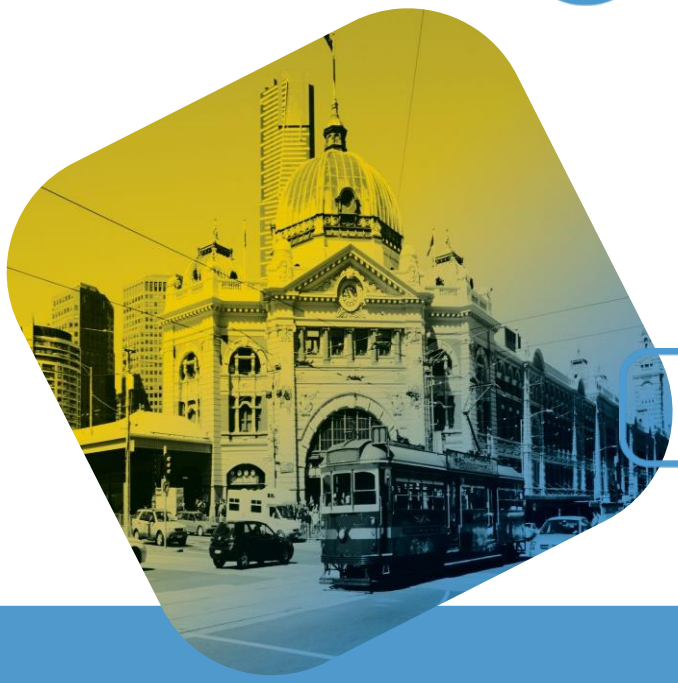
37°57'07"S
145°09'19"E

# Residential Apartment Building: 1-5 Kintore Street, Springvale





## Traffic and Transport Assessment

6 June 2024
Prepared for Tango A1 Pty Ltd

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Impact

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## Document Information

| | |
|---|---|
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| Report Title | Residential Apartment Building: 1-5 Kintore Street, Springvale |
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# Contents

# Tables

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# Figures



# Appendices

# 1 IMPACT® Snap Shot

## Development Proposition

| | | |
|---|---|---|
| **Location** | 37°57'07"S 145°09'19"E | 1-5 Kintore Street, Springvale |
| **Use** | | Residential Apartment Building (Social Housing) |
| **Yield** | | 87 dwellings (49 x 1-bed, 29 x 2-bed & 9 x 3-bed) |
| **Car Parking** | | 34 spaces (including 2 x DDA space) |
| **Bicycle Parking** | | 42 spaces (10 horizontal, 32 vertical) |

## Statutory Controls

**Particular Provisions**

### Clause 52.06: Car Parking

| | |
|---|---|
| **Requirement vs Provision** | A total of 100 spaces required. 34 spaces provided. |
| **Adequacy of Provision** | In the context of the subject site, the proposal (social housing) the reduced parking provisions is considered acceptable. Specifically:<br>• Studies undertake for similar developments commonly found rates considerably less than the statutory requirement.<br>• The site has an over provision of bicycle parking bays, and convenient access to a major shared user path.<br>• The Springvale Train Station is located within 300 metres walking distances and provides access to services every 10 minutes during peaks.<br>• The site is located within walking distance of other key services, including schools, shopping centres and medical clinics. |
| **Design** | Assessed against the relevant design standards and generally found to comply.<br>Where the design did not directly comply, the proposed design outcome was considered appropriate in the context of the site. |

### Clause 52.34: Bicycle Parking

| | |
|---|---|
| **Requirement vs Provision** | 26 spaces required. 42 spaces proposed. |
| **Adequacy of Provision** | Provision comfortably exceeds minimum required and will assist in encouraging cycling as a mode of transport to/from the site. |
| **Design** | Bicycle parking areas found to generally comply with relevant standards and product specifications.<br>Provision of horizontal bicycle parking spaces (10 spaces) exceeds the minimum ratio of 20% horizontal parking. |

## Traffic Considerations

| | |
|---|---|
| **Traffic Generation** | In the order of 11 vehicle movements expected to be generated during peak periods. |
| **Traffic Impact** | This level of traffic is considered negligible and won't have a material impact on the operation of Kintore Street or broader road network. |

## Conclusion

- The proposed development satisfies relevant statutory requirements and where the statutory requirements are not explicitly met, the development is deemed to satisfy decision guidelines that allow for a reduction or waiver of the said requirement.

- There are no traffic and transport grounds that should prohibit the issue of a permit.

# 2 Introduction

## 2.1 Engagement

**IMPACT**® have been engaged by Tango A1 Pty Ltd to undertake a Traffic and Transport Impact Assessment for the proposed residential apartment building at 1-5 Kintore Street, Springvale.

## 2.2 Scope of Engagement

This Traffic and Transport Impact Assessment has been prepared to accompany a town planning submission.

In preparing this assessment we have referenced the following:

- Development plans prepared by AOA Christopher Peck Architects
- City of Greater Dandenong Planning Scheme, specifically:
  - Clause 52.06: Car Parking
  - Clause 52.34: Bicycle Facilities

# 3 Existing Conditions

## 3.1 Location

The subject site is located on the eastern side of Kintore Street in Springvale as illustrated in Figure 1.

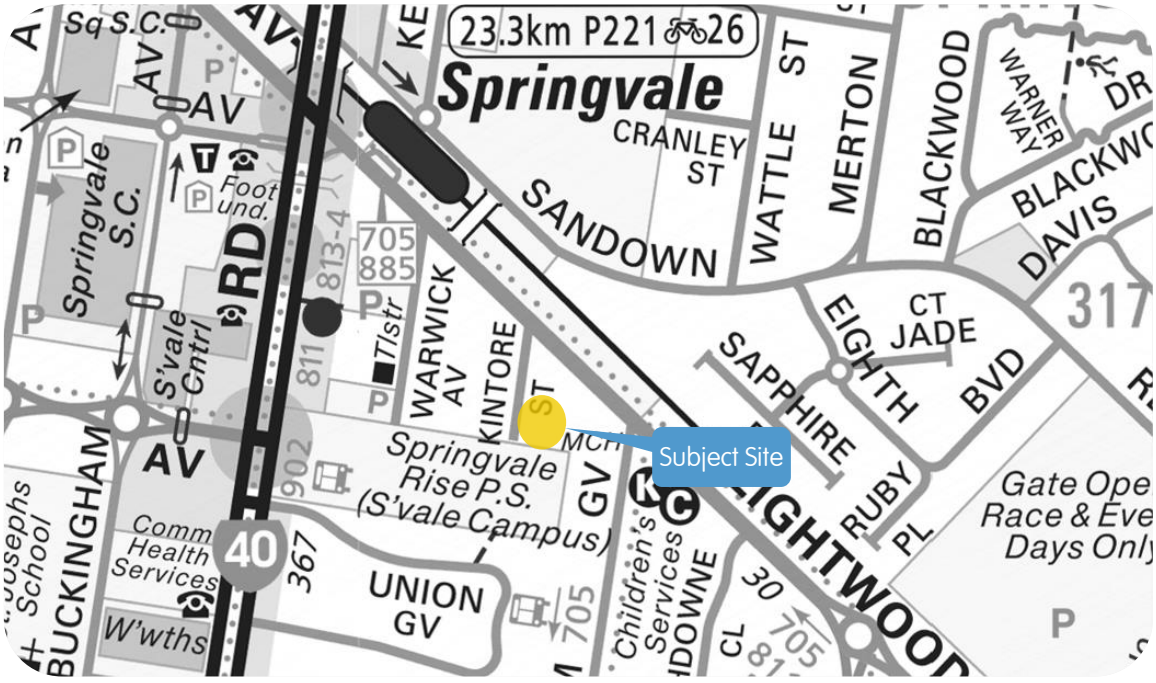



**Figure 1 Location of Subject Site**

The site is asymmetrical with a frontage of approximately 53 metres to Kintore Street.

Neighbouring land uses are generally commercial to the north and east, with the Springvale Rise Primary School also located immediately to the south.

## 3.2 Road Network

### 3.2.1 Kintore Street

Classified as local road, Kintore Street extends south for approximately 100 metres before it terminates at a dead-end.

Along the site frontage, this road has been constructed with an 8.5 metre road pavement, and provides for two-way traffic. Restricted parallel parking (generally 2P from 9am-6pm) is permitted on each side down the length of Kintore Street.

Its typical cross-section is illustrated in Figure 2.

**Figure 2 View of Kintore Street facing south adjacent the subject site**

## 3.3 Public Transport

The site has excellent access to public transport, being located within approximately 350 metres walking distance from Springvale Train Station. Additionally, bus stops located within 150-200 metres walk from the site provide access to the routes 705 and 811 bus. The site in the context of local public transport options is shown below in Figure 3.


**Figure 3 Public Transport Network Map**

In recognition of the site's access to public transport options (in particular Springvale Station), we note that it is located within the Principal Public Transport Network (PPTN) area. The PPTN reflects routes where high-quality public transport services are or will be provided, and is intended to support integrated transport and land use planning, by encouraging more diverse and dense development near high-quality public transport to help support public transport usage.

## 3.4 Bicycle Network

Ultimately, Kintore Street will be accessible via Victoria's Strategic Cycling Corridors (SCC), as illustrated in Figure 4.

These corridors are important transport routes for cycling and are a subset of the Principal Bicycle Network (PBN). They are intended to support the needs of commuter trips (to work or education) and other important trips, such as to stations, shops or schools.

As illustrated below - Lightwood Road (and also Springvale Road) are shown as proposed principal bicycle routes.

Notably, however the Djerring trail (which extends along the northern side of Lightwood Road) provides a connection between Dandenong, all the way in to the Melbourne CBD area.

