

Technical Memorandum

Aura P15 West–Centre Access



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Client Stockland

Project Aura P15 West

Project Number P0053364

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RPEQ: 24764

Introduction

The approved Aura Precinct 15 West forms part of the wider Aura master planned development within the Caloundra South Priority Development Area. Precinct 15 was approved in 2022 under Application DEV2021/1235, with subsequent changes and endorsed context plans issued in 2023 and 2024.

In October 2025, Urbis was engaged by Stockland to provide traffic advice on a secondary access arrangement that proposes direct access to the Neighbourhood Centre from the Trunk Connector. This advice was supported by SIDRA intersection modelling, which was undertaken to quantify the traffic impacts associated with the proposed access location.

EDQ Comments

Following submission of the technical memorandum, Economic Development Queensland (EDQ) advised that the feedback received from their engineer related to the proposed changes to P15, specifically the amended access to the neighbourhood centre. EDQ highlighted that “the existing approved arrangement was designed to minimise the potential for rat-running through the residential lots behind the centre”

This technical memorandum focuses on the safety and network suitability of the proposed secondary access to the Neighbourhood Centre from the Trunk Connector, with specific consideration of whether the proposed arrangement would increase the likelihood of rat running through the surrounding residential street network.

Project Background

Under the approved context plan for Precinct 15, the Neighbourhood Centre access is located at the rear of the site.

Figure 1 Approved and Proposed Site Access



As shown in Figure 1, vehicles accessing the centre are required to circulate via the local residential street network, utilising lower order roads rather than the Trunk Connector. Several issues have been identified with the approved access arrangement, including the following:

- **Legibility:** The approved access is via a low-order residential street, which accessed the neighbourhood centre via a circuitous road which is not obvious to people passing the site. The scale of this centre is suited to convenience retail and an obvious access from a major road is critical to its success.
- **Environmental Capacity:** In accordance with the EDQ Street and Movement Network Plan Guidelines, the access street is intended to provide local access to residential properties rather than to operate as a through route for retail traffic. Concentrating Neighbourhood Centre-related traffic, a high traffic-generating land use, solely on an access street would be inconsistent with its intended function and design capacity. It would also lead to increased impacts on residential traffic, as streets of this type typically have low environmental capacity.
- **Amenity:** Service and delivery vehicles, including medium and heavy rigid vehicles, are required to use residential streets intended to prioritise local access and amenity.
- **Safety:** Increased traffic on residential streets raises conflict with pedestrians and cyclists in an environment not designed for higher traffic volumes.
- **Construction and servicing impacts:** Heavy vehicles must undertake right-turn movements at two roundabouts, increasing manoeuvring complexity and operational risk.

Collectively, these issues led to a reconsideration of the approved access arrangement for the Neighbourhood Centre.

The SIDRA modelling demonstrated that the proposed Neighbourhood Centre access intersections would operate below practical capacity under ultimate development scenarios. This outcome indicates that the amended access arrangement is capable of accommodating traffic generated by the Neighbourhood Centre, as well as surrounding development, without adversely affecting the operation of the Trunk Connector.

In response to EDQ's concerns regarding rat-running, this report first reviews relevant Austroads guidance and Australian Standards to identify any speed management measures that may discourage rat-running through the car park and then followed by a comparison of the available route options within the area.

Operating Speeds within Car Parks

To understand whether the proposed secondary access along the Trunk Road would increase the likelihood of rat running through the car park, a review was undertaken of relevant guidance, including the Austroads Guide to Traffic Management Part 5: Road Management, Austroads Guide to Traffic Management Part 11: Parking, and Australian Standard AS/NZS 2890.1: Parking facilities — Part 1: Off-street car parking. The key findings of this review are summarised in Table 1.

