

BCC DS

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APPLICATION REF

A006083027

ATTACHMENT 10

Traffic Impact Report
prepared by Lambert &
Rehbein

PROPOSED LIGHT DREAMING 'LUMINA NIGHT WALKS' – MOUNT COOT-THA

BRISBANE BOTANIC GARDENS
TRAFFIC IMPACT ASSESSMET

LightDreaming Pty Ltd

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Authorised by:



S.A. WILLIAMS BE(Civil), FIEAust, RPEQ #06417

EXECUTIVE MANAGER

1. INTRODUCTION

Lambert and Rehbein has been commissioned by LightDreaming Pty Ltd to prepare a traffic impact assessment in support of the proposed environmental facility and tourist attraction use, which will be referred to from hereon in as 'Lumina Night Walks'. 'Lumina Night Walks' is proposed to be held at the Mount Coot-tha Brisbane Botanic Gardens. The site is formally known as Lot 1 and 6 on SP266267.

The project involves the implementation of 'Lumina Night Walks' into the Botanical Gardens. 'Lumina Night Walks' can be described as an entertainment night-time walk, offering a series of unique immersive experiences, lasting 50-minutes to 60-minutes per attendee with patrons walking through the experience along a defined track with various light shows and displays along this track. 'Lumina Night Walks' proposes to provide parking areas in two (2) locations within proximity of the site.

The Brisbane Botanical Gardens Mount Coot-tha has several currently operational entertainment facilities, which are generally day-time attractions. The Brisbane Botanic Gardens Mount Coot-tha is currently operational every day 8:00am - 6:00pm (closing at 5:00pm April to August). The main gates to the botanic gardens are closed to vehicular access on weekends, public holidays and from 4pm weekdays. This does not impact the proposed 'Lumina Night Walks' event as the main car parking area always remains open to the public. We note that it is our understanding that the commercial arrangements being put in place will result in the Lumina Night Walks attraction having sole and exclusive use of the existing main parking area associated with the gardens on the basis that there are no events being held at the planetarium. We further understand that in the event that there are pre-planned events associated with the planetarium that the Lumina Night Walks would not operate in parallel.

The proposed activity area plan, including the proposed 'Lumina Night Walks' track prepared by LightDreaming Pty Ltd is included in **Appendix A**.

This report has been undertaken to assess the potential impact that the proposed development could have on the external road network surrounding the site, and is set out as follows:

Section 2 discusses the existing land use and traffic arrangements in the vicinity of the proposed development site.

Section 3 provides details of the proposed development, including an assessment of the site layout, access, car parking and servicing arrangements.

Section 4 displays the calculations and assumptions used to establish the forecast generation and distribution of the proposed development traffic and summarises the key outcomes of the traffic investigations.

A response to Brisbane City Council's Transport, Access, Parking and Servicing Code, has been attached in **Appendix C**.

Lambert & Rehbein has derived the data in this report primarily from the data provided by the Client, and a site investigation undertaken in July 2022.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between Lambert & Rehbein and the Client. Lambert & Rehbein accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

2. DEVELOPMENT SITE

This section of the report describes the context of the proposed development and includes a description of the existing road network, adjacent land uses, and existing public transport facilities servicing the site.

2.1 DEVELOPMENT SITE

The subject site is situated within the Mount Coot-tha Brisbane Botanic Gardens, formally described as Lot 1 and 6 on SP266267. The site is zoned as 'Open Space (Local / Metropolitan)' as per the Brisbane City Council (BCC) city plan 2014. The site is generally surrounded by 'Open Space (Local / Metropolitan)' zones directly to the west, 'Community Facilities (cemetery)' directly to the east, and several residential dwellings further east, north, and south.

Figure 2-1 illustrates the approximate locality of the site, as well as the proposed track that the "Lumina Night Walks" show will follow.

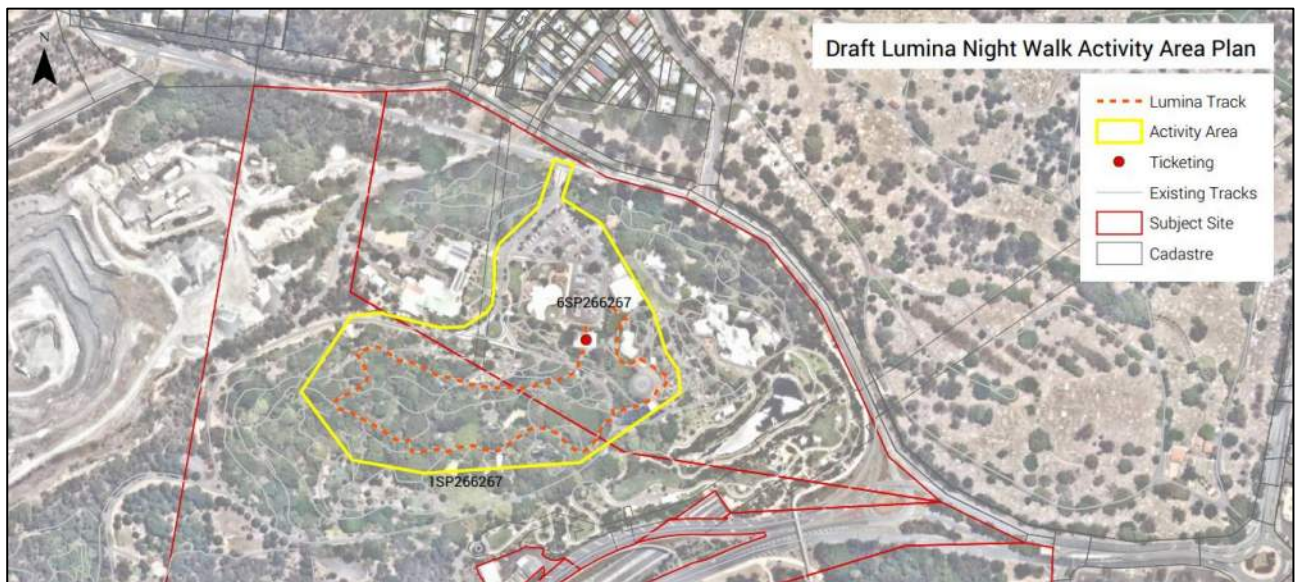


Figure 2-1 Proposed Development Site (Source: QLD Globe)

2.2 ADJACENT ROAD NETWORK

Inspection of the land use, road condition, intersection characteristics, public transport facilities, pedestrian access, and cyclist provisions surrounding the proposed development site have been undertaken in preparation of this traffic assessment. This was completed to collect information about the road network operation, safety characteristics, public transport network and specific network / land-use factors potentially of influence to the proposed development.

The surrounding road network in relation to the proposed development site and relevant proposed car parking areas, can be seen in **Figure 2-2**.



Figure 2-2 Surrounding Road Hierarchy

2.2.1 MOUNT COOT-THA ROAD (ACCESS TO PARKING AREA #1)

Mount Coot-tha Road provides sole access to Parking Area #1, it is classified as a 'Suburban Road' (Major Road) under the jurisdiction of BCC. The general form of Mount Coot-tha Road is shown in **Figure 2-3** and was observed to have the following characteristics near the site access:

- Two-way, two-lane road;
- Full kerb and channel on both sides of the road;
- A kerb-to-kerb width of approximately 13 metres;
- Dedicated on-street cycle lanes in both directions;
- No on-street parking available;
- Paved pedestrian footpaths provided on both sides of the road; and
- No posted speed limit, assumed to be 60 km/h.



Figure 2-3 Mount Coot-tha Road at the Site Frontage (Facing South)

2.2.2 MOUNT COOT-THA SCENIC DRIVE / SIR SAMUEL GRIFFITH SCENIC DRIVE (ACCESS TO PARKING AREA #2)

Mount Coot-tha Scenic Drive provides sole entry in to Parking Area #2 and due to the existing formation of the access, Sir Samuel Griffith Scenic Drive provides sole egress from Parking Area #2. Mount Coot-tha Scenic Drive is classified as a 'District Road' (Major Road) and Sir Samuel Griffith Scenic Drive is classified as a 'Neighbourhood Road' (Minor Road), under the jurisdiction of BCC.

The general form of Mount Coot-tha Scenic Drive at Parking Area #2's access is shown in **Figure 2-4** and was observed to have the following characteristics:

- Two-way, two-lane road (with a left turn lane (~50m) and right turn lane (~95m) into the parking area).
- Dedicated on-street cycle lanes in north-eastern direction;
- No on-street parking available on Mount Coot-tha Scenic Drive;
- Connects adjacently with Mount Coot-tha Road;
- Paved pedestrian footpaths provided on both sides of the road; and
- Posted speed limit of 50km/hr.

The general form of Sir Samuel Griffith Scenic Drive at Parking Area #2's access is shown in **Figure 2-4** and was observed to have the following characteristics:

- One-Lane, one-way road (drivers are forced to take this road);
- Dedicated on-street pedestrian walking path;
- Connects adjacently with Mount Coot-tha Road;
- No on-street cycle lanes;
- On-street parallel parking available (40 car parking spaces); and
- Posted speed limit as 40km/hr



Figure 2-4 Mount Coot-tha Scenic Drive / Sir Samuel Griffith Scenic Drive (Facing North-east)

2.3 PUBLIC TRANSPORT

The development site is reasonably connected to existing public transport facilities, with two (2) Translink bus stops within proximity of the site, as seen in **Figure 2-5**. It should be noted that bus stop #001405 is located within Parking Area #1. These stops are serviced by several bus routes as summarised in **Table 2-1**.

