 8657 Creep LAeq 6	5 -7.5 -2 3.178637 Acoustic LAeq	270.0  LA10 1hr N/A 0 30 50 1.9 5 N/A -7.5 N/A 2 Quality O LA10 70 18	75 18 -7.5 11	Seconds  6B(A)  6B  6B  6B  6B  6B  6B(A)  6B  6B(A)  6B  6B(A)	Total time dustion of combined events  Noise source levels for assessment time period  Totality / Impulsiveness correction  Minimum dutance to receive  Distance attenuation (-d Bp per doubling of distance)  Barrier screening  Fought reflection  Impact at an exert façade  Realisticus through open window (also minus 2.5 dB for impact at also pea window)  CAR MOVEMENT TO DAY  Noise source level for timple event  Duration of single event  Duration of single event	67.5 LAeq 62 0 10 wde) 9.912218 Creep LAeq	62 	LA10 1hr   N/A   0   18   39   39   5.4   5.5   N/A   -7.5   N/A     LA10   70   18   129   129	23 -7.5 16 Dbjectives LA01	dB(A) dB dB dB dB dB dB dB dB dB cB dB(A) dB dB dB dB(A)
Total time duration of combined events  Notes source level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries recenne;  Façade reflection  Impact at searcs if façade  Reduction through open window (also minus 2.5 dB faç.  Impact miside open window  CAR MOVEMENT TO DAY  Notes ource level for single event  Duration of single event	67.5 LAeq 62 0 5 sade) Creep LAeq 6 32 903.0	62 3 3 	270.0    LA10 1hr   N/A   0   30   50   1.0	75  18 -7.5 11  Objectives LA01 73	Seconds  4B(A)  4B  4B  4B  4B  4B  6B  6B  6B  6B  6A)  6B  6B  6A)	Total time duration of combined events  Notes source level for assessment time period  Totality: Impulsivements correction  Minimum distance to receive  Distance effection  Fraçale reflection  Fraçale reflection  Impact at answert façade  Reduction through open window (also minus 2.5 dB for Impact in sixile open window)  CAR MOVEMENT TO DAY  Notes source level for single event  Duration of single event	67.5 LAeq 62 0 10 wde) 9.912218 Creep LAeq 62 32 903.0	62   S   -1   2   10   -7.5   2   Acoustic   LAeq	LA10 1hr N/A 0 88 89 5.4 -5 N/A -7.5 N/A -7.5 N/A 129 3612.0	75 23 -7.5 16 Dbjectives LA01 73	dB(A) dB dB dB dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Total time duration of combined owners  Notes source level for ansessment time period  Tonality / Impulsiveness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barries craeming  Fayela rediction  Impact at a nearest façade  Rediction through open window (also minus 2.5 dB fay)  Impact maid open window  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Duration of single event  Duration of single event  Total time duration of combined events	5 178837 LAeq 62 0 5 side) 5 side) 6 1 178837 Creep LAeq 6 2 32 903.0 LAeq	62 3 3 	270.0  LA10 lbr N/A 0 30 50 19 5 N/A -7.5 N/A -7.5 N/A 129 3612.0  LA10 lbr	75 18 -7.5 11	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Totality / Impediatelymens correction  Minimum distance to receiver  Distance attenuation of dB per doubling of distance)  Barries creening  Barries creening  Readscion through open window (also minus 2.5 dB fay  Impact rail are never façade  Readscion through open window  CAR MOVEMENT TO DAY  Noise source level for tingle event  Duration of single event  Duration of single event  Total time duration of combined events	67.5 LAeq 62 0 10 de) 9.912218 Creep LAeq 32 903.0 LAeq	62	LA10 1hr N/A 0 88 89 5.4 -5 N/A -7.5 N/A -7.6 LA10 70 129 3612.0 LA10 1hr	23 -7.5 16 Dbjectives LA01	dB(A) dB m dB dB dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Total time duration of combined owents  Notes source level for assessment time period  Tonality / Impulsiveness correction  Mainizan distance to receiver  Distance attenuation (6 dB per doubling of distance)  Barries corening  Fayade reflection  Impact at searcet façade  Reduction through open window (also minus 2 5 dB faça  Impact may be a searcet façade  Reduction through open window  CAR MOVEMENT TO DAY  Notes cource level for single event  Duration of single event  Number of events in the measurement period  Tord time duration of combined events  Notes cource level for single event  Number of events in the measurement period	5 5 62 0 5 62 0 62 62 62 62 62 62 62 62 62 62 62 62 62	62 3 3 	270.0  LA10 lbr N/A 0 30 50 1.9 5 N/A -7.5 N/A -7.6 LA10 70 129 3612.0  LA10 lbr 70	75  18 -7.5 11  Objectives LA01 73	Seconds  6B(A)  6B  6B  6B  6B  6B  6B(A)  6B  6B(A)  6B  6B(A)	Totals time duration of combined events  Notes source level for assessment time period  Totality / Impulsiveness currection  Maintaine thateace to teceive  Distance effection of 6 dB per doubling of distance)  Barrier screening  Fagade reflection  Impact at an earest façade  Reduction through open window (also minus 2.5 dB fag  Impact at inside open window  CAR MOVEMENT TO DAY  Notice source level for timple event  Duration of simple event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period	67.5 LAeq 62 0 10 de) Creep LAeq 903.0 LAeq 68	62   S   -1   2   10   -7.5   2   Acoustic   LAeq	LA10 lhr N/A 0 18 39 5.4 -5 N/A -7.5 N/A LA10 129 129 3612.0 LA10 lhr 70	75 23 -7.5 16 Dbjectives LA01 73	dB(A) dB dB dB dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Total time duration of combined owners  Notes source level for ansessment time period  Tonality / Impulsiveness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barries craeming  Fayela rediction  Impact at a nearest façade  Rediction through open window (also minus 2.5 dB fay)  Impact maid open window  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Duration of single event  Duration of single event  Total time duration of combined events	5 178837 LAeq 62 0 5 side) 5 side) 6 1 178837 Creep LAeq 6 2 32 903.0 LAeq	62  3 3	270.0    LA10 lbr   N/A   0   30   50   50     1.9   5     N/A   -7.5   N/A     LA10   70   129   3612.0   LA10 lbr   70   0     CA10 lbr   70     CA10 lbr   70   0	75  18 -7.5 11  Objectives LA01 73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Totality / Impediatelymens correction  Minimum distance to receiver  Distance attenuation of dB per doubling of distance)  Barries creening  Barries creening  Readscion through open window (also minus 2.5 dB fay  Impact rail are never façade  Readscion through open window  CAR MOVEMENT TO DAY  Noise source level for tingle event  Duration of single event  Duration of single event  Total time duration of combined events	67.5 LAeq 62 0 10 de) 9.912218 Creep LAeq 32 903.0 LAeq	62  -1 -1 -2 -7.5 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	LA10 1hr N/A 0 18 59 5.4 5 N/A -7.5 N/A -1.5 N/A -1.5 129 3612.0 LA10 1hr 70 0	75  23 -7.5 16  Dbjectives LA01 73	dB(A) dB m dB dB dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Total time duration of combined owners  Notes source level for ansessment time period  Tonality / Impulsiveness correction  Minimum distance to receive  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Fayele reflection  Impact at a nearest if façede  Reduction through open window (also minus 2.5 dB façel  Impact and a period por minus of the period  CAR MOVEMENT TO DAY  Notes source level for single event  Duration of single event  Duration of single event  Nones or the duration of combined events  Notes ource level for single event  Notes ource level for some summent period  Total time duration of combined events  Notes ource level for accessment time period	5 5 62 0 5 62 0 62 62 62 62 62 62 62 62 62 62 62 62 62	62  3 3	270.0    LA10 lbr   N/A   0   30   50   50     1.9   5     N/A   -7.5   N/A     LA10   70   129   3612.0   LA10 lbr   70   0     CA10 lbr   70     CA10 lbr   70   0	75  18 -7.5 11  Objectives LA01 73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Totality / Improvious contents  Minimum distance to nective  Distance attentation of dB per doubling of distance)  Barries creening  Façade reflection  Impact as learnest façade  Reduction through open window (also minus 2.5 dB façilimpact tails are pear window)  CAR MOVEMENT TO DAY  Noise source level for timple event  Duration of single event  Duration of single event  Noise source level for obsessment time duration  Noise source level for for suspensive events  Noise source level for for suspensive events  Totality / Impalicyments continued events	67.5 LAeq 62 0 10 de) Creep LAeq 903.0 LAeq 68	62  -1 -1 -2 -7.5 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	LA10 1hr N/A 0 18 59 5.4 5 N/A -7.5 N/A -1.5 N/A -1.5 129 3612.0 LA10 1hr 70	75  23 -7.5 16  Dbjectives LA01 73	dB(A) dB m dB dB dB dB(A) dB dB(A) dB dB(A) dB dB(A)
Total time duration of combined ovents  Notes course level for assessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (4 dB per doubling of distance)  Barries (seeming  Fapche reflection  Impact at a searce if fapche  Reduction through open window (also minus 2 5 dB fapc  Impact missed open window  CAR MOVEMENT TO DAY  Notes ource level for single event  Duration of single event  Number of events in the measurement period  Toral time duration of combined events  Notes ource level for assessment time period  Toral time duration of combined events  Notes ource level for assessment time period  Toral time duration of combined events  Notes ource level for assessment time period  Torality / Impulsiveness correction  Minimum distincts to receiver	5 5 62 0 5 62 0 62 62 62 62 62 62 62 62 62 62 62 62 62	62  3 3	270.0  LA10 lbr N/A 0 30 50 19 5 N/A -7.5 N/A  Quality 0  LA10 70 129 3612.0  LA10 lbr 70 0 92	75  18 -7.5 11  Objectives LA01 73	Seconds  dB(A)  dB  eB  dB  dB  dB  dB  dB  dB  dB  dB	Totals time duration of combined events  Notes source level for assessment time period  Totality / Impulsiveness correction  Maintain distance to inceive  Distance effection of 6 db per doubling of distance)  Barrier screening  Fagade reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB fag  Impact at inside open window (also minus 2.5 dB fag  Impact in side open window  CAR MOVEMENT TO DAY  Notice source level for timple event  Duration of windo event  Number of events in the measurement period  Total time duration of combined events  Notes source level for assessment time period  Total time duration of combined events  Notes source level for assessment time period  Total time duration of combined events  Notes source level for assessment time period  Totality / Impulsiveness correction	67.5 LAeq 62 0 10 de) Creep LAeq 903.0 LAeq 68	62	LA10 1hr N/A 0 18 39 5.4 -5 N/A -7.5 N/A -7.6 LA10 70 129 3612.0 LA10 1hr 70 60	75  23 -7.5 16  Dbjectives LA01 73	dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB(A)  dB  dB(A)  Seconds  Events  Seconds
Total time duration of combined owers  Notes our ce level for ansessment time period  Tonality / Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Façale reflection  Impact at nearest façade  Reduction through open window (also minus 2.5 dB façalimpet taside open window  CAR MOVEMENT TO DAY  Notes source level for single event  Duration of single event  None or	5 5 62 0 5 62 0 62 62 62 62 62 62 62 62 62 62 62 62 62	62 3 3 -5 -5 -2 3 178637 Acoustic LAeq 1hr -68	270.0  LA10 lbr N/A 0 30 50 1.9 5 N/A -7.5 N/A -7.5 N/A 129 3612.0 LA10 lbr 70 0 92	75  18 -7.5 11  Objectives LA01 73	Seconds  dB(A)  dB  dB  dB  dB  dB  dB  dB  dB  dB  d	Total time duration of combined events  Noise source level for assessment time period  Totality / Improvisioners correction  Minimum distance to nective  Distance attenuation (a dB per doubling of distance)  Barries creening  Barries creening  Barries creening  Barries creening  Barries to the control of the period of distance)  Barries creening  Readstroom  Impact tail a nearest fleaded  Control of the cont	67.5 LAeq 62 0 10 de) Creep LAeq 903.0 LAeq 68	62	LA10 1hr N/A 0 18 39 5.4 -7.5 N/A -7.5 N/A -7.5 N/A  120 121 120 121 120 123 129 129 129 129 129 129 129 129 129 129	75  23 -7.5 16  Dbjectives LA01 73	dB(A) dB m dB dB dB dB(A) dB dB(A) dB dB(A) dB dB(A)
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Total time duration of combined owers  Noise source lawel for ansessment time period  Tonality 'Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Façole reflection  Impact at nearest façade  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Noise source level for single event  Tonality 'Impulsiveness correction  Total time duration of combined events  Noise ource level for assessment time period  Total time duration of combined events  Noise ource level for assessment time period  Total time duration of combined events  Noise ource level for assessment time period  Total time duration of combined events  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Barries creening	67.5 LAeq 62 0 5 side)  Creep LAeq 63 32 903.0 LAeq 68 0	62   3   3   -5   5   5   -7.5   -2   3   1   2   5	270.0  LA10 1hr  N/A  0  30  50  1.9  5  N/A  -7.5  N/A  Quality 0  LA10  70  12  3612.0  LA10 1hr  70  0  92  49	18 -7.5 11 bjectives LA01 73 LA01 1hr 73	Seconds  4B(A)  4B  4B  4B  4B  4B  4B  6B(A)  4B  5Seconds  Events  Seconds  4B(A)  4B(A)  4B(A)  4B(A)  4B(A)  4B(A)	Total time duration of combined events  Noise source level for assessment time period  Totality / Impairowness correction  Minimum distance to nective  Distance attendants on 6 dB per doubling of distance)  Barries screening  Barries screening  Reduction  Impart at a nearest fleade  Reduction through open window (sloo minus 2 5 dB for  Impart tailed open window  Noise source level for timple event  Direction of timple event  Direction of timple event  Noise source level for timple event  Noise source level for timple event  Noise source level for favesessment time period  Total time duration of combined events  Noise source level for assessment time period  Totalitume duration of combined of the period  Distance extension (of dB per doubling of distance)  Barries creening  Barries creening  Barries creening  Barries creening	67.5 LAeq 62 0 10 cde) Creep LAeq 63 2 903.0 LAeq 68 0	62	LA10 1hr N/A 0 88 39 55.4 5.5 N/A -7.5 N/A 120 1210 3612.0 LA10 1hr 70 0 60 34 5.6 5.6	23 -7.5 16 Dbjectives LA01 73	dB(A) dB dB dB dB dB dB dB dB dB dB(A) dB dB dB(A) dB
Total time duration of combined owers  Notes our ce lavel for ansessment time period  Tonality 'Impulsiveness correction  Minimum distance to receiver  Distance attenuation (4 dB per doubling of distance)  Barries screening  Fayake reflection  Impured at a earset façade  Reduction through open window (also minus 2.5 dB façal  Impured and the server façade  Reduction through open window  CAR MOVEMENT TO DAY  Notes cource level for single event  Duration of single event  Number of events in the measurement period  Total time duration of combined events  Notes cource level for assessment time period  Total time duration of combined events  Notes cource level for assessment time period  Total time duration of combined events  Notes cource level for assessment time period  Total with the control of time duration of combined events  Notes cource level for assessment time period  Total with the control of time duration of combined events  Reflection  Barries screening  Façade reflection  Impact at a searcest façade	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	62   3   3   5   5   5   5   5   5   5   5	270.0  LA10 1hr  N/A  0  30  50  1.9  5  N/A  -7.5  N/A  70  129  3612.0  LA10 1hr  70  92  49  0.0  5  13	18 -7.5 11   Dijectives   LA01   T3   LA01   LA01   LA01   LA01   LA01   T3   LA01   T3   LA01   LA0	Seconds  4B(A)  4B (A)  4B (A)  4B (A)  4B (A)  4B (A)  5C (A)  5C (A)  5C (A)  6C (A)	Total time duration of combined events  Noise source level for assessment time period  Totality 'Impeliationses correction  Minimum distance to receiver  Distance attenuation (-6 did per doubling of distance)  Barrie screening  Façade reflection  Impact at a nearest façade  Reduction through open window (also minus 2.5 dB for  Impact at a nearest façade  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Duration of single event  Duration of single event  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Reduces effection  Reduces reflection  Impact at a nearest façade	67.5 LAeq 62 0 10 dde)  Septimizer Creep LAeq 62 0 10 10 de) 21 21	62	LA10 1hr N/A 0 18 39 5.4 5 N/A -7.5 N/A 129 3612.0 LA10 1hr 70 0 1 LA10 1hr 70 0 1 LA10 1hr 70 34 5.6 5.6 5.6 5.6	75   23   -7.5   16     25     26     26     26     26     26     26     28	dB(A) dB m dB
Total time duration of combined owers  Noise source lawel for ansessment time period  Tonality 'Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Façole reflection  Impact at nearest façade  CAR MOVEMENT TO DAY  Noise source level for single event  Duration of single event  Noise source level for single event  Tonality 'Impulsiveness correction  Total time duration of combined events  Noise ource level for assessment time period  Total time duration of combined events  Noise ource level for assessment time period  Total time duration of combined events  Noise ource level for assessment time period  Total time duration of combined events  Distance attenuation (-6 dB per doubling of distance)  Barries creening  Barries creening	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	62   3   3   -5   5   5   -7.5   -2   3   1   2   5	270.0  LA10 1hr  N/A  0  30  50  1.9  5  N/A  -7.5  N/A  Quality 0  LA10  70  12  3612.0  LA10 1hr  70  0  92  49	18 -7.5 11 bjectives LA01 73 LA01 1hr 73	Seconds  4B(A)  4B  4B  4B  4B  4B  4B  6B(A)  4B  5Seconds  Events  Seconds  4B(A)  4B(A)  4B(A)  4B(A)  4B(A)  4B(A)	Total time duration of combined events  Noise source level for assessment time period  Totality / Impairowness correction  Minimum distance to nective  Distance attendants on 6 dB per doubling of distance)  Barries screening  Barries screening  Reduction  Impart at a nearest fleade  Reduction through open window (sloo minus 2 5 dB for  Impart tailed open window  Noise source level for timple event  Direction of timple event  Direction of timple event  Noise source level for timple event  Noise source level for timple event  Noise source level for favesessment time period  Total time duration of combined events  Noise source level for assessment time period  Totalitume duration of combined of the period  Distance extension (of dB per doubling of distance)  Barries creening  Barries creening  Barries creening  Barries creening	67.5 LAeq 62 0 10 dde)  Septimizer Creep LAeq 62 0 10 10 de) 21 21	62	LA10 1hr N/A 0 88 39 55.4 5.5 N/A -7.5 N/A 120 1210 129 3612.0 LA10 1hr 70 0 60 34 5.6 5.6	23 -7.5 16 Dbjectives LA01 73	dB(A) dB dB dB dB dB dB dB dB dB dB(A) dB dB dB(A) dB

STAGE S ACTIVITY NOISE PREDICTION CALCU	LAHONS	(LAND BE B	nd L <sub>x01 the</sub>	kvek are rep	resented as	N/A if the duration of events do not occur for $10\%$ or $1\%$	oor the 1 n	our period	,		
R3: Existing dwellings to the east						R4: Future dwellings to the immediate east					-
CAR MOVEMENT FROM DAY	Creep	Acoustic				CAR MOVEMENT FROM DAY		Acoustic	Quality C	Dijectives	
	LAeq		LA10		$\vdash$			LAeq	LA10		1
Noise source level for single event Duration of single event	-	8	70	73	dB(A) Seconds	Noise source level for single event Duration of single event	-	58	70	73	EB(A) Seconds
Number of events in the measurement period	32		129		Events	Number of events in the measurement period	32		129		Events
Total time duration of combined events	903.0		3612.0		Seconda	Total time duration of combined events	903.0		3612.0		Seconda
	LAeq	LAeq lhr	LA10 1hr	LA01 lhr			LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	6S	68	70	73	(B(A)	Noise source level for assessment time period	6S	68	70	73	(B(A)
Tonality / Impulsiveness correction	0	Щ,	0		έB	Tonality / Impulsiveness correction	0	Ь.	0		έB
Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	_		50		n /B	Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)	_		3.8		en en
Barrier screening	_		0.0		6B	Barrier screening	_		5.6		dB
Façade reflection			5		éB	Façade reflection			.5		éB
Impact at nearest façade	10	10	12	15	dB(A)	Impact at nearest façade	17	17	19	22	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	6B	Reduction through open window (also minus 2.5 dB fac	(ade)	-7.5	-7.5	-7.5	dB.
Impact inside open window		3	- 5	8	dB(A)	Impact inside open window		9	11	14	dB(A)
	10.7059	10.7059	Onelitu	Nia stissa	$\overline{}$		47,43894	47.43894	Onelitu C	Vicio attano	-
TRUCK ENGINE STARTS Loading bay	Creep LAeq		Quality C		1 1	TRUCK ENGINE STARTS Loading bay	Creep LAeq		Quality C		4
Noise source level for single event		S	Sl	\$3	(B(A)	Noise source level for single event		7S	Sl	23	(B(A)
Duration of single event		-	3		Seconds	Duration of single event		-	3		Seconds
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	6.0		12.0		Seconds	Total time duration of combined events	6.0		12.0		Seconds
	LAeq	LAeq lhr	LA10 1hr	LA01 lbr	$\Box$		LAeq	LAeq lhr	LA10 1hr	LA01 1hr	
Noise source level for assessment time period	56	53		N/A	dB(A)	Noise source level for assessment time period	56 0	53	N/A	N/A	dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	l °		5 08		6B	Tonality / Impulsiveness correction Minimum distance to receiver	F "	ь.	5		éB.
At minium distance to receiver  Distance attenuation (-6 dB per doubling of distance)			US 50		rt dB	Distance attenuation (-6 dB per doubling of distance)	_		36		es dB
Onsite building screening			5.0		4B	Onsite building screening			5.0		6B
Façade reflection		2	.5		6B	Façade reflection			.5		éB
Impact at nearest façade	-6	-4	N/A	N/A	dB(A)	Impact at nearest façade	7	9	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB fac	;ade)	-7.5	-7.5	-7.5	άB
Impact inside open window		-12	N/A	N/A	dB(A)	Impact inside open window		2	N/A	N/A	dB(A)
	Creep	Aconstic	Quality C	Diactions			Creep	Aconstic	Quality C	Phiactime	_
TRUCK MOVEMENT TO SITE	LAeq	LAeq	LA10		1 1	TRUCK MOVEMENT TO SITE	LAeq	LAeq	LA10	LA01	1
Noise source level for single event	20004	7	89	90	(B(A)	Noise source level for single event	224	37	89	90	(B(A)
Duration of single event			5		Seconds	Duration of single event		5			Seconds
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	170.0		340.0		Seconds	Total time duration of combined events	170.0		340.0		Seconds
	LAeq	LAeq lhr	LAI0 1hr	LA01 lhr	$\vdash$		LAeq	LAeq lhr	LA10 1hr	LA01 lhr	
Noise source level for assessment time period	80	77	N/A 0	90	iB(A)	Noise source level for assessment time period	80	77	N/A	90	dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	-	27		27	43	Tonality / Impulsiveness correction Minimum distance to receiver	-	25	0	85	43
Distance attenuation (-6 dB per doubling of distance)		50		50	m.	Distance attenuation (-6 dB per doubling of distance)		39		30	rib.
Barrier screening		.5		8.5	43	Barrier screening		5.4		5.4	63
Façade reflection		2	5		6B	Façade reflection		2	.5		dB.
Impact at nearest façade	23	20	N/A	34	dB(A)	Impact at nearest façade	28	25	N/A	39	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	έΒ
Impact inside open window	_	13	N/A	26	dB(A)	Impact inside open window	_	18	N/A	31	dB(A)
	Creep	Aconstic	Quality C	Dhiectives	-		Creep	Aconstic	Quality C	hiectives	-
TRUCK MOVEMENT FROM SITE	LAeq	LAeq	LA10		1 1	TRUCK MOVEMENT FROM SITE	LAeq	LAeq		LA01	1
Noise source level for single event		7	89	90	dB(A)	Noise source level for single event		37	89	90	4B(A)
Duration of single event			5		Seconds	Duration of single event			5		Seconds
Number of events in the measurement period	2		4		Events	Number of events in the measurement period	2		4		Events
Total time duration of combined events	170.0	T 4 1"	340.0	IT 101 11	Seconds	Total time duration of combined events	170.0	T 4 3"	340.0	T 101 11	Seconds
Noise source level for assessment time period	LAeq 80	LAeq lbr	LA10 1hr N/A	LA01 1hr 90		Noise source level for assessment time period	LAeq 80	LAeq lhr	LA10 1hr N/A	LA01 1hr 90	
Noise source sever for assessment time period Tonality / Impulsiveness correction	0	- 11	0 N/A	90	68(A)	Noise source level for assessment time period Tonality / Impulsiveness correction	0	11	N/A	90	dB(A)
Minimum distance to receiver	3	27		27		Minimum distance to receiver	<u> </u>	85		85	11
Distance attenuation (-6 dB per doubling of distance)		50		50	433	Distance attenuation (-6 dB per doubling of distance)		39		39	413
Barrier screening	-4	.5		8.5	dB	Barrier screening		5.4		5.4	dB.
Façade reflection		2	5		άB	Façade reflection		2	.5		άB
Impact at nearest façade	23	20	N/A	34	dB(A)	Impact at nearest façade	28	25	N/A	39	dB(A)
Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	6B	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	έB
Impact inside open window	_	13	N/A	26	dB(A)	Impact inside open window	_	18	N/A	31	dB(A)
	Creep	Aconstic	Quality C	Diectives	$\vdash$		Crean	Acoustic	Ouality C	Dhiectives	_
TRUCK AIRBRAKES	LAeq	LAeq	LA10	LA01	1 1	TRUCK AIRBRAKES	LAeq	LAeq		LA01	1
Noise source level for single event		0	98	102	(B(A)	Noise source level for single event		20	98	102	(B(A)
Duration of single event			2		Seconds	Duration of single event			2		Seconds
Number of events in the measurement period	4		16		Events	Number of events in the measurement period	4		16		Events
Total time duration of combined events	8.0		32.0		Seconds	Total time duration of combined events	\$.0		32.0		Seconds
	LAeq			LA01 lhr	$\Box$		LAeq			LA01 1hr	
Noise source level for assessment time period	69	69	N/A 5	N/A	iB(A)	Noise source level for assessment time period	69	69	N/A	N/A	iB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	,	3			43	Tonality / Impulsiveness correction Minimum distance to receiver	F "	L .	5		435
priminum my que to receiver	<b>-</b>		50		ri co	Distance attenuation (-6 dB per doubling of distance)	-		30		en. dB
Distance attenuation (-6 dB new doubling of distance)						because accommon (.e. mp has nonounit or appares)	1		**		
			15		ćn.	Barrier screening		. 1	5.4		
Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Facade reflection		-8 2	5.5		6B	Barrier screening Facade reflection		-1	5.4		4B
Barrier screening Façade reflection	13	-8 2 18	.5 N/A	N/A	4B 6B 6B(A)	Façade reflection	18	-1 2 23	5.4 .5 N/A	N/A	6B
Barrier screening		2	.5	N/A -7.5 N/A	4B 6B 6B(A) 4B	Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fac Impact inside open window		2	.5	N/A -7.5 N/A	

STAGE 3 ACTIVITY NOISE PREDICTION CALCU	LATIONS	(Lanne a	nd Lyon the h	are rep	resented as			our period	)		
R3: Existing dwellings to the east	Creep	Aconstic	Quality O	hiactions		R4: Future dwelling: to the immediate east	Creep	Aconstic	Quality C	Phiactions	_
TRUCK AIRBRAKES at loading bay	LAeq	LAeq	LA10	LA01		TRUCK AIRBRAKES at loading bay	LAeq		LA10	LA01	
Noise source level for single event	9	0	98	102	6B(A)	Noise source level for single event	9	0	98	102	6B(A)
Duration of single event			16		Seconds	Duration of single event			16		Seconds
Number of events in the measurement period	4 S.0		32.0		Events	Number of events in the measurement period	4 S.0		32.0		Events
Total time duration of combined events		T As a like		LA01 lbr	Seconds	Total time duration of combined events	LAeq	T As a Thr		IT 401 1be	Seconds
Noise source level for assessment time period	LAeq 69	LAeq Inr	LA10 1hr N/A	N/A	(B(A)	Noise source level for assessment time period	69	69	N/A	LA01 lhr N/A	(B(A)
Tonality / Impulsiveness correction	0	09	N/A	N/A	4B(A)	Tonality / Impulsiveness correction	09	09	IV/A	N/A	dB(A)
Minimum distance to receiver	Ť	3	ns s			Minimum distance to receiver	Ť		i6		
Distance attenuation (-6 dB per doubling of distance)			50		/B	Distance attenuation (-6 dB per doubling of distance)			36		/B
Onsite building screening		-1	5.0		dB	Onsite building screening		-1	5.0		dB
Façade reflection		2			43	Façade reflection		2	.5		410
Impact at nearest façade	7	12	N/A	N/A	6B(A)	Impact at nearest façade	21	26	N/A	N/A	dB(A)
Reduction through open window (also minus 2.5 dB faça	ide)	-7.5	-7.5	-7.5	άB	Reduction through open window (also minus 2.5 dB faç	nde)	-7.5	-7.5	-7.5	dB.
Impact inside open window		5	N/A	N/A	dB(A)	Impact inside open window		18	N/A	N/A	dB(A)
TRUCK UNLOADING at loading bay	Creep		Quality O		1 1	TRUCK UNLOADING at loading bay	Creep		Quality (		1
	LAeq	LAeq	LA10		$\vdash$		LAeq	LAeq			
Noise source level for single event	7	2	80	82	dB(A)	Noise source level for single event	<del>- 7</del>	2	80	82	dB(A)
Duration of single event Number of events in the measurement period	1	9	4		Seconds	Duration of single event Number of events in the measurement period	1	9	4		Seconds
Number of events in the measurement period  Total time duration of combined events	900.0	-	3600.0		Events Seconds	Number of events in the measurement period  Total time duration of combined events	900.0		3600.0		Events Seconds
T GAME AND OTHER OF CONTROLLER SAGERY	LAeq	I Ago 1br	LA10 1hr	T 401 11	acconds	a continue amonom or companied society	LAeq	I Ago 1br		LA01 lhr	
Noise source level for assessment time period	75	25 25	SO SO	\$2	(B(A)	Noise source level for assessment time period	75	75	SO SO	\$2	(B(A)
Tonality / Impulsiveness correction	73	-73	- 30	92	(B(A)	Tonality / Impulsiveness correction	1/3	- /3	5	9.2	dB(A)
Minimum distance to receiver	Ť	2	08			Minimum distance to receiver	Ť				0
Distance attenuation (-6 dB per doubling of distance)			50		dB	Distance attenuation (-6 dB per doubling of distance)			36		dB.
Onsite building screening			5.0		dB	Onsite building screening			5.0		éB
Façade reflection		2			43	Façade reflection			.5		éB
Impact at nearest façade	13	18	23	25	6B(A)	Impact at nearest façade	26	31	36	38	dB(A)
Reduction through open window (also minus 2.5 dB faça	ide)	-7.5	-7.5	-7.5	ćΒ	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	dВ
Impact inside open window		10	15	17	dB(A)	Impact inside open window		24	29	31	dB(A)
PEOPLE TALKING OUTSIDE	Creep		Quality O		1 1	PEOPLE TALKING OUTSIDE	Creep		Quality (		1
	LAeq		LA10	LA01	$\sqcup$				LA10		
Noise source level for single event	6		70	73	iB(A)	Noise source level for single event	- 6	2	70	73	éB(A)
Duration of single event	,		00		Seconds	Duration of single event	,		00		Seconda
Number of events in the measurement period Total time duration of combined events	600.0		2400.0		Events	Number of events in the measurement period Total time duration of combined events	600.0		2400.0		Events
1 orac time duration of combined events	LAeq	T Aso lbr	LA10 1hr	T 401 1hr	Seconds	1 orac time duration of combined events	LAeq	T Aso lbr		LA01 lhr	Seconds
Noise source level for assessment time period	60	60	70	73	(B(A)	Noise source level for assessment time period	60	60	70	73	(B(A)
Tonality / Impulsiveness correction	0	00	0	/3	(B(A)	Tonality / Impulsiveness correction	0	- 00	- 0	13	dB(A)
Minimum distance to receiver	_	2	50			Minimum distance to receiver	<u> </u>	_	8		
Distance attenuation (-6 dB per doubling of distance)			48		43	Distance attenuation (-6 dB per doubling of distance)		-	18		69
Barrier screening			3.0		dB.	Barrier screening		-1			dB.
Façade reflection		2			dB.	Façade reflection		2	.5		dB.
Impact at nearest façade	2	2	12	15	dB(A)	Impact at nearest façade	28	28	38	41	dB(A)
Reduction through open window (also minus 2.5 dB faça	ide)	-7.5	-7.5	-7.5	43	Reduction through open window (also minus 2.5 dB faça	nde)	-7.5	-7.5	-7.5	633
Impact inside open window		-6	4	7	6B(A)	Impact inside open window		21	30	33	dB(A)
	1.518107	1.518107					633,7075	633.7075			
TRUCKS WITH REFRIGERATION UNIT	Creep		Quality O			TRUCKS WITH REFRIGERATION UNIT	Creep	Acoustic	Quality (	Objectives	1
	LAeq	LAeq	LA10	LA01	$\vdash$		LAeq	LAeq	LA10	LA01	_
Noise source level for single event	S		82	\$3	6B(A)	Noise source level for single event	- 8	1	82	\$3	dB(A)
Duration of single event Number of events in the measurement period	1	9	00		Seconds	Duration of single event Number of events in the measurement period	1	9	00		Seconds
Total time duration of combined events	900.0		10000		Events	Total time duration of combined events	900.0	_	1800.0		Events Seconds
2 Over 1880 and districts of Controllient events					Kananata.	2 Over tank distribut of complined events	LAeq	LAen lbr		LA01 1hr	
		LAen lbr	1800.0 LA10 1hr	LA01 lbr	Seconds	Noise source level for assessment time period					
Noise source level for assessment time period	LAeq	LAeq lhr 78	1800.0 LA10 1hr 82	LA01 1hr 83	Seconds dB(A)		\$1	78	82	\$3	(B(A)
Noise source level for assessment time period Tonality / Impulsiveness correction		LAeq lhr 78	LA10 1hr	LA01 1hr 83		Tonality / Impulsiveness correction	\$1 0	78	82	\$3	(B(A)
Noise source level for assessment time period Tonality / Impulsiveness correction Musimum distance to receiver	LAeq Sl	78	LA10 1hr 82	LA01 1hr 83		Tonality / Impulsiveness correction  Minimum distance to receiver	\$1	78	82	\$3	
Tonality / Impulsiveness correction Minimum distance to receiver	LAeq Sl	78	82 0	LA01 1hr 83		Tonality / Impulsiveness correction Minimum distance to receiver	\$1	78	82 0	\$3	
Tonality / Impulsiveness correction Mainimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening	LAeq Sl	78	82 0 08 50	LA01 1hr 83		Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening	\$1	78	82 0 66 36	83	dB m
Tonality / Impulsiveness correction Minimum distance to receiver Distance artenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening Onsite building screening	LAeq Sl	78	82 0 08 50	LA01 1hr 83		Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening Onsite building screening	\$1	78	82 0	83	éB m éB
Tonality /Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening Onsite building screening Façade reflection	LAeq S1 0	78 3 -1 2	82 0 08 50 0 5.0 5.0	\$3	6B(A) 6B 81 6B	Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening Onsite building screening Façade reflection	0	78 -3 -1 2	82 0 66 36 0 5.0	\$3	dB m dB dB
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening Onsite building screening Façade reflection Impact at nearest façade	1.Aeq \$1 0	78 3 1 2 16	EA10 1hr 82 0 08 50 0 5.0 5 20	\$3	6B(A) 6B 86 6B	Tonshiv / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening Onsite building screening Façade reflection Impact at a nearest façade	\$1 0	78 	82 0 66 36 0 5.0 .5	83	EB EB EB EB EB EB EB
Tonality /Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration must truck directivity / screening Onate building screening Façale reflection Impact at nearest façade Reduction through open window (slee minus 2.5 dB faça	1.Aeq \$1 0	78 3 -1 2 16 -7.5	EA10 1hr  82 0 08 50 0 5.0 -7.5	21 -7.5	6B(A) 6B 6B 6B 6B 6B 6B 6B 6B 6B	Tonality / Impulsiveness correction   Maintum distance to receiver   Distance attenuation (-6 dB per doubling of distance)   Refrigeration unit truck disease(*) screening   Onusite building screening   Fayade reflection   Impact at nearest façade   Reduction through open window (also minus 2.5 dB fay	\$1 0	78 -1: -2: 29 -7.5	82 0 66 36 0 5.0 5 33 -7.5	34 -7.5	6B 6B 6B 6B 6B 6B 6B(A)
Tonality /Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration must truck directivity / screening Onate building screening Façale reflection Impact at nearest façade Reduction through open window (slee minus 2.5 dB faça	1.Aeq \$1 0	78 3 1 2 16	EA10 1hr 82 0 08 50 0 5.0 5 20	\$3	6B(A) 6B 6B 6B 6B	Tonshiv / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity / screening Onsite building screening Façade reflection Impact at a nearest façade	\$1 0	78 	82 0 66 36 0 5.0 .5	83	EB EB EB EB EB EB EB
Tonality /Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Redispersion unit ruck directivity / screening Onsite building screening Façade reflection Impact at inearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open window)	1Aeq \$1 0	78 3 -1 -1 2 16 -7.5 8	LA10 1hr   82	21 -7.5 13	6B(A) 6B 6B 6B 6B 6B 6B 6B 6B 6B	Totality: Impulsiveness correction Maintain distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity: screening Onusire building corening Fayade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window	32 nde)	78 1: 29 7.5 22	82 0 66 36 0 55.0 -5 33 -7.5 26	34 -7.5 27	6B 6B 6B 6B 6B 6B 6B(A)
Tonality /Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration must truck directivity / screening Onate building screening Façale reflection Impact at nearest façade Reduction through open window (slee minus 2.5 dB faça	I.Aeq S1 0	78 3 -1 2 16 -7.5 8	LA10 1hr \$2 0 08 50 0 5.0 -7.5 12 Quality O	21 -7.5 13	6B(A) 6B 6B 6B 6B 6B 6B 6B 6B 6B	Tonality : Impulsiveness correction   Maintum distance to receiver   Distance attenuation (-6 dB per doubling of distance)   Refrigeration unit truck disease(*) screening   Onusite buildings screening   Fayade reflection   Impact at nearest façade   Reduction through open window (also minus 2.5 dB fay	32 ade)	78  6  -3  -1: 29  -7.5  22  Acoustic	82 0 66 36 0 55.0 .5 33 -7.5 26	34 -7.5 27	6B 6B 6B 6B 6B 6B 6B(A)
Tonality /Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit ruck directivity / screening Onsite building screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faça Impact inside open window WASTE COLLECTION INDUSTRIAL BIN - Service	1Aeq \$1 0	78 3 -1 -1 2 16 -7.5 8	LA10 1hr 82 0 08 50 0 0 5.0 5 20 -7.5 12 Quality O LA10	21 -7.5 13 bjectives	6B(A) 6B	Totality: Impulsiveness correction Maintaine distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit truck directivity: screening Onuste building corening Fayade reflection Impact at nearest facade Reduction through open window (also minus 2.5 dB faç Impact inside open window WASTE COLLECTION INDUSTRIAL BIN - Service	32 nde)	78 1: 29 7.5 22	\$2 0 66 36 0 55.0 5 33 -7.5 26 Quality Q	34 -7.5 27 Dijectives LA01	6B 6B 6B 6B 6B 6B 6B 6B(A)
Tonality 'Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit ruck directory / screening Ouss'e building screening Feedle reflection Impact at a nearest façade Redisciton through open window (also minus 2.5 dB faça Impact inside open window WASTE COLLECTION INDUSTRIAL BIN - Service Notes source level for single event	I.Aeq S1 0	78 3 -1 2 16 -7.5 8 Acoustic LAeq 2	LA10 lhr 82 0 08 50 00 5.0 -7.5 12 Quality O LA10 97	21 -7.5 13	68(A) 68 68 68 68 68 68 68 68 68 68 (A)	Tonainy / Impulsiveness correction Maintern districts to inceive Distance attenuation (-6 dll per doubling of distance) Refrigeration untruck directivity / screening Onate building screening Façale reflection Impact at nearest façade Reflection through open window (also minus 2.5 dll faç Impact in learness and the server façade Waster COLLECTION INDUSTRIAL BIN - Service Nose source level for simple event	32 ade)	78 61: 2 297:5 22 Acoustic LAeq 2	\$2 0 66 36 0 5.0 5 -7.5 26 Quality C LA10	34 -7.5 27	6B 6B 6B 6B 6B 6B 6B 6B 6B 6B
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Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Refrigeration unit with directary / screening Onare building screening Façade reflection Impact at nearest façade Rediction through open window (also minus 2.5 dB faça Impact distance open window WAS TE COLLECTION INDUSTRIAL, BIN - Service Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes ource level for single event Notes ource level for seasonment time period Totality Time duration of combined events Monte ource level for assessment time period Tonality / Impublicance screenston Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	LAeq   \$1   0   19   sie   19   sie   19   sie   19   sie   11   180.0   LAeq   55   55   55   55   55   55   55	78  3 3 -1 2 16 -7.5 8  Acoustic LAeq 1  LAeq lbr \$2  3 3	LA10 1hr   82   0   0   0   0   0   0   0   0   0	21 -7.5 13 bjectives LA01 102	dB(A) dB n dB	Toosily: Impulsiveness correction Maintaine distance to receiver Distance attenuation (-6 dli per doubling of distance) Refrigeration intruck directivity / screening Oustie building screening Peade reflection Impute at nearest facade Reduction through open window (also minus 2.5 dB for Reduction through open window (also minus 2.5 dB for Reduction through open window WaSTE COLLECTION INDUSTRIAL BIN - Service Notice source levels for tingle event Direction of imple event Direction of imple event Notice source level for tingle event Notice source level for for severament period Toosit impediantion of combined events Notice source level for severament time period Toosity impute for severament time period Toosity impute for severament function Maintain distance to receiver	32 32 34e)  Creep  LAeq  1 180.0  LAeq  85	78  6  -1  29  -7.5  22  Acoustic  LAeq  1  LAeq lbr  \$2	82 0 0 166 336 0 5 5 33 -7.5 26	34 -7.5 27 Dijectives LA01 102	eB
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Tonality / Impulsiveness correction Minimizan distance to receiver Distance attenuation (-6 dB) per doubling of distance) Refrigeration unit ruck directarity / screening Fayable refliction Impact at nearest façade Rediction through open window (sloo minus 2.5 dB faça Impact inside open vindow (sloo minus 2.5 dB faça Impact inside open vindow WAS TE COLLECTION INDUSTRIAL BIN - Service Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes ource level for sacessment time period Total vindowness correction Minimizand distance to receiver Minimizand distance to receiver Distance attenuation (-6 dB) per doubling of distance) Onside building screening	LAeq   S1   O   O   O   O   O   O   O   O   O	78  3  -1  -1  16  -7.5  8  Acoustic LAeq  1  LAeq lhr  \$2  3  -1  -2  -2  -2  -3  -3  -3  -4  -4  -4  -4  -4  -4  -4	LA10 1hr   \$2	21 -7.5 13 bjectives LA01 102	68(A) 68 (A) 68	Toosity / Impulsiveness correction Mainturn distance to receiver Distance attenuation (-6 dl per doubling of distance) Refrigeration intruck directivity / screening Distance bruiding screening Packde reflection Imagerat at nearest facade Reduction chronology depen window (also minus 2.5 dB fac) Imagerat inside open window  WASTE COLLECTION INDUSTRIAL BIN - Service Notice source level for single event Duration of single event Number of events in the measurement period Tools if mus direction of combined events Notice source level for seessment time period Tools if mus direction of combined events Notice source level for assessment time period Tools immediately for assessment time period Tomality / Impulsiveness correction Mainturns distance to receive Distance attenuation (-6 dB per doubling of distance) Onsite building screening	32 ade)  Creep LAeq  1 180.0 LAeq S5 0	78  6  -1  -1  2  29  -7.5  22  Acoustic LAeq  LAeq lhr  \$2  -1  -2  -3  -5  -3  -5  -5  -8  -8	\$2 0 0 6 34 5 5 5 33 -7.5 26   I.Al0 97 80 2 360.0   I.Al0 lhr 97 5 33 36 6 6 7 7 8 8 9 7	34 -7.5 27 LA01 102 LA01 1hr 102	eB
Tonality 'Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB) per doubling of distance) Refigeration unit ruck directary! / screening Oussile building screening Payade reflection Imputed at search façade Reduction through open window (also minus 2.5 dB faça Imputed through open window WASTE COLLECTION INDUSTRIAL BIN - Service Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes cource level for assessment time period Total time duration of combined events Notes cource level for assessment time period Total with the service of the ser	LAeq   S1   O	78  3  -1  2  16  -7.5  8  Acoustic LAeq  1  LAeq lhr  \$2  2  2  2  3  -1  -1	LA10 lhr   82   0   0   0   0   0   0   0   0   0	21 -7.5 13 bjectives LA01 102	6B(A)  6B  10  6B  6B  6B  6B  6B  6B  6B  6B  6B  6	Tooshiy / Impulsiveness correction Minimum distance to receive Distance attenuation (+ 6d B) per doubling of distance) Refrigeration untrusk directivity / screening Onsite building screening Pagadar reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB for, Impact at nearest façade WASTE COLLECTION INDUSTRIAL BIN - Service Noise source level for simple event Duration of simple event Dura	32 dde)  Creep LAeq 1 180.0 LAeq 85 0	78  6 -1 -1: -2 29 -7.5 22  Acoustic LAeq 1:  LAeq lhr \$2 -1: -8 -4 -4 -46	\$2   0   66   36   0   5   5   33   -7.5   26   26   27   5   28   28   29   350.0   LA10 lhr   97   5   3   3   5   3   3   3   3   3   3   3   3   3   3	34 -7.5 27 Dijectives LA01 102	6B (8 )
Tonality / Impulsiveness correction Minimizan distance to receiver Distance attenuation (-6 dB) per doubling of distance) Refrigeration unit ruck directarity / screening Fayable refliction Impact at nearest façade Rediction through open window (sloo minus 2.5 dB faça Impact inside open vindow (sloo minus 2.5 dB faça Impact inside open vindow WAS TE COLLECTION INDUSTRIAL BIN - Service Notes source level for single event Duration of single event Number of events in the measurement period Total time duration of combined events Notes ource level for sacessment time period Total vindowness correction Minimizand distance to receiver Minimizand distance to receiver Distance attenuation (-6 dB) per doubling of distance) Onside building screening	LAeq   S1   O	78  3  -1  -1  16  -7.5  8  Acoustic LAeq  1  LAeq lhr  \$2  3  -1  -2  -2  -2  -3  -3  -3  -4  -4  -4  -4  -4  -4  -4	LA10 1hr   \$2	21 -7.5 13 bjectives LA01 102 LA01 lbr 102	68(A) 68 (A) 68	Toosity / Impulsiveness correction Mainturn distance to receiver Distance attenuation (-6 dl per doubling of distance) Refrigeration intruck directivity / screening Distance bruiding screening Packde reflection Imagerat at nearest facade Reduction chronology depen window (also minus 2.5 dB fac) Imagerat inside open window  WASTE COLLECTION INDUSTRIAL BIN - Service Notice source level for single event Duration of single event Number of events in the measurement period Tools if mus direction of combined events Notice source level for seessment time period Tools if mus direction of combined events Notice source level for assessment time period Tools immediately for assessment time period Tomality / Impulsiveness correction Mainturns distance to receive Distance attenuation (-6 dB per doubling of distance) Onsite building screening	32 dde)  Creep LAeq 1 180.0 LAeq 85 0	78  6  -1  -1  2  29  -7.5  22  Acoustic LAeq  LAeq lhr  \$2  -1  -2  -3  -5  -3  -5  -5  -8  -8	\$2 0 0 6 34 5 5 5 33 -7.5 26   I.Al0 97 80 2 360.0   I.Al0 lhr 97 5 33 36 6 6 7 7 8 8 9 7	34 -7.5 27 LA01 102 LA01 1hr 102	dB

