



EUROBODALLA REGIONAL HOSPITAL

Transport and Traffic Impact Assessment

Health Infrastructure NSW

22 May 2023

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RESPONSE TO SEARs

This report supports a State Significant Development Application (SSDA) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act), for the proposed development of a new hospital at Braemar Drive, Moruya.

This application is SSD by way of section 2.6 and schedule 1 under the State Environmental Planning Policy (Planning Systems) 2021 on the basis that the development is for a new hospital with a capital investment value of more than \$30 million.

This report has been prepared having regard to the Secretary's Environmental Assessment Requirements issued for the project by DPE. Table E.1 outlines and summarises how the TTIA report address the SEARs.

Table E.1: Response to SEARs

SEARs – Transport and Traffic Requirements	Response and Relevant Report Sections
Provide a transport and accessibility impact assessment, which includes:	
analysis of the existing transport network, including the road hierarchy and any pedestrian, bicycle or public transport infrastructure, current daily and peak hour vehicle movements, and existing performance levels of nearby intersections.	An assessment of the existing transport network situation is provided in Section 2.0 (p. 7). Existing intersection performance and traffic information is provided in Section 2.2 (p. 8)
details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances), parking arrangements and rates (including bicycle and end-of-trip facilities), drop-off/pick-up-zone(s) and bus bays (if applicable), and provisions for servicing and loading/unloading.	The proposed development details are summarised in Section 4.0 (p. 15) with access arrangements covered in Section 5.0 (p. 24). An assessment of the site's layout arrangements is covered in Section 3.0 and Section 5.3. With regard to the approach to parking and other modes it is important to consider the local context and project challenges with being in a regional area: - the increase in workforce produced from the development will have higher demands than the existing hospital sites - the hospital's existing and future workforce cover a wide geographic area - existing models in relation to fleet parking on site (staff drive and park at the hospital and then pick up fleet to visit the community) mean these vehicles need to be stored along with personal vehicles - the site has no existing transport connections, is greenfield and in a regional location where staff heavily rely on private vehicles - Additionally as the site has limited alternate parking options, on-site parking provisions seek to meet the principle of trying to be a good neighbour (i.e. by trying to limit staff parking on neighbouring residential streets)

SEARS – Transport and Traffic Requirements	Response and Relevant Report Sections
	During the construction of any subsequent components of the development it is noted that the site has substantial land area to accommodate for any temporary construction vehicle parking and/or temporary off-set parking (in the event that works require temporary closure of any existing parking areas).
analysis of the impacts of the proposed development during construction and operation (including justification for the methodology used), including predicted modal split, a forecast of additional daily and peak hour multimodal network flows as a result of the development (using industry standard modelling), identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict) and any cumulative impact from surrounding approved developments.	A traffic assessment is provided in Section 4.0 of this report (p. 15). The ERH will include primary access to the south is proposed to be through a new intersection with the Princes Highway through a roundabout intersection to ensure safe access and road operations. The analysis has found that the proposed single lane roundabout intersection forms operate within acceptable performance limits for a roundabout in terms of Degree of Saturation (DOS), delays and LOS in all peak hour scenarios. The roundabout operates with an overall LOS A in both peak hour periods. A single lane roundabout will see the right turn from the site access operate at LOS B based on minor additional delays for vehicles turning right out of the site. Delay and back of queues on the Princes Highway approaches during business-as-usual conditions have been found to be similar to those found during 2036 scenarios. It is noted a single lane roundabout's 95% back of queues would increase during the evening peak hour (47m compared with 28m in BAU) however would still operate within acceptable performance limits for DOS and LOS. Overall the proposed access roundabout is able to cater for development traffic demands, and demand forecast for potential future development stages within a 10 year design horizon.
measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms of delivery (including proposed arrangements with local councils or government agencies) of any infrastructure improvements in accordance with the relevant standards.	As noted above the sites primary access to the south is proposed to be through a new intersection with the Princes Highway through a roundabout intersection to ensure safe access and road operations. These works are covered under a separate planning pathway. No other works or mitigations are required.
any infrastructure improvements in accordance with the relevant standards.	The proposed infrastructure improvements for the development include: Single lane roundabout on Princes Highway (as noted above have been covered under a separate planning pathway)

SEARS – Transport and Traffic Requirements	Response and Relevant Report Sections
	Upgrade of the footpath on Caswell Street to a shared path width/standard
measures to promote sustainable travel choices for employees and visitors, such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high quality end-of-trip facilities, and implementing a Green Travel Plan.	A preliminary Green Travel Plan is provided in Appendix B. Consistent with other regional green field hospital developments, a comprehensive GTP is expected to be a condition of consent as part of any approval and will need to be developed and refined in consultation with the Local Health District (LHD), and Transport for NSW (TfNSW). As with these other projects following DA approval, Health Infrastructure NSW and the LHD will be required to work with key stakeholders on the GTP's development and ongoing refinement, in addition to working together with Council and TfNSW on future funding opportunities for active transport infrastructure and/or public transport service improvements as part of GTP implementation as the ERH becomes more established, its workforce evolves over time and the surrounding area develops.
Provide a Construction Traffic Management Plan detailing predicted construction vehicle movements, routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated	A preliminary CTMP is provided in Appendix C. The CTMP will be refined in consultation with the project's Contractor, Council and TfNSW, and further detailed assessment would be expected as part of a detailed CTMP which would form part of conditions of approval.

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1. INTRODUCTION

1.1 Background

The new Eurobodalla Regional Hospital development is located in Moruya on the Princes Highway to the south-east of the Moruya Town Centre, on vacant greenfield land. To the west of the site is Moruya TAFE, and to the north is a small residential subdivision called Mynora Estate. The majority of works will occur on this greenfield site, with some road works proposed in the adjoining Princes Highway and northern access road reserves. The site is legally described as Lot 2, DP 1281576. A map of the site is shown in Figure 1.1.



Figure 1.1: Subject Site

1.2 Stakeholder Engagement

In preparation of this Transport Impact Assessment (TIA), key transport stakeholders were consulted including representatives from, Eurobodalla Shire Council (Council) and Transport for New South Wales (TfNSW) as required by the Planning Secretary's Environmental Assessment Requirements (SEARs).

Key outcomes of the stakeholder engagement are noted in Table 1.1.

Table 1.1: Stakeholder Consultations

Stakeholder	Meeting Date/s	Purpose and Outcomes
Eurobodalla Regional Council	24 February 2022	- Overview on project provided - Shared path connections to the site were discussed including opportunities for future connections. - Noted potential need to confirm Council requirements for Albert Steet road reserve.
Transport for New South Wales (TfNSW)	21 September 2021	Discuss approach to access intersection arrangements and design approach inputs
	10 March 2022	- Overview on project provided - Noted planning for shared pathway to connect to the north of the project site - Confirmed that changes to public transport routes will not be formalised until after SSDA approval - Further considerations for Green Travel Plan were noted but the Plan needs to consider the regional nature of the site and local context for certain initiatives to be considered feasible - Emergency access noted, it was highlighted that the main building and access from Princes Hwy is outside of the PMF, however, in flood events the Princes Hwy may be inaccessible from the North - Further meeting to be scheduled following the issue of the draft EIS documentation
Local Health District	21 February 2022	- Overview of project and Green Travel Plan provided - Operational requirements discussed and further information provided post the meeting to inform this TTIA
Priors Bus Service	4 March 2022	- Existing service routes discussed - Discussed that service planning updates and consultation will need to occur with TfNSW bus planning and contracts team for route changes ahead of opening - It was noted a temporary transitional service strategy during move process may also be required. - Incorporate bus layover area as start/end of line stop with services to allow for dwell time and driver breaks
Rural Fire Service NSW	16 February 2022	- Overview on project provided. - RFS NSW confirmed access to the Hospital was acceptable and noted RFS have off-road vehicles which will be able to access external parts of the building.

1.3 Scope and Report Inclusions

The scope of this Transport and Traffic Impact Assessment included the following:

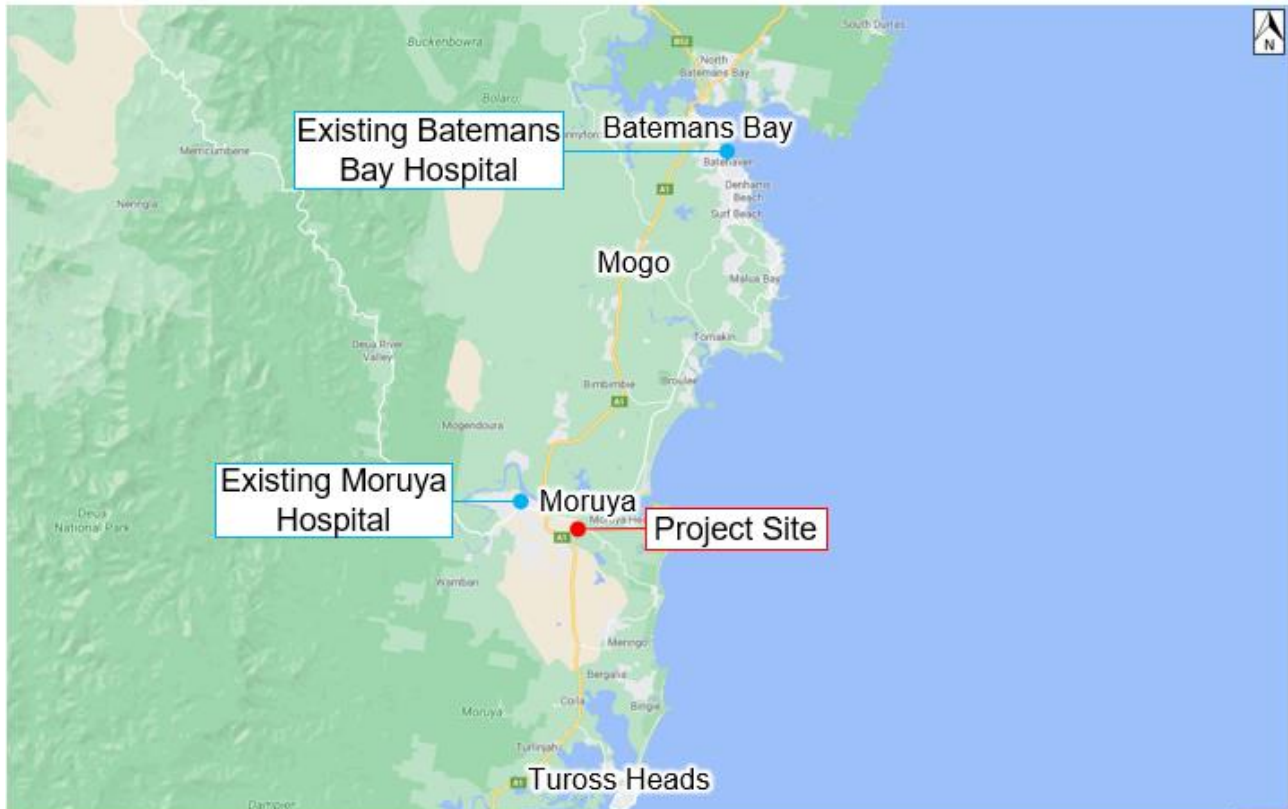
- A review of the existing transport conditions surrounding the subject site
- A review of the existing transport planning documents
- A review of historical crash data
- Assessment of the proposed access arrangements for vehicles, servicing, and refuse collection
- Estimation of the development's trip generation and distribution on the local road network
- Assessment of the development's impacts on the surrounding road network
- Assessment of the development's car and bicycle parking provision
- Assessment of the on-site parking layout, access, servicing, and refuse collection requirements.

2. CONTEXT AND EXISTING CONDITIONS

2.1 Project Site Description

2.1.1 Site Location

The project site location off Princes Highway, Moruya NSW and is described as Lot 2, DP 1281576. The project site locality is shown in Figure 2.1.



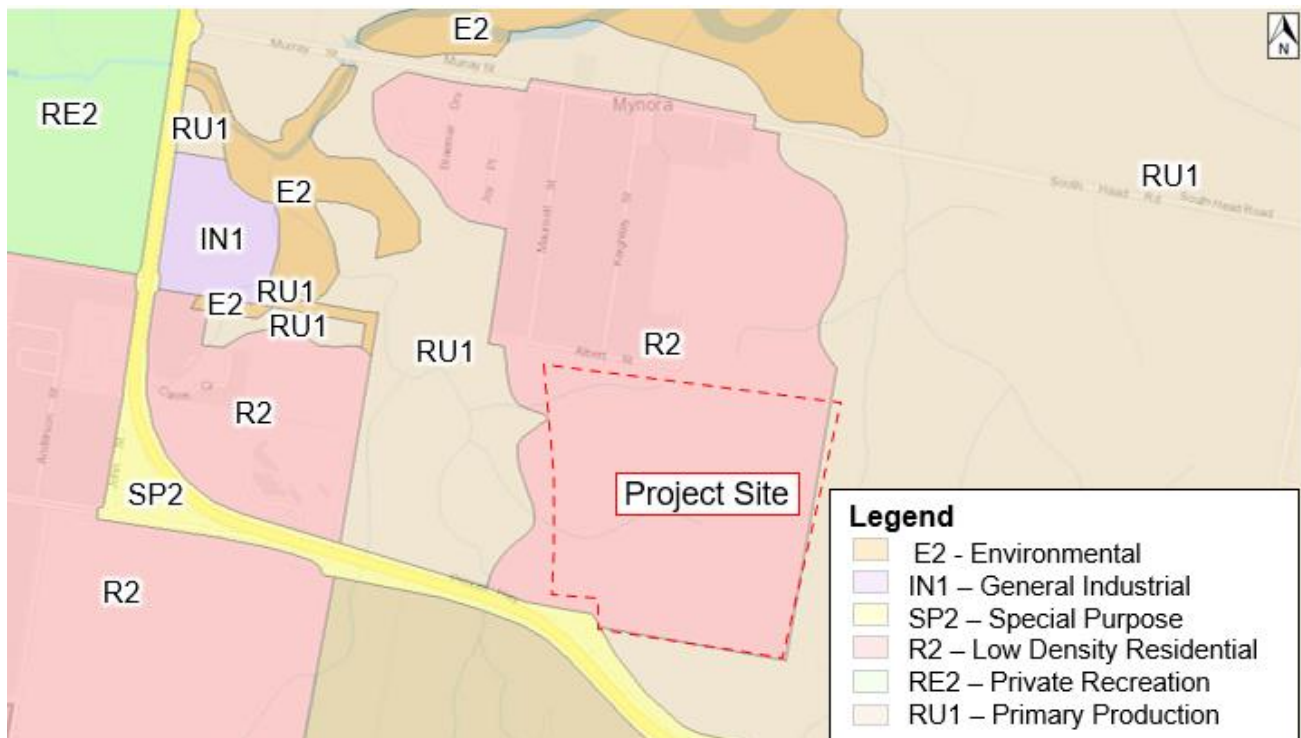
SOURCE: Google Maps

Figure 2.1: Project Site Locality

The project site is located south of the Moruya town centre and is approximately 26-minute drive from the existing Batemans Bay Hospital and 5-minute drive from the existing Moruya Hospital.

2.1.1 Current Land Use and Zoning

The project site is predominately zoned R2 low density residential land, with a very small portion to the west zoned RU1 primary production. Figure 2.2 shows the land zoning of the project site and surrounding area.



SOURCE: NSW ePlanning Spatial Viewer

Figure 2.2: Land Zoning

2.2 Existing Traffic and Road Conditions

2.2.1 Existing Surrounding Road Network

The surrounding road network is shown in Figure 2.3.

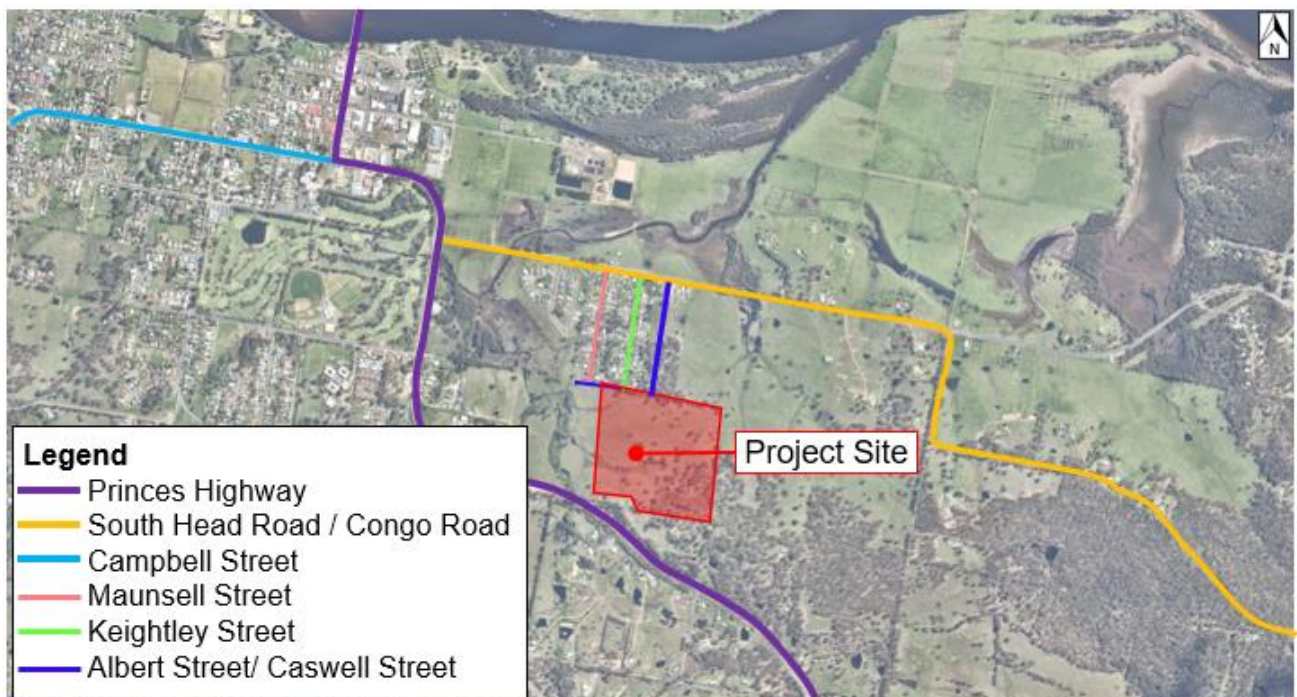


Figure 2.3: Surrounding Road Network

2.2.1.1 Princes Highway

The Princes Highway is a Transport for New South Wales (TfNSW) controlled highway connecting Sydney and Melbourne. In the vicinity of the project site, the Princes Highway is a two-lane undivided road with a posted speed limit of 100km/hr. To the west of the project site, the posted speed is reduced to 80km/hr and further to 50km/hr before entering Moruya. Figure 2.4 shows the typical cross section of the Princes Highway in proximity to the project site.



SOURCE: Google Maps

Figure 2.4: Typical Princes Highway Cross Section

2.2.1.2 Albert Street

Albert Street is a local road that runs along the northern boundary of the project site. It is a two-lane undivided road with a speed limit of 50km/h and runs parallel to the northern site frontage. The typical cross section of Albert Street is shown in Figure 2.5.



SOURCE: Google Maps

Figure 2.5: Typical Albert Street Cross Section

2.2.1.3 Maunsell Street / Keightley Street / Caswell Street

Maunsell, Keightley, and Caswell Street are local roads that give access to Albert Street. Both streets are two lane, undivided with a 50km/h posted speed and are lined with residential properties. A secondary access proposed via Albert Street / Caswell Street is to be an emergency vehicle access only in general or in the event there is any temporary restrictions to Princes Highway (i.e. in the event on an accident, floods etc).

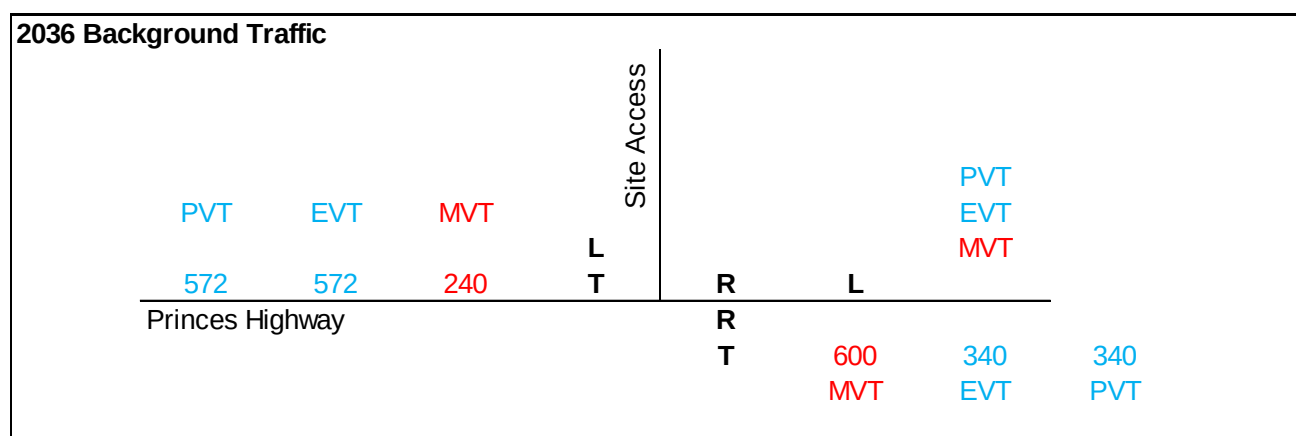
2.2.2 Background Traffic Volumes

As part of Moruya Bypass project, Bitzios Consulting was engaged by Transport for NSW (TfNSW) to develop an AIMSUN microsimulation traffic model to test and evaluate options for the bypass. The AIMSUN model covers the entire Moruya urban area, and the future year base model includes the proposed ERH. Initially the ERH zone in the model had an access located off South Head Road, however this was later updated to include access from the Princes Highway. Future year models have been developed for 2026 and 2036 which aligns with the anticipated ERH complete and 10-year post competition design horizon.

The 2036 do-minimum model is suitable to determine the AM and PM peak hour background volumes for 10-year design horizon.

TfNSW have given approval for Bitzios Consulting to use the Moruya Aimsun model to inform the ERH traffic assessment.

Figure 2.6 shows the background traffic volumes.



SOURCE: Moruya Aimsun Model

Figure 2.6: 2036 Background Traffic Volumes

Traffic count data in 2019 from nearby on the Princes Highway (just east of Bergalla Street) was obtained and utilised to inform background traffic volumes under a pre-Moruya Bypass scenario. A 1.5% per annual growth rate was applied to this count to estimate traffic in 2026

2.2.3 Historical Crash Analysis

The location of historical crashes was reviewed from TfNSW's online road safety data surrounding ERH for the five-year period (2015-2019). There were four (4) recorded crashes in the vicinity of the ERH site and its access as noted in Table 2.1.

No accident types were considered to particular relevance for the site, or its proposed access will have any influence of risks of these accident types.

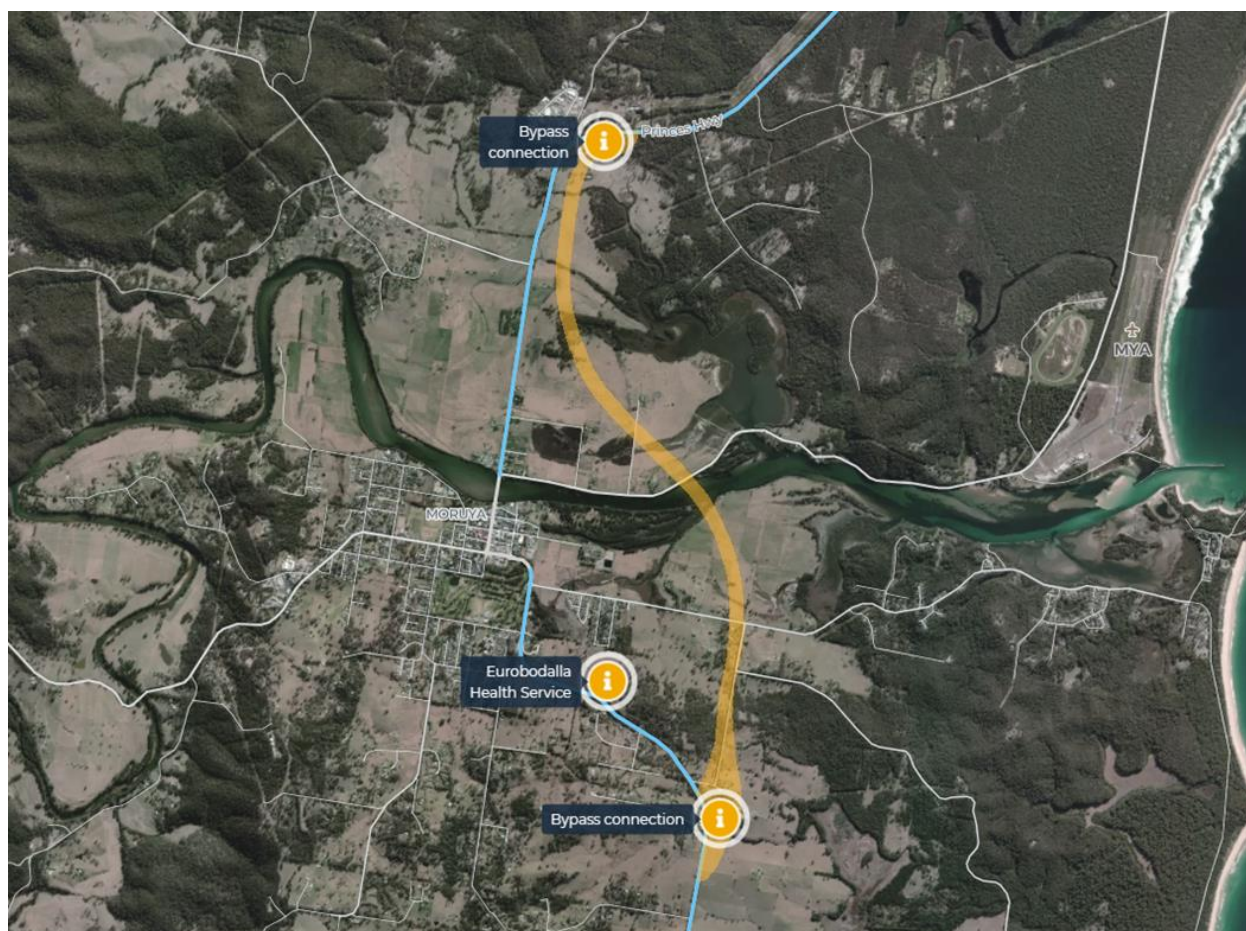
Table 2.1: Crash Data

RUM Code	Description	Location	Crash Severity
150	Struck Animal	Princes Highway 150m east of Moruya Tafe	Serious Injury
32	Right Rear	Driveway of Blue Gum Caravan Park	Moderate Injury
71	Off- road hit object	Princes Highway 450m south of Bergalia Street	Minor Injury
37	Left turn side swipe	2799 Princes Highway	Non-casualty (towaway)

2.3 Future Planning and Transport Network Considerations

2.3.1 Moruya Bypass

TfNSW has committed \$1.5 billion to upgrade the Princes Highway between Jervis Bay Road at Falls Creek and the Victorian border. The Moruya bypass is a priority project as part of the Princes Highway upgrade program which is an 8km project that will divert Princes Highway to the east of Moruya before re-joining the existing highway as shown in Figure 2.7.



SOURCE: NSW Princes Highway Upgrade

Figure 2.7: Proposed Moruya Bypass Upgrade

The bypass is expected to drastically decrease the frontage road traffic volumes but increase the number of trips approaching from the east, when compared to the existing travel patterns past the site. The exact alignment and timing of the bypass project are yet to be confirmed and are subject to further investigation.

2.3.2 State and Local Documents

A review of State and Local planning documents was undertaken to gain an understanding of the current policies and programs within the Eurobodalla region. This also allows this assessment to align with other related plans. A range of documents were reviewed, and the subsequent sections detail the documents that have outcomes relevant to the assessment.

Key guidelines referenced for use during the assessment include:

- Guide to Traffic Generating Developments (Roads and Maritime Services)
- EIS Guidelines – Road and Related Facilities (DoPI)
- Cycling Aspects of Austroads Guides
- NSW Planning Guidelines for Walking and Cycling
- Austroads Guide to Road Design (Part 3, 4 and 4a)
- Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development
- Standards Australia AS2890.1 (Off-street car parking Facilities), AS2890.2 (Off-street commercial vehicle facilities, AS2890.3 (Bicycle Parking Facilities) and AS2890.6 (Off-street parking for people with disabilities)

2.3.3 Proposed Developments in Vicinity

The key developments proposed in the area include the area include a 94-lot subdivision located on Turnbolls Lane, however this is not anticipated to impact on the proposed development or significantly change the surrounding road network.

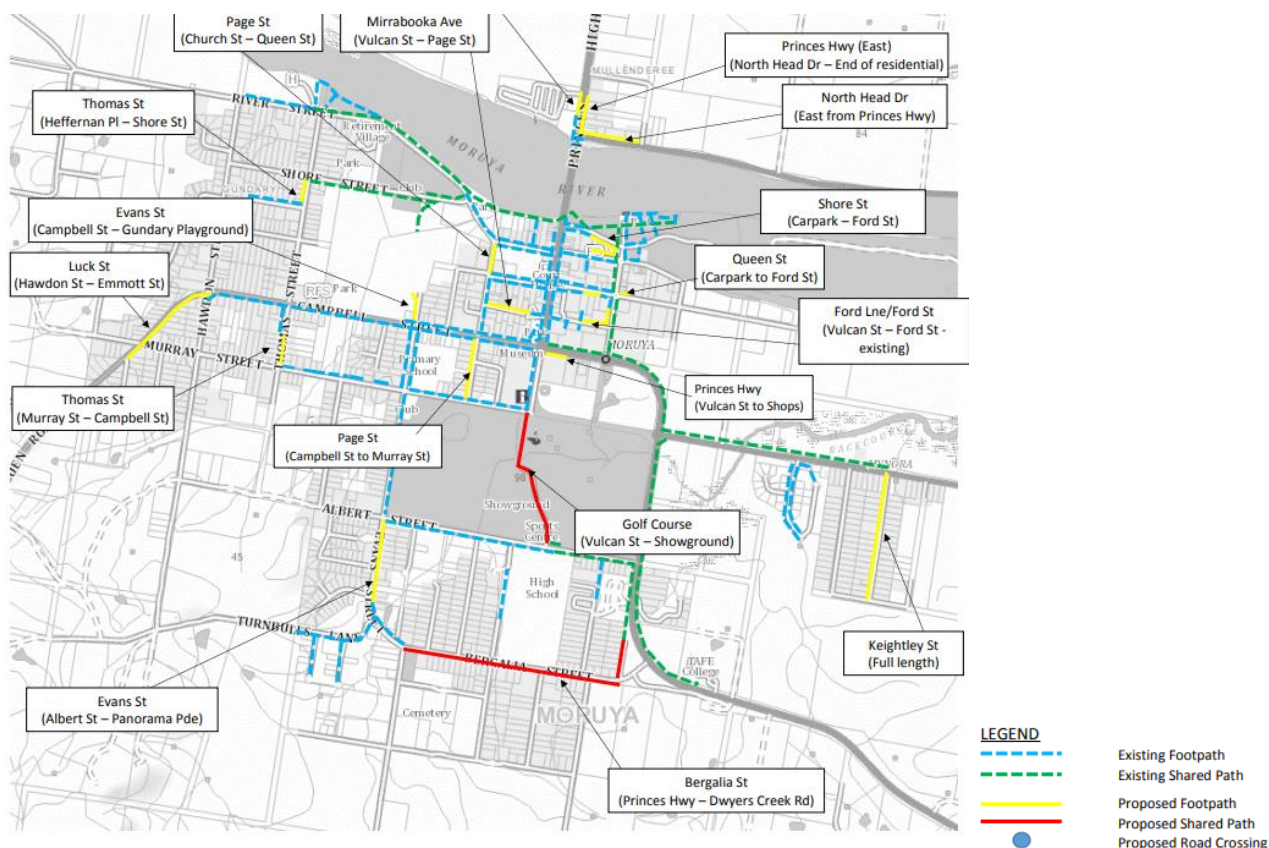
2.4 Public and Active Transport

2.4.1 Existing Public Transport Services and Facilities

The site currently exists as a greenfield site and as such, does not have any existing public transport facilities. Abutting the site to the west is the TAFE NSW campus, which is serviced by Route 860, travelling along the coast from Moruya to Batemans Bay.

