

DECISION NOTICE

Local Government Infrastructure Designation for Birkdale Community Precinct

Decision Details

Decision:	Local Government Infrastructure Designation (LGID) made under section 38 of the <i>Planning Act 2016</i>
Date of decision:	20 August 2026
Type of infrastructure:	Planning Regulation 2017, Schedule 5, Part 2: • Item 3: community and cultural facilities, including community centres, galleries, libraries and meeting halls • Item 6: educational facilities • Item 7: electricity operating works • Item 8: emergency services facilities • Item 11: facilities for parks and recreation • Item 12: hospitals and healthcare services • Item 17: sporting facilities • Item 18: waste management facilities • Item 19: water cycle management infrastructure • Item 20: storage and works depots and similar facilities, including administrative facilities relating to the provision or maintenance of infrastructure stated in Schedule 5, Part 2d • Item 21: any other facility not stated in Schedule 5, Part 2 that is intended mainly to accommodate government functions
Redland City Council reference:	LGID-0423-0694

Premises details

Street address:	302 and 362-388 Old Cleveland Road East, Birkdale, QLD 4159
Real property description:	Lot 1 on RP14143, Lot 2 on RP14144, Lot 2 on SP146445 and Lot 2 on RP211270
Local government area:	Redland City Council

Infrastructure entity details

Infrastructure entity: Redland City Council

Requirements

A notice of requirements included in the LGID is at **Schedule 1**.

Advisory notes

In addition to the notice of requirements, advisory notes for further guidance and information purposes are included in **Schedule 2**.

Supporting documents

Supporting plans, documents and drawings: As listed in **Schedule 3**.

Submissions

A notice of how I have considered submissions is at **Schedule 4**.

Advice to the entity

Despite the LGID, the entity is responsible for determining what obligations exist under previous development approvals that apply to the premises.

Effective date

As set out in section 9(3) of the *Planning Act 2016*, the LGID will take effect from the date the gazette notice for this LGID is published in the Queensland Government Gazette.

Duration of designation

The duration of the LGID is set out in section 39 of the *Planning Act 2016*.



LOUISE RUSAN
Chief Executive Officer
Redland City Council

Schedule 1 - Notice of requirements included in the Local Government Infrastructure Designation (LGID) – Birkdale Community Precinct (BCP)

Development under the LGID is to be carried out in accordance with the plans, reports and documents referenced in the requirements included in Table 1.

Table 1 Requirements	
Stormwater management	
1.	Stormwater management for the Birkdale Community Precinct (the precinct) must not cause worsening to the operating performance and/or structural integrity of the State-controlled road corridor, such that any works on the land must not: i. create any new discharge points for stormwater runoff onto the State-controlled road corridor ii. concentrate or increase the velocity of flows to the State-controlled road corridor iii. interfere with and/or cause damage to the existing stormwater drainage on the State-controlled road corridor iv. surcharge any existing culvert or drain on the State-controlled road corridor v. reduce the quality of stormwater discharge onto the State-controlled road corridor vi. impede or interfere with overland flow and/or hydraulic conveyance on the State-controlled road corridor.
Fauna management	
2.	(a) Prior to undertaking clearing works, prepare a Fauna Management Plan (FMP). (b) The FMP must be prepared by a suitably qualified ecologist and include/address: i. details of all measures to identify, minimise and mitigate impacts on flora and fauna resources and habitats prior to and during clearing ii. pre-clearing inspections of trees, wet areas and other vegetation (for fauna, hollows and nests) to be conducted by a suitably qualified ecologist iii. staging and sequence of clearing and recovery procedures iv. presence of a qualified wildlife officer or suitably qualified ecologist during clearing operations v. measures to protect and recover fauna during clearing operations vi. if hollows, nests or other potential breeding places are identified within vegetation to be cleared, these are to be assessed by a suitably qualified person to determine if they are breeding places vii. for any proposed activity that will impact on breeding places of protected animals that are classified as extinct in the wild, endangered, vulnerable, near threatened, special least concern, colonial breeder or least concern,

	a Species Management Plan (SMP) must be prepared and submitted to the Department of the Environment, Tourism, Science and Innovation (wildlife@des.qld.gov.au) and to the Department of State Development, Infrastructure and Planning (DSDIP) (infrastructuredesignation@dsdip.qld.gov.au), prior to impacting on the breeding place viii. a Koala Management Plan that seeks to ensure site design provides safe Koala-movement opportunities, and that landscaping activities provide Koala food, shelter and movement opportunities. (c) Submit a copy of the FMP to DSDIP (infrastructuredesignation@dsdip.qld.gov.au). (d) Undertake works generally in accordance with the recommendations of the FMP.
Vegetation management	
3.	With the exception of trees required to be cleared for bushfire management, weed pest management, access or fencing, no clearing of non-juvenile koala habitat trees (NJKHT) or habitat associated with mapped threatened ecological communities is to occur within the area identified as 'Protected Vegetation Area' on the Protected Vegetation Plan, prepared by the then Department of Housing, Local Government, Planning and Public Works (Ref: LGID-0423-0694), dated 14 December 2023 as included at Annexure 1.
4.	(a) Prior to undertaking clearing works, prepare a Vegetation Management Plan (VMP). (b) The VMP must be prepared by a suitably qualified ecologist and include/address: i. a tree survey that identifies: ▪ trees impacted by the total development footprint ▪ NJKHT impacted by the total development footprint ▪ trees to be retained and removed ii. areas where development will encroach into tree protection zones of trees to be retained iii. how vegetation is to be managed before, during and after construction works on the site iv. where clearing of vegetation is required, provide details of mitigation measures and maintenance regimes. (c) Submit a copy of the VMP to DSDIP (infrastructuredesignation@dsdip.qld.gov.au). (d) Undertake vegetation management of the development generally in accordance with the VMP.
5.	(a) Relocate any removed habitat features and resources (e.g. large woody debris, tree hollows, logs, rocks) required to be removed to facilitate the proposed development to adjacent areas. (b) Cleared vegetation must:

	i. not be stacked or pushed against mature trees, habitat trees or tall immature trees that are not required to be cleared from construction impacts ii. not obstruct the flow of drains or watercourses.
6.	(a) Prior to undertaking any clearing works, a suitably qualified wildlife officer or ecologist must undertake a pre-clearing inspection of trees, wet areas and other vegetation for fauna, hollows, nests and other breeding places. (b) The suitably qualified wildlife officer or ecologist must be present during clearing operations: i. to advise on the staging and sequencing of clearing ii. to ensure risk of injury to, or death of, fauna is minimised.
7.	(a) Prior to the commencement of works, prepare a weed and invasive species management plan for the facility. (b) Manage the presence of any invasive, declared or pest species (flora or fauna), in accordance with the weed and invasive species management plan and relevant State legislative requirements.
Rehabilitation monitoring plan	
8.	(a) Prior to undertaking clearing works, prepare a Rehabilitation Monitoring Plan (RMP) for the assessment and progressive rehabilitation of disturbed areas. (b) The RMP must be prepared by a person suitably qualified in site rehabilitation and include/address: i. replacement planting of NJKHT at a rate of 6:1 ii. replacement planting of native canopies (other than NJKHTs) at a rate of 3:1 iii. all areas of temporary disturbance to be rehabilitated following construction iv. soil stabilisation, direct seeding, managing natural regeneration and weeds v. reuse of hollow-bearing stags, woody debris, logs and rocks vi. measures to ensure the restoration and reconnection of habitats vii. measures to ensure bank stability and water quality as a result of clearing within watercourse or drainage features viii. monitoring, auditing and reporting objectives undertaken annually for the first five years, to monitor native vegetation regeneration progress, presence of weeds or other disturbance. (c) Submit a copy of the RMP to DSDIP (infrastructuredesignation@dsdip.qld.gov.au). (d) Undertake the rehabilitation of the development generally in accordance with the rehabilitation plan.

Bushfire management	
9.	All buildings must be constructed in accordance with <i>AS3959:2018 - Construction of buildings in bushfire-prone areas</i> .
10.	All new high and low voltage electricity lines must be installed underground.
11.	Asset Protection Zones must be maintained around all vehicle charging station areas at a size calculated in accordance with the recommended management measures outlined in section 4.1.1.1 - Bushfire Risk Protection and Management of the Bushfire Hazard Assessment and Management Plan (Ref. S433300-0000-NC-RPT-0001 Version 01), prepared by Jacobs Consulting and dated 26 April 2023, as included at Annexure 2 .
12.	As the precinct develops, implement best practice bushfire management measures generally in accordance with section 4 – Bushfire Risk Protection and Management of the Bushfire Hazard Assessment and Management Plan (Ref. S433300-0000-NC-RPT-0001 Version 01), prepared by Jacobs Consulting and dated 26 April 2023, as included at Annexure 2 .
13.	(a) As the precinct develops, liaise with the Redland City Council (the Council) and the Quandamooka Yoolooburrabee Aboriginal Corporation on the planned bushfire management burning intervals as identified in Figure B-7 – Recommended planned burning interval of the Bushfire Hazard Assessment and Management Plan (Ref. S433300-0000-NC-RPT-0001 Version 01), prepared by Jacobs Consulting and dated 26 April 2023, as included at Annexure 2. (b) The planned burning intervals and proposed methods must align with existing programs and agreements for land management practices.
14.	(a) As the precinct develops, liaise with Queensland Fire and Emergency Services to prepare a bushfire emergency and evacuation procedure (BEEP). (b) The BEEP must be prepared by a suitably qualified person and address the following: - the Australian Fire Danger Rating System - emergency procedures, including the designation of buildings capable of being securely sealed for customer and staff refuge during bushfire events and mapped evacuation routes and emergency assembly point(s) - emergency team roles and responsibilities including contact details - location of emergency equipment for use by staff intending to defend the premises - evacuation drill schedule - all staff to ensure awareness of procedures to be followed during potential bushfire events (c) A copy of the BEEP must be submitted to DSDIP (infrastructuredesignation@dsdip.qld.gov.au). (d) Implement the recommendations of the BEEP.

