Traffic Impact Statement

50 Alexandria View – Mindarie TIS

CW1200350/304900720

Prepared for
Edge Vision Living

15 August 2022

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1 Introduction

1.1 Background

Cardno now Stantec was commissioned by Edge Visionary Living to undertake a Transport Impact Statement (TIS) for a proposed Residential Apartment development located at 50 Alexandria View, Mindarie.

This TIA has been prepared in accordance with the *Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016)* and the checklist is included in **Appendix A.**

2 Existing Situation

2.1 Existing Site Context

The Site is located at 50 Alexandria View, Mindarie. The Site is bounded by Medway Lane to the north and Alexandria View to the south and other residential developments to the east. **Figure 2-1** shows the location of the proposed development.

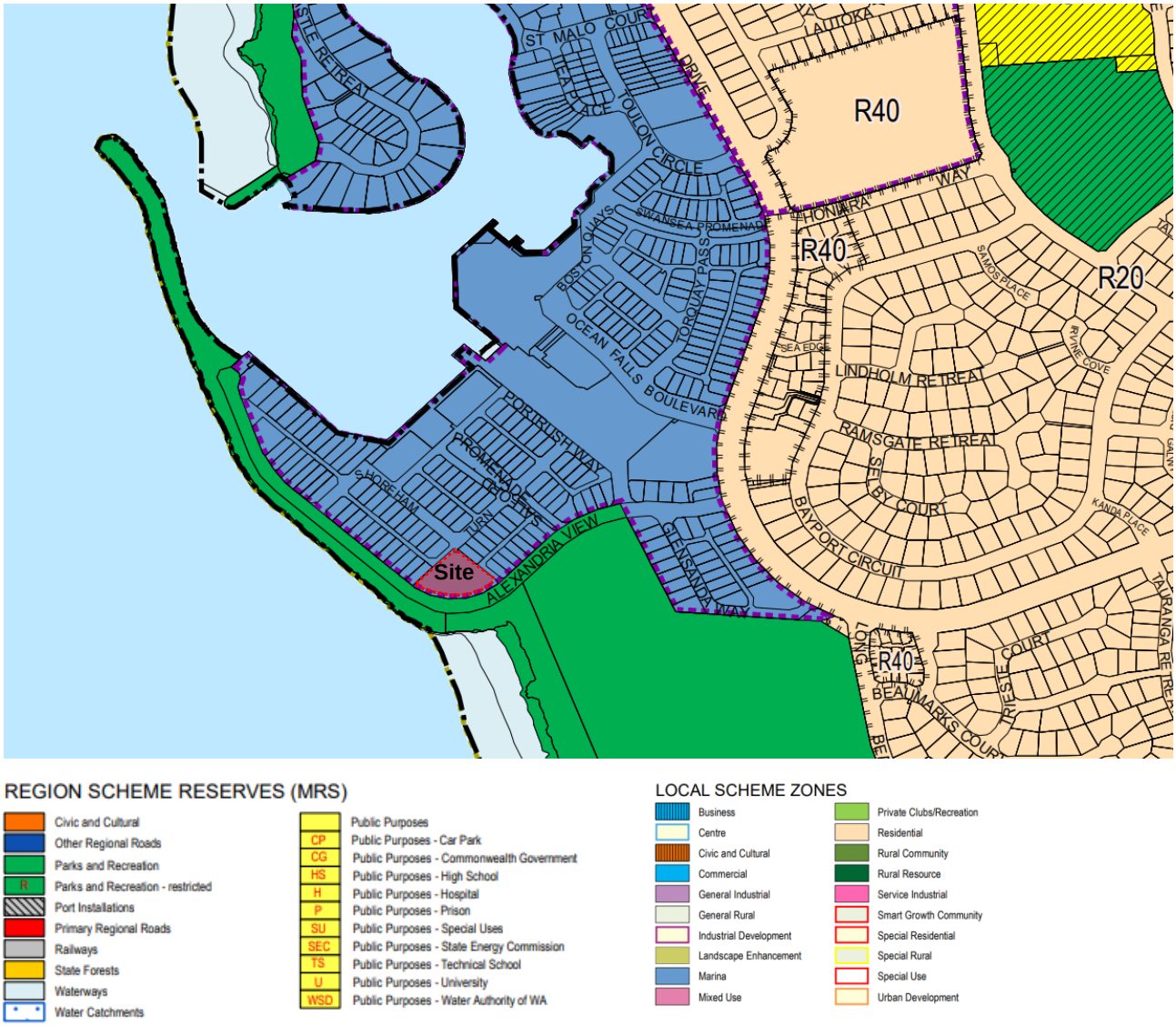
Figure 2-1 Site Location

Source: Metromap

2.2 Surrounding Land Uses

Pursuant to the provision of the *City of Wanneroo Town Planning Scheme No. 2 (TPS2)*, the Site is zoned '*Marina*' as shown in **Figure 2-2.** The Site is surrounded by other Marina developments and parks and recreation uses.

Figure 2-2 Zoning



Source: City of Wanneroo Town Planning Scheme No. 2

2.3 Existing Road Network

Road classifications are defined in the Main Roads Functional Hierarchy as follows:

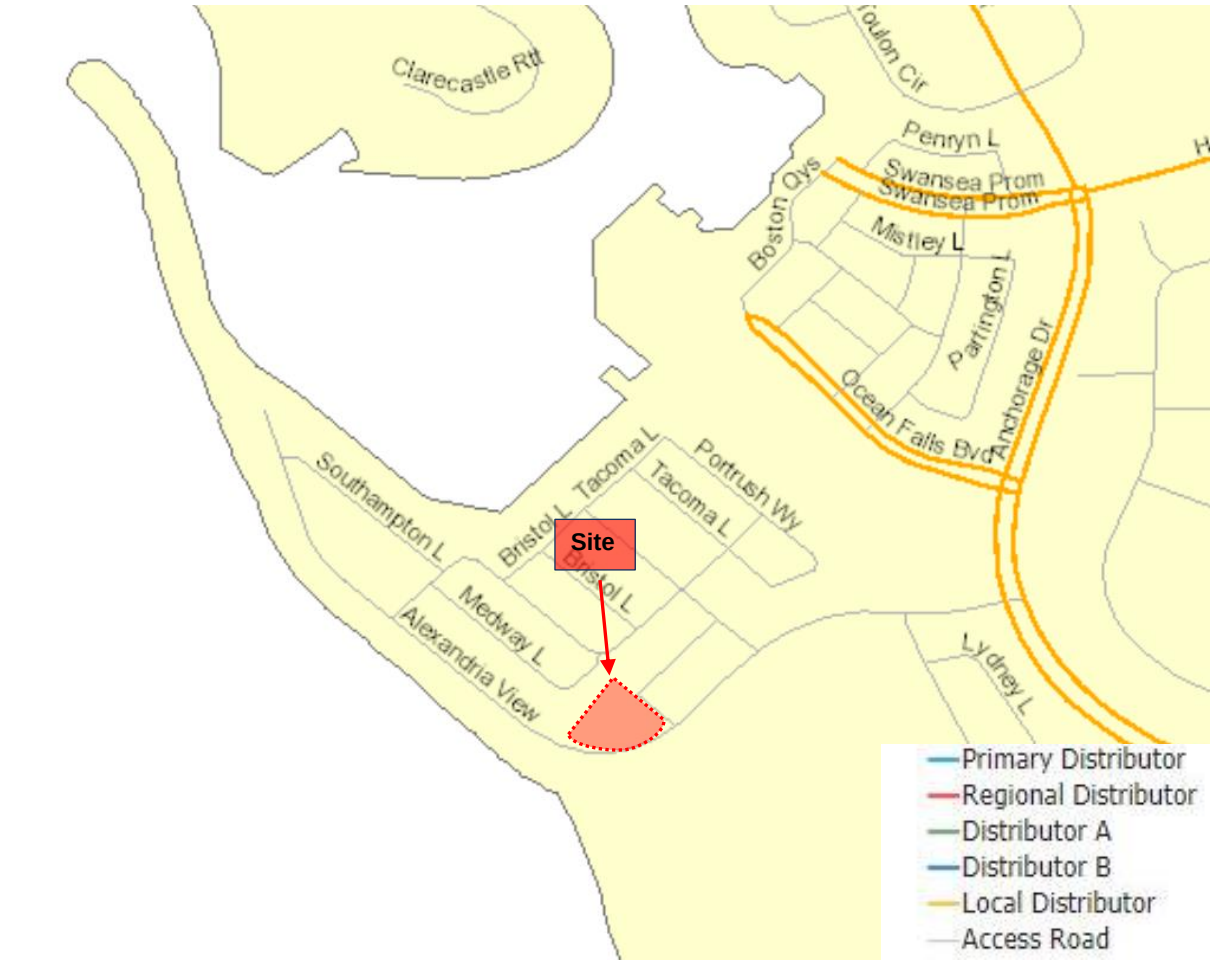
- **Primary Distributors (light blue):** Form the regional and inter-regional grid of Main Roads WA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes and all are National or State Roads WA.
- **Regional Distributors (red):** Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by Local Government.
- **District Distributor A (green):** These carry traffic between industrial, commercial and residential areas and connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining properties. They are managed by Local Government.
- **Distributor B (dark blue):** Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.
- **Local Distributors (orange):** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local Government.
- **Access Roads (grey):** Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local Government.

The Site is bounded by Alexandria View to the south, Stockton Lane to the north east and Medway Lane to the north. The surrounding road network is further described in **Table 2-1** and **Figure 2-3** shows the road hierarchy classification as per the Main Roads WA Road Information Mapping System.

Table 2-1 Road Network Classification

Street Names	Road Hierarchy		Road Network			
	Road Hierarchy	Jurisdiction	No. of Lanes	No. of Footpaths	Approximate Width (m)	Posted Speed Limit (km/h)
Alexandria View	Access Road	Local Government	2	2	7m	50
Stockton Lane	Access Road	Local Government	2	0	5m	50
Medway Lane	Access Road	Local Government	2	0	5.35m	50

Figure 2-3 Road Hierarchy



Source: Road Information Mapping System

2.4 Existing Traffic Volumes

The most recent traffic volumes for the roads in the vicinity of the Site were obtained from the Main Roads Traffic Map and City of Wanneroo and are summarised in **Table 2-2.**

Table 2-2 Traffic Volumes

Road Names	Year	AM Peak (two-way)	PM Peak (two-way)	Source
Anchorage Drive (South of Alexandria View)	2021	451	578	City of Wanneroo
Anchorage Drive (West of Marmion Ave)	2021	1,415	1,491	MRWA Traffic map

2.5 Future Road Network Changes

Cardno now Stantec contacted the City and was advised that no changes are expected to the existing road network within the proximity of the site.

2.6 Existing Intersections

The following section describes the intersections in the vicinity of the site:

> **Alexandria View/Salford Promenade Intersection** is located to the east of the site. The intersection is a T- junction with priority given to Alexandria View as illustrated in **Figure 2-4**

Figure 2-4 Alexandria View/Salford Promenade Intersection

Source: Metromap

> **Salford Promenade/Shoreham Turn Intersection** is located to the north east of the site. The intersection is a T- junction with priority given to Salford Promenade as illustrated in **Figure 2-5**.

Figure 2-5 Salford Promenade/ Shoreham Turn Intersection

Source: Metromap

> **Salford Promenade/Stockton Lane Intersection** is located to the north east of the site. The intersection is a T- junction with priority given to Salford Promenade as illustrated in **Figure 2-6**.

Figure 2-6 Salford Promenade / Stockton Lane Intersection

Source: Metromap

2.7 Crash Assessment

A crash assessment for the surrounding road network of the Site has been completed using the Main Roads WA Reporting Centre. The assessment covers all the recorded accidents between 1 January 2017 and 31 December 2021 and the results are summarised in **Table 2-3** to **Table 2-5**. **Figure 2-7** illustrates the crash locations and the severity of crashes in the vicinity of the site.