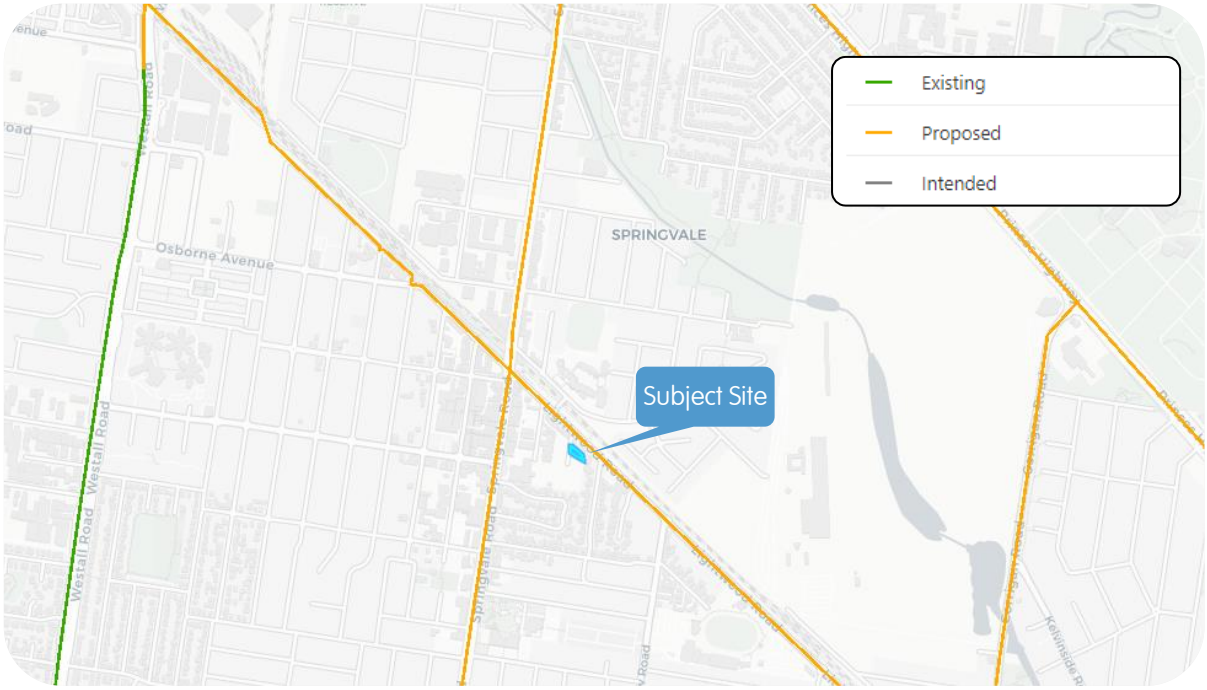



**Figure 4 Strategic Cycling Corridors**

# 4 Development Proposition

## 4.1 Use and Yield

The proposal considers developing the subject site as a 7-storey residential apartment building.

Specifically, a total of 87 dwellings are proposed, including:

- 49 x 1-bed apartments;
- 29 x 2-bed apartments; and
- 9 x 3-bed apartments.

It is understood that the dwellings are intended for use as Social Housing Apartments, and will be owned and operated by the proponent.

An additional small ground floor office tenancy is proposed (135 sq.m). We understand that this tenancy will be occupied by the developer who plans to use this space area to support the residents of their building.

## 4.2 Parking & Access

### 4.2.1 Car Parking and Vehicle Access

Car parking is proposed to be provided within a single basement level.

The plans currently consider a total of 34 on-site parking bays, including two (2) x DDA compliant parking bays.

Access to the basement car park is proposed via a double width ramp down from Kintore Street.

### 4.2.2 Bicycle Parking & Access

In addition to the above, we note that a separate dedicated bike storage area is proposed at the ground level. This bicycle store will be accessed via the pedestrian / cyclist entrance next to the lobby.

A total of 42 bicycle parking spaces are proposed, including a total of ten (10) within standard horizontal rails, and a further 32 within proprietary vertical racks.

The access arrangements are illustrated in Figure 5.

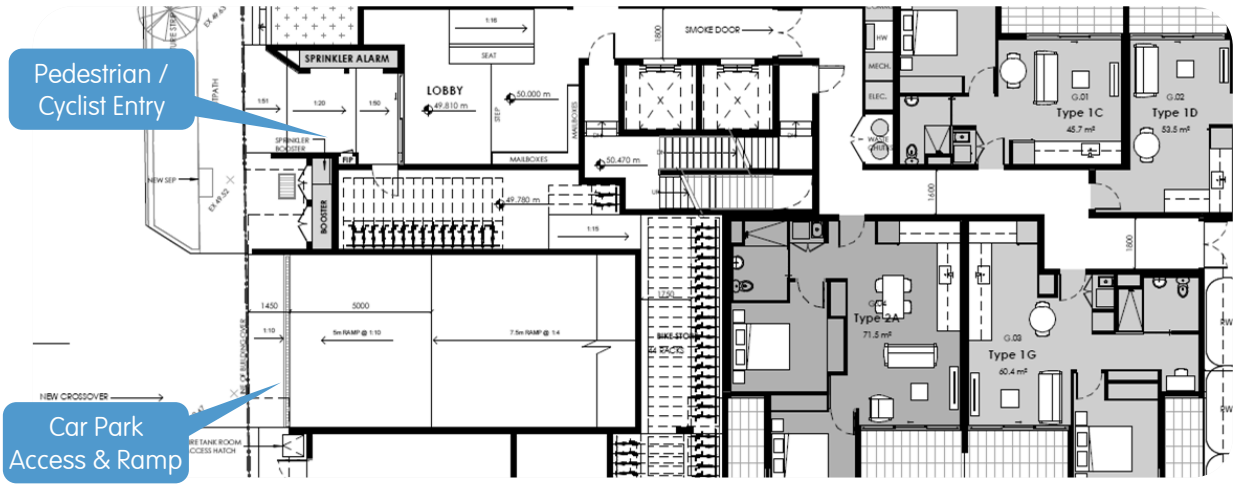



**Figure 5 Access Arrangemnets**

# 5 Statutory Controls

The relevant traffic and transportation Statutory Controls are:

**Particular Provisions**

- Clause 52.06 - Car Parking
- Clause 52.34 - Bicycle Facilities



## 5.1 Clause 52.06 - Car Parking

### 5.1.1 Purpose

The purpose of Clause 52.06 is:

- To ensure that car parking is provided in accordance with the Municipal Planning Strategy and Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

### 5.1.2 Provision and Design Requirements

To satisfy the above purpose, Clause 52.06 of the Greater Dandenong Planning Scheme specifies requirements relating to the provision and design of car parking as follows:

### 5.1.3 Car Parking Provision Requirements - Clause 52.06-5

Table 1 to Clause 52.06-05 of the Greater Dandenong Planning Scheme provides rates for various land uses. The following rates apply to the proposed residential apartment building:

- **Residential Dwelling** — 1 space to each one & two-bed dwelling;<br>2 spaces to each three-bed dwelling; and<br>0 spaces for visitors*
- **Office** — 3.0 spaces to each 100sq.m net floor area

* Where a site is in the PPTN, no parking is required to be provided for visitors

Application of the above rates to the proposal reveals a requirement for:

- **Residential Dwelling** — 96 spaces; plus
- **Office** — 4 spaces.



### 5.1.4 Proposed Provision

The development is planned with **34 spaces** on site.

This provision is below the statutory requirement. This proposal therefore seeks approval to reduce the number of parking spaces required under Clause 52.06-5.

### 5.1.5 Application Requirements and Decision Guidelines to Reduce Car Parking Requirement

An application to reduce (including reduce to zero) the number of car parking spaces required under Clause 52.06-5 must be accompanied by a Car Parking Demand Assessment.

The Car Parking Demand Assessment must assess the car parking demand likely to be generated by the proposal and must also address the following matters, to the satisfaction of the responsible authority.

- The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.
- The variation of car parking demand likely to be generated by the proposed use over time.
- The short-stay and long-stay car parking demand likely to be generated by the proposed use.
- The availability of public transport in the locality of the land.
- The convenience of pedestrian and cyclist access to the land.
- The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land.
- The anticipated car ownership rates of likely or proposed visitors to or occupants (residents or employees) of the land.
- Any empirical assessment or case study.

Before granting a permit to reduce the number of spaces, the responsible authority must consider the following, as appropriate:

- The Car Parking Demand Assessment.
- Any relevant local planning policy or incorporated plans.
- The availability of alternative car parking in the locality of the land, including:
  - Efficiencies gained from the consolidation of shared car parking spaces.
  - Public car parks intended to serve the land.
  - On-street parking in non-residential zones.
  - Streets in residential zones specifically managed for non-residential parking.
- On-street parking in residential zones in the locality of the land that is intended to be for residential use.
- The practicality of providing car parking on the site, particularly for lots of less than 300 square metres.
- Any adverse economic impact a shortfall of parking may have on the economic viability of any nearby activity centre.
- The future growth and development of any nearby activity centre
- Any car parking deficiency associated with the existing use of the land.
- Any credit that should be allowed for car parking spaces provided on common land or by a Special Charge Scheme or cash-in-lieu payment.
- Local traffic management in the locality of the land.
- The impact of fewer car parking spaces on local amenity, including pedestrian amenity and the amenity of nearby residential areas.
- The need to create safe, functional and attractive parking areas.
- Access to or provision of alternative transport modes to and from the land.
- The equity of reducing the car parking requirement having regard to any historic contributions by existing businesses.
- The character of the surrounding area and whether reducing the car parking provision would result in a quality/positive urban design outcome.
- Any other matter specified in a schedule to the Parking Overlay.
- Any other relevant consideration.

Considering the foregoing, we have undertaken the following car parking demand assessment which outlines our expectations of likely parking demand.

### 5.1.6 Car Park Demand Assessment

#### 5.1.6.1 Social Housing Residents

As above, the intent behind the proposed residential apartment building is for it to be operated as a social housing development.

The proposal considers a total of 34 on-site parking spaces, of which 32 will be allocated to the dwellings (a rate of approximately 0.37 spaces / apartment.

To understand the car ownership data for social housing in the vicinity of the development, reference is made to ownership statistics for social housing in the Greater Dandenong area.

| Area | Social Housing Car Ownership | Dwelling Type | | |
|---|---|---|---|---|
| | | One-bedroom | Two-bedroom | Three-bedroom |
| Greater Dandenong | Av. Provision rate | 0.41 / dwelling (sample size: 61) | 0.77 / dwelling (sample size 119) | 1.4 / dwelling (sample size 61) |
| | %ownership | 59% no vehicle | 28% no vehicle | 15% no vehicle |

Based on the above, social housing parking demands were typically less than the above nominated statutory requirement, and was often not required by a portion of residents.

Application of these rates to the proposed development yield would suggest an indicative demand of 55 spaces for residents.

#### 5.1.6.2 Social Housing Developments - Case Study

On behalf of the Department of Health and Human Services and to better understand the quantum of car parking required to support the current and future needs of social housing residents, GTA consultants prepared a parking study report - Review of Social Housing Car Parking Demands, reference: V121030, dated 27 November 2017.

In the process of conducting this study, GTA collected survey data for Social Housing sites throughout Melbourne. The data sources analysed in the report provided a comparison of car ownership data for social housing dwellings based on their locations.