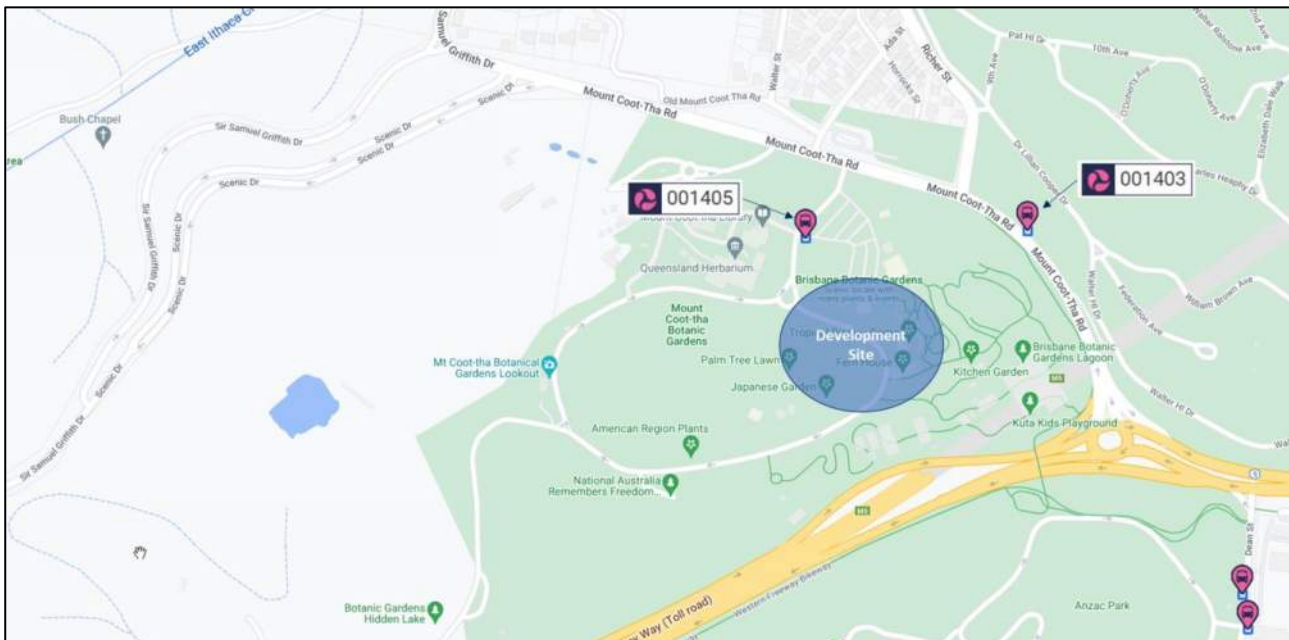


Figure 2-5 Surrounding Public Transport Network

Table 2-1 Bus Services

SITE ID#	SERVICE TIMES	ROUTE	DESCRIPTION
#001405 Mt Coot-tha Rd at Botanic Gardens, stop 19, Mount Coot-tha	Weekday 5:45am- 7:28am	471	City, Milton, Auchenflower, Birdwood Tce, Mt Coot-tha- Outbound
	Weekend 7:32am- 7:12pm	598	Brookside, Indooroopilly, GardenCity, Cannon Hill, Chermshire- Counterclockwise
		599	Cannon Hill, GardenCity, Indooroopilly, Brookside, Chermshire- Clockwise
#001403 Mt Coot-tha Rd at Botanic Gardens, stop 17, Mount Coot-tha	Weekday 6:45am- 7:29am	598	Brookside, Indooroopilly, GardenCity, Cannon Hill, Chermshire- Counterclockwise
	Weekend 7:59am- 7:13pm	S798	Ashgrove, Bardon, Rainworth, Toowong, Indooroopilly- Outbound

2.4 LOCAL GOVERNMENT INFRASTRUCTURE PLAN

Review of BCC's Planning Scheme found no future road or intersection upgrades in proximity of the site.

2.5 ACTIVE TRANSPORT

The development site is reasonably well serviced by existing active transport facilities, with pedestrian pathways running along both sides of Mount Coot-tha Road (note that on the northern side of Mount Coot-tha Road, the pedestrian pathways are only available east of the site access), as can be seen in **Figure 2-5**.

We do note that there is no signalised pedestrian crossing from the northern side of Mount Coot-tha Road to the development site access. As such, patrons of the site will be instructed to not park on the northern side of Mount-Coot-Tha Road, as discussed further in **Section 3**. We note that the carpark on the northern side will be restricted to patrons of Lumina Night Walk to discourage parking opposite the subject site. While there is a pedestrian refuge facility, we are of the view that the management of vehicle parking to the two areas proposed under the event traffic management being proposed is an appropriate mechanism for ensure safety for all users. In conjunction with the implementation of a detailed event traffic management plan we do not anticipate significant pedestrian activity to/from the site from external locations. There are no significant, high standard public transport facilities in a walkable catchment that would be likely to generate significant usage.



Figure 2-6 Surrounding Pedestrian Network

The development site is connected to various existing cycle routes however again we do not anticipate that there would be a significant cycling mode share for patrons of the proposed Lumina Night Walks given the nature of the proposal. As shown in **Figure 2-7**, the BCC Overlay Mapping identifies Mount Coot-tha Road as a secondary cycle route connecting to a secondary bicycle route along the Centenary Motorway Legacy Way. This connects to local and secondary bicycle routes throughout the residential catchments to the north and south of the site, connecting the site to the further cycle network.



Figure 2-7 Surrounding Cycle Network (BCC City Plan)

3. DETAILS OF THE PROPOSED DEVELOPMENT

This section of the report describes the nature of the proposed development, provides a review of the proposed access and describes the internal car park configuration.

3.1 PROPOSED DEVELOPMENT

The proposed development involves the implementation of ‘Lumina Night Walks’ into Brisbane Botanic Gardens Mount Coot-tha. ‘Lumina Night Walks’ can be described as an entertainment night-time walk, offering a series of unique immersive experiences, lasting 50-minutes to 60-minutes per attendee, starting every 10-minutes. ‘Lumina Night Walks’ proposes to provide parking areas in two (2) locations within proximity of the site. The event has an anticipated capacity of 2400 people per night.

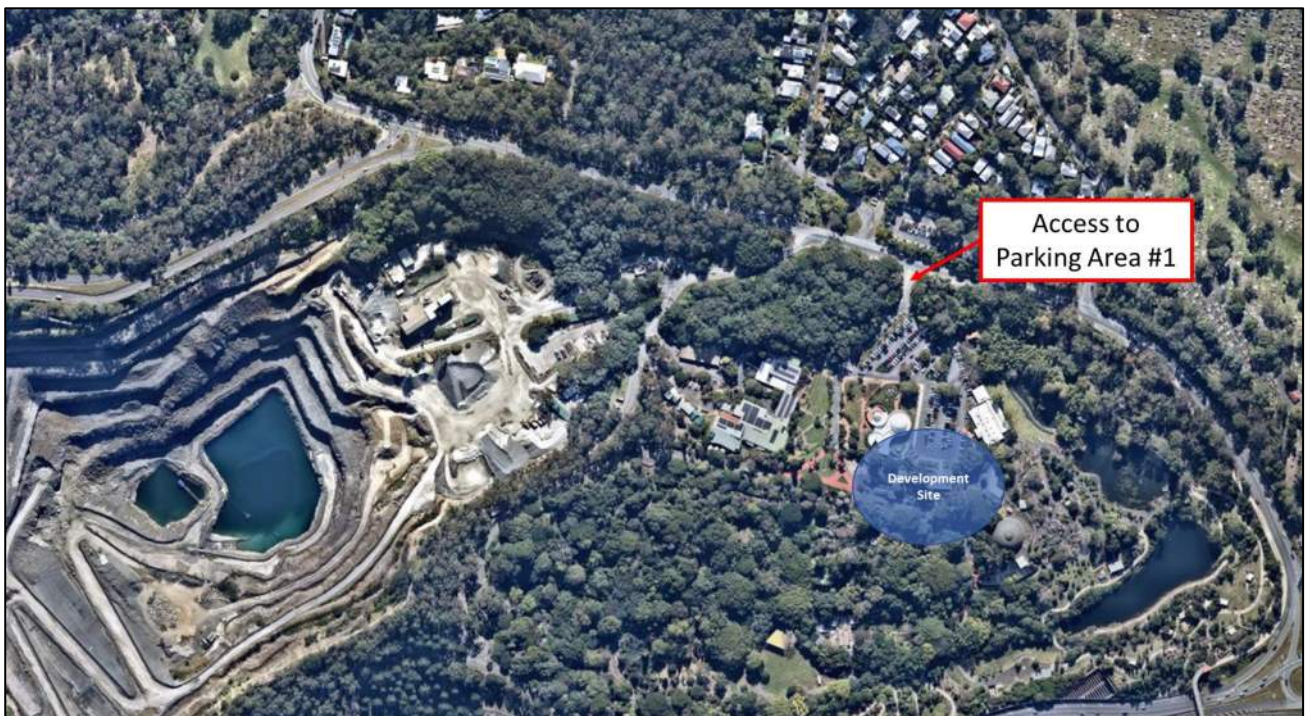
The proposed activity area plan, including the proposed ‘Lumina Night Walks’ track prepared by LightDreaming Pty Ltd is included in **Appendix A**.