2.4.2 Existing Active Transport Facilities

There are no active transport facilities fronting the project site. To the north, there is a footpath network that services some of the local streets with a pedestrian spine on South Head Road that connects to the Moruya town centre. To the east, the TAFE NSW campus is serviced by 3.0m shared path which connects to the Moruya town centre active transport facilities. Under the Eurobodalla Pathways Strategy the following pathway network connections had been identified.



SOURCE: Eurobodalla Pathways Strategy

Figure 2.8: Moruya Existing and Planned Pathways

3. PROPOSED DEVELOPMENT

3.1 Overview

The proposed development is shown in Figure 3.1. This report accompanies a State Significant Development Application that seeks approval for the Eurobodalla Regional Hospital, including:

- Site establishment and preparation, including bulk earthworks, tree removal, environmental clearing and cut and fill
- Construction and operation of a three-storey hospital with four wings, which includes the following departments:
 - Emergency Department (including flexible mental health beds)
 - Medical Imaging
 - Operating Theatre
 - Intensive Care Unit
 - Pathology
 - Pharmacy
 - Medical and surgical in-patient units
 - Rehabilitation and Palliative Care in-patient units
 - Women's Health and Paediatric
 - Ambulatory Care for community outpatient services
 - Administration including Education and Training
 - Front of House including Retail
 - Back of House including Mortuary
- Internal road network and access from Princes Highway
- Secondary road access (controlled access for Emergency vehicles only) from Caswell Street to north of the Project site
- At grade car parking
- Loading dock
- Helipad
- Ancillary landscaping including the Walawanni, Meeting Place and Healing Place.

For a detailed project description refer to the Environmental Impact Statement prepared by Ethos Urban.

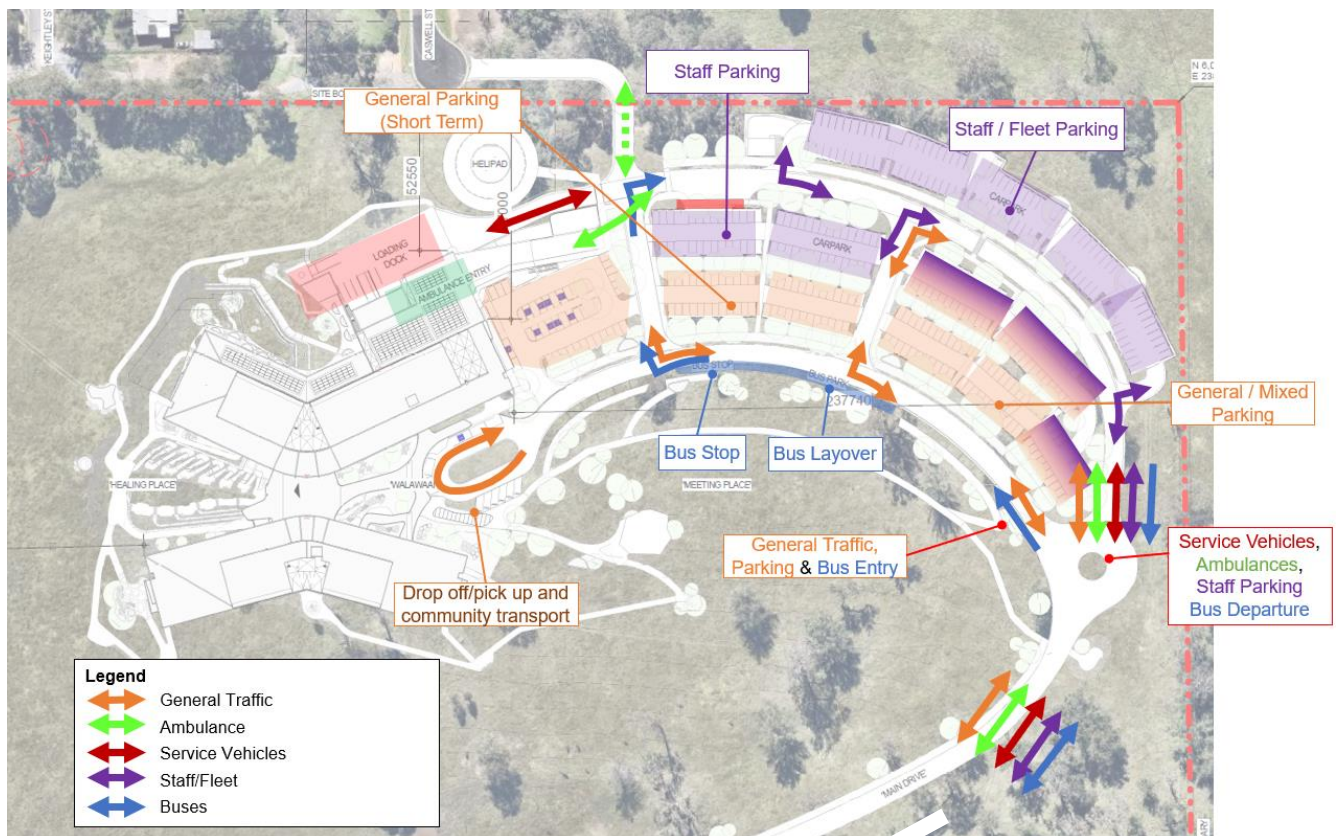


Figure 3.2: Internal Circulation Arrangements

4. TRAFFIC ASSESSMENT

4.1 Overview and Methodology

As part of Moruya Bypass project, Bitzios Consulting was engaged by Transport for NSW (TfNSW) to develop an AIMSUN microsimulation traffic model to test and evaluate options for the bypass. The AIMSUN model covers the entire Moruya urban area, and the future year base model includes the proposed ERH. Initially the ERH zone in the model had an access located off South Head Road, however this was later updated to include access from the Princes Highway. Future year models have been developed for 2026 and 2036 which generally aligns with the anticipated ERH complete and 10-year post competition design horizon.

The 2036 do-minimum model is suitable to determine the AM and PM peak hour background volumes for 10-year design horizon.

TfNSW have given approval for Bitzios Consulting to use the Moruya Aimsun model to inform the ERH traffic assessment.

Traffic generation for the ERH has been based on TfNSW (previously Roads and Maritime Services) *Guide to Traffic Generating Developments* (2002), the *Technical Direction* (2013) and first principles assessment based on likely staff and student numbers benchmarked against recent hospital developments in regional NSW.

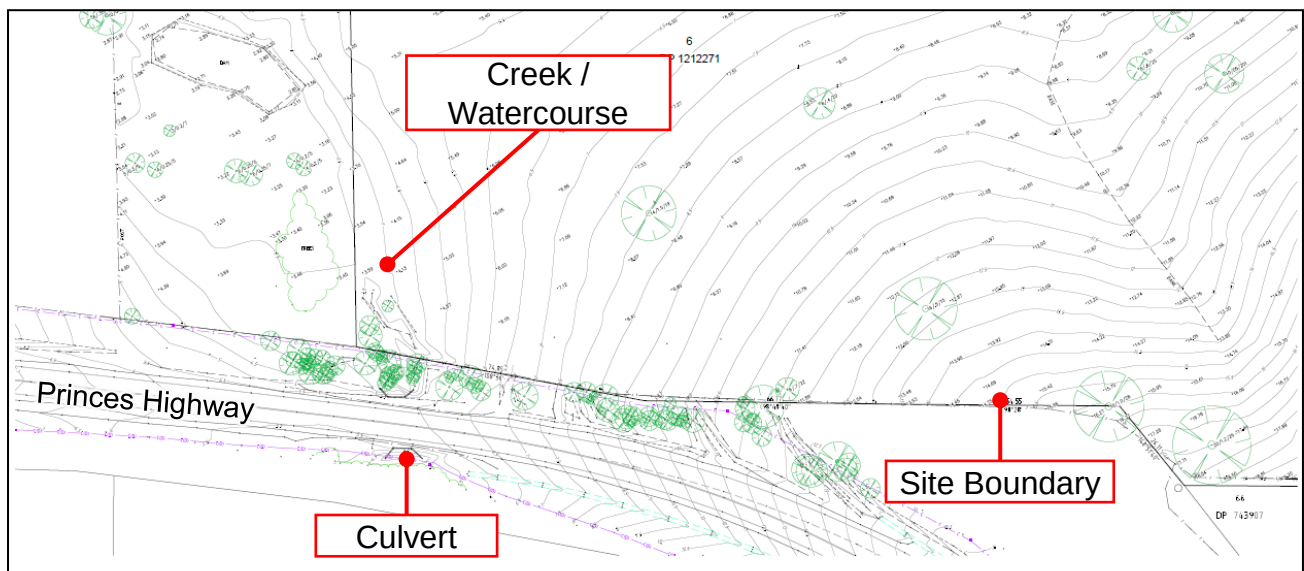
4.2 Access Assessment

4.2.1 Primary Access – Princes Highway

The subject site frontages have significant constraints in the context of providing site access. This includes:

- The road geometry:
 - To the north the roads are local residential streets and are not suitable to provide the primary point of access to a hospital. Primary access will be required from the Princes Highway. Secondary access has been proposed via Albert Street adjacent to Keightley Street intersection. This is considered appropriate, given the minimal use of the access and the existing turn pockets into Keightley Street from South Head Road
 - To the south, the Princes Highway has both horizontal and vertical curves which impact sightlines and potential access forms.
- The speed environment:
 - The Princes Highway has a 100km/h posted speed at the site frontage. This is an important factor in the access design and form
 - Changing the speed requires a change to the road environment TfNSW has provided in principle support for reducing the speed to 80km/h.
- The available site frontage:
 - The existing creek which is located on the western side of the subject site. This runs under Princes Highway via a culvert
 - Limited site frontage west of the culvert and an access here would require an additional bridge structure within the site.
- Grades within the site
- Flooding with the western side of the site being affected by the probable maximum flood (PMF) level.

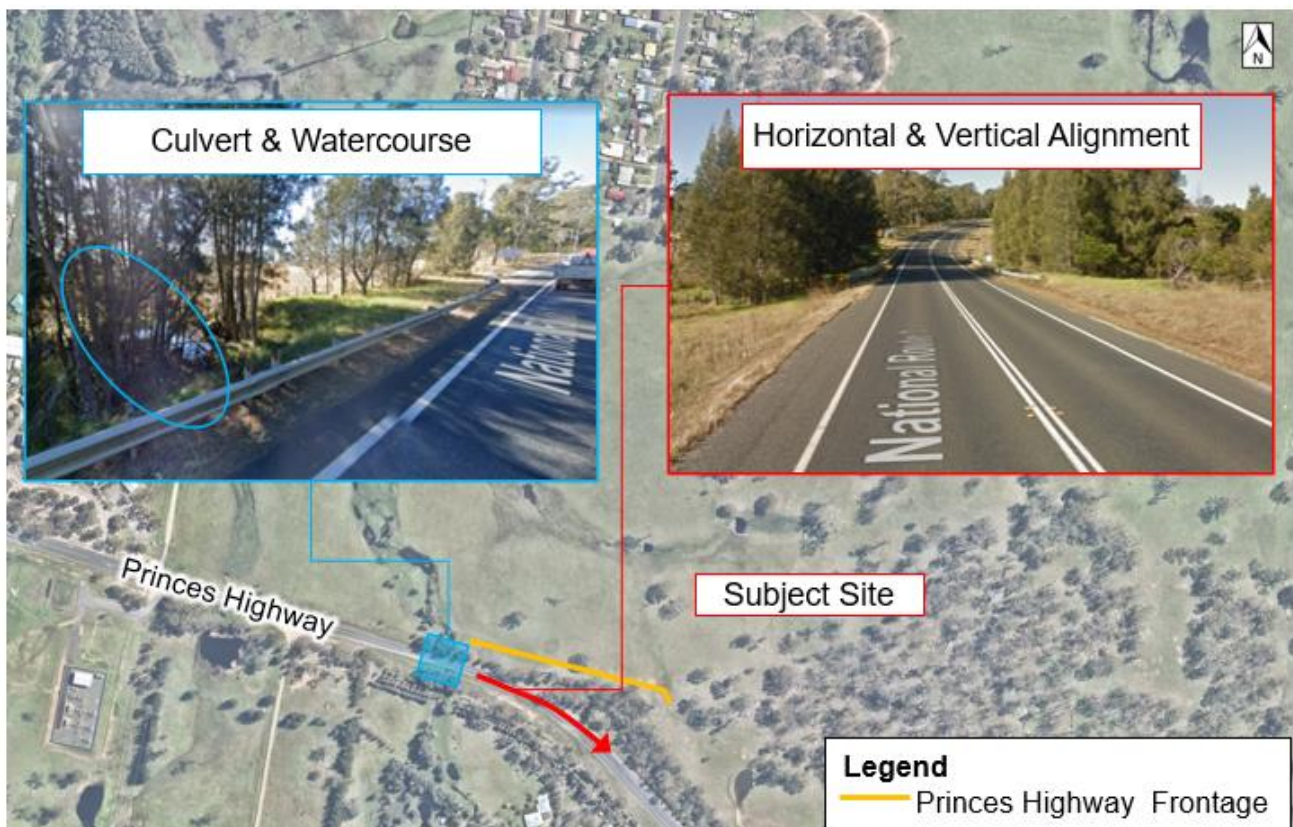
The excerpt of the site survey is shown in Figure 4.1. This figure shows the boundary, culvert, and creek.



Source: LTS survey (edited by Bitzios)

Figure 4.1: Site Survey

Figure 4.2 shows the southern site frontage on Princes Highway and shows a key road alignment and sight line constraints.



SOURCE: NearMap

Figure 4.2: Princes Highway Access Review

Primary access to the south is proposed to be through a new intersection with the Princes Highway through a roundabout as shown in Figure 4.3. The roundabout is being approved and delivered under a separate planning approval pathway.

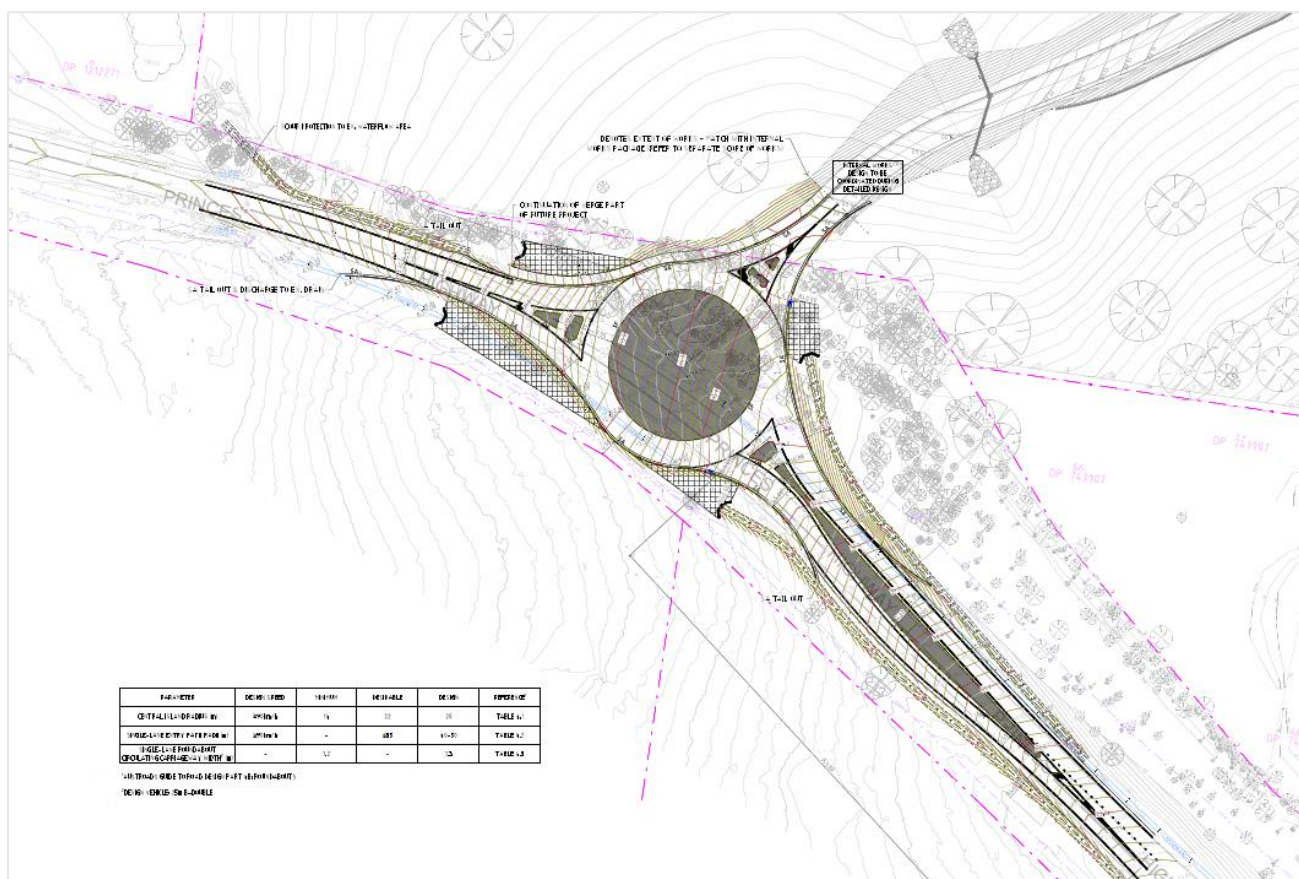


Figure 4.3: Proposed Roundabout Access Configuration

Access arrangement and forms have been chosen based on the existing road alignment, operations and anticipated daily volumes for the hospital. A sight distance assessment was undertaken on the Princes Highway frontage to determine the location where sight distance is maximised. The available safe intersection sight distance of the access is approximately 253m is available to the south-east and 306m is available to the north west.

SISD for an 80km/h approach is 226m, which is achieved at the nominated location. The grade of Princes Highway will need to be confirmed with surveys however, when allowing for a grade correction factor for a grade of 8%, the SISD required could be 251m.

The roundabout access and its construction will be undertaken as part of a separate planning approval pathway to the SSD.

4.2.2 Secondary Controlled Access

A secondary controlled access to the north of the project site via Albert / Caswell Street (see Figure 4.4) is proposed in the form of a driveway crossover. The purpose of this secondary access is to allow emergency vehicles to gain access in the event Princes Highway is blocked or inaccessible.



Figure 4.4: Secondary Controlled Access Location and Arrangement

4.3 Traffic Assessment

The Roads and Maritime Services (RMS) *Guide to Traffic Generating Developments* was used to calculate the project's peak hour traffic generation. The RMS guide specifies three peak period traffic generation rates for hospitals as follows:

- Vehicle trip generation in the morning commuter peak hour (MVT) – This provides an indication of development traffic generation during the typical morning peak hour which typically occurs around 8:00am-9:00am
- Vehicle trip generation in the evening commuter peak hour (EVT) – This provides an indication of development traffic generation during the typical evening peak hour which typically occurs around 5:00pm-6:00pm
- Peak vehicle trips (PVT) – This provides an indication of peak development traffic generation, While the time was found to vary, the most common time for the PVT to occur was 3:00pm-4:00pm. The PVT incorporates a staff shift change.

The MVT, EVT and PVT traffic volumes for the ERH are presented in Table 4.1 with the daily traffic generation traffic volumes for the project are presented in Table 4.2.

While the generation rate under the *Guide to Traffic Generating Developments* is based on private hospitals the resultant site traffic generation based on this methodology is conservative compared high when considering the likely demand generated by the regional public hospital given:

- The hospital sites surveyed as part of RMS study *Land Use Traffic Generation - Data and Analysis 28 - Private Hospitals* were conducted in 1994 and were characterised by facilities higher staffing and visitations associated with general, surgical and rehabilitation services. Further this was at a time when visitation hours at hospital were less flexible and meant less opportunity for peak spreading of traffic to occur
- The generation rate is based on total beds and does not necessarily factor that public facilities includes beds for emergency and similar departments which tend to not have patient visitors and/or the same levels of associated traffic/parking demands as general beds

- Average number of staff per weekday day shift (ASDS) which has been calculated based off a typical ratio of 2.61 staff per bed is considered conservative when compared with projected staff shift numbers to be onsite at any one time (refer to staff demands noted in Section 5.1.5).

Table 4.1: ERH Traffic Generation (Peak Hour)

Year	Yield	Peak	Peak Hour Trip Rate	Peak Hour Trips
2026	~127 beds 332 staff**	MVT	$-10.21+0.47B+0.06ASDS$	70
		EVT	$-2.84+0.25B+0.40ASDS$	162
		PVT	$-14.69+0.69B+0.31ASDS$	189
2036	~165 beds 431 staff**	MVT	$-10.21+0.47B+0.06ASDS$	94
		EVT	$-2.84+0.25B+0.40ASDS$	162
		PVT	$-14.69+0.69B+0.31ASDS$	233

*B = hospital beds

**ASDS = average number of staff per weekday day shift based on typical ratio of 2.61 staff per bed which is considered conservative when compared with projected staff shift numbers

Table 4.2: ERH Traffic Generation (Daily)

Year	Yield	Daily Trip Rate	Daily Trips
2026	~127 beds	11.81 trips/bed/day	1500
2036	~165 beds	11.81 trips/bed/day	1949

The daily traffic generation aligns with typical profiles where peak hour traffic is approximately 10% of daily volumes.

Peak period traffic generation was calculated by combining the peak period trips for the ERH with traffic generated by potential future supporting health services which could occur over a 10-year horizon.

Other specific uses that are not part of the current application, nor are confirmed uses, but for sensitivity testing traffic generation for the potential supporting health services were calculated as follows:

- Ambulance station: a first principles assessment of traffic generation was used on the based on the number of staff spaces and the conservative assumption of a complete staff change during the peak hour. The Rural Ambulance Station Facilities Design Guidelines specifies six staff car parking spaces for a medium size station
- Educational facility: a first principles assessment of traffic generation on the basis of one trip per student in each peak hour
- Private provider: a first principles assessment of traffic generation on the on the basis of the number of staff and patient trips per operating room per hour.

The ancillary peak traffic generation is detailed in Table 4.3 with the total peak period trip generation detailed in Table 4.4.

Table 4.3: ERH Supporting Services Traffic Generation

Component	Quantity	AM Rate	PM Rate	AM Peak Hour Trips	PM Peak Hour Trips
Ambulance NSW (Staff)	6	2	2	12	12
Education	16	1	1	16	16
Private Provider	2	8	8	16	16
				44	44

Table 4.4: Total Peak Period Traffic Generation Potential

Peak Hour	ERH Trips	Ancillary Trips	Total Trips
MVT (AM)	70	44	114
EVT (PM)	162	44	206
PVT (PM)	189	44	233

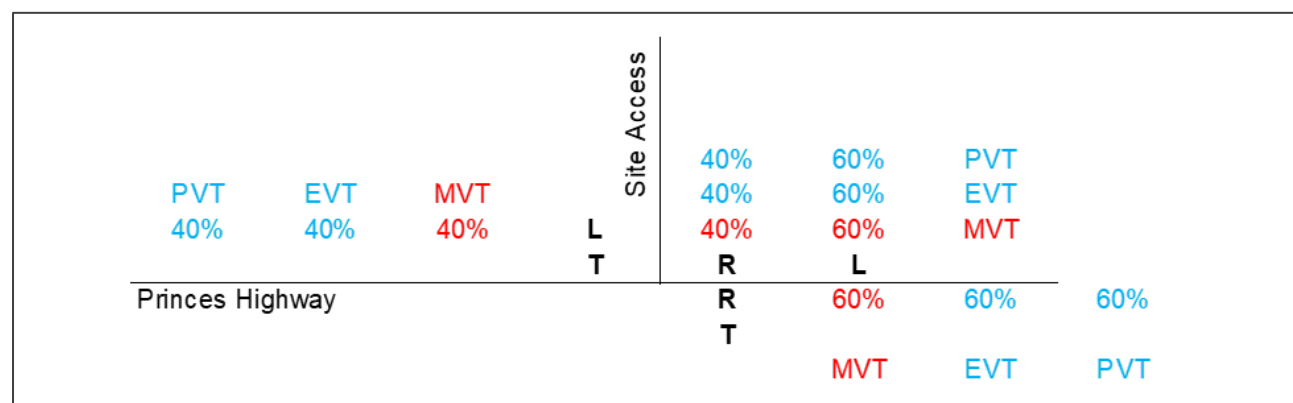
Both the development's EVT and PVT generation were assessed against the same period (i.e. commuter peak). This allowed for a conservative assessment and allowed for a sensitivity comparison by assessing different traffic splits.

4.3.1 Development Traffic Distribution and Assignment

An "IN:OUT" directionality split of "70%:30%" was adopted for the EVT peak and vice versa in the EVT peak. As a sensitivity test an "IN:OUT" split of "50%:50%" was used for the PVT which considers a staff changeover.

Traffic distribution assumptions on the surrounding network was based on distributions from the Moruya Bypass Model (with the ERH on the Project Site) and using a first principle's assessment which considered population centres and densities across Eurobodalla.

Figure 4.5 shows the development traffic distributions. Figure 4.6 shows the design traffic volumes.



SOURCE: Moruya Aimsun Model

Figure 4.5: Development Distributions

			Site Access				
PVT	EVT	MVT		57	86	PVT	
57	32	41	L	74	111	EVT	
572	572	240	T	18	27	MVT	
Princes Highway				R	L		
				R	62	48	86
				T	600	340	340
					MVT	EVT	PVT

Figure 4.6: Design Traffic

As the timing for the opening on the bypass is yet to be confirmed, 2026 analysis has also been prepared to consider potential day of 'opening' conditions for the ERH project.

Background traffic assumptions for the Princes Highway were developed based on a 2019 traffic count of the nearby Princes Highway and Bergalia Street intersection. A 1.5% per annual growth rate was applied to these estimate traffic in 2026. A sensitivity test with 15% background traffic uplift has also been considered to account for peak holiday periods.

Traffic distributions for the ERH site under a pre-bypass scenario have been flipped (i.e. 60% traffic movements would travel to the site eastbound on Princes Highway with the northern catchment having travelled through Moruya centre before the Bypass is established).

The results of this 2026 analysis are further discussed in Section 4.3.3.

4.3.2 Princes Highway/Site Access Performance

Primary access to the south is proposed to be through a new intersection with the Princes Highway through a roundabout intersection. The specific design and location of this will be subject to civil design and consultation with TfNSW. The following intersection forms were tested:

- Priority controlled intersection with turn pockets
- Roundabout (single lane and dual lane)
- Signalised intersection.

A priority-controlled intersection was ruled out based on the potential to result in an increased risk of crashes under the 100km/h speed limit combined with lengthy delays for vehicles exiting the site during peak periods.

Following discussion with TfNSW the following single lane roundabout form was adopted for SIDRA modelling. The geometric layout adopted in SIDRA is presented in Figure 4.7. The intersection performance summary is presented in Table 4.5 to Table 4.7.

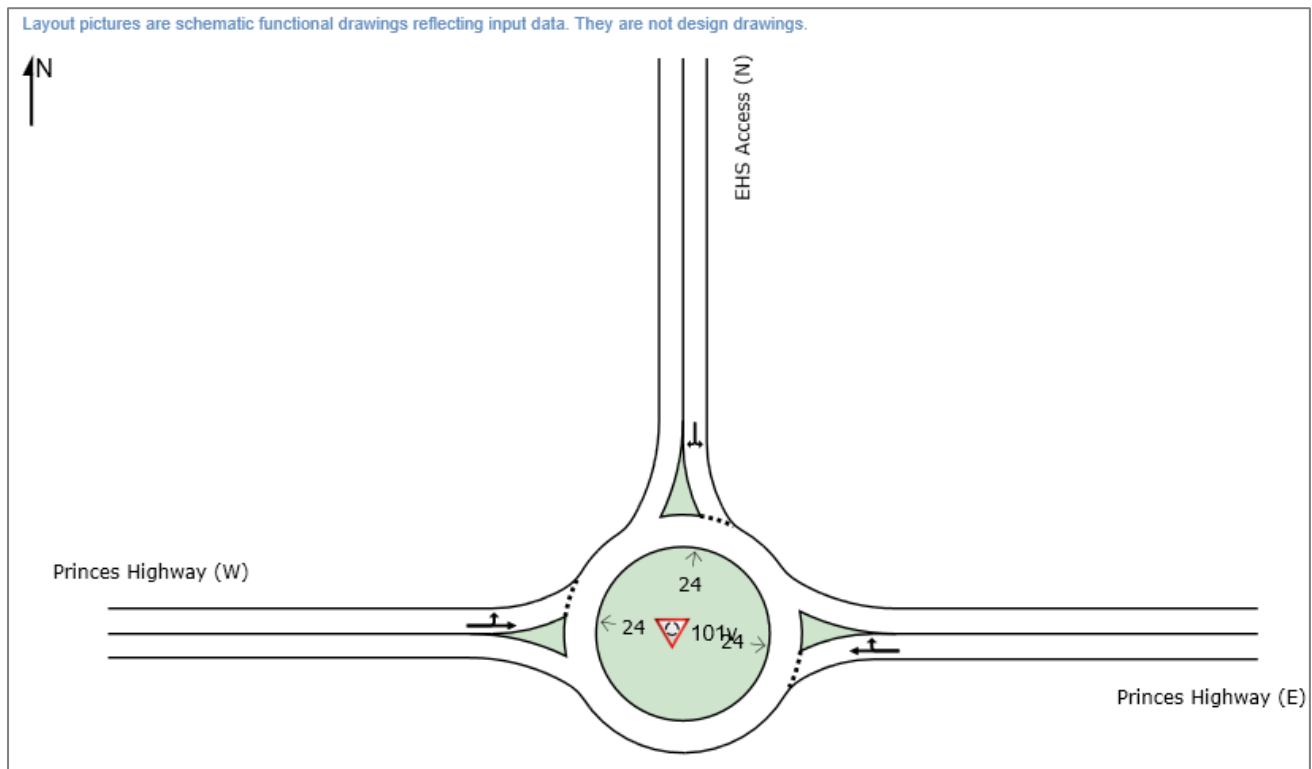


Figure 4.7: Single Lane Roundabout – SIDRA Layout

The single lane roundabout form is shown to operate within acceptable performance limits for a roundabout in terms of Degree of Saturation (DOS), delays and LOS in all peak hour scenarios. The roundabout operates with an overall LOS A in the AM peak hour and an overall LOS A in the PM peak hour.