The report split the findings for social housing parking demands between three locations, Inner Metro (areas such as Melbourne of Port Phillip), Middle Metro (areas such as Maroondah, Maribyrnong Moreland) and Outer Metro (areas such as Greater Dandenong or Hume).

This investigation found the following average ownership rates:

- Inner Metro 0.36 spaces / dwelling (range of 0-1.43 / unit);
- Middle Metro 0.39 spaces / dwelling (range of 0 - 0.7 / unit); and
- Outer Metro 0.63 spaces / dwelling (range of 0.27 - 1 / unit).

The above survey results show that it is suitable to apply lesser car parking rates for social housing developments, compared to private housing developments.

Application of the 'middle metro' rate to the proposed development suggests an indicative yield of 34 car spaces in total.

Note: Whilst the subject site is located within the Greater Dandenong area, it is located within close proximity to high quality public transport (Springvale Station) and a local activity centre area. We therefore expect that vehicle ownership rates at this site would be reflected more closely by that of the Middle Metro site.

#### 5.1.6.3 Office

For the purposes of this assessment, it is assumed that the office might generate a parking demand in line with the statutory rate (3 spaces / 100sq.m) which equates to a total demand for 4 spaces based on the proposed tenancy area of 135 square metres.

### 5.1.7 Responsible Authority Considerations

#### 5.1.7.1 Parking Demand

Based on the above assessment, the proposal could be expected to generate a parking demand for in the order of 38 on-site parking spaces (comprised of 34 resident spaces and 4 office spaces).

#### 5.1.7.2 Availability of Public Transport

As described in Section 3.4, the subject site has access to high quality public transport.

Specifically, the site is located within a 300 metre walk from the Springvale Train Station, which provides services between Dandenong and Melbourne CBD every 10 minutes on average during peak periods

This provides residents (and staff) from the site with a convenient connection between the site and employment areas to the north-west and south-east.

#### 5.1.7.3 Access to Other Transport Modes

In addition to the public transport options, we also note that the site has excellent connectivity to Melbourne's Principal Bicycle Network. Specifically, the site is located a short distance from the Djerring Shared Trail - which extends along the railway line between Dandenong and the City.

The site is also located within walking distance of several other key services, including (but not limited to) a shopping district (Springvale Shopping Centre / Springvale NAC) and schools.

### 5.1.8 Conclusion - Car Parking Provision

Based on the foregoing, we are satisfied that the proposed provision of 34 on-site parking spaces (which will broadly be allocated with 32 spaces to residents and two (2) spaces to the office tenancy) is appropriate in the context of this site.

Accordingly, the development proposition satisfies the purpose of Clause 52.06, specifically:

- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.

### 5.1.9 Design Standard for Car Parking - Clause 52.06 - 9

We have assessed the proposed car parking design and access arrangements against the requirements of Clause 52.06-9 of the Greater Dandenong Planning Scheme. Our findings are as follows:

#### 5.1.9.1 Design Standard 1 - Accessways

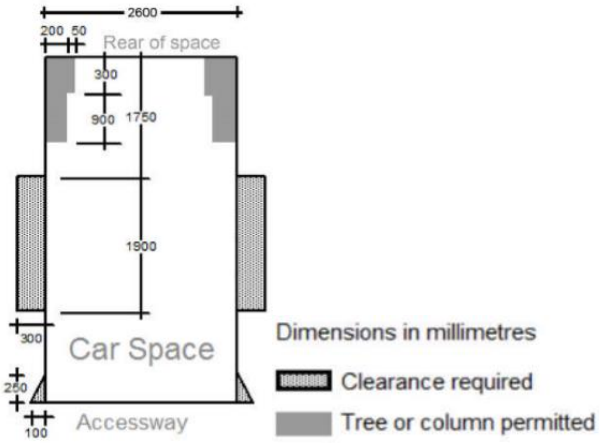
| Requirements | | Design Response | Status |
|---|---|---|---|
| **Accessways Must:** | | | |
| **1** | Be at least 3 metres wide. | Accessway is at least 6.1 metres wide throughout | **Comply** |
| **2** | Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide | | |
| **3** | Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre. | Not a public car park. | **N/A** |
| **4** | Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8 metres. | A clearance height of at least 2.2 metres is available throughout. | **Comply** |
| **5** | If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction. | All vehicles can enter and exit the site in a forward direction. | **Comply** |
| **6** | Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long if the accessway serves ten or more car parking spaces and is either more than 50 metres long or connects to a road in a Transport Zone 2 or Transport Zone 3. | Accessway is provided at a width of 6.1 metres along the access ramp. | **Comply** |
| **7** | Have a corner splay or area at least 50 percent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road.<br>The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height. | Due to a structural shear wall, the sight splay available on the egress side of the site access is slightly compromised (2m x 1.5m). Whilst this is short of the 2m x 2.5m required by this standard - this is considered an acceptable outcome on this occasion, noting that there isn't any footpath or pedestrian desire line coming from the southern side of the site*. | **Does not Comply Considered Appropriate** |
| **8** | If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6 metres from the road carriageway. | Access not from a Transport Zone. | **N/A** |

* If sight lines to the south were considered a concern (once again noting that there isn't any demand or pathway for them in this location) - then supplementary convex mirrors or warning signs could be used to help mitigate this concern.

## 5.1.9.2 Design Standard 2 - Car Parking Spaces

| | Requirements | Design Response | Status |
|---|---|---|---|
| **1** | Car parking spaces and accessways must have the minimum dimensions in Table 2 of Clause 52.06-9. | All standard parking spaces have been provided with a width of 2.6m, length of 4.9 metres and accessed from an aisle at least 6.4 metres wide. | **Comply** |
| **2** | A wall, fence, column, tree, tree guard or any other structure that abuts a car space must not encroach into the area marked 'clearance required' on Diagram 1 other than:<br>A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1 of the design standard<br>A structure, which may project into the space if it is at least 2.1 metres above the space. | Columns or other structures have generally been located in accordance with the clearance diagram, or offset by 300mm. | **Comply** |
| **3** | Car spaces in garages or carports must be at least 6 metres long and 3.5 metres wide for a single space and 5.5 metres wide for a double space measured inside the garage or carport. | No garage parking proposed. | **N/A** |
| **4** | Where parking spaces are provided in tandem (one space behind another) an additional 500mm in length must be provided between each space. | No tandem parking proposed. | **N/A** |
| **5** | Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover. | All parking under cover. | **Comply** |
| **6** | Disabled car parking spaces must be designed in accordance with AS 2890.6-2009 (disabled) and the Building Code of Australia. Disabled car parking spaces may encroach into an accessway width specified in Table 2 by 500mm. | Disabled car parking space has been designed in accordance with AS2890.6-2009. | **Comply** |

| Angle of car parking spaces to access way | Accessway width | Car space width | Car space length |
|---|---|---|---|
| **Parallel** | 3.6 m | 2.3 m | 6.7 m |
| **45°** | 3.5 m | 2.6 m | 4.9 m |
| **60°** | 4.9 m | 2.6 m | 4.9 m |
| **90°** | 6.4 m | 2.6 m | 4.9 m |
| | 5.8 m | 2.8 m | 4.9 m |
| | 5.2 m | 3.0 m | 4.9 m |
| | 4.8 m | 3.2 m | 4.9 m |



### 5.1.9.3 Design Standard 3 - Gradients

| | Requirements | Design Response | Status |
|---|---|---|---|
| **1** | Accessway grades must not be steeper than 1:10 (10 per cent) within 5 metres of the frontage to ensure safety for pedestrians and vehicles. The design must have regard to the wheelbase of the vehicle being designed for; pedestrian and vehicular traffic volumes; the nature of the car park; and the slope and configuration of the vehicle crossover at the site frontage. This does not apply to accessways serving three dwellings or less. | A maximum grade no steeper than 1:10 is proposed within the first 5 metres of the site boundary. | **Comply** |
| **2** | Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 and be designed for vehicles travelling in a forward direction. | A maximum grade of 1:4 is considered in accordance with Table 3. | **Comply** |
| **3** | Where the difference in grade between two sections of ramp or floor is greater than 1:8 (12.5 per cent) for a summit grade change, or greater than 1:6.7 (15 per cent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming. | Appropriate transitions have been used to ensure that vehicles do not scrape. See ground clearance assessment attached as Appendix A. | **Comply** |
| **4** | Plans must include an assessment of grade changes of greater than 1:5.6 (18 per cent) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority. | | |

### 5.1.9.4 Waste Vehicle Circulation

Waste collections will occur from within the car park aisle adjacent to the proposed waste collection area. Collections will be undertaken by a mini rear loading waste collection vehicle, measuring approximately 6.4 metres in length.

As shown in swept paths (attached as Appendix A) the proposed waste collection vehicle can circulate into the site in a forward direction, reverse back towards the bin store entrance and then exit the site in a forward direction.

The propping / loading area for the proposed waste collection vehicle has been designed such that it will minimise the impact on the car park area, with only 3-4 of the total on-site parking provision impacted.

We recommend that this movement be supervised by either the building manager or a second collection contractor to help reduce the likelihood of a conflict when vehicles are reversing back to designated loading area.

Note: To further minimise disruption to the on-site car park, waste collections should be undertaken outside of commuter peak periods, when general vehicle traffic in the car park is at a minimum.

## 5.1.10 Conclusion - Car Park Design

The proposed car park and accessways have been assessed and determined to have satisfied the relevant design guidelines.

Accordingly, the proposal satisfies the purpose of Clause 52.06, specifically:

- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

## 5.2 Clause 52.34 - Bicycle Facilities

### 5.2.1 Purpose

The purpose of Clause 52.34 is to encourage cycling as a mode of transport, and provide secure, accessible and convenient bicycle parking spaces and associated shower and change facilities.

### 5.2.2 Provision Requirements - Clause 52.34.3

To satisfy the above purpose, Clause 52.34-3 of the Greater Dandenong Planning Scheme specifies the bicycle parking provision requirements for a variety of different uses within Table 1.

Rates applicable to the proposed uses are:

| | | |
|---|---|---|
| **Residential Dwelling** | Residents: | 1 to each 5 dwellings |
| | Visitors: | 1 to each 10 dwellings |
| **Office** | Employees: | 1 to each 300 sq.m net floor area* |
| | Visitors: | 1 to each 100 sq.m net floor area* |

*If floor area exceeds 1,000 sq.m net floor area.

Based on the above, the proposed development has a requirement for a total of 26 bicycle parking spaces, including 17 resident spaces and 9 visitor spaces.