South early first in the assistance provided   45   193	STAGE 3 ACTIVITY NOISE PREDICTION CALCU	LATIONS	: (L <sub>x10 lbr</sub> #	nd Lan ne b	ovels are rep	resented as	STAGE 3 ACTIVITY NOISE PREDICTION CALCU	JLATIONS	(L <sub>A10 lbr</sub> a	nd L <sub>son the t</sub>	wa are rep	resented a
CARDONGLOSTER error captable DAY INDS   Cheft   Laber   Labe												
CARD DOOR CLOSURE for expend   CAP			Acoustic	Quality O	bjectives			Creep	Acoustic	Quality O	bjectives	-
See	CAR DOOR CLOSURE Bear carpara DAY / EVEN		LAeq			1				LA10	LA01	1
Subsect of the construction proved   43		7	15	77	80	dB(A)	Noise source level for single event			70	73	dB(A)
First First American of combined evens	Duration of single event		1						. 2			Seconds
Long			_			_						
Season service with fire sensement trape peopl   65   65   70   73   73   73   73   74   74   74   74	1 oral time duration of complined events		I Asa lhr		TA01 1hr	Seconds	Total time duration of combined events		T As a 1hr		T 401 1hr	
Content   Cont	Noise source level for assessment time neriod			N/A		disca)	Noise source level for assessment time meriod					
Minimum delinance to receive   10   10   10   10   10   10   10   1				5		dB			- 00		1.5	
Service crossing	Minimum distance to receiver					m			1	40		n
Figure 1 season   1	Distance attenuation (-6 dB per doubling of distance)					dB						dB
Section Section   19				10		dts						
Publication (rough upon window (obe name 2 + 66 Republic   22   35   1   1   1   1   1   1   1   1   1		25	20	.5 N/A	16	dB		- 20			- 22	
Rigart minds open student   22   NA   39   exist						dB(A)						
CAR DOOR CLOSURE for carpark DAV / NEW	Impact inside open window	ME)	22	N/A	39	(B(A)		aue)				
Note server level for taughe ever	ampire initial spen industri	313.4334	991.1635	1002		1.5 (1.5)	лиристилие орен типоот	574.3666	574.3666		L.V	(IB(A)
Larg	CAP DOOP CLOSUPE for carparly DAY / FVEN	Creep					TRUCK PACTAGE CT APTC I for how	Creep	Acoustic	Quality O	bjectives	$\overline{}$
Note source level for tapple event 979   17   80   60   60   60   60   60   60   60	_	LAeq	LAeq	LA10		1		LAeq	LAeq	LA10	LA01	1
Number of receives in the insusement proof   4   3   3   5   5   5   5   5   5   5   5	Noise source level for single event	7	15	77	80			7	78	81	83	dB(A)
Total trans and comboned sevents	Duration of single event	12	1							3		Seconds
Note secret left for assessment trap period   6-5   6-4   NA   8   NA   5   NA   NA   MA			-			Events				4		
Notes source sheef for assessment trans period   64   64   NA   30   anal.	1 oras sinte duration of complined events		T Asa Ibr		T 401 11-	Seconds	Fotal time duration of combined events		7.1		T 403 31	Seconds
Teachy   Typinghowness correction   0   S   m.	Noise source level for assessment time period			N/A		(BOA)	Naire resures level for accomment time works		LAeq Ihr			
Minimum distance to receive   185		0	04	5	80	4% (A)			>5	N/A	N/A	dB(A)
District restancing   40   per deading of distance    44		Ť	1	38		m m	Minimum distance to receiver	U		50		COS .
Section   Sect		_				dB		_		**		dR.
Page						dB		_				100
Diagrat of an assars face face   23   28   N/A   45   45   45   45   45   45   45   4	Façade reflection		2			dB						_
Reduction through open window (a) an man 3 of 88 fepals   -7.5	Impact at nearest façade					dB(A)		15			N/A	
Empact inside open window	Reduction through open window (also minus 2.5 dB faça	sde)				dB	Reduction through open window (also minus 2.5 dB faç	ade)	-7.5	-7.5	-7.5	
Concess consider for single event	Impact inside open window		21	N/A	37	dB(A)			9	N/A	N/A	dB(A)
Concess consider for single event		221.464	700.3306									
March   Color   Colo	CAR ENGINE STARTS near carpark DAY / EVEN					1	TRUCK MOVEMENT TO SITE	Creep	Acoustic			
Description of stugies event   3	· ·	LAeq	LAeq		LA01						201 207 2	
Number of events in the measurement period   23   90		7	3	74	75	dB(A)		8			90	
Continue described elements   Line		22		5 00		Seconds		L .				Seconds
Note source level for assessment time period   G2   G2   N/A   75   distAl			_						_			
Noise source level for sessessment time period   50   62   N/A   75   600.4	Total time duration of combined events		T Asa lbr		T 401 1hr	Зесопех	Total time duration of combined events					
Totality   Impulsiveness correction   0   0   10   10   10   10   10   10	Noise source level for assessment time neriod	62			75	(B(A)	N	LAeq	LAeq lhr	LA10 1hr	LA01 1hr	
Maintain distance to receiver   116	Tonality / Impulsiveness correction					dB	Noise source ievel for assessment time period		- //		90	
Distance atternation (of dB per doubling of distance)			1	16		n	Minimum distance to receive	_	27		27	dB
Barries creening	Distance attenuation (-6 dB per doubling of distance)					dB						in in
Expose reflection   2.5						dB						
Impact is nearest façade   23   23   N/A   36   state   15   N/A   29   state   15   N/A   20   stat	Façade reflection			~		dts			2	.5		
Reduction through open window (also minus 2.5 dB façabe)	Impact at nearest façade					dB(A)	Impact at nearest facade		37	N/A	50	dB(A)
Impact inside open window		sde)				1.0	Reduction through open window (also minus 2.5 dB fac	ade)	-7.5	-7.5	-7.5	dB
CAR MOVEMENT FROM STITE   Larg   La	Impact inside open window	1000000	15	N/A	29	dB(A)	Impact inside open window		29	N/A	42	dB(A)
CAR MOVEMENT FROM STITE   Larg   La		197.7031	197.7051	01/40	No ottom							
Noise source level for simple event   13	CAR ENGINE STARTS far carpark DAY / EVEN					1	TRUCK MOVEMENT FROM SITE	Creep				1
District extrement in the measurement period   23   50   50   50   50   50   50   50   5	Noise source level for single arrange					(DOA)		LAeq	LAeq			$\leftarrow$
Number of events in the measurement period   23   90		_		3		1000		- 8	5/	89	90	
Tends   Tend		23		90			Distriction of single event	1		,A		
Laq		67.5						170.0	_	340.0		_
Noise source level for assessment time period			LAeq lhr	LA10 lhr	LA01 1hr		Total time distribut of combined events		LAsa lbr		LA01 1br	
Teality   Impulsiveness correction   0   0   0   0   0   0   0   0   0		62		N/A	75	dB(A)	Noise source level for assessment time period	80	77	N/A		
Minimum distance to receiver   138		0				dΒ						
Barries creaming	Minimum distance to receiver			20		m		1	37		37	n
Barries creening						dB	Distance attenuation (-6 dB per doubling of distance)					dB
Impact at answerst flagade   21   21   N/A   38   +8 + 1.5   + 1.5						dΒ		0	.0	0	.0	dΒ
Impact at anaerist façade					1 05	dB	Façade reflection		2	.5		dB
Impact inside open vindow						dB(A)	Impact at nearest facade				50	dB(A)
CAR MOVEMENT TO DAY		xaé)				dB	Reduction through open window (also minus 2.5 dB faç	ade)			-7.5	dB
Laq	mupact made open window	110 727	130 7375	NA	27	HB(A)	Impact inside open window		29	N/A	42	dB(A)
Laq		Creer	Acoustic	Quality O	hiectives					0 111		_
Note source level for single event   98   70   73   186.5	CAR MOVEMENT TO DAY	LAen				1	TRUCK AIRBRAKES	Creep				4
Duration of single event   28	Noise source level for single event		is si		73	(B(A)	Naisa saurea level for single					Water .
Number of sewers in the measurement period   32   159   150   15	Duration of single event	$\overline{}$	- 2	8				١,		32	102	
Total time duration of combined events   963 0   3612.0   1   1   1   1   1   1   1   1   1						Events		4		16		
Log						Seconds		\$.0				Seconds
Noise source level for assessment time period   68   68   70   73   10   10   10   10   10   10   10   1							we want of companies comme		LAea lbr		LA01 lbr	
Tonality / Impulativeness correction   0   0   0   0   0   0   0   0   0			68		73	dB(A)	Noise source level for assessment time period					
Maintenance and Assertice for Receiver   115	Tonality / Impulsiveness correction	0				dB				5		
Barries corening						m	Minimum distance to receiver					m
Figure 4 reflection   2.5   191	Minimum distance to receiver			+1		dB	Distance attenuation (-6 dB per doubling of distance)		-4	13		dB
Special relativistic	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)			^								100
Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 in Reduction through open window (also minus 2.5 dB façade) -7.5 in Reduction through open win	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening		0			dB	Barrier screening					
Transact invide area principles 23 24 25 Present the origin open window (and himles 25 das laque) 41.5 47.5 41.5 68	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection	20	2	.5	2.1	dB	Barrier screening Façade reflection		2	.5		dB
Impact inside open window 27 N/A N/A  dB(A)	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade		2	.5	34	dB dB dB(A)	Barrier screening Façade reflection Impact at nearest façade		34	5 N/A		dB dB(A)
	Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB fa;		29 -7.5	.5 31 -7.5	-7.5	dB	Barrier screening Façade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç		34 -7.5	5 N/A -7.5	-7.5	dB dB(A) dB

STAGE 3 ACTIVITY NOISE PREDICTION CALCU	LATIONS	: (L <sub>A10 lbr</sub> a	nd Loon the h	wa are rep	resented a:
R5: Existing dwellings to the south across Rifle Ran	e Road				
TRUCK AIRBRAKES at loading bay	Creep		Quality O		
Noise source level for single event	LAeq	LAeq	LA10 98	LA01 102	dB(A)
Duration of single event	,		98	102	dB(A) Seconds
Number of events in the measurement period	4		16		Events
Total time duration of combined events	8.0		32.0		Seconds
No.	LAeq 60	LAeq lhr	LA10 lhr N/A	LA01 lhr	
Noise source level for assessment time period Tonality / Impulsiveness correction	09	09	N/A	N/A	dB(A) dB
Minimum distance to receiver	Ť	10	50		m
Distance attenuation (-6 dB per doubling of distance)		-4			dB
Barrier screening		0.			dΒ
Façade reflection Impact at nearest façade	28	33	N/A	N/A	dB dB(A)
Reduction through open window (also minus 2.5 dB faça		-7.5	-7.5	-7.5	dB (A)
Impact inside open window	-muy	25	N/A	N/A	dB(A)
TRUCK UNLOADING at loading bay	Creep	Acoustic	Quality O	bjectives	1
Noise source level for single event	LAeq	LAeq	LA10 80	LA01	dB(A)
Duration of single event	-	9(	00	02	Seconds
Number of events in the measurement period	1		4		Events
Total time duration of combined events	900.0		3600.0		Seconds
	LAeq		LA10 lhr		
Noise source level for assessment time period	75 0	75	80	82	dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver	0	1,	50		dB m
Distance attenuation (-6 dB per doubling of distance)		-4	14		dB
Barrier screening		0.	0		dB
Façade reflection					dΒ
Impact at nearest façade	33	38	43	45	dB(A)
Reduction through open window (also minus 2.5 dB faça Impact inside open window	nue)	-7.5	-7.5	-7.5	dB dB(A)
Impact taxue open manon				- 00	(int(x)
PEOPLE TALKING OUTSIDE	Creep LAeq	Acoustic LAeq	Quality O LA10	bjectives LA01	
Noise source level for single event		52	70	73	dB(A)
Duration of single event		60	00		Seconds
Number of events in the measurement period	600.0		4 2400.0		Events
Total time duration of combined events	LAeq	T 4 33			Seconds
			T A10 1hr		
Noise source level for assessment time period	60	LAeq Ihr	LA10 1hr 70	TA01 1hr	dR(A)
Noise source level for assessment time period Tonality / Impulsiveness correction		60	70	73	dB(A) dB
Tonality / Impulsiveness correction Minimum distance to receiver	60	60	70 0	73	dB m
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance)	60	11	70 0 15	TA01 1hr	dB m dB
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening	60	60	70 0 15 11 0	TA01 1hr 73	dB m dB dB
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	60 0	11	70 0 15 11	73 73	dB m dB
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 (also minus 2.5 dB faç.	60 0	0 0 2 22 -7.5	70 0 15 11 0 5 31 -7.5	73 34 -7.5	dB m dB dB dB dB(A)
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade	60 0	11 -4 0 2	70 0 15 11 0	73	dB m dB dB dB dB(A)
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 (also minus 2.5 dB faç.	22 22 de) Creep	11 -4 0 2 22 -7.5 14 142.0735 Acoustic	70 0 15 11 0 5 31 -7.5 24 Quality O	34 -7.5 27	dB m dB dB dB dB(A)
Tonality /impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Betties creening Fagoda reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç) Impact inside open window TRUCKS WITH REFRIGERATION UNIT	22 22 2de) Creep LAeq	0. 2 27.5 14 142.0735	70 0 15 11 0 5 31 -7.5 24	73 34 -7.5 27	dB m dB dB dB dB(A) dB dB(A)
Tonality /Impulsiveness correction  Minimum distrate to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries corenning  Façade reflection  Linguest at nearest façade  Reductions trough open window (also minus 2.5 dB façi  Linguest assiste open window  TRUCKS WITH REFRIGERATION UNIT  Noses source lavel for single event  Duration of single event	22 22 Creep LAeq 8	11 -4 0 2 22 -7.5 14 142.0735 Acoustic LAeq	70 0 15 11 0 5 31 -7.5 24 Quality O LA10 82	34 -7.5 27 bjectives LA01	dB m dB dB dB dB(A)
Tonality /Impulsiveness correction  Minimum distrato to receiver Distrance attenuation (-6 dB per doubling of distrance) Barries crienting Explore reflection Impact at nearest façade Readston through open window (also minus 2.5 dB faç, Impact inside open window  TRUCKS WITH REFRIGERATION UNIT Noise source level for single event Duration of single event Duration of single event	22 ade)  Creep LAeq  1	00 2 2 2 2-7.5 14 142 0735 Acoustic LAeq	70 0 15 11 0 0 5 5 24	34 -7.5 27 bjectives LA01	dB m dB
Tonality /Impulsiveness correction  Minimum distrate to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries corenning  Façade reflection  Linguest at nearest façade  Reductions trough open window (also minus 2.5 dB façi  Linguest assiste open window  TRUCKS WITH REFRIGERATION UNIT  Noses source lavel for single event  Duration of single event	22 22 side) 142 0735 Creep LAeq 1 900.0	11 44 0 4 2 2 2 2 -7.5 1 4 4 2 0 3 5 4 2 0 3 5 1 1 4 2 0 3 5 1 1 4 2 0 3 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	70 0 155 11 0 0 5 5 24 Quality O LA10 82 1500 0	73  34  -7.5  27  bjectives  LA01  83	dB m dB dB dB dB (A) dB dB(A) Seconds
Tonality 'Impulsiveness correction Minimum distance to reserves Distance attenuation (-6 dB per doubling of distance) Barries creening Fayche reflection Impact at nearest façade Readston through open window (also minus 2.5 dB fay, Impact inside open window TRUCKS WITH REFRIGERATION UNIT Notes source level for single event Duration of single event Duration of single event Tonalor of single event Total time duration of combined events	22 ade)  Creep LAeq  1	00 2 2 2 2-7.5 14 142 0735 Acoustic LAeq	70 0 15 11 10 10 15 11 11 11 11 11 11 11 11 11 11 11 11	73  34  -7.5  27  bjectives  LA01  83	dB en dB dB dB dB dB dB (A) dB dB (A) dB dB (A) Seconds
Tonality / Impulsiveness correction Minimum distance to reserves Distance arresulation (-6 dB per doubling of distance) Barries creening Fayde reflection Impact at a nearest façade Readston trough open window (also minus 2.5 dB fay, Impact inside open window TRUCKS WITH REFRIGERATION UNIT Notes outree level for single event Duration of single event Duration of single event Tonality impulsiveness correction Notes outree level for single event Notes outree level for single event Tonality impulsiveness correction	22 22 ade)  Creep LAeq 1 900.0 LAeq	11:	70 0 0 15 11 10 0 5 5 31 -7.5 24 24 12 12 12 12 12 12 12 12 12 12 12 12 12	73  34  -7.5  27  bjectives  LA01  83	dB m dB
Tonality /Impulsiveness correction  Minimum distrator to receiver  Distance attenuation (-6 dB per doubling of distance)  Barrier screening  Fayche reflection  Impact at searces fayche  Reduction through open window (also minus 2.5 dB faychings of through open window  TRUCKS WITH REFRIGERATION UNIT  Notice source level for single event  Duration of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Tonality /Impulsiveness correction	22 22 dde) Creep LAeq 900.0 LAeq 81	11:	70 0 0 155 11 0 0 55 24	73  34  -7.5  27  bjectives  LA01  83	dB m dB dB dB (A) dB dB(A) Seconds Events Seconds dB(A) dB m
Tonality / Impulsiveness correction Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Batties creening Fayade reflection Impact at nearest façade Reduction through open window (also minus 2.5 dB faç Impact inside open window TRUCKS WITH REFRIGERATION UNIT Notes ource level for single event Duration of single event Duration of single event Number of events in the insensirement period Total time duration of combined events Notes ource level for assessment time period Tonality / Impulsiveness correction Minimum distance to receiver	22 22 dde) Creep LAeq 900.0 LAeq 81	11: -4 0 0 2 22 -7.5 14 142 0735 Acoustic LAeq B1 90	70 0 0 15 11 0 0 5 31 -7.5 24 Quality O LA10 82 100 2 1800 0 LA10 1hr 82 0 0 50	73  34  -7.5  27  bjectives  LA01  83	dB m dB dB dB (A) dB dB(A) Seconds Events Seconds dB(A) dB dB(A) dB dB(A) dB dB(A) dB dB(A) dB
Tonality /Impulsiveness correction  Minimum distrator to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries covening.  Fayche reflection  Impact at searces fayche  Reduction through open window (also minus 2.5 dB faychingset inside open window  TRUCKS WITH REFRIGERATION UNIT  Notice source level for single event  Duration of single event  Number of events in the measurement period  Total time duration of combined events  Notice source level for assessment time period  Total time duration of combined events  Notice source level for assessment time period  Tonality /Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Refrigeration unit ruck directivity /screening	22 22 dde) Creep LAeq 900.0 LAeq 81	60   11   4   60   7   7   6   60   11   6   60   60   60   60	70 0 0 155 11 0 0 55 24	73  34  -7.5  27  bjectives  LA01  83	dB m dB dB dB dB dB (A) dB dB (A) Seconds Events Seconds dB (A) dB m dB dB (A) dB m dB
Tonality /Impulsiveness correction  Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barrier screening Façade reflection Impact at nearest façade Reduction trough open window (also minus 2.5 dB façi Impact inside open window  TRUCKS WITH REFRIGERATION UNIT  Notes ource level for single event Duration of single event Duration of single event Sumber of events in the measurement period Total time distance of combined events  Number of events in the measurement interperiod Total time distance to receiver Minimum distance to receiver Minimum distance to receiver  Refrigeration unit truck directivity / screening Barrier screening	22 22 dde) Creep LAeq 900.0 LAeq 81	11 4 0 0 2 2 2 2 7.5 14 4 4 1 1 1 2 1 2 1 2 1 1 1 1 1 1 1 1	70 0 0 155 11 0 0 55 24 24	73  34  -7.5  27  bjectives  LA01  83	dB m dB dB (A) dB (A) Seconds Events Seconds dB (A) dB
Tonality /Impulsiveness correction  Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Façade reflection Impact at nearest façade Reduction trough open window (also minus 2.5 dB fay) Impact inside open window  TRICKS WITH REFRIGERATION UNIT  Notes cource level for single event Duration of single event Duration of single event Number of events in the measurement period  Total time duration of combined events  Notes cource level for assessment time period  Tonality /Impulsiveness correction Minimum distance to receive Refrigeration unit truck directivity / screening Barries croening Façade reflection Impact at nearest façade	22 22 3de) 1 4 900.0 LAeq S1 0	11:	70 0 0 15 11 0 0 15 5 11 0 0 15 5 11 0 0 15 5 11 0 1 1 1 1	34 -7.5 27 bjectives LA01 83	dB m dB dB dB dB dB (A) dB dB (A) Seconds Events Seconds dB (A) dB m dB dB (A) dB m dB
Tonality /Impulsiveness correction  Minimum distance to receiver Distance attenuation (-6 dB per doubling of distance) Barries screening Façade reflection Impact at nearest façade Reduction trough open window (also minus 2.5 dB fay) Impact inside open window  TRICKS WITH REFRIGERATION UNIT  Notes cource level for single event Duration of single event Duration of single event Number of events in the measurement period  Total time duration of combined events  Notes cource level for assessment time period  Tonality /Impulsiveness correction Minimum distance to receive Refrigeration unit truck directivity / screening Barries croening Façade reflection Impact at nearest façade	22 22 3de) 1 4 900.0 LAeq S1 0	113 44 0 0 2 22 22 21 14 142035 14 142035 Acoustic LAeq 17 18 10 10 10 10 10 10 10 10 10 10 10 10 10	70 0 0 1.55 1.10 1.10 1.10 1.10 1.10 1.10	34 -7.5 27 bjectives LA01 83	dB m dB dB dB (A) dB dB(A) Seconds Events Seconds dB (A) dB
Tonality /Impulsiveness correction  Minimum distrator to receiver  Distance attenuation (-6 dB per doubling of distance)  Barries corening  Façole reflection  Impact at searces façole  Reduction through open window (also minus 2.5 dB façilimpact it saide open window  TRUCKS WITH REFRIGERATION UNIT  Notice source level for single event  Duration of single event  Number of events in the insourcement period  Tord time duration of combined events  Notice source level for assessment time period  Tonality /Impulsiveness correction  Minimum distance to receiver  Distance attenuation (-6 dB per doubling of distance)  Refrigeration unit ruck directivity / screening  Barries creening  Barries creening	22 22 3de) 1 4 900.0 LAeq S1 0	11:	70 0 0 15 11 0 0 15 5 11 0 0 15 5 11 0 0 15 5 11 0 1 1 1 1	34 -7.5 27 bjectives LA01 83	eB m dB dB dB (A) dB (A) Seconds Events Seconds dB (A) dB
Tonality /Impulsiveness correction  Minimum distrator to receive Distance attenuation (-6 dB per doubling of distance)  Barries screening Façole reflection Impact at nearest façode Reduction through open window (also minus 2.5 dB faç- Impact inside open vindow  TRUCKS WITH REFRIGERATION UNIT  Notice source level for single event Duration of single event Number of events in the insusuement period Tord time duration of combined events  Notice source level for assessment time period Tord time duration of combined events  Notice source level for assessment time period Tonality /Impulsiveness correction Minimum distance to receive Distance attenuation (-6 dB per doubling of distance) Refrigeration unit tock directarity / screening Barries creening Barries creening Barries creening Impact at nearest façade	22 22 22	11:	70 0 155 11 0 0 0 5 5 31 -7.5 24  Quality O LA10 lbr 82 0 0 0 150 0 0 144 0 0 5 40 -7.5 33  Quality O	34 -7.5 27 bjectives LA01 1br 83 LA01 1br 83	eB m dB
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R1: Existing Single-storey dwellings to the north			R2: Future dwellings to the immediate north		
Toilet Exhaust Units	52	dB(A) @ 3m	Toilet Exhaust Units	52	dB(A) @ 3m
Number of units	4	umits	Number of units	4	units
Total noise level	58	dB(A) @ 3m	Total noise level	58	dB(A) @ 3m
Distance to receiver	77	m	Distance to receiver	20	m
Distance attenuation (-6 dB per doubling of distance)	-28	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-16	dB(A)
Acoustic attenuator	-10	dB(A)	Acoustic attenuator	-10	dB(A)
Roof screening	0	dB(A)	Roof screening	0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
Impact at façade	22	dB(A)	Impact at façade	34	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	15	dB(A)	Impact inside open window	27	dB(A)
A/C Units	60	dB(A) @ 3m	A/C Units	60	dB(A) @ 3n
Number of units	2	units	Number of units	2	units
Refrig Units	62	dB(A) @ 3m	Refrig Units	62	dB(A) @ 3n
Number of units	2	umits	Number of units	2	units
Total noise level	67	dB(A) @ 3m	Total noise level	67	dB(A) @ 3n
Distance to receiver	77	m	Distance to receiver	20	m
Distance attenuation (-6 dB per doubling of distance)	-28	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-16	dB(A)
Acoustic barrier / enclosure	-20	dB(A)	Acoustic barrier / enclosure	-20	dB(A)
Barrier screening	0.0	dB(A)	Barrier screening	0.0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
Impact at façade	21	dB(A)	Impact at façade	33	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	14	dB(A)	Impact inside open window	26	dB(A)
Combined impact at façade	25	dB(A)	Combined impact at façade	37	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	17	dB(A)	Impact inside open window	29	dB(A)

R3: Existing dwellings to the east			R4: Future dwellings to the immediate east		
Toilet Exhaust Units	52	dB(A) @ 3m	Toilet Exhaust Units	52	dB(A) @ 3m
Number of units	4	umits	Number of units	4	units
Total noise level	58	dB(A) @ 3m	Total noise level	58	dB(A) @ 3n
Distance to receiver	265	m	Distance to receiver	20	m
Distance attenuation (-6 dB per doubling of distance)	-39	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-16	dB(A)
Acoustic attenuator	-10	dB(A)	Acoustic attenuator	-10	dB(A)
Roof screening	0	dB(A)	Roof screening	0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
Impact at façade	12	dB(A)	Impact at façade	34	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	4	dB(A)	Impact inside open window	27	dB(A)
A/C Units		m	A/C Units	- 10	100/11/00 0
	60	dB(A) @ 3m	TO SALE	60	dB(A) @ 3r
Number of units	2	units	Number of units	2	units
Refrig Units	62	dB(A) @ 3m	Refrig Units	62	dB(A) @ 3n
Number of units	2	units	Number of units	2	units
Total noise level	67	dB(A) @ 3m	Total noise level	67	dB(A) @ 3r
Distance to receiver	265	m	Distance to receiver	20	m
Distance attenuation (-6 dB per doubling of distance)	-39	dB(A)	Distance attenuation (-6 dB per doubling of distance)	-16	dB(A)
Acoustic barrier / enclosure	-20	dB(A)	Acoustic barrier / enclosure	-20	dB(A)
Barrier screening	0.0	dB(A)	Barrier screening	0.0	dB(A)
Façade reflection	2.5	dB(A)	Façade reflection	2.5	dB(A)
Impact at façade	11	dB(A)	Impact at façade	33	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	3	dB(A)	Impact inside open window	26	dB(A)
Combined impact at façade	14	dB(A)	Combined impact at façade	37	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)	Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	7	dB(A)	Impact inside open window	29	dB(A)

R5: Existing dwellings to the south across Rifle Range l	Road	
Toilet Exhaust Units	52	dB(A) @ 3m
Number of units	4	units
Total noise level	58	dB(A) @ 3m
Distance to receiver	165	m
Distance attenuation (-6 dB per doubling of distance)	-35	dB(A)
Acoustic attenuator	-10	dB(A)
Roof screening	0	dB(A)
Façade reflection	2.5	dB(A)
Impact at façade	16	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	8	dB(A)
A/C Units	60	dB(A) @ 3m
Number of units	2	units
Refrig Units	62	dB(A) @ 3m
Number of units	2	units
Total noise level	67	dB(A) @ 3m
Distance to receiver	165	m
Distance attenuation (-6 dB per doubling of distance)	-35	dB(A)
Acoustic barrier / enclosure	-20	dB(A)
Barrier screening	0.0	dB(A)
Façade reflection	2.5	dB(A)
Impact at façade	15	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	7	dB(A)
Combined impact at façade	18	dB(A)
Reduction through open window (also minus 2.5 dB façade)	-7.5	dB(A)
Impact inside open window	11	dB(A)



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Job No: J8670 v1.0

Job Name: 60 Rifle Range Road, Bargara

Report Name	Date	Report No.
Stormwater Management Plan	8 October 2021	J8670 v1.0

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#### 1.0 INTRODUCTION

Storm Water Consulting Pty Ltd was commissioned by Bargara Village Pty Ltd to prepare a Stormwater Management Plan for the development on 60 Rifle Range Road, Bargara.

This report has been prepared to address the Further Advice letter dated 9 July 2021. The Further Advice items are presented below. A response to these items is presented in Section 5.0. The updated stormwater quantity management strategy presented in this report incorporates a single detention basin (as opposed to 3 separate detention tanks proposed previously), located toward the rear of the site within Stage 3b land. The captured stormwater will be pumped out to Rifle Range Road.

### Unsupported Elements in Stormwater Management Plan

While Council acknowledges the updated Stormwater Management Plan submitted in response to the Information Request dated 10 February 2021, a number of concerns are raised as below:

- 1. The design does not consider the effects of climate change (1% AEP + climate change design storm event).
- 2. Unless free draining (no permanent storage for water reuse), Council does not support the use of rainwater tanks for detention storage.
- 3. Council does not support the use of underground onsite detention tanks that rely on a pumping system.
- 4. The Triangular Hydrograph Method is not appropriate for detention storage analysis. The ARR2016 temporal pattern ensembles cannot be used with this method and the hydrograph produced is oversimplified and inappropriate for volume based analysis. Pre-burst rainfall should also be considered when sizing detention storage in accordance with the current ARR.
- 5. Detention storage should be designed to ensure post-development flows are less than or equal to pre-development flows for a range of design storm events (i.e. 63%, 39%, 18%, 10%, 5%, 2%, 1% and 1% AEP + CC) and not just the 1% AEP event.
- 6. Velocities > 6 m/s in small pipes is not appropriate. These types of velocities (if realised) will likely cause significant damage to other infrastructure.



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### 2.0 SITE CONDITIONS

### 2.1 Existing Site

The site is a vacant lot with sparse grass cover. The site is bound by Rifle Range Road to the south, Hughes Road to the west and by a private property to the north and east. A locality plan is presented below.



Figure 2.1 – Locality Plan (Google Maps Overlay)



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### 2.2 Developed Site

A commercial development is proposed on the site. Concept plans are presented in Appendix A. The lawful point of discharge is the existing table drain on Rifle Range Road (as confirmed with Council officers). The development is proposed to be delivered in 3 stages, as shown in Figure 2.2 below.



Figure 2.2 - Development Stages

It is proposed to construct an above-ground detention basin at the rear of the site (on Stage 3b land) to mitigate the peak discharge from the development. Pumps are proposed to be located within the detention basin to pump the captured stormwater toward the Rifle Range Road table drain. A temporary overflow basin is also proposed to capture the stormwater runoff during unlikely events when the pumps fail to operate. This report presents the recommended detention basin volume, temporary overflow basin volume and pump sizes.



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#### 3.0 RATIONAL METHOD CALCULATIONS

The site is 1.94 hectares in area. Rational Method calculations were undertaken for the existing and developed site conditions (utilising ARR2016 rainfall intensities). These calculations have been completed in accordance with the parameters recommended in the Queensland Urban Drainage Manual (QUDM, 2016). The IFD data were based on Bundaberg data obtained from BoM. The 1% AEP + climate change (CC) event adopts an additional 20% rainfall intensity above the 1% AEP rainfall intensities.

Under existing site conditions, approximately 30% of the site flows toward Rifle Range Road (Point-1). The remaining approximately 70% of the site flows toward the northern boundary (Point-2). A catchment plan of the existing site condition is presented below.



Figure 3.1 - Existing Catchment Plan

Under developed site conditions, the entire site is proposed to be discharged to the northern boundary (Point-2). A small portion of captured flows will be pumped out to Rifle Range Road (Point-1). A summary of the resulting flows is presented in Tables 3.1 and 3.2 on the following page. Detailed Rational Method calculations are presented in Appendix C.



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Table 3.1 – Flows at Point-1 (Rifle Range Road)

AEP %	Existing Site m³/s
63%	0.11
39%	0.13
18%	0.19
10%	0.23
5%	0.28
2%	0.35
1%	0.40
1% + CC	0.49

Table 3.2 – Flows at Point-2 (Northern Boundary)

		·		
AEP %	Rational Method m³/s	URBS m³/s	Difference m³/s	Difference %
63%	0.26	0.49	0.23	88%
39%	0.30	0.57	0.27	90%
18%	0.44	0.82	0.38	86%
10%	0.53	1.00	0.47	89%
5%	0.63	1.18	0.55	87%
2%	0.79	1.49	0.7	89%
1%	0.91	1.65	0.74	81%
1% + CC	1.09	1.98	0.89	82%



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#### 4.0 HYDROLOGIC MODELLING

URBS hydrologic modelling was undertaken for the existing and developed site condition to determine an appropriate stormwater quantity management solution for the proposed development. The URBS hydrologic model adopts ten ARR2016 ensemble patterns and includes preburst rainfall considerations.