From a capacity perspective, a single lane roundabout is suitable to provide access to the site. The single lane roundabout is shown to have a minor impact on the operations of the Princes Highway (average delay of less than 6 seconds and a 95th percentile queue of 29m).

Table 4.5: 2036AM MVT SIDRA Results – Single Lane Roundabout

Mov ID	Turn	DEMAND FLOWS [Total Veh]	Deg. Satn (v/c)	Aver. Delay (sec)	Level of Service	95% BACK OF QUEUE Dist [m]
East: Princes Highway (E)						
5	T1	632	0.425	4.1	LOS A	27.6
6	R2	65	0.425	9.1	LOS A	27.6
Approach		697	0.425	4.5	LOS A	27.6
North: EHS Access (N)						
7	L2	28	0.041	3.8	LOS A	1.6
9	R2	19	0.041	8.7	LOS A	1.6
Approach		47	0.041	5.8	LOS A	1.6
West: Princes Highway (W)						
10	L2	43	0.206	4	LOS A	9.2
11	T1	253	0.206	4.3	LOS A	9.2
Approach		296	0.206	4.3	LOS A	9.2
All Vehicles		1040	0.425	4.5	LOS A	27.6

Table 4.6: 2036PM EVT SIDRA Results – Single Lane Roundabout

Mov ID	Turn	DEMAND FLOWS [Total Veh]	Deg. Satn (v/c)	Aver. Delay (sec)	Level of Service	95% BACK OF QUEUE Dist [m]
East: Princes Highway (E)						
5	T1	358	0.29	4.4	LOS A	16.4
6	R2	51	0.29	9.4	LOS A	16.4
Approach		408	0.29	5	LOS A	16.4
North: EHS Access (N)						
7	L2	117	0.228	6.7	LOS A	10.6
9	R2	78	0.228	11.5	LOS B	10.6
Approach		195	0.228	8.6	LOS A	10.6
West: Princes Highway (W)						
10	L2	34	0.419	4	LOS A	25.5
11	T1	602	0.419	4.3	LOS A	25.5
Approach		636	0.419	4.3	LOS A	25.5
All Vehicles		1239	0.419	5.2	LOS A	25.5

Table 4.7: 2036PM PVT SIDRA Results – Single Lane Roundabout

Mov ID	Turn	DEMAND FLOWS [Total Veh]	Deg. Satn (v/c)	Aver. Delay (sec)	Level of Service	95% BACK OF QUEUE
						Dist [m]
East: Princes Highway (E)						
5	T1	358	0.307	4.3	LOS A	17.9
6	R2	91	0.307	9.3	LOS A	17.9
Approach		448	0.307	5.3	LOS A	17.9
North: EHS Access (N)						
7	L2	91	0.18	6.5	LOS A	8.4
9	R2	60	0.18	11.4	LOS B	8.4
Approach		151	0.18	8.5	LOS A	8.4
West: Princes Highway (W)						
10	L2	60	0.465	4.3	LOS A	28.9
11	T1	602	0.465	4.6	LOS A	28.9
Approach		662	0.465	4.6	LOS A	28.9
All Vehicles		1261	0.465	5.3	LOS A	28.9

4.3.3 2026 ERH Time of Opening Assessment

As noted earlier, an assessment of 2026 traffic has been prepared to determine intersection performance prior to the Moruya Bypass being in place. Further, sensitivity testing for holiday periods has been performed by applying a 15% uplift to traffic on business-as-usual (BAU) conditions.

The analysis has found that both of the roundabout intersection forms operate within acceptable performance limits for a roundabout in terms of Degree of Saturation (DOS), delays and LOS in all peak hour scenarios. The roundabout operates with an overall LOS A in both peak hour periods.

A single lane roundabout will see the right turn from the site access operate at LOS B based on minor additional delays for vehicles turning right out of the site. Delay and back of queues on the Princes Highway approaches during business-as-usual conditions have been found to be similar to those found during 2036 scenarios (for a 10-year design horizon with ~165 beds).

It is noted a single lane roundabout's 95% back of queues would increase during the evening peak hour (47m compared with 28m in BAU) however would still operate within acceptable performance limits for DOS and LOS.

Table 4.8: 2026 SIDRA Results Summary

Intersection Form	Average Delay (Sec)		Longest 95% Percentile Back of Queue
	MVT	EVT	
Single Lane Roundabout (BAU)	4.5	5.1	26.9m (western approach in evening)
Single Lane Roundabout (Holiday Period)	5.2	5.6	47.7m on (western approach in evening)

5. PARKING, SERVICING & ALTERNATE TRANSPORT

5.1 Parking Assessment

5.1.1 Overview

An important consideration when planning for the car parking provision is to achieve a balance between parking demand and providing an oversupply. It is widely acknowledged that provision of parking relates directly to car parking occupancy and traffic generation. Providing additional parking beyond the requirement will unnecessarily increase parking demand and private vehicle use on the surrounding road network. Managing parking demands also is an important measure in promoting active transport modes including walking and cycling. It is important to note as a regional location and the nature of its geographically spread workforce will have challenges to encourage greener travel modes.

In determining the parking requirements and needs for the ERH, the following was considered:

- Council's minimum parking requirements for a hospital under their Development Control Plan (DCP)
- Peak parking accumulation based on the RMS *Guide to Traffic Generating Developments*
- The equivalent car parking rates provided for the recently approved Tweed Valley Hospital. The Tweed Valley Hospital is in a similar regional location and relies heavily on private vehicle transport
- Parking and traffic surveys of existing Bateman's Bay and Moruya Hospital sites
- Assessment of forecast staff numbers based on FTE, shifts, and change-over time (i.e. afternoon shift change).

5.1.2 Council DCP Requirements

Table 5.1 details car parking requirements for the ERH based on Council's DCP. For the purposes of the parking assessment bed numbers have been prepared based on estimate of 144 beds which could be realised in five (5) year horizon. It is noted at day of opening less beds would be in operation which was used

Table 5.1: Council Car Parking Requirements

Land Use	Yield	Parking Rate	Parking Requirement
ERH Component			
Hospital (Visitor)	~144 beds	1 space per 3 beds	48
Hospital (General Staff)	376 staff*	1 space per 3 employees	126
Hospital Visitor Out patient	~144 beds	60% of total beds	87
ERH Total			261

* Average number of staff per weekday day shift based on typical ratio of 2.61 staff per bed which is conservative when compared with projected staff shift numbers noted in section 5.1.5

Council's car parking requires provision for 261 spaces. The minimum parking rate specified in Council's DCP however does not necessarily consider site specific demands for a hospital.

5.1.3 Industry Guidance

The RMS *Guide to Traffic Generating Developments* includes parking rates to calculate peak parking accumulation (PPA). The rate is based on historical surveys undertaken at hospital developments and provides an indication of peak parking demands. The PPA rate is shown below:

- $PPA = -19.56 + 0.85B + 0.27ASDS$ (average staff on shift during the day).

It is noted that the minimum parking rate specified in Council's DCP, and RMS Guidance does not necessarily consider site specific demands for a hospital and as such a 'first principles' assessment has been prepared based on the existing hospital sites and available information of the ERH site operations.

5.1.4 Survey of Existing Sites and other benchmarking

As part of the ERH project recent parking and traffic surveys were conducted in April 2021 for the existing Batemans Bay and Moruya Hospital sites. Table 5.2 shows the average and peak parking demands based on the surveys.

Table 5.2: Findings of Existing Health Campus Parking Surveys

Health Precinct	Precinct Parking Capacity*	Off-street parking		On-street parking		Peak Parking Demand
		Average Parking Demand	Peak Parking Demand	Average Parking Demand	Peak Parking Demand	
Batemans Bay	169	58	68	51	58	126
Moruya	299	87	113	100	134	247
TOTAL						373

* Precinct parking capacity include both site parking and on-street parking in proximity to each hospital

It is understood these existing health precincts have in the order of a combined 111 beds, but current staff numbers are not confirmed. Based on the findings of this parking demand surveys, this would equate to:

- Average parking demand rate of 2.67 car parking spaces per bed
- Peak parking demand rate of 3.36 car parking spaces per bed

It is noted the Batemans Bay Hospital does have some other surrounding land uses which may contribute to the on-street parking demands found during the parking surveys. The percentage contribution this would have to parking demand and therefore a parking demand rate would however be considered negligible.

5.1.5 Staff Parking Demands

The hospital is estimated to have a total of 518 full-time equivalent (FTE) staff. This however does not translate to the population of staff expected to be on-site at any one time based on shifts across the day and departments that operate 7 days a week.

A further detailed assessment of potential parking demand has been assessed based on forecast staff numbers, shifts and afternoon shift change. Based on updated information obtained from the Local Health District there will be an estimated:

- 259 staff on-site during mornings (time period)
- 320 staff at afternoon shift change (time period)
- 242 staff in the afternoon (time period)

- 62 staff requiring evening/overnight parking
- 56 fleet vehicles and 2 patient transport vehicles requiring on-site storage overnight.

It is noted these levels of staff demands may not be present at the day on opening but could reasonably occur in the initial years of operations.

5.1.6 Visitor and Patients Parking Demands

Based on information obtained from the Local Health District the following visitation estimates have been prepared:

- On average there are 30 contractors, supplier and other district staff who may attend the hospital site per day based on 10,950 contractor/supplier visitors per year.
 - It is noted these contractor/suppliers/visitors won't be on-site at the same time. Generally there is limited visitation by contractors in evenings (i.e. 1-2 during this period) and conservatively have assumed contractors would be split evenly across the day (28 remaining contractors divided by three periods of the day)
- Typically patient visitors are in the order of 1 to 2.4 visitors per bed per day based on approximately 130,417 visitors per year (357 visitors per day)
 - Visiting hours at typically 9am-1pm and 3pm to 8:30pm
 - Assuming each visitor stays for on average 1.5-2 hours across the 9 hours of visiting hours on conservatively there could be 60 to 80 visitors at any one time
 - It is also important to note visitor hours are outside of afternoon shift change time.

Limited information is available at this stage on patient travel to inform parking demands.

5.1.7 Recommended Parking Provision

The proposed development provides 384 formalised car parking spaces and overflow areas for ~94 spaces representing a parking capacity of 478 spaces on-site at-grade.

Table 5.3 presents the estimated parking demands against parking supply based on:

- Parking demand per bed rates experienced by the existing Moruya and Batemans hospitals
 - For the purposes of the parking, ~144 beds has been used for the demand assessment for sensitivity testing purposes and to ensure the provided parking infrastructure is fit-for-purpose to service potential growth during the first five (5) years of operations. It is noted at day of opening there will be less beds so parking demands will be slightly lower for an initial period.
- First principles parking demand assessment based on updated available information to estimate staff per shift, and visitors to patients. Some other key assumptions include:
 - A 95% drive mode share has been applied to staff numbers accounting for potential travel to the site by other modes, multiple occupant vehicles and implementation of a green travel plan
 - Provision of contractor bays have now been incorporated into the loading dock area and will accommodate for most of these contractor demands. As such this parking demand has been removed from the scenarios contained in Table 5.3.

Table 5.3 Parking Demand Scenarios Comparison

Scenario	Rate / Assumptions	Estimated Parking Demand	Parking Supply (Available Spaces)
Benchmarking of Existing Hospital Demand Rates			
Average demand	▪ 2.67 car parking spaces per bed	384 spaces	478 spaces total (384 formalised bays, 94 space overflow capacity)
Peak parking demand	▪ 3.36 car parking spaces per bed.	484 spaces	

Scenario	Rate / Assumptions	Estimated Parking Demand	Parking Supply (Available Spaces)
First Principles Assessment Scenarios			
Morning Parking Demand	259 staff @ 95% drive mode: 246 space demand	384 spaces	478 total spaces (+94 spaces)
	Max. 58 fleet/patient transport vehicles		
	~80 patient visitors at any one time		
At-Shift Afternoon Change Parking Demand	320 staff @ 95% drive mode: 304 space demand	362 spaces	478 spaces (+116 spaces)
	Max. 58 fleet/patient transport vehicles		
	No patient visitors during this period		
Afternoon Parking Demand	242 staff @ 95% drive mode: 230 space demand	368 spaces	478 total spaces (+110 spaces)
	Max. 58 fleet/patient transport vehicles		
	~80 patient visitors at any one time		
Evening Parking Demand	62 staff	180 spaces	384 formalised spaces (+204 spaces)
	58 fleet/patient transport vehicles		
	~60 patient visitors at any one time		

An important consideration when planning for the car parking provision is to achieve a balance between parking demand and providing an oversupply. It is noted however limited alternate parking options exists and as a 'good neighbour' the project is seeking to limit its potential overflow parking impacts on residential streets to the north of the site.

The formalised parking supply seeks to meet average parking demands and on-site overflow facilities are provided to reduce impacts to surrounding residential streets.

Overflow areas may be able to be sealed in the future should demand warrant these parking areas to be formalised.

5.2 Alternate Transport Assessment

5.2.1 Public Transport

Buses are to be catered for on-site with the provision of a new bus stop, layover bay, on the subject site and bus turnaround facility (see Figure 5.1).

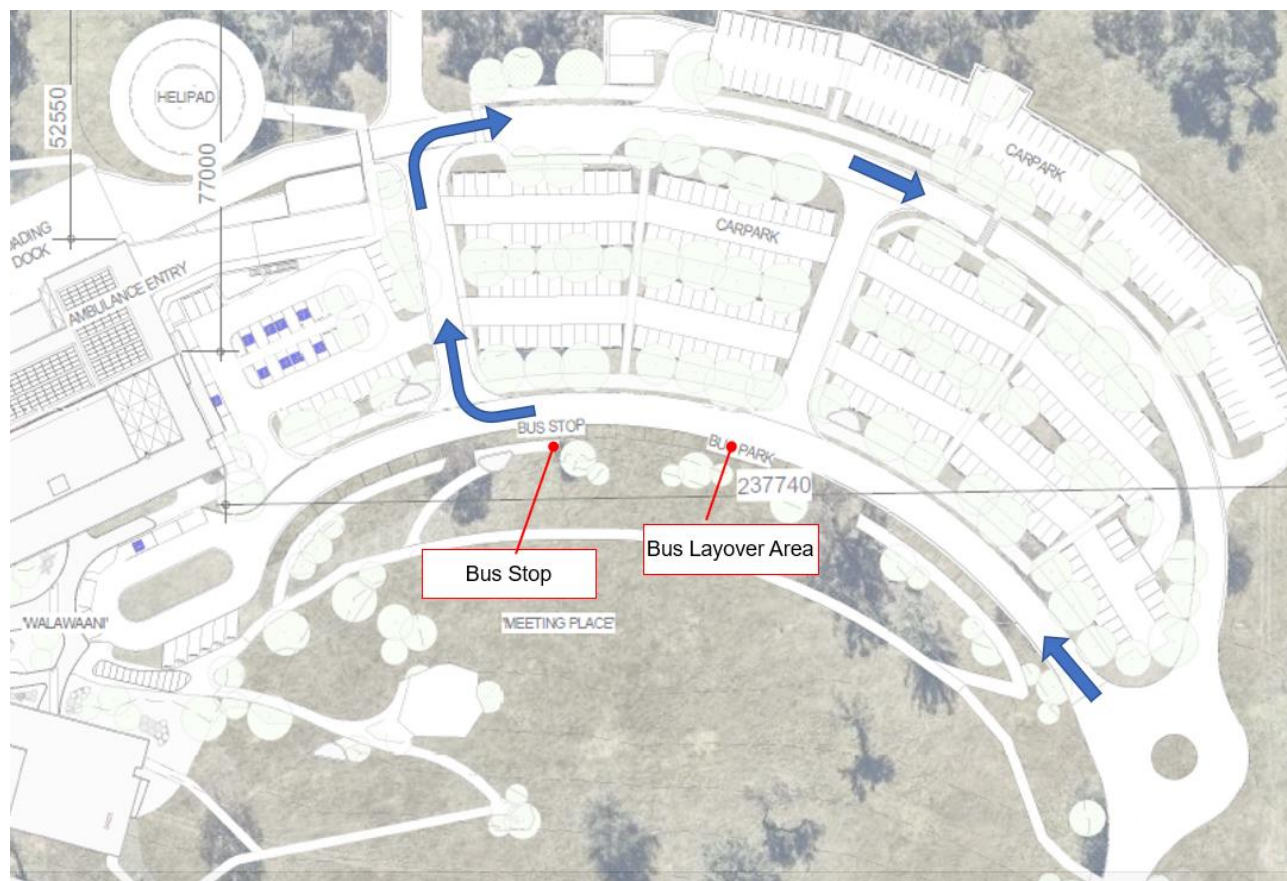
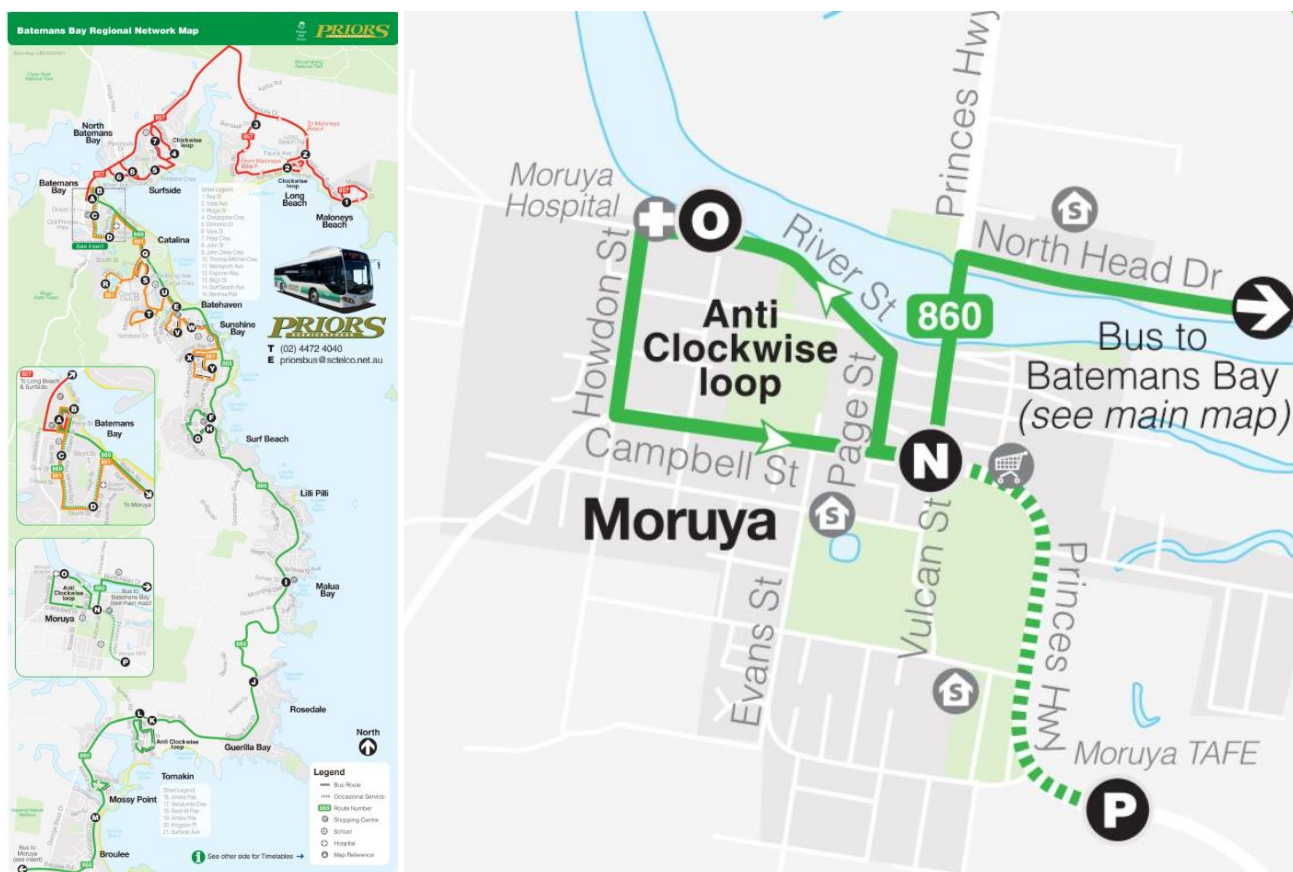


Figure 5.1: On-site Bus Facilities and Circulation

Existing bus routes to the Batemans Bay and Moruya hospitals will need to be modified to allow the ERH to be serviced. The existing Route 860 service (see Figure 5.2) currently terminates at the adjacent Tafe site and has limited services on the weekend on this particular route.

Initial consultation has occurred with Priors Scenic Express to understand their existing routes and operations, along with flagging the project. Further consultation with TfNSW and the range of service providers in the area (i.e. Priors, Murrays Coaches, Premier Motor Services) will be required.



5.2.2 Active Transport

The development provides internal footpaths from key parking areas and the bus stop facilities. Design approach. The internal footpaths seek to provide convenient and direct connection through the site, whilst dealing with the site's topography.

The on-site pedestrian facilities will connect to the existing pathway network to the north via Caswell Street. This connect links to an existing shared path on South Head Road that provides the most convenience and direct active transport connection to the main Moruya township.

A footpath or shared path connection is not proposed along the site's Princes Highway frontage; however the design of roadworks and the access roundabout provide a flat verge width sufficient to accommodate for a share path to be built in the future. This path is considered to be more suitable as a future consideration when there is more likely to be user demand and when other potential infill development between the existing Tafe and the proposed hospital may occur.

On-site end of journey facilities are provided lower ground level on the eastern side of the building. The facility includes provision of bicycle parking spaces, showers and change room facilities, along with a drying room.

The facility will have provision for approximately 12 staff bicycle parking spaces which aligns to 4.6% of staff on-shift at most times (i.e. 259 staff in a morning shift).

As part of the Green Travel Plan implementation use and occupancy of these facilities will be monitored to determine if/when additional provisions are required.

5.3 Servicing and Layout

5.3.1 Deliveries and Refuse

A rear service road allows for separation of service vehicles, and emergency vehicles from the main access areas and facilitates access to various locations across the site (medical gas storage, ambulance servicing area, servicing area). It will also need to allow for full circulation of the site by fire appliances.

Based on the servicing operations required for the ERH the largest vehicle required for the ERH is a 19m AV for oxygen and gas deliveries and smaller service vehicles for a range of other deliveries and servicing requirements (e.g. linen, medical supplies, food, equipment).

The service dock is located separate to the main access and such that service vehicle trips through the main pedestrian and circulating areas are minimised. The servicing dock area is able to cater for a range of standard service vehicles including:

- 19m AV
- 12.5m HRV
- 8.8m MRV
- 6.4m SRV.

Several bays labelled for deliveries 2-5 (as shown in Figure 5.3) will cater for a combination of delivery and contractors' vehicles (parked in a tandem arrangement).

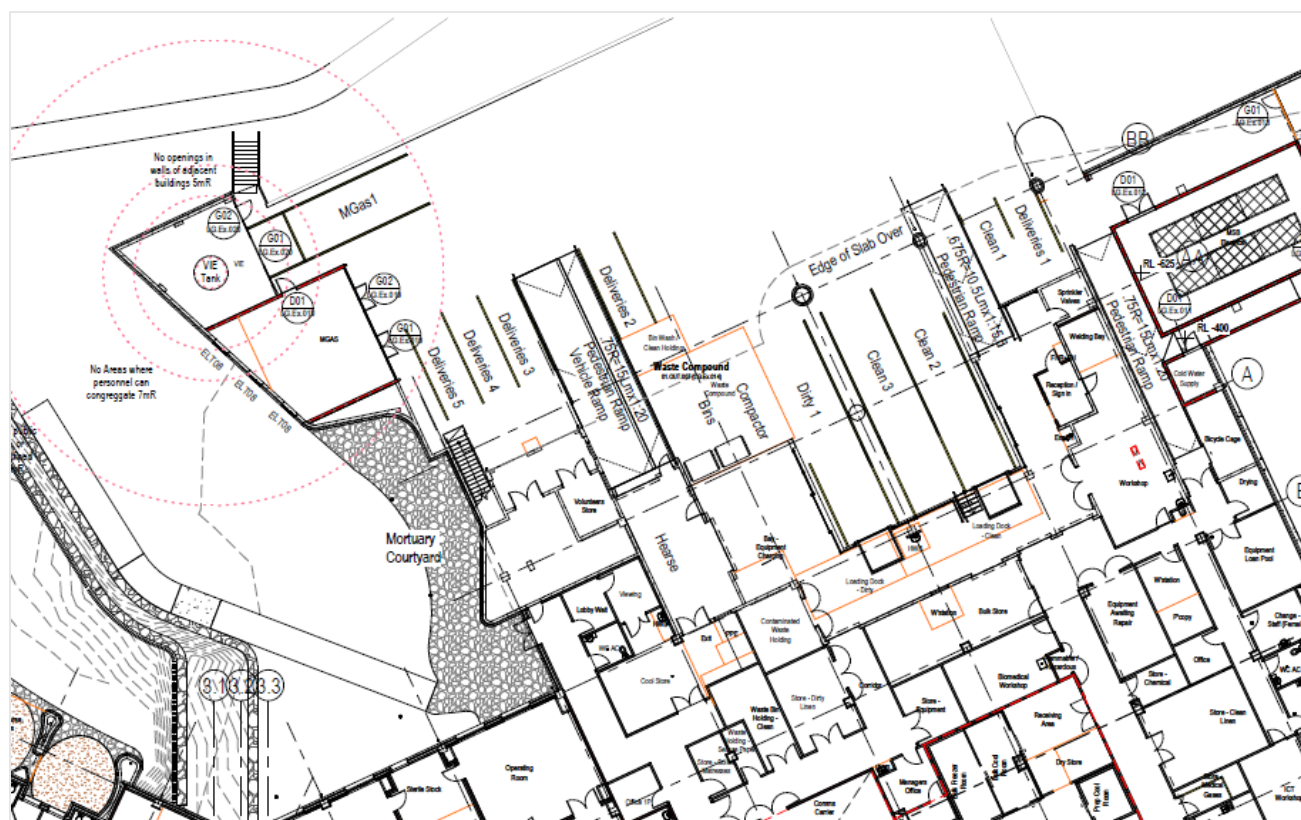


Figure 5.3: Service Dock Layout Arrangement

Refuse will also be collected from the loading area. Bin types are and refuse collection vehicles are to be confirmed, but likely to include a combination of bulk bins, compactor systems and medical waste.

Swept paths of service vehicles are provided in **Appendix F**.

5.3.2 Ambulance Facilities

Ambulance and other emergency vehicles will access the hospital via the rear of the site. The emergency vehicle dock is located above the servicing vehicle dock and is expected to cater for up to three (3) ambulances, with ability to accommodate for demands for two other emergency vehicles (i.e. police, paramedics). Swept paths of an ambulance (a 6.4m Small Rigid Vehicle, SRV) have been prepared and demonstrated vehicle movements for the emergency / service vehicle access roads as well as ingress and egress movements for the emergency vehicle dock. The proposed design of the emergency vehicle dock was found to be functional and provide suitable capacity for expected demands.

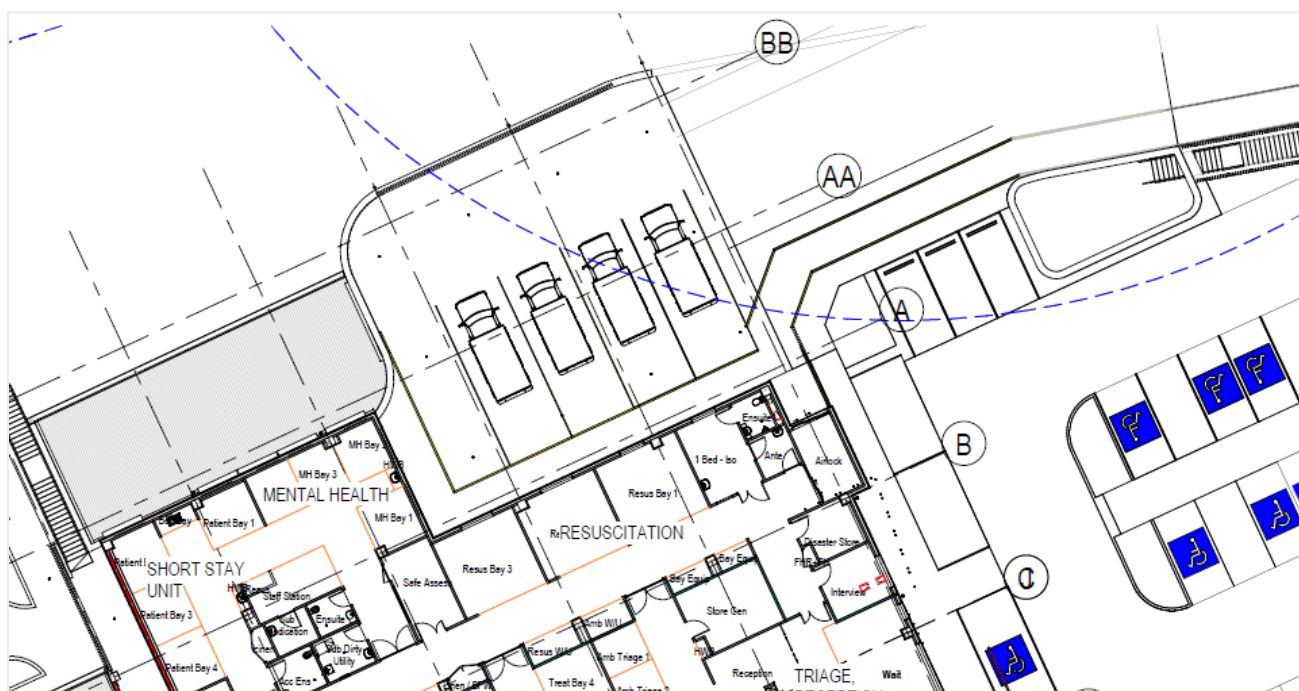


Figure 5.4: Ambulance Dock Layout

5.3.3 Car Parking Geometry Assessment

Table 5.4 summarises the on-site facilities compliance with Australian Standards and Council requirements.