### 5.2.3 Proposed Provision

The development plans consider a total of 42 bicycle parking on-site, which comfortably exceeds the minimum number required.

This provision is considered appropriate in the context of the subject site, which seeks a significant car parking dispensation and has access to a key shared path (which providesa connection between the site and Melbourne CBD), a short distance to the north.

### 5.2.4 Design Requirements

Bicycle spaces should:

- Provide a space for a bicycle of minimum dimensions of 1.7 metres in length, 1.2 metres in height and 0.7 metres in width at the handlebars.
- Be located to allow a bicycle to be ridden to within 30 metres of the bicycle parking space.
- Be located to provide convenient access from surrounding bicycle routes and main building entrances.
- Not interfere with reasonable access to doorways, loading areas, access covers, furniture, services and infrastructure.
- Not cause a hazard.
- Be adequately lit during periods of use.

#### 5.2.4.1 Design

The bicycle spaces are to be provided in the form of proprietary bicycle hoops and vertical racks designed to satisfy the relevant standards.

Whilst there are some localised pinch points within the bike parking area, these are only for a short distance, and measure 1.2 metres, which is wide enough for a person to wheel their bike through the gap. Thereafter, each hoop and rack is provided with a 1.5 metre access aisle to the rear of the space to enable convenient access.

Additionally, ten (10) of the 42 on-site bike parking spaces are proposed in the form of horizontal hoops. This equates to a ratio of 24% horizontal bicycle parking bays, and exceeds the minimum requirement for 20% horizontal spaces.

### 5.2.5 Conclusion - Bicycle Parking

We can conclude that bicycle parking provided as part of this development satisfies the purpose of Clause 52.34, specifically:

- To encourage cycling as a mode of transport, and provide secure, accessible and convenient bicycle parking spaces.

# 6 Traffic Considerations

## 6.1 Traffic Generation

For the purposes of estimating the amount of traffic generated by the subject site, reference is made to RMS's (NSW) Publications titled

- Guide to Traffic Generating Developments Version 2.2 (2002); and
- Guide to Traffic Generating Developments - Update Surveys (2013).

These documents, informed by comprehensive case studies, provide guidance on traffic generation rates for high density residential developments.

In metropolitan locations, the RMS( NSW) publications suggest the following rates:

| | | |
|---|---|---|
| Peak Hour: | Version 202 (2002) | 0.24 trips per unit |
| | Updated Surveys (2013) | 0.19 trips per unit |
| | Outer Metropolitan (2013) | 0.29 trips per unit. |

Given the subject site is located within 300 metres walking distance of the Springvale Train Station, and has almost 100% additional bicycle parking spaces, we expect that the traffic generation rate would likely be equivalent to the lower 0.19-0.24 rates observed.

For the purposes of a conservative estimate however, we have adopted a peak generation rate of 0.29 trips per unit.

A daily to peak hour volume factor of 1 to 10 will be adopted, and therefore a daily generation rate of 2.9 movements per dwelling will be adopted.

Application of these rates to the 32 apartments that will be allocated on-site parking yields the following anticipated vehicle movements:

- Daily Vehicle Movements 93 vehicle movements; and
- Peak Period Vehicle Movements 9 vehicles.

In addition to the above, it is assumed that each of the remaining two spaces (allocated to the office component) will be occupied in the AM peak and vacated in the PM Peak period.

## 6.2 Traffic Impact

The proposal is expected to generate in the order of 11 peak period vehicle movements during the AM and PM commuter peak periods (split between inbound and outbound traffic).

This equates to just less than one additional vehicle movement every five minutes on average.

This level of additional traffic is considered minimal and is not expected to have any material impact on the operation of Kintore Street or the surrounding road network.

# APPENDIX A
# Swept Path Analysis



Design Vehicle -

B99 Car

B85 Car

6.4m Mini Rear Loader

STREET

REDUNDANT CROSSOVERS TO BE REMOVED
LANDSCAPING, KERB AND CHANNEL TO BE REINSTATED

SIDE ENTRY PIT AND TELECOM PIT TO BE RELOCATED

CROSSOVER TO BE CONSTRUCTED IN
ACCORDANCE WITH CITY OF GREATER DANDENONG
COUNCIL STANDARD DRAWING NO. SD408-B

KINTORE

*SUBJECT SITE*
*1-5 KINTORE STREET,*
*SPRINGVALE*
*GROUND LEVEL*

RAMP TO BASEMENT LEVEL

1.0
1.5
1.3
1.7
1.2
6.1
1.2
1.5
1.2

GENERAL NOTES:
1. ALL DIMENSIONS ARE TO FACE OF KERB AND CHANNEL UNLESS NOTED OTHERWISE.
2. LOCAL ROADS - KINTORESTREET (SPEED ZONE 50KM/H).
3. BASE INFORMATION FROM NEARMAP AERIAL PHOTOGRAPHY DATED 02.15.2024 AND AOA DRAWING NO. 23023_1-5 Kintore Street Springvale_-Sheet - A-120 - PLAN - GROUND.dwg DATED 06.05.2024

ADVERTISED PLAN

13/05/2024 3:03:27 PM



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MELWAY ONLINE REF:MAP 80 A10

SCALE
**1:250 @ A3**

Client
**TANGO**

Date **2024-05-13**
Drawn / Approved **WH / WD**

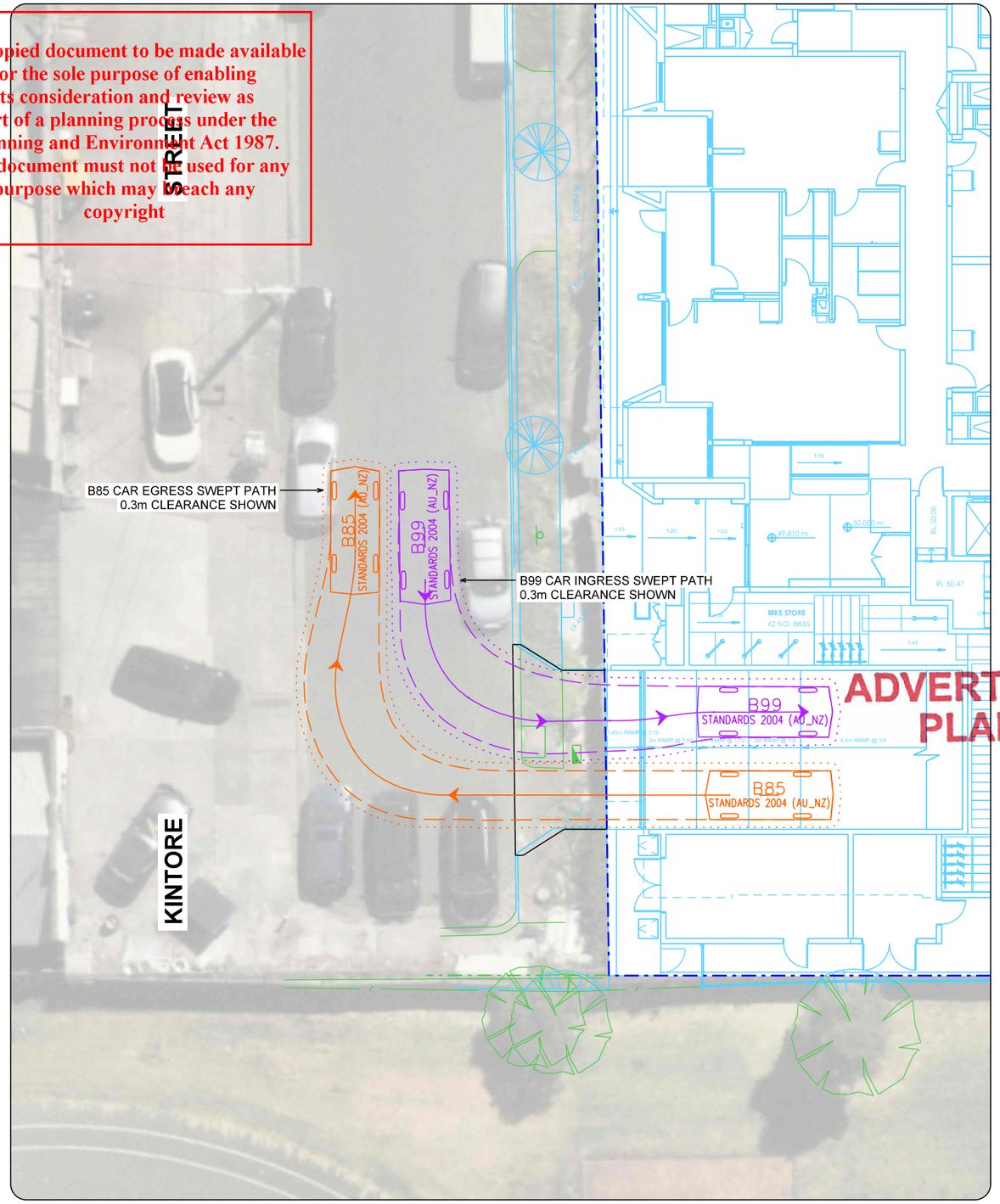
Project
**MEDIUM DENSITY RESIDENTIAL DEVELOPMENT**
**1-5 KINTORE STREET, SPRINGVALE**
**CITY OF GREATER DANDENONG**