### 4.1 Existing URBS Model

A schematic of the existing URBS model is presented below.



Figure 4.1 – Existing URBS Model Schematic

The existing model incorporated regionally-accepted alpha and beta values of 1.2 and 0.8 respectively. The existing sub-areas were modelled with a fraction impervious of 10%. An initial loss of 0 mm and a continuing loss of 2.5 mm/hr was adopted for all storm events.

A comparison of the existing Rational Method flows and the existing URBS flows at Point-1 and Point-2 is presented in Tables 4.1 and 4.2 on the following page respectively. The results show that the URBS flows compare favourably with the Rational Method calculated flows at Point-1 and Point-2.



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### 4.2 Developed (Unmitigated) URBS Model

The existing URBS model was modified to include an increase in fraction impervious to between a minimum of 50% and maximum of 100% for various sub-areas (refer Appendix D). A schematic of the developed (unmitigated) URBS model is presented below.



Figure 4.2 – Developed (Unmitigated) URBS Model Schematic

A comparison of the existing URBS flows and the developed (unmitigated) URBS flows at Point-2 is presented in Table 4.1 on the following page.



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Table 4.1 - Comparison of URBS Flows (Ex v Dev)

AEP %	Existing URBS m³/s	Developed URBS unmitigated m³/s	Increase m³/s	Increase %
63%	0.36	0.66	0.30	83%
39%	0.40	0.74	0.34	85%
18%	0.52	0.97	0.45	87%
10%	0.61	1.11	0.50	82%
5%	0.70	1.27	0.57	81%
2%	0.81	1.48	0.67	83%
1%	0.91	1.64	0.73	80%
1% + CC	1.11	2.00	0.89	80%

The above results indicate that the development would result in increases to peak discharges flowing downstream, across the northern boundary. The observed increases in peak flows are also comparable to the Rational Method calculated flow increases.

An above-ground detention basin is proposed to mitigate the increase in peak flows. Captured flows would be pumped toward the table drain on Rifle Range Road (Point-1). The detention basin would need to ensure that the peak flows at Point-1 and Point-2 are not increased as a result of development (when compared with existing peak flows at these locations). The following section presents the specifications of the proposed detention basin and the associated hydrologic modelling results.



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### 4.3 Developed (Mitigated) URBS Model

The developed URBS model was modified to include an above-ground detention basin, located toward the northern portion of the development. Table 4.2 below presents a summary of the modelled detention volume and pump. All runoff from the development is proposed to be directed and captured by the detention basin.

Table 4.2 – Or	n-Site	Det	entic	n Sp	pecit	icatio	n
							_

Detail	Specification
Volume	1,600 m³
Depth	3 m
Pump	Total pump rate 160 litres/second Can be provided via multiple pump systems
Overflow Weir	3 m width at basin invert + 2.7 m, widening to 6.6m at basin invert + 3.0 m (weir adopts 1 in 6 side slope) Weir height 0.3 m Refer schematic in Figure 4.3 below

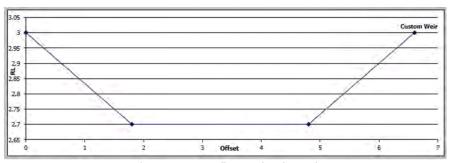


Figure 4.3 – Overflow Weir Schematic

The detention volume has been modelled to capture and attenuate flows up to and including the 1% AEP + CC event. The overflow weir activates during events equal to and greater than the 2% AEP storm. A comparison of the existing URBS flows and the developed (mitigated) URBS flows at Point-1 and Point-2 is presented in Tables 4.3 and 4.4 on the following page respectively.



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Table 4.3 - Comparison of URBS Flows at Point-1 (Ex v Dev1)

AEP %	Existing URBS m³/s	Developed URBS mitigated m³/s	Increase m³/s	Increase %
63%	0.16	0.16	0.00	0%
39%	0.18	0.16	-0.02	-11%
18%	0.24	0.16	-0.08	-33%
10%	0.28	0.16	-0.12	-43%
5%	0.32	0.16	-0.16	-50%
2%	0.37	0.16	-0.21	-57%
1%	0.41	0.16	-0.25	-61%
1% + CC	0.50	0.16	-0.34	-68%

Table 4.4 – Comparison of URBS Flows at Point-2 (Ex v Dev1)

AEP %	Existing URBS m³/s	Developed URBS mitigated m³/s	Increase m³/s	Increase %
63%	0.36	0.00	-0.36	-100%
39%	0.40	0.00	-0.40	-100%
18%	0.52	0.00	-0.52	-100%
10%	0.61	0.00	-0.61	-100%
5%	0.70	0.00	-0.70	-100%
2%	0.81	0.21	-0.60	-74%
1%	0.91	0.55	-0.36	-40%
1% + CC	1.11	1.09	-0.02	-2%

The results presented above indicate that the proposed detention basin effectively mitigates all AEP events (up to and including the 1% AEP + CC event) down to the existing flow rate at Point-1 and Point-2. The proposed development is therefore not anticipated to result in any material worsening on downstream properties.

Details of the URBS modelling are presented in Appendix D. A potential location for the basin is shown in Figure 4.4 on the following page. The proposed pump and its details are presented in Appendix E. Three (3) of the proposed pumps would be required to sufficiently achieve a total pump rate of 160 litres/second. Final detention basin location, size, levels and pump details will be determined during the detailed design stage of the project.



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Figure 4.4 – Potential Location of Stormwater Basins



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#### 4.4 Developed (Mitigated) URBS Model - Pump Failure Event

The developed (mitigated) URBS model was modified to assess potential downstream impacts due to the unlikely event of pumps failing to operate as intended (e.g. due to potential power outages).

The detention basin pump was reduced to close to 0 litres/second. A temporary overflow basin was modelled in URBS to capture and contain sufficient stormwater runoff to mitigate downstream stormwater impacts. The temporary overflow basin was modelled with a volume of 1,000 m<sup>3</sup>. A potential location of the overflow basin is presented in Figure 4.4.

A comparison of the existing URBS flows and the developed (mitigated) URBS flows at Point-2 (during a pump failure) is presented in Table 4.5 below.

Table 4.5 – Comparison of URBS Flows at Point-2 – Pump Failure Event (Ex v Dev1)

AEP %	Existing URBS m³/s	Developed URBS mitigated m³/s	Increase m³/s	Increase %
63%	0.36	0.05	-0.31	-86%
39%	0.40	0.09	-0.31	-78%
18%	0.52	0.32	-0.20	-38%
10%	0.61	0.30	-0.31	-51%
5%	0.70	0.52	-0.18	-26%
2%	0.81	0.62	-0.19	-23%
1%	0.91	0.76	-0.15	-16%
1% + CC	1.11	1.09	-0.02	-2%

The results presented above indicate that the proposed detention basin, together with the temporary overflow basin, effectively mitigates all AEP events (up to and including the 1% AEP + CC event) down to the existing flow rate, in the event of a pump failure. Final temporary basin location, size and level details will be determined during the detailed design stage of the project.

A detailed comparison of all AEP events, storm durations and the ten ARR2016 temporal patterns between the existing URBS results and the developed (mitigated) URBS results (pump failure event) is presented in Appendix D. The detailed comparisons show that the proposed basins would mitigate the majority of short-duration storms for all AEP events (i.e. storm durations less than 3 hours), the sort of storm events which detention basins would typically be designed for. The proposed basins are therefore considered adequate to attenuate downstream impacts in the event of a pump failure.



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#### 4.5 Pump Maintenance

The proposed pump details and its maintenance manual are presented in Appendix E. Regular maintenance and inspections are necessary for continued efficient functioning of the pump. The necessary steps and inspection/maintenance frequency is described below.

### **Inspection of Pump**

- **Prior to inspection:** Detach power cable from terminals after making certain the power supply (circuit breaker, etc.) is turned off.
- **Wash the pump:** Remove accumulated matter from the surface of the pump and wash it with clean water. Take special care to remove any debris from the impeller.
- **Inspect the pump exterior:** Look for any peeling or chipped paint and make sure the nuts and bolts are fastened tightly. Repair any surface cracks by first cleaning and drying the area, followed by applying touch-up coating.
- Oil inspection: Remove the oil plug and tilt the pump to drain a small amount of oil. If
  the oil is milk white or has water mixed with it, the mechanical seal may be faulty. In this
  case, the pump will need to be dismantled and repaired. When replacing the oil, remove
  the oil plug and drain all the oil, then replace it with the specified amount.

### Inspection / Maintenance Frequency

Frequency	Inspection Items		
MONTHLY	Measure insulation resistance – Reference resistance $1\Omega$ or greater		
	<b>NOTE:</b> if the insulation resistance has become notably lower than previous inspection, an inspection of the motor will be necessary.		
	<ul> <li>Measure operating current - Compare with rated current.</li> </ul>		
	<ul> <li>Measure supply voltage - Compare with allowable range (within ±5% of rated voltage)</li> </ul>		
	<ul> <li>Pump inspection.</li> </ul>		
	<ul> <li>A noticable drop in performance may indicate wear in the impeller, etc., or else clogging of the strainer stand, etc. Remove clogged debris, and replace any worn parts.</li> </ul>		
BI-ANNUALLY	Oil inspection.		
	<ul> <li>Check the oil every six months or after 1,000 hours of use, whichever comes first.</li> </ul>		
ANNUALLY	Change Oil.		
	<ul> <li>Change oil every 12 months or after 2,000 hours of use, whichever comes first.</li> </ul>		
	<ul> <li>Designated Oil: Turbine oil VG32 - Caltex - or similar.</li> </ul>		
	Change mechanical seal.		
	<b>NOTE:</b> Trained personnel are required for inspecting and replacing the mechanical seal. Consult with your nearest dealer or representative.		
2 TO 5 YEARS	<ul> <li>Overhaul – This should be carried out even if there are no problems with the pump. The frequency depends on how continuously the pump is in use.</li> </ul>		
	NOTE: Consult with your nearest dealer		



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#### 5.0 CONCLUSIONS

This Stormwater Management Plan was prepared to address the Further Advice letter dated 9 July 2021 for the proposed commercial development on 60 Rifle Range Road, Bargara. A response to each item is presented below.

### Unsupported Elements in Stormwater Management Plan

While Council acknowledges the updated Stormwater Management Plan submitted in response to the Information Request dated 10 February 2021, a number of concerns are raised as below:

1. The design does not consider the effects of climate change (1% AEP + climate change design storm event).

**SWC Response:** The effects of climate change, specifically the 1% AEP + climate change design event, has been considered as part of this assessment. The 1% AEP + climate change event adopts an additional 20% rainfall intensity above the 1% AEP rainfall intensities.

2. Unless free draining (no permanent storage for water reuse), Council does not support the use of rainwater tanks for detention storage.

**SWC Response:** Rainwater tanks are not proposed as part of the development for use as detention storage.

3. Council does not support the use of underground onsite detention tanks that rely on a pumping system.

**SWC Response:** It is understood that, since the issue of this Further Advice letter, an agreement was reached regarding the use of on-site detention that relies on a pumping system. Although not ideal, the elevations on the site essentially required any on-site detention to be discharged via a pumping system. A lawful point of discharge currently does not exist for the development that can be reached via a gravity-drained solution. As such, and as confirmed with Council officers, the lawful point of discharge is the existing table drain on Rifle Range Road.

The proposed on-site detention basin and pump ensures that peak discharges would not be increased on Rifle Range Road, as well as across the northern downstream boundary. The on-site detention basin and the temporary overflow basin ensures that, in the unlikely event of pump failure, the peak discharges flowing across the northern downstream boundary would not be increased. The proposed stormwater quantity management solution is considered adequate in attenuating peak discharges running off the development and minimises the potential for adverse impacts downstream.



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4. The Triangular Hydrograph Method is not appropriate for detention storage analysis. The ARR2016 temporal pattern ensembles cannot be used with this method and the hydrograph produced is oversimplified and inappropriate for volume based analysis. Pre-burst rainfall should also be considered when sizing detention storage in accordance with the current ARR.

**SWC Response:** The URBS hydrologic analysis undertaken in this report (for sizing on-site detention) adopted the ten ARR2016 temporal pattern ensembles and also include pre-burst rainfall considerations.

5. Detention storage should be designed to ensure post-development flows are less than or equal to pre-development flows for a range of design storm events (i.e. 63%, 39%, 18%, 10%, 5%, 2%, 1% and 1% AEP + CC) and not just the 1% AEP event.

**SWC Response:** The detention storages presented in this report have been designed to ensure post-development flows are less than or equal to the pre-development flows for a range of design storm events (i.e. 63%, 39%, 18%, 10%, 5%, 2%, 1% and 1% AEP + CC). The assessment included the scenario when the pump operates as intended, as well as when the pump fails to operate as intended (e.g. due to potential power outages).

6. Velocities > 6 m/s in small pipes is not appropriate. These types of velocities (if realised) will likely cause significant damage to other infrastructure.

**SWC Response:** Pipe outlets were not proposed as part of the current stormwater quantity management system. Pipe outlets may be introduced as part of the stormwater quantity management system in the future, when a pipe connection is provided on the northern (downstream) property for connection to the existing drainage system on the Palm Lake development further downstream. The flow velocities within the future pipe network would need to be assessed accordingly.

Darren Rogers

BE Civil (Hons), MIE Aust, RPEQ 5016

Director



### **LIST OF APPENDICIES**

APPENDIX A – Development Plans

APPENDIX B - Photographs

APPENDIX C - Rational Method Calculations

APPENDIX D – URBS Model Files and Results

APPENDIX E - Pump Details and Maintenance Instructions

Attachme	ent 3	age 689
•		•
•		•
	ADDENDIV A	
	APPENDIX A	
	Development Plans	
	Development Flans	

Attachment 3



# PROPOSED DEVELOPMENT 60 RIFLE RANGE ROAD, BARGARA QLD 4670 BARGARA VILLAGE PTY LTD



LOCALITY MAP NOT TO SCALE

DRAWING NO.	DRAWING TITLE
154914-C01	LOCALITY MAP, SITE PLAN AND DRAWING LIST
154914-002	STORMWATER MANAGEMENT PLAN - OVERALL LAYOUT
154914-003	STORMWATER MANAGEMENT PLAN - STAGE CATCHMENTS
154914-004	STORMWATER MANAGEMENT PLAN - STAGE 1 CATCHMENT
154914-005	STORMWATER MANAGEMENT PLAN - STAGE 2 CATCHMENT
154914-C06	STORMWATER MANAGEMENT PLAN - STAGE 3 CATCHMENT



EXISTING SERVICES
PRIOR TO COMMERCING ANY CONSTRUCTION
MCORS, THE CONTRACTOR SHALL LOCATE
MCORS, THE CONTRACTOR SHALL LOCATE
SERVICES IN THE VICINITY OF THE WORMS.
ANY DISCREPANCES OF DEPTH OR LOCATION
FROM THAT SHOWN ON THE DRAWNINGS TO BE
REPORTED TO THE ENDINCET.

IT SHOULD BE NOTED THAT THERE MAY BE OTHER EXISTING SERVICES IN THE VICINITY OF THE WORKS NOT SHOWN ON THE DRAWINGS.



RPD: LDT T on SP228667

LOCAL AUTHORITY: BUNDABERG RC

SITE LOCATION: BARGARA

PROPERTY DESCRIPTION

CERTIFED BY
JOHN BURGE
PPEQ 08336
INTRAX CONSULTING ENGINEERS PTY. LTD.

Intrax

| Sensitive | Contract |

BARGARA VILLAGE PTY LTD

Project: PROPOSED DEVELOPMENT 60 RIFLE RANGE ROAD BAGARA, QLD 4670 Drawie: LOCALITY MAP, SITE PLAN AND DRAWING LIST

FOR APPROVAL

| NOT FOR CONSTRUCTION | Designed pits | Society | 32 SHOWN | Designed pits | Society | 32 SHOWN | Designed pits | Designed pi



Page 692 Attachment 3 **APPENDIX B Photographs** 

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Photograph 1 – Existing table drain on Rifle Range Road (source: Google Earth)



Photograph 2 – Existing site, viewed from south-west site corner (source: Google Earth)

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#### **APPENDIX C**

#### **Rational Method Calculations**

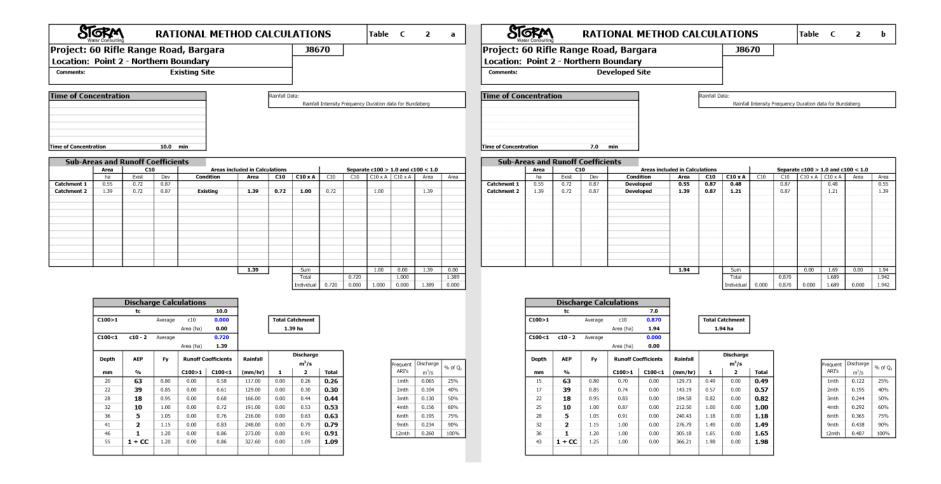
Attachment 3 - Proposal Plans

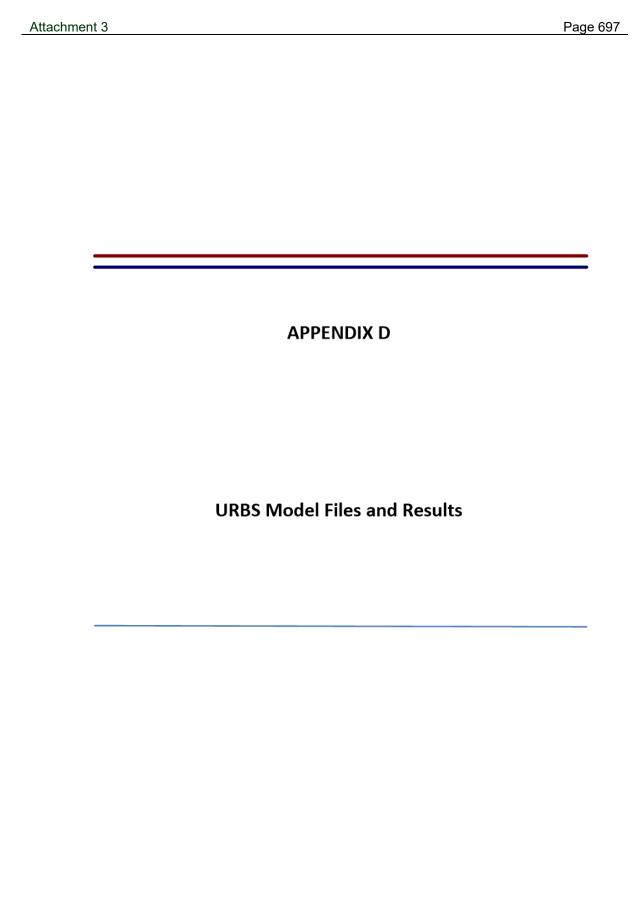
STORM Water Consulting	RATIONAL METHO	D CALCUL	ATIONS		Table	С	1	a
Project: 60 Rifle Rang	e Road, Bargara		J8670					
Location: Point 1 - Rifle	Range Rd			-				
Comments:	Existing Site							
			l					
Time of Concentration		Rainfall Da	ita: Rainfall Intensity	Frequency	Duration dat	ta for Bun	daberg	
Time of Concentration	7.0 min							

Sub-Are	eas and I	Runoff Co	oefficie	nts									
	Area	C10	D	Areas inc	luded in Calc	ulations		l	Separat	e c100 >	1.0 and c1	1.00 < 1.0	
	ha	Exist	Dev	Condition	Area	C10	C10 x A	C10	C10	C10 x A	C10 x A	Area	Area
Catchment 1	0.55	0.72	0.87	Existing	0.55	0.72	0.40	0.72		0.40		0.55	
Catchment 2	1.39	0.72	0.87										
					0.55		Sum			0.40	0.00	0.55	0.00
						-	Total		0.720		0.398		0.553
							Individual	0.720	0.000	0.398	0.000	0.553	0.000

					ulations	ge Calc	Dischar	
				7.0			tc	
	atchment	Total Ca		0.000	c10	Average		C100>1
	5 ha	0.5		0.00	Area (ha)			
			١ '	0.720		Average	c10 - 2	C100<1
				0.55	Area (ha)			
	Discharge		Rainfall	efficients	Runoff Co	Fy	AEP	Depth
	m³/s	١.						
Tota	2	1	(mm/hr)	C100<1	C100>1		%	mm
0.1	0.11	0.00	129.73	0.58	0.00	0.80	63	15
0.1	0.13	0.00	143.19	0.61	0.00	0.85	39	17
0.1	0.19	0.00	184.58	0.68	0.00	0.95	18	22
0.2	0.23	0.00	212.50	0.72	0.00	1.00	10	25
0.2	0.28	0.00	240.43	0.76	0.00	1.05	5	28
0.3	0.35	0.00	276.79	0.83	0.00	1.15	2	32
0.4	0.40	0.00	305.18	0.86	0.00	1.20	1	36
0.4	0.49	0.00	366.21	0.86	0.00	1.20	1 + CC	43

Frequent ARI's	Discharge m³/s	% of Q <sub>1</sub>
1mth	0.029	25%
2mth	0.046	40%
3mth	0.057	50%
4mth	0.069	60%
6mth	0.086	75%
9mth	0.103	90%
12mth	0.115	100%





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#### 8670 Ex.DAT

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Bargara - Existing
MODEL: Basic
USES: L, U
Default Parameters: alpha=1.20 m=0.8
Catchment File=8670_Ex.dat
Default :
Catchment File-t

Rain #102 L=0.013
Route thru #201 L=0.013
Add Rain #201 L=0.014
*bru #203 L=0.021
*203 L=0.024
*=0.016
 Add Rain #203
Route thru #205
                                 L=0.016
Store.
Rain #204 L=0.025
Route thru #205 L=0.013
Store.
Rain #206 L=0.015
Route thru #205 L=0.021
Get.
Add Rain #205 L=0.021
Get.
Print. POINT-1
Store.
Rain #104 L=0.018
Route thru #105
                       #105 L=0.006
Route thru #105 L=0.007
Get.
Add Rain
                     #105 L=0.006
#103 L=0.019
Route thru #103 I
Store.
Rain #103 L=0.014
Get.
Route thru
                                   L=0.016
L=0.010
L=0.012
Add Rain
Route thru
                     #202
#311
 Add Rain
                        #311
 Route thru
                                   L=0.006
Route
Store.
                       L=0.019
#312 L=0.009
Rain #310
Route thru
Get.
Add Rain
                        #312
                                   L=0.006
 Store.
```

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```
Rain #101 L=0.023
Store.
Rain #301 L=0.018
Get.
Route thru #302 L=0.009
Add Rain #302 L=0.008
Add Rain #303 L=0.008
Add Rain #303 L=0.013
Route thru #309 L=0.026
Get.
Route thru #309 L=0.010
Add Rain #309 L=0.022
Store.
Rain #304 L=0.016
Route thru #305 L=0.025
Store.
Rain #305 L=0.016
Get.
Route thru #306 L=0.022
Store.
Rain #306 L=0.016
Get.
Route thru #309 L=0.005
Get.
Route thru #309 L=0.005
Rain #305 L=0.015
Get.
Route thru #309 L=0.005
Rain #306 L=0.015
Get.
Route thru #309 L=0.005
Route thru #309 L=0.005
Get.
Route thru #309 L=0.005
Route thru #308 L=0.000
Add Rain #308 L=0.020
Add Rain #308 L=0.021
Store.
Rain #307 L=0.022
Route thru #308 L=0.019
Get.
Print. POINT-2
Get.
Frint. POINT-2
Get.
Frint. TOTAL
end of catchment details.
```

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#### 8670 Dev.DAT

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#### 8670\_Dev.U

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Bargara - Development
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USES: L, U
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Rain #101 L=0.019
Store.
Rain #103 L=0.020
 Get.
 Route thru #105 L=0.024
Route thru $100
Store.
Rain $105 L=0.009
Store.
Rain $104 L=0.021
Rain #10.
Store.
Rain #106 L=0.014
Store.
Rain #102 L=0.013
Posite thru #105 L=0.013
 Get.
 Get.
Print. TANK1
Route thru
                      #302 L=0.090
Store.
Rain #301
Route thru
Add Rain
                      L=0.017
                      #302
#302
#303
                                L=0.009
                                 L=0.008
Route thru
Add Rain
                      #303 L=0.008
#303 L=0.007
 Route thru
Store.
Rain #311
                      L=0.016
Get.
Route thru
                      #312 L=0.012
Store.
Rain #310
Route thru
                      L=0.016
#312 L=0.017
#312 L=0.019
 Add Rain
 Get.
Route thru
                      #309 L=0.021
Store.
Rain #304 L=0.016
```

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```
Route thru #305 L=0.012 Get.
Route thru #305 L=0.012 Get.
Route thru #305 L=0.012 Get.
                            #305 L=0.012
                                #305 L=0.009
#306 L=0.022
Store.
Rain #306
Store.
Rain #307
Route thru
                                L=0.016
                                L=0.022
#308 L=0.019
Store.
Rain #308 L=0.022
Get.
Route thru
                                #309 L=0.051
Store.
Rain #309 L=0.028
Get.
Get.
Get.
Get.
Print. TANK3
Frint. TANKS
Store.
Rain #201
Route thru
Add Rain
Store.
Rain #203
Route thru
Add Pain
                                L=0.020
#202 L=0.019
#202 L=0.037
                             L=0.013
#204 L=0.016
#204 L=0.016
#202 L=0.015
Route thru
Add Rain
Route thru
Store.
Rain #205
Route thru
Add Rain
Route thru
Add Rain
Get.
Get.
                                L=0.020
#206 L=0.016
#206 L=0.015
#207 L=0.023
#207 L=0.021
 Get.
Print. TANK2
Route thru
                                #302 L=0.090
 Get.
Print. TOTAL end of catchment details.
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#### 8670 Dev1.DAT

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#307,0.00085,0.50,0.50,0.95
#308,0.00072,0.50,0.50,0.95
#309,0.00100,0.50,0.50,0.95
#310,0.00061,0.50,0.50,0.90
#311,0.00058,0.50,0.50,0.90
#312,0.00063,0.50,0.50,0.90
```

```
8670_Dev1.U
Bargara - Developmentl
MODEL: Basic
USES: L, U
Default Parameters: alpha=1.20 m=0.8
Catchment File=8670_Devl.dat
Rain #101 L=0.019
Store.
Rain #103 L=0.020
 Get.
 Route thru #105 L=0.024
Route thru $100
Store.
Rain $105 L=0.009
Store.
Rain $104 L=0.021
Rain #10.
Store.
Rain #106 L=0.014
Store.
Rain #102 L=0.013
Posite thru #105 L=0.013
 Get.
 Get.
Print. TANK1
Route thru
                      #302 L=0.090
Store.
Rain #301
Route thru
Add Rain
                      L=0.017
                      #302
#302
#303
                                L=0.009
                                 L=0.008
Route thru
Add Rain
                     #303 L=0.008
#303 L=0.007
 Route thru
Store.
Rain #311
                     L=0.016
Get.
Route thru
                      #312 L=0.012
Store.
Rain #310
Route thru
                     L=0.016
#312 L=0.017
#312 L=0.019
 Add Rain
 Get.
Route thru
                      #309 L=0.021
Store.
Rain #304 L=0.016
```

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```
#305 L=0.012
 Route thru
 Store.
Rain #305 L=0.012
  Get.
                                    #305 L=0.009
#306 L=0.022
 Route thru
Route Store.
Rain #306
Store.
 Route thru
                                    L=0.016
 Rain #307
Route thru
                                    L=0.022
#308 L=0.019
 Store.
Rain #308
                                    L=0.022
 Get.
 Route thru
                                    #309 L=0.051
 Store.
Rain #309 L=0.028
 Get.
 Get.
Get.
 Get.
 Print. TANK3
 Store.
Rain #201
Route thru
                                    L=0.020
#202 L=0.019
 Add Rain
                                                       L=0.037
 Store.
                                 L=0.013
#204 L=0.016
#204 L=0.016
#202 L=0.015
 Rain #203
Route thru
 Add Rain
Route thru
Route thru
Store.
Rain #205
Route thru
Add Rain
Route thru
Add Rain
                                    L=0.020
#206 L=0.016
#206 L=0.015
#207 L=0.023
#207 L=0.021
 Get.
 Get.
 Print. TANK2
                                   #302 L=0.090
 Route thru
 Get.
Print. B4-IN
DAM ROUTE VBF=0 NUMBER=30
0.000000 0.000000
0.005333 0.159900
 1.440000 0.160000
1.600000 1.327932
1.440000 0.160000
1.600000 1.327932
1.629333 1.400087
1.658667 1.474211
1.688000 1.550196
1.717333 1.627965
1.776000 1.788616
1.895333 1.871399
1.834667 1.955765
1.8964000 2.041676
1.893333 2.129099
1.922667 2.218003
1.952000 2.308358
1.981333 2.400138
2.010667 2.493317
2.040000 2.587873
2.098667 2.781024
2.128000 2.879578
2.157333 2.979426
2.186667 3.080549
2.216000 3.182930
2.245333 3.266552
2.274667 3.391400
2.304000 2.30497459
2.333333 3.604713
2.362667 3.713149
Print. B4-OUT
 Print. B4-OUT
Loss C= F=1 Q=0.16 BYPASS=LOSS4
```

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Print. POINT-1
Store.
Input. LOSS4
Print. POINT-2
Get.
Print. TOTAL
end of catchment details.

#### On-site Detention Basin Results

AEP		URBS	Basin		Disch	arge	Inunc	lation
AEF	Inflow	Outflow	Level	Depth	Pump	Weir	Area	Volume
	m3/s	m3/s	m AHD	m	m3/s	m3/s	m2	m3
63%	0.66	0.16	0.01	0.01	0.16	0.00	533.3	5.3
39%	0.74	0.16	0.01	0.01	0.16	0.00	533.3	5.3
18%	0.97	0.16	0.01	0.01	0.16	0.00	533.3	5.3
10%	1.11	0.16	0.01	0.01	0.16	0.00	533.3	5.3
5%	1.27	0.16	0.01	0.01	0.16	0.00	533.3	5.3
2%	1.48	0.37	2.75	2.75	0.16	0.21	533.3	1469.2
1%	1.64	0.71	2.84	2.84	0.16	0.55	533.3	1516.0
1% + CC	2.00	1.25	2.98	2.98	0.16	1.09	533.3	1589.7

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#### $\bf 8670\_Dev1.DAT-Pump\ Failure\ Event$

```
"Index", "Area", "UL", "UN", IT"
#101,0.00093,0.50,0.50,0.50
#102,0.00056,0.50,0.50,0.50
#103,0.00097,0.50,0.50,0.50
#104,0.00076,0.50,0.50,0.50
#104,0.00076,0.50,0.50,0.50
#105,0.00040,0.50,0.50,0.50
#106,0.00042,0.50,0.50,0.70
#201,0.00100,0.50,0.50,0.50
#202,0.00184,0.50,0.50,0.50
#202,0.00184,0.50,0.50,0.50
#202,0.00184,0.50,0.50,0.50
#203,0.00106,0.50,0.50,0.50
#204,0.00130,0.50,0.50,0.50
#204,0.00031,0.50,0.50,0.50
#207,0.00179,0.50,0.50,0.50
#301,0.00031,0.50,0.50,0.50
#301,0.00031,0.50,0.50,1.00
#303,0.00031,0.50,0.50,1.00
#303,0.00051,0.50,0.50,1.00
#303,0.00051,0.50,0.50,0.50
#305,0.00051,0.50,0.50,0.50
#307,0.00050,0.50,0.50,0.50
#307,0.00050,0.50,0.50,0.50
#308,0.00051,0.50,0.50,0.50
#309,0.00072,0.50,0.50,0.55
#309,0.00072,0.50,0.50,0.55
#309,0.00072,0.50,0.50,0.55
#311,0.00061,0.50,0.50,0.50
#311,0.00063,0.50,0.50,0.90
#311,0.00063,0.50,0.50,0.90
```

#### 8670\_Dev1.U - Pump Failure Event

```
Bargara - Developmentl
USES: L, U
Default Parameters: alpha=1.20 m=0.8
Catchment File=8670_Devl.dat
Rain #101 L=0.019
Store.
Rain #103 L=0.020
 Get.
                    #105 L=0.024
 Route thru
Route thru $105
Store.
Rain #105 L=0.009
Store.
Rain #104 L=0.021
Rain #10.
Store.
Rain #106 L=0.014
Store.
Rain #102 L=0.013
                                   L=0.013
 Get.
 Get.
Route thru
Store.
Rain #301
Route thru
                        #302 L=0.090
                        L=0.017
                       #302 L=0.009
#302 L=0.008
#303 L=0.008
#303 L=0.008
Add Rain
Route thru
Add Rain
Route thru
Store.
Rain #311 L=0.016
 Get.
                        #312 L=0.012
 Route thru
Route bill Store.
Rain #310 L=0.016
Route thru #312 L=0.017
Add Rain #312 L=0.019
Get.
Route thru
                        #309 L=0.021
Store.
Rain #304
Route thru
                        L=0.016
#305 L=0.012
```

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```
Store.
Rain #305 L=0.012
   Get.
Route thru
                                                #305 L=0.009
#306 L=0.022
  Route thru #306
Store.
Rain #306 L=0.016
Store.
Rain #307 L=0.022
Store.
Rain #30,
Route thru #300
Store.
Rain #308 L=0.022
                                               L=0.022
#308 L=0.019
                                                #309 L=0.051
   Store.
Rain #309 L=0.028
   Get.
   Get.
Get.
  Store.
Rain #201 L=0.020
Route thru #202 L=0.019
Add Rain #202 L=0.037
  Store.
Rain #203
Route thru
                                           L=0.013
#204 L=0.016
#204 L=0.016
#202 L=0.015
   Add Rain
Route thru
  Store.
Rain #205
Route thru
                                                L=0.020
#206 1
#206 1
#207 1
                                                                 L=0.016
L=0.015
L=0.023
L=0.021
   Add Rain
   Route thru
   Add Rain
   Get.
   Get.
   Route thru
                                               #302 L=0.090
   Get.
 Get.
Print. B4-IN
DAM ROUTE VBF=0 NUMBER=30
0.000000 0.000000
0.005333 0.000990
1.440000 0.01000
1.600000 1.168932
1.629333 1.241087
1.682667 1.331211
1.736000 1.436451
1.789333 1.552103
1.842667 1.676456
1.896000 1.808501
1.949333 1.947550
2.002667 2.093089
2.056000 2.244715
2.109333 2.402099
2.162667 2.564967
2.216000 2.733084
2.269333 2.906245
2.322667 3.084272
2.376000 3.267004
2.429333 3.454298
2.482667 3.646024
2.536000 3.842063
2.589333 4.042306
2.642667 4.246654
2.696000 4.455013
2.749333 4.667298
2.802667 4.883427
2.856000 5.103325
2.999333 5.326921
2.962667 5.554149
Print. B4-OUT
Print. B3-IN
   Print. B4-IN
   Print. B4-OUT
Print. B3-IN
   DAM ROUTE VBF=1 NUMBER=30
0.000000 0.000000
0.000100 3000000
```