	(e) Update the BEEP with the growth and development of the precinct.
Public passenger transport	
15.	(a) The following roads must be designed and constructed in accordance with the Department of Transport and Main Roads (DTMR) standards and be able to accommodate a 14.5 metre long single unit rigid bus: i. the internal access road from the main entry on Old Cleveland Road East traversing the precinct and including the internal roundabouts. ii. any managed car park circulation aisles required to accommodate bus movements.
16.	(a) As the precinct develops, provide permanent, dedicated bus set-down facilities for private/chartered buses relevant to the scale and capacity of users of the staged use of the facility. (b) Bus set-down facilities must be designed and constructed in accordance with the relevant standards and include the following components: i. a bus set-down zone with a minimum capacity for two single-unit rigid buses of 14.5 metres in length at the internal entry for the facility ii. a bus set-down zone with a minimum capacity for five single-unit rigid buses of 14.5 metres in length, suitably located to service the major sports and recreation facility, swimming lagoon and other facilities/venues iii. the provision of additional permanent bus set-down zones within the facility to accommodate single rigid buses of 14.5 metres in length according to demand iv. signage, lighting, access, pedestrian pathways and waiting areas are to be constructed in accordance with Australian standards.
17.	As the precinct develops, provide bus lay-by parking within the managed car parks that includes the following: i. adequate dedicated bus parking bays based on a maximum design vehicle of a single-unit rigid bus of 14.5 metres in length to service the major sports and recreation facility, swimming lagoon and other facilities/venues ii. a bus turnaround facility to allow the maximum design vehicle for a bus to re-circulate to the permanent bus set down facilities.
18.	(a) As the precinct develops, provide permanent, dedicated passenger loading zones for taxis, rideshare services and private vehicle drop-off/pick-up. (b) Each passenger loading zone must be designed and constructed to include: i. a passenger loading zone (including entry and exit tapers, if required) with minimum capacity for the parking of six vehicles (four standard vehicles and two wheelchair accessible taxi) in total, parallel to the kerb in one continuous zone to service the major sports and recreation facility, swimming lagoon and other facilities/venues ii. a passenger loading zone (including entry and exit tapers, if required) with minimum capacity for the parking of three vehicles (two standard vehicles

	and one wheel chair accessible taxi) in total, parallel to the kerb in one continuous zone at the BCP internal entry iii. the provision of additional permanent passenger loading zone capacity in accordance with demand within the BCP iv. one wheelchair accessible parking bay, designated by signage and pavement marking at the front of the queue in accordance with relevant Australian standards v. access and hardstand, and shelter with seats, for waiting and boarding/alighting passengers vi. a paved pedestrian pathway adjacent to the passenger loading zone and connecting to the entry of an adjacent venue and the internal pedestrian pathway network on the site.
Active transport	
19.	(a) As the precinct develops, provide: i. an internal active transport network connecting all components of the development to each other and to public passenger transport and the external active transport network ii. separate entry / exit for cyclists between Old Cleveland Road East and the shared pathway network on the site iii. a disability-accessible pathway network that reduces reliance on operational lifts, wherever practical and possible, ensures alternative routes for people with a disability are direct and equitable, and identifies all required lift locations (b) All active transport network and pedestrian crossing arrangements must be designed and constructed in accordance with relevant DTMR and Australian standards.
20.	Provide bicycle and personal mobility devices parking at convenient locations throughout the development commensurate to the need and in accordance with the relevant standards.
21.	Signage, indicating the location, distance and direction to public passenger transport facilities, car parking and facilities are to be installed at key locations and decision points within and external to the development in accordance with relevant DTMR and council standards.
External works/upgrades	
22.	(a) Prior to the commencement of the first publicly accessible use of the facility (excluding use of Willard's Farm), obtain the required approvals from DTMR pursuant to the <i>Transport Infrastructure Act 1994</i> for the following works external to the site: i. provision of a signalised primary access at Old Cleveland Road East, including: – amending Buckingham Street to a left-in and left-out operation only – a signalised pedestrian crossing arrangement on all legs of the intersection

	- cycle lanes in accordance with TMR's <i>Selection of design of cycle tracks</i>, dated October 2019 - lane widths capable of accommodating a 14.5 metre long single unit rigid bus ii. left-in, left-out secondary service and emergency vehicles access on Old Cleveland Road East generally in the location opposite Menas Court and able to accommodate a 12.5 metre long Heavy Rigid Vehicle. iii. upgrade of urban bus stops 'Old Cleveland Road near Buckingham Street, Birkdale' (ID: 311501 and 310196) to Intermediate Stop standard as close as possible to its existing location. (b) Undertake monitoring of traffic ingress and egress movements at the primary access point to the BCP, using permanent traffic counting infrastructure. The results of the traffic monitoring must be provided to DTMR and DSDIP on a six monthly basis until such time as the intersection works have been completed by the proponent or another entity or otherwise agreed in writing by DTMR. At the point in time where monitoring demonstrates that the average daily traffic volumes associated with the BCP, calculated as a rolling monthly average, exceed 2,600 vehicles per day (being the traffic volume determined to correspond to a 4.5 per cent increase in aggregate intersection delay at the Old Cleveland Road East / Finucane Road / Moreton Bay Road intersection above baseline conditions at the time of approval), the proponent must, unless otherwise agreed in writing by DTMR: i. obtain the required approvals to extend the right-turn lanes on the north, south and western arms of the Old Cleveland Road East / Finucane Road / Moreton Bay Road intersection ii. complete the delivery of those works within 12 months of obtaining the necessary approvals. (c) All external works are to be designed and constructed in accordance with DTMR standards.
Emergency access	
23.	Prior to the commencement of use, the following must be provided: i. emergency access to Old Cleveland Road East constructed generally in accordance with <i>Revised Concept Sketch Rev.C, SK-001</i> prepared by AECOM and dated 24 September 2024, as included at Annexure 3 ii. line marking and/or signage at the 'emergency access' to Old Cleveland Road East identifying the access point is for emergency vehicles only iii. installation of a gate to restrict general access.
Event transport management	
24.	(a) Prior to the commencement of the first event on the site, prepare an Event Management Plan for the development addressing at least the following: i. consultation with relevant stakeholders including DTMR, Queensland Police Service, the Council and private/chartered bus operators ii. clarify the event mode of the proposed development, including all anticipated event types and their anticipated frequency and likely

	maximum attendance categorised into small, medium and large events with a maximum attendance threshold for each iii. identify the worst-case event scenario which may include the largest event and the largest of any coinciding events iv. identify the events (small, medium and large) for which a Transport Management Plan is required and the events for which a Transport Management Plan is not required v. address increasing modal share to public passenger transport and active transport over time vi. devise a strategy for the augmentation of permanent public passenger transport (taxis, rideshare, private coaches/buses/shuttles) and active transport (walking, personal mobility device and cycling) infrastructure capacity over time vii. an action plan and implementation schedule. (b) Prior to the commencement of the first event on the site, prepare a Transport Management Plan for the relevant events identified in the Event Management Plan in part (a), addressing at least the following: i. all transport modes such as urban bus services, taxis, rideshare, private coaches/buses, private vehicles, active transport (walking, cycling, personal mobility devices) ii. the expected number of events and attendees at each of these events per year iii. transport and traffic management before, during and after events iv. modelling of event traffic volumes (all modes) around the proposed site and along major nearby arterials/ public transport routes v. potential interchange and lay-by locations for private/chartered buses/coaches on the wider transport network vi. extent of any regular road closures and traffic delays vii. demonstrate how attendees will be able to travel to and from the venue safely viii. consideration given to emergency management, lay-by parking, passenger drop-off/pick-up, car parking and queuing ix. strategies to minimise impacts to the safety and efficiency of the State-controlled road x. consultation with relevant stakeholders including the Council, DTMR (TransLink Events and Metropolitan Region) and Queensland Police. xi. expected bus servicing requirements and proposed means of delivering additional services. (c) From commencement of use, implement the recommendations and measures in the Event Management Plan and Transport Management Plan.
Design	
25.	All facades of buildings and structures on the site within 25 metres of the site boundary with Old Cleveland Road East (excluding the Willard's Farm buildings and structures) should be made of non-reflective materials.