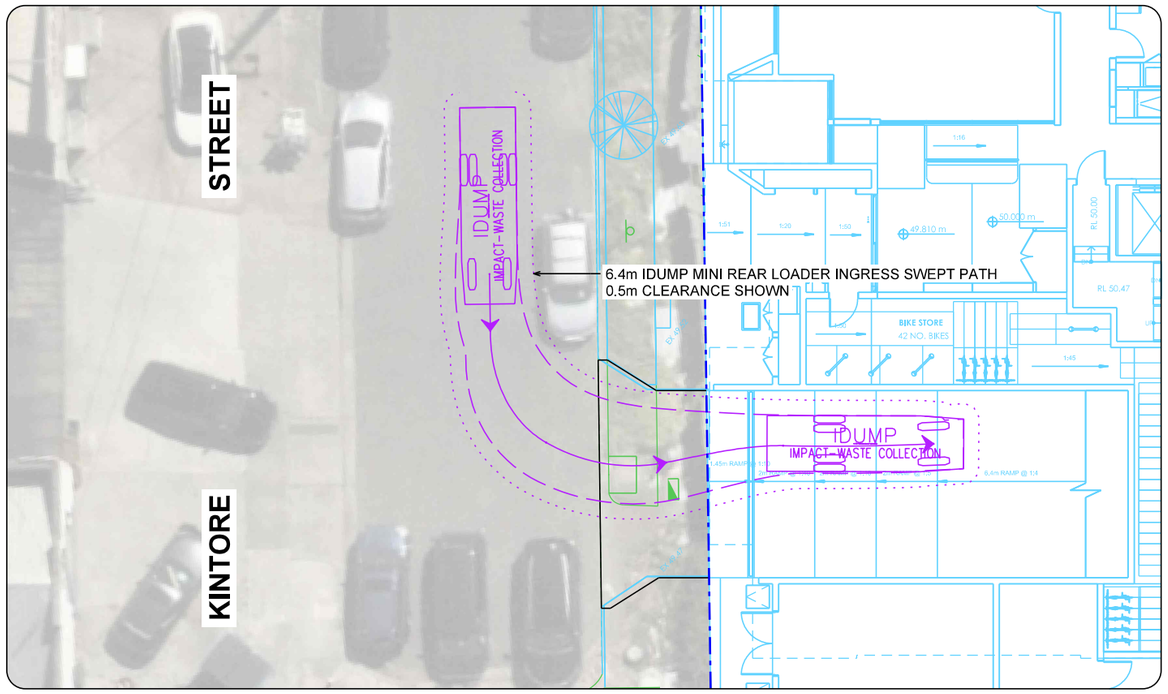
Title
**TRAFFIC AND TRANSPORT ASSESSMENT**
**SITE LAYOUT PLAN**
**GROUND LEVEL**

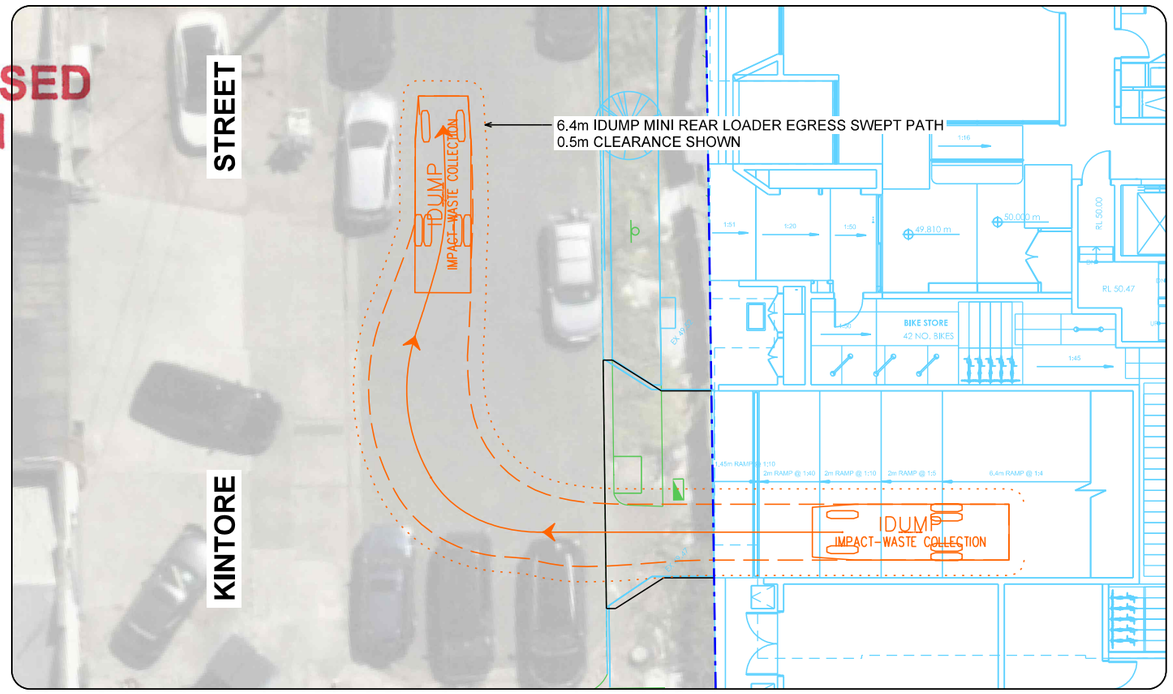
Status
**PRELIMINARY**

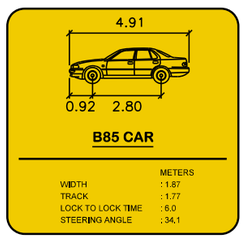
Drawing Number
**IMP2311051 - DRG-02-01**

Revision
**B**



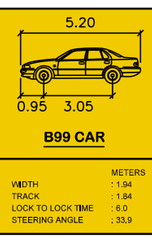



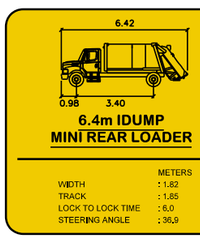

**B85 CAR**

| | METERS |
|---|---|
| WIDTH | : 1.87 |
| TRACK | : 1.77 |
| LOCK TO LOCK TIME | : 6.0 |
| STEERING ANGLE | : 34.1 |




**B99 CAR**

| | METERS |
|---|---|
| WIDTH | : 1.94 |
| TRACK | : 1.84 |
| LOCK TO LOCK TIME | : 6.0 |
| STEERING ANGLE | : 33.9 |




**6.4m IDUMP**
**MINI REAR LOADER**

| | METERS |
|---|---|
| WIDTH | : 1.82 |
| TRACK | : 1.85 |
| LOCK TO LOCK TIME | : 6.0 |
| STEERING ANGLE | : 36.9 |

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MELWAY ONLINE REF:MAP 80 A10

SCALE

**1:200 @ A3**

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**TANGO**

Date **2024-05-13**
Drawn / Approved **WH / WD**

Project
**MEDIUM DENSITY RESIDENTIAL DEVELOPMENT**
**1-5 KINTORE STREET, SPRINGVALE**
**CITY OF GREATER DANDENONG**

Title
**TRAFFIC AND TRANSPORT ASSESSMENT**
**SWEPT PATH ANALYSIS**
**B85, B99 CAR AND 6.4m IDUMP - DESIGN VEHICLES**

Status
**PRELIMINARY**

Drawing Number
**IMP2311051 - DRG-02-02**

Revision
**B**

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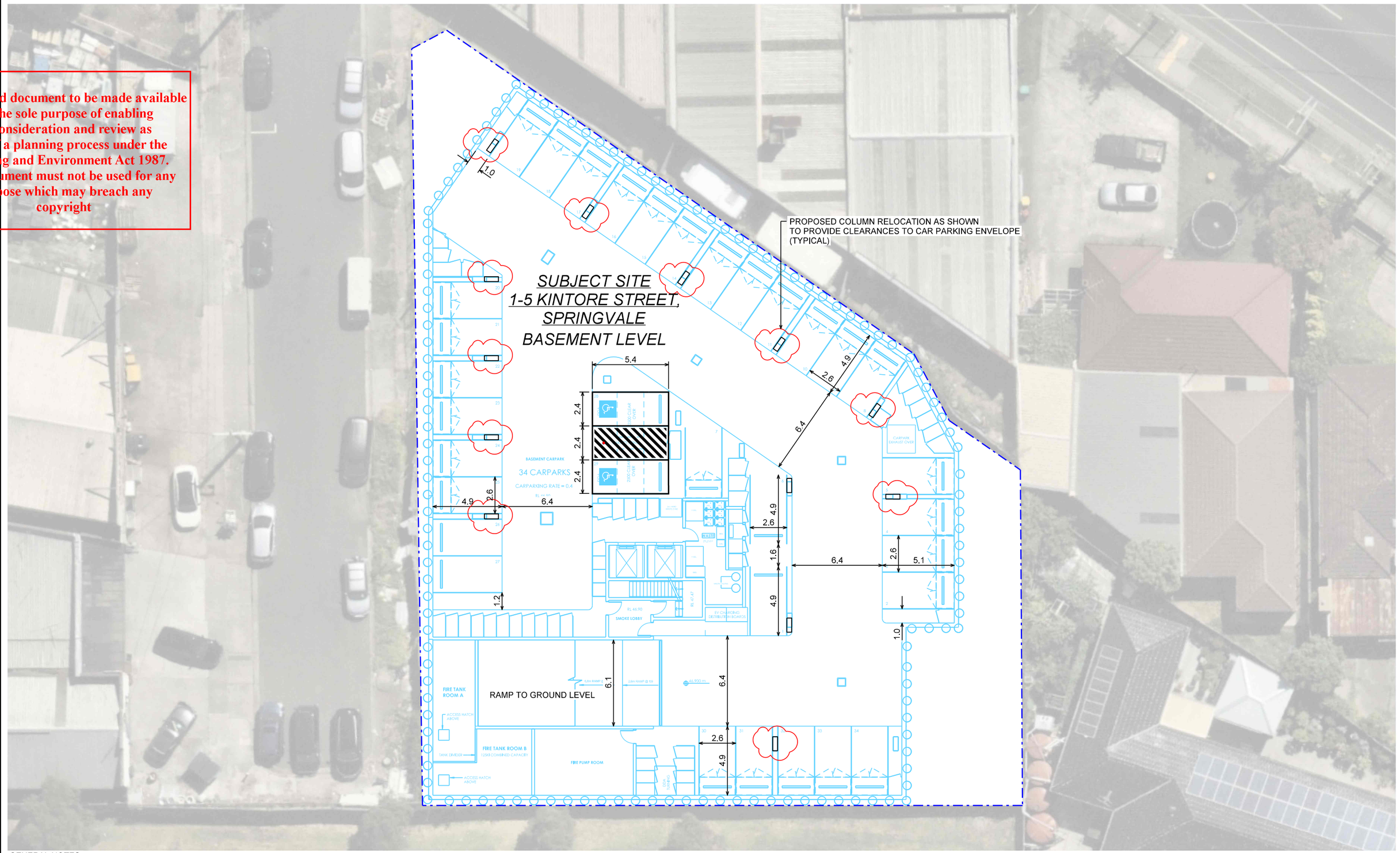


GENERAL NOTES:
1. ALL DIMENSIONS ARE TO FACE OF KERB AND CHANNEL UNLESS NOTED OTHERWISE.
2. LOCAL ROADS - KINTORESTREET (SPEED ZONE 50KM/H).
3. BASE INFORMATION FROM NEARMAP AERIAL PHOTOGRAPHY DATED 02.15.2024 AND AOA DRAWING NO. 23023_1-5 Kintore Street Springvale_-Sheet - A-119 - PLAN - BASEMENT 01.dwg DATED 06.05.2024