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```
0.000200 3.500000

0.000400 4.500000

0.000400 4.500000

0.000500 5000000

0.000700 6000000

0.000700 6000000

0.000900 7.500000

0.00100 7.500000

0.001100 8000000

0.001200 8.500000

0.001200 8.500000

0.001200 9.500000

0.001200 9.500000

0.001200 10.50000

0.001200 10.50000

0.001200 10.50000

0.001200 12.50000

0.001200 12.50000

0.002200 12.50000

0.002200 13.50000

0.002200 13.50000

0.002200 14.50000

0.002200 15.50000

0.002200 15.50000

0.002200 15.50000

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0.002200 15.50000

0.002200 15.50000

0.002200 15.50000

0.002200 17000000

Frint. B3-OUT

Frint. FOINT-2

end of catchment details.
```

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Existing																			
A POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90 D08	2 hrs D09	3 hrs	4.5 hrs	6 hrs	9hrs D13	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs D19 D20
63%	0.2634	0.2941	0.2713	0.3054	0.3555	0.2965	0.3243	0.2106	0.2196	0.1966	0.1718	0.0933	0.1104	0.0862	0.0523	0.0807	0.0353	0.0185	0.0173 0.032
39% 18%	0.2967	0.3289	0.3002	0.3393	0.3952	0.3318	0.3617	0.2351	0.2454	0.2216	0.1942	0.1081	0.1274	0.1014	0.0624	0.0957	0.0429	0.0232	0.0222 0.0391 0.0381 0.0617
10%	0.4759	0.4935	0.4907	0.4784	0.4078	0.5218	0.4776	0.4207	0.3714	0.4484	0.2047	0.3405	0.1828	0.163	0.0875	0.1987	0.0565	0.0515	0.0701 0.0266 0.0855 0.0335
2%	0.6473	0.6543	0.6599	0.6296	0.552	0.7076	0.6436	0.5811	0.5143	0.6188	0.2907	0.4801	0.2637	0.2383	0.13	0.294	0.0861	0.0797	0.1063 0.0428
1% 1% + CC	0.724	0.7262 0.8852	0.7374	0.6973 0.8421	0.619 0.7626	0.7858 0.961	0.7188 0.8747	0.6559 0.8019	0.5797	0.6979	0.3309	0.6576	0.3013	0.2736	0.1511 0.1846	0.3368	0.1217	0.092 0.1121	0.1227 0.05 0.1488 0.0617
В	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2 63%	D01 0.2631	D02 0.2837	D03 0.2938	D04 0.3043	D05 0.2773	D06 0.2838	D07 0.2321	D08 0.2537	D09 0.1773	D10 0.2272	D11 0.1429	D12 0.0958	D13 0.0872	D14 0.0925	D15 0.0784	D16 0.0331	D17 0.0311	D18 0.0407	D19 D20 0.0172 0.0359
39% 18%	0.2962	0.3172	0.3268	0.3375	0.3087	0.317	0.2578	0.284	0.1988	0.2562	0.1626	0.1115	0.1009	0.1084	0.0926	0.0403	0.0381	0.0498	0.0217 0.0436 0.0365 0.0676
10% 5%	0.4769	0.5003	0.5016	0.5992	0.5551	0.5053	0.4001	0.3494	0.2646	0.2836	0.2044	0.4043	0.2106	0.3202	0.1108	0.1656	0.1313	0.0904	0.1221 0.0504 0.1478 0.0622
2%	0.6492	0.6676	0.6648	0.8	0.7507	0.686	0.5368	0.4783	0.3632	0.3948	0.2906	0.5812	0.3036	0.4659	0.1635	0.2487	0.1937	0.1362	0.1825 0.079 0.2096 0.0921
1% 1% + CC	0.7264 0.8982	0.7413	0.7389	1.0876	1.0305	0.9323	0.7269	0.5381	0.4947	0.4461	0.4008	0.8082	0.419	0.5345	0.1898	0.2861	0.2683	0.1886	0.2525 0.1134
С	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2 63%	D01 0.2631	D02 0.2916	D03 0.2856	D04 0.2668	D05 0.2711	D06 0.2419	D07 0.2731	D08 0.2796	D09 0.2216	D10 0.2728	D11 0.2111	D12 0.1578	D13 0.1956	D14 0.1401	D15 0.1139	D16	D17 0.0674	D18 0.0301	D19 D20 0.0539 0.0333
39%	0.2962	0.3265	0.3178	0.2969	0.3016	0.2692	0.3035	0.3126	0.2487	0.3075	0.2393	0.1818	0.225	0.1632	0.1339	0.0512	0.0808	0.037	0.065 0.0404 0.102 0.0633
10%	0.4731	0.496	0.5197	0.437	0.4903	0.5347	0.4315	0.4197	0.3363	0.3081	0.4383	0.3153	0.1724	0.1419	0.1722	0.1011	0.0515	0.0723	0.0836 0.0525 0.1016 0.064
2%	0.6436	0.6591	0.6885	0.5817	0.6584	0.726	0.5808	0.5741	0.4695	0.4413	0.6164	0.4644	0.2489	0.2074	0.2564	0.1515	0.0787	0.1099	0.1258 0.0803
1% 1%+CC	0.7217 0.8952	0.7308 0.8891	0.7654 0.9325	0.6477	0.7366 0.9011	0.8056 0.9831	0.6487 0.7888	0.6458 0.786	0.5305 0.6488	0.5044 0.6196	0.6995	0.5364 0.6584	0.2845 0.3436	0.2382	0.2963 0.3597	0.1745 0.2121	0.0916 0.1116	0.1264 0.1532	0.1448 0.0941 0.175 0.1163
D	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2 63%	D01 0.2677	D02 0.2964	D03 0.3198	D04 0.2787	D05 0.2404	D06 0.3117	D07 0.2642	D08 0.1676	D09 0.185	D10 0.1694	D11 0.1071	D12 0.1313	D13 0.1197	D14 0.0678	D15 0.0349	D16 0.0607	D17 0.026	D18 0.0344	D19 D20 0.0784 0.0253
39%	0.3018	0.3322	0.3552	0.3099	0.2675	0.3465	0.2955	0.187	0.2071	0.1923	0.1222	0.1513	0.1379	0.0797	0.0422	0.0723	0.0321	0.0421	0.0932 0.0313 0.1422 0.0506
10%	0.4713	0.5595	0.5582	0.4439	0.4417	0.4282	0.4091	0.4626	0.4802	0.3786	0.2776	0.1712	0.197	0.1162	0.0931	0.0682	0.0896	0.0817	0.0603 0.0619
5% 2%	0.5461 0.6434	0.6424 0.7498	0.6357 0.7397	0.5122 0.5972	0.5039 0.5877	0.4868 0.5695	0.4723 0.5568	0.5388 0.6439	0.5555 0.6599	0.4414	0.3249 0.3897	0.202	0.2339	0.1393	0.1125	0.0827	0.1083 0.1338	0.0992	0.0739 0.0753 0.0923 0.0931
1% 1%+00	0.7205	0.8338	0.8224	0.6683	0.6554	0.628	0.6247	0.7281	0.7421	0.5941	0.4419	0.278	0.3247	0.196	0.1596	0.1185	0.1546 0.1866	0.1419	0.1067 0.1069 0.1296 0.1311
E	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2 63%	D01 0.2639	D02 0.3074	D03 0.3056	D04 0.2591	D05 0.2948	D06 0.2538	D07 0.257	D08 0.2569	D09 0.2474	D10 0.1458	D11 0.126	D12 0.0963	D13 0.1194	D14 0.0561	D15 0.025	D16 0.0534	D17 0.0174	D18 0.0331	D19 D20 0.0148 0.024
39%	0.2976	0.3448	0.3398	0.2899	0.326	0.2825	0.2867	0.2886	0.2764	0.1647	0.1432	0.1112	0.1381	0.0665	0.0306	0.0639	0.0221	0.0403	0.019 0.0295
18% 10%	0.4047 0.4819	0.4567 0.5345	0.4506 0.553	0.3888 0.4602	0.4244	0.3737 0.4222	0.3823 0.4384	0.3919 0.384	0.3717 0.3301	0.2261 0.3299	0.2015 0.1244	0.1592 0.2063	0.202	0.1006 0.1537	0.0488 0.1528	0.0984	0.0379 0.0726	0.0642 0.1059	0.0329 0.0472 0.07 0.1076
5% 2%	0.5589	0.6131	0.6327	0.5298	0.4924	0.4812	0.5037	0.4451	0.3811	0.3847	0.1466	0.2438	0.2975	0.1837	0.1858	0.1099	0.0881	0.128	0.0858 0.1326 0.1073 0.1669
1% 1%+00	0.7388 0.9157	0.7947	0.8252 1.0086	0.6887	0.6362 0.7711	0.6235	0.6584	0.5953	0.5071 0.6127	0.5178 0.6252	0.2015	0.3369	0.4111	0.2573	0.2654	0.1565	0.1267 0.1536	0.1817	0.1241 0.194 0.1508 0.238
F	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2 63%	D01 0.2641	D02 0.3109	D03 0.2871	D04 0.3151	D05 0.3092	D06 0.2436	D07 0.2733	D08 0.1555	D09 0.1542	D10 0.127	D11 0.1613	D12 0.1073	D13	D14 0.0364	D15 0.0364	D16 0.0395	D17 0.0301	D18 0.041	D19 D20 0.0756 0.0154
39%	0.298	0.3493	0.3182	0.3501	0.3442	0.2703	0.3036	0.1733	0.1733	0.1435	0.185	0.1237	0.1155	0.0435	0.0439	0.0477	0.0369	0.0501	0.0903 0.0197
18%	0.4058 0.4786	0.4643	0.4171	0.4609	0.456	0.3536	0.4004	0.2304	0.2369	0.1966	0.2673	0.1767	0.1687	0.0667	0.0681	0.0748	0.059	0.0801	0.1391 0.033 0.1914 0.0673
5% 2%	0.5542	0.5914	0.6148	0.695	0.5798	0.5218	0.4299	0.4515	0.3926	0.2514	0.3955	0.1619	0.1446	0.2045	0.1198	0.1111	0.1533	0.1395	0.2299 0.0818 0.2819 0.1029
1% 1%+CC	0.7306	0.7629	0.7906	0.8988	0.7552	0.6804	0.5697	0.5994	0.5437	0.3381	0.5366 0.6458	0.2273	0.2016	0.2864	0.1687	0.1593	0.2167	0.1977	0.3223 0.1196 0.3863 0.1465
G	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19 D20
63% 39%	0.2631	0.3106	0.3292	0.3229	0.3044	0.2391 0.2657	0.1973	0.1868	0.2785 0.3131	0.136 0.1543	0.16 0.1832	0.1045 0.1218	0.0857	0.0351	0.0637	0.0873	0.0435 0.0525	0.0245	0.0073 0.0208 0.0101 0.0258
18% 10%	0.401	0.465	0.4893	0.4725	0.4406	0.3498	0.2883	0.2805 0.3138	0.4277	0.214	0.2631	0.1786	0.146	0.0643	0.1153	0.1562	0.0822	0.0513	0.0195 0.0419 0.0856 0.0746
5% 2%	0.5642	0.5991	0.5703	0.5805	0.6289	0.4475	0.49	0.3628	0.4246	0.3494	0.1919	0.3593	0.2395	0.1782	0.091	0.2721	0.1361	0.067	0.1039 0.0921 0.1287 0.1166
1% 1% + CC	0.7484	0.7747	0.7309	0.7424	0.8221	0.5811	0.6382	0.4831	0.5717	0.474	0.262	0.4974	0.3325	0.2498	0.1291	0.389	0.1933	0.0981	0.1481 0.1359 0.1789 0.1674
1%+CC								-							-				
POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90 D08	2 hrs D09	3 hrs D10	4.5 hrs D11	6 hrs D12	9hrs D13	12 hrs D14	18 hrs D15	24 hrs D16	30 hrs D17	36 hrs D18	48 hrs 72 hrs D19 D20
63% 39%	0.265	0.3064	0.3035	0.2946	0.3416	0.2354	0.2157	0.2296	0.23	0.1139	0.1305 0.1488	0.1034	0.0539	0.1627 0.1894	0.0818	0.0523	0.017	0.0566	0.0331 0.0126 0.0407 0.0165
18%	0.4078	0.4588	0.4446	0.4244	0.505	0.3407	0.3216	0.3425	0.3603	0.178	0.2116	0.1727	0.0939	0.2765	0.1449	0.0967	0.0361	0.1052	0.0662 0.0284 0.1326 0.069
5% 2%	0.5579	0.6249	0.6964	0.5801 0.6706	0.5761	0.4081	0.4924	0.436	0.3241	0.2786	0.3758	0.2503	0.2373	0.2254	0.087	0.1388	0.1626 0.1997	0.0715	0.1596 0.0845 0.1961 0.1071
1%	0.737	0.8081	0.9085	0.7439	0.7489	0.5298	0.6418	0.5863	0.4331	0.3753	0.518	0.3441	0.3289	0.3155	0.1237	0.1995	0.23	0.1034	0.2246 0.1249
1%+CC	0.913	0.9855	1.1112	0.9011	0.9096	0.6424	0.7777	0.7177	0.5242	0.4535	0.6286	0.4152	0.398	0.3812	0.1516	0.2446	0.2768	0.1258	0.2698 0.1538
POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90 D08	2 hrs D09	3 hrs D10	4.5 hrs D11	6 hrs	9hrs D13	12 hrs D14	18 hrs D15	24 hrs D16	30 hrs D17	36 hrs D18	48 hrs 72 hrs D19 D20
63% 39%	0.2626	0.3221	0.3465	0.35	0.3		0.2807	0.2921	0.1632	0.1419	0.1432	0.0936	0.077	0.0753	0.049	0.078	0.0466	0.0495	0.0509 0.018 0.0612 0.0226
18%	0.3988	0.484	0.514	0.5148	0.4345	0.4489	0.4143	0.4394	0.2486	0.2202	0.2325	0.1553	0.1317	0.1315	0.0896	0.1403	0.0875	0.0931	0.0953 0.0375
5%	0.5522	0.6505	0.6924	0.5822	0.6059	0.6314	0.4555	0.3272	0.443	0.3265	0.3467	0.3164	0.2176	0.2204	0.1112	0.1377	0.1633	0.0655	0.0649 0.0577
2% 1%	0.6497 0.7269	0.7611 0.8479	0.81	0.6755 0.7513	0.7041	0.7437 0.8241	0.5323 0.5925	0.3859	0.5281	0.3891 0.4396	0.4187	0.3833 0.4386	0.3642	0.2685	0.1367 0.1587	0.1698 0.1971	0.2004	0.0824	0.0813 0.0717 0.0941 0.0825
1%+00	0.8984	1.0423	1.1067	0.9141	0.947	1.0048	0.7163	0.5243	0.7222	0.5309	0.5783	0.5316	0.3646	0.3727	0.1935	0.242	0.2772	0.1156	0.1146 0.1024
J POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90 D08	2 hrs D09	3 hrs D10	4.5 hrs	6 hrs D12	9hrs D13	12 hrs	18 hrs	24 hrs D16	30 hrs D17	36 hrs D18	48 hrs 72 hrs D19 D20
63%	0.2635	0.3237	0.3288	0.3455	0.3156	0.288	0.2578	0.2465	0.1897	0.1762	0.157	0.0872	0.0754	0.0824	0.0848	0.0333	0.0397	0.0384	0.0524 0.0223 0.0633 0.0275
18%	0.4026	0.4887	0.4895	0.5041	0.4565	0.422	0.3742	0.3668	0.2875	0.2696	0.2527	0.1458	0.129	0.1431	0.1509	0.0636	0.0774	0.0756	0.0995 0.0444
10% 5%	0.4889 0.5689	0.5627 0.6467	0.4614 0.5218	0.6014 0.6893	0.5399 0.6155	0.4866 0.5562	0.5589	0.3791 0.4377	0.299	0.2771 0.3233	0.3061	0.2098 0.2486	0.1425 0.1698	0.1504 0.1799	0.181	0.0929	0.0971	0.073	0.1467 0.0857 0.1768 0.1033
2% 1%	0.6734	0.7572	0.6021	0.7985	0.7168	0.655	0.748	0.5177	0.4227	0.3855	0.4453	0.3015	0.2067	0.2195	0.2731	0.1386	0.1446 0.1669	0.111	0.2175 0.1293 0.2493 0.1513
1% + CC	0.9428		0.826	1.078	0.9682			0.7053		0.5264		0.419			0.3868				0.2999 0.1873

Dev1																			
A POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90	2 hrs D09	3 hrs	4.5 hrs	6 hrs	9hrs D13	12 hrs	18 hrs	24 hrs D16	30 hrs	36 hrs	48 hrs 72 hrs D19 D20
63%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.001	0.001	0.001 0.046
39% 18%	0	0	0	0	0	0	0	0	0	0	0	0	0.1151	0.0807	0.0715	0.001	0.0647	0.0222	0.0361 0.0544 0.0647 0.082
10%	0	0	0	0	0	0	0	0	0	0.089	0.1379	0.0909	0.2168	0.1668	0.111	0.2859	0.079	0.0631	0.0663 0.0474 0.1218 0.0604
2%	0	0	0	0	0	0	0	0	0.3751	0.5161	0.4291	0.4701	0.3832	0.2401	0.1907	0.4367	0.1311	0.0938	0.1574 0.0751
1% 1%+00	0	0	0	0	0	0	0.557	0.2992 0.5223	0.707 1.0889	0.7629	0.486 0.5845	0.6099	0.4363 0.5243	0.2746	0.2379	0.4984	0.1503 0.181	0.1114	0.1734 0.0865 0.2206 0.1049
В	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2 63%	D01 0	D02 0	D03	D04 0	D05	D06	007	D08	D09 0	D10 0	D11 0	D12 0	D13 0	D14 0	D15 0	D16 0	D17 0	D18 0.001	D19 D20 0.001 0.0265
39% 18%	0	0	0	0	0	0	0	0	0	0	0	0	0.1052	0.077	0.001	0.001	0.0071	0.0282	0.0283 0.0558 0.0515 0.1116
10%	0	0	0	0	0	0	0	0	0	0	0.274	0.2328	0.2137	0.2909	0.1833	0.2603	0.0913	0.1378	0.1793 0.0879
5% 2%	0	0	0	0	0	0	0	0	0.3332	0.1488	0.358	0.2934	0.2528	0.3591	0.2201	0.3107	0.1343	0.1645	0.2135 0.1064 0.2617 0.1316
1% 1% + CC	0	0	0	0	0	0	0.4509	0.4672	0.5961	0.3043	0.4849	0.5259	0.5054	0.4989	0.3083	0.4354	0.3079	0.2305	0.3003 0.1513 0.3622 0.1832
С	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2	D01	D02	D03	D04	D05	D06	D07	DOS	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19 D20
63% 39%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.001	0.001	0.001	0.001	0.0307 0.0185 0.0567 0.0406
18%	0	0	0	0	0	0	0	0	0	0	0.0738	0.1089	0.3058	0.2099	0.3229	0.1259	0.18	0.0518	0.1384 0.0746 0.1267 0.0499
5% 2%	0	0	0	0	0	0	0	0	0.3831	0.1067	0.1042	0.2104	0.3001	0.2344	0.3243	0.1794	0.0979	0.1328	0.1513 0.1032 0.1847 0.1261
1%	0	0	0	0	0	0	0	0.3358	0.7458	0.4646	0.2268	0.3214	0.4131	0.3262	0.4517	0.2666	0.1377	0.1869	0.2114 0.1537
1% + CC	0	0	0	0	0	0	0.3808	0.9233	0.9418	0.6234	0.6318	0.4398	0.4966	0.3926	0.5435	0.3209	0.1655	0.2258	0.2548 0.1846
D POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90 D08	2 hrs D09	3 hrs D10	4.5 hrs D11	6 hrs D12	9hrs D13	12 hrs D14	18 hrs D15	24 hrs D16	30 hrs D17	36 hrs D18	48 hrs 72 hrs D19 D20
63%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.001	0.0081 0.0304
39% 18%	0	0	0	0	0	0	0	0	0	0	0	0	0.0544	0.1552	0.0828	0.001 0.1135	0.0124	0.0347 0.1044	0.0636 0.0444 0.0961 0.0702
10% 5%	0	0	0	0	0	0	0	0	0	0.1536	0.1532	0.2364	0.2469	0.103	0.139	0.1092	0.0732	0.0897	0.0958 0.0951 0.1145 0.1203
2% 1%	0	0	0	0	0	0	0	0.253	0.2207	0.3545	0.2703	0.3519	0.3531	0.1771	0.2253	0.1604	0.1102	0.1833	0.1398 0.1493 0.1596 0.1721
1% + CC	0	0	0	0	0	0	0.5278	0.5158	0.6693	1.0269	0.7565	0.4805	0.4022	0.2556	0.3124	0.221	0.1279	0.2518	
E	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2 63%	D01 0	D02 0	D03	D04 0	D05	D06	D07 0	D08	D09 0	D10 0	D11 0	D12 0	D13 0	D14 0	D15 0	D16	D17 0	D18 0.001	D19 D20 0.001 0.0126
39% 18%	0	0	0	0	0	0	0	0	0	0	0	0	0.1303	0.1467	0 0.0776	0.001	0.0178	0.0124	0.021 0.0206 0.0509 0.0812
10%	0	0	0	0	0	0	0	0	0	0	0.1763	0.1997	0.1739	0.1128	0.1598	0.109	0.0938	0.1575	0.0826 0.1869
5% 2%	0	0	0	0	0	0	0	0	0.2426	0.2913	0.206	0.3211	0.2715	0.2459	0.1914	0.131	0.1324	0.1889	0.0991 0.2241 0.122 0.2749
1% 1%+00	0	0	0	0	0	0	0 0.4376	0.3894	0.2966	0.5529 0.666	0.2961 0.356	0.4906	0.4173	0.3461	0.2671 0.3217	0.1857 0.2247	0.1871 0.2266	0.2658	0.1402 0.3149 0.1856 0.3796
F	10	15	20	25	30	45	60	90	2 hrs	3 hrs		6 hrs	9hrs			24 hrs		36 hrs	
POINT-2	D01	D02	D03	D04	D05	D06	D07	DOS	D09	D10	4.5 hrs	D12	D13	12 hrs D14	18 hrs D15	D16	30 hrs D17	D18	D19 D20
63% 39%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.001	0.001	0.001	0.0104 0.0045 0.0249 0.0374
18%	0	0	0	0	0	0	0	0	0	0	0.0896	0.1498	0.1896	0.1037	0.1084	0.1065	0.0752	0.1189	0.1094 0.0579 0.2782 0.1306
5%	0	0	0	0	0	0	0	0	0	0.1614	0.1245	0.1757	0.1871	0.1559	0.2001	0.1775	0.2223	0.1332	0.3301 0.1503
2% 1%	0	0	0	0	0	0	0	0.3384	0.2475 0.3356	0.3467 0.4569	0.4641	0.2312	0.2567	0.2061	0.2444	0.2181	0.2726 0.3141	0.1621	0.4047 0.1817 0.4633 0.2066
1% + CC	0	0	0	0	0	0	0.5523	0.5273	0.5388	0.5813	0.9127	0.3314	0.354	0.4941	0.3401	0.3005	0.3786	0.3093	0.5573 0.2472
G POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90 D08	2 hrs D09	3 hrs D10	4.5 hrs	6 hrs D12	9hrs D13	12 hrs D14	18 hrs D15	24 hrs D16	30 hrs	36 hrs D18	48 hrs 72 hrs D19 D20
63%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0.001	0.001	0.001	0.001 0.0283
18%	0	0	0	0	0	0	0	0	0	0	0	0	0.0938	0.0859	0.0832	0.2569	0.0538	0.0518	0.0371 0.0703
10% 5%	0	0	0	0	0	0	0	0	0	0.1689	0.1219	0.1672	0.1604	0.136	0.114	0.1558	0.1674	0.0779	0.1301 0.072 0.1553 0.0875
2% 1%	0	0	0	0	0	0	0	0.3258	0.285	0.3944	0.3378	0.4067	0.273	0.2404	0.1808	0.2542	0.2454	0.1194	0.1893 0.1084 0.2164 0.1249
1% + CC	0	0	0	0	0	0	0.4278	0.7154	1.0746	0.815	0.4598	0.6843	0.4117	0.3314	0.2507	0.6638	0.34	0.1766	0.261 0.2186
Н	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2 63%	D01 0	D02	D03	D04 0	D05	D06	D07 0	0	D09 0	D10 0	D11 0	D12 0	D13	D14 0	D15 0	D16	D17 0	D18 0.001	D19 D20 0.001 0.0078
39% 18%	0	0	0	0	0	0	0	0	0	0	0	0	0.142	0.2483	0.2108	0.001	0.0148	0.0825	0.0662 0.0215 0.105 0.0332
10%	0	0	0	0	0	0	0	0	0	0	0.2116	0.1129	0.1531	0.2785	0.1097	0.1233	0.1617	0.0742	0.1921 0.0945
5% 2%	0	0	0	0	0	0	0	0	0.4248	0.0917 0.4518	0.3912	0.2759	0.2644	0.3313	0.1411 0.1718	0.1474 0.1812	0.1942 0.2889	0.104 0.1373	0.2309 0.114 0.284 0.1585
1% 1%+CC	0	0	0	0	0	0	0.4741	0.4118 0.6338	0.5123 0.7796	0.5429 0.6525	0.5321 0.6412	0.4409	0.3633 0.4365	0.4606 0.554	0.1974	0.2822	0.3257 0.4704	0.1558 0.1886	0.3258 0.1856 0.3927 0.2436
	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs 72 hrs
POINT-2	D01	D02	D03	D04	D05	D06	D07	DOS	D09	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19 D20
63% 39%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0154	0.0128	0.001	0.0044 0.0236 0.0932 0.0292
18% 10%	0	0	0	0	0	0	0	0	0	0	0.1511	0.1962	0.0901	0.1945	0.1468	0.1565	0.0662	0.14	0.1438 0.0657 0.0837 0.0774
5% 2%	0	0	0	0	0	0	0	0	0.4043	0.1588	0.5173	0.4716	0.1828	0.3237	0.1773	0.229	0.238	0.1009	0.1003 0.0969 0.1228 0.1201
1%	0	0	0	0	0	0	0	0.3525	0.49	0.5746	0.7013	0.644	0.3329	0.4497	0.2477	0.3231	0.3358	0.1414	0.1405 0.1385
1% + CC	0	0	0	0	0	0	0.4334	0.7856	0.5924	0.7619	0.8438	0.7747	0.52	0.5408	0.2983	0.3899	0.4044	0.1698	0.1689 0.1681
J POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90 D08	2 hrs D09	3 hrs D10	4.5 hrs	6 hrs	9hrs D13	12 hrs D14	18 hrs D15	24 hrs D16	30 hrs D17	36 hrs	48 hrs 72 hrs D19 D20
63%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.001	0.001	0.0096 0.0146
39% 18%	0	0	0	0	0	0	0	0	0	0	0	0	0.0655	0.1465	0.2183	0.001	0.0636 0.1198	0.0649 0.1064	0.1237 0.0771
10% 5%	0	0	0	0	0	0	0	0	0	0.2012	0.2758	0.1792	0.1142	0.2097	0.2992	0.1442	0.1457	0.0858	0.2244 0.1432 0.2692 0.1737
	0																		
2% 2%	0	0	0	0	0	0	0	0 0.4161	0.4282	0.5601	0.4447	0.4497	0.304	0.3203	0.4364	0.2116	0.2116	0.1261	0.3307 0.2153 0.3795 0.2482

Comparisons																				
A POINT-2 63%	10 D01 -0.2634	15 D02 -0.2941	20 D03 -0.2713	25 D04 -0.3054	30 D05 -0.3555	45 D06 -0.2965	60 D07 -0.3243	90 D08 -0.2106	2 hrs D09 -0.2196	3 hrs D10 -0.1966	4.5 hrs D11 -0.1718	6 hrs D12 -0.0933	9hrs D13 -0.1104	12 hrs D14 -0.0862	18 hrs D15 -0.0523	24 hrs D16 -0.0907	30 hrs D17 -0.0343	36 hrs D18 -0.0175	48 hrs D19 -0.0163	72 hrs D20 0.014
39% -	-0.2967 -0.4022	-0.3289 -0.4339	-0.3002 -0.3917	-0.3393 -0.4461	-0.3952 -0.5222	-0.3318 -0.4433	-0.3617 -0.4815	-0.2351 -0.3139	-0.2454 -0.3303	-0.2216 -0.3025	-0.1942 -0.2704	-0.1081 -0.1559	-0.1274 -0.0708	-0.1014 -0.0704	-0.0624 -0.0236	-0.0947 0.0659	0.0218	-0.001 0.0217	0.0139	0.0153
5% -	-0.4759 -0.5505 -0.6473	-0.4935 -0.5638 -0.6543	-0.4907 -0.5628 -0.6599	-0.4784 -0.546 -0.6296	-0.4078 -0.4693 -0.552	-0.5218 -0.598 -0.7076	-0.4776 -0.5488 -0.6436	-0.4207 -0.4882 -0.5811	-0.3714 -0.4313 -0.1392	-0.4484 -0.4319 -0.1027	-0.0668 0.1178 0.1384	-0.2496 -0.2739 -0.01	0.034 0.097 0.1195	0.0038 0.0029 0.0018	0.0235 0.0274 0.0607	0.0872 0.1197 0.1427	0.0225 0.0383 0.045	0.0116 0.0128 0.0141	-0.0038 0.0363 0.0511	0.0208 0.0269 0.0323
1%	-0.724 -0.8974	-0.7262 -0.8852	-0.7374 -0.9044	-0.6973 -0.8421	-0.619 -0.7626	-0.7858 -0.961	-0.7188 -0.3177	-0.3567 -0.2796	0.1273	0.065	0.1551	0.0635	0.135	0.001	0.0868	0.1616	0.0503	0.0194	0.0507	0.0365
B POINT-2	10 D01	15 D02	20 D03	25 D04	30 D05	45 D06	60 D07	90 D08	2 hrs D09	3 hrs D10	4.5 hrs	6 hrs D12	9hrs D13	12 hrs	18 hrs	24 hrs D16	30 hrs	36 hrs D18	48 hrs D19	72 hrs D20
39% -	-0.2631 -0.2962 -0.4008	-0.2837 -0.3172 -0.4167	-0.2938 -0.3268 -0.4335	-0.3043 -0.3375 -0.4417	-0.2773 -0.3087 -0.4089	-0.2838 -0.317 -0.4212	-0.2321 -0.2578 -0.3391	-0.2537 -0.284 -0.3828	-0.1773 -0.1988 -0.27	-0.2272 -0.2562 -0.3497	-0.1429 -0.1626 -0.2298	-0.0958 -0.1115 -0.1625	-0.0872 -0.1009 -0.0427	-0.0925 -0.1084 -0.0834	-0.0784 -0.0916 0.0727	-0.0331 -0.0393 0.034	-0.0311 -0.031 0.0354	-0.0397 -0.0216 -0.0363	-0.0162 0.0066 0.015	-0.0094 0.0122 0.044
10%	-0.4008 -0.4769 -0.5519	-0.5003 -0.5733	-0.4333 -0.5016 -0.5714	-0.5992 -0.6886	-0.4089 -0.5551 -0.6385	-0.4212 -0.5053 -0.58	-0.4001 -0.4587	-0.3494 -0.4037	-0.2646 -0.306	-0.3497 -0.2836 -0.1822	0.0696 0.1172	-0.1625 -0.1715 -0.1857	0.0031	-0.0293 -0.023	0.0725	0.0947	-0.04 -0.0234	0.0474	0.015	0.0442
1% -	-0.6492 -0.7264 -0.8982	-0.6676 -0.7413 -0.9082	-0.6648 -0.7389 -0.9	-0.8 -0.8909 -1.0876	-0.7507 -0.8412 -1.0305	-0.686 -0.7612 -0.9323	-0.5368 -0.5988 -0.276	-0.4783 -0.0709 0.1983	-0.03 0.1877 0.2499	-0.1247 -0.1418 0.1063	0.1376 0.154 0.1824	-0.1194 -0.1399 -0.1748	0.132 0.1584 0.1887	-0.0294 -0.0356 -0.0449	0.1047 0.1185 0.1394	0.1324 0.1493 0.1766	0.1253 0.0849 0.1203	0.0655 0.0744 0.0892	0.0792 0.0907 0.1097	0.0526 0.0592 0.0698
С	10	15	20	25	30	45	60	90	2 hrs	3 hrs	4.5 hrs	6 hrs	9hrs	12 hrs	18 hrs	24 hrs	30 hrs	36 hrs	48 hrs	72 hrs
	D01 -0.2631 -0.2962	-0.2916 -0.3265	-0.2856 -0.3178	-0.2668 -0.2969	-0.2711 -0.3016	-0.2419 -0.2692	-0.2731 -0.3035	-0.2796 -0.3126	-0.2216 -0.2487	-0.2728 -0.3075	-0.2111 -0.2393	-0.1578 -0.1818	-0.1956 -0.225	-0.1401 -0.1632	-0.1139 -0.1329	-0.0422 -0.0502	-0.0664 -0.0539	-0.0291 -0.0047	-0.0232 -0.0083	-0.0148 0.0002
10%	-0.4008 -0.4731 -0.5466	-0.4306 -0.496 -0.5672	-0.4214 -0.5197 -0.5917	-0.3931 -0.437 -0.5016	-0.399 -0.4903 -0.5618	-0.3547 -0.5347 -0.6138	-0.3997 -0.4315 -0.4957	-0.4194 -0.4197 -0.4849	-0.3377 -0.3363 -0.3921	-0.4201 -0.3081 -0.257	-0.3355 -0.3645 -0.4093	-0.2595 -0.2064 -0.1676	-0.0196 0.0815 0.0951	-0.0287 0.055 0.0645	0.1243 0.074 0.1157	0.0454 0.0414 0.0577	0.0563 0.0304 0.0349	-0.008 0.0385 0.0448	0.0364 0.0431 0.0497	0.0113 -0.0026 0.0392
2% - 1% -	-0.6436 -0.7217	-0.6591 -0.7308	-0.6885 -0.7654	-0.5817 -0.6477	-0.6584 -0.7366	-0.726 -0.8056	-0.5808 -0.6487	-0.5741 -0.31	-0.0864 0.2153	-0.0294 -0.0398	-0.4454 -0.4727	-0.143 -0.1708	0.1139 0.1286	0.0774	0.1374 0.1554	0.0818	0.0411 0.0461	0.0538	0.0589 0.0666	0.0458 0.0596
1%+CC	-0.8952	-0.8891 15	-0.9325	-0.7903 25	-0.9011 30	-0.9831 -45	-0.408	90	0.293 2 hrs	0.0038 3 hrs	-0.2119 4.5 hrs	-0.2186	0.153 9hrs	0.1047	0.1838	0.1088	0.0539 30 hrs	0.0726 36 hrs	0.0798 48 hrs	0.0683
POINT-2 63% -	D01 -0.2677 -0.3018	D02 -0.2964	D03 -0.3198	D04 -0.2787 -0.3099	D05 -0.2404	-0.3117	D07 -0.2642	D08 -0.1676	D09 -0.185	D10 -0.1694	D11 -0.1071	D12 -0.1313 -0.1513	D13 -0.1197 -0.1379	D14 -0.0678	D15 -0.0349	D16 -0.0607	D17 -0.026	D18 -0.0334	D19 -0.0703 -0.0296	0.0051 0.0131
18% -	-0.4104 -0.4713	-0.3322 -0.4393 -0.5595	-0.3552 -0.4681 -0.5582	-0.4082 -0.4439	-0.2675 -0.355 -0.4417	-0.3465 -0.4554 -0.4282	-0.2955 -0.3959 -0.4091	-0.187 -0.2497 -0.4626	-0.2071 -0.2798 -0.4802	-0.1923 -0.2668 -0.3786	-0.1222 -0.174 -0.1244	-0.2157 0.0652	-0.1462 0.0499	-0.0797 0.0367 -0.0132	-0.0422 0.0169 0.0459	-0.0713 0.0028 0.041	-0.0197 0.0318 -0.0164	-0.0074 0.0373 0.008	-0.0461 0.0355	0.0196
2% -	-0.5461 -0.6434 -0.7206	-0.6424 -0.7498 -0.8338	-0.6357 -0.7397 -0.8224	-0.5122 -0.5972 -0.6683	-0.5039 -0.5877 -0.6554	-0.4868 -0.5695 -0.628	-0.4723 -0.5568 -0.6247	-0.5388 -0.6439 -0.4751	-0.5555 -0.4392 -0.1932	-0.2878 -0.1715 -0.1946	-0.1001 -0.1194 0.121	0.0917 0.1082 0.122	0.0582 0.069 0.0775	-0.0167 0.0066 0.0596	0.0724 0.0876 0.0994	0.0479 0.0575 0.0649	-0.0209 -0.0236 -0.0267	0.0465 0.0596 0.0672	0.0406 0.0475 0.0529	0.045 0.0562 0.0652
1% + CC -	-0.8918	-1.02	-0.9997	-0.8226	-0.7963	-0.7581	-0.2385	-0.3761	-0.2304	0.3096	0.2241	0.1448	0.0916	0.1069	0.1167	0.0766	-0.0334	0.0801	0.0615	0.0779
POINT-2 63%	10 D01 -0.2639	15 D02 -0.3074	20 D03 -0.3056	25 D04 -0.2591	30 D05 -0.2948	45 D06 -0.2538	60 D07 -0.257	90 D08 -0.2569	2 hrs D09 -0.2474	3 hrs D10 -0.1458	4.5 hrs D11 -0.126	6 hrs D12 -0.0963	9hrs D13 -0.1194	12 hrs D14 -0.0561	18 hrs D15 -0.025	24 hrs D16 -0.0534	30 hrs D17 -0.0174	36 hrs D18 -0.0321	48 hrs D19 -0.0138	72 hrs D20 -0.0114
18% -	-0.2976 -0.4047 -0.4819	-0.3448 -0.4567 -0.5345	-0.3398 -0.4506 -0.553	-0.2899 -0.3888 -0.4602	-0.326 -0.4244 -0.4332	-0.2825 -0.3737 -0.4222	-0.2867 -0.3823 -0.4384	-0.2886 -0.3919 -0.384	-0.2764 -0.3717 -0.3301	-0.1647 -0.2261 -0.3299	-0.1432 -0.2015 0.0519	-0.1112 -0.1592 -0.0066	-0.1381 -0.0717 -0.077	-0.0665 0.0461 -0.0409	-0.0306 0.0288 0.007	-0.0629 0.0606 0.0179	-0.0043 0.0173 0.0212	-0.0279 0.0305 0.0516	0.002 0.018 0.0126	-0.0089 0.034 0.0793
5% - 2% -	-0.5589 -0.6591	-0.6131 -0.7149	-0.6327 -0.7398	-0.5298 -0.6166	-0.4924 -0.5719	-0.4812 -0.5643	-0.5037 -0.5902	-0.4451 -0.5287	-0.3811 -0.2091	-0.0934 0.0319	0.0594	0.0773	-0.026 -0.0326	0.0622	0.0056	0.0211	0.0443	0.0609	0.0133	0.0915 0.108
	-0.7388 -0.9157	-0.7947 -0.9712	-0.8252 -1.0086	-0.6887 -0.8444	-0.6362 -0.7711	-0.6235 -0.7556	-0.6584 -0.3611	-0.2059 -0.1459	-0.2105 0.3126	0.0351	0.0946	0.1537	0.0062	0.0888	0.0017 -0.0013	0.0292	0.0604	0.0841	0.0161	0.1209
																			0.0240	
POINT-2	10 D01	15 D02	20 D03	25 D04	30 005	45 D06	60 D07	90 D08	2 hrs D09	3 hrs D10	4.5 hrs D11	6 hrs D12	9hrs D13	12 hrs D14	18 hrs D15	24 hrs D16	30 hrs D17	36 hrs D18	48 hrs D19	72 hrs D20
63% - 39% -	001 -0.2641 -0.298 -0.4058	-0.3109 -0.3493 -0.4643	-0.2871 -0.3182 -0.4171	-0.3151 -0.3501 -0.4609	-0.3092 -0.3442 -0.456	-0.2436 -0.2703 -0.3536	-0.2733 -0.3036 -0.4004	-0.1555 -0.1753 -0.2304	-0.1542 -0.1733 -0.2369	-0.127 -0.1435 -0.1966	D11 -0.1613 -0.185 -0.2673	-0.1073 -0.1237 -0.1767	-0.1 -0.1155 0.0209	-0.0364 -0.0455 0.037	18 hrs D15 -0.0364 -0.0439	24 hrs D16 -0.0395 -0.0467 0.0317	0.0291 0.004 0.0162	-0.04 -0.0096 0.0388	48 hrs D19 -0.0652 -0.0654 -0.0297	0.0109 0.0177 0.0249
53% - 39% - 18% - 10% - 5% -	001 -0.2641 -0.298 -0.4058 -0.4786 -0.5542	D02 -0.3109 -0.3493 -0.4643 -0.5168 -0.5914	D03 -0.2871 -0.3182 -0.4171 -0.5413 -0.6148	D04 -0.3151 -0.3501 -0.4609 -0.6048 -0.695	005 -0.3092 -0.3442 -0.456 -0.5071 -0.5798	D06 -0.2436 -0.2703 -0.3556 -0.4559 -0.5218	D07 -0.2733 -0.3036 -0.4004 -0.3715 -0.4299	D08 -0.1555 -0.1753 -0.2304 -0.3914 -0.4515	009 -0.1542 -0.1753 -0.2369 -0.3328 -0.3926	-0.127 -0.1435 -0.1966 -0.2157 -0.09	D11 -0.1613 -0.185 -0.2673 -0.2487 -0.271	012 -0.1073 -0.1237 -0.1767 0.014 0.0138	D13 -0.1 -0.1155 0.0209 0.0366 0.0425	D14 -0.0364 -0.0435 0.037 -0.0674 -0.0486	18 hrs D15 -0.0364 -0.0439 0.0403 0.0671 0.0803	24 hrs D16 -0.0395 -0.0467 0.0317 0.0563 0.0664	D17 -0.0291 0.004 0.0162 0.0596 0.069	0.04 -0.0096 0.0388 -0.0072 -0.0063	48 hrs D19 -0.0652 -0.0654 -0.0297 0.0868 0.1002	0.0109 0.0177 0.0249 0.0633 0.0685
63% - 39% - 18% - 10% - 5% - 2% -	001 -0.2641 -0.298 -0.4058 -0.4786	-0.3109 -0.3493 -0.4643 -0.5168	-0.2871 -0.3182 -0.4171 -0.5413	-0.3151 -0.3501 -0.4609 -0.6048	-0.3092 -0.3442 -0.456 -0.5071	-0.2436 -0.2703 -0.3536 -0.4559	-0.2733 -0.3036 -0.4004 -0.3715	-0.1555 -0.1733 -0.2304 -0.3914	-0.1542 -0.1733 -0.2369 -0.3328	-0.127 -0.1435 -0.1966 -0.2157	D11 -0.1613 -0.185 -0.2673 -0.2487	-0.1073 -0.1257 -0.1767 -0.014	-0.1 -0.1155 0.0209 0.0366	-0.0364 -0.0435 -0.037 -0.0674	18 hrs D15 -0.0364 -0.0439 0.0403 0.0671	24 hrs D16 -0.0395 -0.0467 0.0317 0.0563	0.004 0.0162 0.0596	-0.04 -0.096 -0.0388 -0.0072	48 hrs D19 -0.0652 -0.0654 -0.0297 0.0868	0.0109 0.0177 0.0249 0.0633
63% 39% 18% 10% 5% 2% 1% 1% + CC	D01 -0.2641 -0.298 -0.4058 -0.4786 -0.5542 -0.6526 -0.7306 -0.9035	D02 -0.3109 -0.3493 -0.4643 -0.5168 -0.5914 -0.6877 -0.7629	D03 -0.2871 -0.3182 -0.4171 -0.5413 -0.6148 -0.7129 -0.7906 -0.9577	D04 -0.3151 -0.3501 -0.4609 -0.6048 -0.695 -0.8074 -0.8988 -1.0961 25 D04	D05 -0.3092 -0.3442 -0.456 -0.5071 -0.5798 -0.6771 -0.7552 -0.9179	D06 -0.2436 -0.2703 -0.3536 -0.4559 -0.5218 -0.6147 -0.6804 -0.829	D07 -0.2733 -0.3036 -0.4004 -0.3715 -0.4299 -0.5078 -0.5697 -0.146	D08 -0.1555 -0.1753 -0.2304 -0.3914 -0.4515 -0.5337 -0.261 -0.1996	D09 -0.1542 -0.1733 -0.2369 -0.3328 -0.3926 -0.2292 -0.2081 -0.1343 2 hrs D09	D10 -0.127 -0.1435 -0.1966 -0.2157 -0.09 0.0473 0.1188 0.1733 3 hrs	D11 -0.1613 -0.185 -0.2673 -0.2487 -0.271 -0.0095 0.0629 0.2669 4.5 hrs	D12 -0.1073 -0.1257 -0.1257 -0.1767 0.014 0.0138 0.0335 0.0356 0.0541 6 hrs D12	D13 -0.1 -0.1155 0.0209 0.0366 0.0425 0.0805 0.0927 0.1103	D14 -0.0364 -0.0435 0.057 -0.0674 -0.0486 -0.0432 -0.0505 0.1481 12 hrs	18 hrs D15 -0.0364 -0.0459 0.0463 0.0671 0.0803 0.0978 0.1127 0.1351	24 hrs D16 -0.0395 -0.0467 0.0317 0.0563 0.0664 0.0802 0.0902 0.1063 24 hrs	D17 -0.0291 0.004 0.0162 0.0596 0.069 0.0848 0.0974 0.1181 30 hrs	D18 -0.04 -0.0096 0.0388 -0.0072 -0.0063 -0.0107 -0.0127 0.0711 36 hrs	48 hrs D19 -0.0652 -0.0654 -0.0297 0.0868 0.1002 0.1228 0.141 0.171 48 hrs D19	D20 -0.0109 0.0177 0.0249 0.0633 0.0685 0.0788 0.087 0.1007
63% 39% 18% 10% 5% 2% 1% + CC G POINT-2 63% 39%	D01 -0.2641 -0.298 -0.4058 -0.4786 -0.5542 -0.6526 -0.7306 -0.9035 -0.9035 -0.2631 -0.2631 -0.2962	D02 -0.3109 -0.3493 -0.4643 -0.5914 -0.6877 -0.7629 -0.929 15 D02 -0.3106 -0.3492	D03 -0.2871 -0.3182 -0.4171 -0.5413 -0.6148 -0.7129 -0.7906 -0.9577 20 D03 -0.3292 -0.3669	D04 -0.3151 -0.3501 -0.4609 -0.6048 -0.695 -0.8074 -0.8988 -1.0961 25 D04 -0.3229 -0.3592	005 -0.3092 -0.3442 -0.456 -0.5071 -0.5798 -0.6771 -0.7552 -0.9179 30 005 -0.3044 -0.337	D06 -0.2436 -0.2703 -0.3536 -0.4559 -0.5218 -0.6147 -0.6804 -0.829 45 D06 -0.2391 -0.2657	007 -0.2733 -0.3036 -0.4004 -0.3715 -0.4299 -0.5078 -0.5697 -0.146 -0.007 -0.1973 -0.2191	D08 -0.1555 -0.1753 -0.2304 -0.3914 -0.4515 -0.5337 -0.261 -0.1996 -0.1868 -0.209	009 -0.1542 -0.1733 -0.2369 -0.3328 -0.3926 -0.2292 -0.2081 -0.1343 2 hrs 009 -0.2785 -0.3131	010 -0.127 -0.1435 -0.1966 -0.2157 -0.09 0.0473 0.1188 0.1733 3 hrs 010 -0.136 -0.1543	D11 -0.1613 -0.185 -0.2673 -0.2487 -0.271 -0.0095 0.0629 0.2669 4.5 hrs D11 -0.16	D12 -0.1073 -0.1237 -0.1767 -0.014 -0.0138 -0.0356 -0.0541 -0.1045 -0.1045 -0.1218	D13 -0.1 -0.1155 0.0209 0.0366 0.0425 0.0805 0.0927 0.1103 9hrs D13 -0.0857 -0.0993	D14 -0.0364 -0.0435 0.037 -0.0674 -0.0486 -0.0432 -0.0505 0.1481 12 hrs D14 -0.0351 -0.0419	18 hrs D15 -0.0364 -0.0403 0.0403 0.0671 0.0803 0.0127 0.1351 18 hrs D15 -0.0637 -0.0759	24 hrs D16 -0.0395 -0.0467 0.0563 0.0664 0.0902 0.1063 24 hrs D16 -0.0873 -0.1024	D17 -0.0291 0.004 0.0162 0.0596 0.069 0.0843 0.0974 0.1181 30 hrs D17 -0.0425 -0.0308	D18 -0.04 -0.0096 0.0388 -0.0072 -0.0063 -0.0107 -0.0127 0.0711 36 hrs D18 -0.0235 0.0211	48 hrs D19 -0.0652 -0.0654 -0.0297 0.0868 0.1002 0.1228 0.141 0.171 48 hrs D19 -0.0063 0.0023	020 -0.0109 0.0177 0.0249 0.0633 0.0685 0.0788 0.087 0.1007 72 hrs 020 0.0075 0.0205
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		APPENDIX	r	
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Attachment 3

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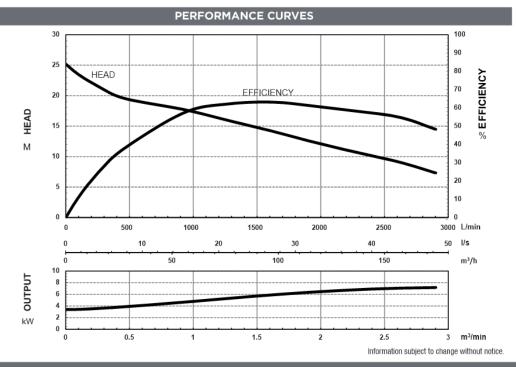


Models: **UMDZHF7500/100/3** 



MODEL	NUMBER STRUCTURE
U	Ultraflow
M	'M' indicates Manual, without floats witch
D	'D' indicates 'Drainage' series
Z	'Z' indicates New series
HF	'HF' indicates High Flow series
7500	Power consumption in 'Watts'
100	Outlet size
3	'3' indicates 415 volt three phase

SPECIFICATIONS	
Power	7.5kW / 10HP
Frequency	50Hz
Discharge	100mm / 4 Inch BSP
Weight (Excl cable)	125Kg
Solld Passage	76 mm
Phase	3ø
Voltage	415
Full Load Amps	16.0
Maximum Liquid Temperature	0-40° C
Maximum Submersion Depth	10m (33 feet)
Motor type	Dry motor
Motor Speed	4 Pole (1440 rpm)
Motor Insulation	Class F
Motor Protection	IP68
Protector	Auto-Cut
Motor Bearings	Ball Type
	Dual Mechanical seal
Seal Method	Upper: Carbon/Ceramic
	Lower; Silicon/Silicon
Impeller Type	Enclosed-channel
Motor Cover Construction	FC-200 Cast Iron
Motor Casing Construction	FC-200 Cast Iron
Motor Shaft Construction	420J2 Stainless Steel
Pump Casing Construction	FC-200 Cast Iron
Impeller Construction	FC-200 Cast Iron
Cable Material	H07RN-F



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Models: **UMDZHF7500/100/3** 



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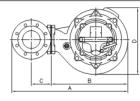
# PART NUMBER DESCRIPTION O1 Cable O3 Upper Motor Ca O3 Upper Motor Stator O9 Shaft (With Roto 10A Auto Cut Out Ow 10B Auto Cut Out Ow 10B Auto Cut Out Ow 10B Lower Bearing 17 Lubricant 19 Lower Bearing 17 Lower Bearing 18 Description O1 Cable O3 Upper Motor Stator O9 Shaft (With Roto O9

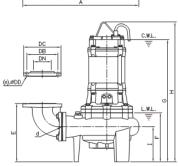
PART NUMBER	DESCRIPTION	MATERIAL
01	Cable	H07RN-F
03	Upper Motor Cap/ Bearing Housing	Cast Iron FC-200
07	Motor Stator	
09	Shaft (With Rotor)	(Shaft) Stainless Steel 420
10A	Auto Cut Out Overload	
10B	Auto Cut Out Overload	
16	Motor Casing	Cast Iron FC-200
17	Lubricant	Turbine Oil
19	Lower Bearing Housing	Cast Iron FC-200
20A	Upper Bearing	
20B	Lower Bearing	
21	Mechanical Seal	Upper: Carbon/Ceramic
	Moontainour octa	Lower: Silicon/Silicon
23	Mechanical Seal Housing	Cast Iron FC-200
25	Oil Seal	Nitrile
26	Pump Casing	Cast Iron FC-200
	Wear ring	BC6 Bronze
27	Impeller	Cast Iron FC-200
41	Handle	Steel
46	Impeller Key	304 Stainless Steel
47	O'rings	
55	Oil Plug	304 Stainless Steel

When ordering Spare parts as above, Simply add the pump model number to the part number from the list above For example, a power lead (part '01'), the complete Spare part name would be written as '01-UMDZHF7500/100/3'

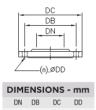
> GUIDE RAIL SYSTEM DIMENSIONS USING GR100EB GUIDE RAIL KIT

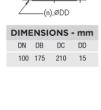
#### DIMENSIONAL DRAWING

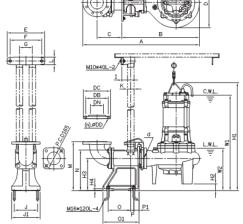












DIMENSIONS - UMDZHF7500/100/3

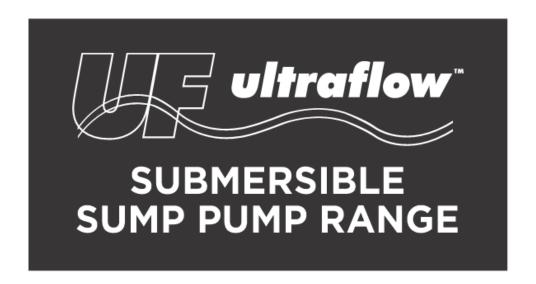
d A B C D E F G I J J1 K L M N O 01 P P1 W1 W2 H H2 H3 H4
100 907 605 192 374 290 245 100 70 180 220 50 60 380 315 176 280 24 40 779 328 878 52 250 16

Information subject to change without notice.



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# Installation Operating Maintenance Instructions & Warranty Conditions

#### IMPORTANT

This instruction manual must be read and adhered to prior to installing and/or operating the pump/s.

For safety reasons, persons who have not read these instructions should not be authorised to use the pump. The Installer must provide a copy of this manual to the Operator of the pump/s.

While this booklet is comprehensive, it is not exhaustive. Therefore, if you need clarification of any of the information contained herein, please contact us.



Revision 1.2015. This information is subject to change without notice. Please contact General Pump Company to ensure you have the most up to date information.

#### PRIOR TO INSTALLATION & OPERATION

The Installer must consult a WHS supervisor and/or adhere to all relevant criteria and regulations. The installer should consult an engineer for site assessment and correct installation methods.

When the pump is delivered, first perform the following checks.

#### INSPECTION

While unpacking, inspect the product for damage during shipment, and make sure all the fasteners, clamps, etc. are tightened properly.

#### SPECIFICATION CHECK

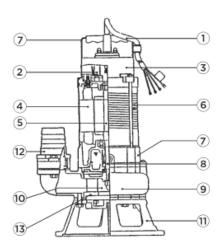
Check the model number to make sure it is the product that was ordered. Be certain it is the correct voltage and frequency.

#### PRODUCT SPECIFICATIONS



#### **CAUTION:**

- Do not operate this product under any conditions other than those for which it is specified.
- Failure to observe this precaution can lead to electrical shock, electrical leakage, fire, water leakage, damage to property, injury and death.



- Cable
- 2. Protector
- 3. Motor Cover
- Motor
- Shaft
- Motor Frame
- 7. Oil Chamber
- Mechanical Seal
- 9. Casing
- 10. Impeller
- 11. Stand/Strainer
- Discharge
- 13. Wear Plate

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#### **INSTALLATION**



#### **CAUTION:**

- Do not use pump in liquids other than water, sewage, or chemically stable wastewater. Do not use pump in oil, salt water, flammable liquids, or organic solvents.
- Use with a power supply voltage within ±5% of the rated voltage.
- Do not use in water temperatures outside the range of 0-35°C. This can lead to failure, electrical leakage, shock or fire.
- Do not use in the vicinity of explosive or flammable materials, or areas classified as hazardous.
- Use only in fully assembled state.

**NOTE:** Consult your dealer or representative before using with any liquids others than those indicated in this document.

# PREPARING FOR INSTALLATION

Before installing the pump at a work site, you will need to have the following tools and instruments ready.

- · Insulation resistance tester
- AC Voltmeter
- · AC ammeter (clamp on type)
- Bolt and nut tighteners
- · Power supply connection tools
- Ensure adequate power supply is available

**NOTE:** Please read also the instructions that come with each of the test instruments.

# CHECKS TO MAKE BEFORE INSTALLATION

#### When a three pin plug is used:

Use the megohmeter to measure the insulation resistance between the cabtyre cable plug tips and ground.

#### When connection leads are used:

With the megohmeter, measure the insulation resistance between each core lead and the ground lead (Green/Yellow).

Reference insulation resistance:  $20\Omega$  or greater.

**NOTE:** The reference insulation resistance (20  $\Omega$  or greater) is the value when the pump is new or has been repaired.



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#### **WARNING:**

- When installing the pump, pay close attention to its centre of gravity and weight. If it is not lowered into place correctly, it may fall and be damaged or cause injury.
- When transporting the pump by hand, be sure to employ manpower commensurate with the weight of the pump. To avoid back injury when lifting the pump, bend the knees to pick it up rather than bending your back.



#### CAUTION:

- Do not under any circumstances install or move the pump by suspending it from the power cable. The cable may be damaged, causing electrical leakage, shock, fire, injury or death.
- 1 Attach the hose to the hose coupling as far as it will go, then fasten it securely with the hose band.
- 2 Avoid dropping the pump or other strong impact. Lift the pump by holding it firmly with both hands or by attaching a rope or chain to the handle.
- 3 Install the pump in an upright position on a secure base. Ensure that the inlet to the pump is not blocked by sludge, mud, solids, plastic bags, rubbish.

- 4 Where a float switch is attached to the pump, ensure the float switch is free to operate without interfering with tank walls, pipe work etc.
- 5 A swing check non-return valve and isolating valve should be fitted to discharge pipe close to the pump but accessible so that it can be replaced.
- 6 The pump must not be used in or at swimming pools, garden ponds or where there are people in the water.



#### **CAUTION:**

- Avoid dry operation, which will not only lower performance but can cause the pump to malfunction, leading to electrical leakage and shock.
- 7 Install the pump in a location with sufficient water level, where water collects readily.