It should be noted that a Transport Management Plan framework has been developed to assist with the implementation of ‘Lumina Night Walks’ into Brisbane Botanic Gardens Mount Coot-tha. This framework was developed to provide an indicative structure to the management of the pedestrian and vehicular movements associated with this event. It is likely that this Transport Management Plan Framework will need to be continually updated as the event begins to run. The Transport Management Plan Framework is attached in **Appendix B**.

3.2 ACCESS ARRANGEMENTS

Brisbane Botanic Gardens Mount Coot-tha lies approximately 6-7km from Brisbane CBD in the Brisbane City Council Area. It comprises 36.5ha and has eastern frontage to Mount Coot-tha Drive which provides main vehicular access to the development.

During the ‘Lumina Night Walks’ event, the main vehicular access will be the existing all-movements access to the Brisbane Botanic Gardens Mount Coot-tha at Mount Coot-tha Road. It should be noted that this access intersection provides sole access into Parking Area #1.



Due to the physical area of Mount Coot-tha and the location of the ‘Lumina Night Walk’ event, large focus will be travel to and from the event, including parking and pedestrian movements.

3.3 CAR PARKING FACILITIES

As the existing Botanical Garden events typically end by 6pm, the existing car parking areas are anticipated to be empty by nightfall and as such, the following car parking arrangements will be made available for patrons:

- The main car parking area located adjacent to the planetarium, labelled 'Parking Area #1' in **Figure 3-1**;
- The currently underutilised car parking area located along Mount Coot-tha Scenic Drive, labelled 'Parking Area #2' in **Figure 3-1**; and
- Parallel car parking along Sir Samuel Griffith Drive is also available for overflow car parking and staff car parking, labelled 'Overflow Parking' in **Figure 3-1**.

It should be noted that patrons of 'Lumina Night Walks' will retrieve traffic and parking instructions when they pre-purchase tickets to ensure that no patrons park to the north of Mount Coot-tha Road, including the 'Ada Street' car park and residential streets. These instructions aim to ensure attendees additionally do not park in local residential streets, improving safety and reducing noise for residents.

Furthermore, it is proposed that clear instructions will be provided on the Event Website and parking instructions will be provided as part of the ticket purchasing process. Along with clearly outlining where patrons are not permitted to park, the instructions provided as part of the ticketing process will outline the management practices being put in place to ensure the maximum efficiency of the use of Parking Areas 1 and 2. These areas will be managed by event staff.

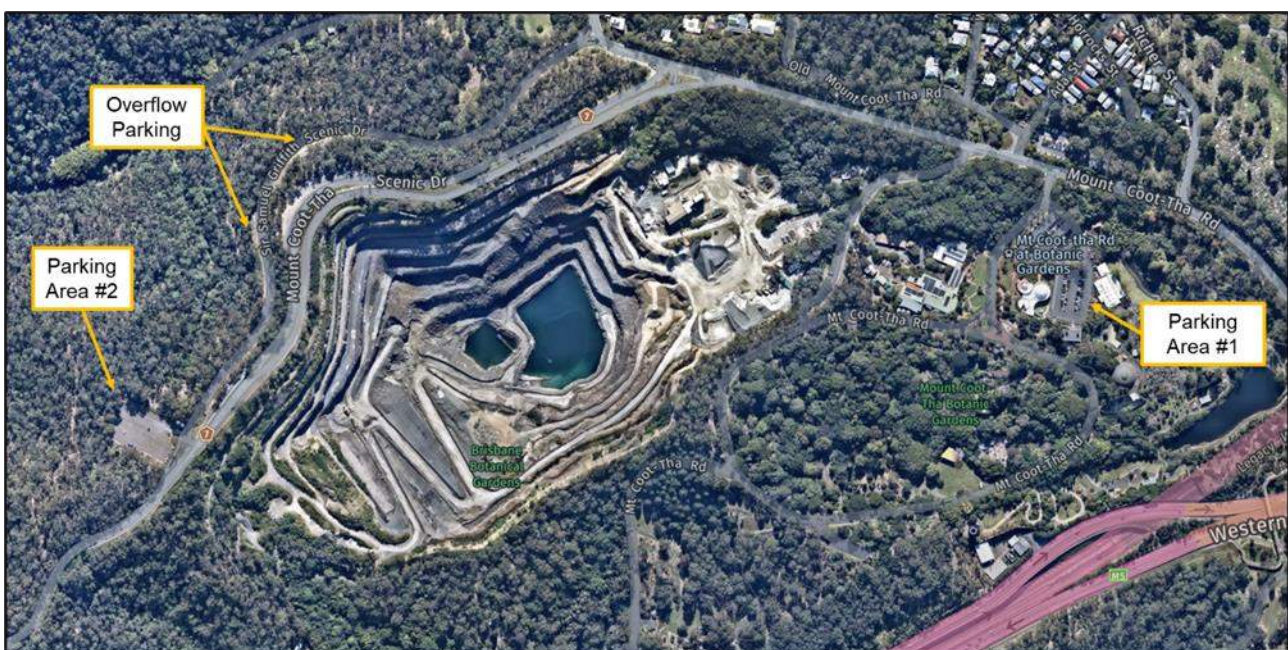


Figure 3-1 Proposed Car Parking Facilities

Table 3-1 Car Parking Availability

PARKING AREA	ACCESS VIA	AVAILABILITY
Parking Area #1	Mount Coot-tha Road	184 Visitor Parking Spaces
Parking Area #2	Mount Coot-tha Scenic Drive	164 Visitor Parking Spaces
Overflow Parking	Sir Samuel Griffith Scenic Drive	40 Parking Spaces (incl. Staff)
Total Parking	349 Visitor Parking Spaces + 40 Overflow (incl. Staff) Spaces	

As documented in **Table 3-1**, the Botanical Gardens currently has 351 parking spaces and 40 overflow parking spaces available for use after nightfall. As documented in the Traffic Management Plan framework attached in **Appendix B**, in our view this is considered to be an acceptable volume of parking spaces for the anticipated arrival and departure flow of vehicles.

From our investigation we know that Parking Area #2 and the overflow car parking are approximately 1.3km from the event location, and as such it is proposed that the event traffic management will include complimentary shuttle buses that will carry people to the main entrance, as detailed in the Operational Management Plan.

It should be noted that the overflow parking is proposed to be utilised by staff members, we note that the staff will additionally be provided with a complimentary shuttle bus to get to the main entrance.

3.4 SERVICING ARRANGEMENTS

Servicing arrangements including refuse collection at the Botanical Gardens will maintain existing operations. It is unlikely that the proposed “Lumina Night Walks” event will generate ample waste.

3.5 TRAFFIC IMPACTS

The operational times of the ‘Lumina Night Walks’ event are outside of traffic peak periods (7-9am and 4-6pm) and as such in our view, the event will have negligible impact to the surrounding road network. We also note that in the prelodgement advice dated 6 April 2022, it was stated that “Due to the proposed operation hours being outside Peak Travel demand periods network capacity will not be a key consideration for supporting traffic documentation”. Notwithstanding this, we have completed a high-level analysis of the surrounding road network to ensure that the event will not result in external impacts.

The Traffic Management Plan Framework, attached in **Appendix B**, has been developed to manage the pedestrian and vehicular movements associated with this event, whereby the following characteristics form the event traffic profile:

- The event has an anticipated capacity of 2400 people per night (tickets pre-purchased).
- The event operates from 50-minute to 60-minute periods per attendee, with shows beginning every 10 minutes.
- All vehicles accessing the site will arrive within a five (5) hour period, hours of operation are anticipated to be as follows:
 - September to March: 6:00pm – 11:00pm Monday to Sunday (incl. public holidays); and
 - April to August: 6:00pm – 11:00pm Monday to Sunday (incl. public holidays).
- International and domestic tourists are anticipated to account for 25-50% of visitors, as such:
 - Approx. 50% of attendees (Brisbane residents) are reasonably familiar with the site as it is currently operational for popular attractions; and
 - Approx. 50% of attendees (tourists) are not familiar with the site at all.
- A conservative assumption of 25% of attendees are anticipated to utilise public transport / uber / taxi to get to the site.
- Patrons arriving by private vehicle have an anticipated vehicle occupancy of 2.6 persons per vehicle (the average Queensland household size is 2.6 people per household <https://www.abs.gov.au/census/find-census-data/quickstats/2016/3>).
- Vehicles will be able to access two (2) car parking areas (See **Section 3.3** for details).
- It is anticipated that the event will require 17 staff members during each operational evening.

Taking the above into account, the development traffic anticipated to be added onto the surrounding road network equates to less than three (3) cars every minute during operational periods (combined in and out).

We also note that the existing infrastructure of the surrounding road network can absolutely withstand the volumes of traffic anticipated to arrive to the event, noting that Mount Coot-tha currently has more than 1,000,000 visitors in a year, equating to more than 2,700 visitors on average each day.

As such, in our view, the development will have negligible impact on the surrounding road network.