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PLAN

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SCALE
1:250 @ A3

Client
**TANGO**

Date **2024-05-13**
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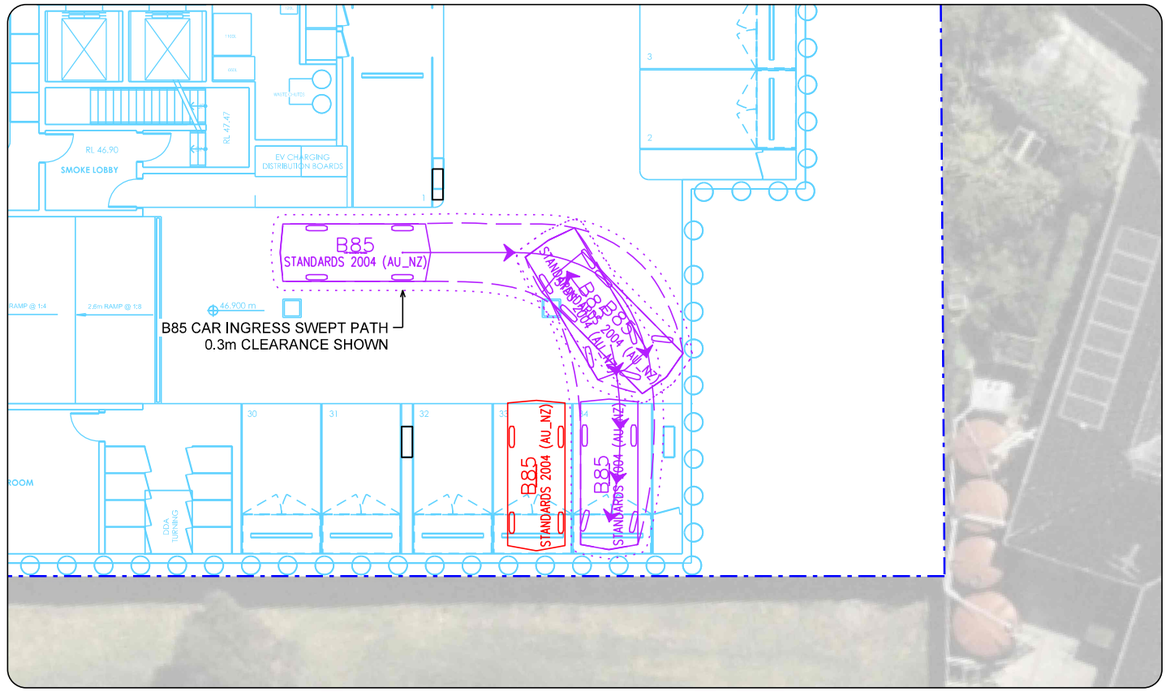
Project
**MEDIUM DENSITY RESIDENTIAL DEVELOPMENT**
**1-5 KINTORE STREET, SPRINGVALE**
**CITY OF GREATER DANDENONG**

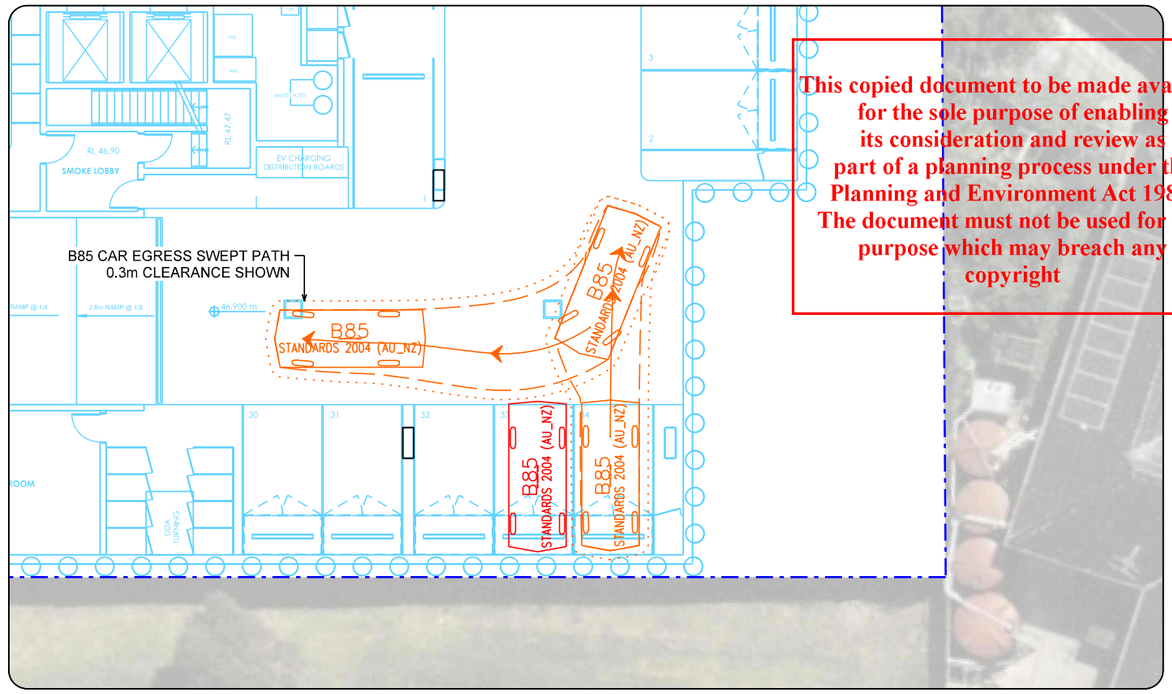
Title
**TRAFFIC AND TRANSPORT ASSESSMENT**
**SITE LAYOUT PLAN**
**BASEMENT LEVEL**

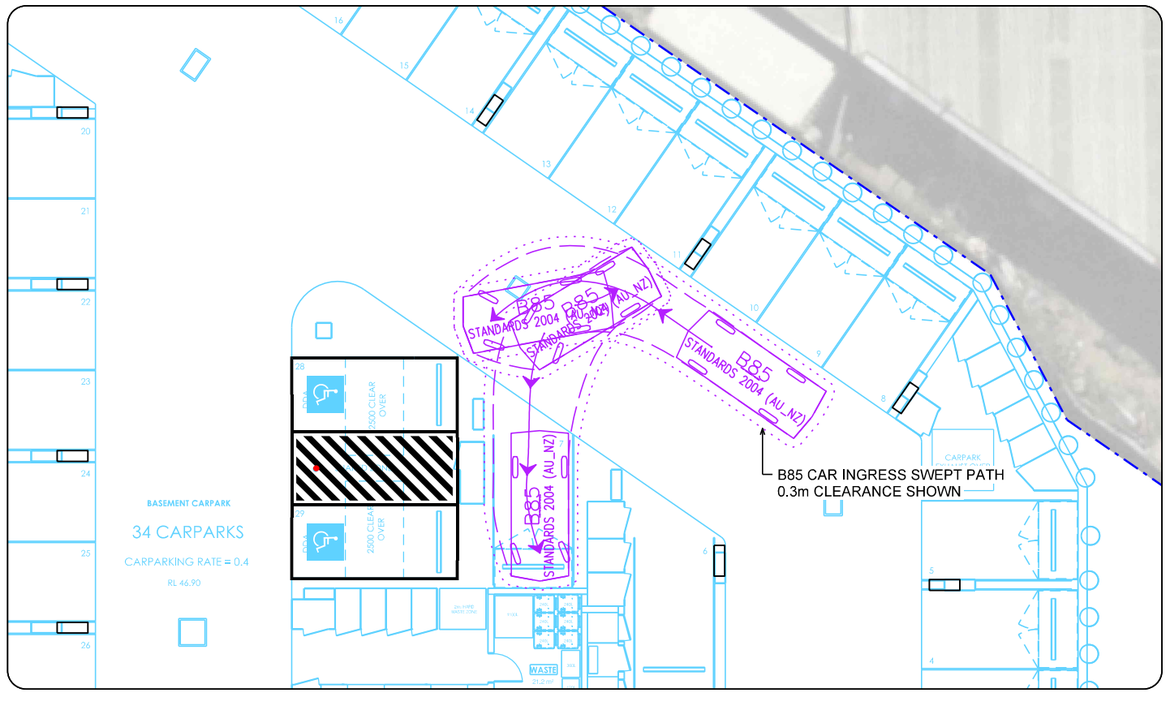
Status
**PRELIMINARY**

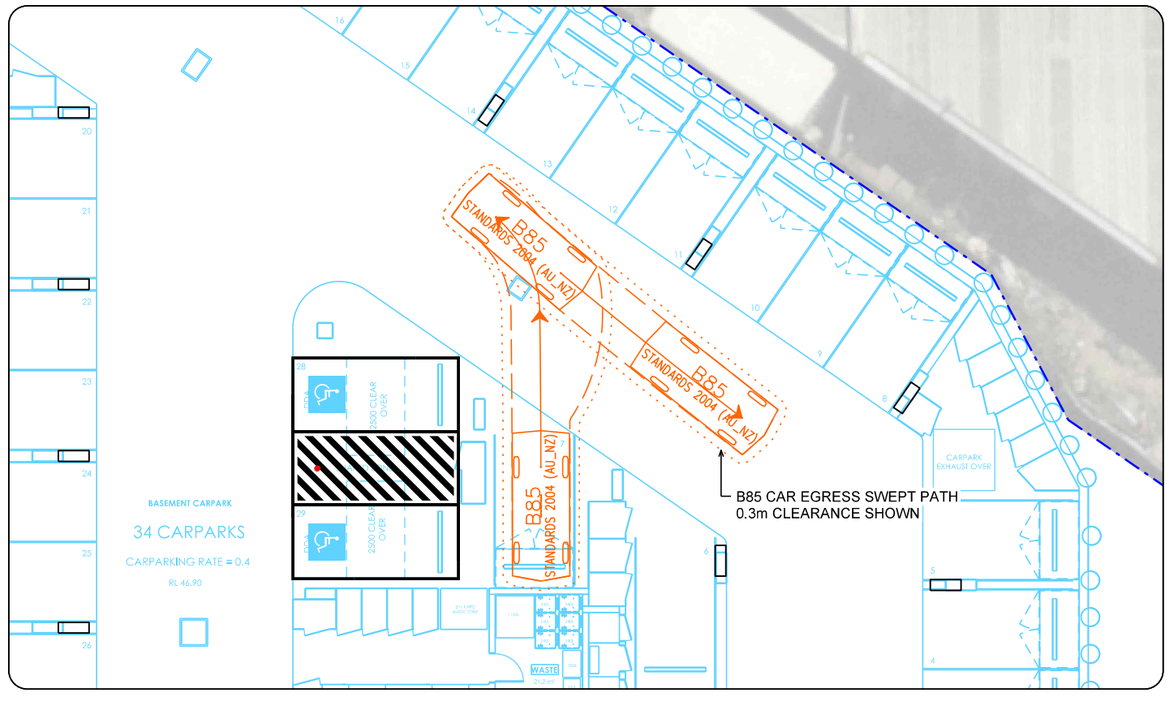
Drawing Number
**IMP2311051 - DRG-01-01**