Table 5.4: On-Site Parking Geometric Layout Requirements

Design Element	Requirement	Compliance
General Car Parking Facilities		
Car Parking Bays (User Class 3)	2.6m x 5.4m	Yes
Parallel Car Parking Bays	2.1m x 6.1m	Yes
PWD Parking Bays (User Class 4)	2.4m x 5.4m with adjacent shared area of same dimensions	Yes
Parking Aisle (90-Degree Parking)	5.8m minimum (6.2m preferred)	Yes
Parking Aisle (Parallel Parking)	3.6m	Yes
Clearance Adjacent to Vertical Obstructions	0.3m	Yes
Internal Roadways (One-Way)	3.6m (light vehicles) and 4.1m (heavy vehicles)	Yes

Design Element	Requirement	Compliance
Internal Roadways (Two-Way)	6.5m (heavy vehicles)	Yes
Grades (Entry)	Max 1:20 for first 6m into site (for passenger vehicle accesses and service vehicles up to an MRV) and max 1:20 for first 9.5m into site (for 19m AV accesses)	Yes
Grades (Circulation and Parking Areas)	Max 1:20	Yes
Car Parking Ramps	Max 1:5 with transitions	Yes
Service Vehicle Facilities		
SRV parking	3.5m x 6.4m	Yes
MRV parking	3.5m x 8.8m	Yes
HRV parking	3.5m x 12.5m	Yes
AV parking	3.5m x 19m	Yes
Height Clearance (travelling path for all service vehicles)	4.5m to overhead structure / services	Yes
Servicing Height (refuse vehicles)	Typically 6.5m (6.4m servicing height plus 100mm clearance) to overhead structure / services	Yes
Grades Parking Areas	Max 1:20	Yes
Circulation roads	Max 1:6.5 (15.4%) grade and max rate of change should not exceed 1:16 (6.25%) in 10m travel (for AV circulation) or in 7m of travel (to cater for any other service vehicle movements)	Yes
Bicycle Facilities		
Bicycle Parking	0.5m x 1.8m x 1.5m aisle	Will comply

5.3.4 Rural Fire Services NSW

Rural Fire Services NSW vehicle swept paths have been checked for internal roads and confirmed are able to access key locations. Consultation on the design occurred with representatives from the service on 16 February 2022 who were satisfied with the design and that rural fire appliance could access areas surrounding the building as required.

6. RECOMMENDED WORKS & IMPROVEMENTS

6.1 Proposed Works

The proposed external works for the site are described in Table 6.1

Table 6.1: Infrastructure Works

Infrastructure	Description
Princes Highway Access Intersection - Single Lane Roundabout	As illustrated in Figure 6.1, the development will construct a single lane roundabout on Princes Highway. Based on consultations with TfNSW a 90km/h design speed was adopted assuming a future posted speed of <80km/h. The roundabout will have a central island radius of 20m and circulating width of 7.3m The roundabout will be constructed as part of an Early Works package and is subject to a separate review of environmental factors (REF) assessment. The roundabout design will allow space for a level verge to accommodate for a future potential shared path connection but will not provide a footpath as part of current works. This pathway connection can be built in the future when other infill development between the hospital and Tafe site occurs.
Caswell Street / Albert Street Access	A secondary internal access road will be connected into the public network within the Albert Street road reserve and Caswell Street. The further detailed design on the arrangements for a cul-de-sac head and any road stub is expected to be resolved through the SSD process.
Pathway to connect to existing Caswell Street footpath	Internal footpath connection will link external to the site with a public footpath connect to Caswell Street. A 2.0m width is recommended to accommodate for potential shared path use for pedestrians and cyclist.

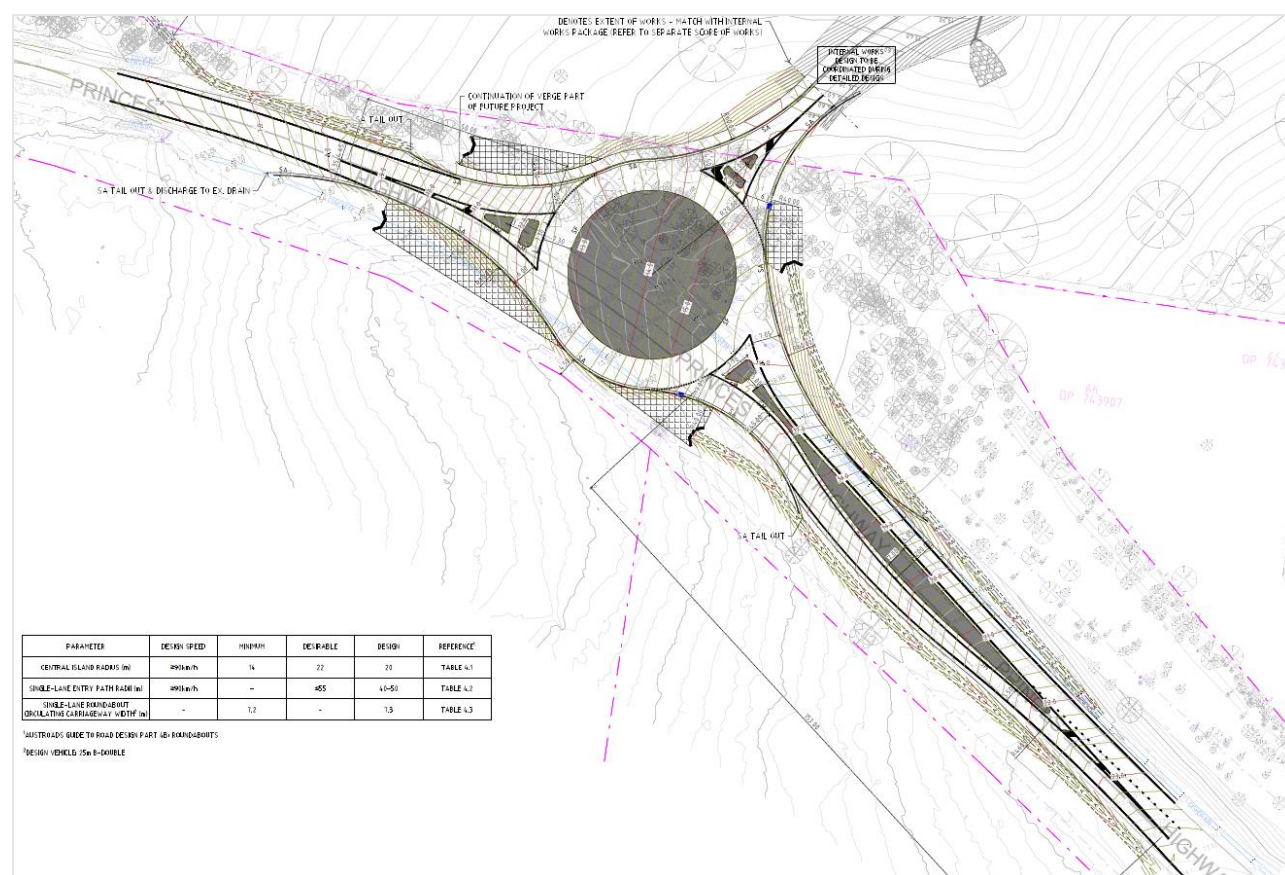


Figure 6.1: Proposed Princes Highway Single Lane Roundabout

7. SUMMARY AND CONCLUSIONS

The key findings of the ERH traffic and transport impact assessment are as follows:

- The ERH is on a greenfield site (described Lot 2, DP 1281576) located in Moruya on the Princes Highway to the south-east of the Moruya Town Centre. To the west of the site is Moruya TAFE, and to the north is a small residential subdivision called Mynora Estate.
- The ERH will incorporate two vehicular access points, including a main site access roundabout from Princes Highway and a secondary controlled access via Caswell Street. The main site access will be delivered under a separate town planning application for Early Works
- Parking will consist of 384 formalised parking spaces and potential overflow areas with an estimated 94 space capacity
- The traffic analysis demonstrates that the net increase in traffic movements associated with the ERH can be adequately accommodated by the surrounding road network with construction of a single lane roundabout on Princes Highway to form the main site access. This access is suitable to cater for development and potential future development stages.
- New pathway upgrades will be provided to connect the site with existing footpath connections to the north of Caswell Road and through to the South Head Road shared path.
- Bus services have been designed to be able to be accommodated on-site. Existing bus routes to the Batemans Bay and Moruya hospitals will need to be modified to allow the ERH to be serviced
- The site's transport elements including internal road network, parking modules and service areas have been reviewed against Australian Standards and Council's Guidelines. While the architectural plans are considered generally compliant for the purpose of the EIS, they are subject to further detailed design. It is therefore recommended that appropriate conditions be imposed regarding design compliance to Australian Standards.

Appendix A: Development Proposal Plans (Transport and Traffic Related)

- NOTES:
- AERIAL IMAGE OF SITE IS INDICATIVE ONLY.
 - ALL WORKS ARE WITHIN THE SITE BOUNDARY, (UNO:- FOR TRUNK SERVICES, ACCESS ROADWAYS AND FLIGHT PATH TREE REMOVAL.)
 - ALL TREES ARE TO BE RETAINED ON SITE AND NOT DISTURBED, UNLESS THEY ARE SHOWN TO BE REMOVED, IN THE WAY OF NEW WORKS.
 - ALL TREE LOCATIONS FOR REMOVAL TO BE TAGGED AND VERIFIED BY SURVEYOR
 - ALL TREE REMOVAL TO BE CONFIRMED WITH RELEVANT STATUTORY AUTHORITIES PRIOR TO COMMENCING WORKS
 - NOT ALL TREES HAVE BEEN SURVEYED WITH DETAILED TREE DESCRIPTIONS. ALL TREES MAY BE VIEWED ON-SITE.

- NEW PLANTING ZONE
- NEW PLANTING
- SITE BOUNDARY

NOTE

- BACK GROUND IMAGE SOURCED FROM NEARMAP.COM
- ALL EXISTING FEATURES OF THE SITE AND SURROUNDS ARE TO BE CONFIRMED VIA SURVEY

Revision				
REV	DESCRIPTION	DATE	INT.	
A	FOR INFORMATION	04.08.2022	EA	
B	DRAFT FOR INFORMATION	05.09.2022	EA	
C	FOR INFORMATION	10.10.2022	EA	
D	FOR INFORMATION	18.10.2022	EA	
E	FOR INFORMATION	21.12.2022	EA	
F	FOR INFORMATION	12.01.2023	EA	

Client

NSW GOVERNMENT | **Health** Infrastructure

Project

Eurobodalla Regional Hospital

Drawing

OVERALL PROPOSED

A1 Scale As indicated
Project 20157
Issue F
Number
ERH - HI - AR - DWG - DD - DA10PW10

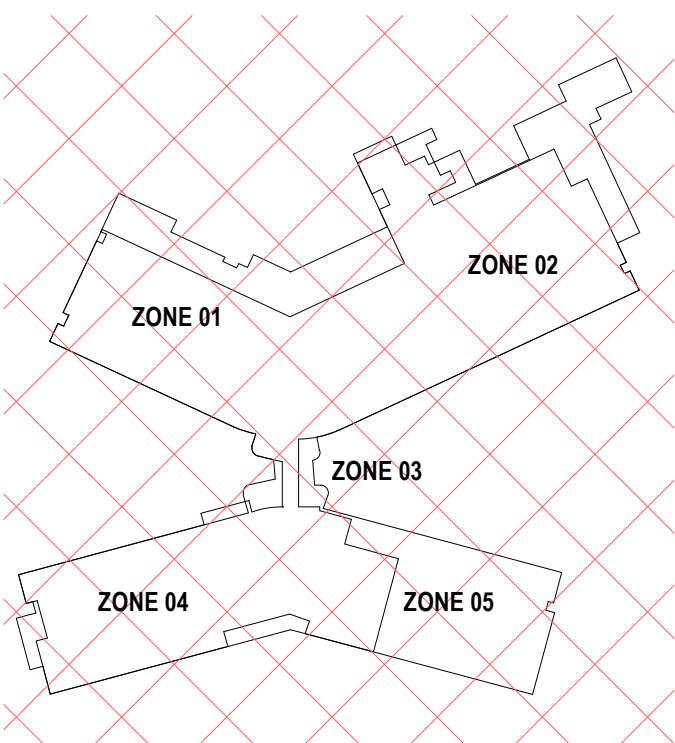
Details

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Do not scale this drawing and verify all dimensions and levels on site.
Nominated Architect : Lawrence Tooldo NSW Reg. 10255.

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BUILDING ZONE KEY



Revision	REV	DESCRIPTION	DATE	INT.
A	DD PRELIMINARY 40% ISSUE		06.08.2022	EA
B	DD PRELIMINARY 70% ISSUE		16.09.2022	EA
1	TENDER ISSUE		28.10.2022	EA
2	FOR INFORMATION		18.11.2022	EA
3	FOR INFORMATION		25.11.2022	EA
4	100% DESIGN DEVELOPMENT		16.12.2022	EA
5	FOR INFORMATION		01.03.2023	EA

Client

 **Health Infrastructure**

Project

Eurobodalla Regional Hospital

Drawing

**GENERAL ARRANGEMENT
PLAN - LOWER GROUND -
OVERALL**

A1 Scale 1 : 250

Project 20157

Issue 5

Number

ERH - HI - AR - DWG - DD - 21LG00

Details

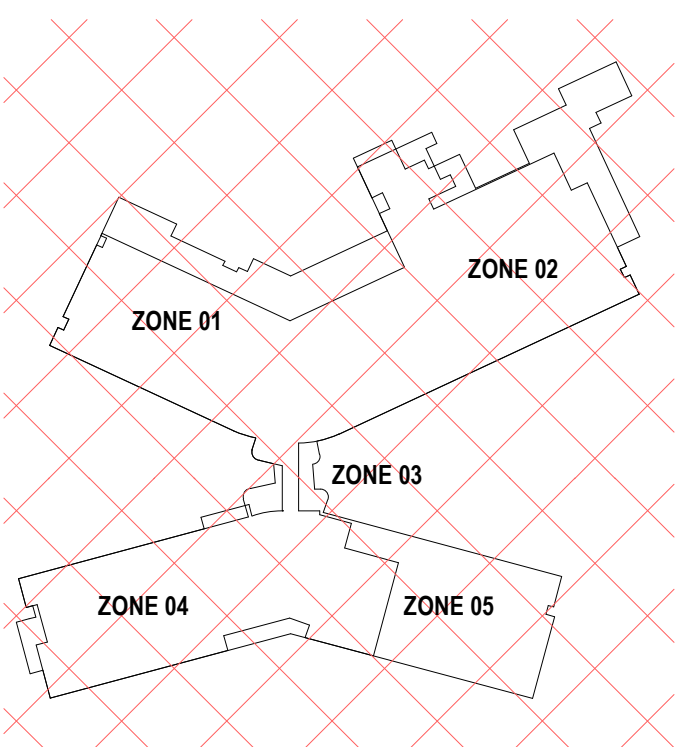
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DESIGN DEVELOPMENT



BUILDING ZONE KEY



Revision	REV	DESCRIPTION	DATE	INT.
A	DD PRELIMINARY 40% ISSUE		06.08.2022	EA
B	DD PRELIMINARY 70% ISSUE		16.09.2022	EA
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3	FOR INFORMATION		25.11.2022	EA
4	100% DESIGN DEVELOPMENT		16.12.2022	EA
5	FOR INFORMATION		01.03.2023	EA

Client



Project
**Eurobodalla Regional
Hospital**

Drawing
**GENERAL ARRANGEMENT
PLAN - GROUND FLOOR -
OVERALL**

A1 Scale 1 : 250
Project 20157
Issue 5

Number
ERH - HI - AR - DWG - DD - 210000

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0mm 40 80mm

DESIGN DEVELOPMENT



Appendix B: Preliminary Green Travel Plan

Eurobodalla Regional Hospital

Preliminary Green Travel Plan

Health Infrastructure NSW

18 May 2023



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P5059.003R Eurobodalla Regional Hospital GTP	B. Campbell / J. Brook	J. Brook	J. Brook	08/04/2022	Ash McGowan, Root Partnerships via Aconex
P5059.004R Eurobodalla Regional Hospital GTP	J. Brook	A. Eke	J. Brook	13/04/2022	Ash McGowan, Root Partnerships via Aconex
P5059.005R Eurobodalla Regional Hospital GTP	J. Brook	A. Eke	J. Brook	11/10/2022	Ash McGowan, Root Partnerships via Aconex
P5059.006R Eurobodalla Regional Hospital GTP	J. Brook	A. Eke	J. Brook	18/05/2023	Dan Humphries, RP Infrastructure Via Aconex

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Appendix A: Transport Access Guide

Appendix B: Travel Mode Survey – Staff

Appendix C: Travel Mode Survey – Non-staff

1. INTRODUCTION

1.1 Background

As part of the Department of Planning, Infrastructure, and Environment (DPIE) Secretary's Environmental Assessment Requirements (SEARs), this preliminary Green Travel Plan (GTP) has been prepared to support the Environmental Impact Statement for the Eurobodalla Regional Hospital (ERH).

The GTP will be updated as the development progresses to ensure the aims and measures remain fit-for-purpose.

1.2 Purpose of a Green Travel Plan

A GTP is a document that identifies strategies to reduce the dependency on private vehicles and encourages travel mode behaviour change.

GTPs are used to endorse and encourage sustainable travel options such as cycling, walking, carpooling and public transport as viable and attractive alternatives for single occupant private vehicle trips whenever practicable.

Increased uptake of public transport and active transport can bring a number of benefits to employers, staff, local communities and the environment. These include:

- reduced congestion on surrounding roads
- reduced emissions associated with private vehicle usage
- a healthier, more active and more productive workforce
- a greater sense of community among employees
- reduction in car operating costs such as fuel and vehicle wear



The GTPs are designed to be used as 'live document'. The document should be monitored and updated on a regular basis to monitor progress towards active transport mode share targets and review the success of current strategies.

Transport for NSW (TfNSW) has developed a specific Toolkit for development of Travel Plans for Hospital Precincts. This targeted Toolkit includes a series of steps, templates, and resources for developing a comprehensive Travel Plan focused on staff health, efficient travel, reducing up front and on-going costs, ensuring sustainability and providing input into new or upgraded hospital project.

A summary of TfNSW's Toolkit value to hospital projects is outlined in Figure 1.1. This Toolkit will be referenced and utilised moving forward with the development of this GTP as the project moves towards construction and operational phase.

Value to your hospital and staff				
 Employee health	 Efficiency	 Cost reduction	 Sustainability	 Site development (if applicable)
• Generate an average of 20 min more exercise each day per person • Staff less likely to take sick leave • Staff up to three times more productive • Contribute to improved workplace culture, morale and engagement • Improve work life balance and reduce time spent commuting	• Improve reliability of staff and patient arrival times • Improve access for emergency vehicles and deliveries • Reduce staff downtime spent travelling • Repurpose onsite car parking space • Provide better site access experience for employees, visitors and patients • Reduce local area traffic congestion • Improve patient ability to keep appointments	• Reduce costs associated with sick leave • Reduce parking costs • Reduce mileage claims • Improve staff recruitment and retention • Reduce travel costs for organisation and staff	• Encourage use of sustainable transport options • Improve your standing as an 'employer of choice' • Improve hospital image – environmental, corporate and social responsibility • Build relationships among local community • Contribute towards Green Star building rating	• Reduce development costs and potential to increase density of development (fewer parking spaces) • Enhance attractiveness and accessibility of site • Easier pathway to development approval • Mitigate adverse traffic impacts of a development

Figure 1.1: TfNSW's Hospital Travel Guide Toolkit Aims

1.3 About the Eurobodalla Regional Hospital GTP

The Eurobodalla Regional Hospital GTP develops strategies to support sustainable transport whilst considering and recognising the unique travel patterns at hospitals and the local context of the area where the hospital is situated. This GTP has been developed for the ERH with the aim of:

- reducing the number of private vehicles trips to and from the site
- reducing car parking demand for staff and visitors/patients
- encouraging use of transport modes that have a low environmental impact (i.e. active and public transport)
- reducing the vehicle-kilometres travelled.

In the process of developing this preliminary GTP, consultation has been undertaken with transport agencies, operators, Council and the Southern NSW Local Health District. As part of this consultation, inputs about the existing active and public transport infrastructure, travel barriers as well as potential actions and solutions to be implemented by ERH were gathered. These inputs have been considered in the process of developing the GTP.

Figure 1. outlines the Eurobodalla Regional Hospital GTP process.

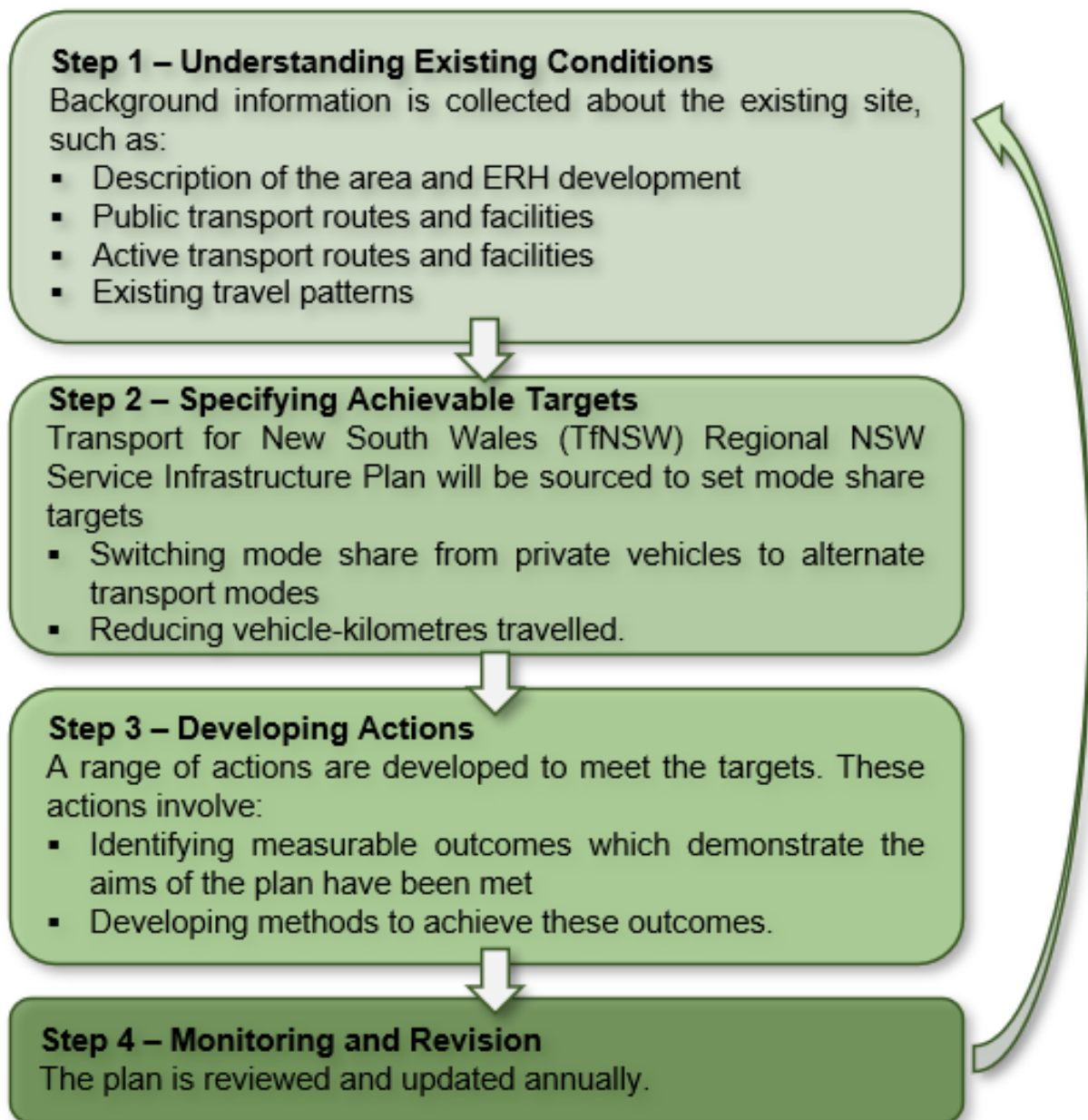
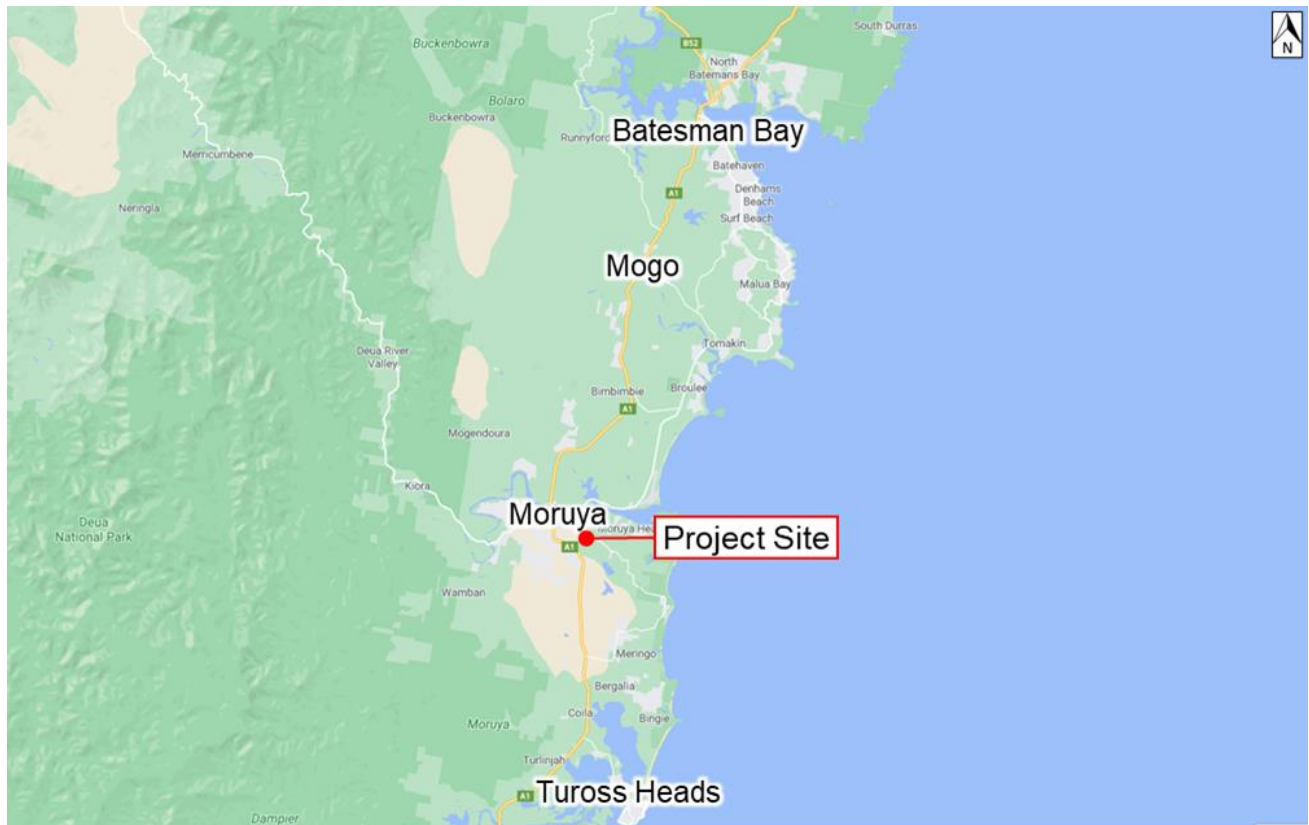


Figure 1.2: Green Travel Plan Process

2. EXISTING CONDITIONS

2.1 Site Location

The ERH site is located off the Princes Highway, Moruya NSW formally described as Lot 2 on DP1281576. The project site locality is shown in Figure 2.1.



Source: Google Maps

Figure 2.1: Project Site Locality

2.2 Existing Travel Patterns

Work travel modes were obtained from the Australian Bureau of Statistics (2016) Census, as reported by Profile Id. Approximately 90% of employees in the Eurobodalla Shire commute daily by private vehicles (84% as driver and 6.2% as passenger), 4.6% walk to work, 0.9% use public transport as their primary mode of transport and 0.8% cycle to work.

Figure 2.2 outlines the existing mode share for the Eurobodalla Shire.

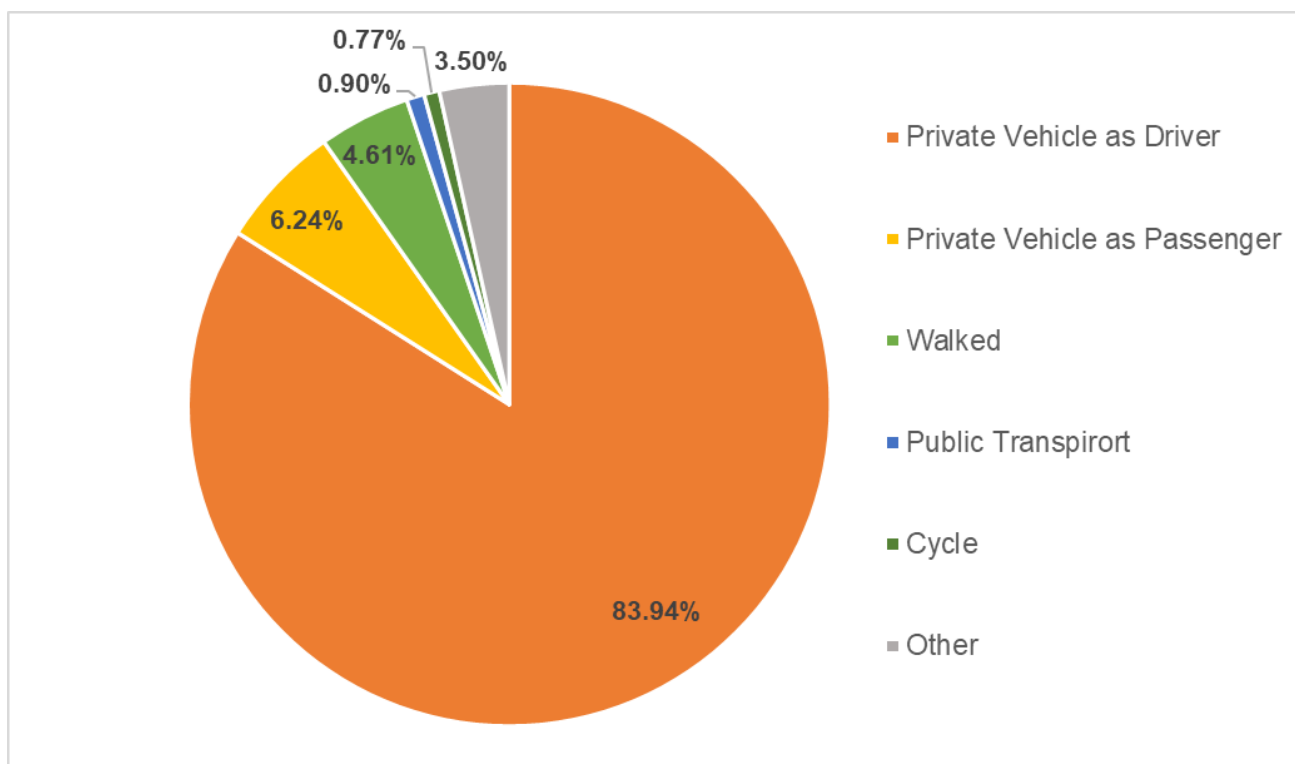


Figure 2.2: Eurobodalla Shire Mode Share

In addition, the Roads and Maritime Service (RMS) Guide to Traffic Generating Development (2002) surveyed traffic generation in private hospitals. The survey found that the mean proportion of people who travelled to the site by private vehicles as approximately 90% and the average vehicle occupancy was 1.3 persons per private vehicle.

3. EXISTING INFRASTRUCTURE

3.1 Public Transport

The site currently exists as a greenfield site and as such, does not have any existing public transport facilities. The nearby TAFE NSW campus to the west is serviced by Route 860 travelling along the coast from Moruya to Batemans Bay.

Additional daily coach services are provided past the site by Murrays and Premier Motor Service. These services provide an opportunity to connect the site to key centres such as Narooma in the south, Canberra in the west and Sydney on the north via a single seat journey.