4. SUMMARY

Lambert and Rehbein has been commissioned by LightDreaming Pty Ltd to prepare a traffic impact assessment in support of the proposed environmental facility and tourist attraction use, which will be referred to from hereon in as 'Lumina Night Walks'. 'Lumina Night Walks' is proposed to be held at the Mount Coot-tha Brisbane Botanic Gardens. The site is formally known as Lot 1 and 6 on SP266267.

The project involves the implementation of 'Lumina Night Walks' into the Botanical Gardens. 'Lumina Night Walks' can be described as an entertainment night-time walk, offering a series of unique immersive experiences, lasting 50-minutes to 60-minutes per attendee with patrons walking through the experience along a defined track with various light shows and displays along this track. 'Lumina Night Walks' proposes to provide parking areas in two (2) locations within proximity of the site.

The Brisbane Botanical Gardens Mount Coot-tha has several currently operational entertainment facilities, which are generally day-time attractions. The Brisbane Botanic Gardens Mount Coot-tha is currently operational every day 8:00am - 6:00pm (closing at 5:00pm April to August). The main gates to the botanic gardens are closed to vehicular access on weekends, public holidays and from 4pm weekdays. This does not impact the proposed 'Lumina Night Walks' event as the main car parking area always remains open to the public. We note that it is our understanding that the commercial arrangements being put in place will result in the Lumina Night Walks attraction having sole and exclusive use of the existing main parking area associated with the gardens on the basis that there are no events being held at the planetarium. We further understand that in the event that there are pre-planned events associated with the planetarium that the Lumina Night Walks would not operate in parallel.

The proposed activity area plan, including the proposed 'Lumina Night Walks' track prepared by LightDreaming Pty Ltd is included in **Appendix A**.

The Brisbane Botanical Gardens Mount Cot-Tha has several currently operational entertainment facilities, which are generally day-time attractions. The Brisbane Botanic Gardens Mount Coot-tha is currently operational every day 8:00am - 6:00pm (closing at 5:00pm April to August). The main gates to the botanic gardens are closed to vehicular access on weekends, public holidays and from 4pm weekdays. This does not impact the proposed 'Lumina Night Walks' event as the main car parking area always remains open to the public.

It should be noted that a Transport Management Plan framework has been developed to assist with the implementation of 'Lumina Night Walks' into Brisbane Botanic Gardens Mount Coot-tha. This framework was developed to provide an indicative structure to the management of the pedestrian and vehicular movements associated with this event. It is likely that this Transport Management Plan Framework will need to be continually updated as the event begins to run. The Transport Management Plan Framework is attached in **Appendix B**.

During the 'Lumina Night Walks' event, the main vehicular access will be the existing all-movements access to the Brisbane Botanic Gardens Mount Coot-tha at Mount Coot-tha Road. It should be noted that this access intersection provides sole access into Parking Area #1.

Due to the physical area of Mount Coot-tha and the location of the 'Lumina Night Walk' event, large focus will be travel to and from the event, including parking and pedestrian movements.

As the existing Botanical Garden events typically end by 6pm, the existing car parking areas are anticipated to be empty by nightfall and as such, the following car parking arrangements will be made available for patrons:

- The main car parking area located adjacent to the planetarium;
- The currently underutilised car parking area located along Mount Coot-tha Scenic Drive; and
- Parallel car parking along Sir Samuel Griffith Drive is also available for overflow car parking and staff car parking.

It should be noted that patrons of 'Lumina Night Walks' will retrieve traffic and parking instructions when they pre-purchase tickets to ensure that no patrons park to the north of Mount Coot-tha Road, including the 'Ada Street' car park and residential streets. These instructions aim to ensure attendees additionally do not park in local residential streets, improving safety and reducing noise for residents.

Furthermore, it is proposed that clear instructions will be provided on the Event Website and parking instructions will be provided as part of the ticket purchasing process. Along with clearly outlining where patrons are not permitted to park, the instructions provided as part of the ticketing process will outline the management

practices being put in place to ensure the maximum efficiency of the use of Parking Areas 1 and 2. These areas will be managed by event staff.

The development traffic anticipated to be added onto the surrounding road network equates to less than three (3) cars every minute during operational periods (combined in and out).

We also note that the existing infrastructure of the surrounding road network can absolutely withstand the volumes of traffic anticipated to arrive to the event, noting that Mount Coot-tha currently has more than 1,000,000 visitors in a year, equating to more than 2,700 visitors on average each day. As such, in our view, the development will have negligible impact on the surrounding road network.

APPENDIX A- PROPOSED SITE LAYOUT

Draft Lumina Night Walk Activity Area Plan

- Lumina Track
- Activity Area
- Ticketing
- Existing Tracks
- Subject Site
- Cadastre

6SP266267

1SP266267



Draft Lumina Night Walk Activity Area Plan

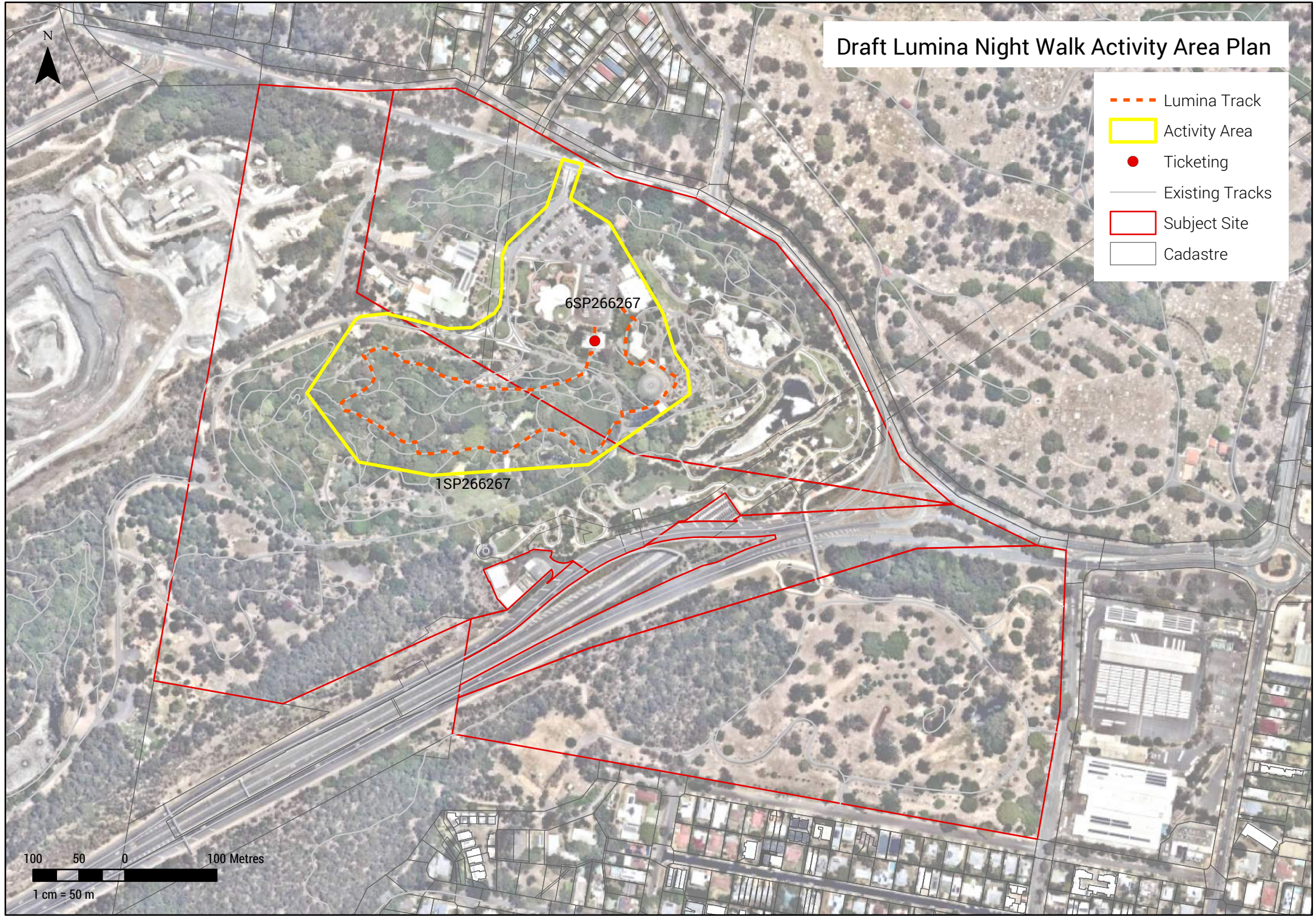
- Lumina Track
- ▭ Activity Area
- Ticketing
- Existing Tracks
- ▭ Subject Site
- ▭ Cadastre

6SP266267

1SP266267



100 50 0 100 Metres
1 cm = 50 m



APPENDIX B- TRAFFIC MANAGEMENT PLAN FRAMEWORK

1. Introduction

Lambert & Rehbein has been commissioned by Light Dreaming Pty Ltd to prepare a Traffic Report for the proposed 'Lumina Night Walks' show. 'Lumina Night Walks' is proposed to be held at the Mount Coot-tha Brisbane Botanic Gardens. The site is formally known as Lot 1 and 6 on SP266267, the total attraction use area is 4,512m².