Lighting	
26.	All external lighting must be installed and maintained to accord with Australian standards and shielded to minimise light spill to surrounding residential properties, transport infrastructure and protected vegetated areas generally in accordance with Table 14 (Number 8) of the Ecological Assessment Report (Ref 2002_023 version 4), prepared by Raptor Environmental and dated 19 April 2023, as included at Annexure 4 .
Contaminated land management	
27.	(a) Prior to the site disturbance work in areas of concern as identified in the Preliminary Site Contamination Investigation, prepare a Site Environmental Management Plan (SEMP). (b) The SEMP report must be prepared by a suitably qualified person and include/address: i. determine the extent of additional testing required to inform the remediation and/or site management approaches in order to achieve compliance with the <i>Environmental Protection Act 1994</i> ii. an asbestos management plan for any future renovations within the World War II Receiving Station iii. incorporate the relevant findings from the following sections of the Preliminary Site (Contamination) Investigation (Ref: IS433300-0000-CG-RPT-0001 Rev 01), prepared by Jacobs Group (Australia) and dated 19 April 2023, as included at Annexure 5: ▪ 8 – Areas of Environmental Concern ▪ 9 – Areas of Environmental Concern ▪ 10 – Conclusions and recommendations ▪ Figure 1 – Site observations and areas of environmental concern. (c) Submit a copy of the SEMP to DSDIP (infrastructuredesignation@dsdip.qld.gov.au). (d) Carry out the development in accordance with the recommendations of the SEMP.
Construction management	
28.	(a) Prior to commencement of work within the State-controlled road corridor, prepare a Construction Environmental Management Plan (CEMP) in relation to impact on the State-controlled road network. (b) The CEMP must be prepared by a suitably qualified person and include/address: i. an Erosion and Sediment Control Plan that includes/addresses: ▪ the erosion and surface water run-off risk from construction activities ▪ the Best Practice Erosion and Sediment Control Document, IECA, 2008 ▪ requirements of Appendix 2 – Stormwater management design objectives of the State Planning Policy 2017

	▪ measures to prevent or minimise the flow of stormwater containing contaminants, including hydrocarbons, from impacting on Matters of State Environmental Significance ▪ measure to prevent the release of sediment to tidal waters. ii. dust mitigation methods (such as use of water to suppress potential dust) and air quality management measures iii. hours of construction, vibration, and construction noise (including the default noise standards), in accordance with the <i>Environmental Protection Act 1994</i> (sections 440R & 440S) iv. construction waste control and management, in conjunction with a waste management plan if deemed necessary v. disposal and management of hazardous materials and regulated waste, including removal by a suitably licenced contractor where deemed necessary vi. chemical and fuel used during construction stored in bunded areas vii. access locations for and management of construction vehicle traffic (any construction parking off-site is subject to engagement with the Council and relevant landowners) viii. appropriate machine hygiene measures ix. proximity of works to easements and services and any necessary design measures, additional analysis or safe work methods x. other required permits from the Council, easement holders or utility providers xi. bushfire mitigation management measures for construction phase xii. an unexpected finds protocol outlining procedures for unexpected contamination during construction including suspected and actual asbestos finds xiii. maintenance of safe pedestrian and cyclist access/movement around the site xiv. complaint resolution procedures, including who to contact and a record of how complaints have been addressed xv. a construction communication plan including: ▪ how neighbouring properties will be advised of construction and demolition activities for each stage ▪ how the appropriate extent of neighbouring properties to be notified will be determined ▪ timeframes for notification of construction activities, with notification to occur prior to works commencing. (c) Submit a copy of the CEMP to DSDIP (infrastructuredesignation@dsdip.qld.gov.au). (d) Construction of the development is to be undertaken in accordance with the CEMP.
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Acid sulfate soils	
29.	If potential or actual acid sulfate soil is identified during construction, an ASS investigation is to be carried out in accordance with an acid sulfate soil management plan prepared in accordance with the current Queensland acid sulfate soil Technical Manual - Soil Management Guidelines.

Annexure 1 to Schedule 1 – Protected vegetation plan



Legend

-  Protected vegetation
-  Vehicular ingress/egress
-  Designation boundary

Title: Protected Vegetation Plan
Date: 14 December 2023
Reference: LGID-0423-0694

 Aerial not to scale
Scale (metres)




Annexure 2 to Schedule 1 – Bushfire management

4. Bushfire risk protection and management

Bushfire protection measures are recommended for construction and operational phases of the Project. Adoption of the measures described here is expected to reduce, to an acceptable level, both the risk of bushfire ignition by construction and/or operation of BCP and the risk that bushfires in the landscape pose to site assets and users.

It is recommended that the QFES be consulted in the finalisation of the bushfire protection measures. These measures also need to align with both RCC's Bushfire and Environmental Code (Appendix D).

The main bushfire protection measures that have application to construction and operation of the Project are:

- *Fire management zones*: provide vegetation hazard-specific mitigation actions through the development of Asset Protection Zones around sensitive infrastructure and Land Management Zones for native vegetation within the Conservation Area.
- *Access roads*: which provide safe operational access to and within the Project area for emergency services personnel. Access roads will also provide safe egress for site personnel in case of a bushfire or other emergency. It is recommended that the proposed Ring Road and secondary access track be used as an internal access road for firefighting in the event of a bushfire.
- *Fire water supply*: access to water for fire suppression and/or protection of structures or equipment located on site must be provided.
- *Landscaping*: Planted landscaping within 10m of a building or structure will aim to adhere to RC Plan Table 8.2.2.3.2 (refer Section 4.1.4).
- *Emergency and evacuation planning* would be addressed for bushfire and other hazards as part of the contractor's and operator's site emergency management planning. It is recommended that emergency and evacuation procedures are developed in consultation with QFES.
- *Cultural burning and bushfire fuel hazard management*: To continue the relationship with the Traditional Owners within the RCC LGA, it is recommended that cultural burning practices form part of the BCP BHAMP. QYAC should be consulted and engaged prior to planned burns.

Proposed bushfire protection measures are described in greater detail below.

4.1. Operational measures

4.1.1. Fire management zones

Fire management zones (FMZ) and respective protection measures for BCP can be determined by vegetation hazard class. FMZ will aid in managing bushfire risk and mitigating bushfire effects through vegetation hazard class-specific actions. Recommended FMZs for BCP include:

- *Asset Protection Zones (APZs)*: a buffer zone between a bushfire hazard and buildings/structures that is managed to minimise fuel hazard and reduce the exposure of people and site infrastructure to radiant heat exposure to structures and people, flames and ember attack
- *Land Management Zone (LMZ)*: areas with retained native vegetation are managed to achieve multiple ecological and fire management objectives. Fire is used in this zone to create a mosaic of fire histories to assist in reducing fire spread and achieve ecological or other objectives.
- *Fire Exclusion Zone (FEZ)*: planned burning or fire management measures are avoided in areas with protected or regulated vegetation.

shows the fire management zones proposed for the site and outlines the key features and performance requirements for each FMZ.

4.1.1.1. Asset Protection Zones

APZs provide a low fuel hazard buffer zone around fire sensitive buildings or structures and a bushfire hazard. APZs are managed to minimise fuel loads and reduce radiant heat levels, flame, ember, and smoke attack. They help to provide a defensible space for firefighters and other emergency services personnel responding to a fire event and reduce opportunities for any fire igniting on site to escape to surrounding areas. APZs typically require the removal of most of the native overstorey vegetation and regular maintenance of the grasses or other understorey vegetation. However, APZs should be managed or developed appropriately to balance the need for removal of protected vegetation.

APZ are comprised of two management zones including the Fuel Free Zone (FFZ) (10 m) and the Fuel Reduced Zone (FRZ) (residual distance of the assigned APZ).

- **Fuel Free Zone (~10m):** is located directly adjacent to buildings/structures and is free of vegetation. This provides a defensible space that is free of hazards or obstructions. Fuel mitigation measures with FFZs include:
 - Removal of all flammable vegetation and objects
 - Regular understorey maintenance
 - Raking or manual removal of fine fuels (i.e., leaves, twigs, branches, and bark).
 - Mowing or slashing grasses to a short length (<100mm)
 - Weed management
 - Removal of overhanging trees or branches
- **Fuel Reduced Zone:** FRZs make up the residual distance of an assigned APZ and have a reduce load of fine and large fuels to reduce the intensity of a bushfire. Where FFZs are less than 10m, no FRZ is required. Fuel mitigation measures with FRZs include:
 - Pruning of small trees and shrubs
 - Separation of mature trees (~2-5m gap between canopies)
 - Removal of overhanging trees or branches
 - Vegetation removal where necessary
 - Weed management

Where individual trees or small patches of vegetation do not support connectivity to bushfire-prone vegetation (i.e., connection to the Conservation Area), vegetation does not need to be cleared. Instead, vegetation should be maintained in line with the FRZ specifications.

APZ are only specifically required for five buildings, as shown in Figure 4-1. APZ for buildings 9, 23 and 24 (as per numbering in Figure B-6 in Appendix B) are entirely within the development footprint and are anticipated to be cleared as part of the site development. The APZs for buildings 11 and 29 extend into the Conservation Area. This only includes the fuel reduced zone for the APZ for building 11. Parts of the fuel free and fuel reduced zone for the building 29 APZ extend into the Subtropical Eucalypt Floodplain TEC.