**NOTE:** Please refer to "Operating Water Level" (page 10) for the water level necessary for operation.

**NOTE:** The discharge end should be located higher than the water surface. If the end of the hose or pipe is submerged, water may flow back to the pump when the pump is stopped; and if the hose end is lower than the water surface, water may overflow when the pump is turned off.

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#### **CAUTION:**

 If large quantities of earth are sucked up, damage resulting from erosion in the pump can lead to electrical leakage and shock. 8 To prevent the pump strainer stand from becoming submerged in mud, causing it to suck in debris, mount it on a block or firm base.

#### **ELECTRICAL WIRING**

# PERFORMING ELECTRICAL WIRING



#### **WARNING:**

- Electrical Wiring should be performed by a qualified/licenced person in accord with all applicable regulations.
   Failure to observe this precaution not only risks breaking the law but is extremely dangerous.
- Incorrect wiring can lead to electrical leakage, electrical shock, fire, property damage, injury or death.
- Always make sure the pump is equipped with the specified overload protectors and fuses or breakers, as required by law, so as to prevent electrical shock from an electrical leak or pump malfunction.
- The voltage, frequency and current rating are displayed on the name plate, please ensure that the power supply meets the requirements.

#### **GROUNDING**



#### **WARNING:**

 Do not use the pump without first earthing it properly. Failure to earth it can lead to electrical shock from an electrical leak or pump malfunction.



#### **CAUTION:**

 Do not attach the earth wire to a gas pipe, water pipe, lightening arrestor or telephone earth wire. Improper earthing can result in electrical shock.

# CONNECTING THE POWER SUPPLY



#### **WARNING:**

 Before connecting leads to the terminal, make certain the power supply is turned off (circuit breaker, etc), to avoid electrical shock, shorting,



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or unexpected starting of the pump, leading to injury or death.



#### **WARNING:**

 Before inserting the power supply plug make certain the power supply is turned off (circuit breaker etc), to avoid electrical shock, shorting, or unexpected starting of the pump, leading to injury or death.



#### **CAUTION:**

 Do not use the pump with the power cable or plug connected loosely, which can result in electric shock, shorting, fire, injury or death.



#### **CAUTION:**

- Draw power from a dedicated power outlet. Sharing the outlet with other equipment may overheat the branch outlet and could result in a fire.
  - When using a three pin plug, connect as described in the manufacturer's instructions.
  - When a single-phase power source is used, connect the leads to the control panel terminals as shown in the diagram, making sure they do not become twisted together.



#### **CAUTION:**

 Be sure to use a dedicated power supply with a ground/earth leakage circuit breaker.

#### **POWER CABLE**



#### **CAUTION:**

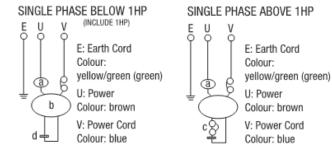
- If it is necessary to extend the power cable, use a core size equal to or larger than the original. This is necessary not only for avoiding a voltage drop, but to prevent cable overheating which can result in fire, electrical leakage, electrical shock, injury and death. Refer to AS3000
- If a cable with cut insulation or other
- damage is submerged in the water, there is a danger of water seeping into the motor causing a short. This may result in damage to pump, electrical leakage, electrical shock, fire, injury or death.
- Be careful not to let the power cable be cut or become twisted. This may result in damage to the pump, electrical leakage, electrical shock, fire, injury or death.

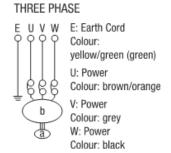
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- If it is necessary to submerse the connection leads of the power cable in water, first seal the leads completely in a molded sleeve, to prevent electrical leakage, electrical shock, fire, injury or death.
- Do not allow power cable leads or power supply plug to become wet.
- Make sure that the cable does not become excessively bent or twisted, and does not rub against a structure in a way that might damage it.

#### ELECTRICAL CIRCUIT DIAGRAMS





 THREE PHASE PUMPS must be connected to a external motor starter fitted with a contactor and overload. The nominal current of the motor starter must correspond to the electrical data marked on the pump nameplate.

#### CHECKING OF DIRECTION OF ROTATION (THREE PHASE PUMPS ONLY)

The direction of rotation should be checked every time the pump is connected to a new installation.

Check the direction of rotation as follows:

At all times keep fingers and hands away from impeller.

- Position the pump so that the impeller can be observed.
- 2 Start the pump momentarily, pump will jerk be careful.
- 3 Observe the rotation of the impeller. The correct direction of the rotation is indicated by an arrow on the top of the motor (anticlockwise when seen from the bottom). If the impeller rotates in the wrong direction, reverse the direction of rotation by interchanging two phases of the motor.



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If the pump is connected to a piping system, the direction of rotation can be checked as follows:

- Start the pump and check the quantity of water or the discharge pressure.
- 2 Stop the pump and interchange two of the phases to the motor.
- 3 Start the pump and check the quantity of water or the discharge pressure.
- 4 Stop the pump.
- 5 Compare the results taken under point 1 and 3. The connection which gives the larger quantity of water or the higher pressure is the correct direction of rotation.

#### **OPERATION**

#### BEFORE STARTING

 Make sure once again that the product is of the correct voltage and frequency rating.



#### **CAUTION:**

 Using the product with a voltage and frequency other than the rated voltage frequency will not only lower its performance but damage the product.

**NOTE:** Confirm the rated voltage and frequency on the model name plate.

2 Confirm the wiring, supply voltage, circuit breaker capacity, and motor insulation resistance.

Reference insulation resistance:  $20\Omega$  or greater.

**NOTE:** The reference insulation resistance ( $20\Omega$  or greater) is the value when the pump is new or has been repaired.

3 The setting on the circuit breaker or other overload protector should be made in accord with the rated currency of the pump.

**NOTE:** See the model name plate on the pump for its rated current.

#### **TEST OPERATION**



#### **WARNING:**

- Never operate the pump while it is suspended in the air. The recoil will result in injury, property damage or death.
- 1 Run the pump for a short time (3–10 minutes) and confirm the following:
- Using an ammeter (clamp-on type), measure the operating current at the L1, and L2 phase leads on the terminal.

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Countermeasure: If the operating current exceeds the rated value, pump motor overload may be a cause, or there may be insufficient back pressure. Make sure the pump has been installed under proper conditions as described in Installation (page 5).

 Using an AC voltmeter (tester), measure voltage at the terminals.

Supply voltage tolerance: within ±5% of rated voltage.

Countermeasure: If the supply voltage is outside the tolerance, possible causes are the power supply capacity or an inadequate extension cable. Look again at Electrical Wiring (page 8) and make sure the conditions are proper.



#### **CAUTION:**

- In case of very excessive vibration, unusual noise or odour, turn off the power immediately and consult with your nearest dealer or representative.
   Continuing to operate the pump under abnormal conditions may result in electrical shock, fire, property damage, injury or death.
- 2 If the test operation reveals no problems, continue operating the pump.

#### **OPERATION**



#### **WARNING:**

- Do not operate the pump in dry pit, well, trench etc.
- The pump may become very hot during operation. To avoid being burned, be careful not to contact the pump accidentally.
- Make sure no extraneous objects such as pins, nails or other metal objects, cloth, wipes, rocks, wood, napkins or sanitary items or products of this nature are sucked into the pump.
   These can damage the pump or cause it to malfunction, and can result in electrical shock or electrical leakage.
- In case of a power outage, turn off the power to the pump to avoid having it start unexpectedly when the power is restored, presenting serious danger to people in the vicinity.
- Pay careful attention to the water level while the pump is operating. Dry operation may cause the pump to malfunction.

**NOTE:** See page 10, "Operating water level" for the water level necessary for operation.

 Sharp bends in the hose, especially near its base, may cause air pockets to form resulting in idle operation. Lessen the degree of bending while continuing to operate the pump.



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#### OPERATING WATER LEVEL



#### **CAUTION:**

 Do not operate the pump below the C.W.L. (continuous running water level). Failure to observe this condition may result in damage to pump, electrical leakage or electrical shock.



#### MOTOR PROTECTION SYSTEM (Autocut Protector)

Some single phase pumps have a built-in motor protection system (Autocut Protector). If an excessive current is detected or the motor overheats, for reasons such as the following, the pump will automatically, stop operating regardless of the water level, to protect the motor.

- Change in supply voltage polarity
- Overload
- Open-phase operation or operation under constraint

**NOTE:** Always determine the cause of the problem and resolve it before resuming operation. Simply repeating cycles of stopping

and restarting will result in damage to the pump. Do not continue operation at a very low lift, low water level, or while the strainer stand is clogged with debris. Not only will performance suffer, but such conditions may cause noise, heavy vibration, and malfunctioning.

# MAINTENANCE AND INSPECTION

Regular maintenance and inspections are necessary for continued efficient functioning of the pump. If any abnormal conditions are noticed, refer to the section on Troubleshooting (pages 12-13) and take corrective measures immediately.

It is highly recommended that a spare pump be kept ready in case of any problems.

#### PRIOR TO INSPECTION



#### **WARNING:**

Consult WHS supervisor for correct procedures.



#### **WARNING:**

 Detach the power cable from the receptacle or terminals, after making certain the power supply (circuit breaker, etc) is turned off. Failure to follow this precaution will result in a serious accident or death from electrical shock or unexpected starting of the pump motor.

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1 Washing the Pump: Remove accumulated matter from the surface of the pump and wash it with clean water. Take special care to remove any debris from the impeller.

When inspecting the pump exterior look for any peeling or chipped paint, and make sure the nuts and bolts are fastened tightly. Any cracks in the surface should be repaired by cleaning up that area, drying it and then applying touchup coating.

**NOTE:** touchup is not supplied. Note that some kinds of damage or looseness may require that the unit be dismantled for repairs. Please consult with your nearest dealer.

#### Frequency

#### Inspection Items

#### MONTHLY

#### Measure insulation resistance – Reference resistance $1\Omega$ or greater

**NOTE:** if the insulation resistance has become notably lower than previous inspection, an inspection of the motor will be necessary.

- Measure operating current Compare with rated current.
- Measure supply voltage Compare with allowable range (within ±5% of rated voltage)
- · Pump inspection.
- A noticable drop in performance may indicate wear in the impeller, etc., or else clogging of the strainer stand, etc. Remove clogged debris, and replace any worn parts.

#### **BI-ANNUALLY**

- Oil inspection.
- Check the oil every six months or after 1,000 hours of use, whichever comes first.

#### ANNUALLY

- · Change Oil.
- Change oil every 12 months or after 2,000 hours of use, whichever comes first.
- Designated Oil: Turbine oil VG32 Caltex or similar.
- · Change mechanical seal.

**NOTE:** Trained personnel are required for inspecting and replacing the mechanical seal. Consult with your nearest dealer or representative.

#### 2 TO 5 YEARS

 Overhaul – This should be carried out even if there are no problems with the pump. The frequency depends on how continuously the pump is in use.

NOTE: Consult with your nearest dealer



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#### **STORAGE**

When the pump is out of use for an extended period, wash it and dry it thoroughly, then store it indoors.

**NOTE:** Always run a test operation before putting the pump back into service.

When the pump is left installed in the water, it should be run at regular intervals (about once a week).

#### **OIL INSPECTION & CHANGE**

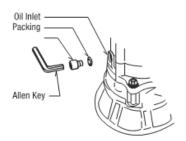
Inspecting Oil

Remove the Oil Plug (Hex. Bolt) and tilt the pump to drain a small amount of oil. If the oil is milk white or has water mixed with it, the Mechanical seal maybe faulty. In this case the pump will need to be dismantled and repaired.

Replacing the Oil

Remove the Oil Plug and drain all the oil, then replace it with the specified amount.

**NOTE:** Used oil and other waste products should be disposed of by a qualified agent, in accord with applicable laws. The Oil Plug packing and O-Ring should be replaced each time the oil is inspected or changed.



#### TROUBLESHOOTING

#### **Trouble**

Does not start. Starts, but immediately stops.

#### Cause

- 1. Power Failure
- Large discrepancy between power source and voltage
- 3. Significant drop in voltage
- 4. Motor phase malfunction
- 5. Electric circuit connection faulty
- 6. Faulty connection of control circuit
- Fuse blown
- 8. Faulty magnetic switch
- 9. Water is not at level indicated by float
- 10. Float is not at appropriate level
- 11. Float defective
- 12. Short circuit breaker is functioning
- 13. Foreign matter clogging pump
- 14. Motor burned out
- 15. Motor bearing failure

#### Remedy

- 3. Contact electric power company and devise counter measures
- Inspect connections and magnetic switch
- 5. Inspect electric circuit
- 6. Correct wiring
- 7. Replace with correct type of fuse
- Replace correct type of magnetic switch
- Raise water level
- 10. Move float to appropriate starting level
- Repair or replace
- 12. Repair location of short circuit
- 13. Remove foreign matter
- Repair or replace
- 15. Repair or replace

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### **TROUBLESHOOTING**

#### Trouble

#### Operates, but stops after a while.

#### Cause

#### Prolonged dry operation has activated motor protector and caused the pump to stop

 High liquid temperature has activated motor protector and caused the pump to stop.

#### Remedy

- 1. Raise stop water level
- 2. Lower liquid temperature

#### Does not pump. Inadequate volume.

- 1. Reverse rotation
- 2. Significant drop in voltage
- 3. Operating a 60Hz pump on 50Hz
- 4. Discharge head is high
- 5. Large piping loss
- Low operating water level causes air suction
- 7. Leaking from discharge piping
- 8. Clogging of discharge piping
- 9. Foreign matter in suction inlet
- 10. Foreign matter clogging pump
- 11. Worn impeller

- 1. Correct rotation (operation 2, 3)
- Contact electric power company and devise counter measures
- 3. Check nameplate
- 4. Recalculate and adjust
- 5. Recalculate and adjust
- Raise water level or lower pump.
- 7. Inspect, repair
- 8. Remove foreign matter
- 9. Remove foreign matter
- Disassemble and remove foreign matter
- Replace impeller

#### Over current.

- 1. Unbalanced current and voltage
- 2. Significant voltage drop
- Motor phase malfunction
- 4. Operating 50Hz pump on 60Hz
- 5. Reverse rotation
- Low head, Excessive volume of water
- Foreign matter clogging pump
- Motor bearing is worn or damaged
- Contact electric power company and devise counter measure
- Contact electric power company and devise counter measure
- Inspect connections and magnetic switch
- 4. Check nameplate
- 5. Correct rotation (see page 7)
- 6. Replace pump with low head pump
- Disassemble and remove foreign matter
- 8. Replace bearing

Pump vibrates; excessive operating noise.

- Shut off valve closed too far
- 2. Piping resonates
- 3. Reverse rotation
- 1. Open shut off (valve)
- 2. Improve pipe mounting
- 3. Correct rotation (see page 7)



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- the equipment was correctly installed and under proper use in accordance with the 'Installation, Operation and Maintenance Instructions' issued by GENERAL PUMP COMPANY and also accepted codes of good practice, relevant Australian Standards and Government regulations.
- the claim for goods under warranty arises solely from alleged faulty and/or defective materials and/or workmanship.
- the company is notified in writing within twenty four (24) hours, after the discovery of any alleged faults and/or defects stating the date, place of purchase and invoice number.
- the repair is carried out by GENERAL PUMP COMPANY or its agent who has been specifically authorised in writing to carry out the repair under warranty.
- the faulty and/or defective goods are returned freight paid and at the purchaser's risk to the company or its authorised agent as required.
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# WARRANTY CONDITIONS

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- damage caused by the lack of maintenance of installation including but not limited to regular cleaning of pits, pumpwells and float switches
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# Waste Management Plan

Commercial - 60 Rifle Range Road | Bargara

Date 14 December 2020 Project Number 15908



#### REPORT CONTROL SHEET

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II



## 1. Introduction

RMA Engineers has been engaged by Bargara Village Pty Ltd to provide a Waste Management Plan in relation to a proposed mixed-use commercial development located at 60 Rifle Range Road, in Bargara, within the Bundaberg Regional Council local government area.

#### 1.1 Objectives and scope

This waste management plan addresses the waste associated with the mixed-use commercial development. Considerations of detailed management, operation and design with respect to the waste storage and collection are envisaged to be undertaken during future detailed design stages of the development.

This waste management plan outlines measures to achieve the following objectives:

- Avoid and minimise generation of waste using the Waste Hierarchical principles
- Provide a safe and efficient means to collect and dispose of waste
- Provide procedural measures for the disposal of waste
- Review waste generation and storage requirements for the site
- Review refuse collection requirements for the site

Where required, this report makes recommendations for the mitigation of development impacts.

This plan details only the management of standard waste streams and not handling, storage and removal of special, chemical or hazardous waste.

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# 2. Proposed development

## 2.1 Locations and descriptions

The development is located on Lot 7 on SP228667, within the Bundaberg Regional Council local government area. The site is situated approximately 12 km to the east of Bundaberg CBD.

The site land is currently classified as local centre in the Planning Scheme. It is bounded by land classified as low density residential to the northeast, emerging community to the west, low density to the southeast and community facilities / rural land to the southwest.

The subject site and its environs are illustrated on the locality plan in Figure 2-1.



Figure 2-1: Locality Plan

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## 2.2 Development details

The proposed development comprises the following:

#### Stage 1

- Service Station (207 m<sup>2</sup> GFA)
- Café / Restaurant (170.67 m² GFA)

#### Stage 2

- Café / Restaurant (216.58 m² GFA)
- Retail 1 (128.42 m² GFA)
- Retail 2 (119.52 m² GFA)
- Retail 3 (119.52 m<sup>2</sup> GFA)
- Retail 4 (84.52 m<sup>2</sup> GFA)
- Retail 5 (84.52 m<sup>2</sup> GFA)
- Retail 6 (84.52 m<sup>2</sup> GFA)
- Specialty Shop 1 (255.23 m² GFA)
- Specialty Shop 2 (214.14 m² GFA)
- Specialty Shop 3 (233.55 m² GFA)
- Specialty Shop 4 (282.2 m<sup>2</sup> GFA)
- Gymnasium (282.68 m² GFA)

#### Stage 3

- Supermarket including storeroom area (1510.74 m² GFA)
- Bulky Goods 1 (309.16 m<sup>2</sup> GFA)
- Bulky Goods 2 (305.98 m<sup>2</sup> GFA)
- Bulky Goods 3 (305.98 m<sup>2</sup> GFA)
- Bulky Goods 4 (309.16 m<sup>2</sup> GFA)

The proposed layout is shown in Figure 2-2 and Appendix A.

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Figure 2-2: Development layout

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## 3. General waste procedures

This assessment of waste volumes is an estimate which will ultimately be influenced by the site management and commitment towards waste disposal and recycling.

#### 3.1 Construction and development waste

It will be the responsibility of the lead contractor to remove all construction related waste offsite, in a manner that satisfies authority requirements. A separate waste management plan should be undertaken for the construction (or demolition) activities prior to commencement of the development operational works stage.

#### 3.2 Waste caretaker/s

Completion of the development will see the appointment of a waste caretaker/s, who will be responsible for staffing and managing all waste generated by the development.

Note: Staff working at the service station, cafés, retail, specialty and bulky goods stores may also be appointed waste duties or may be expected to handle (or move) waste as part of their position. The waste handling, management and training for these staff are to be coordinated by the waste caretaker/s

All equipment movements in each component of the development are to be managed by the appointed waste caretaker/s at all times. Other staff or visitors will not be permitted to transport waste or recycling to the bin store areas. Waste bins will be available throughout the site for disposal of both general waste and recycling.

Duties allocated to the waste caretaker/s may include (not limited to) the following:

- Organising, maintaining, and cleaning the allocated general and recycled waste storage areas (frequency to the discrepancy of management and operation of development)
- Organising both garbage and recycled waste collection as required
- Operating machinery (such as the waste tug or the baling machine for compaction of paper and cardboard waste – if applicable for the development).
- Monitoring the use of the waste facilities, and ensuring that bins are exchanged and cleaned.
- Educating and training of staff of the correct waste management procedures for the site.
- Coordination of waste between the different uses of the development.

It should be noted it is the responsibility of the site manager to monitor the number of bins required for the development. Recycling, bin numbers and sizes may be altered to suit the development, as waste volumes may change due to the developments management and operation.

#### 3.3 Reporting

It is recommended that management ensure that all waste service providers submit monthly reports detailing the movements and weights of any waste and recycling removed from the site. Regular reviews of servicing are suggested to assist with sustainability reporting, and ensure the sustainability of operational and economic performance of the developments waste procedures.

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#### 3.4 Reducing waste with better practice waste management strategies

It is recommended that management provide an effective waste management strategy that includes all of the elements of the Waste Hierarchy, by identifying what waste generation should be avoided, through to ensuring that waste generated is appropriately disposed of. Some examples of approaches can include:

- Reduce/avoid: double sided printing, electronic filing procedures, reusable cups
- Reuse: return packaging to supplies, donate unwanted items to charities, fix broken items
- Recycling: having separate bins that separate recycling
- Recovery: composting organic materials
- Disposal: dispose of some materials at suitably licenced landfills (i.e. paint, asbestos, batteries etc)

#### 3.5 Education

Signage and identification should be provided within the bin store areas and on bins to minimise incorrect waste disposal.

Regular communication should also be undertaken to ensure the relevant staff have knowledge of any system upgrades, other efficiencies, or procedural changes that need to occur.

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# 4. Development waste procedures

A review of the proposed bin store areas was undertaken to facilitate the most safe and effective method of collection.

#### 4.1 Waste handling and collection

Bulk bins are proposed to be provided in the bin store areas, to allow staff to dispose of general and recycled waste in a location appropriate for collection twice a week.

The bin store areas are located adjacent to each building group within the development, as shown in **Figure 4-1**. These locations are considered appropriate as they minimise the distance for the movement of waste from the buildings to the bin store areas.



Figure 4-1: Bin store areas locations

### 4.1.1 Kitchen and food preparation areas

The following waste procedures are recommended for kitchen and food preparation areas within the café / restaurant components of this development:

- Kitchen and food preparation areas will be supplied with appropriate waste and recycle bins
  to be transported by management to the bin store areas.
- All waste bins should be bagged or plastic lined.

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 Management will consider provision and servicing of grease interceptors and basket arresters, the design of which will be considered further in the detailed design stage of the development.

- Café / restaurant tenants will make arrangements for storing used cooking oil and organising
  its collection by the appropriate servicing. An oil storage container is suggested to be located
  in either the relevant bin store areas or food preparation areas for development use.
- All flattened cardboard will be collected and transported to the bin store areas and, if applicable, compacted/baled using a cardboard and plastic baler machine.

#### 4.1.2 Service station

The following waste procedures are recommended for the service station component of the development:

- The service station is supplied with appropriate waste and recycle bins to be transported by management to bin store area 1.
- Bin sizes and quantities are interchangeable, and frequency of collections are determined to reduce the number of bins required on site.
- All waste bins should be bagged or plastic lined.
- Individual recycling programs are utilised to ensure comingled recycling is separated correctly.
- All flattened cardboard will be collected and transported to the bin store areas and, if applicable, compacted/baled using a cardboard and plastic baler machine.

#### 4.1.3 Supermarket

The following waste procedures are recommended for the supermarket component of this development:

- Supermarket tenant is supplied with appropriate waste and recycle bins to be transported by supermarket staff to bin store area 4, for disposal into the appropriate bulk bins.
- Bin sizes and quantities are interchangeable, and frequency of collections are determined to reduce the number of bins required on site
- All waste bins should be bagged or plastic lined
- Individual recycling programs are utilised by tenant to ensure comingled recycling is separated correctly
- If applicable, separate organic bins should be provided for organic waste. These bins shall be collected by a specialist contractor for off-site composting.
- Comingled Recycling: all plastics (PET, HDPE and PVC) will be disposed into the recycling bin located in the bin store area. Where appropriate, provision of a baler is recommended for plastic.

All paper, newspaper and magazine waste generated by the supermarket tenant will disposed into the designated recycling bin located in the bin store area.

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#### 4.1.4 Retail (including retail, specialty shops & bulky goods development components)

The following waste procedures are recommended for the retail, specialty shops and bulky goods components of this development:

- Building tenants are supplied with appropriate waste and recycle bins to be transported by management of the development to the relevant bin store area (bin store areas adjacent to each building group).
- Bin sizes and quantities are interchangeable, and frequency of collections are determined to reduce the number of bins required on site.
- All waste bins should be bagged or plastic lined.
- Individual recycling programs are utilised by retailers to ensure recycle waste is separated correctly.
- All flattened cardboard will be collected and transported to the relevant bin store area and compacted / baled using the proposed cardboard and plastic baler machine.

#### 4.1.5 Common areas

Any common areas throughout the development should be supplied with appropriate waste and recycle bins. It is recommended that management of the development be responsible for monitoring the use of the waste facilities, and ensuring that bins are exchanged and cleaned.

It is also recommended that management of the development is responsible for ensuring all common areas (including bin store areas) are kept clear of litter, and any waste is removed from these areas on a regular basis.

#### 4.1.6 Washrooms

If applicable, washrooms should be provided with collection bins for disposal of paper towel and any other associated waste.

# 4.2 Other waste streams

#### 4.2.1 Bulky items

A designated area must be must be allocated for the waste storage of bulky items, and should be incorporated with the waste and recycling areas of the development (i.e. the bin store areas). It is assumed that the disposal of bulky items will be managed appropriately by the appointed waste caretaker/s.

#### 4.2.2 Electronic and chemical items

Electronic and chemical waste items could include but not limited to batteries, computers, televisions and paint. The disposal of electronic and chemical waste items should be organized in accordance with the development waste caretaker/s.

#### 4.2.3 Cardboard Items

All cardboard waste items associated with the development should be disposed of in accordance with development management preferred operation. It is suggested that this will include the baling of cardboard by management or the appointed waste caretaker/s, which is recommended to be collected with the recycle waste. The recycling services provider are to be arranged by the development waste caretaker/s prior to commencement of development operation.

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#### 4.3 Development waste generation

It was found that there is a lack of published information regarding waste generation rates for the Bundaberg Regional Council area. Therefore, specified waste and recycle generation rates were obtained from the City of Melbourne Waste Generation Rates, City of Perth Waste Guidelines for All Development, Randwick City Council Waste Management Guidelines and Toowoomba Regional Council Technical Guideline for New Developments: General Waste and Recyclable Waste Storage and Collections.

The rates in all of these references propose similar generation values for shop (non-food), café / restaurant and supermarket premises. The rates proposed in these waste guidelines (see **Table 4-1** and **Table 4-2**) were considered appropriate for estimating the amount of waste generated by the different uses within the development.

It should be noted that this is a general provision, however, it is identified that the actual waste generated is subject to the operational procedures and site usage.

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#### 4.3.1 General waste generation

The estimated general waste generation of the development is shown below in Table 4-1.

Table 4-1: General waste generation

Bin Store Area	Use	Yield	Waste genera	ation rate	Waste (L/day)
		s	TAGE 1		
1	Service Station	207 m <sup>2</sup>	50L per 100m² flo	or area / day	104
'	Café / Restaurant	170.67 m <sup>2</sup>	660L per 100m² flo	oor area / day	1,126
Stage	Stage 1 (bin store area 1) general waste:			L per day L per week	1,230 8,609
		s	TAGE 2	L per week	0,003
	Café / Restaurant	216.58 m <sup>2</sup>	660L per 100m² fle	oor area / dav	1,429
	Retail 1	128.42 m <sup>2</sup>	50L per 100m² flo	·	64
	Retail 2	119.52 m <sup>2</sup>	50L per 100m² flo		60
2	Retail 3	119.52 m <sup>2</sup>	50L per 100m² flo	or area / day	60
	Retail 4	84.52 m <sup>2</sup>	50L per 100m² flo	or area / day	42
	Retail 5	84.52 m <sup>2</sup>	50L per 100m² flo	or area / day	42
	Retail 6	84.52 m <sup>2</sup>	50L per 100m² flo	or area / day	42
Stage	2 (bin store area 2) ger	neral waste		L per day	1,740
	Specialty Shop 1	255.23 m <sup>2</sup>	50L per 100m² flo	L per week	<b>12,180</b> 128
	Specialty Shop 2	214.14 m <sup>2</sup>	50L per 100m² flo		107
3	Specialty Shop 3	233.55 m <sup>2</sup>	50L per 100m² flo	•	117
ŭ	Specialty Shop 4	282.2 m <sup>2</sup>	50L per 100m² flo	,	141
	Gymnasium	282.68 m <sup>2</sup>	10L per 100m² flo	,	28
Stane	2 (bin store area 3) ger	neral waste		L per day	521
otage	z (biii store area 5) ger		TACE 2	L per week	3,646
	Supermarket	3	TAGE 3		
4	(including Store Room)	1510.74	660L per 100m² flo	oor area / day	9,971
Stage	3 (bin store area 4) ger	neral waste		L per day L per week	9,971 69,796
	Bulky Goods 1	309.16	50L per 100m2 flo		155
	Bulky Goods 2	305.98	50L per 100m2 flo	or area / day	153
5	Bulky Goods 3	305.98	50L per 100m2 flo	or area / day	153
	Bulky Goods 4	309.16	50L per 100m2 flo	or area / day	155
Stage	Stage 3 (bin store area 5) general waste				615
	, <b>.</b> , <b></b> ,			L per week	4,306
	Total g	eneral waste:		L per day	14,077 98,537
				L per week	00,001

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#### 4.3.2 Recycle waste generation

The estimated recycle waste generation of the development is shown below in **Table 4-2**.

Table 4-2: Recycled waste generation

Bin Store Area	Use	Yield	Waste genera	ation rate	Waste (L/day)
		S	TAGE 1		
	Service Station	207 m <sup>2</sup>	50L per 100m² flo	oor area / day	104
1	Café / Restaurant	170.67 m <sup>2</sup>	130L per 100m² fl	oor area / day	222
Stage	1 (bin store area 1) rec	ycle waste:		L per day L per week	325 2,278
		S	TAGE 2		
	Café / Restaurant	216.58 m <sup>2</sup>	130L per 100m² fl	oor area / day	282
	Retail 1	128.42 m <sup>2</sup>	50L per 100m² flo	oor area / day	64
	Retail 2	119.52 m <sup>2</sup>	50L per 100m² flo	oor area / day	60
2	Retail 3	119.52 m <sup>2</sup>	50L per 100m² flo	oor area / day	60
	Retail 4	84.52 m <sup>2</sup>	50L per 100m² flo	oor area / day	42
	Retail 5	84.52 m <sup>2</sup>	50L per 100m² flo	oor area / day	42
	Retail 6	84.52 m <sup>2</sup>	50L per 100m² flo	oor area / day	42
Stage	2 (bin store area 2) rec	ycle waste		L per day L per week	592 4,144
	Specialty Shop 1	255.23 m <sup>2</sup>	50L per 100m² flo		128
	Specialty Shop 2	214.14 m <sup>2</sup>	50L per 100m² flo	oor area / day	107
3	Specialty Shop 3	233.55 m <sup>2</sup>	50L per 100m² flo	oor area / day	117
	Specialty Shop 4	282.2 m <sup>2</sup>	50L per 100m² flo	oor area / day	141
	Gymnasium	282.68 m <sup>2</sup>	10L per 100m² flo	oor area / day	28
Stage	2 (bin store area 3) rec	ycle waste		L per day L per week	521 3,646
		S	TAGE 3	L por wook	0,040
4	Supermarket (including Store Room)	1510.74	240L per 100m² fl	oor area / day	3,626
Stage	3 (bin store area 4) rec	ycle waste		L per day L per week	3,626 25,380
	Bulky Goods 1	309.16	50L per 100m2 flo		155
	Bulky Goods 2	305.98	50L per 100m2 flo	oor area / day	153
5	Bulky Goods 3	305.98	50L per 100m2 flo	oor area / day	153
	Bulky Goods 4	309.16	50L per 100m2 flo	oor area / day	155
Stage 3 (bin store area 5) recycle waste			L per day	615	
290	- ( 010.0 4.04 0) 100	,		L per week	4,306 5.670
	Total re	ecycle waste:		L per day	5,679
				L per week	39,754

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#### 4.3.3 Number of bins required

The number of bins required to store the waste associated with this development is detailed in **Table 4-3** below. Note: refer to **Appendix B** for a more detailed breakdown of waste storage requirements (i.e. no. of bins per bin type required for each bin store area).

Table 4-3: No. of bins required for waste collection

Bin Store Area	Type of waste	Bin Qty	Bin size	Collection frequency (no. per week)
	General	2	3,000L	2
'	Recycle	1	2,000L	2
2	General	2	4,000L	2
2	Recycle	1	3,000L	2
3	General	1	2,000L	2
3	Recycle	1	2,000L	2
	General	6	4,000L	3
4	Recycle	3	3,000L	3
5	General	1	3,000L	2
5	Recycle	1	3,000L	2

It should be noted that the proposed bin arrangements for the development will allow for additional waste storage if needed (as values within the tables in **Appendix B** are rounded up).

Waste oil storage is proposed as part of the development, as discussed in Section 4.1.1.

It is recommended that a baling machine be installed within each of the bin store areas, to help provide compaction of recyclable waste (such as cardboards and plastics).

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#### 4.4 Bin store areas