For context, 'Lumina Night Walks' is an entertainment night time walk, offering a series of unique immersive experiences, lasting 50-minutes to 60-minutes per attendee with patrons walking through the experience along a defined track with various light shows and displays along this track. Operation of the show will occur 150 nights per year. **Figure 1** demonstrates the proposed 'Lumina Night Walk' activity area plan.

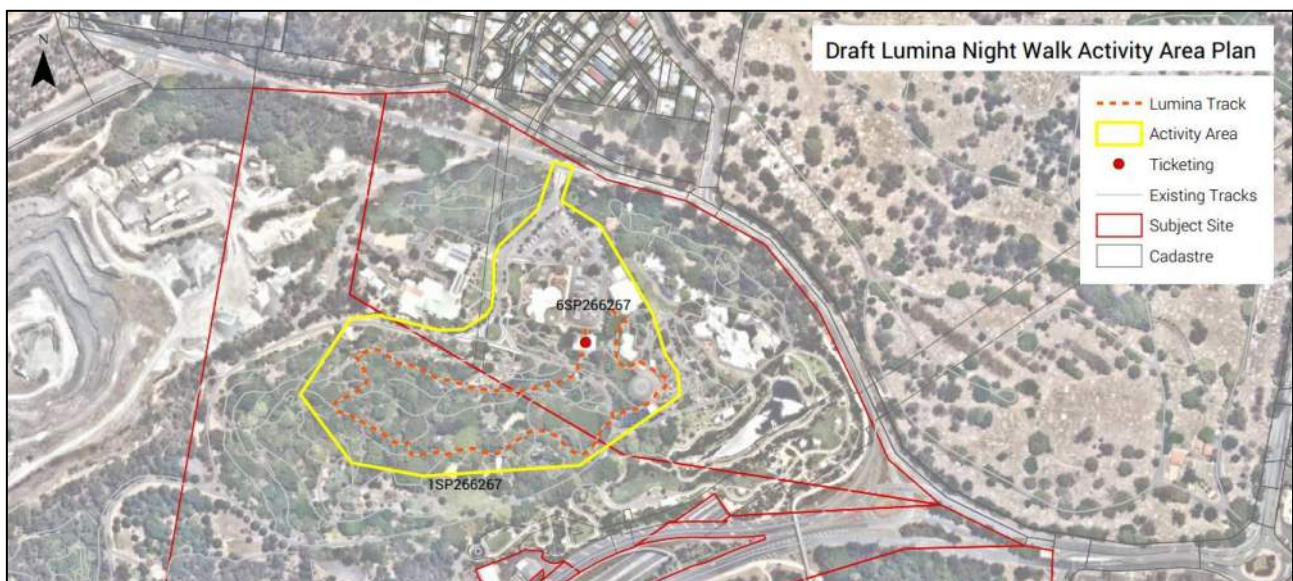


Figure 1 Proposed Lumina Night Walk Activity Area Plan

This report demonstrates that traffic movements and parking associated with the 'Lumina Night Walks' event being held at the Brisbane Botanic Gardens Mount Coot-tha, whether before, during or after have no adverse impact on the operation or safety of the surrounding and internal road network. The report will achieve this by:

- Identifying the nature of the event;
- Identifying traffic, parking and pedestrian management objectives; and
- Identifying where specific management measures are needed in terms of transportation and direction of traffic throughout the site.

Following this report, a Traffic Management Plan will be developed and implemented, in addition to the following strategies:

- Detailed information of how to get to the site shall be provided on the BCC 'Brisbane Botanic Gardens Mount Coot-tha' webpage and/ or the Lumina Light Dreaming website; and
- Pre-purchase ticketing will include clarification of directions to the event, as well as parking.
- Clear signage and instructions are to be implemented at the chosen entrance gate and parking facilities. This aims to diminish the impact the event will have on the surrounding residential streets.

2. Existing Operations at Brisbane Botanic Gardens Mount Coot-tha

The Brisbane Botanic Gardens Mount Coot-tha has several currently operational entertainment facilities. Some of the main attractions at the Botanic Gardens are as listed below:

- Tropical Dome
- Fern House
- Bonsai House
- Japanese Gardens
- Kitchen in the Garden
- Playground
- Australian Rainforest
- QLD Conservation Trail
- Hide 'n' Seek Children's Trail
- Arid Region Plants and Cactus House
- Exotic Rainforest
- National Freedom Wall
- Temperate Region Plants

The Brisbane Botanic Gardens Mount Coot-tha is currently operational every day 8:00am - 6:00pm (closing at 5:00pm April to August). The main gates to the botanic gardens are closed to vehicular access on weekends, public holidays and from 4pm weekdays. This does not impact the proposed 'Lumina Night Walks' event as the main car parking area always remains open to the public.

3. 'Lumina Night Walks' Event Traffic Profile

This traffic report has been developed to manage the pedestrian and vehicular movements associated with this event, whereby the following characteristics form the event traffic profile:

- The event has an anticipated capacity of 2400 people per night (tickets pre-purchased).
- The event operates from 50-minute to 60-minute periods per attendee, with shows beginning every 10 minutes.
- All vehicles accessing the site will arrive within a five (5) hour period, hours of operation are anticipated to be as follows:
 - September to March: 6.00pm – 11.00pm Monday to Sunday (inc. public holidays); and
 - April to August: 6:00pm – 11:00pm Monday to Sunday (inc. public holidays).
- International and domestic tourists are anticipated to account for 25-50% of visitors, as such:
 - Approx. 50% of attendees (Brisbane residents) are reasonably familiar with the site as it is currently operational for popular attractions; and
 - Approx. 50% of attendees (tourists) are not familiar with the site at all.
- A conservative assumption of 25% of attendees are anticipated to utilise public transport / uber / taxi to get to the site.
- Patrons arriving by private vehicle have an anticipated vehicle occupancy of 2.6 persons per vehicle (the average Queensland household size is 2.6 people per household <https://www.abs.gov.au/census/find-census-data/quickstats/2016/3>).
- Vehicles will be able to access two (2) car parking areas (See **Section 6** for more details).
- It is anticipated that the event will require 17 staff members during each operational evening.

4. Access Locations

Brisbane Botanic Gardens Mount Coot-tha lies approximately 6-7km from Brisbane CBD in the Brisbane City Council Area. It comprises 36.5ha and has eastern frontage to Mount Coot-tha Drive which provides main vehicular access to the development.

During the ‘Lumina Night Walks’ event, the main vehicular access will be the existing all-movements access to the Brisbane Botanic Gardens Mount Coot-tha at Mount Coot-tha Road.

Due to the physical area of Mount Coot-tha and the location of the ‘Lumina Night Walk’ event, large focus will be travel to and from the event, including parking and pedestrian movements.

5. Anticipated Arrival Flow of Event Patrons

We note that at the time the ‘Lumina Night Walks’ event is held, all other activities at the Botanical Gardens will be closed and as such, we have assumed that the car park is empty.

We have completed an analysis based on the anticipated event traffic profile, as detailed in **Section 3**, to evaluate the estimated car parking requirements for ‘Lumina Night Walks’. The analysis below is based on a 15-minute “arrival time”, 60-minute “show time” and 15-minute “departure time”. The anticipated arrival patterns of patrons are demonstrated in **Figure 2**, this has additionally been attached to this Traffic Management Framework.

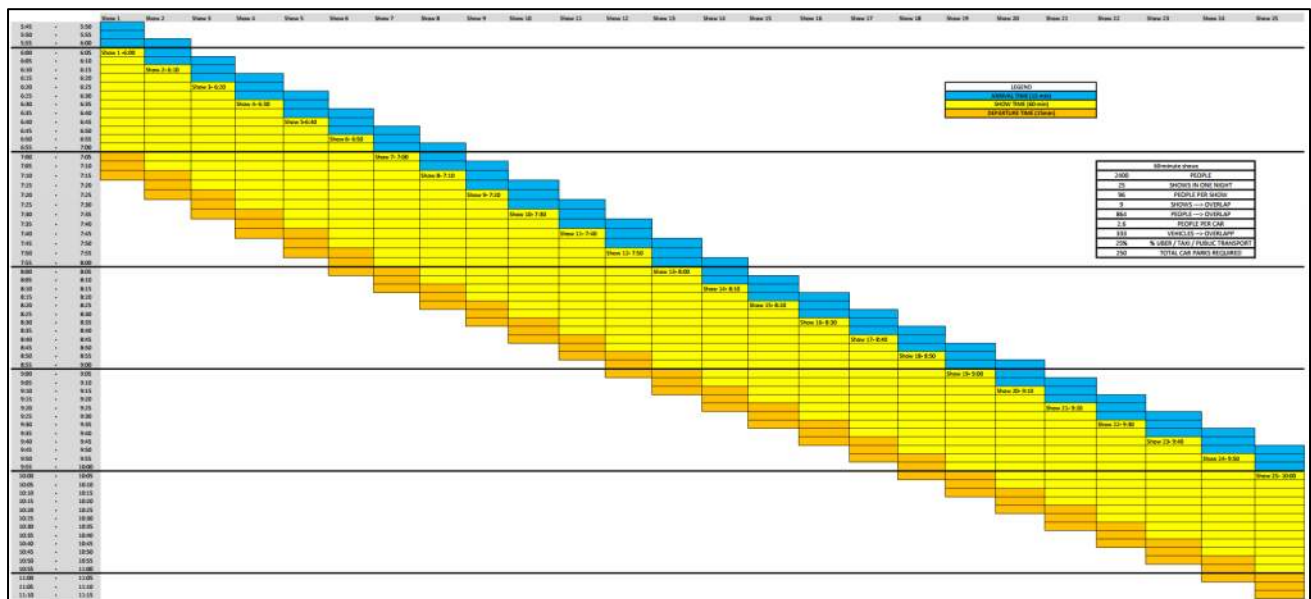


Figure 2 Anticipated Arrival Patterns of Event Patrons

Our analysis found that an average night at ‘Lumina Night Walks’ will encompass 25 shows, with approximately 96 people within each show. We note that within an hour period, a maximum of six (6) ticketed shows will be operating at any one time.