APZs for BCP should adhere to RC Plan performance outcome requirements regarding distances between building envelopes and hazardous vegetation as provided in Table 4-1. APZ dimensions are given in Table 4-2

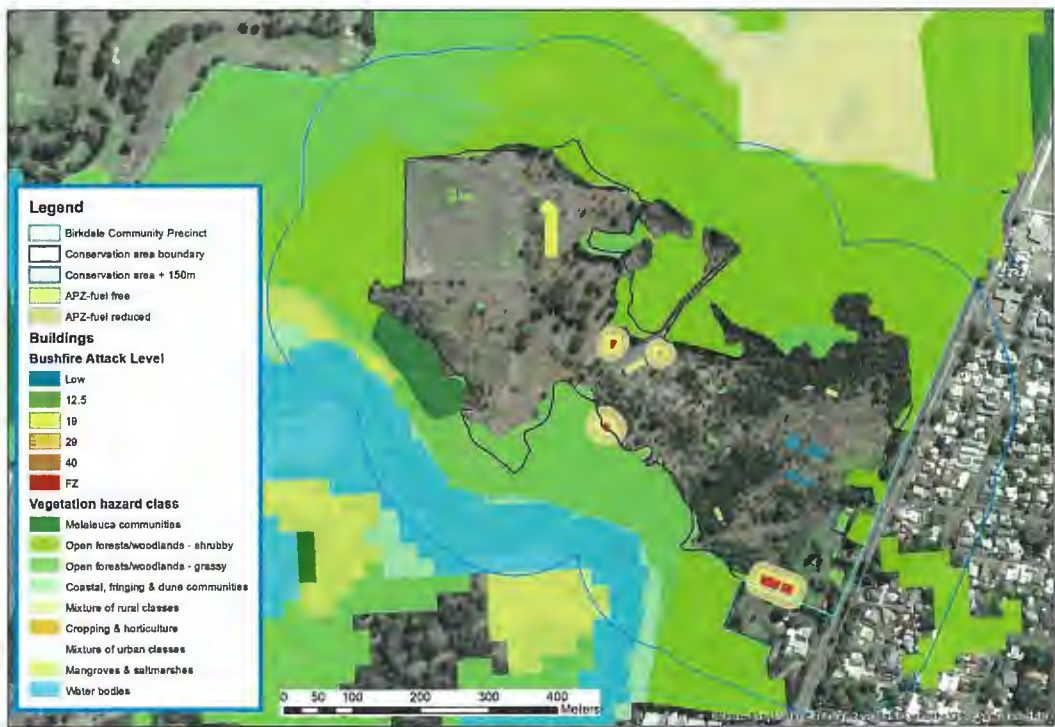
Birkdale Community Precinct Local Government Infrastructure Designation Bushfire Hazard Assessment and Bushfire Management Plan

Table 4-1: Recommended APZ management measures (RC Plan)

Performance outcome	Acceptable outcome	Recommended management measure
PO10 Development is located and designed to ensure proposed buildings or building envelopes achieve the following radiant heat flux level at any point: 10kW/m² where the use involves the accommodation or congregation of vulnerable sectors of the community such as childcare centres, community care centres, educational establishments, detention facilities, hospitals, rooming accommodation, retirement facilities or residential care facilities; or 29kW/m² otherwise.	A010.1 Buildings or building envelopes are separated from hazardous vegetation by a distance that achieves a radiant heat flux level at any point on the building or envelope respectively, of 10kW/m² for a use mentioned in the performance outcome, or 29kW/m² otherwise.	Fire sensitive BCP infrastructure located in bushfire-prone areas should be designed and constructed: ▪ In line with AS3959:2018 Construction of buildings in bushfire-prone areas; ▪ To achieve resilience against a maximum of 29kW/m² radiant heat exposure. APZ should be established to reduce radiant heat exposure to no more than 29kW/m². Where achievable (almost all instances) vegetation buffer distances should be sufficient to reduce radiant heat exposure to the equivalent of BAL 19 or BAL 12.5. APZ should be maintained to manage fuel loads and continuity, particularly during the fire danger period. Grassy fuels should be managed to provide low overall fuel hazard and maintained at less than 100mm height. Clearance and management of native vegetation should comply with the RC Environmental Code (Appendix E) and the Conservation Agreement with the Commonwealth.

Table 4-2. Proposed APZ dimensions for Birkdale Community Precinct buildings

Building	Slope			Fuel free zone		Fuel reduced zone
	Under vegetation	To vegetation	Type			
9	5	1	Upslope	10m		9m
11	5	1	Upslope	10m		9m
23	1	5	Downslope	10m		10m
24	1	1	Downslope	10m		10m
29	5	1	Downslope	10m		14m



Note: APZs comprise and fuel free inner zone (10m) and a (variable) fuel reduced outer zone..

Figure 4-1: Recommended APZs for sensitive Project infrastructure.

4.1.1.2. Land Management Zones

As the Conservation Area is administered under the Environmental Code, bushfire mitigation measures must be consistent with the Code's performance outcomes under the RC Plan (Appendix E). As such, LMZs and planned burning intervals have been defined to reflect environmental objectives and ecological fire requirements.

Four planned burning LMZs have been defined within the Conservation Area, based on ecological fire requirements (Appendix B) and logistical efficiency. These are depicted in **Figure 4-3**. Priority for implementation of hazard reduction burning is based on reducing bushfire risks to neighbouring properties, to the east of Old Cleveland Road East and the Birkdale Baptist Church.

Planning for and execution of hazard reduction burning in the LMZs needs to take account of the presence of and risks to resident koala populations. Planned burning areas should be surveyed for koalas prior to burning and burns should be delayed if koalas are present. Burns should aim to create a mosaic of burnt and unburnt areas within the LMZ being treated to avoid creation of a single fuel age.

4.1.1.3. Fire Exclusion Zone

A fire exclusion LMZ (LMZ 5) is also recommended to support rehabilitation of the EPBC Act TECs (; Figure 3-10, **Figure 4-2**), including:

- Subtropical and Temperate Coastal Saltmarsh (RE 12.1.2)
- Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and Queensland (RE 12.1.1) (currently under restoration at BCP)

Planned burns should also be excluded from mangrove communities.



Figure 4-3. Land management zones

4.1.2. Access Roads

Access roads are intended to provide safe operational access to and within the Project site for emergency services personnel, as well as safe egress for site personnel and users in case of a bushfire or other emergency. In line with the proposed BCP design, a Ring Road will be constructed that follows the perimeter of BCP development footprint and connects with the secondary internal access track (located within the Conservation Area) as shown in Error! Reference source not found.. The Ring Road will support one-way traffic that provides sufficient access for trucks and/or buses and turning areas within site carparks. As such, this Ring Road and secondary access track may act as a perimeter road/fire trail for fire-fighting purposes in the event of a bushfire. This Ring Road should adhere to RC Plan performance outcome requirements regarding perimeter roads/fire trails and site access points.

This Ring Road should accommodate a minimum easement width of 20m, a minimum trafficable width of 4m (~6m clear of vegetation), and a minimum vertical clearance of 5m. This trail should have a maximum gradient of 12.5% and a cross fall of no greater than 10°. The trail should accommodate turning areas for fire-fighting vehicles (which could be incorporated into the car parks. The Ring Road should also have identifiable way-finding signage. In addition, no cut or fill embankments or retaining walls should be constructed within 4m of the trafficable path. Drainage and erosion control devices should be in accordance with the Planning Scheme Policy 2.

It is also recommended that BCP ensure and maintain appropriate vehicle access via Old Cleveland Road East. Access driveways to BCP should have a minimum width of 3.5m and accommodate turning areas for fire emergency vehicles.

Table 4-3: Recommended Ring Road access management measures (RC Plan)

Performance Outcome	Acceptable Outcome	Recommended management measure
PO12 A constructed perimeter road or a formed, all weather fire trail is provided between the hazardous vegetation and the site boundary or building envelope and is readily accessible at all times for the type of fire fighting vehicles servicing the area. However, a fire trail will not be required where it would not serve a practical fire management purpose.	AO12.1 Development is separated from hazardous vegetation by a public road or fire trail which has 1. a reserve or easement width of at least 20m; 2. a minimum trafficable (cleared and formed) width of 4m capable of accommodating a 15 tonne vehicle and which is at least 6m clear of vegetation; 3. no cut or fill embankments or retaining walls adjacent to the 4m wide trafficable path; 4. a minimum of 4.8m vertical clearance; 5. turning areas for fire-fighting appliances in accordance with Qld Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines; 6. a maximum gradient of 12.5%; 7. a cross fall of no greater than 10 degrees; 8. drainage and erosion control devices in accordance with the	The Ring Road should accommodate: ▪ a minimum easement width of 20m; ▪ a minimum trafficable width of 4m (~6m clear of vegetation); ▪ a minimum vertical width of 5m; ▪ a maximum gradient of 12.5%; ▪ a cross fall of no greater than 10°; ▪ turning areas for fire-fighting vehicles; ▪ appropriate and identifiable way-finding signage; ▪ no cut or fill embankments or retaining walls within 4m of the trafficable path; ▪ drainage and erosion control devices in accordance with the Planning Scheme Policy 2. Where possible and in line with the RC Environmental Code

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Performance Outcome	Acceptable Outcome	Recommended management measure
	standards in Planning Scheme Policy 2 – Infrastructure works; 9. vehicular access at each end which is connected to the public road network which is connected to the public road network at intervals of no more than 500m; 10. designated fire trail signage; 11. if used, has gates locked with a system authorised by Qld Fire and Emergency Services; and if a fire trail, has an access easement that is granted in favour of council and Qld Fire and Emergency Services.	(Appendix E) and Conservation Agreement, the secondary access track should accommodate: ▪ a minimum trafficable width of 4m (~6m clear of vegetation); ▪ a minimum vertical width of 5m; ▪ a maximum gradient of 12.5%; ▪ a cross fall of no greater than 10°; ▪ turning areas for fire-fighting vehicles; ▪ appropriate and identifiable way-finding signage; ▪ no cut or fill embankments or retaining walls within 4m of the trafficable path; ▪ drainage and erosion control devices in accordance with the Planning Scheme Policy 2.
All development		
PO13 All premises are provided with vehicular access that enables safe evacuation for occupants and easy access by fire fighting appliances.	N/A	Site access should accommodate: ▪ vehicle access via two points along Old Cleveland Road East; ▪ a minimum width of 3.5m; ▪ turning areas for fire emergency vehicles.