3.2 Active Transport

There are no active transport facilities fronting the project site. To the north, there is a footpath network that services some of the local streets with a pedestrian spine on South Head Road that connects to the Moruya town centre. To the east, the TAFE NSW campus is serviced by 3.0m shared path which connects to the Moruya town centre active transport facilities.

Website 'Walk Score' provides a walkability index to any city in the Australian territory. The score is based on a mathematical model to produce a walkability rate, Moruya town centre has a Walk Score rate of 76, which puts Moruya as a "Very Walkable" area. However, more locally to the proposed hospital site the Moruya TAFE has a Walk Score of 14 and Caswell Street has a Walk Score of 4, with both being deemed "Car-Dependent".

3.3 Carpooling

There are currently no carpooling schemes within the Eurobodalla Shire Council.

3.4 Point to Point Services

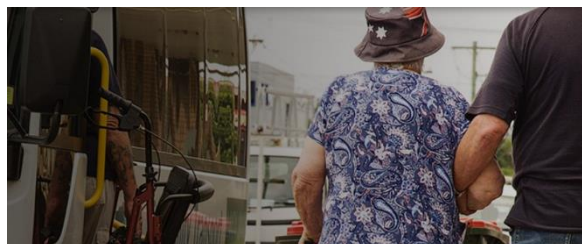
There is a Taxi Rank / Taxi Zone spot in Moruya approximately 1.6km from the ERH site. Three taxi services operate in Eurobodalla based in the main towns of Batemans Bay, Moruya, and Narooma. Taxi services are limited and phone bookings are recommended.



3.5 Community Transport Services

Eurobodalla Community Transport (ECT) provides local trips on a daily basis and long-distance trips between to Canberra, Nowra and Bega.

ECT provides transport services to assist older people, people living with disability, people who are transport disadvantaged and their carers. Registration is required with bookings made via email or phone (eurotransport@esc.nsw.gov.au or 4474 1040).



3.6 Available Transport Information

Various websites for trip planning include:

- TfNSW Trip Planner – a website to plan public transport travel and look up stops and route details
- Live Traffic NSW – a website to review road incidents, closures, works, planned events and weather. A live traffic viewer and traffic camera feeds are also available.
- Going Places – a website which provides public transport, taxi, community transport and other transport information through northern NSW.

There are also a number of free and paid transport apps that allow users to plan bus and carpool trips around Eurobodalla areas. TfNSW recommends the following transport apps:

- abil.io (iOS)
- AnyTrip (Android)
- Auto (iOS)
- Citymapper (iOS, Android)
- Commuter NSW (iOS)
- Feedback2Go (iOS, Android)
- Live Traffic NSW (iOS, Android)
- Metarove (Android)
- Moovit (iOS, Android)
- NextThere (iOS)
- Snarl (iOS, Android)
- Speed Adviser (iOS, Android)
- Transit (iOS, Android)
- Triptastic (iOS)
- TripView (iOS, Android).



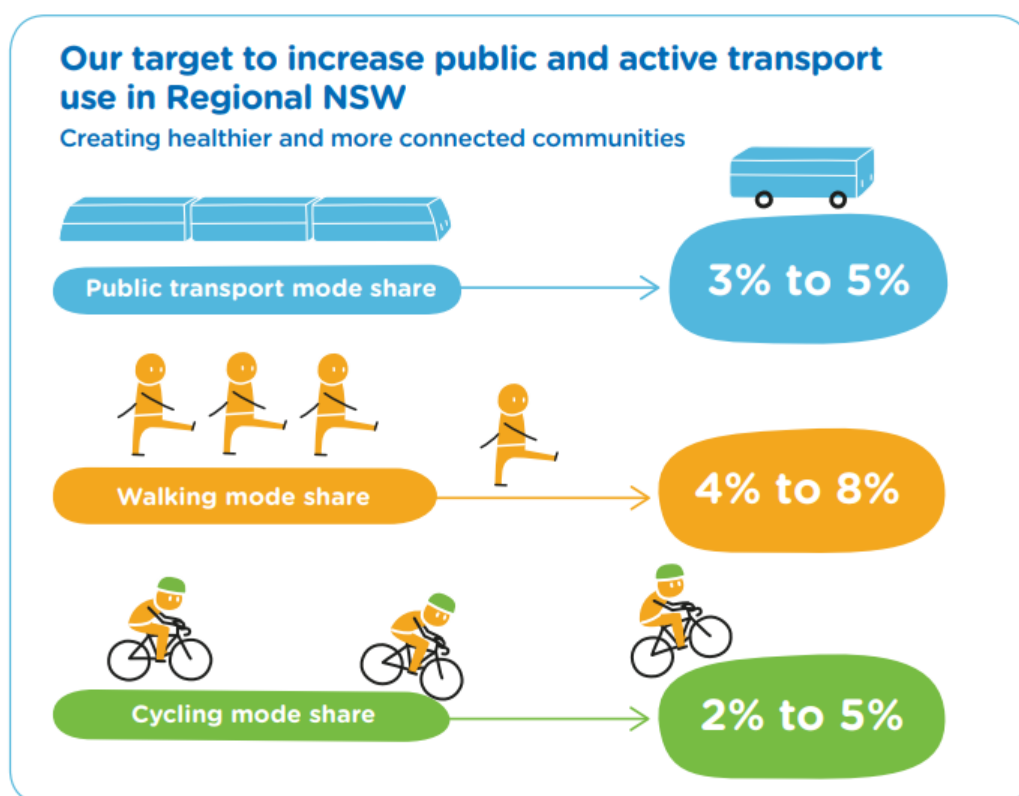
It is noted that the existing hospital website pages do not provide detailed information on how to get to the hospital other than by private vehicle.

4. TRANSPORT MODE SHARE TARGETS

Progress toward targets will be measured using an annual tailored travel survey of employees. The survey results will be compared with the outlined targets of this GTP to determine the success of the plan and update actions as well as potentially develop new actions.

The targets of this plan focus on reducing the reliance on private vehicle and increasing the number of public and active transport trips. The targets are initially aligned with the transport goals set in the *TfNSW's Regional NSW Services and Infrastructure Plan*.

The targets for this GTP, aligned with TfNSW aspirational targets for regional NSW over the **next 10 years** are:



Source: TfNSW's Regional NSW Services and Infrastructure Plan

It is noted that the initial travel mode share targets are considered low when compared to greater metropolitan hospitals and work places. These initial mode share targets are however considered realistic as longer term targets given the location of the facilities to the wider catchment and current limited availability of alternate transport modes to service the site. It is expected that these mode share targets will however be refined through the development and updating of the GTP for operational phases as well as part of on-going monitoring phase.

Recommended short-term targets and long-term targets are noted in Table 4.1 but will be subject to a staff travel survey being conducted to set existing benchmarks.

Table 4.1: ERH Travel Mode Share Targets

Travel Mode	Existing Staff Survey Result TBC	New ERH Survey Results	ERH Travel Mode Target (12 to 24 months from opening)	Longer Term Target	Comment
Private Vehicle (includes drive, drop-off, carpool)	TBC	TBC	93%	85%	Aim to reduce single vehicle trips up front below 95% in 12 months and less than 90% in longer term. Subject to effectiveness of initiatives and also parking policy (time limits and pricing which is yet to be confirmed). While drop-off and car pool trips would still constitute private vehicle mode share, the uptake and promotion of these measures would reduce the overall number of vehicle trips to ERH and aid in achieving GTP objectives.
Walking	TBC	TBC	3%	8%	Reliant on walk-up catchment currently living within walking proximity to the ERH site. Expected to increase in future years as ERH becomes more established and workforce evolves over time.
Cycling (includes cycle and scooter)	TBC	TBC	3%	5%	Reliant on cycle catchment around ERH. Market is expected to increase over time as the workforce evolves and surrounding areas develop.
Public Transport	TBC	TBC	2%	5%	Improved service updates and frequencies to ERH are showing more of a willingness to use buses compared to existing. Longer term incentives on consultation with operators and TfNSW to improve the public transport system.

5. POTENTIAL ACTIONS

5.1 Private Vehicle

A range of potential actions may be implemented to reduce private vehicle usage and promote the use of public and active transport modes. These actions are focused on staff, visitors, patients, and potential non-users of the hospital intending to park on the ERH parking area and using nearby land-uses.

It is also acknowledged that depending on the patient condition, driving may be the only reasonable mode of transport to access the ERH.

Management of car parking facilities is important to reduce non-essential parking demands to the site. Where parking is not managed or restricted, there is a greater utilisation of private vehicles which can hinder alternate mode of transport use.

5.1.1 Staff Carpooling

Implement an online carpool register to connect those interested in sharing car rides to work. The carpooling initiative is focused on staff and should be disclosed to existing and new staff of the ERH.

Aim:

- Encourage staff to carpool and reduce the total number of private vehicle trips
- Reduce private vehicle trips by increasing vehicle occupancy
- Provide incentives for staff to car pool such as:
 - Prioritised parking locations
 - Guaranteed ride home vouchers
 - Dedicated application or Car Pool Community Pages to arrange car pooling between staff
 - Designated car pool stations at various locations across the shire
- Reduce car parking demands and allows for cost sharing amongst staff.

Measure:

- Monitor staff level of awareness of carpooling initiative through the travel survey tool
- Monitor the staff carpooling usage to commute daily to ERH
- Review as part of routine utilisation survey

Timing:

Commence upon opening and monitor annually.

5.1.2 Time Limited Parking / Allocated Parking

Implement parking time limits and allocated parking to prioritise use of specific parking areas for particular users. This could consist of time limiting parking spaces closer to the building for visitors to provide suitable availability and turnover. Allocated parking measures could also be used to provide specific parking for night-shift works or carpooling staff.

Aim:

- Maximise the use for available on-site parking through turnover and prioritisation of space
- Ensure parking is available for priority users (i.e. shift workers, carpoolers, short-term visitors)

- Encourage reduced vehicle trips by increasing car pooling with incentivisation of convenience and priority parking access

Measure:

- Review as part of routine utilisation survey

Timing:

Commence upon opening and monitor annually.

5.2 Public Transport Improvements

The actions described aim to increase public transport usage. These actions are focused on making public transport a more convenient mode of transport particularly for staff, but also for patients and visitors of the ERH.

5.2.1 Improve Public Transport Accessibility for Residents and Staff

- Liaise with TfNSW and bus service providers to market and promote improved bus routes and to provide a simpler new payment and ticketing system for public transport in Eurobodalla.
- Update existing services provided by Priors to extend from the Moruya Tafe to connect to the ERH and increase service frequencies
- Incorporate existing Coach services provided by Murrays and Premier Motor Service which pass the site to incorporate a stop with the new ERH. These services will provide direct one-seat connections to major centres including Narooma in the south, Canberra in the west and as far as Sydney on the north
- Investigate with TfNSW the delivery of on-demand bus services to service ERH and connect to key centres across ERH and service both community and staff.

Aim:

- Make public transport a more accessible mode of transport by increasing services catchments and route frequencies
- Increase public transport coverage to / from ERH
- Increase public transport usage to / from ERH
- Provide tailored public transport services that integrate with existing providers in the area
- Reduce the barriers for staff and visitors that currently are unable to access existing public transport services.

Measure:

- Monitor public transport usage rates using travel survey tool
- Monitor public transport usage rates using TfNSW and Murray Coaches/Premier Motor Service data.

Timing:

- Commence upon opening and monitor annually.

5.2.2 Public, Active and Community Transport Access Guide

Provide all staff with a Transport Access Guide information map. The map should also be available for visitors and patients to the ERH at common areas such as lobbies, stair wells, lifts and cafes. The map should display information on public transport routes, bus stops, timetable, active transport infrastructure, end of trip facilities and community transport providers, as well as referral for further information and related websites and smartphone applications.

Aim:

- To provide easily accessible information on public and active transport modes to all staff, visitor and patients.

Measure:

- Confirm the distribution of the 'staff map' for existing and new employees
- Provide Access Guide Maps in common areas of the ERH for visitors and patients
- Provide Access Guide Maps on the ERH website and at various health facilities across Eurobodalla Shire.

Timing:

- Commence upon opening and monitor annually.

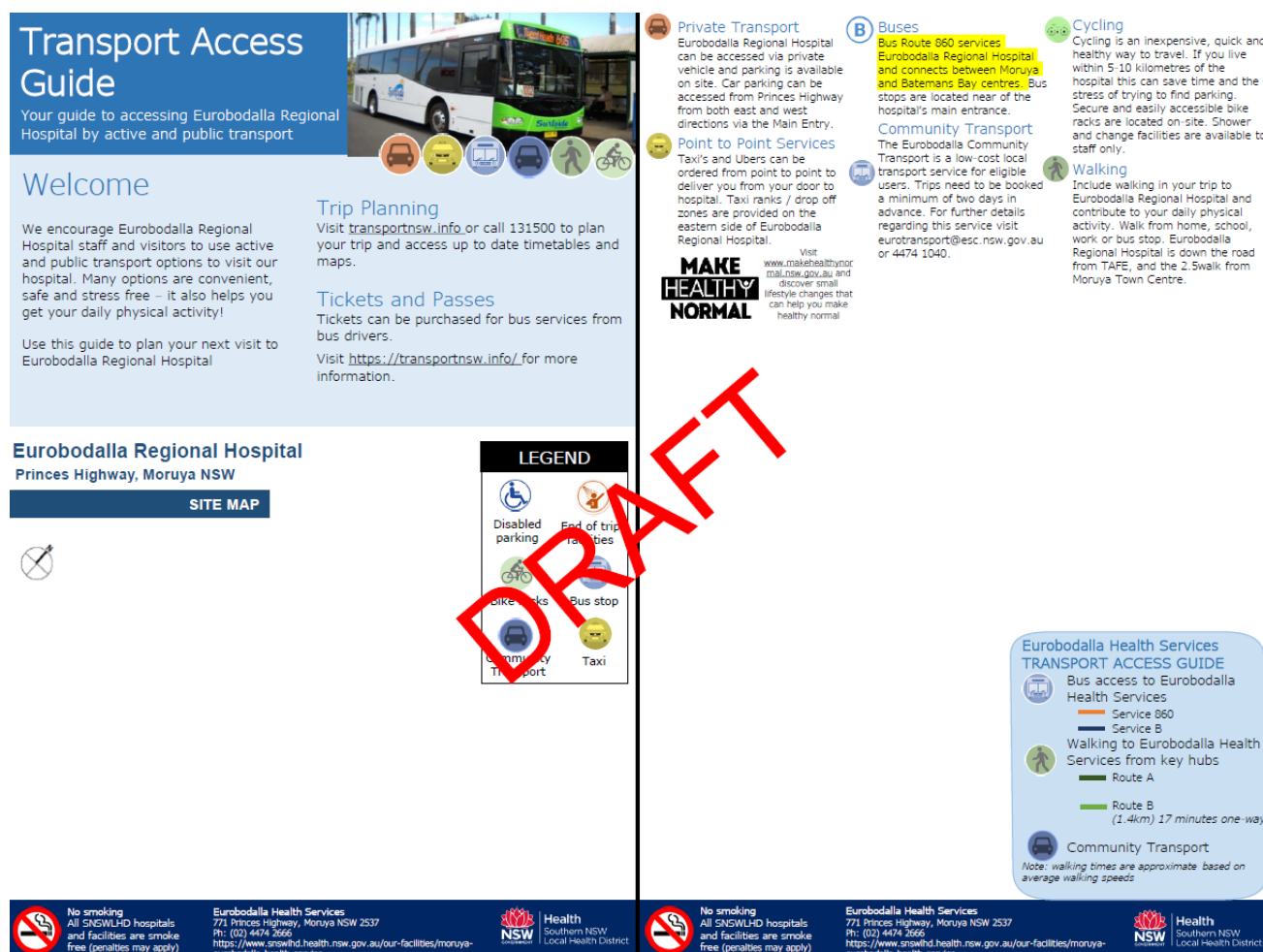


Figure 5.1: ERH Transport Access Guide

The preliminary ERH Transport Access Guide is presented in **Appendix A**. It is noted that updated bus route services are subject to further planning between TfNSW and local providers.

5.2.3 Public Transport Concession for Staff

Work with TfNSW and transport providers on the ability to provide public transport concession card for staff that use bus to commute daily to work.

Aim:

- To provide a cheaper public transport fare for ERH staff
- To increase public transport usage and reduce traffic and parking pressures.

Measure:

- Monitor staff level of awareness of public transport concession through the travel survey tool
- Monitor the staff public transport usage to commute daily to ERH.

Timing:

- Commence upon opening and monitor annually.

5.3 Active Transport

The actions described aim to increase active transport usage. These actions are focused on making active transport a more convenient and desirable mode of transport particularly for staff, but also for patients and visitors of the ERH.

5.3.1 Staff End of Trip Facilities with the Hospital Building

Provide easily accessible, visible and secure end of trip facilities on site, including:

- Security Level C bicycle parking spaces for staff
- Security Level B bicycle parking spaces for visitors
- Showers and toilets
- Changing room facilities
- Lockers
- Electric bike/ scooter charging stations
- Bike repair and pump facilities.

Aim:

- Encourage staff and visitors to commute cycling by providing facilities within the hospital building that are safe, convenient and fit-for-purpose
- Remove existing barriers for staff to cycle to work

Measure:

- Monitor use of the end of trip facilities through the travel survey tool and occupancy/use of the facility
- Monitor active transport usage rates using travel survey tool.

Timing:

- Commence upon opening and monitor annually.



Source: <http://krismoreau.com/trend>

Figure 5.2: Example of End of Trip Facilities

5.3.2 Healthy Habits Initiatives

Promote healthy habit initiatives amongst staff such as:

- Car-Free Days (celebrated yearly on 22nd September encourages motorists to give up their cars for a day)
- 10,000 Steps program / Pedometer Challenge (encourages participants to achieve 10,000 steps daily)
- Display motivational and informative posters / brochure about benefits of physical activity and tips on using active transport to commute daily.

Aim:

- Encourage staff to walk and cycle to work
- Promote active transport as a practical mode of transport
- Increase active transport usage amongst staff.

Measure:

- Monitor awareness of healthy habits initiatives through the travel survey tool
- Monitor healthy habit initiative uptake through the travel survey tool
- Monitor active transport usage rates using travel survey tool.

Timing:

- Commence upon opening and monitor annually.



Source: Otago Regional Council

Figure 5.3: Healthy Habits Initiative – Car Free Day

5.4 Electric Vehicles and Charging

The actions described aim to increase the use of electric vehicles over conventional fuel powered vehicles. Initiatives may include:

- Electric vehicle charging stations located in close proximity to the hospital entry and excluded from time-limits
- Liaise with LHD regarding the use, funding and roll-out of full electric and hybrid fleet cars
- Liaise with TfNSW and bus operators regarding the use, funding and roll-out of electric bus fleets.

Aim:

- Provide incentives towards electric vehicles
- Promote the uptake and availability of electric charging stations for the south coast
- Reduce vehicle emissions associated with the hospital

Measure:

- Monitor use of the electric vehicle charging stations through the travel survey tool and occupancy/use of the facility
- Operational information regarding fleet vehicle operating costs
- Operational information from bus operators and TfNSW.

Timing:

- Commence upon opening and monitor annually. Subject to liaison and endorsement with South Coast LHD and TfNSW.

6. MONITORING AND REVIEW

6.1 Monitoring and Review

An annual travel mode share survey undertaken by the Southern NSW LHD should be implemented to collect current data and assist in decision making. This data can be compared against the mode share targets identified in Section 4. The GTP can be updated to align with the results of the mode share survey and potentially include additional actions. The annual staff and visitor travel mode share survey aims to gain feedback and provide realistic actions targeted specifically for ERH staff and visitors.

Communication between state and local government agencies will be required to collaborate policies where possible. Eurobodalla Shire Council's (Council's) policies including the Pedestrian Access and Mobility Plan (PAMP) and Bike Plan could include the GTP's actions to better integrate ERH's transport facilities within the nearby community.

The LHD will be required to submit progress reports to the Department of Planning, and Environment. The following template can be used to accurately monitor and review actions annually.

Action Name (i.e. Staff Carpooling)	
Target Date	
Current Status	
Updates Required	
Revised Target	
Date for Review	

6.2 Next Steps

The LHD will work with ERH Campus partners as well as Eurobodalla Shire Council, Transport for NSW and transport providers to develop and implement the Green Travel Plan for opening in 2026. This will include development of the GTP Committee and nomination of positions and responsibilities.

LHD will continue to actively engage and consult with staff, patients, families, community and relevant government agencies to refine and implement the Green Travel Plan Initiatives.

6.3 Potential Funding Options

The available funding for active and public transport projects is reliant on Council's budget allocations and successful grant applications through State and Federal Government programs.

Potential funding options include:

- HINSW Infrastructure Programs
- Collaborations with other State Government departments (e.g. TfNSW)
- Section 94 Contributions
- Council Rates
- Planning Agreements
- Reallocation of existing funds within Council's budget
- Cycleway grants
- Commonwealth Government grants.

Appendix A: ERH Transport Access Guide

Transport Access Guide

Your guide to accessing Eurobodalla Regional Hospital by active and public transport



Welcome

We encourage Eurobodalla Regional Hospital staff and visitors to use active and public transport options to visit our hospital. Many options are convenient, safe and stress free – it also helps you get your daily physical activity!

Use this guide to plan your next visit to Eurobodalla Regional Hospital

Trip Planning

Visit transportnsw.info or call 131500 to plan your trip and access up to date timetables and maps.

Tickets and Passes

Tickets can be purchased for bus services from bus drivers.

Visit <https://transportnsw.info/> for more information.

 **Private Transport**
Eurobodalla Regional Hospital can be accessed via private vehicle and parking is available on site. Car parking can be accessed from Princes Highway from both east and west directions via the Main Entry.

 **Point to Point Services**
Taxi's and Ubers can be ordered from point to point to deliver you from your door to hospital. Taxi ranks / drop off zones are provided on the eastern side of Eurobodalla Regional Hospital.

**MAKE
HEALTHY
NORMAL**

Visit www.makehealthynormal.nsw.gov.au and discover small lifestyle changes that can help you make healthy normal

 **Buses**
Bus Route 860 services Eurobodalla Regional Hospital and connects between Moruya and Batemans Bay centres. Bus stops are located near of the hospital's main entrance.

 **Community Transport**
The Eurobodalla Community Transport is a low-cost local transport service for eligible users. Trips need to be booked a minimum of two days in advance. For further details regarding this service visit eurotransport@esc.nsw.gov.au or 4474 1040.

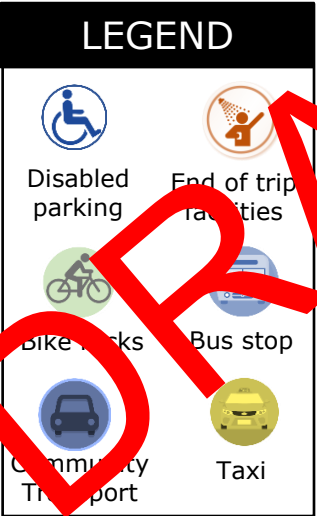
 **Cycling**
Cycling is an inexpensive, quick and healthy way to travel. If you live within 5-10 kilometres of the hospital this can save time and the stress of trying to find parking. Secure and easily accessible bike racks are located on-site. Shower and change facilities are available to staff only.

 **Walking**
Include walking in your trip to Eurobodalla Regional Hospital and contribute to your daily physical activity. Walk from home, school, work or bus stop. Eurobodalla Regional Hospital is down the road from TAFE, and the 2.5walk from Moruya Town Centre.

Eurobodalla Regional Hospital

Princes Highway, Moruya NSW

SITE MAP



Eurobodalla Health Services TRANSPORT ACCESS GUIDE

-  Bus access to Eurobodalla Health Services
 -  Service 860
 -  Service B
-  Walking to Eurobodalla Health Services from key hubs
 -  Route A
 -  Route B (1.4km) 17 minutes one-way
-  Community Transport

Note: walking times are approximate based on average walking speeds



No smoking
All SNSWLHD hospitals and facilities are smoke free (penalties may apply)

Eurobodalla Health Services
771 Princes Highway, Moruya NSW 2537
Ph: (02) 4474 2666
<https://www.snswhd.health.nsw.gov.au/our-facilities/moruya-eurobodalla-health-service>



No smoking
All SNSWLHD hospitals and facilities are smoke free (penalties may apply)

Eurobodalla Health Services
771 Princes Highway, Moruya NSW 2537
Ph: (02) 4474 2666
<https://www.snswhd.health.nsw.gov.au/our-facilities/moruya-eurobodalla-health-service>



Appendix B: Travel Mode Survey – Staff

Eurobodalla Regional Hospital – Staff Travel Mode Survey

First Name: _____

Last Name: _____

Date of Birth: _____

Date: _____

Please select the most appropriate answer for each question

1. What is your role within Eurobodalla Regional Hospital (choose one)?

- a. Doctor
- b. Admin
- c. Catering and kitchen
- d. Property Manager
- e. Cleaner
- f. Other (please specify): _____

2. How do you usually travel to Eurobodalla Regional Hospital (choose one)?

- a. Walk
- b. Cycle
- c. Public transport
- d. Car (alone)
- e. Carpool
- f. Other (please specify): _____

3. Estimate your travel distance from your home to Eurobodalla Regional Hospital (choose one)

- a. Less than 1km
- b. 1-2km
- c. 2-5km
- d. 5-10km
- e. 10-15km
- f. More than 15km

4. How long does your journey usually takes (choose one)?
- a. Less than 15 minutes
 - b. 15-30 minutes
 - c. 30-45minutes
 - d. 45-60minutes
 - e. More than 60 minutes
5. If you **drive** to work, what are the main reasons for doing so? Please tick all that apply
- a. Distance
 - b. Time available
 - c. Cost
 - d. Weather conditions
 - e. Family commitments
 - f. Health / fitness condition
 - g. Personal / road safety
 - h. Need to carry work equipment
 - i. Other (please specify): _____
6. How do you consider your awareness / knowledge of Public Transport services around Regional Hospital (choose one)?
- a. Good
 - b. Sufficient
 - c. Insufficient
 - d. Poor
7. Are you aware of any Public Transport Concession for Eurobodalla Regional Hospital (choose one)?
- a. Yes
 - b. No

8. Is there any actions Eurobodalla Regional Hospital can undertake to increase public transport usage for staff?

a. Yes (please specify): _____

b. No

9. How do you consider your knowledge about active transport infrastructure (i.e. pedestrian footpaths, bicycle paths) surrounding Eurobodalla Regional Hospital (choose one)?

- a. Good
- b. Sufficient
- c. Insufficient
- d. Poor

10. Are you aware of the end-of-trip facilities (i.e. bicycle lockers, showers, changing rooms) at Eurobodalla Regional Hospital (choose one)?

- a. Yes
- b. No

11. Is there any actions Eurobodalla Regional Hospital can undertake to increase bicycle and walking modes usage?

a. Yes (please specify): _____

b. No

12. Are you aware of the Eurobodalla Regional Hospital Carpooling scheme (choose one)?

- a. Yes
- b. No

13. Is there any actions Eurobodalla Regional Hospital can undertake to increase carpooling usage?

a. Yes (please specify): _____

b. No

14. Do you have any other comments on how to increase green travel mode usage (i.e. public transport, walking, carpool) to Eurobodalla Regional Hospital?

Appendix C: Travel Mode Survey – Non-Staff

Eurobodalla Regional Hospital – Non-staff Travel Mode Survey

First Name: _____

Last Name: _____

Date of Birth: _____

Date: _____

Please select the most appropriate answer for each question

1. What is your reason for visiting Eurobodalla Regional Hospital (choose one)?

- a. Acute patient
- b. Ambulatory patient
- c. Outpatient
- d. Visitor
- e. Career
- f. Other (please specify): _____

2. How did you travel to Eurobodalla Regional Hospital (choose one)?

- a. Walk
- b. Cycle
- c. Public transport
- d. Car (alone)
- e. Carpool
- f. Other (please specify): _____

3. Estimate your travel distance from your home to Eurobodalla Regional Hospital (choose one)

- a. Less than 1km
- b. 1-2km
- c. 2-5km
- d. 5-10km
- e. 10-15km
- f. More than 15km

4. How long did your journey take (choose one)?
- a. Less than 15 minutes
 - b. 15-30 minutes
 - c. 30-45minutes
 - d. 45-60minutes
 - e. More than 60 minutes
5. Are you aware of the Eurobodalla Regional Hospital Transport Access Guide provided at the Hospital hall and at the Eurobodalla Regional Hospital Website (choose one)?
- a. Yes
 - b. No
6. Do you consider Eurobodalla Health Services provided you with enough information on how to get to the Hospital by different transport modes?
- a. Yes
 - b. No (please specify): _____

7. Are you aware of the community transport providers in the Eurobodalla Regional Hospital area and how to contact them?
- a. Yes
 - b. No
8. Are you aware of end-of-trip facilities (i.e. bicycle lockers, showers, changing rooms) at Eurobodalla Regional Hospital (choose one)?
- a. Yes
 - b. No

9. Is there any actions Eurobodalla Regional Hospital can undertake to decrease private vehicle usage?

a. Yes (please specify): _____

b. No

10. Do you have any other comments on how to improve information on how to get to the hospital by different transport modes (i.e. public transport, walking, community transport) to Eurobodalla Regional Hospital?

Appendix C: Preliminary Construction Traffic Management Plan

Eurobodalla Regional Hospital, Moruya

Preliminary Construction Traffic and Pedestrian Management Plan

Health Infrastructure NSW

22 May 2023



Gold Coast

Suite 26, 58 Riverwalk Avenue
 Robina QLD 4226
 P: (07) 5562 5377

Brisbane

Level 2, 428 Upper Edward Street
 Spring Hill QLD 4000
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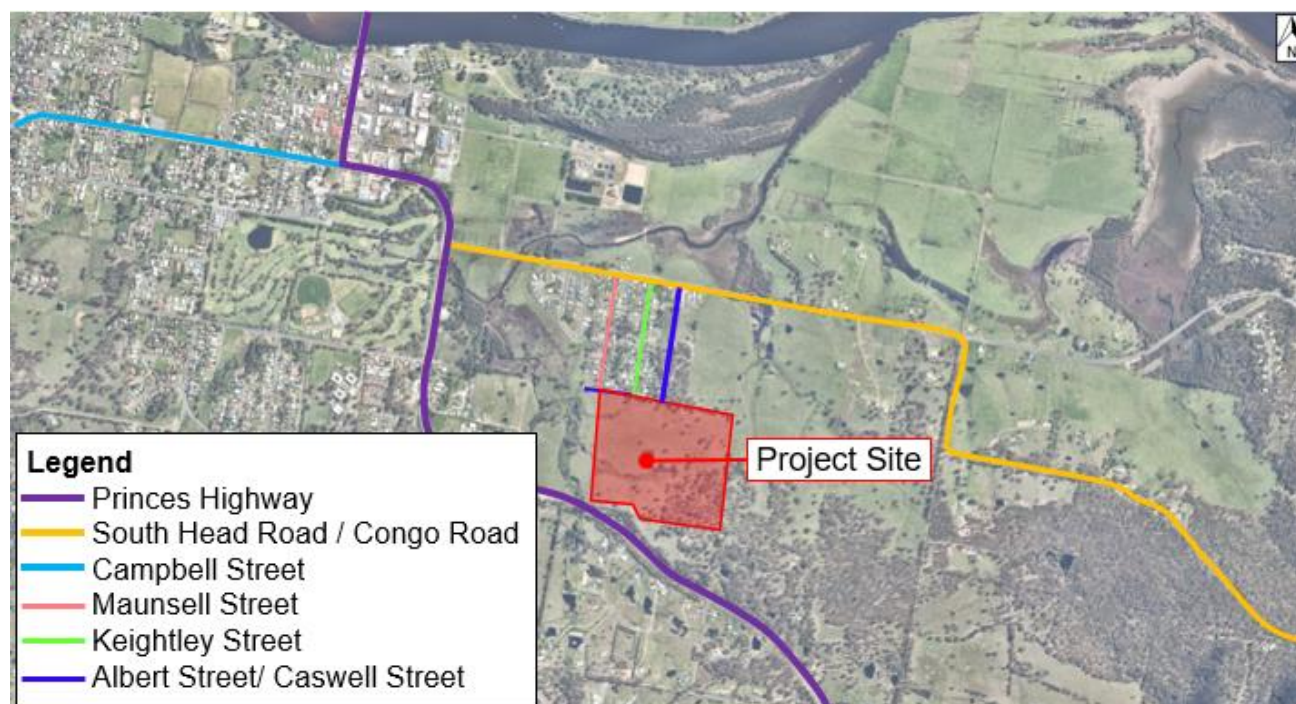
Appendix A:	Driver Code of Conduct
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1. INTRODUCTION

1.1 Background

Bitzios Consulting has been engaged by Health Infrastructure NSW to prepare a preliminary Construction Traffic and Pedestrian Management Plan (CTPMP) to support the Environmental Impact Statement (EIS) application for the Eurobodalla Regional Hospital (ERH) project at Princes Highway, Moruya.