For the ‘Lumina Night Walks’ event, we anticipate that there could be as many as eight (8) groups of attendees needing to be parked at the site at any one time. As such, 250 car parking spaces are required to be available for attendees.

6. Event Car Parking Facilities

As previously noted, the existing Botanical Gardens car parking areas are anticipated to be empty by nightfall and as such, the following car parking arrangements will be made available for patrons:

- The main car parking area located adjacent to the planetarium, labelled 'Parking Area #1' in **Figure 3**;
- The currently underutilised car parking area located along Mount Coot-tha Scenic Drive, labelled 'Parking Area #2' in **Figure 3**; and
- Parallel car parking along Sir Samuel Griffith Drive is also available for overflow car parking and staff car parking, labelled 'Overflow Parking' in **Figure 3**.

From our investigation we know that Parking Area #2 and the overflow car parking are approximately 1.3km from the event location, and as such it is proposed that the event traffic management will include complimentary shuttle buses that will carry people to the main entrance, as detailed in **Section 7**.



Figure 3 Car Parking Areas

Table 1 Parking Availability at Site

Parking Area	Access Via	Availability
Parking Area #1	Mount Coot-tha Road	184 Visitor Parking Spaces
Parking Area #2	Mount Coot-tha Scenic Drive	164 Visitor Parking Spaces
Overflow Parking (Staff)	Sir Samuel Griffith Scenic Drive	40 Parking Spaces (incl. Staff)
Total Parking		349 Visitor Parking Spaces + 40 Overflow (incl. Staff) Spaces

As documented in **Table 1**, the Botanical Gardens currently has 349 parking spaces and 40 overflow parking spaces available for use after nightfall. As noted in **Section 5**, we anticipate that at any one time there could be as many as eight (8) groups of people needing to be parked at the site, as such 250 car parking spaces are required to be available for attendees. The existing facilities at the Brisbane Botanical Gardens Mount Coot-tha can cater for this volume of vehicles, with a surplus of 100 parking spaces and 40 overflow spaces.

It should be noted that patrons of 'Lumina Night Walks' will retrieve traffic and parking instructions when they pre-purchase tickets to ensure that no patrons park to the north of Mount Coot-tha Road, including the 'Ada Street' car park and residential streets. These instructions aim to ensure attendees additionally do not park in local residential streets, improving safety and reducing noise for residents.

7. Shuttle Bus Management

As noted in **Section 6**, Car Parking Area #2 is located approximately 1.5km from the main entrance, and as such the 'Lumina Night Walks' event will provide a complimentary (free) shuttle bus service to travel to and from the parking area to improve safety, reduce noise for local housing, and improve traffic flow. The proposed route to and from the car parking area is as illustrated in **Figure 4**.



Figure 4 Shuttle Bus Route

The existing bus stop located at Car Parking Area #2 has a designated waiting area for patrons, including a pedestrian path and fencing to the J-pole. We encourage patrons waiting for the shuttle bus to stand in this area, for safe operation. We note that a staff member will be allocated to this parking area to assist with the management of 'Lumina Night Walks' attendees.

As shows for the 'Lumina Night Walks' event will begin every 10 minutes, there will be two (2) shuttle buses running on a 10-minute cycle. A one-way trip to or from the main entrance and parking area #2, should take the shuttle bus approximately three (3) minutes to complete. This would therefore allow approximately seven (7) minutes of spare time to load and unload patrons at pick-up and drop-off.

The first and final operational shuttle bus will assist staff travelling to and from the overflow car parking along Sir Samuel Griffith Drive to the main entrance of the event.

8. Public Transport / Uber / Taxi / Public Transport / Private Drop-off & Pick-up Areas

The main car parking area, located adjacent to the planetarium has existing pick-up and drop-off facilities, as highlighted in **Figure 5**. It should be noted that the following set down zones will likely be managed by staff at the event, details of carpark and traffic staff will form part of a following traffic management plan.



Figure 5 Parking Area #1 Layout

The strategies that will be implemented to ensure safe and efficient vehicle movement within this car parking area for the anticipated arrival / departure methods are as tabulated in **Table 2**. Due to frequent start times of the show (every 10-minutes), it is expected that people will constantly be arriving and departing over the operational period and as such, it is expected that there will be a constant flow of vehicles picking up and dropping off patrons, resulting in minimal congestion and queuing.

Table 2 Pick-up / Drop-off Management

	Vehicles	Management
1 (orange)	Taxi / Uber	<ul style="list-style-type: none"> Set down zone for vehicles. Implement a 2-minute zone operation.
2 (yellow)	Public Buses (before 7:30pm)	<ul style="list-style-type: none"> Translink buses are operational until 7:30pm on weekdays and Saturdays and until 5:20pm on Sundays. The shuttle bus will utilise this area as the loading bay.
3 (blue)	Private Vehicles	<ul style="list-style-type: none"> Private vehicles are to utilise this area as a set down zone, implement a 2-minute zone operation.

The car parking area will be equipped with sufficient signage and instructions to ensure that vehicles move through the car park efficiently. As can be seen in **Figure 5**, the three (3) set down zones are on the main frontage and therefore in our view no additional pedestrian connectivity is necessary.

We note that specific traffic and parking instructions will be given to attendees with their pre-purchased tickets to help ensure that no vehicles are parking in the residential streets to the north of Mount Coot-tha Road. We recommend that signage, for example, “No Event Parking Beyond This Point”, be implemented. Additionally, the parking area to the north of Mount Coot-tha Road, known formally as the ‘Ada Street’ car parking area will be closed during the operational hours of ‘Lumina Night Walks’.

Please refer to the associated traffic impact assessment which provides information of the traffic impacts that the development will have on the surrounding road network.

9. Conclusion

Due to the physical area of Mount Coot-tha and the location of the ‘Lumina Night Walk’ event, large focus will be travel to and from the event, including parking and pedestrian movements.

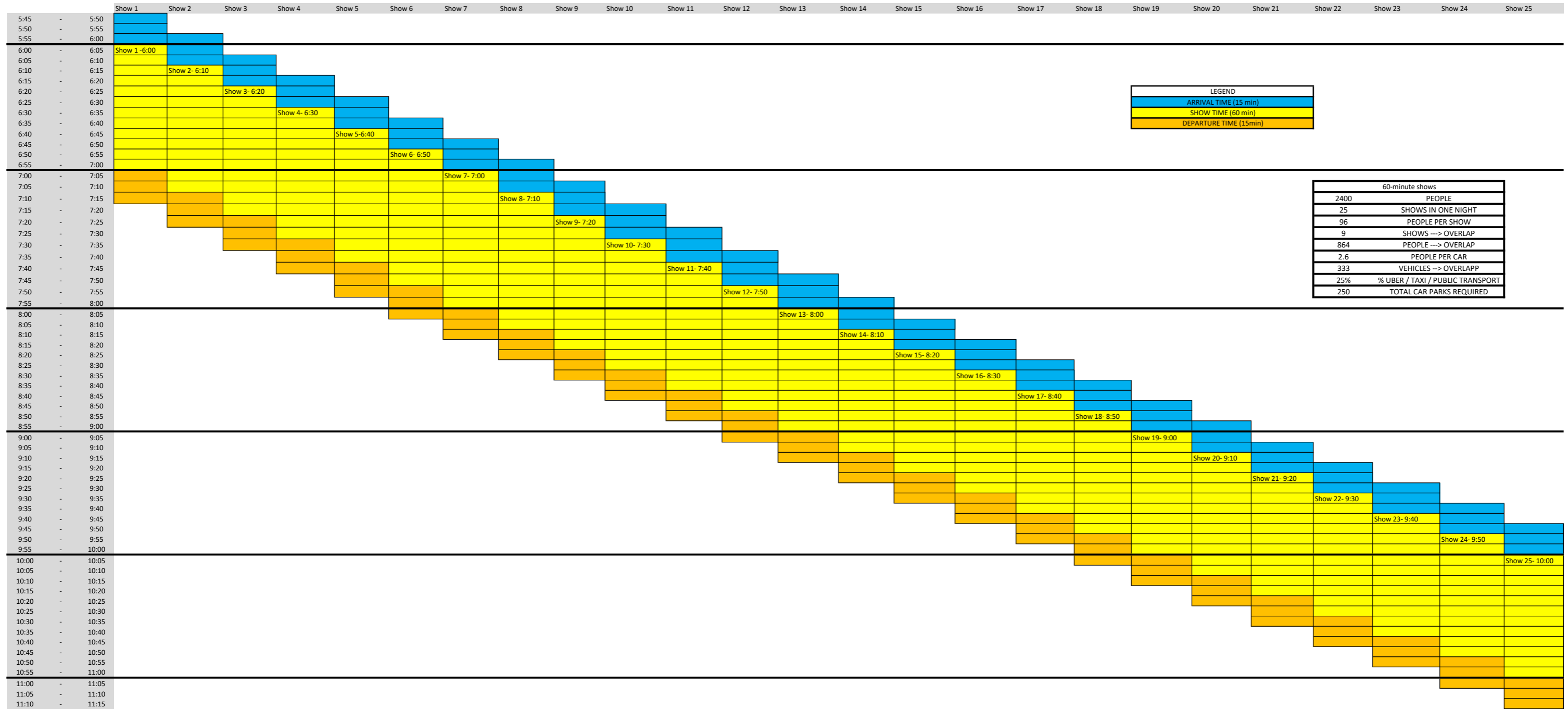
As such, we recommend a Traffic Management Plan be drafted and distributed to ‘Lumina Night Walks’ attendees for traffic and parking instructions and to propose an operational procedure that ensures the safety and efficiency of the existing set down facilities located within Car Parking Area #1.