4.1.3. Fire water supply

Fire water supply access to water for fire suppression and/or protection of structures or equipment located on site must be provided. Fire water supply for BCP should adhere to RC Plan performance outcome requirements regarding fire water supply and site access points as provided in Table 4-4.

It is recommended that the design incorporates multiple water access points (i.e., water hydrants) that have fire brigade fittings and provide a take-off connection at a level that enables a dedicated, static water supply. Water access points should have clearly identifiable signage.

Bushfire water supplies should be available at multiple points within the site (located in the east and west areas of the site). Water points need to be signposted and have maintained accessibility with wide vegetation clearance.

Table 4-4: Recommended water supply management measures (RC Plan)

Performance Outcome	Acceptable Outcome	Recommended management measure
PO14 Development outside reticulated water supply areas, includes a dedicated static supply that is	AO14.1 A water tank is provided within 10m of each building (other than a class 10 building) which:	As the site supports a reticulated water supply, water tanks and associated infrastructure are not required.

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Performance Outcome	Acceptable Outcome	Recommended management measure
available solely for fire fighting purposes and can be accessed by fire fighting appliances.	1. is either below ground level or is constructed or screened by non combustibile materials; 2. has a take-off connection at a level that allows the following dedicated, static water supply to be left available for access by fire fighters: a. 10,000 litres for residential buildings; b. 45,000 litres for industrial buildings; and c. 20,000 litres for other buildings; 3. includes a hardstand area allowing medium rigid vehicle (15 tonne fire appliance) access within 6m of the tank; 4. is provided with fire brigade tank fittings – 50mm ball valve and male camlock coupling and, if underground, an access hole of 200mm (minimum) to accommodate suction lines; and is clearly identified by directional signage provided at the street frontage.	The design should accommodate for water access points (i.e., in-ground hydrants) will be placed on the proposed ring main at spacing consistent with typical urban water supply reticulation. Water access points should support: ▪ fire brigade fittings; ▪ a take-off connection at a level that enables a dedicated, static water supply. Water access points should have clearly identifiable signage. Bushfire water supplies should be available at multiple points within the site and provide: ▪ clear signage; ▪ clear accessibility with wide vegetation clearance.

4.1.4. Landscaping

Landscaping for BCP should adhere to RC Plan performance outcome requirements regarding vegetation and vegetation management as provided in Table 4-5. In addition, vegetation management should be conducted in accordance with recommended APZs (Section 4.1.1.1) and land management zones (Section 4.1.1.2).

Bushfire mitigation measures should align with the RC Environmental Code and avoid clearance of koala habitat trees and the BCP Conservation Area. Where possible, it is recommended that suitably experienced personnel or conservation organisations are engaged following a fire event to improve or restore koala habitat.

Table 4-5: Recommended landscaping management measures (RC Plan)

Performance Outcome	Acceptable Outcome	Recommended management measure
P015 Landscaping uses species that are not likely to exacerbate a bushfire event, and does not increase fuel loads within separation areas.	A015.1 Low flammability plant species identified in Table 8.2.2.2 are used for any planted landscaping within 10m of a building or structure.	Planted landscaping within 10m of a building or structure will aim to include low flammability species listed in the RC Plan Table 8.2.2.3.2.
P016 Bushfire risk mitigation treatments do not have a significant impact on the natural environment or landscape character of the locality.	No acceptable outcome is nominated.	Vegetation management should comply with the RC Environmental Code and Conservation Agreement.

Planted landscaping within 10m of a building or structure should adhere to the recommended low flammability species within the RC Plan (Table 8.2.2.3.2) as detailed in Table 4-6.

Birkdale Community Precinct Local Government Infrastructure Designation Bushfire Hazard Assessment and Bushfire Management Plan

Table 4-6: Low flammability flora species (RC Plan)

Species	Common Name
<i>Acacia melanoxylon</i>	Blackwood
<i>Acacia sophorae</i>	Coastal Wattle
<i>Banksia spinulosa</i> var <i>collina</i>	
<i>Brachychiton acerifolius</i>	Flame
<i>Buckinghamia celcissima</i>	Ivory Curl
<i>Casuarina glauca</i>	Swamp Oak
<i>Cupaniopsis anacardioides</i>	Tuckeroo
<i>Dodoneaea</i> spp.	
<i>Elaeocarpus reticulatus</i>	Burberry Ash
<i>Ficus macrophylla</i>	Moreton Bay Fig
<i>Glochidion ferdinandii</i>	Cheese Wood
<i>Guioa semiglauc</i>	
<i>Hymenosporum flavum</i>	Native Frangipani
<i>Jacksonia scoparia</i>	Dog Wood
<i>Lophostemon confertus</i>	Brushbox
<i>Mallotus phillippensis</i>	Red Kamala
<i>Myoporum acuminatum</i>	Boobialla
<i>Pittosporum revolutum</i>	Brisbane Laurel
<i>Pittosporum rhombifolium</i>	
<i>Rapanea variabilis</i>	
<i>Stenocarpus sinuatus</i>	
<i>Carpobrotus glaucescens</i>	Pigs Face
<i>Hardenbergia violacea</i>	
<i>Kennedia rubicunda</i>	
<i>Lomandra longifolia</i>	
<i>Themeda triandra</i>	
<i>Viola hederacea</i>	
<i>Chrysocephalum apiculatum</i>	

4.1.5. Emergency and evacuation planning

Emergency and evacuation procedures should be developed in conjunction with QFES prior to the construction and operation of BCP. These procedures should be consistent with the BHOC performance outcomes, as per Table 4-7.

Table 4-7: Recommended emergency and evacuation management measures

Performance Outcome	Acceptable Outcome	Recommended management measure
PO11 Effective safety and evacuation	No acceptable outcome is nominated.	Emergency and evacuation procedures across construction and

Birkdale Community Precinct Local Government Infrastructure Designation Bushfire Hazard Assessment and Bushfire Management Plan

Performance Outcome	Acceptable Outcome	Recommended management measure
procedures and measures are established.		operation of the Project should be developed: ▪ within a Prepare-Act-Survive structure; ▪ in consultation with Queensland Fire and Emergency Services.

4.2. Construction measures

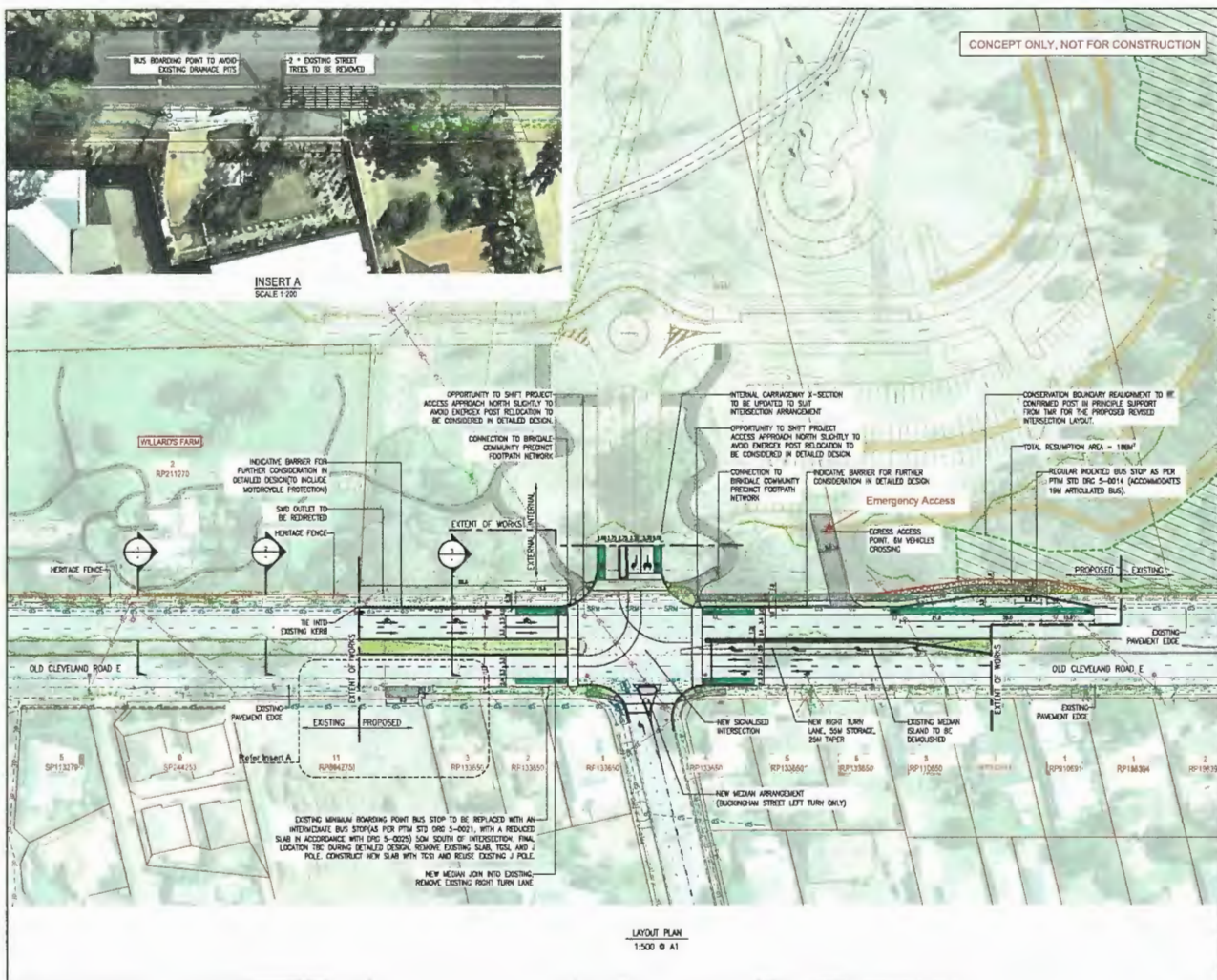
Construction activities may present a different risk profile to those during Project operation due to the larger number of personnel and activities taking place on site. During this time risks of landscape fire to construction personnel and of on-site ignitions escaping from the site into the surrounding landscape may be elevated. A specific emergency management plan to manage risks during construction is required. The construction emergency management plan should include:

- **Access:** In the event of a fire, emergency services would access the site via Old Cleveland Road East and through tracks used for construction activities. External access (prior to construction of the proposed APZ access track) would be via the existing formal and informal track network.
- **Evacuation:** In case of an approaching fire in vegetation to the north, south and west of BCP, workers should safely retreat towards the eastern access points along Old Cleveland Road East and evacuate the site if required.
- **Fire water supply:** It is assumed that water will be required during site preparation and for construction and that a connection point would be provided to enable fire response vehicles to refill.
- **Hazardous materials:** it may be necessary during some construction stages to store potentially flammable materials on site. Storage of such materials should follow environmental protection guidance and be located at parts of the site with low radiant heat exposure in the event of a bushfire (i.e., preferably BAL-12.5). Since the entire BCP could be subject to ember attack, it will be particularly important to ensure storage areas for any hazardous materials are free of vegetation or any other combustible materials that could contribute to a fire ignition. Any fuel spills should be remediated to ensure that they cannot be a source of ignition.
- **Hot works** (activities that generate sparks, heat or hot material): works that have potential to generate sparks and ignite fires will be subject to contractors' hot works safety management procedures. Hot works will not be undertaken during local fire bans except where permission has been given by the QFES.



Figure B-7. Recommended planned burning interval. Source: Queensland Herbarium (2021)

Annexure 3 to Schedule 1 – Emergency access



PROJECT

**Birkdale Community
Precinct Masterplan**

**PROPOSED REVISED SITE ACCESS
INTERSECTION LAYOUT**

CLIENT
Redland City Council
Cnr Bloomfield and Middle Streets
Cleveland QLD 4183.
A.B.N 66 058 929 828

CONSULTANT
AECOM Australia Pty Ltd
A,B,N 20 093 946 925
www.aecom.com

PROJECT MANAGEMENT INITIALS		
WW	DS	DS
DESIGNER	ENGINEER	APPROVER
ISSUE/REVISION		
C	24.06.2024	FOR INFORMATION
B	03.06.2024	FOR INFORMATION
A	25.05.2024	FOR INFORMATION
REV	DATE	DESCRIPTION



PROJECT NUMBER
00733425
SHEET TITLE
REVISED CONCEPT SKETCH

SHEET NUMBER
SK-001

Annexure 4 to Schedule 1 – Lighting

4.2 Impact Mitigation Measures

4.2.1 Design Phase Recommendations

Design-phase recommendations were provided in the early design phase for the Project. The design recommendations integrated into the Master Plan and are summarised in **Table 14**, below.

Table 14. Incorporated design-phase recommendations for the Project.

Number	Element	Integration in design
1	Koala habitat	The design retains Koala habitat Categories A and B (see Figure 6) area where possible within the Development Footprint. The Landscape Plan includes revegetation areas adjoining and buffering the Conservation Area as well as additional planting within open space areas within the Development Footprint. The planting palette incorporates Locally important koala trees.
2	Fauna movement	Fauna movement infrastructure is included in the design. Proposed infrastructure includes rope bridges, signage, pavement stenciling, fauna friendly fencing and Koala exclusion fencing. Pemeability of the Development Footprint is important by way of eliminating barriers in the design. It is understood that speed will be limited to 30km/hr within the Project and the facility will be inaccessible to vehicles after hours. The landscape plan includes koala food trees and locally endemic native species to maintain fauna movement opportunities within the Development Footprint.
3	Threatened Ecological Communities	The Development Footprint avoids directly impacting TECs within the Project Area. The design retains the patch of Swamp oak that has the potential to be future TEC following restoration (refer to regrowth RE 12.3.20 shown in Figure 7). This patch of vegetation will be restored with of the aim of restoring this patch to meet the TEC threshold. A Stormwater Management Plan has been prepared to ensure the changes to hydrological regime within proximity to TEC is minimal. The Bushfire Hazard and Management Plan includes exclusion zones for TECs which should not be subject to prescribed burns.
4	Significant habitat trees	Two significant habitat trees (see Figure 11) will be retained as part of the Project. One is located within the Development Footprint and one is located within the Conservation Area. If significant habitat trees will be impacted by the design, it is recommended that the significant habitat trees are salvaged and reinstalled as vertical habitat feature within landscaping.
5	Wetland area	The wetland area is designed to retain, TECS, vegetation within the Conservation Area, Marine Plants and a significant habitat tree (see Figure 8).
6	Protection of retained vegetation.	RCC propose a to submit a Property Map of Assessable Vegetation (PMAV) application to amend the vegetation mapping within the Conservation Area to Category A area (i.e. declared offset area).

Number	Element	Integration in design
7	Kayak and canoe launch facility	The proposed Kayak and canoe launch facility is located in the existing cleared area along Tingalpa Creek to minimise impacts to marine plants and remnant vegetation and TEC. The proposed walking track to the Kayak and canoe launch facility is an existing informal walking track and the path alignment will formalise this existing track through low-impact pathway construction.
8	Lighting	The concept design includes measures to minimise lighting minimise impacts to fauna during the operational phase of the Project. To minimise potential impacts of light spill, proper light management are incorporated into the design of the lighting: • The design of the proposed pathway streetlights complies with AS1158.3.1:2020 and the floodlights comply with AS4282: 2019. • The design incorporates a tilt-adaptor to be installed (which will reduce the upward throw of light) and a warmer 3,000K colour temperature LED light engine (rather than 4,000k) be installed in the luminaires. • Buffer plantings are included in the Project landscaping to minimise light spill into the Conservation Area. • The concept design ensures floodlights face away from the Conservation Area to minimise reflection and light spill. • In accordance with the best practice lighting design available detailed in the National Light Pollution Guidelines for Wildlife² (Department of the Environment and Energy, 2020) the design has incorporated the following principals: • Lighting is to be installed as close as possible to the ground; • Consider adaptive light controls to manage light timing, intensity and colour; • Use the lowest intensity lighting appropriate for the task; • Use non-reflective, dark-coloured surfaces (where possible); and • Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.

4.2.2 Clearing, Construction and Operational Phase Recommendations

Recommendations to be adopted throughout the clearing, construction and operational phases of the Project are detailed in **Table 15**, below.

² It is noted that the National Light Pollution Guidelines for Wildlife (Department of the Environment and Energy, 2020) have been developed for marine turtles, seabirds and migratory shorebirds, however in the absence of guidelines for light pollution and terrestrial vertebrates this guideline has been referenced.

Annexure 5 to Schedule 1 – Contaminated land management

8. Areas of Environmental Concern

Following the PSI assessment, the potential contamination sources presented in Table 8-1 were identified.

Table 8-1: Areas of Environmental Concern

PCS	Comment	Likelihood	Severity	Risk
Former Landfill	Potential for contaminants to include ACM or PCBs which may present severe or fatal human health issues	Possible	Major	High
World War II Receiving Station	Potential for asbestos from renovations to be within soil. Potential from pesticides to be in surrounding soil.	Possible	Major	High
3-phase power cable	Potential to be disturbed during construction	Possible	Moderate	Medium

The following potential contamination sources contained a risk ranking greater than low and considered to be AECs:

- Former landfill (AEC01)
- World War II receiving station (AEC02)
- 3-Phase power cable (AEC03)

9. Preliminary conceptual Site model

9.1 Conceptual Site model overview

A conceptual Site Model (CSM) summarises the pertinent information from the available studies and databases available. This includes:

- Site use and area history;
- Environmental setting;
- Sources, nature and extent of contamination;
- Transport mechanisms;
- Health and environmental risks; and
- Impacts on proposed development.

Based on the above information, a preliminary CSM has been prepared which presents potential source(s), pathway(s) and ecological/human receptor(s) linkages. A risk is defined when all three components (source, pathway, receptor) of the CSM are relevant. The CSM will help inform scope of works and any associated risks.

9.2 Sources

AECs were assessed to establish their respective CoPCs. These are identified below in Table 9-1. It is noted that each of the AECs may need further investigation based on the final extent of any development and the nature of the material being removed.

Table 9-1. Summary of identified AEC and CoPC

No.	AEC name	Likelihood of contamination	Media potentially affected	CoPC
AEC01	Former Landfill / dumping ground	High	Soils, temporal surface water, groundwater	▪ Asbestos ▪ Heavy Metals
AEC02	World War II Receiving Station	High	Building material and debris, soil, air	▪ Asbestos ▪ Heavy metals ▪ Hydrocarbons from AST
AEC03	3-phase power cable	Medium	Soils, building materials and debris	▪ PCBs ▪ Solvents ▪ Heavy metals

9.3 Exposure Pathways

The pathways of exposure could consist of:

- a transport mechanism;
- a route of exposure.