Table 2-3 Total Crashes

TOTAL CRASHES						
Type of Crash (RUM Code)	**Fatal**	**Hospital**	**Medical**	**Major Property Damage**	**Minor Property Damage**	**Total Crashes**
Right Angle	-	-	-	3	-	**3**
Unspecified	-	-	-	2	-	**2**
Total	**-**	**-**	**-**	**5**	**-**	**5**

Table 2-4 Mid-Block Crashes

MIDBLOCK CRASHES						
Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Unspecified	-	-	-	2	-	**2**
Total	**-**	**-**	**-**	**2**	**-**	**2**

Table 2-5 Intersection Crashes

iNTERSECTION CRASHES						
Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Alexandria View - Anchorage Dr	-	-	-	3	-	**3**
Total	**-**	**-**	**-**	**3**	**-**	**3**

Figure 2-7 Crash Severity and Locations

Source: Maps.co

A summary of the crash data is as follows:

- A total of 5 crashes were recorded in the vicinity of the Site;
- There were no fatal accidents recorded;
- 2 midblock crash were recorded; and
- All of the crashes recorded resulted in major property damage.

Overall, the number of crashes that occurred within the surrounding area appears to be relatively low. It is very unlikely that this development would have any material impact on road safety in the area due to the low number of trips expected to be generated by this development.

3 Public Transport Facilities

3.1 Existing Public Transport Facilities

The nearest bus stops are located approximately 950m from the Site served by bus route 481 which travels along Rothesay Heights as shown in **Figure 3-1** The routes operate from these stops to Clarkson and Butler Station. Other bus services in the vicinity of site includes routes along Marmion Avenue and hence the site is considered to be poorly serviced by public transport. Bus route frequencies are summarised in **Table 3-1.**

Figure 3-1 Bus Routes in the vicinity of the site

Source: Transperth

Table 3-1 Bus Service Frequency

Route	Route Description	Frequency	
		Weekday Peak	Weekend Peak
480	Clarkson Station – Butler Station	30 minutes	60 minutes
481	Clarkson Stn – Quinns Rocks	30 minutes	60 minutes
482	Clarkson Stn – Butler Stn via Marmion Ave	10 -15 minutes	60 minutes
474	Joondalup – Clarkson via Kinross	60 – 120 minutes	No Service

3.2 Future Public Transport Facilities

Cardno now Stantec contacted the Public Transport Authority and was advised that there are longer term plans for a new Route 479 which will operate from Mindarie Marina to Clarkson Station via Catalina Estate.

The new route is proposed to operate via Catalina Dr / Portofino Prom / Long Beach Prom / Anchorage Dr South / Ocean Falls Blvd to terminate at the existing bus stop currently served by Route 481 deviations.

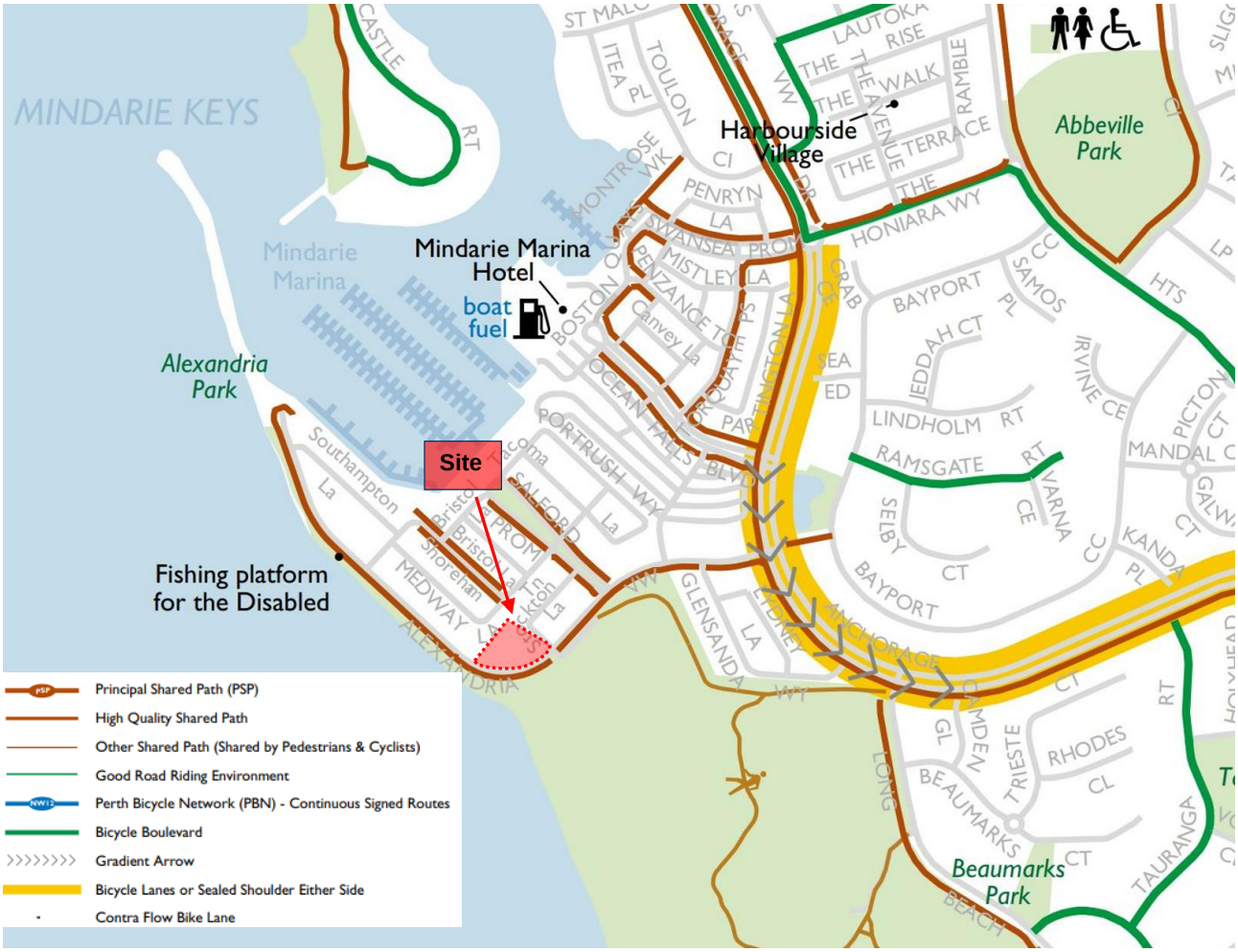
The timeframe for introduction of this route is unknown as there is no funding available for general network expansion.