The location of the subject site is shown in Figure 1.1.



Adapted from Nearmap

Figure 1.1: Subject Site Location

1.2 Purpose

The purpose of this CTPMP is to assess the impacts associated with construction activities and maintain an accessible and efficient road network for all users. This document has been prepared to assist Health Infrastructure NSW (and their contractors) to implement vehicle and pedestrian management measures when carrying out the works phase of the development.

The CTMP will be refined in consultation with the project's Contractor and Eurobodalla Shire Council (ESC), and further detailed assessment would be expected as part of a detailed CTMP which would form part of conditions of approval.

2. EXISTING CONDITIONS

2.1 Road Network

2.1.1 Princes Highway

The Princes Highway is a Transport for New South Wales (TfNSW) controlled highway connecting Sydney and Melbourne. In the vicinity of the project site, the Princes Highway is a two-lane undivided road with a posted speed limit of 100km/hr. To the west of the project site, the posted speed is reduced to 80km/hr and further to 50km/hr before entering Moruya.

2.1.2 Albert Street

Albert Street is a local road that runs along the northern boundary of the project site. It is a two-lane undivided road with a speed limit of 50km/h and runs parallel to the northern site frontage.

2.1.1 Maunsell Street / Keightley Street / Caswell

Maunsell, Keightley, and Caswell Street are local roads that give access to Albert Street. Both streets are two lane, undivided with a 50km/h posted speed and are lined with residential properties. A secondary access proposed via Albert Street / Caswell Street is to be an emergency vehicle access only in general or in the event there is any temporary restrictions to Princes Highway (i.e. in the event on an accident, floods etc).

2.1.2 South Head Road

South Head Road is an undivided two-lane rural arterial road connecting Moruya Heads to the east with Moruya to the west. In the vicinity of the subject site, the posted speed limit is 70km/h. South Head Road is separated from the site by a small residential catchment on the northern side of the subject site. South Head Road is a local road under the jurisdiction of Eurobodalla Shire Council.

2.2 Parking

The road network immediately surrounding the subject site consists predominantly of rural arterial or local access and collector streets. There are no formalised on-street parking facilities in the area.

2.3 Public Transport

The site currently exists as a greenfield site and as such, does not have any existing public transport facilities. Abutting the site to the west is the TAFE NSW campus, which is serviced by Route 860, travelling along the coast from Moruya to Batemans Bay.

2.4 Active Transport

There are currently no active transport facilities fronting the project site on Princes Highway. To the north, there is a footpath network that services some of the local streets with a pedestrian spine on South Head Road that connects to the Moruya town centre. To the east, the TAFE NSW campus is serviced by 3.0m shared path which connects to the Moruya town centre active transport facilities.

3. CONSTRUCTION ACTIVITIES

3.1 Description of Construction Activities

This CTPMP covers the Main Works of the ERH project, which includes internal construction works within the site over four stages as summarised in Table 3.1.

Table 3.1: Description and Staging of Works

Stage	Description of Construction Works	Indicative Commencement Date*	Indicative Completion
Stage 1 – Site Establishment & Base Structure	- Site establishment, including installing tower crane, construction hoist, concrete pumps - Sitewide fencing and barriers - Bulk earthworks, Internal roads, and car parks - Structure (slab on ground) - Lift and stair cores (vertical members) - Services (inground)	October 2023	September 2024
Stage 2 – Structure & Services	- Structure - Service infrastructure	March 2023	January 2025
Stage 3 – Facade & Base Fit Out	- Facade for MHB - Services - Service infrastructure - Lifts - Fit out - External plant	August 2024	September 2025
Stage 4 – Fit Out & External Works	- Fit out - External works (i.e. landscaping) - Commissioning	February 2025	January 2026

*Some stages will run concurrently

It is noted that there will be road upgrades external to the subject site along Princes Highway as part of the overall Eurobodalla Regional Hospital Project. These works include upgrade of construction of a roundabout intersection to form the site access. **All external works are specifically excluded from this CTPMP and the associated TCPs.** These works will be subject to a separate CTPMP and TCPs which will be prepared by the contractor(s) responsible for external works.

3.2 Construction Hours

Construction works, including the delivery of machinery and materials to and from the site, will occur between the approved hours of:

- 7:00am and 6:00pm Monday to Friday
- 8:00am and 1:00pm Saturday.

Where possible, access and activities requiring external heavy vehicle movements should be scheduled to occur outside network peak periods which occur between 8:00am and 9:00am in the morning and 2:45pm and 4:15pm in the afternoon to avoid school start and finish times.

No work shall be carried out on weekends or public holidays. Activities may be undertaken outside of the approved working hours for construction if required:

- By the police or a public authority for the delivery of vehicles, plant, or materials
- In an emergency to avoid the loss of life, damage to property or to prevent environmental harm
- Where the works are inaudible at the nearest sensitive receivers
- Where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is provided for the works
- For the delivery, set up and removal of construction cranes, where notice of the crane related works is provided to the Planning Secretary and affected residents at least seven days prior to the works
- Or if permitted under COVID-19 provisions.

Notification of such activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

Deliveries of heavy machinery may be required out of the construction hours of operation to conform to the overriding requirements of Transport for NSW.

3.3 Construction Worker Induction

All workers and subcontractors engaged onsite will be required to undergo a site induction. The induction should include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, Work Health and Safety, Driver Code of Conduct, and emergency procedures.

3.3.1 SafeWork Requirements

To protect the safety of workers and the public, the worksite should be adequately secured (i.e. security fence) to prevent access by unauthorised personnel. Additionally, all works must be conducted in accordance with the relevant SafeWork requirements at all times.

3.3.2 Safe Work Method Statements

A Safe Work Method Statement should be prepared whenever any person is undertaking works on or adjacent to the public domain.

3.3.3 Truck Driver Code of Conduct

All drivers associated with the project are to abide by a Code of Conduct in order to:

- Minimise impacts of construction on the local road network
- Minimise conflicts with other road users
- Minimise road traffic noise
- Ensure truck drivers use specified routes.

A Driver Code of Conduct has been included in **Appendix A**.

3.4 Construction Worker Parking

It is anticipated that there will be a peak of 250-300 workers onsite for several months when parts of Stages 2 to 4 run concurrently. Throughout the project, all personnel shall park within the designated parking area onsite, accessible via the site gate/s on Princes Highway and the internal road network.

3.4.1 Construction Worker Alternate Transport

Public and active transport trips generated by construction activities are expected to be low. Carpooling should be encouraged where possible.

3.5 Construction Site Access

Construction vehicle access during the main works phase of the project will be via one gate on Princes Highway as shown in Figure 3.1 and detailed below. Gate 1 will be used as the primary access during construction. Construction traffic management for the site accesses therefore has two key elements:

1. Construction traffic management for the construction of the site accesses (which does not form part of this CTPMP or associated TCPs will be prepared separately by others)
2. Construction traffic management for the use of the constructed accesses as site accesses.

Construction vehicles will enter and exit the site in a forward direction.



Adapted from NSW Spatial Map Viewer

Figure 3.1: Proposed Gate Locations

3.5.1 Gate 1 – Auxiliary Left Turn / Roundabout

Gate 1 will via a new roundabout intersection (to be constructed as part of separate Early Works package) and tie-in to Princes Highway on the northern side of the road. It will facilitate construction vehicle ingress in a minor function to avoid damage and be utilised as a permanent access for the hospital once opened.

The entry gate will generally be kept closed at all times, except to allow construction vehicles to enter the site. When this gate is in use, a gateman will be required at the entry gate to the site compound during construction hours to open and close the gate as required and manage the ingress of vehicles.

Appropriate signage will be placed at the entry gate to notify vehicles.

3.6 Delivery, Loading and Unloading of Plant, Equipment and Materials

During all stages of the works, the loading and unloading and storage of all plant, equipment and/or materials will only occur within the site boundary. In the event that loading, unloading and/or storage of any plant, equipment and/or materials is required outside of the site area, an appropriate application for a Work Zone should be made to the relevant road authority (Eurobodalla Shire Council).

3.7 Dust Minimisation

Gate 1 will have a shakedown device installed in accordance with Eurobodalla Shire Council requirements so that trucks do not track dirt onto the public road network. Additionally, all trucks entering or exiting the site are to have their loads sealed and covered. To further control dust onsite, exposed surfaces and stockpiles should be suppressed by regular watering.

3.8 Road Occupancy Licence

Under Section 138 of the *Roads Act 1993*, Road Occupancy Licenses (ROL) are required where an activity requires an existing road to be used in such a way that affects traffic flow. This type of traffic control is required for proposed road works associated with the early works phase of the project. Further details of the proposed traffic controls are provided in Section 6.

Applications for ROLs should be submitted to the relevant authority (Eurobodalla Shire Council) at least 10 working days prior to the planned commencement of the activity requiring the road occupancy. The activity must not commence until the ROL has been obtained.

3.9 Road Dilapidation Report

Before the commencement of construction, consultation with the relevant owner and provider of services that are likely to be affected by the development should be undertaken to make suitable arrangement for access to, diversion, protection, and support of the affected infrastructure.

A dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters, and footpaths) shall be carried out by a suitably qualified person prior to the commencement of and after the completion of the Stage 2 construction works. A copy of the dilapidation report shall be provided to the Certifying Authority and Eurobodalla Shire Council prior to the commencement of the Stage 2 construction works for that activity and no later than one month upon completion of the Stage 2 construction works. The cost of repairing any damage caused to Council or other Public Authority assets in the vicinity of the site as a result of the construction works associated with the approved development shall be met in full by the Contractor prior to the commencement of use of any stage of the development.

3.10 Road Safety Audits

Independent Road Safety Audits shall be conducted of the TCPs in accordance with the *Transport for NSW Guidelines for Road Safety Audit Practices (2011)*, *Austrroads Guide to Road Safety Part 6: Road Safety Audit* and IPWEA guidelines.

4. CONSTRUCTION TRAFFIC

4.1 Types of Construction Traffic

A combination of truck and vehicle types will be used during each stage of the main works phase of the project as detailed in Table 4.1. Predominantly, the upper limit of heavy vehicles will be semi-trailers (articulated vehicles (AV)), however, in the event that a B-double is required, the site has capacity to facilitate these movements and all exit movements will be assisted by traffic control/gatemen and liaison with Eurobodalla Shire Council will occur.

Table 4.1: Types of Construction Traffic Per Stage

Stage	Vehicles
1	Frannas, 80 Tonne Crane, Body Trucks, Aggregate Concrete Trucks, Mobile Pumps, B-doubles, Water Trucks and Low Loader.
2	Aggregate Concrete Trucks, Mobile Pumps and Body Trucks
3	Frannas, Mobile Cranes, Body Trucks, Semi-trailers, B-doubles, Low Loaders, Water Trucks
4	Frannas, Mobile Cranes, Body Trucks, Semi-trailers, B-doubles, Low Loaders, Water Trucks, Aggregate Concrete Trucks, Mobile Pumps

4.2 Vehicle Frequency

Daily two-way heavy vehicle movements are to be limited to 20 movements per hour (equating to 240 per day). Peak hours are proposed to be between 7:00am and 1:00pm. The expected daily cumulative two-way heavy vehicle movements during each stage of the main works phase are detailed in Table 4.2. The 240-vehicle limit is not expected to be exceeded. The worst-case peak worker vehicle movements are expected to be in the order of 400-500 movements (800-1,000 daily trips) based on the estimated number of workers, noting that the main works is the primary stage of the overall project. Again, carpooling should be encouraged where possible.

Table 4.2: Heavy Vehicle Frequency Per Stage

Indicative Month	Stage 1	Stage 2	Stage 3	Stage 4	Total
October 2023	40				40
November 2023	70				70
December 2023	100				100
January 2024	150				150
February 2024	70				70
March 2024	80	40			120
April 2024	70	50			120
May 2024	90	120			210
June 2024	90	150			240
July 2024	90	150			240
August 2024	40	140	40		220
September 2024		140	100		240
October 2024		140	100		240
November 2024		140	100		240

Indicative Month	Stage 1	Stage 2	Stage 3	Stage 4	Total
December 2024		100	80		180
January 2025		100	80		180
February 2025			80	60	140
March 2025			80	60	140
April 2025			80	40	120
May 2025			80	40	120
June 2025			80	60	240
July 2025			40	140	180
August 2025			40	140	180
September 2025				140	140
October 2025				140	140
November 2025				150	150
December 2025				150	150
January 2026				60	60

4.2.1 Impact on the Local Road Network

The Traffic Impact Assessments for the ERH prepared by Bitzios Consulting investigated the operations of the external road network including surrounding intersections for a range of scenarios. This included assessment of peak hour background traffic and design traffic volumes (design volumes being Hospital traffic plus background traffic). The assessment identified the surrounding road network and intersections generally operate within acceptable performance limits. Peak hours were typically 8:00am to 9:00am for the morning peak and 3:00pm to 4:00pm for the afternoon/evening.

Construction accesses will be managed by gatemen to mitigate traffic impacts and control deliveries and at access locations. In the instance the B-doubles are required at Gate 1 (noting the frequency is expected to be very low), traffic controllers will manage the access under a Traffic Control Plan. Traffic impacts construction works will be managed by scheduling deliveries and staff shift changes outside of peak traffic periods.

Construction works generally are expected to have relatively low impacts to the surrounding road network as traffic generation is generally low (relative to the operational Hospital which was assessed as part of the Traffic Impact Assessment). However, impacts will be moderate to significant for around eight months when parts of Stages 2 to 4 run concurrently. As such, truck movements should be spread throughout the day and staff will generally arrive before the morning peak hour (noting that construction hours start at 7:00am) and will leave after the afternoon/evening peak (noting that construction hours end at 6:00pm).

Due to the residential nature of some of the surrounding streets, queuing and idling of heavy vehicles on the external road network will not be permitted. This shall be managed by engaging trusted suppliers and the spreading of heavy vehicle movements throughout the day. Vehicles may only wait inside the worksite.

On the rare occasion of truck drivers arriving prior to 7:00am they will be instructed in advance to park at Albert Street (in vicinity of the showgrounds) where there is limited residences. Drivers will be instructed to switch off vehicles when parked and not in idle.

Once it is 7:00am, truck drivers will use their radios to confirm that it is acceptable to come to the site and circulate around the nearby grid road network. It shall be noted that this activity only occurs between 6:30am and 7:00am, and that during site opening hours, all trucks will park within the site upon arrival.

Some minor increase to intersection delays may occur due to additional vehicles on the network associated with construction. Overall, construction traffic impacts are expected to be low and the aforementioned mitigation measures will be implemented to further reduce impacts (such as scheduling of deliveries and staff shifts).

4.3 Construction Vehicle Routes

4.3.1 Access Routes

Construction vehicle movements will occur to and from the north on Princes Highway (and then to and from the wider road network). Construction vehicles will predominantly use the state-controlled network to access the site.

4.4 Road Restrictions

Princes Highway is an approved 23m B-double route to and from the subject site. If larger vehicles are required during the main works phase of the project, approval must be sought from Transport for NSW and managed under that approval.

5. TRAFFIC IMPACTS

5.1 General Traffic

The project team will maximise the safety for road users and workers by isolating the active work areas from live traffic. This will be achieved by providing sufficient clearance between the work areas and adjacent travel lanes and using temporary safety barriers where required.

5.2 On-street Parking

There are no parking areas on Princes Highway in proximity to the subject site. Therefore, construction works will not impact on any on-street or off-street parking spaces.

5.3 Pedestrians and Cyclists

Pedestrian management will be in place at the site entry/exit points. During the external works phase of the project, pedestrian and cyclist access to the surrounding road network will be maintained. This is subject to a separate CTPMP and TCPs undertaken as part of the external works package.

5.4 Bus Zones and Bus Services

There are no bus zones on Princes Highway in proximity to the subject site. Therefore, construction works will not impact on any bus zones. However, bus services operating on Princes Highway past the site must be maintained. This will be subject to a separate CTPMP and TCPs undertaken as part of the external works package.

5.5 Adjacent Properties

Vehicular access to adjacent properties will be maintained at all times as per the existing conditions.

5.6 Emergency Services

The proposed construction activities are not expected to impact emergency services.

5.7 Agricultural Vehicles

The proposed construction activities are not expected to impact agricultural vehicles (tractors etc.). Vehicular access to adjacent properties will be maintained at all times as per the existing conditions (including to agricultural properties). All existing traffic lanes and widths are being maintained as part of works being undertaken as part of the CTPMP. Further, the volume of agricultural vehicles is expected to be low.

6. CONSTRUCTION TRAFFIC MANAGEMENT

6.1 Traffic Control Plans

Prior to implementation, construction traffic management measures will require the preparation of approved TCPs. TCPs indicate the road worksite arrangements to ensure the safety of all road users as well as workers at the site.

Preliminary TCPs will need to be developed in accordance with AS1742.3 and the Transport for NSW Traffic control at work sites Technical Manual (July 2018). These have been designed by a qualified person holding the current Transport for NSW 'Prepare Work Zone Traffic Management Plans' accreditation.

It should be noted that any road occupancy will require approval from Eurobodalla Shire Council with local residents/neighbours also being consulted prior to activities commencing.

6.2 Traffic Controllers

The services of a qualified Traffic Control subcontractor must be used to provide traffic control services for the construction phase of the project if need be. Traffic controllers will be trained, hold a current SafeWork NSW Traffic Control Work Training Card, and comply with the requirements of the *Transport for NSW Traffic control at work sites Technical Manual (July 2018)*.

7. STAKEHOLDER CONSULTATION

7.1 Eurobodalla Shire Council and Transport for NSW

Consultation was undertaken with Eurobodalla Shire Council and Transport for NSW as part of the CTPMP for Main Works. Further consultation with Council will be required with the development of further details CTPMPs once a construction contractor is appointed.

7.2 Community

Information is to be provided to nearby residents and other non-residential landowners adjacent to the site (i.e. on Princes Highway between South Head Road and Mountain View Road). This information should include:

- Proposed works on Princes Highway
- Impacts to amenity as a result of proposed works (i.e. traffic conditions, pedestrian diversions etc.)
- Information on the timing of the proposed works.

This information is to be provided via a flyer delivered to local letterboxes.

8. MONITORING AND EVALUATION

8.1 Ongoing Inspections

Formal and documented short-term and long-term inspections shall be undertaken at worksites by persons holding the Prepare Work Zone Traffic Management Plan qualification.

8.2 Reporting

It is also important for any near miss incidents to be recorded and documented then reviewed as part of any inspection.

In the case of incidents, either witnessed or reported, involving the public or from which legal proceedings might arise, the actual type, size and location of signs, and devices in use at the time of the incident should be recorded and the sign arrangement photographed for subsequent reporting. The actual travelled path width and condition and weather conditions should also be recorded, as well as personal injury, extent of vehicle damage and vehicle details, such as registration.

8.3 Responsibilities

8.3.1 Works Supervisor

For all long-term worksites, the works supervisor who is appropriately qualified shall:

- Inspect the traffic control layout on the day before the work begins and at least once per week during the duration of the work
- Inspect the traffic control layout between shifts at least once during the first week and at least once every two months for the duration of work
- Review the reported near miss incidents
- Provide after-hours contact to local police for the duration of the work
- Inspect the site on the final day to ensure that unnecessary signs and devices are removed
- Record results of these inspections noting date, time, deficiencies, and any corrective action taken or specified
- Ensure that any specified corrective action is taken.

8.3.2 Team Leader

For all works, the team leader (or site supervisor) shall:

- Keep a record of the TCPs that were used
- Have a copy of the TCPs used onsite
- Record start and finish times and location of the works
- Record near misses
- Carry out inspections before work starts, during the works and pre-closedown of the site using the nominated checklist, noting:
 - Date and time of inspection
 - Deficiencies identified and corrective action taken
 - Changes or modifications made to the site.
- Periodically check that all signs and devices are satisfactory and in their correct position
- Make these records available to authorised staff.

8.3.3 Project Manager

The project manager shall:

- Record near misses
- Carry out inspections before work starts, during the works and pre-closedown of the site using the nominated checklist
- Ensure that a traffic control safety inspection is carried out at least once per month by a person qualified in 'Prepare Work Zone Traffic Management Plans' and that the date, time, and deficiencies are recorded
- Ensure that a traffic control safety inspection or Road Safety Audit is carried out prior to the implementation of any changes in traffic control or a TCP
- Ensure that a traffic control safety inspection or Road Safety Audit is carried out prior to the implementation of any lateral shift tapers to ensure that geometric requirements and delineation methods are in accordance with the approved TCP
- Ensure that near miss incidents are being reported and recorded then reviewed
- Ensure that any corrective action specified is taken and recorded.

This information may be critical, should legal proceedings follow an incident.

The Department of Planning, Industry and Environment must be notified in writing to compliance@planning.nsw.gov.au immediately after the applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. **Appendix B** contains the Written Incident Notification and Reporting Requirements (Appendix 2 of the development consent).

8.3.4 Drivers

Drivers are to:

- Obey road rules at all times
- Follow the haulage routes defined in this CTPMP or the site-specific CTPMP
- Notify the site contact/escort of arrival
- Follow instructions from traffic controllers to access the site or perform manoeuvres specified in a TCP
- Follow instructions from the site contact/escort, including directions to nominated laydown or holding areas
- After arriving at the nominated laydown area, exit the vehicle and remain in a predefined safe area while loading or unloading of plant, equipment and/or materials is undertaken
- Once unloading of the plant, equipment and/or materials has been completed, return to the vehicle, and exit the site, following instructions from the site contact/escort and traffic controllers. The driver is then to follow the designated haulage routes
- Read, understand, and follow this CTPMP, site-specific TCPs and any other relevant project documentation regarding road safety and traffic management
- Abide by the Driver Code of Conduct.

Appendix A: Driver Code of Conduct

TRUCK DRIVER CODE OF CONDUCT

EUROBODALLA REGIONAL HOSPITAL

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1. GENERAL RESPONSIBILITIES

As a professional driver working in the transport industry, I agree to and adopt this code of conduct. I accept that as a professional driver I have responsibilities under both chain of responsibility and OH&S Legislation to maintain my fitness for duty and not accept unsafe practices or breaches of the law. I share the road with other road users and aim to improve community safety.

1. I recognise and accept my obligations as a professional driver by:
 - setting a good example to others
 - supporting safety within the workplace
 - actively supporting this code and promoting it to other drivers
 - encouraging safety on the road.
2. I undertake to comply with all road laws, and be considerate of others by:
 - being professional at all times
 - being considerate of other road users
 - being fit for duty - alert, healthy and prepared for the driving task
 - observing speed limits & seat belt laws
 - observing fatigue regulations
 - observing drug & alcohol laws
 - leaving a safe distance between other vehicles
 - travelling in left lanes unless overtaking
 - avoiding the use of noisy engine brakes at inappropriate times
 - not being under the influence of drugs or alcohol
 - not tailgating other vehicles.
3. I agree to and adopt all the company's working policies and regulations.
4. I agree to obey all other related laws.
5. I support the introduction in companies of "Safe Systems" of work that include practices & procedures to reduce the risk of injuries or death.
6. I take pride in my vehicle and conduct regular checks to ensure my truck and the load is in a safe condition.
7. I understand that driver distraction is a risk and will reduce this risk through:
 - avoiding the use of mobile phones, two-way radios or other forms of communication whilst the vehicle is moving
 - fully preparing for any journey to avoid being distracted when driving.
8. I actively support this code of conduct for the purpose of promoting compliance with laws and promoting safe behaviour, within the workplace and on the road.
9. I undertake to actively participate through my OH&S representatives/delegates to commit to industry codes of conduct, codes of practice and safety guidelines.

2. LEGAL DRIVING HOURS AND REST PERIOD

Definition of **“rest time”** – The rest time is any continuous period of at least 15 minutes that is not driving time or work time. Breaks of less than 15 minutes are classed as work time.

Definition of **“work time”** - The work time of a driver includes driving time, and other time spent by the driver doing the following tasks:

- a. loading or unloading
- b. inspecting, servicing or repairing
- c. cleaning or refuelling
- d. performing marketing tasks
- e. helping with or supervising an activity mentioned in paragraphs a to c
- f. recording information, or completing a document in accordance with the regulations, or in relation to the operation of a truck.

The maximum a driver can drive without a break is five hours and 15 minutes and a driver must have a minimum of 15 minutes rest in every 5.5 hours.

A driver can take a rest period in the driver's seat with the engine turned off, in an approved sleeper berth, or away from the vehicle. However, rest periods of 7 continuous hours must be taken away from the vehicle.

A driver cannot work more than 12 hours in any 24 hour period. A rest period of 7 continuous hours must be taken during this 24 hour period. This applies for any 24 hour period, e.g. 6:00am to 6:00am or 5:30pm to 5:30pm.

The maximum number of hours a regulated truck driver can work in any 168 hour (7 day) period is 72 hours.

Table 2.1 summarises the standard allowable truck driver working hours. Standard hours apply to all drivers who do not have accreditation for fatigue management.

Table 2.1: Standard hours – work and rest hours requirement

In any period of...	A driver must not work for more than a maximum of...	And must have the rest of that period off work with at least a minimum rest break of...
5 ½ hours	5 ¼ hours work time	15 continuous minutes rest time
8 hours	7 ½ hours work time	30 minutes rest time in blocks of 15 continuous minutes
11 hours	10 hours work time	60 minutes rest time in blocks of 15 continuous minutes
24 hours	12 hours work time	7 continuous hours stationary rest time*
7 days	72 hours work time	24 continuous hours stationary rest time
14 days	144 hours work time	2 x night rest breaks# and 2 x night rest breaks taken on consecutive days

* *Stationary rest time is the time a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary heavy vehicle.*

Night rest breaks are 7 continuous hours stationary rest time taken between the hours of 10pm on a day and 8am on the next day (using the time zone of the base of the driver) or a 24 continuous hours stationary rest break.

3. SAFETY

3.1 GENERAL

The driver must adhere to the following rules:

- comply with the instructions given for health and safety
- comply with all Australian Road Rules
- comply with all requirements of the National Heavy Vehicle Regulator (NHVR)
- comply with Lendlease's Code of Conduct
- comply with all safety instructions, including safe working practices and procedures set in place and use any equipment that is issued for personal protection and ensure that it is maintained in proper order
- never wilfully, recklessly or intentionally interfere with, remove, misuse or damage anything that is provided in the interests of safety, health or welfare nor wilfully place at risk the safety and health of any other person at their workplace
- work with due care and consideration to safeguard your own safety and health and the safety and health of others
- smoking is forbidden in all vehicles, mobile plant, buildings and enclosed structures
- protect the environment.

3.2 USE OF MOBILE PHONES

The driver must adhere to the following relating to use of mobile phones:

- it is strictly forbidden to drive a vehicle while using (includes talking, sending or receiving text messages, playing games or taking photos) when using a hand-held phone. It is also forbidden to perform these activities when the vehicle is stopped but not parked, for example when you are waiting at traffic lights
- a hands-free device can reduce the physical effort to make and receive calls but doesn't necessarily make it safe to use a phone while driving. It is forbidden to use a hands-free phone while driving if it causes you to lose proper control of your vehicle. The penalty includes significant fines and loss of demerit points
- if using a hands-free phone while driving is required:
 - make sure it is a hands-free phone that is set up and working before you start driving
 - keep the conversation short. Don't engage in complex or emotional conversations
 - tell the person on the other end that you are driving and may have to end the call
 - never text message (SMS) while driving
 - end the call if it is distracting you from driving.

3.3 SITE SAFETY

The driver must follow the following rules relating to site safety:

- site speed limit
- maintain a clean and orderly site
- comply with safety directions
- assess hazards in a task before commencing
- immediately report all potential hazards seen on site

- immediately report all injuries
- immediately report any environmental damage – oil spills, noise, soil contamination etc.
- drivers are not allowed to enter confined spaces. Entry to confined spaces is subject to a permit, which is issued to appropriately trained authorised persons only.

4. WORK ETHICS

4.1 ALCOHOL AND DRUGS

It is Lendlease's policy to maintain a drug and alcohol-free work environment. The use, sale, transfer or possession of illegal drugs or other illegal substances, is strictly prohibited at the work site. This also includes illegal or improper use of controlled substances.

Reporting to work under the influence of any such substance is also strictly prohibited. Doing so will result in the application of the relevant disciplinary procedures.

In addition, compliance with any laws, policies or regulations regarding the use or possession of alcohol, illegal drugs, or controlled substances by persons who operate motor vehicles is mandatory.

The following Blood Alcohol Content (BAC) levels apply for entry to the Tweed Valley Hospital site:

- BAC level of 0.0% applies to heavy vehicle drivers
- the consumption of alcohol and other drugs, except prescribed and over the counter medicines during work hours is prohibited
- bringing alcohol and other drugs on site is prohibited
- if planning to consume alcohol locally after work ensure your vehicle is parked outside the Tweed Valley Hospital project site.

4.2 STANDARDS OF BEHAVIOUR

The following behaviour is unacceptable in the workplace:

- instigating a fight and/or workplace bullying
- assaulting or threatening other employees or persons
- theft
- harassment and discrimination of any kind
- initiation or participation in unauthorised activities that may cause personal injury, property damage or physical stress or anxiety to other employees or members of the public
- abuse, damage or destruction of property
- interfering with or removing without permission, the property of the company or any other person
- failing to adhere to safe operating procedures
- horseplay, practical jokes and skylarking
- the taking of unauthorised photographs and removal of company assets is strictly forbidden.

Employees under the influence of alcohol and/or drugs will not be permitted on any worksite. Employees affected by alcohol and/or drugs must not drive vehicles or operate any plant, equipment or machinery.

5. PRE-DEPARTURE CHECK

A pre-departure check is a procedure to be completed daily. Each driver is to carry out a visual inspection of the items listed. This is to be done by the driver prior to the commencement of each shift/or when changing into another vehicle mid-shift.