Table 1 Key literature review findings

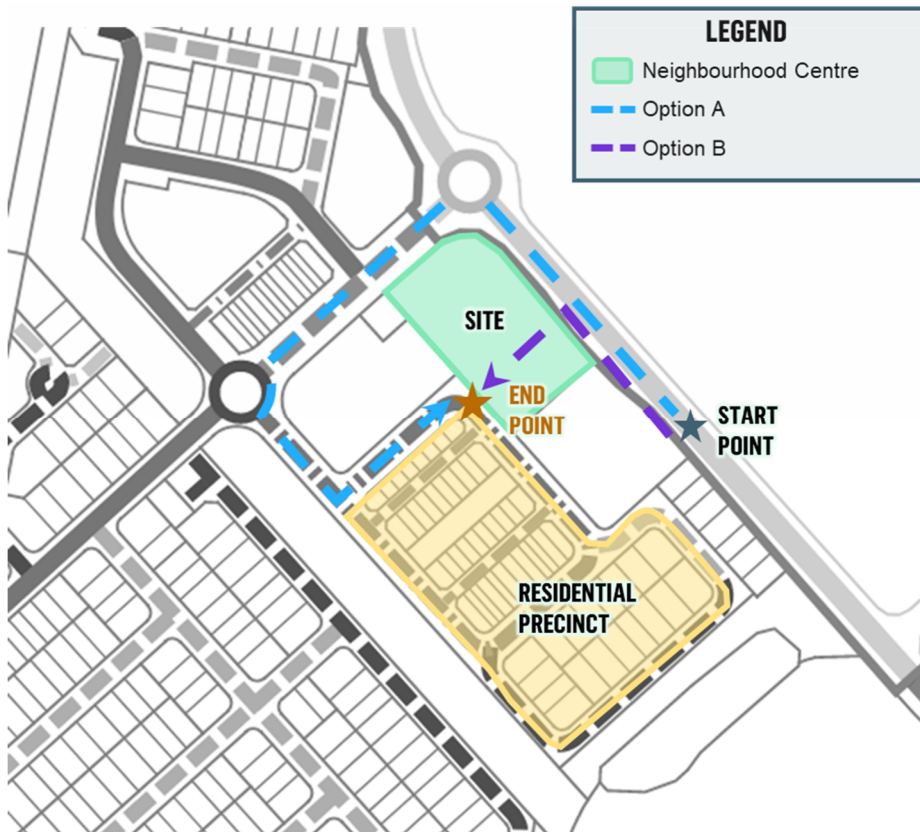
Source / Clause	Key Guidance	Implications for Traffic and Rat Running
Austroads Guide to Traffic Management Part 5: Road Management (Table 6.4)	Recommended speed limit for car parks: <20 km/h	Car park circulation is inherently low speed. Higher travelling speeds through the car park are not expected and would be unsafe.
Australian Standard AS/NZS: 2890:1 (Parking facilities part 1: Off-street car parking)	Car park layouts should, as far as practicable, be designed to discourage excessive vehicle speeds. Where speeding is identified as a particular issue, traffic management measures such as speed humps should be incorporated.	Physical design and treatments prevent high-speed travel; car parks are unsuitable for through traffic.
Austroads Guide to Traffic Management Part 11: Parking	Parking facilities are inherently low speed, high interaction environments; not intended as through routes. Vehicle movements are constrained by frequent access points, parking manoeuvres, pedestrian crossings, and internal circulation layouts.	Car parks do not provide an efficient or attractive alternative route compared with formal roads; rat running through parking areas is impractical.
Austroads Guide to Traffic Management Part 11: Parking	Parking facilities should be located between primary access routes and the land use served, with direct and legible access from higher order roads.	Direct access from higher order roads reduces traffic intrusion into local streets and limits unnecessary circulation through residential areas.
Austroads Guide to Traffic Management Part 11: Parking	Large parking facilities should take access from arterial, trunk, or collector roads, supported by appropriate intersection controls; sufficient internal queuing space should be provided. Reliance on local/residential streets is discouraged.	The formal road network is better suited for handling higher traffic volumes and service vehicles; residential streets and car parks are unsuitable for through traffic.

Based on this, it is considered that car parks operate as low-speed, high-conflict environments with a strong pedestrian presence. These characteristics make rat running through car parks unattractive, impractical and unsafe when compared with travel via the formal road network. A detailed route comparisons are discussed in the sections below.

Route Comparison

In this section, two travel options (Figure 2) are assessed using first principles. Both options commence and terminate at the same locations and are assessed based on travel distance and posted speed limits to estimate travel time. This provides a clear basis for assessing the likelihood of rat running through the Neighbourhood Centre car park.

Figure 2 Route Options



Option A—Along Road Network

Under the approved context plan for Precinct 15, the approved Neighbourhood Centre access is located at the rear of the site.

As shown in Figure 3, vehicles accessing the centre would circulate via the neighbourhood connector and access street network. This is a legible and logical route for residential trips to the residential precinct highlighted in Figure 3.

Figure 3 Option A-Along Road Network



Table 2 Route A Characteristics

Segment	Road Hierarchy	Length	Speed	Approximate time to travel
A	Trunk Collector	140m	Default 60km/h	8s
B	Neighbourhood Connector	145m	Default 50km/h	10s
C	Access Street	160m	Default 50km/h	12s
Typical Travel Time:				30s

Based on the route length and the default speed for the relevant road classification, the estimated travel time for Route A is approximately 30 seconds. The previous SIDRA intersection analysis indicates that intersections along this route operate well below capacity under the assessed scenarios, resulting in minimal delay. Accordingly, traffic is expected to operate under free-flow conditions, with Route Option A providing an efficient, reliable and comparatively faster travel option within the area.

Option B–Rat Running Through Neighbourhood Centre

Under this option (Figure 4), any attempt by drivers to shortcut from the Trunk Connector to the residential areas located to the rear of the Neighbourhood Centre via the centre car park would require travel through a low-speed, highly interrupted environment.

The typical car park operates with a posted speed limit of 10 km/h and includes multiple speed control measures, such as speed bumps. As shown in Figure 4, the typical travel time for Route B is approximately 33 seconds, assuming ideal conditions with no stopping. In practice, vehicle movements within the car park are further constrained by parking manoeuvres, pedestrian activity, and interactions with other vehicles. While Route B is shorter in distance, the stop-start nature of these conditions results in longer and less reliable travel times compared with movement via the formal road network.