#### 4.4.1 Proposed layout of bin store areas

From an initial review of the development plans shown at **Appendix A** (052-2019- Drawings TP01 to TP10, dated 8 December 2020), it was identified that the bin store areas are deemed sufficient for the proposed bulk bin storage. All bin store areas have capacity to the number of bulk bins required for the expected waste generated, as discussed above in **Section 4.3.3** (refer to figures below).

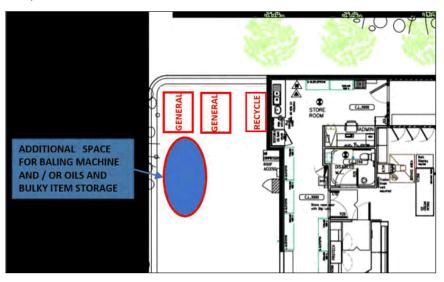


Figure 4-2: bin store area 1 layout

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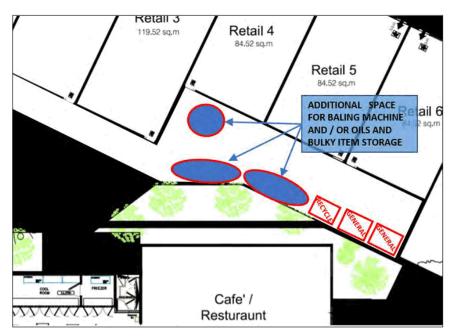


Figure 4-3: bin store area 2 layout

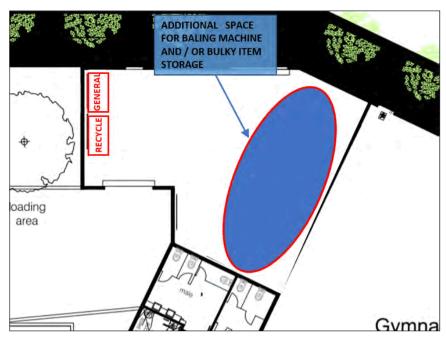


Figure 4-4: bin store area 3 layout

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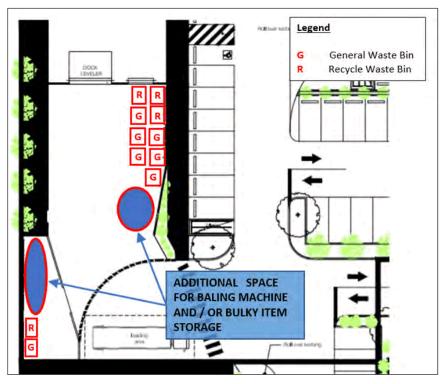


Figure 4-5: bin store area 4 & 5 layouts

#### 4.4.2 Physical design considerations for the bin store areas

#### Frequency

All bin store areas excluding bin store area 1 have room to cater for weekly collection frequencies. A collection frequency of twice a week is proposed to minimise odour and vermin.

Bin store area 1 has room to cater for a collection frequency of two collections per week, however a collection frequency of <u>three</u> collections per week is proposed, to maximise available operational space for the loading area and to minimise odour and vermin. It is noted that the other bin store areas within the development (particularly bin store area 3) have ample space to cater for overflow bins from bin store area 1, if needed.

#### Bin storage

The bin store areas have adequate room to accommodate the proposed bulk bin arrangements i.e. a total of eight 4,000L bins (2,040mm L x 1,631mm W x 1,990mm H), eight 3,000L bins (2,040mm L x 1,441mm W x 1,620mm H) and three 2,000L bins (2,040mm L x 1,041mm W x 1,570mm H).

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The layout allows adequate area for independent manoeuvring of bulk bins to the service vehicle bay for servicing by a refuse collection vehicle. It is recommended that the bulk bins be provided on wheels to assist with manoeuvring. A bin tug can also be used to assist with manoeuvring, if required.

#### Bulky items and miscellaneous

The concept design of the bin store areas provides adequate spare area to store miscellaneous and bulky waste items for collection. These may include items such as pallets, electronic equipment and containers.

#### Cardboard and plastic baler/compactor

If space permits, a cardboard and plastic baler/compactor is recommended for each area of the site. The type and size of machines will be dependent on the waste generation of each area, and are expected to be similar to the Mil-tek 305 baling machine illustrated in **Figure 4** 6.



# Mil-tek 305 Cardboard & Plastic Baling Machine

The Mil-tek 305 baling machine is ideal for businesses, institutions and organisations with medium to large volumes of cardboard and/or plastic waste for recycling. It is safe and easy to use with a simple automated bale-out mechanism.

- · Bale plastic, cardboard and other material
- · Ergonomic, easy, clean and safe
- · Low on noise, low on energy
- · Small, fast and efficient
- Automated bale-out mechanism
- Deep chamber for larger materials
- · Constant pressure: highest compaction degree

Figure 4-6: Mil-tek 305 baling machine specifications

#### <u>Oil bin</u>

It is recommended that an oil bin also be provided to collect used cooking oils. Collection services for this type of waste are usually free of charge and specialised collection containers are usually provided.

#### 4.4.3 Amenity and operational design considerations for the bin store areas

#### Accessibility

It is recommended that the bin store areas be accessible for management and relevant operational staff. If screening is used, provision of a gate should be designed for use by appropriate staff.

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Restriction measures to prevent unauthorised entry should also be considered for the bin store areas (for security and safety purposes).

#### Noise

The bin store areas do not include a compactor or any similar noise generating equipment. Therefore, the acoustic design of the areas is not required. If a baler is installed, then the operating hours of the machine should be considered to minimise noise impacts.

#### Ventilation

The bin store areas are located outside and therefore no ventilation systems are required.

#### Fire safety

Given the number of flammable materials stored within the bin store areas, appropriate fire safety, procedures and education should be provided for users.

#### Handling of bulk bins

Bin movements and transportation of waste require minimal manual handling. It is recommended that the operator must individually assess manual handling risks and provide any relevant documentation to site management.

It is recommended that the bulk bins be provided on wheels to assist with manoeuvring. A tug can be used if required, at the waste caretaker/s discretion, to assist with handling and moving the bulk bins around the bin store areas and to the servicing location.

#### Hygiene and vermin

It is recommended that all general waste collected be sealed in bags before transferring to the bin store areas, to maximise hygiene and minimise attracting vermin.

The proposed bin store areas, as shown in **Figure 4-2** to **Figure 4-5**, will require wash down provisions (hose tap located adjacent to the bin store areas, and area drained to sewer) to clean the hardstand and bins. It is recommended that this be provided in the detailed design stage of the development.

General bins and waste collection areas should also be periodically inspected and any clutter and rubbish removed.

#### Health and safety

Safe practices should be undertaken when handling, collecting and disposing of waste. Management should provide appropriate waste policies and procedures to help prevent the potential risk of injury and illness with the operation. Such risks may include:

- Manual handling injury from moving bulk bins.
- Cuts and lacerations, or contact with unknown substances
- Exposure to malodourous materials.
- Potential conflict with collection vehicles.
- Injury from using stored bins and equipment (i.e. manoeuvring bulk bins, lifting heavy objects, etc.)
- Reporting any damage to equipment, buildings, structures, and landscaping.
- Environmental damage caused by accidental spills/releases.

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First aid kits with the appropriate contents should also be conveniently located within each of the tenancies.

Given that the height of the proposed bulk bins will most likely require overhead handling for waste transfer, it is suggested that the waste caretaker/s regularly monitor manual handling practices for the bulk bins to ensure no workplace health and safety issues arise. If any issues arise as part of this ongoing monitoring, the waste caretaker/s will need to determine a more suitable bulk bin arrangement for the bin store areas, to include bulk bins more appropriate in height.

#### 4.5 Waste collection

#### 4.5.1 Frequency

For all bin store areas excluding bin store area 1, two collections per week for both general and recycled waste is considered to be sufficient in catering for the number of bins stored in the bin store areas, vermin and odour associated with bulk bin waste storage. Three collections per week for both general and recycled waste is considered sufficient for bin store area 1.

#### 4.5.2 Time of collection

The collection will be undertaken outside peak operational hours, where activity on site is at a minimum, and outside the applicable noise restriction hours, to minimise any noise complaints regarding the collection.

#### 4.5.3 RCV servicing swept path review

The bin store area swept paths shown in **Appendix C** have been undertaken in accordance with Australian Standards AS2890.1 and AS2890.2. The swept paths illustrate sufficient refuse vehicle manoeuvrability and clearance for bin servicing.

The development layout is satisfactory for refuse collection as per the following considerations:

- Servicing will be undertaken wholly on-site with the RCV entering and exiting in a forward gear.
- The internal layout connecting to the refuse collection area allows for unimpeded movements for vehicles to pass each other, where possible.
- There is no height obstruction within the refuse collection area for the RCV.

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## 5. Conclusion

RMA Engineers has been engaged by Bargara Village Pty Ltd to provide a Waste Management Plan in relation to a proposed mixed-use commercial development located at 60 Rifle Range Road, Bargara.

The findings of the report identified several waste management considerations and operational procedures that can be considered with ongoing design and future operation of the site.

A review of the layout found that the proposed waste storage and collection procedures can be adequately accommodated in accordance with Council and relevant waste management requirements.

A review of the design found that the location of the bin store areas is adequate in terms of vehicle servicing and amenity.

From the above, no adverse waste management issues were identified.

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# Appendix A Development layout plans

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# **Appendix B** Detailed waste storage requirements (no. of bins)

Table B.1: No. of bins required for waste collection (BIN STORE AREA 1)

Bin type	Bin size	1 times per week		2 times per week	
ын туре	DIII SIZE	General	Recycle	General	Recycle
Wheelie bin	240L	36	10	18	5
1,100L	1,100L	8	3	4	2
2	1,500L	6	2	3	1
3	2,000L	5	2	3	1
4	3,000L	3	1	2	1
6	4,000L	3	1	2	1

Table B.2: No. of bins required for waste collection (BIN STORE AREA 2)

Bin type	Bin size	1 times per week		2 times per week	
ын туре	DIII SIZE	General	Recycle	General	Recycle
Wheelie bin	240L	51	18	26	9
1,100L	1,100L	12	4	6	2
2	1,500L	9	3	5	2
3	2,000L	7	3	4	2
4	3,000L	5	2	3	1
6	4,000L	4	2	2	1

Table B.3: No. of bins required for waste collection (BIN STORE AREA 3)

Bin type Bin size		1 times	per week	2 times per week	
Bin type	DIII SIZE	General	Recycle	General	Recycle
Wheelie bin	240L	16	16	8	8
1,100L	1,100L	4	4	2	2
2	1,500L	3	3	2	2
3	2,000L	2	2	1	1
4	3,000L	2	2	1	1
6	4,000L	1	1	1	1

Table B.4: No. of bins required for waste collection (BIN STORE AREA 4)

Bin type Bin size		2 times per week		3 times per week	
ын туре	DIII SIZE	General	Recycle	General	Recycle
Wheelie bin	240L	146	53	97	36
1,100L	1,100L	32	12	22	8
2	1,500L	24	9	16	6
3	2,000L	18	7	12	5
4	3,000L	12	5	8	3
6	4,000L	9	4	6	3

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Table B.5: No. of bins required for waste collection (BIN STORE AREA 5)

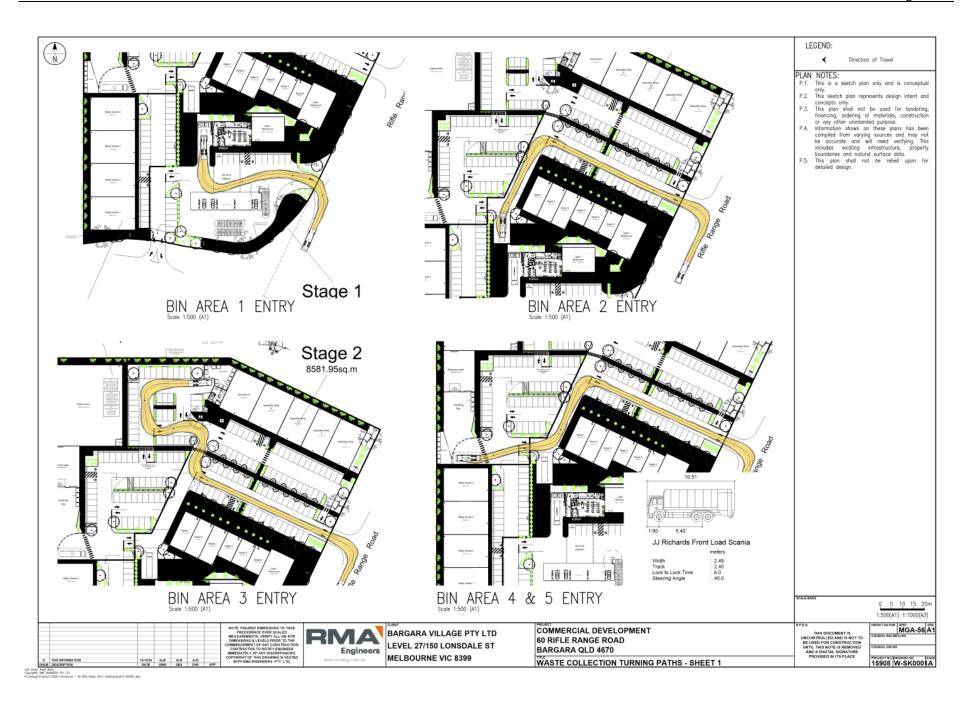
Din tune	Bin size	1 times per week		2 times per week	
Bin type	DIII SIZE	General	Recycle	General	Recycle
Wheelie bin	240L	18	18	9	9
1,100L	1,100L	4	4	2	2
2	1,500L	3	3	2	2
3	2,000L	3	3	2	2
4	3,000L	2	2	1	1
6	4,000L	2	2	1	1

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# Appendix C Swept path assessment

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**Item** 

**21 December 2021** 

Item Number: File Number: Part:

L4 521.2021.239.1 DEVELOPMENT ASSESSMENT

# **Portfolio:**

Planning & Development Services

## Subject:

67 Harbour Esplanade, Burnett Heads - Reconfiguring a Lot for Subdivision (One Lots into Four Lots)

# **Report Author:**

Sarah Watts, Principal Planner

# **Authorised by:**

Michael Ellery, Group Manager Development

# **Link to Corporate Plan:**

Our infrastructure and development - 2.3 Sustainable development - 2.3.3 Review and consistently enforce the planning scheme to ensure sustainable environmental practices.

# **Summary**:

APPLICATION NO	521.2021.239.1
PROPOSAL	Reconfiguring a Lot for Subdivision (One Lots into
	Four Lots)
APPLICANT	Gladstone Ports Corporation Limited
OWNER	Gladstone Ports Corporation Limited
PROPERTY DESCRIPTION	Lot 1 on SP157913
ADDRESS	67 Harbour Esplanade, Burnett Heads
PLANNING SCHEME	Bundaberg Regional Council Planning Scheme 2015
ZONING	Community Facilities Zone
OVERLAYS	Acid Sulfate Soils
	Flood Hazard
	Steep Land
	Coastal Management
LEVEL OF ASSESSMENT	Code
SITE AREA	14.6087 ha
CURRENT USE	Chandlery, VMR and Marine berths currently
	under construction
PROPERLY MADE DATE	17 September 2021
STATUS	The 35 business day decision period ends on 6
	January 2022

REFERRAL AGENCIES	Department of State Development, Manufacturing,
	Infrastructure and Planning
NO OF SUBMITTERS	Not Applicable
PREVIOUS APPROVALS	Development approval number 325.2012.36591.001 originally approved on 13 May 2013 for 273 wet berth Marina and associated facilities, café/restaurant, administration, marine based commercial/retail and office uses) and Caretakers dwelling and associated Prescribed Tidal Works. The applicant has started undertaking the works associated with the wet Marina berths
	Extension to Relevant Period for 4 years application number 325.2012.36591.002 approved on 16 May 2017 extending the relevant period of the above application until 16 May 2021.
	Application for a Minor change to development approval (325.2012.36591.001) application number 526.2020.219.1 approved on 2 November 2020 for Material Change of Use for General Business (318 wet berth Marina and associated facilities, café/restaurant, administration, marine based commercial/retail and office uses) and Caretakers dwelling and associated Prescribed Tidal Works
	Material Change of Use for Mixed Use Development (Burnett Harbour Marina Village) - Office, Shop, Food and Drink Outlet, Indoor Sport and Recreation, Short Term Accommodation and Multiple Dwellings which was approved by Council on 24 November 2020.
	Preliminary Approval for Material Change of Use (Preliminary Approval (Mixed Use Development - Burnett Harbour Marina Village) - Resort Complex (including: ancillary shop, restaurant, bar, recreation and conference facilities), Short Term Accommodation and Multiple Dwellings which was approved by Council on 15 December 2020
SITE INSPECTION CONDUCTED	Desktop analysis as site inspections have been undertaken by the assessing officer for the previous approvals
LEVEL OF DELEGATION C2	

# 1. INTRODUCTION

# 1.1 Proposal

The proposal seeks a development permit for a reconfiguration of a lot to subdivide the subject site into 4 lots. The 4 proposed lot sizes are as follows:

- Lot 1 7.3917 ha
- Lot 11 1.118 ha
- Lot 12 1.284 ha
- Lot 13 4.862 ha

The objective of the proposed development is to create three development project lots generally consistent with the earlier Council approvals given in 2020, and a balance lot. The three development lots are necessary to allow sale of the land to the developer and achieve the plan of development approved through decisions in applications 522.2018.89.1 and 522.2018.90.1.

# 1.2 Site Description

The subject land includes parts of Lot 1, 2 and 3 on SP157913 and is identified as 'Mixed Use – Boat Harbour' in the Burnett Heads Harbour Precinct of the Bundaberg Port Authority Land Use Plan. Lot 1 has an area of 14.6 ha and, expect for the public car park/boat ramp area located on 4 on SP157913 which does not form part of the submitted application, all but encompasses the landward edge of the boat harbour (and open space where the existing public amenities building is located). The development permit application is proposed over an area of 24,140 m<sup>2</sup>.

The subject site is improved with a two-storey masonry building and workshop that was formerly part of the Burnett Heads Marina. The workshop is no longer in use, the ground floor chandlery has been abandoned but the upstairs caretaker's residence remains in use. The adjoining hard stand yard has most vessels removed and the marina per se has been dismantled.

Also on the site are a number of unused accommodation 'dongas', the Bundaberg Volunteer Marine Rescue (VMR), the now abandoned Blue Water Club (under Lease 709722713) and a secure boat storage area (under Lease 709722690). The site has an existing boat hardstand (for 27 boats) and an associated slip, ramp and service pontoon.

The subject land is flat, ground level hovers around RL3.0 mAHD and the site is void of vegetation. The site is not mapped as containing State Planning Policy biodiversity wetland values or vegetation and habitat values or conservation area values. The site is within a coastal management district and much, of the land is within an erosion prone area.

Part of the site is located within the Flood hazard area—Level 1 Queensland floodplain and as identified in the Planning Scheme, the site is affected by the coastal management district, erosion prone area and medium and high storm tide inundation areas

The land is zoned Community Facilities Zone within the Bundaberg Regional Council Planning Scheme 2015.

To the north and west of the commercial precinct of the Burnett Harbour Marina Village is Lot 4 on SP190481. This is a Crown Reserve for recreation purposes under the trustee of Gladstone Ports Corporation and contains a road, public parking, trailer parking and boat ramp. The northern face for the balance residential component of the development permit area is the boat harbour.

To the east of the development permit area is, for all practical purposes, unimproved land (and the preliminary approval land). On the southern side of Harbour Esplanade are detached dwellings from Finucane Street to Moss Street. These properties are included in the Medium Density Residential zone.

The subject site is located approximately 400 metres west of the existing Burnett Heads Town centre to which Council has recently undertaken substantial streetscape works as a result of detailed local area planning. In conjunction with these streetscape works Council has recently constructed a multi modal pathway along Harbour Esplanade to the Burnett Heads central business district to connect the site to the CBD and to the Port area across Wallace Creek to the west of the site.

In February 2017 the Queensland Government declared the Bundaberg State Development Area (SDA), which is located at the Port of Bundaberg. The Port of Bundaberg is expected to play a significant role as a catalyst for the future growth of the Wide Bay Burnett region. The SDA is expected to provide a location for regionally significant economic activities and preserve strategic port land for the long term.

# 2. Background

On 16 May 2013, Council granted a development permit for-

- (1) Material change of use for General Business (273 wet berth marina and associated facilities, café/restaurant, administration, marine based commercial, retail and office uses) and Caretaker's Dwelling; and
- (2) Material change of use for Environmentally Relevant Activity (ERA 63 Sewerage Treatment); and
- (3) Lot reconfiguration for Subdivision by Lease; and
- (4) Operational work for Prescribed Tidal Work (ramp, pontoon, piles, rock revetment, dredging, demolition and reclamation).

On 16 May 2017, Council extended the relevant period of this approval to 16 May 2021. Dredging for the marina berth has commenced.

In conjunction with the assessment of the subject application, the applicant lodged a change to the existing approval to introduce staging, with the view that only stage 1 would be completed under the existing approval. The changes approved on 3 November 2020 incorporated the following:

1. Deliver land-based facilities in a two-stage process rather than as a single stage as follows;

#### First Stage:

Retain the existing buildings (commercial building and amenities building) and re-purpose the commercial building. Increasing and improving landscaping.

# Second Stage

Demolish the re-purposed buildings and develop the land as approved under Development Permit No.325.2012.36591.1.

# 2. Change the marina by-

- (1) Increasing the number of berths to three hundred and eighteen (318).
- (2) Modifying the layout of the marina (but not increasing the marina footprint).
- (3) Introducing five (5) substages of stage 1 stages viz Stage 1 38 berths, Stage 2 58 berths (cumulative), Stage 3 102 berths, Stage 4 140 berths, Stage 5 318 berths.

# 2. Change the two wet lease areas

The minor change seeks an expansion of Lease BU to 3.689 hectares and Lease BV to 3.9 hectares.

On 24 November 2020 Council approved a development application for a Material Change of Use for Mixed Use Development (Burnett Harbour Marina Village) - Office, Shop, Food and Drink Outlet, Indoor Sport and Recreation, Short Term Accommodation and Multiple Dwellings (Stage 1 of the Burnett Head Marina Village).

On 15 December 2020 Council approved a development application for a Preliminary Approval for Material Change of Use (Preliminary Approval (Mixed Use Development - Burnett Harbour Marina Village) - Resort Complex (including: ancillary shop, restaurant, bar, recreation and conference facilities), Short Term Accommodation and Multiple Dwellings (Stage 2 of the Burnett Heads Marina Village).

The subject reconfiguration of a lot application is to facilitate the development of the approved Marina Village.

#### 3. ASSESSMENT PROVISIONS

### 3.1. Assessment Benchmarks

The following are the benchmarks applying for this development:

Benchmarks applying for the development	Benchmark reference
Zone Code: Community Facilities Zone	Bundaberg Regional Council Planning Scheme 2015
Local Plan : Central Costal Urban Growth Area Structure Plan	Bundaberg Regional Council Planning Scheme 2015
Overlay Code	Bundaberg Regional Council
Acid sulfate soils overlay code	Planning Scheme 2015
Biodiversity areas overlay code	
Coastal protection overlay code	
Flood hazard overlay code	
Steep land (slopes > 15%) overlay code	

Benchmarks applying for the development	Benchmark reference
Other Development Code	Bundaberg Regional Council
Landscaping code	Planning Scheme 2015
Nuisance code	
Reconfiguring a lot code	
Transport and parking code	
Works, services and infrastructure code	
Planning Scheme Policy/ies	Bundaberg Regional Counci
Planning scheme policy for development works	Planning Scheme 2015
Planning scheme policy for waste management	
Development Assessment Requirements	State Planning Policy

#### 4. ISSUES RELEVANT TO THE APPLICATION

The following significant issues have been identified in the assessment of the application:

# Lot size and configuration

The purpose of the Reconfiguring a lot code is to ensure that new lots are configured in a manner which:

- Is consistent with the intended use
- Is responsive to local character and site constraints;
- Provides appropriate access (including access for services); and
- Supports high quality urban design outcomes.

The overall outcomes of the code state that this will be achieved by

- (a) development provides for lots that are of a size and have dimensions that:-
  - (i) are appropriate for their intended use:
  - (ii) promote a range of housing types in the case of residential development;
  - (iii) are compatible with the prevailing character and density of development within the local area; and
  - (iv) sensitively respond to site constraints;
- (d) development provides for subdivisions that result in the creation of safe, healthy and prosperous communities by:-
  - (vii) providing timely, efficient and appropriate infrastructure including reticulated water supply and sewerage (where available), sealed roads, pedestrian and bicycle paths, open space and community facilities in urban areas.

The proposed Reconfiguration is to facilitate subdivision of the land for the purpose of enacting the 2 most recent development approvals over the site being the:

• Material Change of Use for Mixed Use Development (Burnett Harbour Marina Village) - Office, Shop, Food and Drink Outlet, Indoor Sport and Recreation,

- Short Term Accommodation and Multiple Dwellings which was approved by Council on 24 November 2020; and
- Preliminary Approval for Material Change of Use (Preliminary Approval (Mixed Use Development - Burnett Harbour Marina Village) - Resort Complex (including: ancillary shop, restaurant, bar, recreation and conference facilities), Short Term Accommodation and Multiple Dwellings which was approved by Council on 15 December 2020

Table 9.3.4.3.2 Minimum Lot size and dimensions does not specify a minimum lot size of dimensions for land located within the Community facilities zone. Therefore the higher order objective of the code should be used as guidance on appropriate lot size and dimensions. Within the submitted application material, the applicant submitted a plan demonstrating that the proposed lot boundaries align with the buildings approved under the two above approvals.

In regards to site constraints, these were dealt with within the higher order approval with the site constraints including the land locating within the sea turtle sensitive overlay area, within the storm tide inundation area and acid sulfate soils.

All of the proposed lots have road frontage to either Harbour Esplanade, Kelly Street or Lighthouse Street.

In regards to appropriate infrastructure and services, these matters are discussed in detail below. Standard conditions relating to urban services are recommended to be applied as part of the recommended conditions of approval.

It is considered that the proposal complies and/or can be conditioned to comply with the Reconfiguration of a Lot Code.

## Servicing

# Water and Sewer

The applicant states within the application material that servicing of the site is adequately addressed through the two most recent development approval over the site being stage 1 and stage of the Burnett Heads Boat Harbour. The conditions imposed under these approvals were imposed to allow for community title subdivision. The conditions under these approval were not imposed to allow for standard format subdivision. The Performance outcome PO2 of the Works services and infrastructure code requires that Development is provided with Infrastructure, services, and utilities that:

- (a) are appropriate to its location and setting;
- (b) are commensurate with the needs of the development and its users; and
- (c) maintain acceptable public health and environmental standards.

Although located within the Community facilities zone, the development approvals over the site are for urban development and the site is surrounded by urban development. Therefore, the required level of services and utilities to be provided to each lot. Conditions of approval for water supply reflect this requirement including requiring the extension of water main to proposed lot 1 (both 1.349 ha part and 1,010 m² part) without partial services to proposed lots 11, 12 & 13 since their load will likely be in excess of a standard residential partial service.

The subdivision will need to provide a sewerage connection to each lot, specifically, Lot 1 (VMR). The development is outside the PIA and sewerage service areas but inside the fully serviced infrastructure charge area. Conditions requiring the extension of sewer main to proposed lot 1 (both 1.349 ha part and 1,010 m<sup>2</sup> part) with points of connection also to proposed lots 11, 12 & 13 are recommended to be imposed to comply with the above performance outcome.

However, it is recommended that the timing of the provision of this infrastructure be prior to the first new use commencing on any of the created lots; or at the time that either Development approval 522.2018.89 or 522.2018.90 lapses or is cancelled, whichever is the sooner. Property notes to this affect are also recommended to be placed on each of the created lots alerting purchasers to this requirement.

#### 5. REFERRALS

## 4.1 Internal Referrals

Advice was received from the following internal departments:

Internal department	Referral Comments Received	
Development Assessment - Engineering	23 November 2021	

Any significant issues raised in the referrals have been included in section 3 of this report.

# 4.2 Referral Agency/ies

Referral Agency responses were received from the following State agencies:

Agency		Concurrence/ Advice	Date Received	Conditions Yes/No
Department Development, Infrastructure and	of State Manufacturing, d Planning	Concurrence	12 November 2021	Yes

Any significant issues raised have been included in section 3 of this report.

#### 6. PUBLIC NOTIFICATION

Not Applicable.

#### 7. DRAFT CONDITIONS

Draft conditions were issued to the Applicant on 2 December 2021.

The Applicant submitted representations to Council on 13 December 2021 relating to the following draft conditions:

- 6 Water
- 7 Water
- 8 Sewerage
- 9 Sewerage

Meeting held: 21 December 2021

- 10 Electricity, Street Lighting, Telecommunications
- 11 Electricity, Street Lighting, Telecommunications

After a review of the submitted representations, the following conditions have been amended:

- 6 Water
- 7 Water
- 8 Sewerage
- 9 Sewerage
- 10 Electricity, Street Lighting, Telecommunications
- 11 Electricity, Street Lighting, Telecommunications

#### 8. REASONS FOR DECISION

The reasons for this decision are:

- The development complies with, or can be conditioned to comply with, the relevant applicable planning matters including the Planning Scheme and the Burnett Heads Local Area Plan;
- The site located within the Community facilities zone and the proposed lots comply with the requirements of the Reconfiguring a lot code applicable for the intended purpose of the zone
- The development provides for lots that are of a size and dimension appropriate for their intended use.
- The proposed development can be adequately serviced by an appropriate level of infrastructure.
- The proposed development is consistent with and facilitates delivery of earlier development approvals still applicable to the site;
- The development complies with or can be conditioned to comply with the relevant benchmarks of the Bundaberg Regional Council Planning Scheme 2015.

# **Communication Strategy:**

Communications Team consulted. A Communication Strategy is:

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☐ Required

## **Attachments:**

- ↓2 Site Plan
- #3 Proposal Plans
- 4 Referral Agency Response

Meeting held: 21 December 2021

# **Recommendation:**

That the Development Application 521.2021.239.1 detailed below be decided as follows:

## 1. Location details

Street address: 67 Harbour Esplanade, Burnett Heads

Real property description: Lot 1 on SP157913

Local government area: Bundaberg Regional Council

# 2. Details of the proposed development

Development Permit for Reconfiguring a Lot (Subdivision (One Lots into Four Lots))

## 3. Decision

Decision details: Approved in full with conditions. These conditions

are set out in <u>Schedule 1</u> and are clearly identified to indicate whether the assessment manager or a

concurrence agency imposed them.

The following approvals are given:

	Planning Regulation 2017 reference	Development Permit	Preliminary Approval
Development assessable under the planning scheme, a temporary local planning instrument, a master plan or a preliminary approval which includes a variation approval			

# 4. Approved plans and specifications

Copies of the following plans, specifications and/or drawings are enclosed.

Drawing/report title	Prepared by	Date	Reference no.	Version /issue
Aspect of develo	pment: All			
Plan of Proposed Lot Reconfiguration	Insite SJC	18/08/2021	GC21-311-P2 Sheet 1 of 4	-

Plan of Proposed Lot Reconfiguration	Insite SJC	18/08/2021	GC21-311-P2 2 of 4	Sheet	-
Plan of Proposed Lot Reconfiguration	Insite SJC	18/08/2021	GC21-311-P2 3 of 4	Sheet	-
Plan of Proposed Lot Reconfiguration	Insite SJC	18/08/2021	GC21-311-P2 4 of 4	Sheet	-

# 5. Conditions

This approval is subject to the conditions in <u>Schedule 1</u>. These conditions are clearly identified to indicate whether the assessment manager or concurrence agency imposed them.

# 6. Further development permits

Please be advised that the following development permits are required to be obtained before the development can be carried out:

- All Plumbing and Drainage Work
- All Operational Work

# 7. Properly made submissions

Not applicable — No part of the application required public notification.

# 8. Referral agencies for the application

The referral agencies for this application are:

For an application involving	Name of referral agency	Advice agency or concurrence agency	Address
•	State Development, Manufacturing , Infrastructure and Planning	Agency	State Assessment and Referral Agency (SARA) <i>E:</i> WBBSARA@dilg p.qld.gov.au <i>P:</i> PO Box 979 Bundaberg Qld 4670

# 9. Currency period for the approval

This development approval will lapse at the end of the period set out in section 85 of *Planning Act 2016*.

# 10. Agreements under Section 49(4)(b) or 66(2)(b) or (c) of the *Planning Act 2016*

There are no agreements about these matters.

#### 11. Conditions about infrastructure

The following conditions about infrastructure have been imposed under Chapter 4 of the *Planning Act 2016*:

Condition/s	Provision under which the condition was imposed
6, 7, 8, 9, 10 & 11	Section 145 – Non-trunk Infrastructure
NA	Section 128 – Trunk Infrastructure

# 12. Rights of appeal

The rights of applicants to appeal to a tribunal or the Planning and Environment Court against decisions about a development application are set out in Chapter 6, Part 1 of the *Planning Act 2016*. For particular applications, there may also be a right to make an application for a declaration by a tribunal (see Chapter 6, Part 2 of the *Planning Act 2016*).

## Appeal by an applicant

An applicant for a development application may appeal to the Planning and Environment Court against the following:

- the refusal of all or part of the development application
- a provision of the development approval

- the decision to give a preliminary approval when a development permit was applied for
- a deemed refusal of the development application.

An applicant may also have a right to appeal to the Development tribunal. For more information, see Schedule 1 of the *Planning Act 2016*.

# Appeal by a submitter

A submitter for a development application may appeal to the Planning and Environment Court against:

- any part of the development application for the development approval that required impact assessment
- a variation request.

The timeframes for starting an appeal in the Planning and Environment Court are set out in Section 229 of the *Planning Act 2016*.

<u>Schedule 2</u> is an extract from the *Planning Act 2016* that sets down the applicant's appeal rights and the appeal rights of a submitter.

# SCHEDULE 1 CONDITIONS AND ADVICES IMPOSED BY THE ASSESSMENT MANAGER

### PART 1A - CONDITIONS IMPOSED BY THE ASSESSMENT MANAGER

<u> </u>	IA - CONDITIONS IMPOSED BY THE ASSESSMENT MANAGER				
NO.	CONDITION	TIMING			
GENE	RAL				
1.	Comply with all conditions of this development approval and maintain compliance whilst the development.				
2.	Where there is any conflict between the conditions of this Development approval and details shown on the Approved plans, the conditions prevail.	At all times			
3.	The full cost of all work and any other requirements associated with this development must be met by the developer, unless specified in a particular condition or Infrastructure agreement.	At all times			
OPER					
4.	Ensure all Operational work that is Accepted development complies with the nominated assessment benchmarks or a Development application for Operational work is submitted.	Prior to the commencement of work			

Meeting held: 21 December 2021

CONS	STRUCTION MANAGEMENT	
5.	Unless otherwise approved in writing by the Assessment Manager, ensure no audible noise from work is made: a. on a business day or Saturday, before 6.30 am or after 6.30 pm b. on any other day, at any time.	_
	WATER	
6.	Provide a reticulated water supply service to each lot by supplying all necessary materials, including structures and equipment, and performing all necessary works.	a. Prior to the first new use commencing on any of the created lots; or
		b.At the time that either Development approval 522.2018.89 or 522.2018.90 lapses or is cancelled.
		Whichever is the sooner.
7.	Extend Council's water main WP.04441 (100 mm AC main terminating at the existing jetty within lot 4 on SP190481) to service proposed lot 1 (1,010 m² part north of existing lot 4 on SP190481). Details to be determined though code assessable	a. Prior to the first new use commencing on any of the created lots; or
	development application for Operational Work.	b.At the time that either Development approval 522.2018.89 or 522.2018.90 lapses or is cancelled.
		Whichever is the sooner.
	SEWERAGE	
8.	Provide a reticulated sewerage service to each proposed lot by supplying all necessary materials,	a.Prior to the first new use commencing on

	including structures and equipment, and performing all necessary works.	any of the created lots; or
		b.At the time that either Development approval 522.2018.89 or 522.2018.90 lapses or is cancelled.
		Whichever is the sooner.
9.	Extend Council's gravity sewer main from SMH.13681 (control manhole east of the Harbour Esplanade Sewerage Pump Station (SE.2008) to service proposed lots 1 (1,010 m² part north of existing lot 4 on SP190481), 11, 12 & 13. Details	a. Prior to the first new use commencing on any of the created lots; or
	to be determined though code assessable development application for operational work.	b. At the time that either Development approval 522.2018.89 or 522.2018.90 lapses or is cancelled.
		Whichever is the sooner.
	ELECTRICITY, STREET LIGHTING, TELECOMMUNICATIONS	
10.	Provide for telecommunications in accordance with the Planning scheme policy for development works. <b>Note:</b> Submission of the detail design must form part of an Operational works application.	a.Prior to the first new use commencing on any of the created lots; or
	an Operational works application.	b.At the time that either Development approval 522.2018.89 or 522.2018.90 lapses or is cancelled.