Revision
**B**




ADVERTISED PLAN

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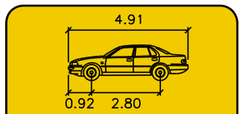


**B85 CAR**

| | METERS |
|---|---|
| WIDTH | : 1.87 |
| TRACK | : 1.77 |
| LOCK TO LOCK TIME | : 6.0 |
| STEERING ANGLE | : 34.1 |

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MELWAY ONLINE REF:MAP 80 A10

SCALE
**1:200 @ A3**

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**TANGO**

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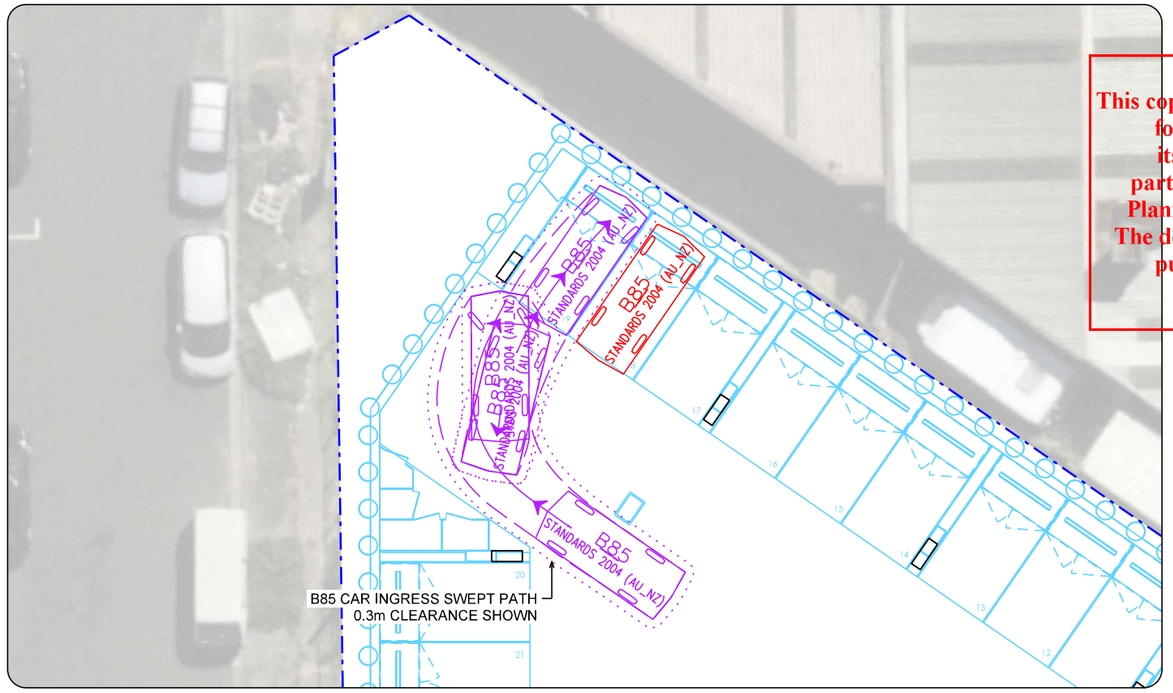
Project
**MEDIUM DENSITY RESIDENTIAL DEVELOPMENT**
**1-5 KINTORE STREET, SPRINGVALE**
**CITY OF GREATER DANDENONG**

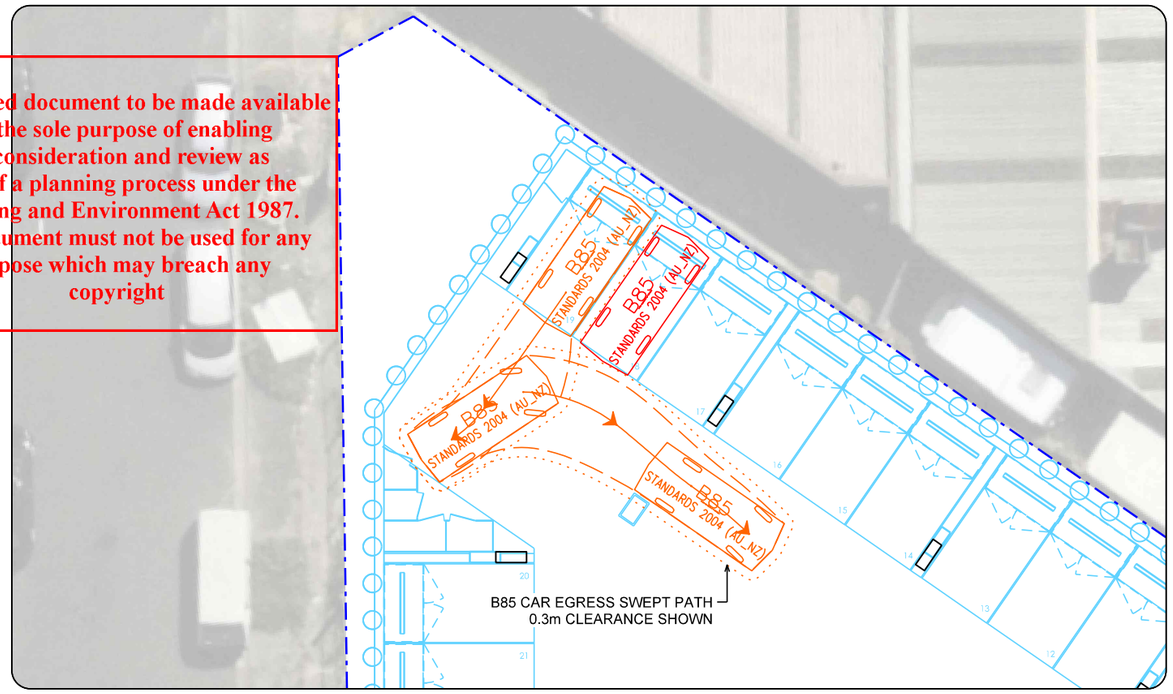
Title
**TRAFFIC AND TRANSPORT ASSESSMENT**
**SWEPT PATH ANALYSIS**
**B85 CAR - DESIGN VEHICLE**

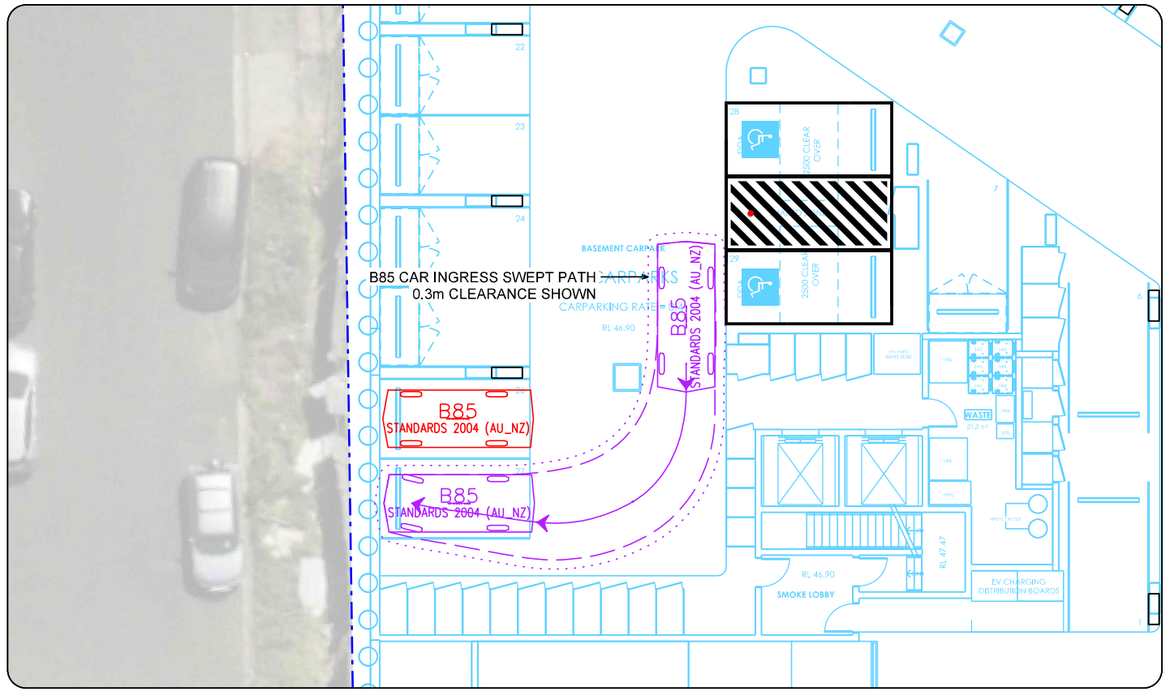
Status
**PRELIMINARY**

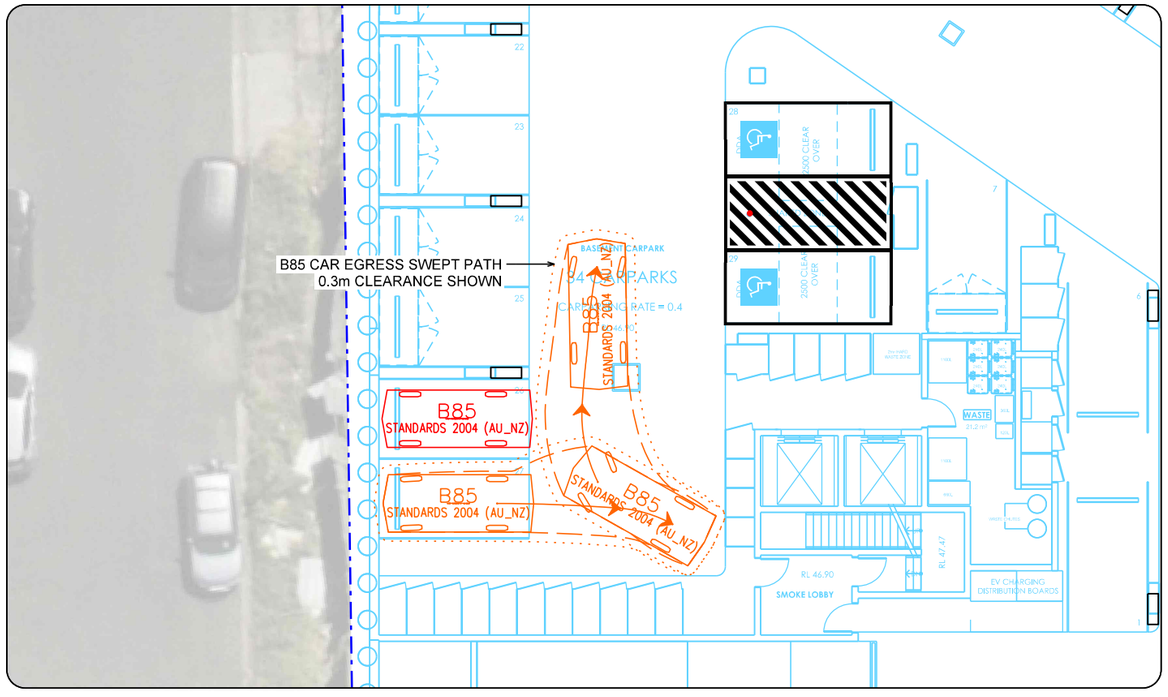
Drawing Number
**IMP2311051 - DRG-01-02**