A pre-trip check involves the inspection of critical equipment. Each driver has to visually inspect as a minimum the items listed below:

- Wheels and Tyres:
 - tyres are adequately inflated
 - tyre tread, depth and integrity
 - wheels are secure.
- Lights and reflectors:
 - all lights, including clearance lights, are working
 - reversing alarm (where applicable)
 - all reflectors and lenses are intact and clean.
- Windscreens, mirrors and wipers:
 - windows, mirrors for security, damage and grime
 - wipers and windscreen washers ensuring clear forward vision.
- Structure, Bodywork and Fluid Systems:
 - all panels and readily visible structural members are secure; and
 - leaks of any fluid (oil, water, refrigerant/coolant, hydraulic fluid, brake fluid or other).
- Brakes:
 - brake failure indicators
 - pressure/vacuum gauges; and
 - drain air tanks daily.
- all roadworthiness faults found during the daily vehicle inspection shall be documented in the driver maintenance report book and reported immediately to the appropriate personnel to ascertain the urgency of the fault, in accordance with procedures.
- responsibility for communicating faults:
 - any major faults are to be reported by the driver directly to their manager or their delegate as well as being recorded/ reported in the vehicle logbook.

6. HOURS OF OPERATION

Drivers are likely to be driving across different periods of the day and are to be aware of the requirement to drive to the prevailing conditions.

As a driver you need to be aware that your driving behaviour and level of attention will need to vary across different times of the day, for instance:

Day-Time Periods

- you will need to pay additional attention to congestion and possible queuing
- you will need to be patient and drive according to the road conditions at the time
- you will need to reduce the number of times you change lanes to minimise the potential of a crash
- you will need to be more cognisant of cyclists and pedestrians along the roadside and crossing the road.

Night-Time Periods

- you will need to pay additional attention to adhering to speed limits
- you will need to take greater caution of other speeding or non-complying motorists
- you will need to take greater caution of animals possibly crossing the road or feeding on the road's edge
- you will need to be mindful of coming across early morning or late evening pedestrians/cyclists that may or may not be under the effects of alcohol.

7. TRUCK ROUTES

7.1 TRUCK ROUTES

You are to remain on designated truck routes. The primary designated truck routes are as follows:

Pacific Highway to Site

The designated route is via:

- Pacific Motorway
- Tweed Coast Road (accessed via the Tweed Coast Road interchange)
- Cudgen Road.

Site to Pacific Highway

The designated route is via:

- Cudgen Road
- Tweed Coast Road
- Pacific Motorway (accessed via the Tweed Coast Road interchange).

Any required deviations to the designated truck route are to be authorised by the Construction Manager.

8. **INFORMATION SOURCES**

- Driving Hours and Rest Periods
<https://www.nhvr.gov.au/safety-accreditation-compliance/fatigue-management/work-and-rest-requirements/standard-hours>
- NSW Government, RMS, Heavy Vehicle Driver Handbook
<http://www.rms.nsw.gov.au/documents/roads/licence/heavy-vehicle-driver-handbook.pdf>
- Truck Drivers Manual
http://www.infrastructure.gov.au/roads/safety/publications/1990/pdf/Edu_book_Truck.pdf

Appendix B: Written Incident Notification and Reporting Requirements

APPENDIX 2 WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

Written Incident Notification Requirements

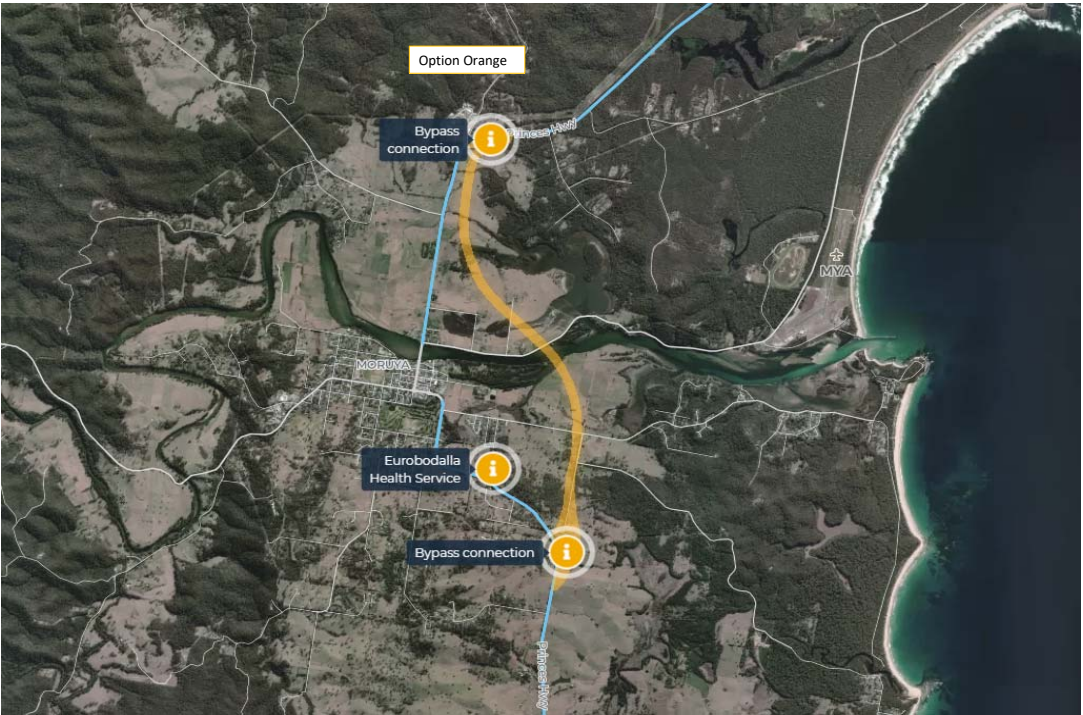
1. A written incident notification addressing the requirements set out below must be emailed to the Planning Secretary at the following address: compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition A27 or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
 - a. identify the development and application number;
 - b. provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
 - c. identify how the incident was detected;
 - d. identify when the applicant became aware of the incident;
 - e. identify any actual or potential non-compliance with conditions of consent;
 - f. describe what immediate steps were taken in relation to the incident;
 - g. identify further action(s) that will be taken in relation to the incident; and
 - h. identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
 - a. a summary of the incident;
 - b. outcomes of an incident investigation, including identification of the cause of the incident;
 - c. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
 - d. details of any communication with other stakeholders regarding the incident.

Appendix D: Traffic Assumptions

AIMSUN Modelling Values									
PVT	EVT	MVT	L	T	Site Access				
80	80	36			R	L	PVT	EVT	MVT
572	572	240			R	L			
Princes Highway					T		8	0	0
							600	340	340
							MVT	EVT	PVT

PVT	EVT	MVT	L	T	Site Access				
63%	63%	29%			R	L	PVT	EVT	MVT
572	572	240			R	L			
Princes Highway					T		71%	37%	37%
							600	340	340
							MVT	EVT	PVT

Distribution based on through-values



Existing Distribution									
			Site Access						
PVT	EVT	MVT	L		88%	12%	PVT		
100%	100%	82%	T		88%	12%	EVT		
					100%	0%	MVT		
Princes Highway					R	L			
					R	18%	0%	0%	
					T				
						MVT	EVT	PVT	

PVT

Post-Byass Distribution						
			Site Access			
PVT 40%	EVT 40%	MVT 40%		40% 40% 40%	60% 60% 60%	PVT EVT MVT
			L T	R T	L	
Princes Highway					60%	60%
					MVT	EVT PVT

MVT - AM Trip Generation					
Component	AM Trip Gen	Distribution		Trips	
		IN (%)	OUT (%)	AM IN	AM OUT
2025					
Hospital	73	70%	30%	52	22
ancillary	0			0	0
TOTAL	73			52	22
2035					
Hospital	94	70%	30%	66	29
ancillary	50			35	15
TOTAL	144			101	44

EVT - PM Trip Generation					
Component	PM Trip Gen	Distribution		Trips	
		IN (%)	OUT (%)	PM IN	PM OUT
2025					
Hospital	180	30%	70%	54	126
ancillary	0			0	0
TOTAL	180			54	126
2035					
Hospital	211	30%	70%	64	148
ancillary	48			15	34
TOTAL	259			79	182

PVT - PM Trip Generation					
Component	PM Trip Gen	Distribution		Trips	
		IN (%)	OUT (%)	PM IN	PM OUT
2025					
Hospital	190	50%	50%	95	95
ancillary	0			0	0
TOTAL	190			95	95
2035					
Hospital	233	50%	50%	117	117
ancillary	48			24	24
TOTAL	281			141	141

MVT AM Peak - Traffic Generation					
Component	Year	Beds	Staff	Peak Hour Trip Rate	Peak Hour Trips

Hospital	2025	127	376	$-10.21 + 0.47B + 0.06ASDS$	73
	2035	165	431	$-10.21 + 0.47B + 0.06ASDS$	94

EVT PM Peak - Traffic Generation

Component		Beds	Staff	Peak Hour Trip Rate	Peak Hour Trips
Hospital	2025	127	376	$-2.84 + 0.25B + 0.4ASDS$	180
	2035	165	431	$-2.84 + 0.25B + 0.4ASDS$	211

PVT PM Peak - Traffic Generation

Component		Beds	Staff	Peak Hour Trip Rate	Peak Hour Trips
Hospital	2025	127	376	$-14.69 + 0.69B + 0.31ASDS$	190
	2035	165	431	$-14.69 + 0.69B + 0.31ASDS$	233

Ancillary Component - Traffic Generation

Component	Quantity	AM Rate	PM Rate	AM Peak Hour Trips	PM Peak Hour Trips
Accommodation	10	0.53	0.32	6	4
Ambulance NSW (Staff)	6	2	2	12	12
Education	16	1	1	16	16
Private Provider	2	8	8	16	16
				50	48

Source

High Density Residential Flat Dwellings Regional 'per unit' rate - RMS *Technical Direction* (2013)

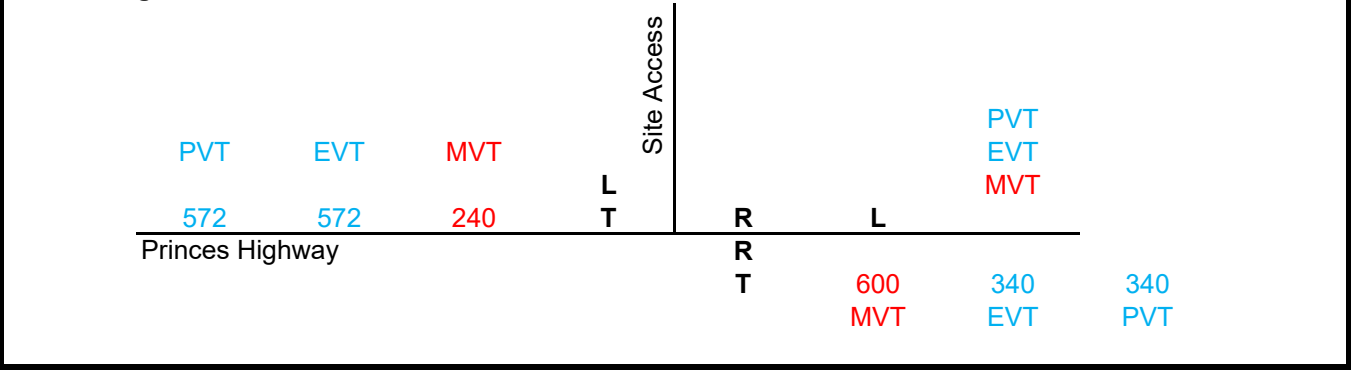
First Principles - 6 staff bays, 2 trips each (1 in, 1 out) per bay

First Principles - likely students will drive to class in single occupancy trips

First Principles - based on 1 doctor, 2 support staff and 1 admin staff per room plus 1 peak hour trip each, max 2 patient appointments per hour per room

Alternate Medical Centre Rate, refer Extended Hours Medical Centres (3.11.2) - RMS *Guide to Traffic Generating Developments* (2002)

2036 Background Traffic



2035 Development Traffic

				Site Access				
PVT	EVT	MVT			57	85	PVT	
57	32	41	L		73	110	EVT	
572	572	240	T		18	27	MVT	
Princes Highway					R	L		
					R	61	48	85
					T	600	340	340
						MVT	EVT	PVT

2035 Background Traffic

			Site Access			
PVT	EVT	MVT		R	L	PVT EVT MVT
572	572	240	L T	R T	600 MVT	340 EVT 340 PVT
Princes Highway						

Distribution

			Site Access			
PVT 40%	EVT 40%	MVT 40%		40% 40% 40%	60% 60% 60%	PVT EVT MVT
			L T	R T	L 60% MVT	60% EVT PVT
Princes Highway						

2035 Development Traffic

			Site Access			
PVT 57 572	EVT 32 572	MVT 41 240		57 73 18 R T	85 110 27 L 61 600 MVT	PVT EVT MVT 48 340 EVT 85 340 PVT
Princes Highway						

Appendix E: SIDRA Results

SITE LAYOUT

 **Site: 101v [2036MVT - Single Lane (Site Folder: General)]**

P5059

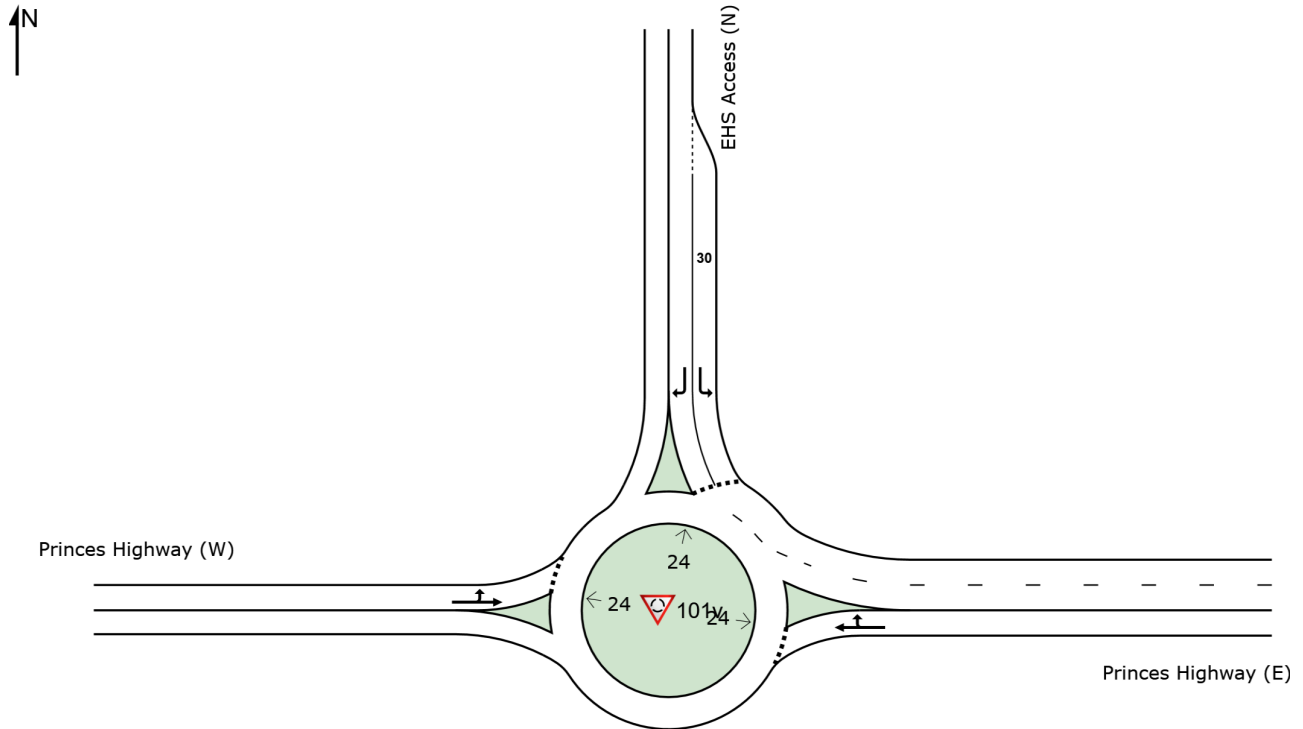
Princes Highway / Site Access

Single Lane Option

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: P:\P5059 Eurobodalla Hospital Traffic and Transport Study\Technical Work\Models\P5059.001M Site Access Princes Highway_Single Lane.sip9

MOVEMENT SUMMARY

 **Site: 101v [2036MVT - Single Lane (Site Folder: General)]**

P5059

Princes Highway / Site Access

Single Lane Option

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
						v/c	sec							km/h
East: Princes Highway (E)														
5	T1	600	5.0	632	5.0	0.425	4.1	LOS A	3.8	27.5	0.15	0.40	0.15	56.4
6	R2	62	0.0	65	0.0	0.425	9.1	LOS A	3.8	27.5	0.15	0.40	0.15	53.0
Approach		662	4.5	697	4.5	0.425	4.5	LOS A	3.8	27.5	0.15	0.40	0.15	56.0
North: EHS Access (N)														
7	L2	27	0.0	28	0.0	0.020	3.7	LOS A	0.1	0.8	0.41	0.42	0.41	50.6
9	R2	18	0.0	19	0.0	0.016	8.6	LOS A	0.1	0.6	0.43	0.57	0.43	48.8
Approach		45	0.0	47	0.0	0.020	5.7	LOS A	0.1	0.8	0.42	0.48	0.42	49.9
West: Princes Highway (W)														
10	L2	41	0.0	43	0.0	0.206	4.0	LOS A	1.3	9.2	0.23	0.40	0.23	51.1
11	T1	240	5.0	253	5.0	0.206	4.3	LOS A	1.3	9.2	0.23	0.40	0.23	56.4
Approach		281	4.3	296	4.3	0.206	4.3	LOS A	1.3	9.2	0.23	0.40	0.23	55.6
All Vehicles		988	4.3	1040	4.3	0.425	4.5	LOS A	3.8	27.5	0.19	0.40	0.19	55.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\P5059 Eurobodalla Hospital Traffic and Transport Study\Technical Work\Models\P5059.001M Site Access Princes Highway_Single Lane.sip9

MOVEMENT SUMMARY

 **Site: 101v [2036EVT - Single Lane (Site Folder: General)]**

P5059

Princes Highway / Site Access

Single Lane Option

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
		veh/h	%	veh/h	%	v/c	sec							km/h
East: Princes Highway (E)														
5	T1	340	5.0	358	5.0	0.290	4.4	LOS A	2.2	16.2	0.32	0.44	0.32	55.5
6	R2	48	0.0	51	0.0	0.290	9.4	LOS A	2.2	16.2	0.32	0.44	0.32	52.2
Approach		388	4.4	408	4.4	0.290	5.0	LOS A	2.2	16.2	0.32	0.44	0.32	55.0
North: EHS Access (N)														
7	L2	111	0.0	117	0.0	0.106	5.6	LOS A	0.7	5.1	0.68	0.61	0.68	49.8
9	R2	74	0.0	78	0.0	0.094	11.2	LOS B	0.6	4.0	0.69	0.72	0.69	47.7
Approach		185	0.0	195	0.0	0.106	7.9	LOS A	0.7	5.1	0.68	0.66	0.68	48.9
West: Princes Highway (W)														
10	L2	32	0.0	34	0.0	0.419	4.0	LOS A	3.5	25.5	0.26	0.39	0.26	51.0
11	T1	572	5.0	602	5.0	0.419	4.3	LOS A	3.5	25.5	0.26	0.39	0.26	56.2
Approach		604	4.7	636	4.7	0.419	4.3	LOS A	3.5	25.5	0.26	0.39	0.26	55.9
All Vehicles		1177	3.9	1239	3.9	0.419	5.1	LOS A	3.5	25.5	0.35	0.45	0.35	54.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\P5059 Eurobodalla Hospital Traffic and Transport Study\Technical Work\Models\P5059.001M Site Access Princes Highway_Single Lane.sip9

MOVEMENT SUMMARY

 **Site: 101v [2036PVT - Single Lane (Site Folder: General)]**

P5059

Princes Highway / Site Access

Single Lane Option

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist m]				
						v/c	sec							km/h
East: Princes Highway (E)														
5	T1	340	5.0	358	5.0	0.307	4.3	LOS A	2.4	17.7	0.28	0.44	0.28	55.4
6	R2	86	0.0	91	0.0	0.307	9.3	LOS A	2.4	17.7	0.28	0.44	0.28	52.2
Approach		426	4.0	448	4.0	0.307	5.3	LOS A	2.4	17.7	0.28	0.44	0.28	54.7
North: EHS Access (N)														
7	L2	86	0.0	91	0.0	0.084	5.6	LOS A	0.6	4.1	0.69	0.61	0.69	49.7
9	R2	57	0.0	60	0.0	0.074	11.2	LOS B	0.5	3.2	0.70	0.71	0.70	47.8
Approach		143	0.0	151	0.0	0.084	7.8	LOS A	0.6	4.1	0.69	0.65	0.69	48.9
West: Princes Highway (W)														
10	L2	57	0.0	60	0.0	0.465	4.3	LOS A	4.0	28.8	0.38	0.43	0.38	50.5
11	T1	572	5.0	602	5.0	0.465	4.6	LOS A	4.0	28.8	0.38	0.43	0.38	55.6
Approach		629	4.5	662	4.5	0.465	4.6	LOS A	4.0	28.8	0.38	0.43	0.38	55.1
All Vehicles		1198	3.8	1261	3.8	0.465	5.2	LOS A	4.0	28.8	0.38	0.46	0.38	54.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

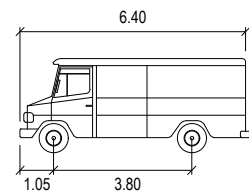
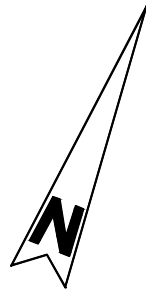
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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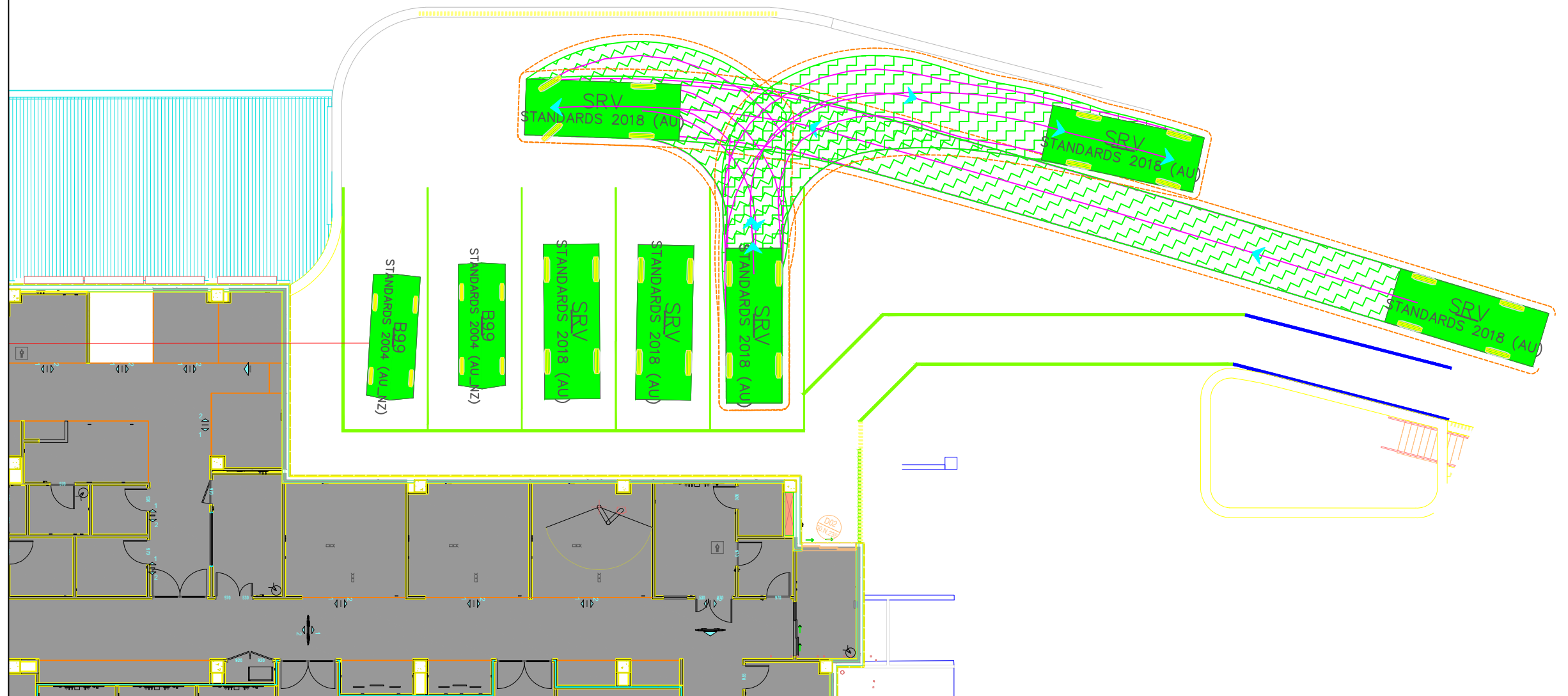
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Appendix F: Swept Paths



SRV
Width : 2.3
Track : 2.3
Lock to Lock Time : 6.0
Steering Angle : 40.0

DESIGN VEHICLE

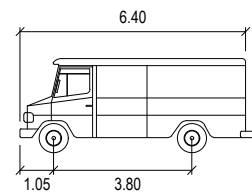
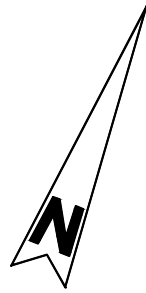


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Issue	Revisions/Descriptions		
001	Swept Path Diagram	J.I	15.03.2023

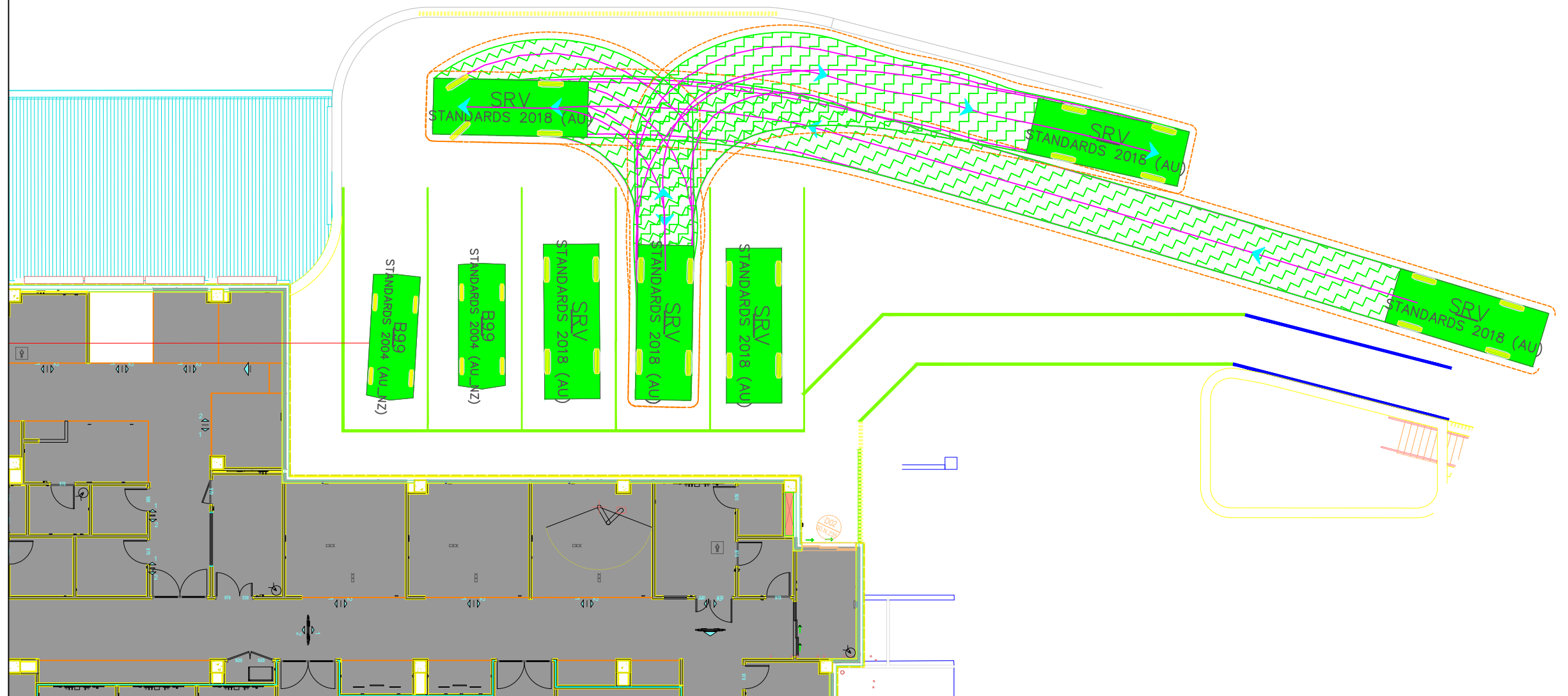
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Project Eurobodalla Hospital Traffic and Transport Study	Design J.I	Drawn J.I	Checked J.BR
	CONCEPT ONLY		
Title Ambulance Servicing Bay 1	Project Number P5059	Sheet Number 1	Date 15.03.2023
			Issue 001



SRV meters
Width : 2.3
Track : 2.3
Lock to Lock Time : 6.0
Steering Angle : 40.0

DESIGN VEHICLE

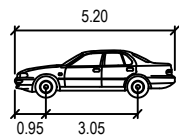
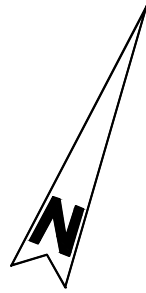


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001	Swept Path Diagram	J.I	15.03.2023

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Project Eurobodalla Hospital Traffic and Transport Study	Design J.I	Drawn J.I	Checked J.BR
	CONCEPT ONLY		Date 15.03.2023
Title Ambulance Servicing Bay 2	Project Number P5059	Sheet Number 2	Issue 001