Based on Site information, there is potential for the following contamination pathways to exist on the Site:

- disturbance of potential soil contamination and exposure by dermal contact or inhalation;
- disturbance of old building material or demolition of old building material;
- air transport of particulates (dust) and exposure by inhalation;
- leaching and migration of contaminated groundwater;
- leaching of former landfill;
- surface water transportation via Tingalpa Creek;
- transport from surface water runoff during storm events.

9.4 Potential Receptors

Possible receptors for the Site may include:

- On Site workers during demolition, material removal and construction;
- Adjacent land and environment including Tingalpa Creek, vegetated land and groundwater.

9.5 Potential source-pathway-receptor linkages

Potential source-pathway-receptor (SPR) linkages connect the (potentially) contaminated media (e.g. soil, water) to a receptor (e.g. aquatic ecosystems, humans, animals) via an exposure pathway (e.g. water flowing into a pond). A risk of exposure can only exist if the SPR linkage is complete. For a linkage to be complete, there needs to be a confirmed source of contamination that has a pathway or mechanism of travel into a receiving body or receptor. Table 9-2 below presents the identified SPR linkages identified for the Site.

9.6 Preliminary tabulated CSM

Table 9-2. Preliminary Conceptual Site model

Source	AEI	Pathway	Receptor	CoPC	Proposed investigation strategy
Former Landfill / dumping ground	AEC01	Ground break disturbance Surface water runoff Groundwater leachate Inhalation Ingestion	Personnel on Site Tingalpa Creek Subsurface soils and off-Site groundwater fed ecosystems Localised flora or fauna	Asbestos Heavy Metals	Further investigation is required prior to earthworks commencing including potential test pitting to identify and characterise the nature of the dumping ground. Subject to the further investigation outcomes, it is necessary to conduct preliminary, high level soil samples to evaluate if there are any contaminants present in the soil. In addition, conduct leachate testing to evaluate if contaminants are present, if they will flow into ground or surface water.
Potential asbestos in soils from building debris and AST	AEC02	Excavation, demolition and ground disturbance via soils and dust	Personnel on Site	Asbestos Heavy metals Hydrocarbons from AST	Any future renovations, including but not limited to, maintenance works, drilling, cutting and wiring within the World War II Receiving station, needs to be completed in accordance with the Asbestos Management Plan in place for the building. Preliminary screening includes completion of a sweep test for presence or absence of asbestos.
3-phase power cable	AEC03	Excavation, demolition and ground disturbance	Personnel on Site	PCBs Solvents Heavy metals	If intrusive works are proposed, conduct preliminary, high level soil samples to evaluate if there are any contaminants present in the soil. In addition, conduct leachate testing to evaluate if contaminants are present, if they will flow into ground or surface water.

10. Conclusions and recommendations

Based on the results of the PSI, Jacobs were able to achieve the objectives outlined in Section 1.2 and draw the following conclusions:

Key findings

The analysis of past and present potentially contaminated activities undertaken on and/or adjacent to the Site revealed three key AECs, namely:

- Former landfill / dumping ground (high risk)
- World War II Receiving Station (high risk)
- 3-phase power cable (medium risk)

Key recommendations

Jacobs recommends:

- Soil sampling be completed at each AEC identified above prior to construction commencing
- Any future renovations, including but not limited to, maintenance works, drilling, cutting and wiring within the World War II Receiving station, needs to be completed in accordance with the Asbestos Management Plan
- Sampling for Acid Sulfate Soil (ASS) near Tingalpa Creek before commencing any earthworks or developments adjacent to wetlands
- Development and inclusion of an Unexpected Finds Protocol (UFP) within the Construction and Environmental Management Plan (CEMP)
 - UFP should outline procedures for unexpected contamination during construction, including suspected and actual asbestos finds.

Figure 1: Site observations and areas of environmental concern



Birkdale Community Precinct

Schedule 2 – Advisory Notes

The following advisory notes in Table 2 are not requirements of this LGID. They are provided for context and informational purposes only.

Table 2 – Advisory Notes	
Land Use	
1	The Birkdale Community Precinct is a regional-level integrated community and recreational precinct providing a range of compatible primary land uses and associated ancillary activities. The defined primary land use is the community infrastructure category designated for the Precinct in accordance with Schedule 5 of the <i>Planning Regulation 2017</i>. The ancillary uses are those uses and activities that perform a supporting and incidental function to the primary use of the land. The community infrastructure uses and ancillary activities permitted under this Infrastructure Designation are: Primary Infrastructure Uses • Community and Cultural Facilities, including Community Centres, Galleries, Libraries and Meeting Halls (1) (2) • Educational Facilities (3) • Emergency Services Facilities (4) • Facilities for Parks and Recreation (5) • Hospitals and Health Care Services (1) (6) • Sporting Facilities (7) • Electricity Operating Works (8) • Waste Management Facilities • Water Cycle Management Infrastructure (9) • Storage and Works Depots and Similar Facilities, including administrative facilities relating to the provision or maintenance of the infrastructure stated (10) • Any Other Facility not stated in Schedule 5, Part 2 of the <i>Planning Regulation 2017</i> that is intended mainly to accommodate government functions Ancillary Supporting Uses • Shop (displaying, selling or hiring goods) (11) • Office (12) • Museum • Market (including stalls, booths or trestle tables) • Food and Drink Outlet (including cafe, coffee shop, kiosk, restaurant, snack bar, tearoom) Supporting Notes (1) Any primary infrastructure use for Community and Cultural Facilities, including Community Centres, Galleries, Libraries and Meeting Halls or Hospitals and Health Care Services must not include the uses of Hospital, Childcare Centre, Retirement and Hotel. (2) Any primary infrastructure use for Community and Cultural Facilities, including Community Centres, Galleries, Libraries and Meeting Halls may include premises for providing artistic, social or cultural facilities or community services to the public (includes the Cultural Centre, visitor centres, events, functions, concerts, festivals, open-air movies, public meetings, markets, performances, art shows and the construction and use of the permanent stage and grassed natural amphitheatre). (3) Any primary infrastructure use for Educational Facilities should be limited to educational facility uses which have a direct nexus with the Birkdale Community Precinct (includes the Cooking School, Innovation / Ag Tech Building) and excludes college, primary school, secondary school and university. (4) Any primary infrastructure use for Emergency Services Facilities

Table 2 – Advisory Notes

- a. may include the Redland Resilience Training Centre; and
 - b. must not include the uses of ambulance, fire and police stations.
- (5) Any primary infrastructure use for Facilities for Parks and Recreation may include the use of premises in the Precinct, accessible to the public, for sport, recreation and leisure activities and facilities including the establishment of soft and hard landscaped open space areas (including proposed plazas, pedestrian links/pathways and public spaces around buildings and infrastructure).
 - (6) Any primary infrastructure use for Hospitals and Health Care Services are limited to uses that serve and support the proposed sporting facilities in the Precinct (includes Medical Centre, Physiotherapy Clinic).
 - (7) Any primary infrastructure use for Sporting Facilities includes Sport and Recreation uses (indoor and outdoor), the Redland Whitewater Centre and public swimming lagoon.,
 - (8) Any primary infrastructure use for Electricity Operating Works is limited to the provision of reticulated electricity infrastructure to service the entire Precinct (including potential on-site substation and renewable energy generation).
 - (9) Any primary infrastructure use for Water Cycle Management Infrastructure is limited to the provision of sewerage and water reticulation to service the entire Precinct (including potential on-site rainwater tanks for rainwater harvesting and reuse for on-site landscape irrigation purposes).
 - (10) Any primary infrastructure use for Storage and Works Depots and Similar Facilities, including administrative facilities relating to the provision or maintenance of the infrastructure stated includes amenity and administration buildings and facilities, sport and maintenance equipment storage sheds.
 - (11) Any ancillary supporting use for a shop must not include the uses of bulky goods retail, supermarket or shopping centre.
 - (12) Any ancillary supporting use for a Office involves ancillary office space only and provides supporting and administration functions to the defined primary land use.
- Other land uses not envisaged within the Precinct**
- Short-Term Accommodation, Motel, Serviced Apartments
 - Drive-Through Facility
 - Fast-Food Outlet
 - Club
 - Winery
 - Tavern
 - Service Station
 - Place of Worship
 - Wholesale Nursery
 - Residential
 - Business Park

Design

- 2 **Built Form Height**
In keeping with the building height provisions of the Community Facilities and Low Density Residential Zones under the *Redland City Plan 2018 v12* development within the Precinct will be low-rise in nature to ensure the existing character and integrity of the locality is maintained and the prominence of the Birkdale Conservation Area is preserved.
- 3 **Building Scale and Intensity**
Reflecting the design principles of the *Birkdale Community Precinct Design Guide* (April 2022), new buildings are to be distinctive and appropriate in scale and intensity that respond sensitively to the local landscape and heritage context of the Precinct, while allowing for appropriate innovation, creativity and design excellence.