		Whichever is the sooner.

11.	Provide for electrical reticulation in accordance with the Planning scheme policy for development works.  Note: Submission of the detail design must form part of an Operational works application. No additional street lighting is required in association with this subdivision – considered open space lighting per SC6.3.8.4.5.	a. Prior to the first new use commencing on any of the created lots; or b. At the time that either Development approval 522.2018.89 or 522.2018.90 lapses or is cancelled. Whichever is the sooner.
	EASEMENTS	
12.	Lodge to the State (Titles office) for registration the following easements:	When the survey plan is endorsed
	<ul> <li>a. a minimum 3 m wide sewerage easement in gross over any sewerage main existing or proposed traversing the land</li> <li>b. a minimum 3 m wide water supply easement in gross over any water mains existing or proposed traversing the land</li> </ul>	
13.	Submit all draft easement documentation to the Assessment Manager with the lodgement of the survey plans for endorsement.	When the survey plan is endorsed
14.	All works must be clear of any existing or proposed easements on the subject land, unless agreed in writing by the Grantee.	At all times

# **PART 1B - ADVICE NOTES**

NO.	ADVICE	TIMING
GENERAL		
1.	An audit check of the Operational Works drawings has been undertaken in relation to the proposed works. A detailed check of the calculations and drawings has not been undertaken, as they have been certified by a Registered Professional Engineer of Queensland (RPEQ).	At all times

2.	The RPEQ bears full responsibility for all aspects of the engineering design, including the identification and resolution of any design faults that may arise throughout the course of the Operational works. The Assessment Manager reserves the right to require further amendments and/or additions at a later date should design errors become apparent. Inspections by Council are independent of, and do not negate, the Registered Professional Engineer	At all times	
	of Queensland (RPEQ) inspections that ensure compliance with the Operational works approval.		
GENE	RAL AMENITY		
3.	Ensure the development does not cause environmental nuisance or environmental harm as per the <i>Environmental Protection Act 1994</i> .	At all times	
RATE	S AND CHARGES		
4.	In accordance with the <i>Planning Act 2016</i> , all rates, charges, or any expenses being a charge over the subject land under any Act must be paid prior to the Plan of Subdivision being endorsed by the Assessment Manager.	Prior to the endorsement of the survey plan	
INFRA	INFRASTRUCTURE CHARGES		
5.	Infrastructure charges notice (331.2021.1368.1) applicable to the development is attached to this Development approval.	At all times	
ENVIE	RONMENTAL HARM		
6.	The Environmental Protection Act 1994 states that a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm. Environmental harm includes environmental nuisance. In this regard persons and entities, involved in the civil, earthworks, construction, and operational phases of this development, are to adhere to their 'general environmental duty' to minimise the risk of causing environmental harm. Environmental harm is defined by the Act as any adverse effect, or potential adverse effect whether temporary or permanent and of whatever magnitude, duration or frequency on an environmental value and includes environmental nuisance. Therefore, no person should cause any interference with the environment or amenity of the	At all times	

area by reason of the emission of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, wastewater, waste products, grit, sediment, oil, or otherwise, or cause hazards likely in the opinion of the administering authority to cause undue disturbance or annoyance to persons or affect property no connected with the use.

# ABORIGINAL CULTURAL HERITAGE

7. All development should proceed in accordance with the Duty of care guidelines under the *Aboriginal Cultural Heritage Act 2003*. Penalties may apply where duty of care under that act has been breached.

At all times

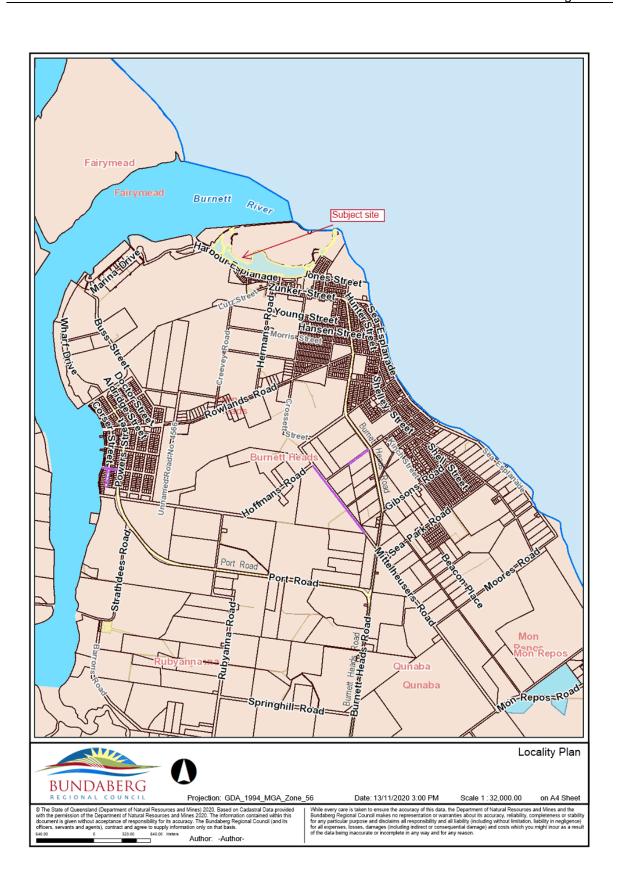
### **PART 1C - PROPERTY NOTES**

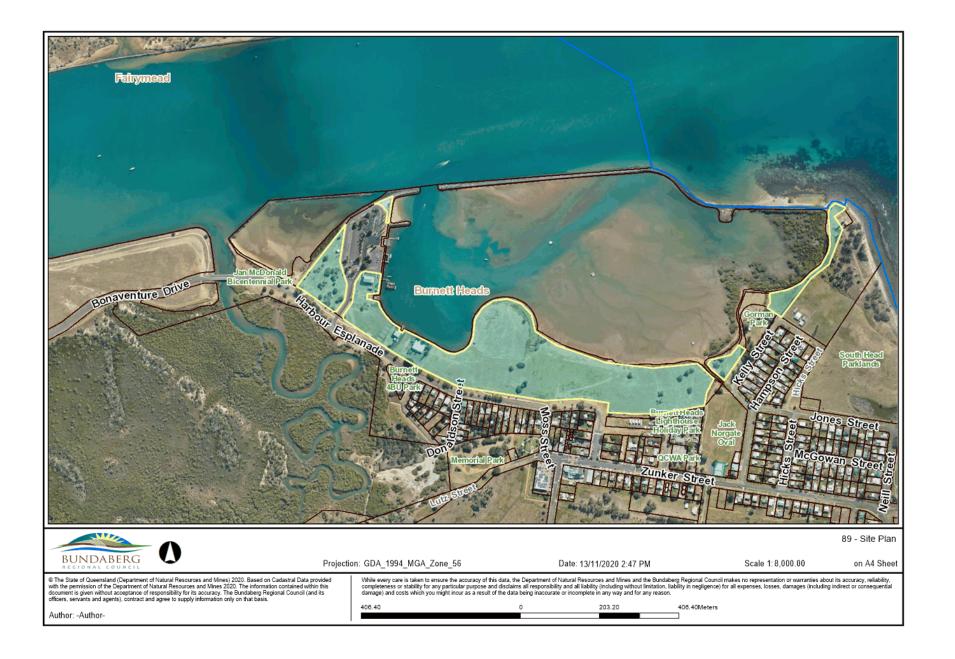
NO.	ADVICE		
PROP	PROPERTY NOTES		
1.	Development approval 521.2021.239.1 – Water		
	Prior to the first new use commencing on any of the created lots or at the time that Development approval 522.2018.89 or 522.2018.90 lapses or are cancelled, provide a reticulated water supply service to each lot by supplying all necessary materials, including structures and equipment, and performing all necessary works in accordance with conditions 6 and 7 of Development approval 521.2021.239.1.		
2.	Development approval 521.2021.239.1 – Sewerage		
	Prior to the first new use commencing on any of the created lots or at the time that Development approval 522.2018.89 or 522.2018.90 lapses or are cancelled, provide a reticulated sewerage service to each proposed lot by supplying all necessary materials, including structures and equipment, and performing all necessary works in accordance with conditions 8 and 9 of Development approval 521.2021.239.1.		
3.	Development approval 521.2021.239.1 – Sewerage		
	The following notation applies to the approved lot 1:		
	The 1,010 m <sup>2</sup> part of approved lot 1 is not serviced by Council's gravity reticulated sewerage network. Any future development must be provided with a low-		

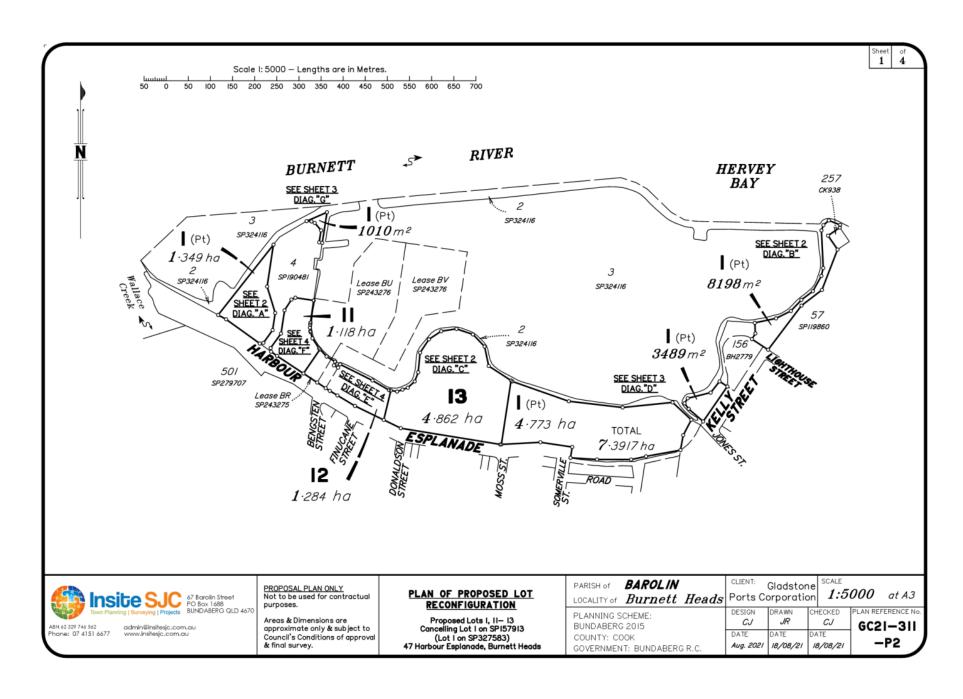
	pressure sewer (LPS) system having capacity sufficient for the use.  The 1.349 ha part of approved lot 1 is not fully serviced by Council's gravity reticulated sewerage network. Any future development must be provided with a low-pressure sewer (LPS) system having capacity sufficient for the use if it cannot reach of the nearby gravity main servicing approved lot 11.	
4.	Development approval 521.2021.239.1 – Telecommunications  Prior to the first new use commencing on any of the	
	created lots or at the time that Development approval 522.2018.89 or 522.2018.90 lapses or are cancelled, provide telecommunications infrastructure to each proposed lot by supplying all necessary materials, including structures and equipment, and performing all necessary works in accordance with conditions 10 of Development approval 521.2021.239.1.	
5.	Development approval 521.2021.239.1 – Electricity Reticulation	
	Prior to the first new use commencing on any of the created lots or at the time that Development approval 522.2018.89 or 522.2018.90 lapses or are cancelled, provide electrical reticulation to each proposed lot by supplying all necessary materials, including structures and equipment, and performing all necessary works in accordance with conditions 11 of Development approval 521.2021.239.1.	

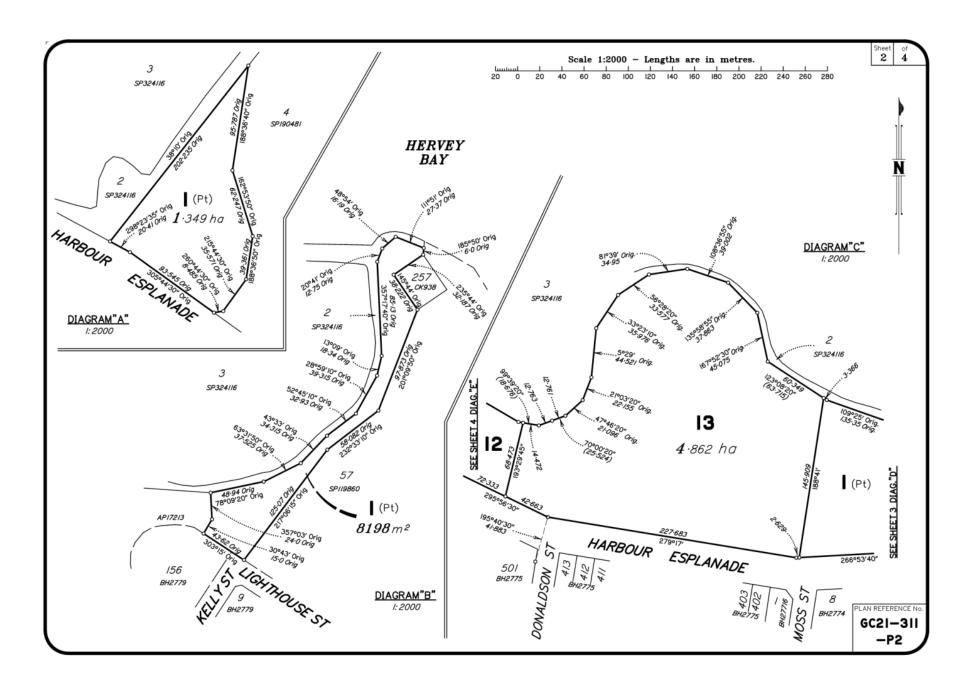
# PART 2—CONCURRENCE AGENCY CONDITIONS

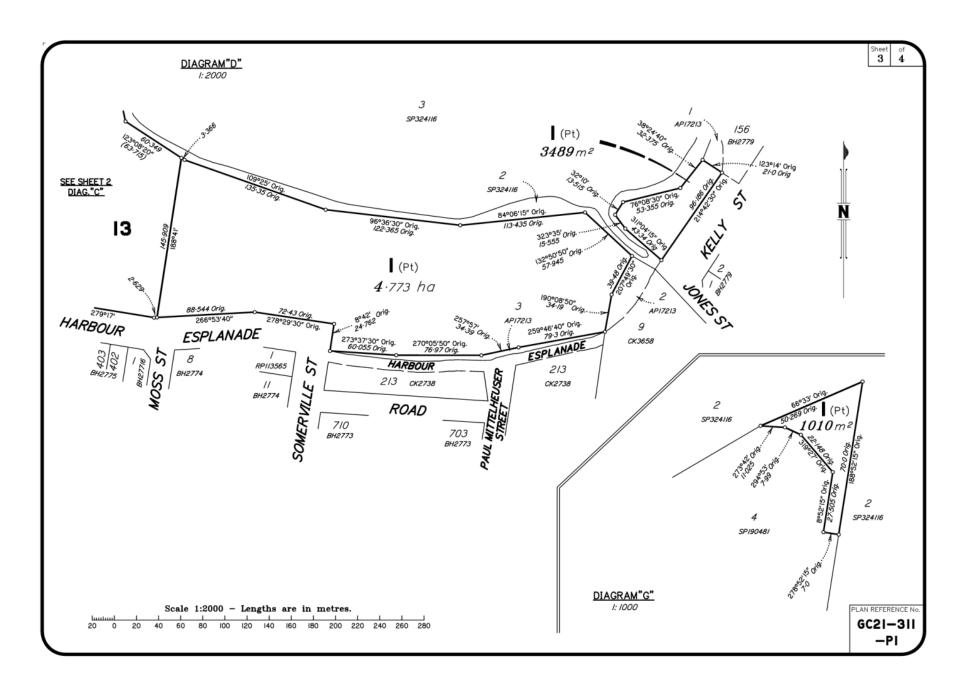
Department of State Development, Manufacturing, Infrastructure and Planning, by letter dated 12 November 2021 (copy letter attached for information).

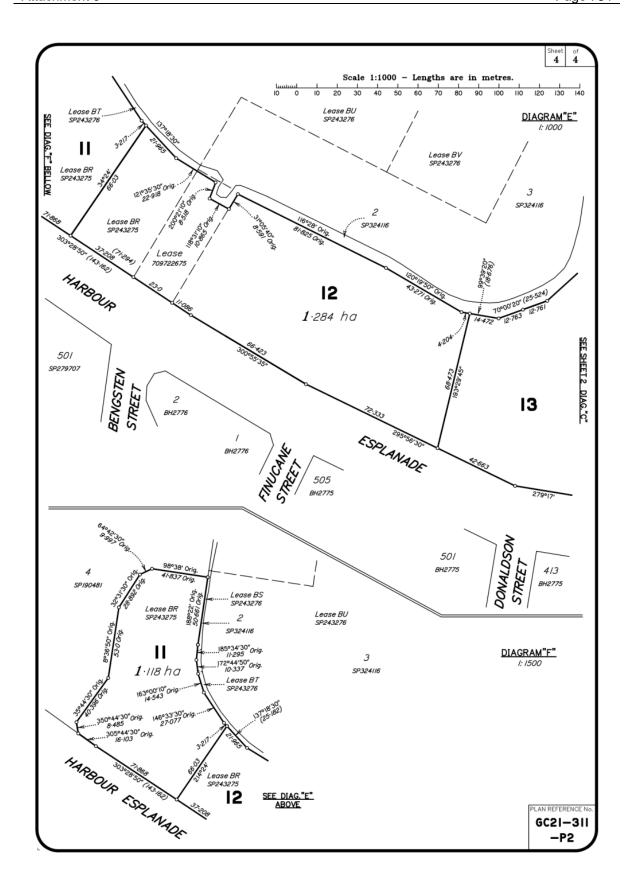












RA6-N



SARA reference: 2109-24976 SRA Council reference: 521.2021.239.1

12 November 2021

Chief Executive Officer
Bundaberg Regional Council
PO Box 3130
BUNDABERG QLD 4670
development@bundaberg.qld.gov.au

Attention: Sarah Watts

Dear Ms Watts

# SARA Response—67 Harbour Esplanade, Burnett Heads

(Referral agency response given under section 56 of the Planning Act 2016)

The development application described below was confirmed as properly referred by the State Assessment and Referral Agency on 8 October 2021.

#### Response

Outcome: Referral agency response – with conditions.

Date of Response: 12 November 2021

Conditions: The conditions in Attachment 1 must be attached to any

development approval.

Advice: Advice to the applicant is in **Attachment 2**.

Reasons: The reasons for the referral agency response are in Attachment 3.

# **Development Details**

Description: Development Permit Reconfiguring a Lot for Subdivision (One

Lot into Four Lots)

SARA Role: Referral Agency

SARA Trigger: Schedule 10, Part 17, Division 3, Table 5, Item 1 of the Planning

Regulation 2017

Development application for reconfiguring a lot in a coastal management district, involving creating a lot within an erosion prone

area

Wide Bay Burnett regional office Level 1, 7 Takalvan Street, Bundaberg PO Box 979, Bundaberg QLD 4670

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2109-24976 SRA

SARA Reference: 2109-24976 SRA

Assessment Manager: Bundaberg Regional Council

Street Address: 67 Harbour Esplanade, Burnett Heads

Real Property Description: Lot 1 on SP324116

Applicant Name: Gladstone Ports Corporation Limited

Applicant Contact Details: PO Box 1688

BUNDABERG QLD 4670 chris@insitesjc.com.au

#### Representations

An applicant may make representations to a concurrence agency, at any time before the application is decided, about changing a matter in the referral agency response (s.30 Development Assessment Rules) Copies of the relevant provisions are in **Attachment 4**.

A copy of this response has been sent to the applicant for their information.

For further information please contact Cavannah Deller, Planning Officer, on (07) 4331 5614 or via email WBBSARA@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely

Luke Lankowski

Manager, Planning - Wide Bay Burnett

cc Gladstone Ports Corporation Limited, chris@insitesjc.com.au

enc Attachment 1 - Referral agency conditions

Attachment 2 - Advice to the applicant

Attachment 3 - Reasons for referral agency response Attachment 4 - Representations provisions Attachment 5 - Approved plans and specifications

State Assessment and Referral Agency

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2109-24976 SRA

# **Attachment 1—Referral Agency Conditions**

(Under section 56(1)(b)(i) of the *Planning Act 2016* the following conditions must be attached to any development approval relating to this application) (Copies of the plans and specifications referenced below are found at Attachment 5)

No.	Conditions	Condition Timing	
Reco	Reconfiguring a Lot		
Schedule 10, Part 17, Division 3, Table 5, Item 1—Tidal Works or Work in a Coastal Management District—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Environment and Science to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition(s):			
1.	The reconfiguration must be carried out generally in accordance with the following plans:  • Plan of Proposed Lot Reconfiguration – Proposed Lots 1, 11-12 Cancelling Lot 1 on SP157913(Lot 1 on SP327583), prepared by InsiteSJC, dated 18 August 2021, reference GC21-311-P2 Sheet 1 of 4	Prior to submitting the Plan of Survey to the local government for approval	

State Assessment and Referral Agency

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2109-24976 SRA

# Attachment 2—Advice to the Applicant

## **General Advice**

Terms and phrases used in this document are defined in the *Planning Act 2016* its regulation or the State Development Assessment Provisions (SDAP) version 2.6. If a word remains undefined it has its ordinary meaning.

State Assessment and Referral Agency

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2109-24976 SRA

## Attachment 3—Reasons for referral agency response

(Given under section 56(7) of the Planning Act 2016)

#### The reasons for the department's decision are:

- The development application is for reconfiguring a lot for subdivision (one lot into four lots).
- The purpose of the proposed development is to facilitate delivery of the Burnett Heads Marina Village development (subject to separate approvals for material change of use; development permit for Stage 1 and preliminary approval for Stage 2).
- The proposed development is located within the erosion prone area however, no operational work is
  required to facilitate the proposed reconfiguration and therefore the proposed development will not
  impact on coastal erosion and process or water quality.
- · The proposed development avoids impacts on Matters of State Environment Significance.

#### Material used in the assessment of the application:

- The development application material and submitted plans
- Planning Act 2016
- Planning Regulation 2017
- The State Development Assessment Provisions (version 2.6), as published by the department
- The Development Assessment Rules
- SARA DA Mapping system
- State Planning Policy mapping system

State Assessment and Referral Agency

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# Attachment 4—Change representation provisions

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State Assessment and Referral Agency

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# Attachment 5—Approved plans and specifications

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State Assessment and Referral Agency

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# Development Assessment Rules—Representations about a referral agency response

The following provisions are those set out in sections 28 and 30 of the Development Assessment Rules<sup>1</sup> regarding **representations about a referral agency response** 

# Part 6: Changes to the application and referral agency responses

#### 28 Concurrence agency changes its response or gives a late response

- 28.1. Despite part 2, a concurrence agency may, after its referral agency assessment period and any further period agreed ends, change its referral agency response or give a late referral agency response before the application is decided, subject to section 28.2 and 28.3.
- 28.2. A concurrence agency may change its referral agency response at any time before the application is decided if—
  - (a) the change is in response to a change which the assessment manager is satisfied is a change under section 26.1; or
  - (b) the Minister has given the concurrence agency a direction under section 99 of the Act; or
  - (c) the applicant has given written agreement to the change to the referral agency response.<sup>2</sup>
- 28.3. A concurrence agency may give a late referral agency response before the application is decided, if the applicant has given written agreement to the late referral agency response.
- 28.4. If a concurrence agency proposes to change its referral agency response under section 28.2(a), the concurrence agency must—
  - (a) give notice of its intention to change its referral agency response to the assessment manager and a copy to the applicant within 5 days of receiving notice of the change under section 25.1;
     and
  - (b) the concurrence agency has 10 days from the day of giving notice under paragraph (a), or a further period agreed between the applicant and the concurrence agency, to give an amended referral agency response to the assessment manager and a copy to the applicant.

Page 1 of 2

Pursuant to Section 68 of the Planning Act 2016

In the instance an applicant has made representations to the concurrence agency under section 30, and the concurrence agency agrees to make the change included in the representations, section 28.2(c) is taken to have been satisfied.

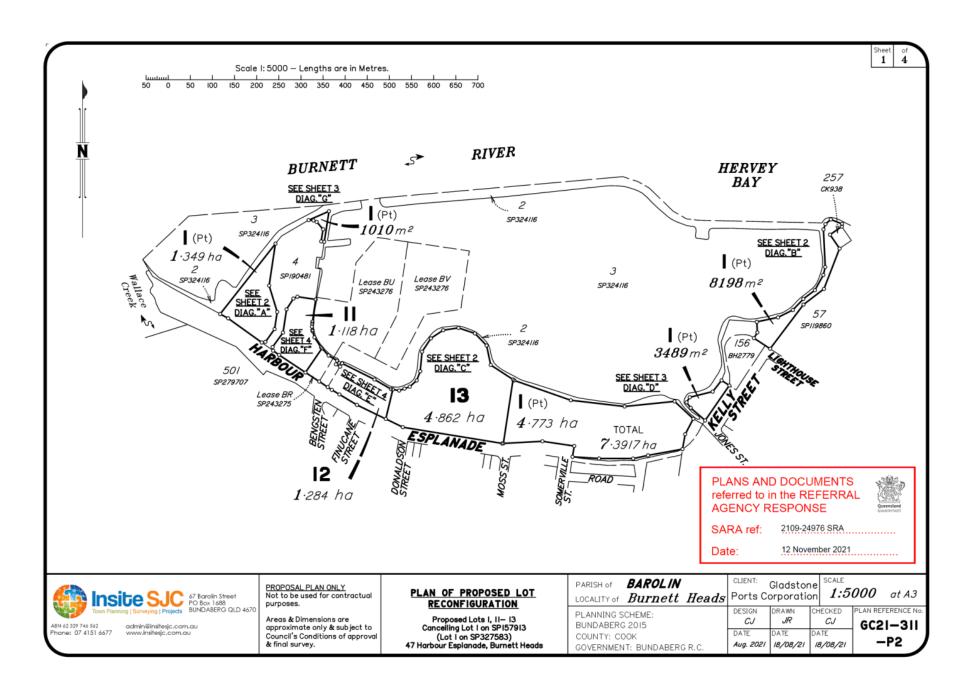
# Part 7: Miscellaneous

## 30 Representations about a referral agency response

30.1. An applicant may make representations to a concurrence agency at any time before the application is decided, about changing a matter in the referral agency response.3

Page 2 of 2

An applicant may elect, under section 32, to stop the assessment manager's decision period in which to take this action. If a concurrence agency wishes to amend their response in relation to representations made under this section, they must do so in accordance with section 28.





**Item** 

**21 December 2021** 

Item Number: File Number: Part:

L5 322.2013.38453.1 DEVELOPMENT ASSESSMENT

# **Portfolio:**

Planning & Development Services

## Subject:

DA 322.2013.38453.1 - Request for Extended Completion Date Building Bundaberg Region 2020 Incentives

# **Report Author:**

Michael Ellery, Group Manager Development

# **Authorised by:**

Stephen Johnston, Chief Executive Officer

### **Link to Corporate Plan:**

Our community and environment - 1.1 Economic growth and prosperity - 1.1.4 Develop a sustainable pipeline of strategic projects that support organisational and economic development objectives, including procuring external grant funding.

## **Background:**

Council is in receipt of a request to extend the completion date for a development to be eligible for incentives under the Building Bundaberg Region 2020 incentives scheme.

The request relates to DA 322.2013.38453.1 being a development permit for Multiple Dwelling Units and Aged care/retirement accommodation. The incentives approved on 13 November 2020 apply to proposed units 11-16 and provide for a 50% discount. Under the Infrastructure agreement (IA) executed on 20 November 2020, to receive the incentives the development was required to be completed by 18 November 2021.

The owner of the subject site has requested that the completion date be extended for a period of two years. Although the IA provides for the ability to make an Extension Request to the Chief Executive Officer, it is a precondition of such requests that the development achieve substantial commencement (ie the slabs for the units are constructed) prior to making that request. As such the request has been reported to Council for determination.

In seeking the request the owner has advised that the extension is needed given the difficulty they are having with engaging builders to complete the development. A copy of the owner's request is included as Attachment 2.

# **Associated Person/Organization:**

Emtom Pty Ltd - owner

### **Consultation:**

No consultation has been undertaken regarding this matter.

# **Chief Legal Officer's Comments:**

As noted previously, the discounts and performance of the developer are secured by an Infrastructure Agreement. If Council agrees to the extended completion date, a Deed of Variation will be required to amend the Completion Date in the IA.

# **Policy Implications:**

The Building Bundaberg Region 2020 incentives scheme closed for new application on 30 June 2021. Accordingly, it was originally envisaged that the last of the incentivised developments would be finalized in the second half of 2022 barring any extensions as allowed for under each IA.

It is also noted that the infrastructure contributions for this development were imposed as conditions on the original approval in 2007 under the policies of the former Isis Shire Council. These contributions are \$8,883.59 per two bedroom unit, or \$53,301.54 for the 6 units the subject of this request. Under the current Charges Resolution, if approved today the applicable Infrastructure charge for this development would be \$19,196.72 per 2 bedroom unit or \$115,180.50 for the 6 units.

Given the intended end date for this incentives scheme, the already substantial reduced amount payable for the development and the modest scale of the development proposed, it is considered that an extension of only 12 months is warranted.

# **Financial and Resource Implications:**

The discounts available for the development based on the current IA are outlined in the table below:

Infrastructure Amount	Applicable Discount	Reduced Infrastructure Amount
Units 11- 16 (part stage one) - \$53,301.54	50%	\$26,650.77

## **Risk Management Implications:**

There appears to be no risk management implications.

## **Human Rights:**

There appears to be no human rights implications.

# **Indigenous Land Use Agreement (ILUA) Implications:**

There appears to be no ILUA implications.

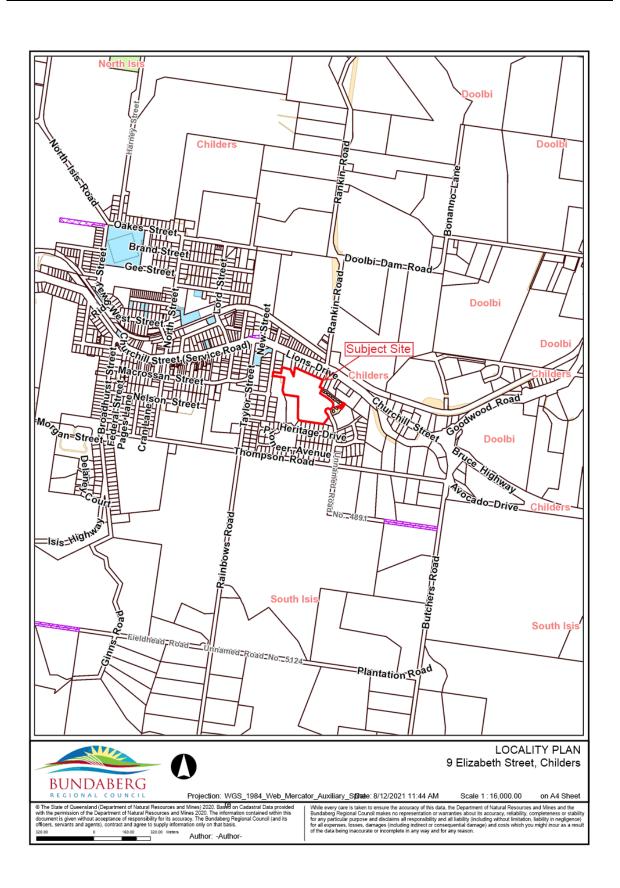
# **Attachments:**

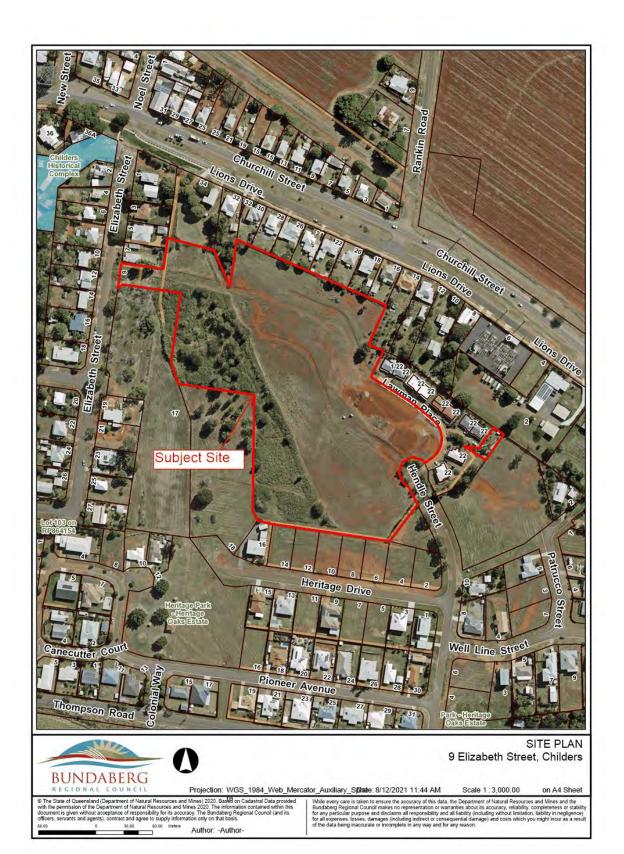
- ↓2 Site Plan
- J4 Infrastructure Agreement

Meeting held: 21 December 2021

# **Recommendation**:

That Council agree to an extension of the Completion Date in the Building Bundaberg Region 2020 infrastructure agreement for DA 322.2013.38453.1 to 18 November 2022.





Attachment 2 - Site Plan

> From: Daniel Gorza BRC CEO Incoming

RE: 9 Elizabeth St request an extension to this infrastructure charges due to Covid19 Sunday, 21 November 2021 7:27:06 PM Subject:

Date:

Attachments:

image001.jpg image002.png image003.png image003.png image004.png image005.png image006.png image008.jpg image010.png image011.png image012.png image012.png image013.png

Importance: High

To whom it may concern

Emtom Pty Ltd requests that

it is seeking an extension to our incentive discount

due to to Covid19

we are unable to subtantially commence with the development of

3 duplexes at 9 Elizabeth St Childers

as we are finding difficulty in sourcing and contracting builders for the project

We would be please for Council to grant an extension to the project and incentive discounts.

kind regards John Gorza Director

Emtom Pty Ltd

> From: Daniel Gorza <gorza2000@hotmail.com> Sent: Sunday, 7 November 2021 8:19 PM

To: Judy Jackson < Judy. Jackson@bundaberg.gld.gov.au>

Subject: 9 Elizabeth St Importance: High

Hi Judy

Can we respectfully request an extension to this infrastructure charges due to Covid19 and availability of Builders.

regards Daniel

Re: "Building Bundaberg Region 2020" Infrastructure Charges Incentive Scheme Thank you for your application for the "Building Bundaberg Region 2020" Infrastructure Charges Incentive Scheme. Your application relates to Development Permit for 3 x 2 Bedroom duplex units 11 - 16 (Council reference 322.2013.38453.1) at 9 Elizabeth St, Childers; land described as Lot: 0 SP: 202712 - Lot: 8 SP: 202712 & Lot: 101 SP: 271530, which was received by Council on 10 November 2020.

Please be advised your request has been accepted by Council. It is requested that you complete the attached document (infrastructure agreement) and post Two original hardcopies for endorsement by Council which will allow us to finalise your request.

If you require any assistance in completing the infrastructure agreement or have any questions about the process, please contact me, on telephone 1300 883 699. Yours sincerely



Senior Administration Officer

E judy.jackson@bundaberg.gld.gov.au ?

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# **Infrastructure Agreement**

Planning Act 2016

# Building Bundaberg Region 2020 Infrastructure Agreement

**Bundaberg Regional Council** Council

Emtom Pty Ltd Owner

2

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Dated this day of 2020

**PARTIES** 

Council: BUNDABERG REGIONAL COUNCIL of 190 Bourbong Street,

Bundaberg in the State of Queensland

Owner: EMTOM PTY LTD of 4551 Goodwood Road, Alloway in the State of

Queensland

# Part 1 Preliminary

#### 1. Introduction

#### 1.1 Short title

This document may be referred to as the Building Bundaberg Region 2020 Infrastructure Agreement.

#### 1.2 Deed

This document is a deed which comprises the following:

- (a) Part 1 which recites the following:
  - (i) the date of this document;
  - (ii) the names of the parties to this document;
  - (iii) the purpose for which the parties have entered into this document;
- (b) Part 2 which witnesses the terms agreed upon by the parties;
- (c) Part 3 which provides for the execution of this document by the parties.

#### 1.3 Date

This document is made on the date when the last party executes this document.

# 1.4 Parties

This document is made between the parties in Schedule 1.

#### 1.5 Recitals

This document has been entered into for the following purposes:

(a) On 30 June 2020, the Council launched the "Building Bundaberg Region 2020" infrastructure charges incentives policy with the 6

objective of stimulating new construction activity and employment in the region;

- (b) The "Building Bundaberg Region 2020" infrastructure charges incentives scheme commenced on 1 July 2020 and it seeks to offer discounts for infrastructure charges or infrastructure contributions required under a condition of approval, for certain development;
- (c) The parties have agreed that discounts will apply for the Eligible Development in accordance with the terms of this document.

# Part 2Terms agreed by the parties

# 2. Interpretation

#### 2.1 Definitions

In this document, unless the context or subject matter otherwise indicates or requires a word which is capitalised has the following meaning:

#### Applicable Discount means.

- (a) 100% of the Infrastructure Amount if the Eligible Development is for:
  - (i) CBD/Town Centre Development; or
  - (ii) Rural Sector Development where:
    - (1) intensive horticulture;
    - (2) rural industry;
    - (3) intensive animal industry
    - (4) aquaculture; or
    - (5) winery (where in a rural zone),

and is Completed by the Completion Date but limited to a maximum monetary discount of one million dollars; or

(b) 50% of the Infrastructure Amount if the Eligible Development is any other development and is Completed by the Completion Date but limited to a maximum monetary discount of one million dollars.

Approval means a development permit or compliance permit for a material change of use or reconfiguring a lot.

**Authority** means a government, semi-government, local government, statutory, public, ministerial, civil, administrative, fiscal or judicial body or other entity or body with relevant power or authority.

Business Day has the meaning in the Acts Interpretation Act 1954 (Qld).

Calendar Day means from one midnight to the following one.

CBD/TownCentreDevelopment has the meaning specified for "CBD/Town Centre development" in Attachment B of the Incentives Application Form.

(a) an infrastructure charges notice as defined in the Planning Act;

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(b) a notice equivalent to an infrastructure charges notice which is given under legislation which repeals and replaces the Planning Act.

Chief Executive Officer means the chief executive officer of the Council.

Commencement Date means the date on which this document commences as stated in clause 1.3.

#### Completed means:

Charges Notice means:

- (a) for a material change of use:
  - (i) where involving building works, a certificate of classification or the final inspection certificate (for a single detached class 1a building or structure) has been issued and the Council is satisfied that all applicable conditions for the material change of use have been complied with; or
  - (ii) where not involving building work, the whole of the approved use is established and the Council is satisfied that all applicable conditions for the material change of use have been complied with: or
- for building work, a certificate of classification or the final inspection certificate (for a single detached class 1a building or structure) has been issued; or
- (c) where the Eligible Development relates to one or more stages of development, achievement of (a) or (b) for the stage or stages.

# Completion Date means:

- (a) 18 November 2021 or
- (b) if the Chief Executive Officer extends the date under clause 6.1(c), the extended date.

Council means the Local Government identified in Item 1 of Schedule 1.

Owner means the party identified in Item 2A of Schedule 1.

Development Land means the land identified in Item 3 of Schedule 1.

**Development Obligation** means an obligation under this document to be performed and fulfilled by a party.

Dispute Notice means a Notice given under clause 11.1.

**Due Date** means the last date by which the Reduced Infrastructure Amount must be paid to the Council and identified in Item 6 of Schedule 1.

Eligible Development means the development identified in Item 4 of Schedule 1 which is:

- (a) CBD/Town Centre Development; or
- (b) Rural Sector Development; or
- (c) Other Eligible Development.

Expert means an expert appointed under clause 11.3.

**Extension Request** means a request made in writing to the Chief Executive Officer before the Completion Date sought to be extended, for an extension to the Completion Date which includes information demonstrating that:

- the Eligible Development has a chieved Substantial Commencement by the Completion Date sought to be extended; and
- (b) there is a sufficient explanation for why the Eligible Development cannot be completed by the Completion Date sought to be extended.

Force Majeure means an event:

- (a) being a Commonwealth or State government decree, an act of God, industrial disturbance, act of public enemy, war, international blockade, public riot, lightning, flood, earthquake, fire, storm or other physical or material restraint;
- (b) which is not within the reasonable control of the party claiming Force Majeure; and
- (c) which could not have been prevented by that party exercising a standard of knowledge, foresight, care and diligence consistent with that of a prudent and competent person under the circumstances.

GST has the meaning in the GST Act.

GST Act means A New Tax System (Goods and Services Tax) Act 1999 (Cth).

Incentives Application Form means the document in Schedule 3.

**Infrastructure Agreement** means an agreement under Chapter 4, Part 4 of the Planning Act.

Infrastructure Amount means the amount identified in Column 1 of Schedule 2.

**Infrastructure Charging Instrument** means a law or statutory instrument for the levying of a charge for infrastructure.

Local Government has the meaning in the Local Government Act.

Notice means a document to be given by a party or a person under this document.

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Other Eligible Development has the meaning specified for "Other eligible development" in Attachment B of the Incentives Application Form.

#### Owner means:

- (a) the party identified in Item 2 of Schedule 1;
- (b) otherwise, for land the following:
  - (i) the person for the time being entitled to receive the rent for the
  - (ii) the person who would be entitled to receive the rent for the land if the land were let to a tenant at a rent.

Planning Act means the Planning Act 2016 (Qld).

**Reconfigured Lot** means a lot created upon the reconfiguration of the Development Land.

**Reduced Infrastructure Amount** means the Infrastructure Amount discounted by the Applicable Discount and is the amount identified in Column 3 of Schedule 2.

Rural Sector Development has the meaning specified for "Rural sector development" in Attachment B of the Incentives Application Form.

#### **Substantial Commencement:**

- means the commencement of construction of either slab or footings (whichever is required for the development) proportionate to the size of the development proposed; and
- (b) does not include preliminary site works such as tree clearing orbulk earth works.

#### 2.2 Undefined word

If a word is not defined in this document, unless the context or subject matter otherwise indicates or requires, the word is to have a meaning given to it by the following:

- (a) the Planning Act;
- (b) a relevant local planning instrument if the word is not defined in the Planning Act;
- (c) the Macquarie Dictionary if the word is not defined in the Planning Act or a relevant local planning instrument.

#### 2.3 References

In this document unless the context or subject matter otherwise indicates or requires:

 a reference to a document, includes a consolidation, amendment, notation, supplement, replacement or variation of the document;

- (b) a reference to a law or a provision of a law, includes the following:
  - the law and the common law including the principles of equity of the Commonwealth, a State or a Territory;
  - (ii) a statutory instrument made or in effect under the law or the provision;
  - (iii) a consolidation, amendment, extension, re-enactment or replacement of the law or the provision;
- (c) a reference to a word in:
  - the singular includes the plural; and
  - (ii) the plural includes the singular;
- a reference to the word dollar or \$, is a reference to a dollar of Australian currency and an amount payable is payable in Australian dollars;
- a reference to writing, includes a mode of representing or reproducing a word in tangible and permanently visible form and includes a facsimile transmission:
- a reference to the word includes, or to an example or particularisation of a clause, does not limit the meaning of a word to which the clause relates to a matter of a similar kind;
- a reference to a word which is defined in this document, includes another part of speech or grammatical form of the word which is to have a corresponding meaning;
- (h) a reference to a party made up of more than one person, is a reference to all of those persons separately so that:
  - an obligation of a party binds them jointly and each of them individually; and
  - (ii) a right of a party benefits them jointly and each of them individually;
- (i) a reference to a day is a Calendar Day;
- (j) a reference to a date on or by which an act is to be done is to be taken to be the next Business Day if:
  - (i) the date is not a Business Day; or
  - (ii) the act is done after 5.00pm on the day by which the act is to be
- (k) a reference to a period of time which is to be calculated by regard to a day or an event, is to exclude the day or the day of the event;
- (I) a reference to the word land, includes the following:
  - (i) an interest or estate in, on, over or under the land;

- (ii) the airspace above the surface of the land and an estate or interest in the land:
- (iii) the subsoil of the land and an estate or interest in the subsoil;
- (iv) a part or parts of the land;
- (v) an estate or interest created for any of the above matters;
- (m) a reference to the word sell, includes transfer, dispose of and alienate but excludes a mortgage, licence, grant of an easement and a lease other than a lease for a term including an option exceeding 5 years;
- (n) a reference to a successor in title of land, includes the following:
  - (i) a person deriving title to the land through or under the Owner of the land:
  - (ii) a mortgagee which takes possession of the land;
- (o) a reference to the address of a party is a reference to the physical or postal address of that party stated in Schedule 1 or as changed under this document, as indicated by the context or subject matter.

# 3. Infrastructure Agreement

# 3.1 Infrastructure Agreement under the Planning Act

This document constitutes an Infrastructure Agreement under the Planning

# 3.2 Application of the Infrastructure Agreement

This document applies to all development comprising the Eligible Development described in Item 4 of Schedule 1.

#### 3.3 Owner

- (a) The Owner consents to the Development Obligations of the Owner attaching to the Land under the Planning Act.
- (b) A Development Obligation is binding on the Owner of the Development Land and the Owner's successor in title of the Development Land under the Planning Act.
- (c) A Development Obligation is not affected by a change in the ownership of the Development Land or a part of the Development Land.

# 3.4 Relationship to an Approval

If a Development Obligation is inconsistent with an Approval for the Development Land, the Development Obligation is to prevail to the extent of the inconsistency.

# 3.5 Relationship to an Infrastructure Charging Instrument

- (a) This document is not intended to limit the nature or type of an Infrastructure Charging Instrument which an Authority may lawfully make for the development of the Development Land.
- (b) If a Development Obligation is inconsistent with an Infrastructure Charging Instrument, the Development Obligation is to prevail to the extent of the inconsistency.

# 4. Operation of the Infrastructure Agreement

#### 4.1 Commencement of the Infrastructure Agreement

This document is to be of no effect until the Commencement Date.

#### 4.2 Termination of the Infrastructure Agreement

This document is terminated if:

- (a) the parties agree as follows:
  - (i) that the performance and fulfilment of this document has been frustrated by an event outside of the control of the parties; or
  - (ii) to terminate this document; or
- the Eligible Development is not Completed by the Completion Date or an extended Completion Date allowed for under clause 6.1(c); or
- (c) clause 7.1(d) operates.

### Deed of agreement

#### 5.1 Continuing effect as a deed of agreement if not an Infrastructure Agreement

In the event that this document is declared not to be an Infrastructure Agreement, as defined by the Planning Act, the parties agree to be bound by the terms of this document as though it were a deed of agreement.

#### 6. Development Obligations

#### 6.1 The Council's and Owner's obligations

- (a) If:
  - the Eligible Development is Completed by the Completion Date;
     and
  - (ii) the Reduced Infrastructure Amount is paid by the Due Date,

the Council agrees to accept the payment of the Reduced Infrastructure Amount in full and final satisfaction of the Infrastructure Amount.

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(b) If:

- (i) the Eligible Development is not Completed by the Completion Date; or
- (ii) the Reduced Infrastructure Amount is not paid by the Due Date,

the Owner will pay the Infrastructure Amount forthwith.

(c) The Chief Executive Officer may, in his absolute discretion, extend the Completion Date upon the making of an Extension Request.

#### 6.2 The Owner's obligations

Upon acceptance by the Council of the payment of a Reduced Infrastructure Amount in accordance with the terms of this document, the Owner is released from any further obligation to pay the Infrastructure Amount under the Charges Notice or the condition identified in Item 5 of Schedule 1.

# 7. Application

# 7.1 Application of Applicable Discount

- (a) An Applicable Discount applies to the net amount of an Infrastructure Amount before credits and offsets have been deducted.
- (b) An Applicable Discount may only be applied in the manner stated in this document.
- (c) An Applicable Discount may only be applied once for the Eligible Development.