4 Pedestrian/Cycle Networks and Facilities

4.1 Existing Pedestrian/Cycle Network Facilities

Figure 4-1 shows the existing bicycle network within the surrounding area of the Site. A "High Quality Shared Path" is provided along Alexandria View, Shoreham Turn and Salford Promenade. Bicycle lanes with sealed shoulders on either side are available along Anchorage Drive.

Figure 4-1 Existing Pedestrian/Cycling Networks



Source: Department of Transport

4.2 Future Pedestrian/Cycle Network Facilities

Cardno now Stantec contacted the City of Wanneroo and was advised that no significant changes are expected regarding the existing Alexandria Drive pedestrian facilities, which have already been fully built out on both sides.

The long-term strategy for cycling infrastructure in the area is defined by the Department of Transport's *Long-Term Cycle Network* (LTCN), as shown in **Figure 4-2.** The Long-Term Cycling Network (LTCN) is an aspirational blueprint to provide a continuous cycling network throughout Perth and identifies the function of a route – primary, secondary or local. The LTCN shows Anchorage Drive to be a Primary route and Ocean Falls Blvd to be a Local route connecting to the wider road network.

Figure 4-2 Long Term Cycle Network

Source: DoT Long Term Cycle Network

5 Proposed Development

5.1 Proposed Land Uses

The proposed development will comprise of residential apartments as follows:

> 88 Residential Apartments over 6 levels, comprising of:

- 08 - 1 B/R apartments;
- 49 - 2 B/R apartments;
- 20 - 3 B/R apartments;
- 5 - Townhouses; and
- 6 - Penthouses

> 2 levels of carparking with 147 residential tenant car parking bays, 9 visitor bays and 15 motor cycle bays

Figure 5-1 shows the ground level of the Site. The development plans are also included Appendix B.

Figure 5-1 Ground Floor Plan

Source: Hillam Architects

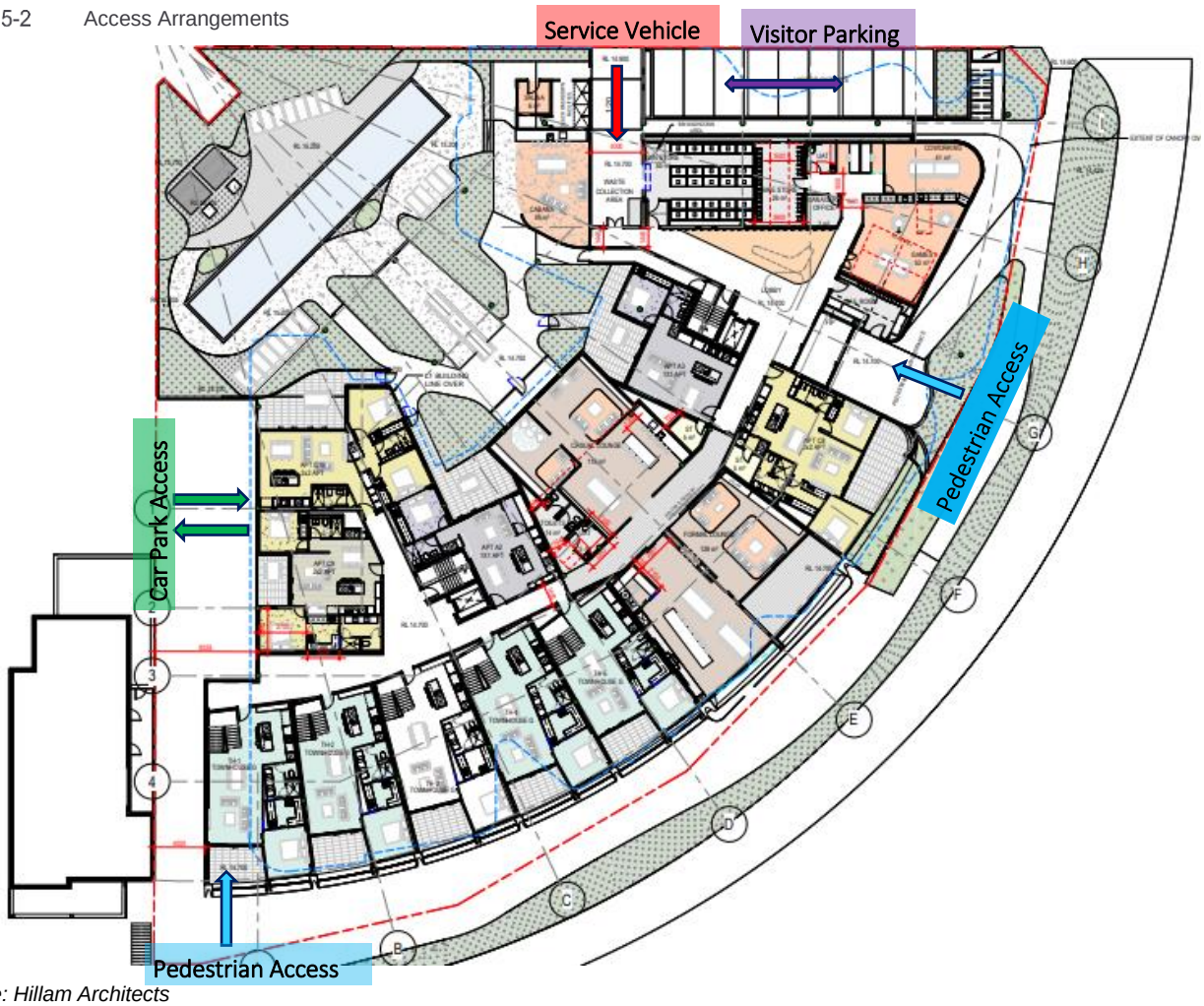
5.2 Access Arrangements

5.2.1 Site Access

Vehicle access for the overall site is via Medway Lane and pedestrian access is provided via Alexandria view as shown in **Figure 5-2**.

Visitor parking bays are proposed along Stockton Lane.