Table 2 – Advisory Notes

4	Building Detail New buildings and structures will achieve a high standard of design that responds to the architectural design inspiration and approach outlined in the <i>Birkdale Community Precinct Design Narratives Report</i> (Redland City Council, April 2023). Development is to incorporate variations in roof form, facade articulation, external materials and finishes. The selected colour palette and materials should reflect the local natural bushland setting to ensure the development does not detract visually from the character and scenic amenity of the locality.
5	Landscape Elements Landscaping is to be designed and constructed in accordance with the guiding themes of the <i>Birkdale Community Precinct Design Narratives Report</i> (Redland City Council, April 2023). New landscaping will achieve a high standard of design that respects the surrounding local landscape and heritage context of the Precinct and will utilise predominately endemic and local planting that has minimal reliance on artificial irrigation. Non-endemic native planting and productive bush tucker planting may be incorporated to showcase a broader range of species on the international stage. Wayfinding signage shall ensure clear guidance and direction with well positioned signage that is sympathetic to the surrounds and enhances the natural character of the site.
6	Lighting In accordance with the <i>Birkdale Community Precinct Design Narratives Report</i> (Redland City Council, April 2023), a 'Creative Lighting Approach' is to be implemented to enhance the Precinct experience, reflect and support the key themes of the design inspiration and encourage safe and active spaces after dark. All lighting should comply with the relevant Australian Standards. Both functional and creative lighting should be considered to achieve a balanced outcome that enhances safety and amenity, supports sustainability and minimises neighbour and fauna disturbance.
7	Accessibility Guided by the core social values outlined in the Birkdale Community Precinct Master Plan and Foundation Report, infrastructure and public amenities are to be designed to ensure accessibility for all users, including people with disabilities. This may include the provision of accessible pedestrian pathways, compliant ramps and tactile indicators at key intersections and public facilities. Where feasible accessible entrances, ramps and parking spaces are to be incorporated within the design to support inclusive access and mobility. Design responses are to align with the <i>Disability Discrimination Act 1992</i> (DDA) and relevant Australian Standards to support inclusive, safe and dignified access for all users.
Environmental Values	
8	Development is located and designed to ensure it protects and enhances the environmental values of the Precinct. Design should reflect the environmental objectives and landscape-led approach outlined in the Birkdale Community Precinct Master Plan and the <i>Birkdale Community Precinct Design Guide</i> (April 2022), including the protection of existing ecological areas, the use of endemic and locally appropriate planting and the integration of built form with the Precinct's natural topography, water networks and ecological systems.
Cultural Heritage	
9	The Infrastructure Designation is to comply with the Cultural Heritage Duty of Care requirements under the <i>Aboriginal Cultural Heritage Act 2003</i> and the <i>Queensland Heritage Act 1992</i>. These requirements are not overridden by this Designation.
10	The heritage restoration of Willard's Farm shall be undertaken in accordance with the Willard's Farm Conservation Management Plan prepared by Australian Heritage Specialists (AHS), dated 5/04/2023, as included in Appendix B of the Willard's Farm (Former) Heritage Impact Statement prepared by AHS, dated 18/04/2023.
11	The heritage restoration of the US Army Radio Receiving Station shall be undertaken in accordance with the US Army Radio Receiving Station (Former) Conservation Management Plan prepared by Australian Heritage Specialists (AHS), dated 5/04/2023, as included in

Table 2 – Advisory Notes	
Appendix B of the US Army Radio Receiving Station (Former) Heritage Impact Statement prepared by AHS, dated 18/04/2023.	
Car and Bicycle Parking	
12	Layout and Design a) The car parking layout must be generally consistent with the Birkdale Community Precinct Pre-2032 and Post-2032 Concept Master Plans and is to provide a dispersed parking arrangement across the Precinct. Parking is to be located to ensure convenient access to key uses and activity areas with sufficient parking proximate to meet the parking needs they generate. b) All car parking areas and electric vehicle (EV) charging stations should be sensitively designed and appropriately landscaped to reduce visual impact on the streetscape and to minimise impact on the natural environment. c) All new car parking spaces are to comply with the relevant Council or Australian standards. d) Development is to provide for bicycle parking to satisfy expected demand. e) Considerations should be made to parking during major site events and the potential for trip-making by private coaches/buses/shuttles and rideshare or by active transport (walking, cycling and personal mobility devices).

Schedule 3 – Supporting plans and documents

Copies of the following plans, documents and drawings can be obtained at:
<https://yoursay.redland.qld.gov.au/imagine/widgets/324331/documents>

Drawing/report title	Prepared by	Date
Birkdale Community Precinct Local Government Infrastructure Designation Environment Assessment Report	Jacobs Group	20/04/2023
Birkdale Community Precinct Master Plan and Foundation Report	Redland City Council	15/3/2023
Design Narratives Report	Redland City Council	April 2023
Local Government Infrastructure Designation Consultation Strategy	Redland City Council	March 2023
Contour Plan	Redland City Council	03/06/2023
Preliminary Civil Drawings	Jacobs Group	19/04/2023
Ecological Assessment Report	Raptor Environmental	19/04/2023
State (DAMS) Mapping	Jacobs Group	02/03/2023
SEQ Regional Plan 2017 assessment benchmark response	Jacobs Group	20/04/2023
Redland City Plan 2018 v.9 Mapping	Redland City Council	02/06/2023
Redland City Plan 2018 v.9 Code assessment benchmark responses	Jacobs Group	20/04/2023
Bushfire Hazard Assessment and Management Plan	Jacobs Group	26/04/2023
Coastal Hazards Assessment Report	Jacobs Group	19/04/2023
Site Based Stormwater Management Plan	Jacobs Group	19/04/2023
Willard's Farm Heritage Impact Statement	Australian Heritage Specialists	18/04/2023
US Army Receiving Station Heritage Impact Statement	Australian Heritage Specialists	18/04/2023
State Development and Assessment (SDAP) Code assessment benchmark responses	Jacobs Group	20/04/2023
Preliminary Site (Contamination) Investigation Report	Jacobs Group	19/04/2023
Noise Impact Assessment Report	Jacobs Group	19/04/2023
Air Quality Impact Assessment Report	Jacobs Group	19/04/2023

Drawing/report title	Prepared by	Date
Traffic Impact Assessment Report	Jacobs Group	19/04/2023
Property Title Searches	Jacobs Group	31/01/2023
Birkdale Community Precinct Visual Assessment	LatStudios	08/02/2022

Schedule 4 – Notice of how submissions were considered

Submissions received during consultation

On 21/04/2023, I gave a notice to the Director General of DSGILP (now Department of State Development, Infrastructure and Planning), adjoining landowners and known stakeholders advising that I was proposing to make the LGID and inviting final submissions within 25 business days.

Public consultation actions were also conducted by the entity inviting submissions between 21/04/2023 and 22/05/2023.

A total of 144 public submissions were received during this period from 21/04/2023 and 22/05/2023.

A summary of how I have considered the submissions is provided in the table below:

Matters raised	Response
Redland White Water Centre	
Residents opposed the costs of building and operating the White-Water Centre (WWC) costs; on the basis that it would increase rates in Redland City Council.	- These objections are non LGID planning issues but note that State/Federal budgets cover the WWC capital expense. - Business cases by RCC and the State Government show the WWC will be profit making. More financial details to be published by the State when approval announced.
LGID Process	
Residents opposed the use of the LGID as a planning pathway for the BCP Masterplan and claimed Council had acted illegally.	This is also non LGID planning issue but note that the LGID process undertaken has been reviewed within the Council and by external Legal and Statutory Planning Advisors.
Environment	
- Potential threats to endangered koala's and other flora and fauna by building, operating and using the BCP site. - State Requirements to protect identified species and environmental values outlined in the LGID Conditions. - Impact of lights and noise on wildlife.	- The BCP Designation Area is subject to a Conservation Agreement with the Commonwealth Government to preserve the Conservation Area. - RCC is to prepare the following documents to meet LGID Requirements: Vegetation Management Plan, Construction Environmental Management Plan, Rehabilitation Management Plan, Fauna Management Plan, Koala Management Plan, Species Management Plan and Bushfire Management Plan. - All external lighting is to be installed and managed to shield and minimise light spill plus meeting Australian Standards as stipulated in the LGID requirements.
Heritage	
- Residents concern about loss of State Heritage Items at the World War II Radio Receiving Station and Willards Farm. - Residents concern about negative impacts on Aboriginal Heritage Items. - State Heritage Requirements included in LGID Conditions.	- Both items i.e. WWII Radio Station and Willard's Farm are listed on the State Heritage Register and both have current Conservation Management Plans in place. - BCP is subject to a State Government Heritage Agreement protecting heritage values on site. - Use of existing Conservation Management Plans is required and the development of an Archaeological Management Plan and best practice heritage management methods are included as part of the LGID requirements.

Matters raised	Response
Energy Residents concern about the energy use at the BCP and increasing the site's carbon footprint.	- Shared mechanical engineering plant is proposed to improve energy efficiency. - Target zero net waste and 100% renewable energy during construction is planned. - Final design is to support low carbon, energy and water use outcomes where possible.
Water - Concerns about increasing flooding in the locality for residents. - State Requirements include protection of stormwater infrastructure in the State controlled road.	- BCP Stormwater Management Plan is included as a listed document to the LGID and confirms the site development achieves a net reduction in annual runoff. The Stormwater Management Plan also shows that any inundation during 10% AEP flood event is limited to the proposed constructed wetland. - LGID requirements prohibit any detrimental impact on the State Road and all flow is retained within the BCP designation area.
Traffic - Traffic at major road junctions is already at saturation and increased visitors will make the current traffic much worse. - State Traffic Requirements are included in the LGID Conditions for public passenger transport, active transport and event transport.	- LGID requirements include preparation of an Event Management Plan and Transport Management Plan in consultation with DTMR and Queensland Police. - Accommodation for active transport, cyclists and public transport is included in the LGID requirements.