Authorised by:



S.A. WILLIAMS BE(Civil), FIEAust, RPEQ #06417
EXECUTIVE MANAGER
TRANSPORT & INFRASTRUCTURE

Enc: Anticipated Arrival Times



LEGEND	
ARRIVAL TIME (15 min)	Blue
SHOW TIME (60 min)	Yellow
DEPARTURE TIME (15min)	Orange

60-minute shows	
2400	PEOPLE
25	SHOWS IN ONE NIGHT
96	PEOPLE PER SHOW
9	SHOWS ---> OVERLAP
864	PEOPLE ---> OVERLAP
2.6	PEOPLE PER CAR
333	VEHICLES --> OVERLAPP
25%	% UBER / TAXI / PUBLIC TRANSPORT
250	TOTAL CAR PARKS REQUIRED

APPENDIX C- BCC'S TRANSPORT, ACCESS, PARKING AND SERVICING CODE

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>PO1</p> <p>Development is designed:</p> <p>(a) to include a technically competent and accurate response to the transport and traffic elements of the development;</p> <p>(b) in accordance with the standards in the Transport, access parking and servicing planning scheme policy;</p> <p>(c) to ensure the efficient operation and safety of the development and its surrounds.</p> <p>Note—The acceptable outcome and performance outcome can be demonstrated through a development application that:</p> <ul style="list-style-type: none"> - is accompanied by sufficient information, including computer modelling input and output data, to allow the proposed development to be properly assessed against the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; - is certified by a Registered Professional Engineer Queensland that all plans, documents and dimensioned drawings comply with the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; - ensures that any computer modelling input and output data are accurate, reasonable and carried out in accordance with sound traffic engineering practices. 	<p>AO1</p> <p>Development complies with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	<p style="text-align: center;">✓</p>	<p>Refer to Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	

Solution: ✓ = Acceptable Solution
 ✓ PC = Satisfies Performance Criteria Directly
 A/S = Alternative Solution
 N/A = Not applicable to this proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>P02</p> <p>Development of a major size incorporates on-site provision for integration with the public transport network and the management of vehicles, public transport, pedestrians and cyclists, including providing appropriate pedestrian and cyclist linkages to adjoining uses, public areas and the transport network consistent with the planning by the State Government and Council.</p>	<p>A02</p> <p>No acceptable outcome is prescribed.</p>	<p>✓</p>	<p>Refer to Traffic Report and Appendix B, prepared by Lambert & Rehbein, B22113TR001.</p>	
<p>P03</p> <p>Development provides vehicle access that is located and designed so as to have no significant impact on the safety, efficiency, function, convenience of use or capacity of the road network.</p>	<p>A03.1</p> <p>Development provides site access that is located and designed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p> <p>A03.2</p> <p>Development provides an easement for a vehicular access benefiting all adjoining landowners and the Council if the vehicular access services more than an individual development or premises.</p>	<p>✓</p> <p>N/A</p>	<p>The site access is existing.</p> <p>Refer to Section 3.2 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>PO4</p> <p>Development provides walking and cycle routes through the site which:</p> <p>(a) link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes;</p> <p>(b) encourage walking and cycling;</p> <p>(c) ensure pedestrian and cyclist safety;</p> <p>(d) provide a direct and legible network.</p> <p>Note—The Infrastructure design planning scheme policy provides additional guidance on how to comply with this performance outcome.</p>	<p>AO4.1</p> <p>Development provides walking and cycle routes which are constructed on the carriageway or through the site to:</p> <p>(a) create a walking or cycle route along the full frontage of the site;</p> <p>(b) connect to public transport and existing cycle and walking routes at the frontage or boundary of the site.</p> <p>AO4.2</p> <p>Development provides walking and cycle routes that are constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.</p> <p>AO4.3</p> <p>Development provides walking and cycle routes which do not include a potential entrapment area, blind corner or sudden change in level that restrict sightlines.</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p>	<p>The development will rely on the existing cycle and pedestrian network surrounding the site.</p>	

Solution: ✓ = Acceptable Solution
 ✓ PC = Satisfies Performance Criteria Directly
 A/S = Alternative Solution
 N/A = Not applicable to this proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>PO5</p> <p>Development provides secure and convenient bicycle parking which:</p> <p>(a) for visitors is obvious and located close to the building's main entrance;</p> <p>(b) for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building;</p> <p>(c) is easily and safely accessible from outside the site;</p> <p>(d) does not impact adversely on visual amenity;</p> <p>(e) does not impede the movement of pedestrians or other vehicles;</p> <p>(f) is designed to comply with a recognised standard for the construction of bicycle facilities.</p> <p>Note—For a performance outcome relating to the number of bicycle parking spaces provided, the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.</p>	<p>AO5.1</p> <p>Development provides on-site bicycle parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p> <p>AO5.2</p> <p>Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers) in compliance with the Transport, access, parking and servicing planning scheme policy and AS 2890.3-1993 Bicycle parking facilities.</p> <p>AO5.3</p> <p>Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street.</p> <p>AO5.4</p> <p>Development provides visitor bicycle parking which does not impede pedestrian movement.</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>	<p>The proposal is for an afterhours (beyond nightfall) event and as such we have assumed that there will not be any attendees cycling to the event.</p>	

Solution: ✓ = Acceptable Solution
 ✓ PC = Satisfies Performance Criteria Directly
 A/S = Alternative Solution
 N/A = Not applicable to this proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
	<p>AO5.5</p> <p>Development provides bicycle parking which is constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	N/A		
<p>PO6</p> <p>Development provides shower cubicles and lockers in sufficient numbers to meet the needs and volume of predicted pedestrian and cyclist users.</p> <p>Note—For a performance outcome the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.</p>	<p>AO6</p> <p>Development provides shower cubicles and lockers for pedestrians and cyclists in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	N/A		
<p>PO7</p> <p>Development provides pedestrian and cyclist access to the site which is designed to provide safe movement and avoid unnecessary conflict between pedestrians, cyclists and motor vehicles.</p>	<p>AO7</p> <p>Development provides pedestrian and cycle access that is designed and constructed in compliance with the site access design guidelines, pedestrian facilities standards and cyclist facilities standards in the Transport, access, parking and servicing planning scheme policy.</p>	✓	Refer to Traffic Report, prepared by Lambert & Rehbein, B22113TR001.	

Solution: ✓ = Acceptable Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>PO8</p> <p>Development provides pedestrian and cyclist access to and from the site which is located to take advantage of safe crossing points of the adjacent road system, key destinations and public transport facilities.</p>	<p>A08</p> <p>No acceptable outcome is prescribed.</p>	✓	Refer to Traffic Report, prepared by Lambert & Rehbein, B22113TR001.	
<p>PO9</p> <p>Development provides access driveways in the road area that are located, designed and controlled to:</p> <p>(a) minimise adverse impacts on the safety and operation of the transport network, including the movement of pedestrians and cyclists;</p> <p>(b) ensure the amenity of adjacent premises, from impacts such as noise and light.</p>	<p>A09.1</p> <p>No acceptable outcome for access is prescribed, for a major development (as described in the Transport, access, parking and servicing planning scheme policy).</p>	✓	<p>The proposal will rely on existing access driveways.</p> <p>Refer to Section 3.2 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	
	<p>A09.2</p> <p>Development which is not a major development (as described in the Transport, access, parking and servicing planning scheme policy) provides a single site access driveway in the road area to the lowest order road to which the site has frontage.</p>	N/A		

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 N/A = Not applicable to this proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
	<p>AO9.3</p> <p>Development ensures that sight distances to and from all proposed access driveways in the road area and intersections are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	✓	Refer the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.	
	<p>AO9.4</p> <p>Development provides access driveways in the road area which:</p> <p>(a) are located, designed and controlled in compliance with the standards in the Transport, access, parking and servicing planning scheme policy;</p> <p>(b) are not provided through a bus stop, taxi rank or pedestrian crossing or refuge.</p> <p>AO9.5</p> <p>Development makes provision for shared access arrangements particularly where it is necessary to limit access points to a major road.</p>	✓	<p>The proposal will rely on existing access driveways.</p> <p>Refer to Section 3.2 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	
		N/A		