Figure 5-2 Access Arrangements

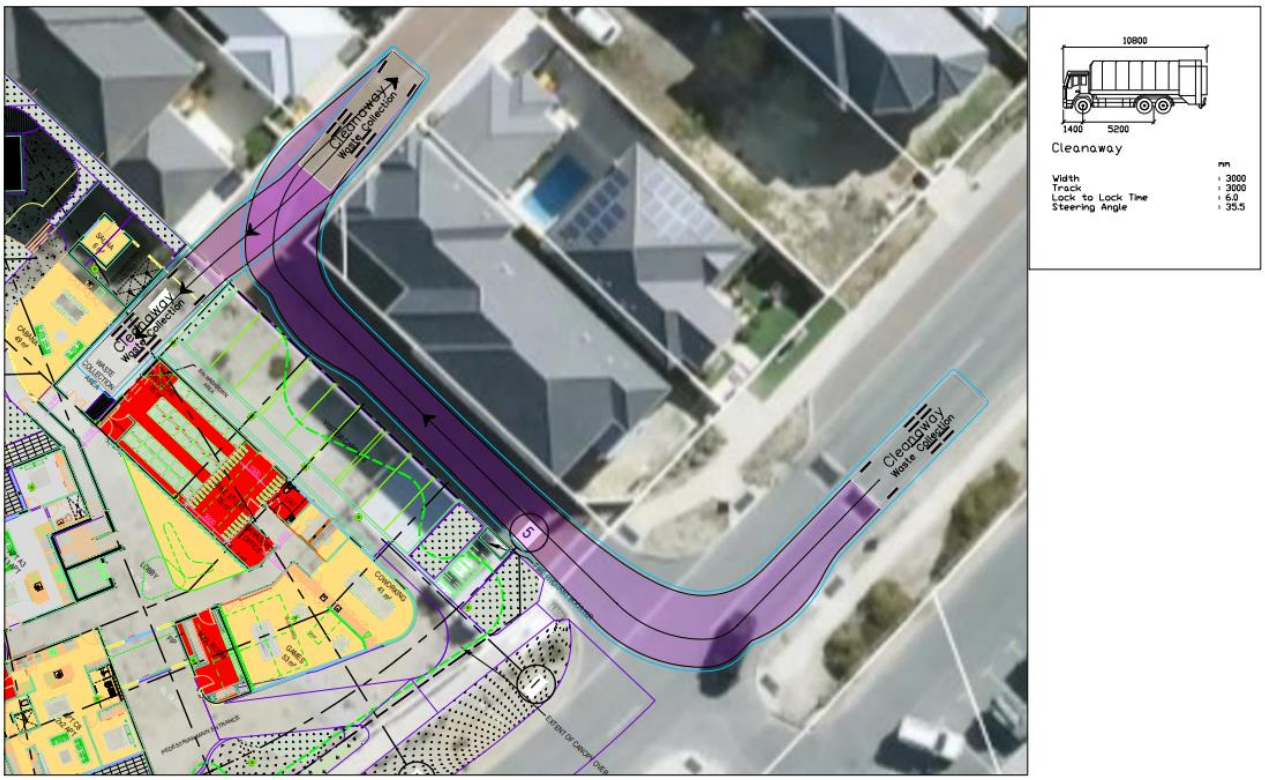


Source: Hillam Architects

5.2.2 Provision for Service /Waste Vehicles

Waste collection will be conducted via Stockton Lane. A swept path assessment has been completed for a standard 10.8m rear lift truck waste truck entering via Stockton Lane and reversing back into the loading area and exiting the Site in forward gear. **Figure 5-3** shows that the waste truck will appear to be able to adequately enter and exit the site.

Figure 5-3 Waste Truck Swept Path



5.2.3 Car Parking and Circulation Swept Paths

5.2.3.1 B85 and B99 Passenger Cars

The swept paths for the B85 and B99 design vehicles are shown in **Figure 5-4** and **Figure 5-5**.