- (d) Development which is subject to a refund by operation of section 137 or section 139 of the Planning Act is not eligible for a discount. If by operation of section 137 or section 139 of the Planning Act development, which is otherwise Eligible Development, is subject to a refund, this agreement terminates and each party is released from all obligations under this agreement.

#### 7.2 Early payment

This document does not preclude the Owner from making early payment of a Reduced Infrastructure Amount. However, early payment does not guarantee eligibility for an Applicable Discount and the terms of this document must be satisfied to secure an Applicable Discount. The early payment of a Reduced Infrastructure Amount does not release the Owner from an obligation to pay the Infrastructure Amount until the Council has accepted the payment of the Reduced Infrastructure Amount in accordance with clause 6.1(a).

Attachment 4 - Infrastructure Agreement

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# 8. Assignment

#### 8.1 Assignment of interests, rights or obligations under document

The Owner may not, either absolutely or by way of security, assign its interests, rights or obligations under this document:

- (a) without the written consent of the Council; and
- (b) in a manner which is inconsistent with the provisions of this document.

# 9. Novation of document uponsale

#### 9.1 Reconfiguring of the Development Land

If the Development Land is subject to reconfiguring of a lot to create a Reconfigured Lot, then a Development Obligation:

- (a) remains attached to the Reconfigured Lot; and
- (b) binds the Owner of the Reconfigured Lot.

#### 9.2 Dealing with the DevelopmentLand

The Owner and the Owner's successors in title are not to sell the Development Land or a Reconfigured Lot prior to the performance and fulfilment of the Development Obligations under this document except subject to the condition that the purchaser is to enter into a deed of novation of this document with each other party, on terms reasonably acceptable to each other party, whereby the purchaser becomes contractually bound to each other party to perform and fulfil the provisions of this document or such of them as remain unperformed or unfulfilled by the Owner at the time of the sale.

# 10. Right of access

### 10.1 Access to Development Land

The Owner is to, upon the receipt of a Notice given by the Council to the Owner which states that access is requested, permit the Council to have access to the Development Land for the purposes of determining whether:

- (a) Substantial Commencement has been achieved; or
- (b) the Eligible Development has been Completed.

# 10.2 Exercise of a right of access

In exercising a right of access, the Council is:

 (a) to exercise reasonable care so as not to cause damage or injury to property or a person;

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(b) taken to be an invitee of the Owner and the occupier of the relevant land; and

(c) to promptly rectify any damage caused to property.

# 11. Dispute resolution generally

#### 11.1 Dispute

If there is a dispute between the parties, a party may give a Dispute Notice referring the dispute for determination by the Expert.

#### 11.2 Notice as bar

The giving of a Dispute Notice operates as a complete and unconditional bar and waiver to the commencement of a proceeding or any litigation in respect of a dispute until after the actions in this **clause 11** have been taken and followed.

#### 11.3 Identity of expert

If within 14 Calendar Days from the giving of a Dispute Notice the parties are not able to agree on the identity of the Expert, the Expert is to be appointed at the request of any party by the President for the time being of the Queensland Law Society Incorporated.

# 11.4 Experience and expertise

The Expert is to be a qualified civil engineer with extensive experience in dispute resolution and construction practices.

#### 11.5 Non arbitrator

The Expert is to determine the procedure to be adopted to determine the dispute and is to act as an expert and not as an arbitrator.

#### 11.6 Submissions

- (a) A party may make a submission to the Expert in respect of the dispute within 14 Calendar Days after the appointment of the Expert.
- (b) A party making a submission to the Expert in respect of the dispute is to give a copy of the submission to each other party within 7 Calendar Days after the submission is given to the Expert.
- (c) The Expert is to take account of any submission received in respect of the dispute under paragraph11.6(a).

#### 11.7 Costs

The parties are to pay the Expert's costs (including the cost of engaging and consulting advisers) equally.

#### 11.8 Co-operation

- (a) The parties are to at all times do all things which the Expert requires of them in respect of the Expert's determination of the dispute and are to co-operate and assist the Expert in every reasonable way.
- (b) A party is not to wilfully do or cause to be done any act to delay or prevent the determination of the dispute by the Expert.

#### 11.9 Determination

The Expert's determination:

- (a) is to be made within 14 Calendar Days after the earlier of:
  - each party has made a submission to the Expert in respect of the dispute;
  - the expiry of the time for a party to make a submission to the Expert in respect of the dispute;
- (b) is to be given in writing as soon as possible;
- (c) is to contain the reasons for the making of the determination;
- (d) is final and binding on the parties.

# 12. Force Majeure

#### 12.1 Notice of Force Majeure

If a party is unable by reason of Force Majeure to perform and fulfil an obligation, the party is to, as soon as is reasonably practicable after the Force Majeure, give to each other party a Notice which states the following:

- (a) that Force Majeure is in existence; and
- (b) full particulars of the Force Majeure.

# 12.2 Suspension of an obligation

An obligation of a party so far as it is affected by Force Majeure is suspended during the following:

- (a) the continuance of Force Majeure; and
- (b) a further period which is reasonable in the circumstances.

#### 12.3 Removal or amelioration of Force Majeure

The party giving a Notice of Force Majeure is to, as soon as is reasonably practicable, use its best endeavours to remove the Force Majeure or ameliorate its effect.

# 12.4 Dispute resolution process toapply

If the parties are unable to agree on the existence of a party's Force Majeure or the period during which an obligation is suspended during the continuance of Force Majeure the dispute is to be resolved under clause 11.

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#### **13.** Time

#### 13.1 Time of the essence

Time is, in all cases, of the essence.

#### 13.2 Extension of time

The parties may agree to extend a time stated in this document by giving to each other a Notice which states the extended time.

#### 14. Counterparts

# 14.1 Document may consist of counterparts

This document may consist of a number of counterparts, each of which when executed shall be an original and all the counterparts together shall constitute one and the same instrument.

# 14.2 Exchange of a counterpart

A party who has executed a counterpart of this document may exchange that counterpart with another party by faxing it or emailing it to the other party and, if that other party requests it, promptly delivering that executed counterpart by hand or post to the other party. However, the validity of this document is not affected if the party who has faxed or emailed the counterpart delays in delivering or does not deliver it by hand or by post.

#### 15. Further action

# 15.1 Action to give effect to this document

A party is to do at its cost everything reasonably necessary to effect, perfect or complete this document and a transaction incidental to this document.

# 15.2 Further action if a clause is invalid, illegal or unenforceable

The parties are to use their best endeavours including the preparation, negotiation and execution of a further document to ensure that the object of a clause or part of a clause which is held by a court to be invalid, illegal or unenforceable is substantially achieved.

#### 16. Severance

# 16.1 Removal from this document

A clause or part of a clause which is held by a court to be invalid, illegal or unenforceable is to be treated as removed from this document.

#### 16.2 Effect of removal on this document

The remaining clauses are not affected by:

- the invalidity, illegality or unenforceability of a clause or part of a clause; or
- (b) the removal of a clause or part of a clause from this document.

#### 16.3 Further action on removal

The parties are to use their best endeavours to satisfy the intent of this document as stated in **clause 1.5**, for a clause or part of a clause which is held by a court to be invalid, illegal or unenforceable, to the extent that it is possible having regard to the relevant court judgment.

#### 17. Notice

#### 17.1 Form of a Notice

- (a) A Notice given by a party is to be:
  - (i) in writing;
  - (ii) signed by the party; and
  - (iii) marked for the attention of the relevant person.
- (b) A party receiving a Notice is not obliged to enquire as to the authority of the person signing the Notice.

#### 17.2 Giving of a Notice

- (a) A party may give to any other party a Notice by sending the Notice in one of the following ways:
  - delivering the Notice to the other party at the physical address of the party;
  - (ii) sending the Notice to the other party by electronic mail;
  - (iii) posting the Notice by prepaid post to the other party at the postal address of the party;
  - (iv) faxing the Notice to the other party at its facsimile number.
- (b) A Notice is to be treated as given in the following circumstances:
  - if it is delivered, when it is left at the physical address of the other party;
  - (ii) if it is sent by electronic mail and no electronic error notification is received by the sender, the date and time the electronic mail indicates it was sent;
  - (iii) if it is sent by post, 3 Calendar Days after it is posted or 7 Calendar Days after it is posted if sent to or from a place outside Australia;
  - (iv) if it is sent by facsimile, as soon as the sender receives from the sender's facsimile machine a report of an error-free transmission to the correct facsimile number.

# 17.3 Change of the details of a party

A party may change the address, facsimile number and the person to whose attention a Notice is to be brought by giving to each other party a Notice which states the following:

- (a) the changed details;
- (b) that the change is to take effect from a date which is at least 7 Calendar Days after the Notice is given to each other party.

### 18. Further agreement

# 18.1 Agreement to change

- (a) The parties may at any time agree to change, review or replace this document.
- (b) The parties may agree the circumstances and the manner in which a change, review or replacement of this document is to be conducted.

#### 18.2 Form of the change

A change, review or replacement of this document only has effect if the change:

- (a) is in the form of a deed executed by the parties; and
- (b) complies with the Planning Act and any other relevant law.

#### 18.3 Further agreement

- (a) The parties may at any time enter into an agreement or arrangement for a matter the subject of this document that the parties consider is necessary or desirable in order to give effect to this document.
- (b) An agreement or arrangement entered into under **paragraph (a)** is not to be inconsistent with this document.

#### 19. Costs and outlays

# 19.1 Each party pay its own costs

Each party must pay its own costs and outlays connected with the negotiation, preparation and execution of this document.

# 20. Governing law and jurisdiction

# 20.1 Queensland law to apply

This document is governed by the laws which apply in the State of Queensland.

#### 20.2 Queensland courts to have jurisdiction

- (a) The parties irrevocably and unconditionally submit to the exclusive jurisdiction of the courts of the State of Queensland and a court which has jurisdiction to hear an appeal from those courts.
- (b) The parties are not to object and waive their right to object to the following:
  - (i) a legal proceeding brought in those courts;
  - (ii) the exercise of the jurisdiction by those courts on any basis;
  - (iii) the exercise or non-exercise of a right, including for the actual or contemplated enforcement or preservation of a right, waiver, release, indemnity, discharge or charge under this document.

#### 21. GST

#### 21.1 Construction of this clause

In this clause 21:

- (a) a word has the meaning in the GST Act; and
- (b) a reference to GST payable and an input tax credit entitlement include the GST payable by, and the input tax credit entitlement of, the representative member for a GST group of which the entity is a member.

#### 21.2 Payment of GST

- (a) If a party or an entity through which that party acts (Supplier) is liable to pay GST on a supply made under or in connection with this document, the recipient is to pay to the Supplier an amount equal to the GST payable by the Supplier.
- (b) The recipient is to pay the amount stated in paragraph (a) in addition to and at the same time that the consideration for the supply is to be provided under this document.
- (c) The Supplier is to deliver a tax invoice or an adjustment note to the recipient before the Supplier is entitled to the payment of the amount stated in paragraph (a).
- (d) The recipient may withhold the payment of the amount stated in paragraph (a) until the Supplier provides a tax invoice or an adjustment note, as appropriate.
- (e) If an adjustment event arises in respect of a taxable supply made by a Supplier under this document, the amount payable by the recipient is to be recalculated to reflect the adjustment event and a payment is to be made by the recipient to the Supplier or by the Supplier to the recipient as the case requires.

(f) The parties are to do all things including producing a tax invoice and other documents which may be necessary or desirable to enable or help the other party to claim an input tax credit, set-off, rebate or refund for an amount of GST for a supply under this document.

#### 21.3 Reimbursable cost

If a party is required to pay for a cost of another party (**Reimbursable Cost**), the amount to be paid is the amount of the Reimbursable Cost net of an input tax credit or reduced input tax credit to which the other party is entitled for the Reimbursable Cost.

#### 21.4 Indemnified cost

If a party has the benefit of an indemnity for a cost (Indemnified Cost), the indemnity is for the Indemnified Cost net of an input tax credit or reduced input tax credit to which that party is entitled for the Indemnified Cost.

#### 21.5 Stated amount

An amount stated in this document is exclusive of GST unless otherwise expressly stated.

#### 21.6 No merger on termination

Clause 21 does not merge on the termination of this document and continues to have effect until each party gives to each other party a Notice waiving the benefit of the clause.

# **SCHEDULE 1**

#### Reference schedule

ITEM 1 Council

Name of Council

**Bundaberg Regional Council** 190 Bourbong Street, Bundaberg,

Address

4670 in the State of Queensland

Facsimile No.

(07) 4150 5410

Email address:

ceo@bundaberg.qld.gov.au

Person to whose attention a Notice is to be brought:

Chief Executive Officer

ITEM 2 Owner

Name

**Emtom Pty Ltd** 

Address (or registered office if a

corporation)

4551 Goodwood Road, Alloway in the State of Queensland

Email address:

gorza2000@hotmail.com

Person to whose attention a

Notice is to be brought:

John Gorza

ITEM 3 **Development Land** 

> 9 Elizabeth Street, Childers in the State of Queensland; land described as Lot 100 on SP202712

**Eligible Development** 

322.2013.38453.1 (being 3x Duplex units 11-16)

Charges Notice or condition under which Infrastructure Amount is ITEM 5

payable

ITEM 4

331.2014.673.1

Due Date for payment of Reduced Infrastructure Amount ITEM 6

Before the Change of Use happens

24

# **SCHEDULE 2**

# **Discount Schedule**

Column 1 Infrastructure Amount	Column 2 Applicable Discount	Column 3 Reduced Infrastructure Amount		
\$53301.54	50%	\$26,650.77		



# Infrastructure charges incentives

# **Application Form**

Council is offering infrastructure charges incentives to encourage increased development activity and job creation to assist with the economic recovery from the Covid-19 pandemic.

To see if your development is eligible for infrastructure charges incentives, please refer to Attachment A. To apply, please complete this form and return to Council prior to 1 July 2021. Please email directly to development@bundaberg.qld.gov.au

Developers details							
Name/s (individual or company name in <b>full)</b>							
Contact name							
Postal address	Suburb		State	Postcode			
Phone	Suburb	Mobile					
Email address							
Owner details							
Name/s (individual or company name in <b>full)</b>							
Double die							
Postal address	Suburb		State	Postcode			
Phone		Mobile					
Description of land		,					
Property address							
	Lot	Plan type and No.					
Property description	Lot	Plan type and No.					
	Lot	Plan type and No.					
Declaration							
and Regulations of the Build of your application for infrast Act (Old) 2009 and may be	the property have cons ding Bundaberg 2020 in structure charges incent accessed by employee ormation to any other pe	ented to enter into an infrastructure itiative. Council is collecting your per ives. Your information will be handled s of Council. rson or agency unless authorised or r /privacy	sonal informatio	n to assist in the assessment			
Signature/s			Date	Page 1 of			
				rage 1 of			

# Building 20 Bundaberg Region 20



Which of the following categories of Incentivised development are you applying for (please see definitions).  D Rural sector development  D CBD/town centre development  D Other eligible development
NOTE: if the proposed development does not fit within a category listed, the development may not be eligible for this program but may be eligible for other incentives offered by Council. Please contact Council's Development Assessment team on 1300 883 699 for further information about how we can assist with your development. Please see definitions in attachment B for assistance in determining what category your development may fit within.
Details of the development permit or compliance permit
Application No:
Type of approval:
Date approval took effect:
Have the adopted infrastructure changes or infrastructure contribution/s been paid?
D yes 0 No
Proposal details
What is the proposed value of works for the development? \$
What is the anticipated number of jobs to be created by this development? (if known/applicable)
If the development is for residential development please provide the following:
Number of dwelling units: Number of lots:
If the development is for commercial or industrial uses please provide the following:
If the development is for commercial or industrial uses please provide the following:  Gross floor area (GFA)
Gross floor area (GFA)
Gross floor area (GFA)  Staged development  Is the development a staged development?  D Yes 0 No
Gross floor area (GFA)  Staged development  Is the development a staged development?
Staged development  Is the development a staged development?  D Yes 0 No  Is it proposed that a discount apply to certain stages of the development and not the whole of the development?  D Yes 0 No
Staged development Is the development a staged development?  D Yes O No  Is it proposed that a discount apply to certain stages of the development and not the whole of the development?

Page 2 of 5

# Building 20 Bundaberg Region 20



# Attachment A: Rules and procedures

#### 1. Background

On 30 June 2020 Council launched the "Building Bundaberg Region 2020" incentives scheme with the objective of stimulating increased development activity to counter the economic impacts caused by the Covid-19 pandemic. As part of this initiative, Council is offering a range of discounts for infrastructure charges on certain developments.

Council has resolved to develop these rules and procedures to guide its decision-making in assessing applications for the infrastructure charges incentives.

Building Bundaberg Region 2020 will commence on 1 July 2020 and applies to eligible development. A development that has been completed prior 1 July 2020 is not eligible for the infrastructure charges incentives.

#### 2. Eligibility for infrastructure charges incentives

- 2.1 A development approval exists for the development.
- 2.2 The Council has either:
  - issued a charges notice in relation to the development approval; or
  - imposed an infrastructure contribution condition in the development approval;

AND The development is not subject to an existing infrastructure agreement that varies the amount of infrastructure charges payable (except where the infrastructure agreement relates to an extension of the relevant period for the development approval or a recalculation of the charges under a new charges resolution).

- 2.3 The development is for rural sector, CBD/town centre or other eligible development as defined in attachment B.
- 2.4 The development was not completed before 1 July 2020. For staged development, the stage being applied for was not completed before 1 July 2020.
- 2.5 The development is not eligible for a refund for the provision of trunk infrastructure pursuant to s129 of the *Planning Act 2016* (PA) (or equivalent section in any subsequent legislation). If through a conversion application (s139 PA) or a recalculation of the establishment cost of trunk infrastructure (s137 PA) a development that at the time an application under this policy was made was not subject to a refund becomes subject to a refund, then the development will no longer be eligible for a discount under this incentives scheme.
- 2.6 Development that does not meet the above criteria is not eligible for the infrastructure charges incentives.

#### 3. Rules

- 3.1 Developments seeking to take advantage of the infrastructure charges incentives must make application to Council for a discount using the approved form. Applications for the infrastructure charges incentives can be made at any time prior to 1 July 2021.
- 3.2 Only one infrastructure charges incentives offer can apply to a development.
- 3.3 The infrastructure charges incentives will not apply to:
  - any development that has been completed on or before 1 July 2020.
- 3.4 Discounts for the infrastructure charge are as follows:
  - 100% discount for development that is completed before 1 July 2021 which is for:
    - (a) CBD/town centre development:
    - (b) Rural sector development where:
      - (i) Intensive horticulture;
      - (ii) Rural industry;
      - (iii) Intensive animal industry
      - (iv) Aquaculture; or
    - (v) Winery (where located in a ruralzone);
  - 50% discount for all other eligible development that is completed before 1 July 2021.

The above discounts are taken to be discounts off the applicable infrastructure charges specified in a charges notice or conditioned in a development approval (as varied by any infrastructure agreement relating to an extension of the relevant period of the development approval, where one exists). To be clear, no other discounts either under an adopted infrastructure charges resolution or other policy will apply.

- 3.6 The maximum discount under the incentives scheme is no more than \$1 million for an eligible development.
- 3.7 Council may, in its absolute discretion, extend the date for any of the above discounts for a particular development where:
  - The applicant can show sufficient reason why the development cannot be completed by the original completion date; and
  - The development has achieved substantial commencement prior to the original completion date.
- 3.8 Applications to extend the date by which development is to be completed for any particular discount must be made in writing and received prior to expiry of the completion date. Any extension to the date by which development is to be completed is at Council's absolute discretion.

Page 3 of 5



- 3.9 Corpliance with the completion date for receiving the incentive reduction in infrastructure charges is only achieved through full compliance with the following:
  - For developments involving material change of use and building works, the issue of a certificate of classification for building works and/or issue of final inspection certificate by the completion date; or
  - For developments involving material change of use and no building works, the approved use is established by the Completion Date;
- 3.10 In all cases, Council must be satisfied that all applicable conditions of the development approval for the development completed have been satisfactorily complied with.
- 3.11 The discount will be applied at the time of payment of the infrastructure charges, but no discount is applicable if Infrastructure Charges are not paid when due.
- 3.12 Nothing stops development from making early payment of infrastructure charges payable after approval for discount has been given under this policy. However, early payment does not guarantee eligibility for any discount. Development must comply with the terms of the executed infrastructure agreement to secure approved discounts.
- 3.13 The discount applies to gross charges before credits and offsets for the provision of trunk infrastructure have been deducted. To be clear, no discount given under this policy can result in development receiving a refund.

#### 4. Process

- 4.1 Applicants must lodge the application form prior to 1 July 2021.
- 4.2 Within five (5) business days of Council receiving the request, applicants will be notified by Council via email about whether the development is eligible for the incentive scheme applied for and details of any approved reduction in infrastructure charges subject to the incentive requirements being met and if so;
  - (a) An infrastructure agreement will be issued identifying the discount available and must be signed by the applicant to acknowledge all terms applying to the incentive offer approved for the development;
  - (b) For the discounts to apply, the applicant must execute and return the infrastructure agreement to Council prior to the time for payment of the Infrastructure charges.



Page 4 of

# Attachment B: Definitions

The below are the definitions for the Building Bundaberg Region 2020 incentives scheme. If a word is not defined in this document, unless the context or subject matter otherwise indicates or requires, the word is to have a meaning given to it by the following:

- (a) the Planning Act;
- (b) the Bundaberg Regional Council Planning Scheme 2015 if the word is not defined in the Planning Act;
- (c) the Macquarie Dictionary if the word is not defined in the Planning Act or the Bundaberg Regional Council Planning Scheme 2015.

Where a development approval has been given under one of the four superseded planning schemes for the Bundaberg Region, the development's eligibility will be determined by applying the definition from the Bundaberg Regional Council Planning Scheme 2015 that best fits the approved development.

#### Definition

#### Adopted infrastructure charges resolution

Means Adopted Infrastructure Charges Resolution (No.1) 2012, Adopted Infrastructure Charges Resolution (No.1) 2013, Adopted Infrastructure Charges Resolution (No.1) 2014, Adopted Infrastructure Charges Resolution (No.1) 2015 or Charges Resolution (No.1) 2018 or any subsequent charges resolution.

#### Applicant

Means the applicant for the infrastructure charges incentives under this policy.

#### CBD/town centre development

Means development located within the Bundaberg CBD, Childers Town Centre, Gin Gin Town Centre, Burnett Heads Town Centre, Bargara Tourism Precinct, Moore Park Beach Tourism Precinct or Woodgate Tourism Precinct as delineated in the Building Bundaberg 2020 maps (shown on Council's website at bundaberg.qld.gov.au/development/bbr2020)for any one or combination of the following purposes defined under the Bundaberg Regional Council Planning Scheme 2015 subject to any limitation in brackets:

- Bar
- Dual occupancy (where part of a mixed use building)
- Dwelling unit (where part of a mixed use building)
   Educational establishment;
- Educational establishment
   Entertainment activities;
- Food and drink outlet;
- Food and drink out
   Multiple dwelling:
- Multiple dw
   Offices;
- Shop;
- Shopping centre;
- Short-term accommodation; and
- Showroom

#### Charges notice

#### Means:

- an infrastructure charges notice as defined in section 119 of the Planning Act 2016 (PA); or
- a notice mentioned in section 301(1) of PA; or
- a notice equivalent to an infrastructure charges notice which is given under legislation which repeals and replaces PA.

#### Completed

Means for a material change of use:

 Where involving building works, a certificate of classification or the final inspection certificate (for a single detached class 1a building or structure) has been issued; or  Where not involving building works, the approved use has been established.

#### Means for building work:

 A certificate of classification or the final inspection certificate (for a single detached class 1a building or structure) has been issued

#### Completion date

#### Means:

- Twelve months from the date of the email notice mentioned in section 4.2 of attachment A; or
- such date as extended by the Council pursuant to section 3.7 of attachment A.

#### Development approval

A development permit for a material change of use or a development permit or compliance permit for reconfiguring a lot or a development permit for building work (where the material change of use is accepted development) that has not lapsed.

#### Eligible development

Means proposed development that satisfies the requirements of section 2 of attachment A.

#### Entertainment activities

Means any of the following:

- Club;
- Function facility;
- Hotel;
- Nightclub entertainment facility:
- Theatre:
- Tourist attraction.

#### Infrastructure charges

Means infrastructure charges or contributions for trunk infrastructure payable pursuant to a charges notice or a contribution condition in a development approval.

#### Other eligible development

Means development for any material change of use or building works for which a charges notice has been issued.

# Planning Act Means the Planning Act 2016 or subsequent legislation

which repeals and replaces that act.

#### Rural sector development

Means development for any one or combination of the following purposes defined under the Bundaberg Regional Council Planning Scheme 2015 subject to any limitation in brackets:

- Intensive horticulture;
- Rural industry;
- Aquaculture;
- Winery (where located in a Rural zone);
- Intensive animal husbandry;
- Short-term accommodation (for the purpose of accommodating backpackers and/or itinerant farm workers):
- Non-resident workforce accommodation (for the purpose of accommodating backpackers and/or itinerant farm workers); or
- Rural workers accommodation.

#### Substantial Commencement

Means the commencement of the construction of either slab or footings (whichever is required for the development) proportionate to the size of the development proposed.

Preliminary site works including tree clearing or bulk earth works are not considered to be substantial commencement for these purposes.

 Attac	hme	nt R	· De	fin	itions
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# Part 3 Execution by the parties

EXECUTED as a deed. Signed by Michael Ellery, Group Manager Development on behalf of the **BUNDABERG REGIONAL COUNCIL** in accordance with the Local Government Act 2009 on the 2014 day of World Dec Signature of of witness JACKSON Name of witness (print) 18 NOV 2020ne Signed by day of 2020 in the presence of: signature of Signature of witness Name of witness (print) 1 8 NOV 2020 Signed by on the day of 2020 in the presence of: Signature of Signature of witness

Name of witness (print)



**Item** 

**21 December 2021** 

Item Number: File Number: Part:

O1 COMMUNITY & CULTURAL

SERVICES

# **Portfolio:**

Community & Environment

# **Subject:**

Lease AY - Bundaberg Regional Airport - PSA Super Pty Ltd

# **Report Author:**

Nicole Sabo, Property & Leases Officer

### **Authorised by:**

Gavin Steele, General Manager Community & Environment

# **Link to Corporate Plan:**

Our organisational services - 3.2 Responsible governance with a customer-driven focus

# **Background:**

Council as owner of Bundaberg Regional Airport located at Airport Drive, Kensington, leases non-air side space at Lot 35 on SP254546 for commercial use ('Property'). The general sheds are built and maintained by the lessee on Council land.

PSA Super Pty Ltd ('PSA') currently lease part of the Property. Their Lease is due to expire on 31 July 2022. PSA are currently looking for tenants for their shed to sublease to and have requested a renewal of their lease to commence as soon as possible to attract potential sublease tenant as the lease expiry date is hindering efforts of PSA in find new sub-tenants.

The initial term of the lease will be for 5 years with one additional option of a further 5 years. Rent will be for market rent and will increase annually by CPI. The terms and conditions of the lease are to be as per Council's standard terms.

Council proposes to apply the exception to the tender/auction requirements contained in section 236(1)(c)(iii) of *Local Government Regulation 2012* given that the disposal is for the purposes of renewing a lease to an existing tenant.

# **Associated Person/Organization:**

**PSA Super Pty Ltd** 

# **Consultation:**

Nil

# **Chief Legal Officer's Comments:**

Pursuant to section 236(1)(c)(iii) of the *Local Government Regulation 2021*, Council may dispose of the property by way of lease to PSA Super Pty Ltd without first offering the lease by way of tender given that the disposal is for the renewal of a current tenant.

# **Policy Implications:**

There appears to be no policy implications.

# **Financial and Resource Implications:**

There appears to be no financial or resource implications.

# **Risk Management Implications:**

There appears to be no risk management implications.

# **Human Rights:**

There appears to be no human rights implications.

# **Attachments:**

Nil

# **Recommendation:**

#### That:-

- 1. Council apply the exception contained in section 236(1)(c)(iii) of the *Local Government Regulation 2012*; and
- 2. the Chief Executive Officer be authorised to enter into a Lease to PSA Super Pty Ltd for part of Lot 35 on SP254546 for an initial term of 5 years with a further 5 year option.

Meeting held: 21 December 2021



**Item** 

**21 December 2021** 

Item Number: File Number: Part:

S1 TOURISM & REGIONAL

GROWTH

# **Portfolio:**

Community & Environment

# Subject:

Sole Supplier Arrangement with Skidata Australasia Pty Ltd

# **Report Author:**

Greg Barrington, Manager Airport Operations

# **Authorised by:**

Gavin Steele, General Manager Community & Environment

# **Link to Corporate Plan:**

Our infrastructure and development - 2.1 Infrastructure that meets our current and future needs - 2.1.3 Manage and maintain Council owned buildings, facilities and assets that support and facilitate social connectedness and community life.

# **Background:**

Council installed an access management system for the car park at Bundaberg Regional Airport during 2011, which was manufactured by Skidata AG of Germany. The system is made up from entry and exit control points, payment machines and system control consoles.

Preventive and reactive maintenance services for the access control system have been supplied under a maintenance contract with Skidata Australasia since that time. Programmed preventive maintenance reduces the risk of breakdowns, consequent loss of revenue, and risk of customer complaints. Reactive maintenance provides a rapid recovery from breakdowns to full operational service.

The maintenance contract with Skidata Australasia has run to the end of its term and a new contract is recommended. Skidata Australasia is the only organisation in Australia with the proprietary technical knowledge, and access to spare parts, required for the ongoing service and maintenance of the access control system.

It is proposed to negotiate an arrangement with Skidata Australasia to provide continuation of the services provided by the previous contract.

#### **Associated Person/Organization:**

Skidata Australasia Pty Ltd

#### **Consultation:**

Nil

Meeting held: 21 December 2021

# **Chief Legal Officer's Comments:**

Section 235(a) of the *Local Government Regulation 2012* allows the local government to resolve that it is satisfied that there is only one supplier that is reasonably available.

# **Policy Implications:**

There appears to be no policy implications.

# **Financial and Resource Implications:**

The cost of maintenance services for the airport car park is included in Council's adopted budget for the current financial year.

# **Risk Management Implications:**

There appears to be no risk management implications.

# **Human Rights**:

There appears to be no human rights implications.

# **Indigenous Land Use Agreement (ILUA) Implications:**

There appears to be no ILUA implications.

# **Attachments:**

Nil

# **Recommendation:**

That Council authorise the Chief Executive Office to enter into an arrangement with Skidata Australasia Pty Ltd (ACN 164 259 750) for the provision of maintenance services for the airport car park access management system without seeking competitive quotations or tenders pursuant to section 235(a) of the Local Government Regulation 2012.

Meeting held: 21 December 2021