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>PO10</p> <p>Redevelopment provides for:</p> <p>(a) the closure of all access driveways in the road area that no longer comply with the standards in the Transport, access, parking and servicing planning scheme policy;</p> <p>(b) the reinstatement of adjacent footpaths.</p>	<p>AO10</p> <p>No acceptable outcome is prescribed.</p>	N/A		
<p>PO11</p> <p>Development provides that an internal approach to an access driveway in the road area is designed and located to provide for the safety of pedestrians and cyclists using paths adjacent to the frontage of the site, and motorists.</p>	<p>AO11.1</p> <p>Development provides sight distances to and from all proposed access driveways in the road area and intersections which are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	✓	<p>The proposal will rely on existing access driveways.</p> <p>Refer to Section 3.2 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	

Solution: ✓ = Acceptable Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
	<p>AO11.2</p> <p>Development ensures that convex mirrors are only used in a site:</p> <p>(a) as a secondary support at access driveways;</p> <p>(b) in addition to acceptable sight splays that comply with the sight distances standards in the Transport, access, parking and servicing planning scheme policy.</p>	N/A		
<p>PO12</p> <p>Development in the City core and City frame as identified in Figure a, provides car parking spaces at rates to discourage private car use and encourage walking, cycling and the use of public transport.</p>	<p>AO12</p> <p>Development in the City core and City frame as identified in Figure a provides maximum car-parking rates in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p> <p>Note—For self-assessable development including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.</p>	N/A		

Solution: ✓ = Acceptable Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>PO13</p> <p>Development outside of the City core and City frame as identified in Figure a provides on-site car parking spaces to accommodate the design peak parking demand without any overflow of car parking to an adjacent premises or adjacent street.</p>	<p>AO13</p> <p>Development outside of the City core and City frame as identified in Figure a:</p> <p>(a) provides on-site car parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; or</p> <p>(b) for self-assessable development does not result in on-street car parking if no parking standard is identified in the Transport, access, parking and servicing planning scheme policy.</p> <p>Note—For self-assessable development including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.</p>	<p>✓PC</p>	<p>Refer to Section 3.3 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p> <p>In the Traffic Management Plan framework attached in Appendix B of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001, in our view the proposed car parking supply is considered to be an acceptable volume of parking spaces for the anticipated arrival and departure flow of vehicles.</p>	
<p>PO14</p> <p>Development ensures that the number of car parking spaces and design of the car parking area:</p> <p>(a) meet the combined design peak parking demand for residential, visitor and</p>	<p>AO14.1</p> <p>Development provides a number of car parking spaces on site equalling the sum of the maximum design peak parking demand for the individual uses at any point in time.</p>	<p>✓</p>	<p>Refer to Section 3.3 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>business parking;</p> <p>(b) allow for the temporal sharing of car-parking spaces for uses with different peak parking demands.</p> <p>Note—In order to demonstrate that adequate car parking is provided, a traffic impact assessment prepared in compliance with the Transport, access and servicing planning scheme policy is to identify the appropriate number of car parking spaces to be provided.</p>	<p>AO14.2</p> <p>Development involving mixed use provides a non-residential car parking area with shared parking for all the businesses in the development.</p>	N/A		
<p>PO15</p> <p>Development provides a car park layout which allows for on-site vehicle parking that:</p> <p>(a) is clearly defined, safe and easily accessible;</p> <p>(b) is designed to contain potential adverse impacts within the site;</p> <p>(c) does not detract from the aesthetics or amenity of an area;</p> <p>(d) discourages on-street parking if parking has an adverse traffic management safety or amenity impact;</p> <p>(e) is consistent with safe and convenient pedestrian and cyclist movement.</p>	<p>AO15</p> <p>Development provides parking bays, queue areas and manoeuvring areas which are designed for the design service vehicle to the standards in the Transport, access, parking and servicing planning scheme policy.</p>	✓	<p>The development proposes to rely on existing car parking facilities.</p> <p>Refer to the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	
<p>PO16</p> <p>Development creates a safe environment by</p>	<p>AO16</p> <p>Development incorporates the key</p>	N/A		

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>incorporating the key elements of crime prevention through environmental design.</p>	<p>elements of crime prevention through environmental design in its layout, building and structure design and landscaping by:</p> <p>(a) facilitating casual surveillance opportunities and including good sightlines to publicly accessible areas such as car parks, pathways, public toilets and communal areas;</p> <p>(b) defining different uses and ownerships through design and restricting access from non-residential uses into private residential dwellings;</p> <p>(c) promoting safety and minimising opportunities for graffiti and vandalism through exterior building design and orientation of buildings and use of active frontages;</p> <p>(d) ensuring publicly accessible areas such as car parks, pathways, public toilets and communal areas are well lit;</p> <p>(e) including way-finding cues;</p> <p>(f) minimising predictable routes</p>			

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
	<p>and entrapment locations near public spaces such as car parks, public toilets, ATMs and communal areas.</p> <p>Note—For guidance in achieving the key elements of crime prevention through environmental design, refer to the Crime prevention through environmental design planning scheme policy.</p>			
<p>PO17</p> <p>Development minimises the potential for graffiti and vandalism through access control, canvas reduction and easy maintenance selection.</p>	<p>AO17</p> <p>Development incorporates graffiti and vandalism prevention techniques in its layout, building and structure design and landscaping, by:</p> <p>(a) denying access to potential canvas through access control techniques;</p> <p>(b) reducing potential canvases through canvas reduction techniques;</p> <p>(c) ensuring graffiti can be readily and quickly removed through easy maintenance selection techniques.</p> <p>Note—For guidance on graffiti and vandalism prevention techniques, refer to the Graffiti prevention planning scheme policy.</p>	<p>N/A</p>		

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
<p>PO18</p> <p>Development is serviced by an adequate number and size of service vehicles.</p>	<p>AO18</p> <p>Development ensures that the number and size of design service vehicles selected for the site is in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	✓	Refer to Section 3.4 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.	
<p>PO19</p> <p>Development layout provides for services which:</p> <p>(a) are wholly within the site;</p> <p>(b) are clearly defined, safe and easily accessible;</p> <p>(c) are designed to contain potential adverse impacts of servicing within the site;</p> <p>(d) do not detract from the aesthetics or amenity of the surrounding area.</p>	<p>AO19.1</p> <p>Development ensures that a service bay provided on site:</p> <p>(a) is provided and designed to comply with the design vehicle table and service area design standards in the Transport, access, parking and servicing planning scheme policy;</p> <p>(b) is located away from street frontages and screened from adjoining premises.</p>	✓	<p>The development proposes to rely on existing servicing facilities.</p> <p>Refer to Section 3.4 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
	<p>AO19.2</p> <p>Development provides on-site servicing facilities and associated on-site vehicle manoeuvring areas which are designed in compliance with the service area design standards in the Transport, access, parking and servicing planning scheme policy.</p> <p>AO19.3</p> <p>Development provides service areas for refuse collection in compliance with the standards in the Refuse planning scheme policy, Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.</p>	<p>✓</p> <p>✓</p>	<p>Refer to Section 3.4 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p> <p>Refer to Section 3.4 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	
<p>PO20</p> <p>Development provides service vehicle access routes to and from the site which minimise the impact on:</p> <p>(a) amenity and safety in residential areas;</p> <p>(b) streets not constructed to a standard that accommodate increased heavy vehicle movements.</p>	<p>AO20</p> <p>Development ensures that service vehicles use the shortest and most direct route to the major road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing, planning scheme policy.</p>	<p>✓</p>	<p>The development proposes to rely on existing servicing arrangements.</p> <p>Refer to Section 3.4 of the Traffic Report, prepared by Lambert & Rehbein, B22113TR001.</p>	

Solution: ✓ = Acceptable Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
If for development which is required to be serviced by a b-double (Austroad class 10 vehicle), multi-combination vehicle, over-dimensional vehicle or any on vehicle identified by the Queensland Government as requiring a permit to operate on the road (freight-dependent development)				
<p>PO21</p> <p>Development which is freight-dependent development ensures that the traffic generated by the development does not impact on:</p> <p>(a) the operation of the transport network;</p> <p>(b) the safety and amenity of a residential area;</p> <p>(c) a road not constructed to accommodate a non-standard vehicle such as a road only constructed to accommodate a vehicle that has a legal right of access to all roads including Austroads vehicles classes 1–9.</p>	<p>AO21.1</p> <p>Development which is freight-dependent development is located on a site which:</p> <p>(a) has frontage to or direct access to the freight network in the Road hierarchy overlay via roads in a zone in the Industry zones category; or</p> <p>(b) can be serviced by a route that can act as a primary freight access route and connect to an existing primary freight route without impacting on the safe operation of the road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing, planning scheme policy.</p>	N/A		

Solution: ✓ = Acceptable Solution
 ✓ PC = Satisfies Performance Criteria Directly
 A/S = Alternative Solution
 N/A = Not applicable to this proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS	COMMENTS	COUNCIL USE ONLY
	<p>AO21.2</p> <p>Development which is freight-dependent development provides any necessary upgrade to a road used as an access route in compliance with the Infrastructure design planning scheme policy.</p>	N/A		

Solution: ✓ = Acceptable Solution
 ✓ PC = Satisfies Performance Criteria Directly
 A/S = Alternative Solution
 N/A = Not applicable to this proposal