Figure 5-4 Basement Floor Swept Path

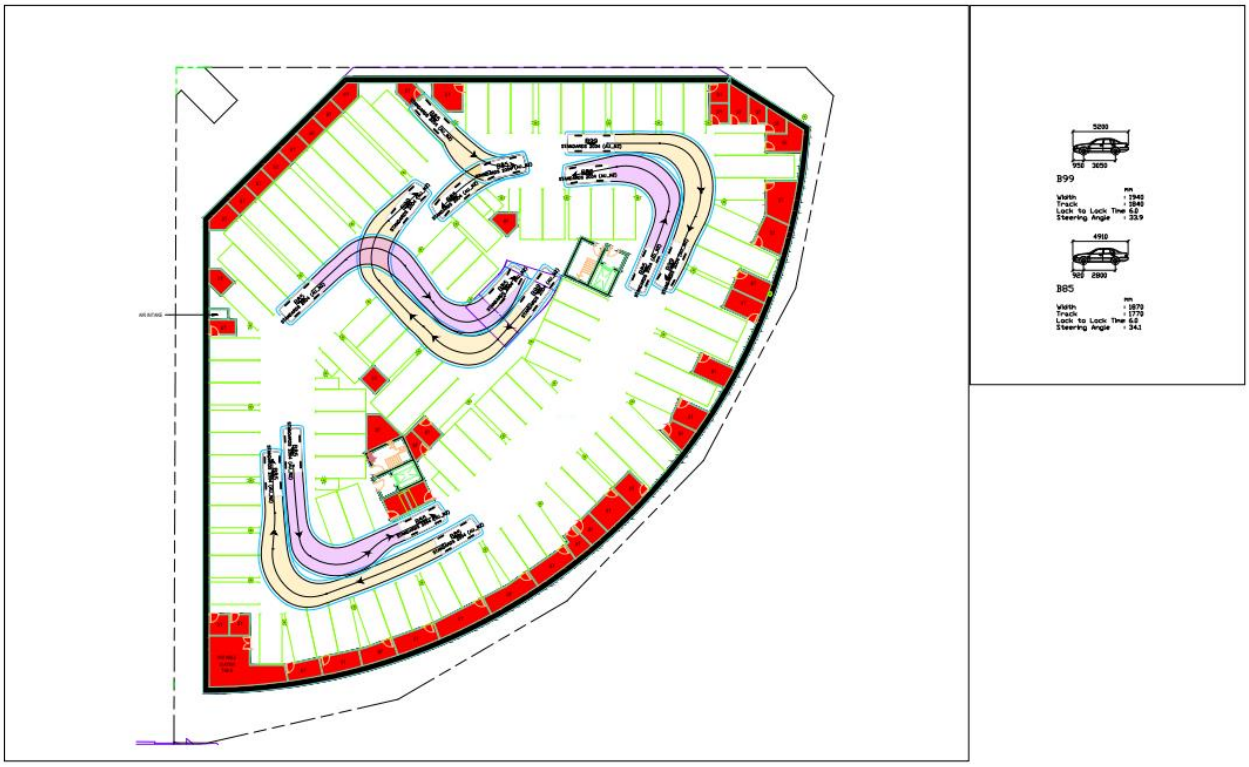
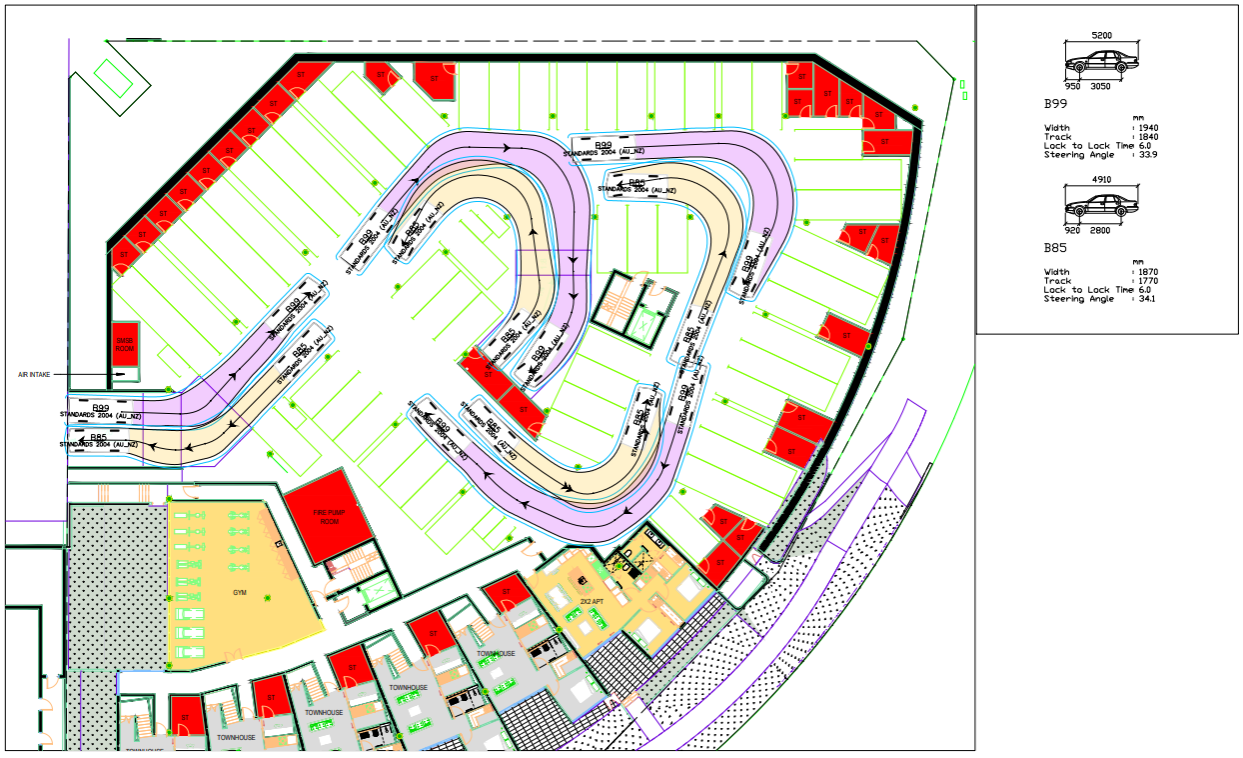


Figure 5-5 Lower Ground Floor Swept Path



The swept paths show that the B85 and B99 vehicles appear to be able to safely and adequately enter and exit and manoeuvre within the proposed parking areas in the car park. Detailed swept paths are provided in **Appendix C.**

5.3 Traffic Generation

Trip generation has been calculated for the proposed development utilising trip generation rates from the *Institute of Transportation Engineers (ITE) "Trip Generation" 10th Ed*. The following tables summarise the directional distribution and the estimated total trips to be generated by the proposed development.

Table 5-1 provides the trip generation rates during the AM and PM peak hour periods. **Table 5-2** outlines the directional distribution and **Table 5-3** summarises the total trips expected to be generated by the proposed development.

Table 5-1 Trip Generation Rates

Land Use	ITE Code/Source	AM Peak	PM Peak
Residential Apartments	222	0.34 trips per dwelling	0.39 trips per dwelling
Townhouse	210	0.74 trips per dwelling	0.99 trips per dwelling

Table 5-2 Directional Distribution

Land Use	AM Peak		PM Peak	
	In	**Out**	**In**	**Out**
Residential Apartments	21%	79%	62%	38%
Townhouse	25%	75%	63%	37%

Table 5-3 Total Trip Generation

Land Use	AM Peak		PM Peak	
	In	**Out**	**In**	**Out**
Residential Apartments	6	22	20	12
Townhouse	1	3	3	2
Total	**7**	**25**	**23**	**14**

The proposed development is expected to generate approximately 32 vehicles during the AM peak hour and 37 vehicles during the PM peak hour.

According to WAPC Transport Impact Assessment Guidelines, developments generating between 10 and 100 trips during the peak hour falls under the 'moderate impact' category and is not considered to have any substantial impact on the surrounding road network.

5.4 Parking Requirements and Provision

5.4.1 Car Parking Requirements

The statutory parking requirements, in accordance with the *State Planning Policy 7.3 Residential Design Codes: Volume 2 – Apartments (R-Codes* have been considered in the context of the proposed development and are summarised below in **Table 5-4.**

Table 5-4 Car Parking Requirements

Land Use	Source	Rate	Bays Required	Bays Provided
Residential				
▪ 1 bedroom dwelling	R-codes	0.75 bay per dwelling	6	Basement -95 Lower Ground - 52
▪ 2+ bedroom dwelling	R-codes	1 bay per dwelling	75	
▪ Townhouses	R-codes	1 bay per dwelling	5	
Residential Visitor	R-codes	1 bay per four dwellings up to 12 dwellings, 1 bay per eight dwellings for the 13th dwelling and above.	13	9
Total			**99 bays**	**156 bays**

The proposed development will provide a total of 156 parking bays, consisting of 147 residential tenant parking bays and 9 visitor bays resulting in a shortfall of 4 visitor parking bays.