It should be noted that this assessment is overly optimistic and does not take account of time for navigating internal car park manoeuvres (i.e. other drivers reversing in and out of spaces, drivers waiting for spaces and pedestrian moving through the carpark).

Figure 4 Option B–Rat running through neighbourhood centre

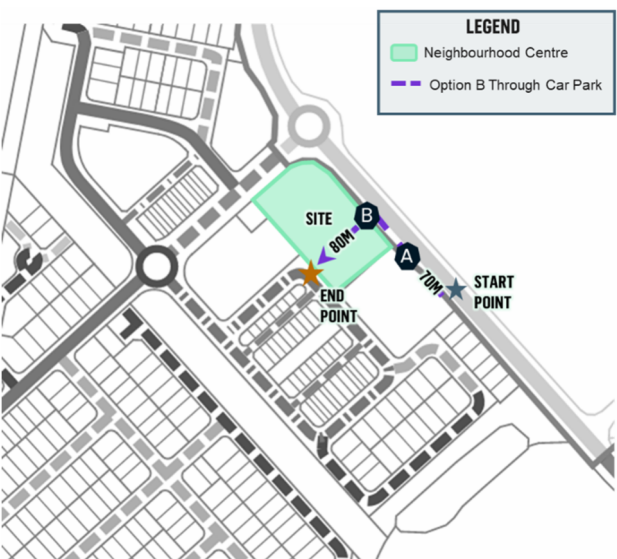


Table 3 Route B Characteristics

Segment	Road Hierarchy	Length	Speed	Approximate time to travel
A	Truck Collector	70m	Default 60km/h	5s
B	Car Par	80m	<10km/h	29s
Typical Travel Time:				33s

Route Travel Time Comparison

Based on the comparative travel time assessment, Route A operates via the neighbourhood street network with minimal interruptions, resulting in a typical travel time of approximately 30 seconds under free-flow conditions. In contrast, Route B traverses the car park and operates at lower speeds, with frequent interruptions from parking manoeuvres, speed control devices, and pedestrian activity. While the idealised travel time for Route B is estimated at approximately 33 seconds, actual travel times are likely to be longer and less predictable in practice.

Overall, Route A provides a faster, safer, and more reliable movement option, whereas Route B is less efficient and not suitable for through traffic. As such, the likelihood of drivers engaging in rat-running through the Neighbourhood Centre is considered to be unlikely.

Summary

This technical memorandum has been prepared in response to EDQ's concerns regarding the potential for rat-running through the Neighbourhood Centre and the suitability of the proposed secondary access from the Trunk Connector. The key findings are summarised in below:

- As part of the previous assessment, several issues were identified with the approved access arrangement, including the following:
 - **Legibility:** The approved access is via a low-order residential street using a circuitous route that is not obvious to passing traffic. Given the centre's convenience retail role, a clear and direct access from a major road is critical to its success.
 - **Environmental capacity:** Under the EDQ Guidelines, the access street is intended for local residential access, not retail through-traffic. Concentrating Neighbourhood Centre traffic on this street would be inconsistent with its function and design capacity and would increase impacts on residential traffic, given its low environmental capacity.
 - **Amenity:** Service and delivery vehicles, including medium and heavy rigid vehicles, are required to use residential streets intended to prioritise local access and amenity.
 - **Safety:** Increased traffic on residential streets raises conflict with pedestrians and cyclists in an environment not designed for higher traffic volumes.
 - **Construction and servicing impacts:** Heavy vehicles must undertake right-turn movements at two roundabouts, increasing manoeuvring complexity and operational risk.

The proposed arrangement addresses these issues.

- A review of relevant literature indicates that car parks function as low-speed, high-conflict environments with a strong pedestrian presence. These characteristics, combined with frequent vehicle manoeuvring and traffic control measures, make car parks unattractive, impractical and frustrating for use as through-routes when compared with the formal road network.
- Route A (Along Road Network), which utilises the neighbourhood street network, provides relatively uninterrupted movement and achieves a typical free-flow travel time of approximately 30 seconds.
- Route B (Rat Running Through Neighbourhood Centre) traverses the Neighbourhood Centre car park and operates at lower speeds, with frequent interruptions from parking manoeuvres, speed control devices and pedestrian activity.
- While an idealised travel time of approximately 33 seconds is estimated for Route B, actual travel times are expected to be longer and less predictable in practice. **This assessment does not take account of delays associated with the normal car parking manoeuvring (i.e. other drivers reversing in and out of spaces, drivers waiting for space, and pedestrian crossing).**
- Overall, Route A provides a faster, safer and more reliable movement option for through traffic. Route B is less efficient and unsuitable for through traffic.

Based on the findings, the likelihood of drivers engaging in rat-running through the Neighbourhood Centre is considered to be unlikely, and the proposed secondary access from the Trunk Connector is a far superior outcome in term of convenience, operational efficiency, amenity and safety for the local road network.

Kind regards,



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