Revision
**B**

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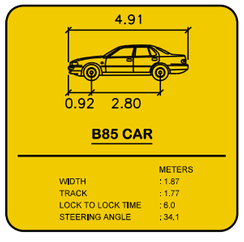


| | METERS |
|---|---|
| WIDTH | : 1.87 |
| TRACK | : 1.77 |
| LOCK TO LOCK TIME | : 6.0 |
| STEERING ANGLE | : 34.1 |

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SCALE
1:200 @ A3

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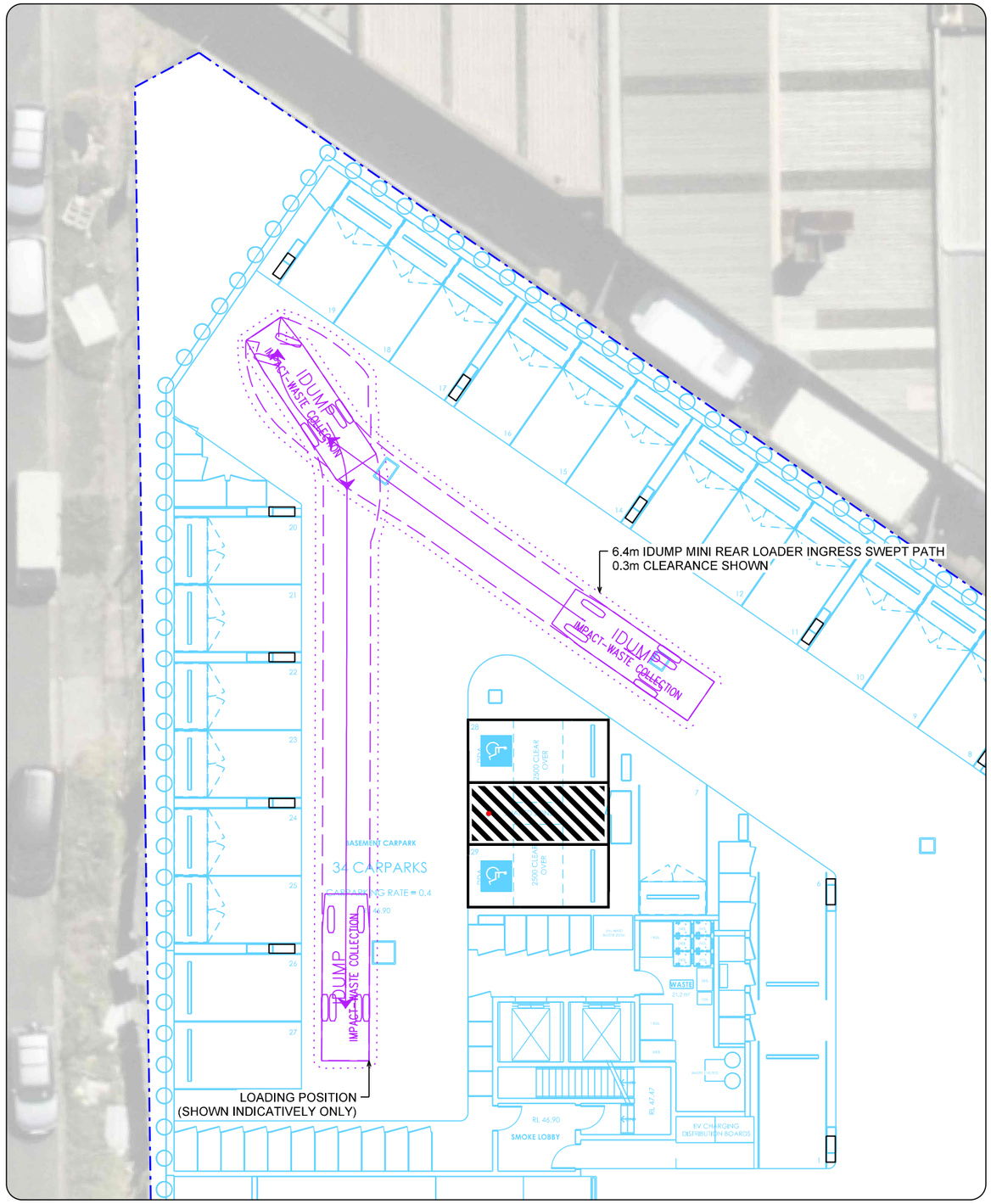
**1-5 KINTORE STREET, SPRINGVALE**
**CITY OF GREATER DANDENONG**

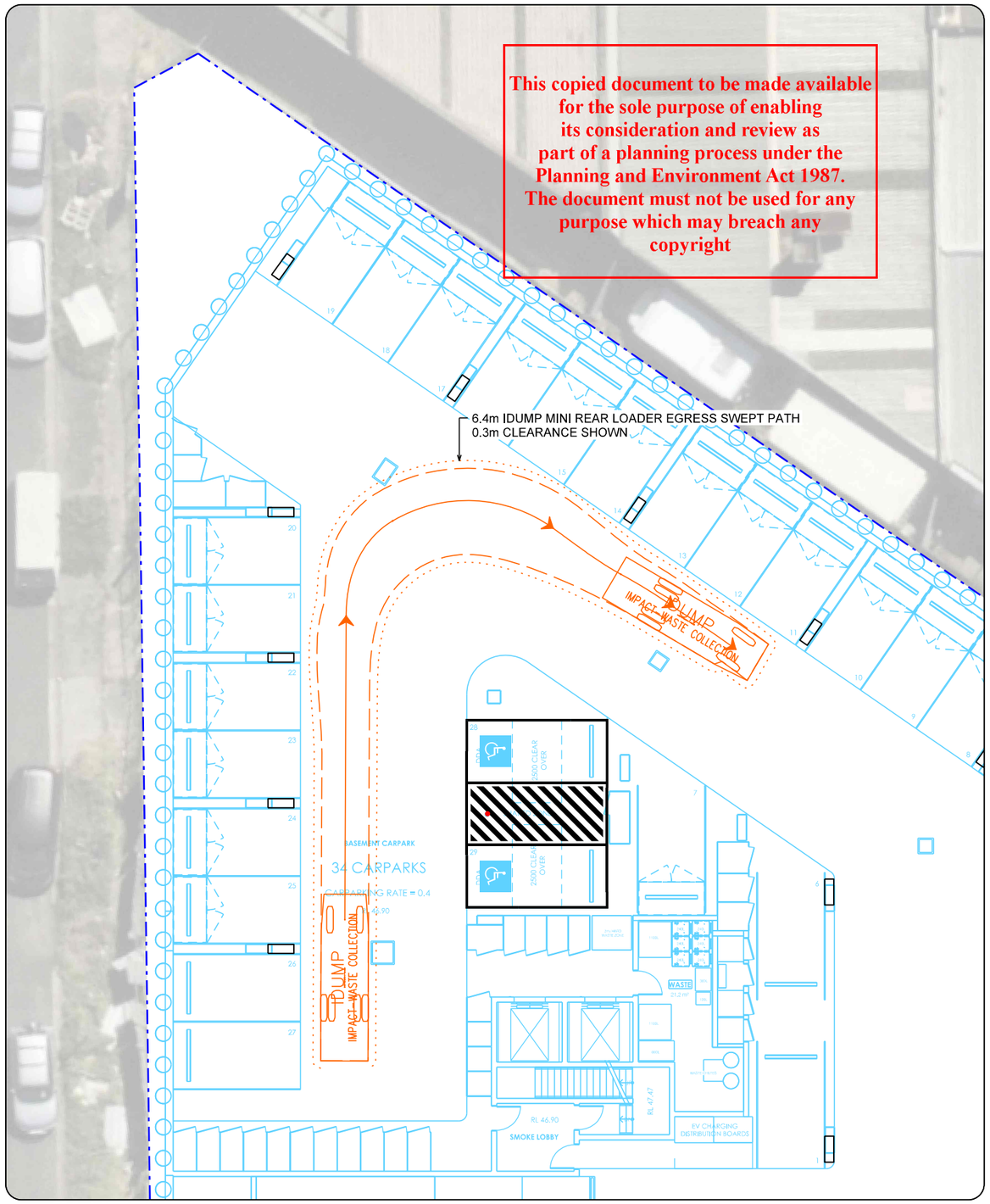
Title
**TRAFFIC AND TRANSPORT ASSESSMENT**
**SWEPT PATH ANALYSIS**
**B85 CAR - DESIGN VEHICLE**

Status
**PRELIMINARY**

Drawing Number
**IMP2311051 - DRG-01-03**

Revision
**B**




ADVERTISED PLAN

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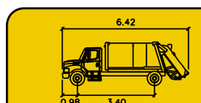


**6.4m IDUMP MINI REAR LOADER**

| | METERS |
|---|---|
| WIDTH | : 1.82 |
| TRACK | : 1.85 |
| LOCK TO LOCK TIME | : 6.0 |
| STEERING ANGLE | : 36.9 |

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**CITY OF GREATER DANDENONG**

Title
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**SWEPT PATH ANALYSIS**
**6.4m IDUMP MINI REAR LOADER - DESIGN VEHICLE**

Status
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Drawing Number
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Revision
**B**

Simplexity