However, there is ample public off-street parking bays on Alexandria View adjacent to the proposed site as shown in **Figure 5-6,** which is available for visitors use. It is anticipated that these parking bays would adequately satisfy the shortfall of residential visitor bays**.**

Figure 5-6 Parking in front of the Site

Source: Metromap

6 Summary

This Transport Impact Statement outlines the transport aspects of the proposed development focusing on traffic operations, access and provision of car parking. Included are discussion regarding pedestrian, cycle, and public transport considerations.

This statement has been prepared in accordance with the WAPC Transport Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016).

The following are conclusions about the proposed development:

> The proposal is a residential development with 88 residential apartments comprising of:

- 08 – 1 B/R Apartment;
- 49 – 2 B/R Apartment;
- 20 – 3 B/R Apartment;
- 5 – Townhouse; and
- 6 – Penthouse.

> Walking and cycling facilities within the surrounding area of the Site is considered to be excellent with a many high-quality paths available providing good connectivity with the surrounds

> The development is expected to generate approximately 32 vehicles in the AM peak hour and 37 vehicles in the PM peak hour. According to WAPC Transport Impact Assessment Guidelines, developments generating between 10 and 100 trips during the peak hour falls under the 'moderate impact' category and is not considered to have any substantial impact on the surrounding road network.

> The proposed parking provision generally meets the R-codes requirements although a shortfall of 4 residential visitor parking bays is anticipated. However, there is ample public off-street parking bays on Alexandria View adjacent to the proposed site and this is anticipated to adequately satisfy the shortfall of residential visitor bays**.**

Overall, it is considered unlikely that the development will result in any material impact to traffic operations and safety to the surrounding road network.

APPENDIX

A

WAPC CHECKLIST

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Item	Status	Comments/Proposals
Proposed development		
proposed land use	Section 1/5	
existing land uses	Section 1	
context with surrounds	Section 1	
Vehicular access and parking		
access arrangements	Section 5	
public, private, disabled parking set down / pick up	N/A	
Service vehicles (non-residential)		
access arrangements	Section 5	
on/off-site loading facilities	N/A	
Service vehicles (residential)		
Rubbish collection and emergency vehicle access	Section 5	
Hours of operation (non-residential only)	N/A	
Traffic volumes		
daily or peak traffic volumes	Section 2	
type of vehicles (e.g. cars, trucks)	Section 2	
Traffic management on frontage streets	N/A	
Public transport access		
nearest bus/train routes	Section 3	
nearest bus stops/train stations	Section 3	
pedestrian/cycle links to bus stops/train station	Section 3	
Pedestrian access/facilities		
existing pedestrian facilities within the development (if any)	Section 4	
proposed pedestrian facilities within development	Section 4	
existing pedestrian facilities on surrounding roads	Section 4	
proposals to improve pedestrian access	N/A	
Cycle access/facilities		
existing cycle facilities within the development (if any)	Section 4	
proposed cycle facilities within the development	N/A	
existing cycle facilities on surrounding roads	Section 4	
proposals to improve cycle access	Section 4	
Site specific issues	N/A	
Safety issues		
identify issues	N/A	
remedial measures	N/A	

APPENDIX

B

SITE PLANS

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MINDARIE

Lot 418
50 Alexandria View Mindarie

HILLAM ARCHITECTS

SCALE 1 : 200 (A2)

0 1 2 3 4 5 6

DD.MM.YY	REV	DESCRIPTION	ISSUED BY	CHECKED

PROJECT No. 2104

DWG NAME GROUND LEVEL

DWG No. SK2-03

REV

APPENDIX C

SWEPT PATHS

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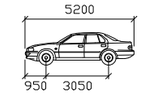

B99

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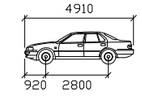
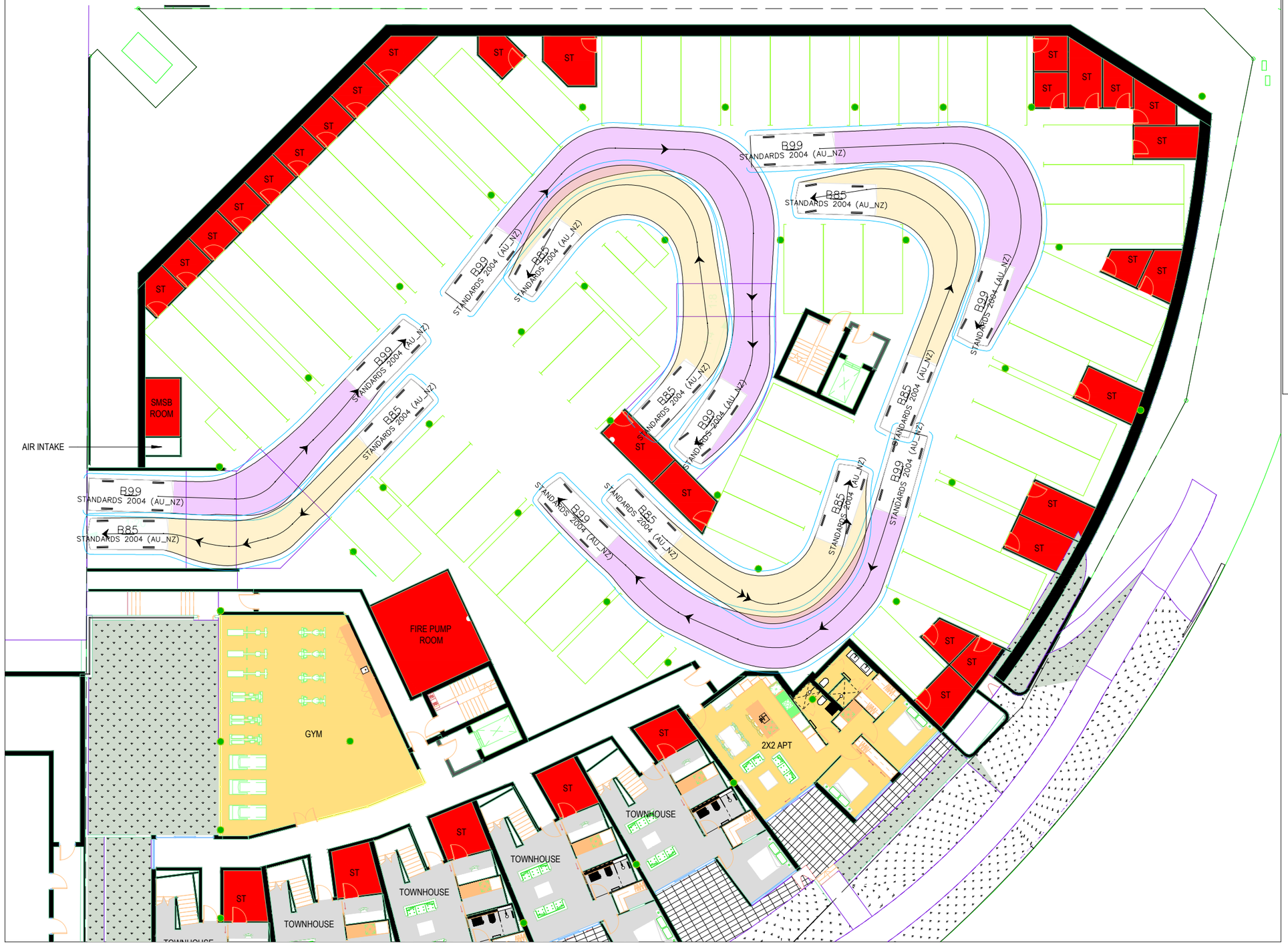
Width	: 1940
Track	: 1840
Lock to Lock Time	6.0
Steering Angle	: 33.9



B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	6.0
Steering Angle	: 34.1



5200

950 3050

B99

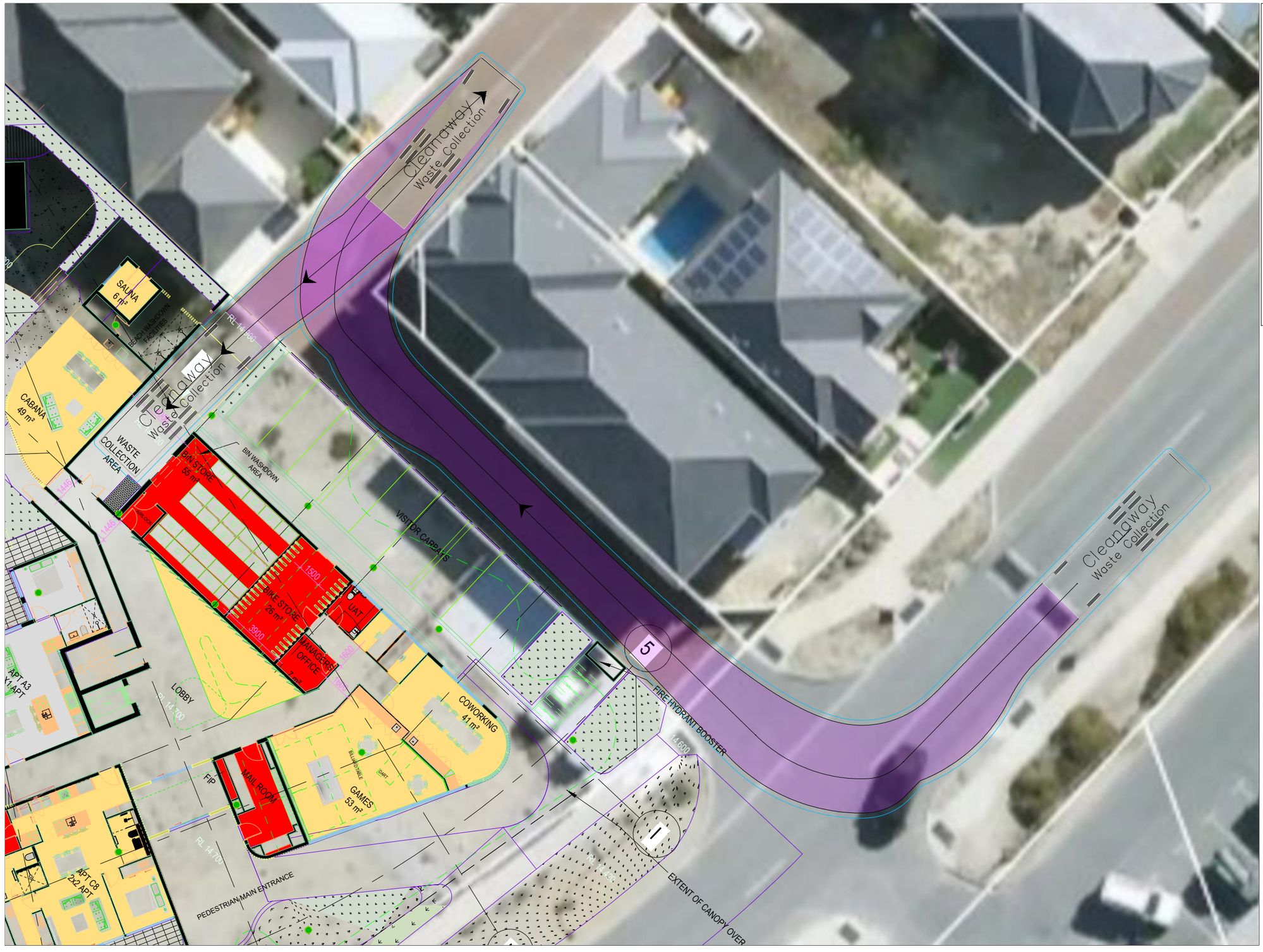
	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	6.0
Steering Angle	: 33.9

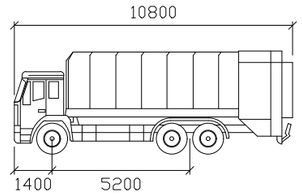
4910

920 2800

B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	6.0
Steering Angle	: 34.1





Cleanaway

	mm
Width	: 3000
Track	: 3000
Lock to Lock Time	: 6.0
Steering Angle	: 35.5

About Cardno

Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

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