B99
Width : 1.94
Track : 1.84
Lock to Lock Time : 6.0
Steering Angle : 38.0

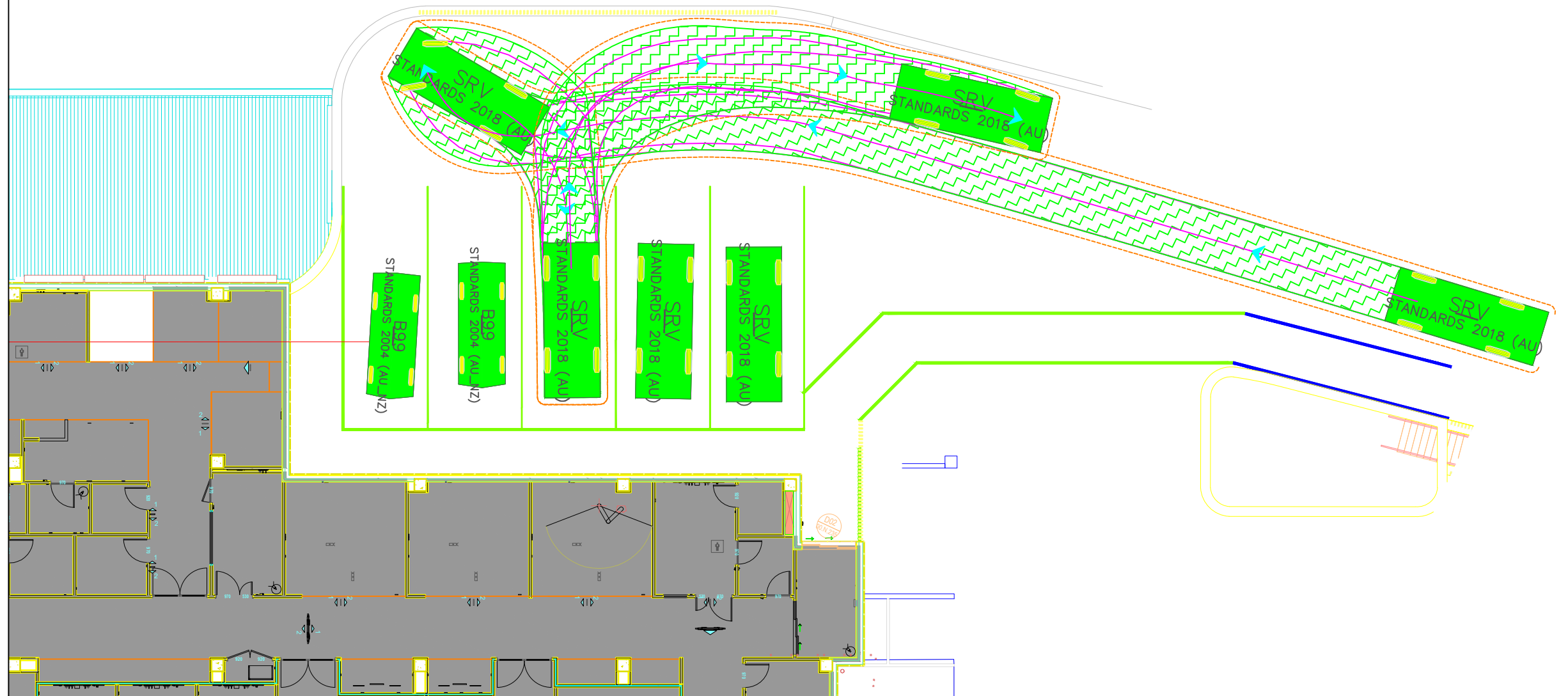
DESIGN VEHICLE



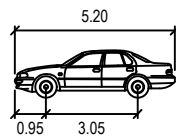
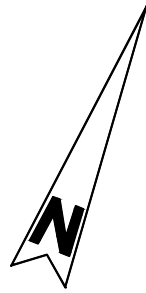
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001	Swept Path Diagram	J.I	15.03.2023

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	CONCEPT ONLY		
Title Ambulance Servicing Bay 3	Project Number P5059	Sheet Number 3	Date 15.03.2023
	Issue 001		



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Track : 1.84
Lock to Lock Time : 6.0
Steering Angle : 38.0

DESIGN VEHICLE

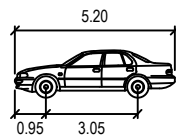
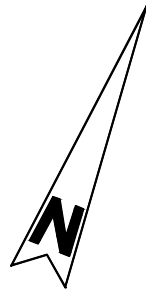


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	CONCEPT ONLY		
Title Ambulance Servicing Bay 4	Project Number P5059	Sheet Number 4	Issue 001
	Date 15.03.2023		



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Track : 1.84
Lock to Lock Time : 6.0
Steering Angle : 38.0

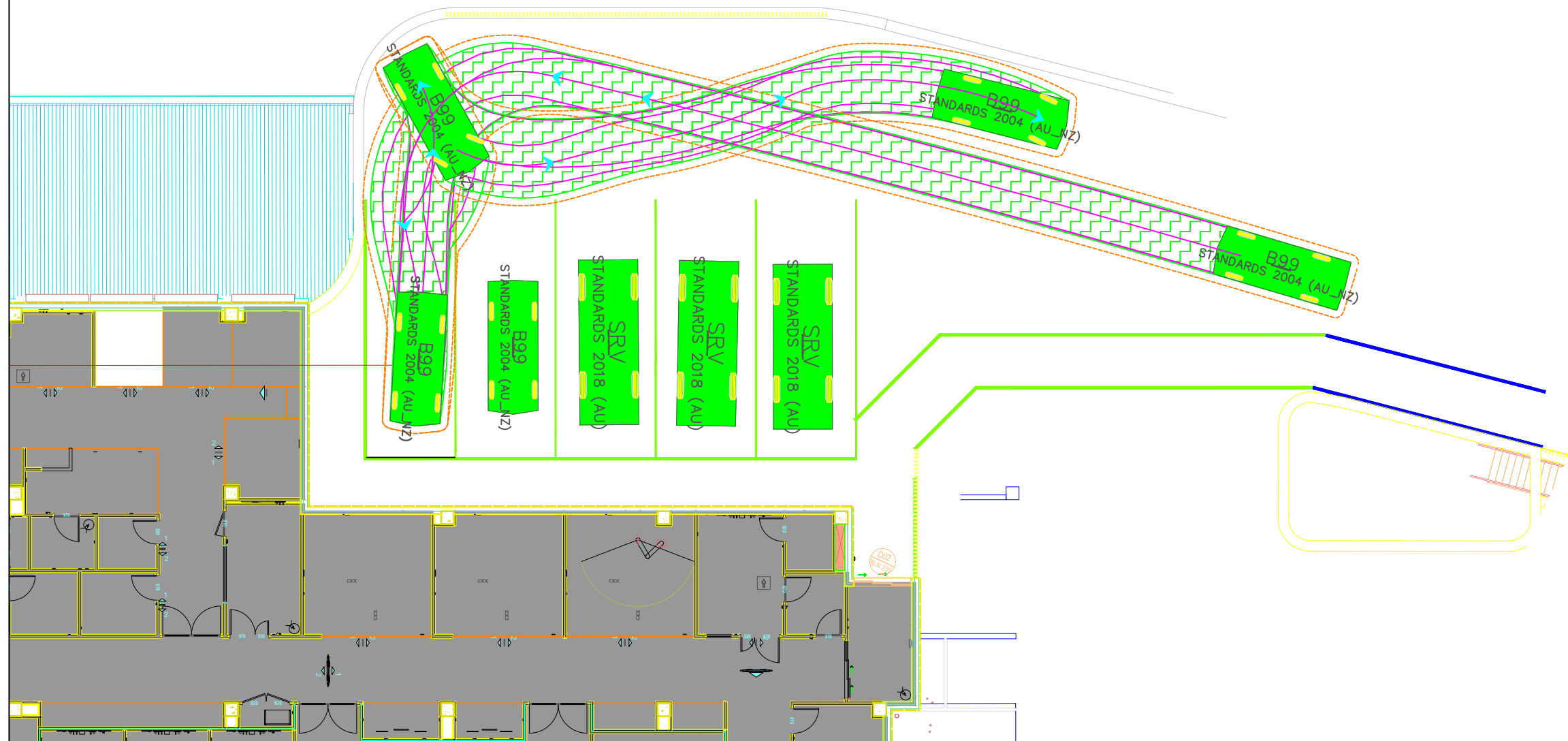
DESIGN VEHICLE



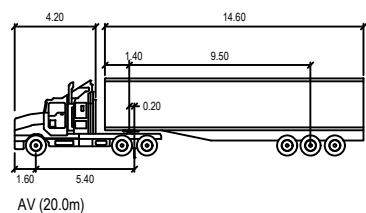
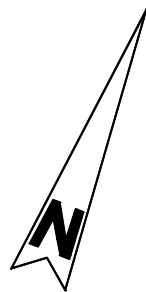
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001	Swept Path Diagram	J.I	15.03.2023

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	CONCEPT ONLY		
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	Date 15.03.2023		



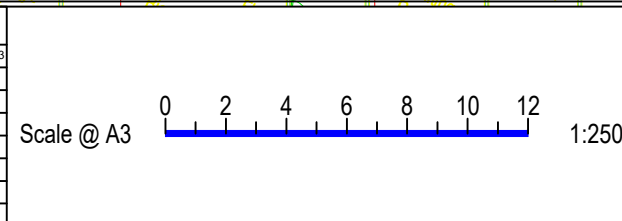
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Trailer Track	: 2.50		

DESIGN VEHICLE

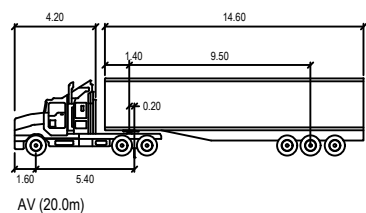
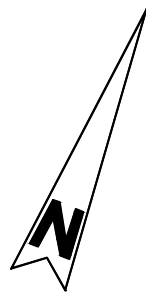


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001	Swept Path Diagram	J.I	15.03.2023



Project	Eurobodalla Hospital Traffic and Transport Study		
Title	Design	Drawn	Checked
	J.I	J.I	J.BR
Loading Dock AV Bay 1	CONCEPT ONLY		
	Project Number	Sheet Number	Issue
	P5059	6	001



Tractor Width	: 2.50	Lock to Lock Time	: 6.0
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Trailer Track	: 2.50		

DESIGN VEHICLE



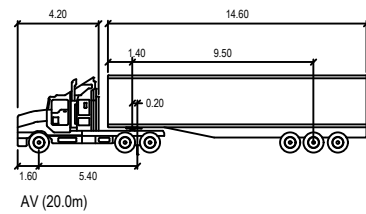
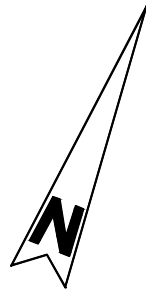
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REVISIONS			
Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Diagram	J.I	15.03.2023

Scale @ A3

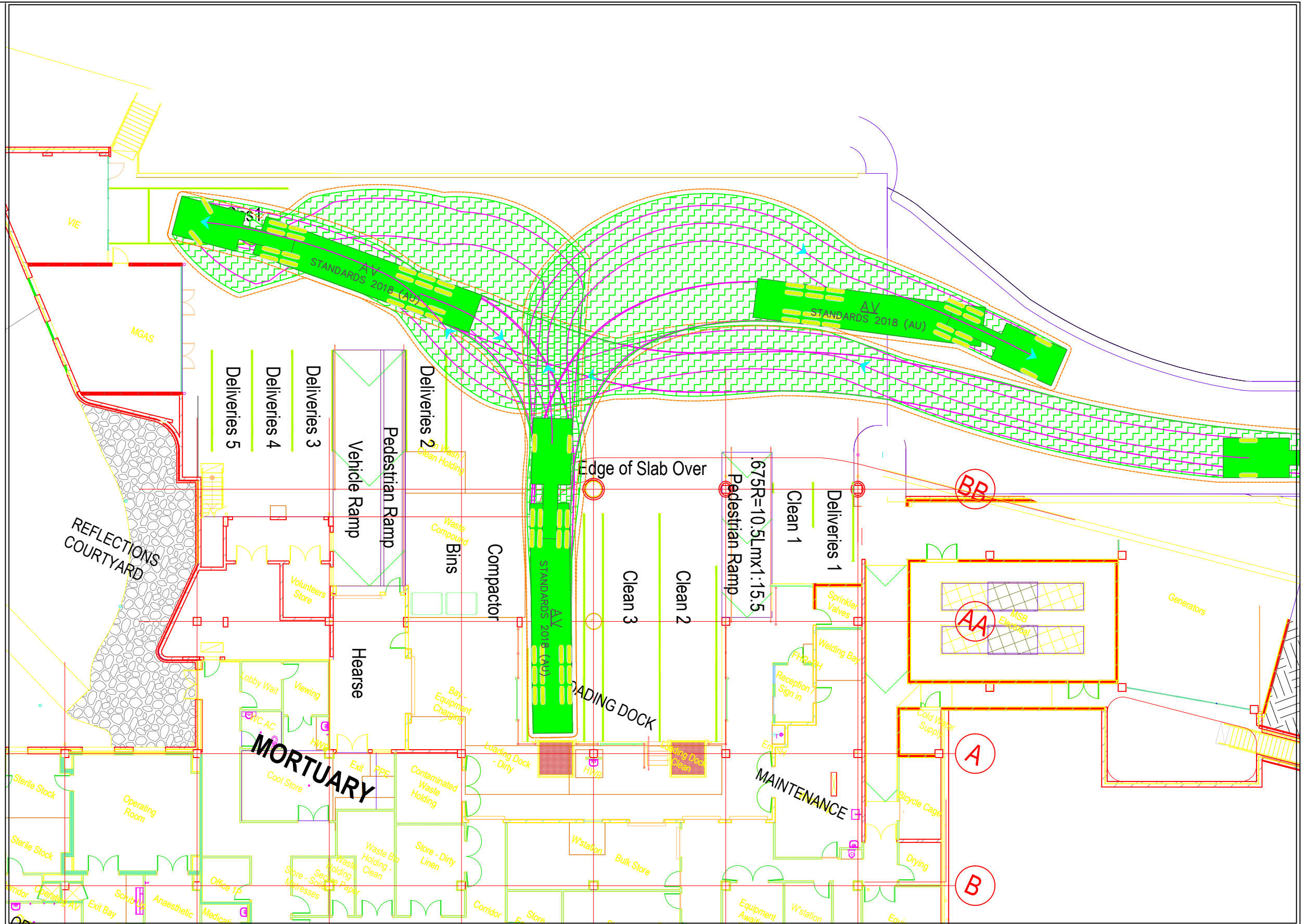
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Project	Eurobodalla Hospital Traffic and Transport Study		
Title	Design	Drawn	Checked
	J.I	J.I	J.BR
Loading Dock AV Bay 2	CONCEPT ONLY		
	Project Number	Sheet Number	Issue
	P5059	7	001



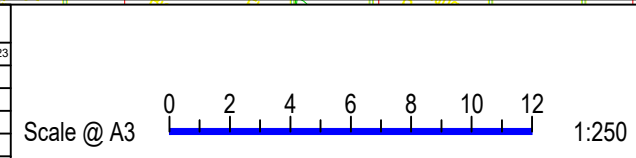
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Trailer Width	: 2.50	Steering Angle	: 28.3
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Trailer Track	: 2.50		

DESIGN VEHICLE

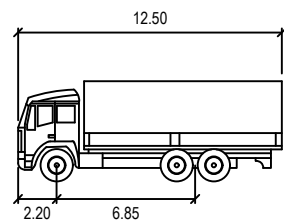
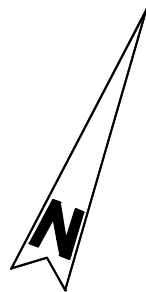


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REVISIONS		Drawn	Date
Issue	Revisions/Descriptions		
001	Swept Path Diagram	J.I	15.03.2023



Project Eurobodalla Hospital Traffic and Transport Study	Design J.I	Drawn J.I	Checked J.BR
	CONCEPT ONLY		
Title Loading Dock AV Bay 3	Project Number P5059	Sheet Number 8	Issue 001
	Date 15.03.2023		



HRV
Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

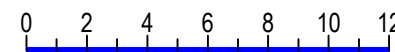
DESIGN VEHICLE



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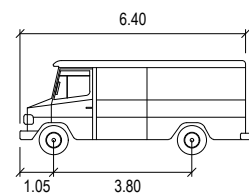
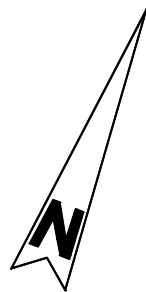
REVISIONS		Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Diagram	J.I	15.03.2023		

Scale @ A3



1:250

Project Eurobodalla Hospital Traffic and Transport Study	Design J.I	Drawn J.I	Checked J.BR
	Date 15.03.2023		
Title Loading Dock MGas	Project Number P5059	Sheet Number 9	Issue 001
	CONCEPT ONLY		



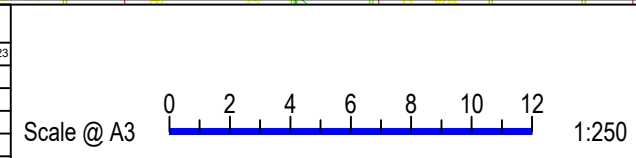
SRV
Width : 2.3
Track : 2.3
Lock to Lock Time : 6.0
Steering Angle : 40.0

DESIGN VEHICLE

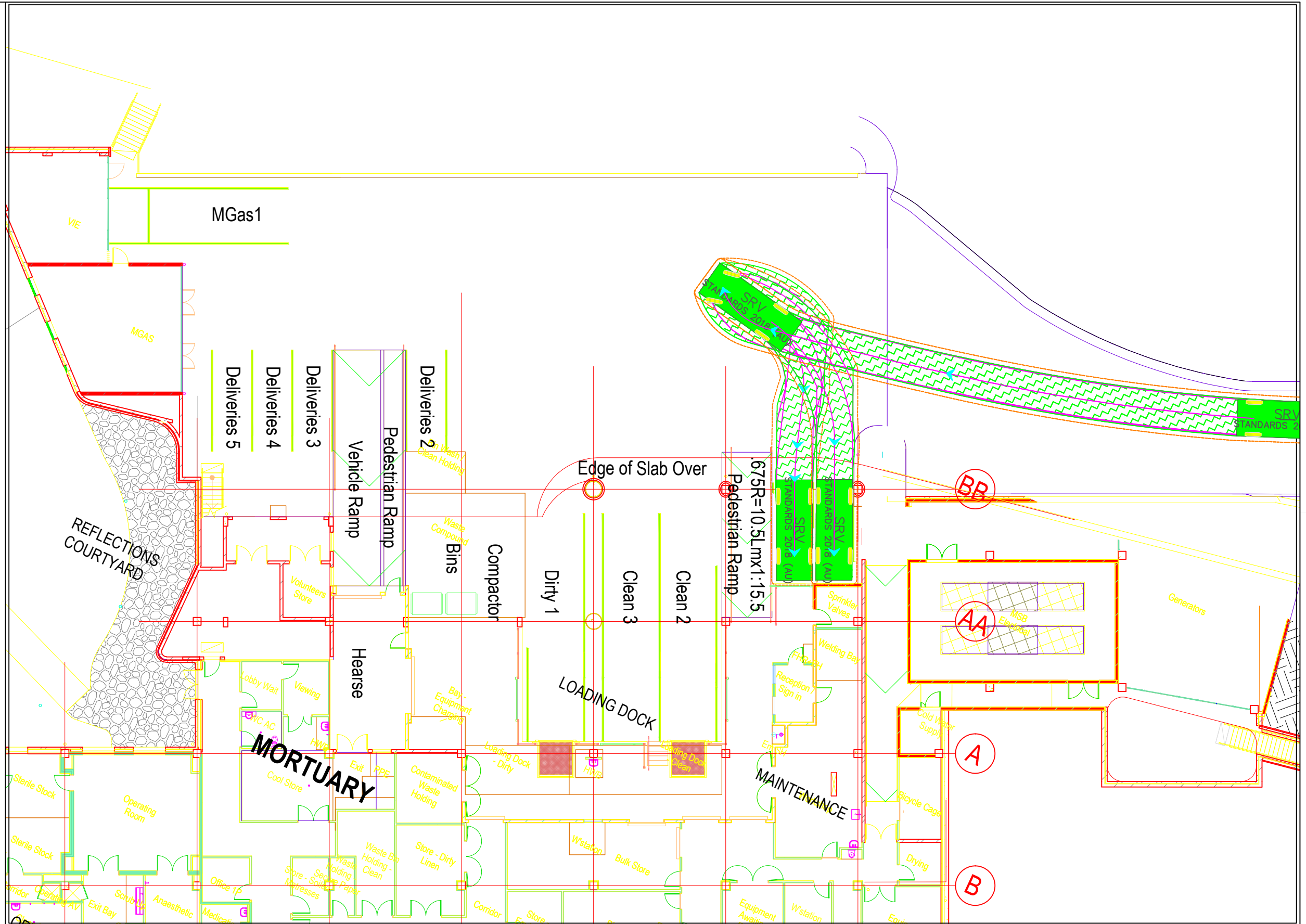


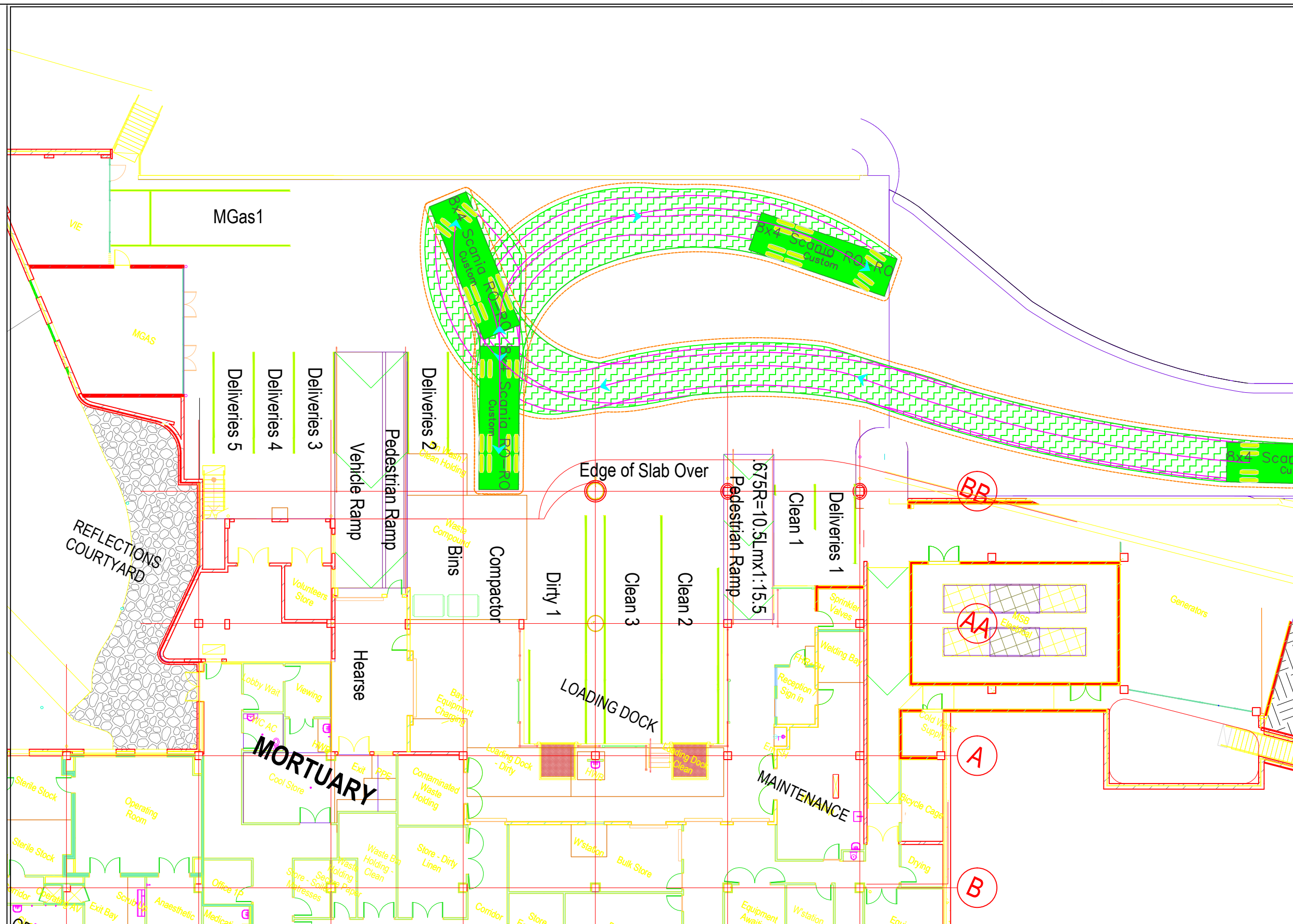
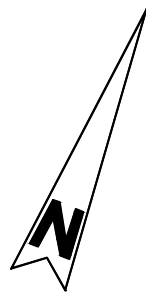
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Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Diagram	J.I	15.03.2023

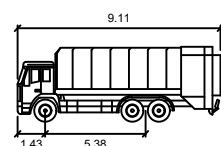


Project Eurobodalla Hospital Traffic and Transport Study	Design J.I	Drawn J.I	Checked J.BR
	CONCEPT ONLY		
Title Loading Dock Clean 1 / Delivery 1 Bays	Project Number P5059	Sheet Number 10	Issue 001
	Date 15.03.2023		





DESIGN VEHICLE



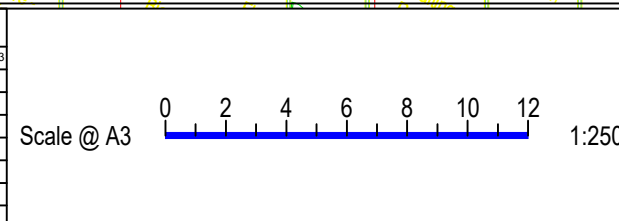
8x4 Scania RO-RO

Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 31.9

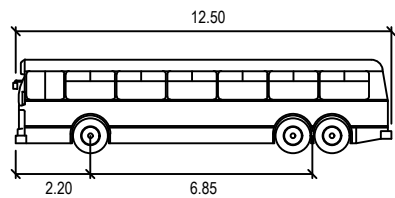
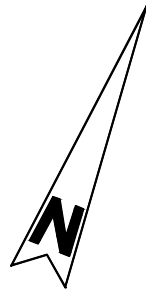


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REVISIONS		Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Diagram	J.I.	15.03.2023		



Project	Eurobodalla Hospital Traffic and Transport Study			Design	J.I	Drawn	J.I	Checked	J.BR
	Title			CONCEPT ONLY			Date	15.03.2023	
Loading Dock Compactor Servicing			Project Number	P5059	Sheet Number	11	Issue	001	



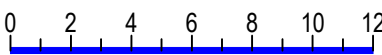
Bus (12.5m)		meters
Width	: 2.50	
Track	: 2.50	
Lock to Lock Time	: 6.0	
Steering Angle	: 36.6	

DESIGN VEHICLE

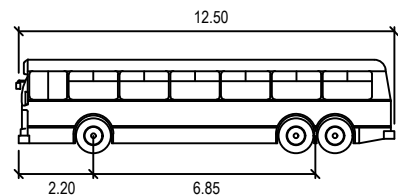
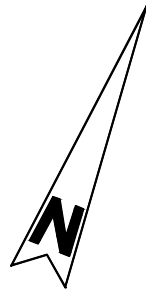


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REVISIONS			
Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Diagram	J.I	15.03.2023

Scale @ A3  1:250

Project Eurobodalla Hospital Traffic and Transport Study	Design J.I	Drawn J.I	Checked J.BR
	CONCEPT ONLY		
	Date 15.03.2023		
Title Bus Servicing Circulation 1	Project Number P5059	Sheet Number 12	Issue 001



Bus (12.5m) meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

DESIGN VEHICLE

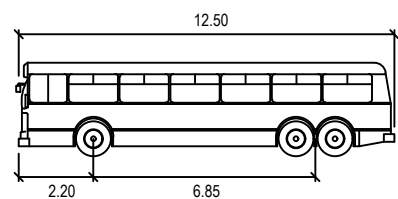
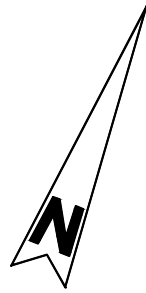


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REVISIONS			
Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Diagram	J.I	15.03.2023

Scale @ A3 0 2 4 6 8 10 12 1:250

Project Eurobodalla Hospital Traffic and Transport Study	Design J.I	Drawn J.I	Checked J.BR
	CONCEPT ONLY		
	Title Bus Servicing Circulation 2	Project Number P5059	Issue 001
Date 15.03.2023		Sheet Number 13	



Bus (12.5m) meters
Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

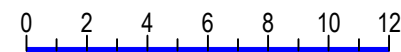
DESIGN VEHICLE



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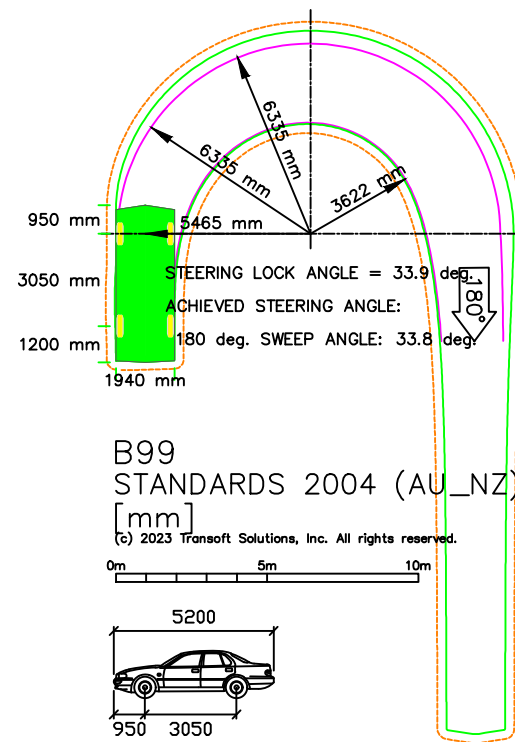
REVISIONS			
Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Diagram	J.I	15.03.2023

Scale @ A3



1:250

Project	Eurobodalla Hospital Traffic and Transport Study		
	Design J.I	Drawn J.I	Checked J.BR
Title	CONCEPT ONLY		
	Project Number P5059	Sheet Number 14	Date 15.03.2023
Bus Servicing Circulation 3			Issue 001



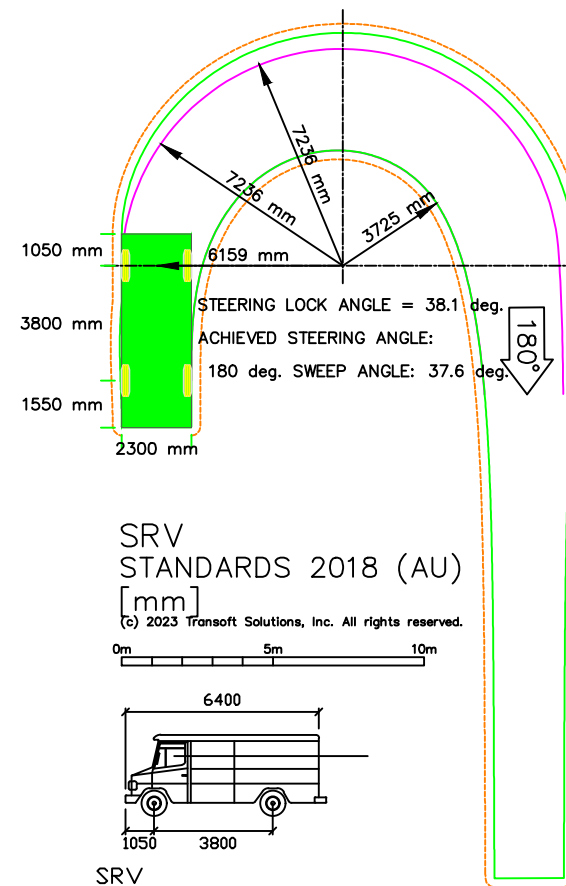
B99
STANDARDS 2004 (AU_NZ)
[mm]
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0m 5m 10m

5200

950 3050

Width : 1940 mm
Track : 3050 mm
Lock to Lock Time : 6.0
Steering Angle : 33.9



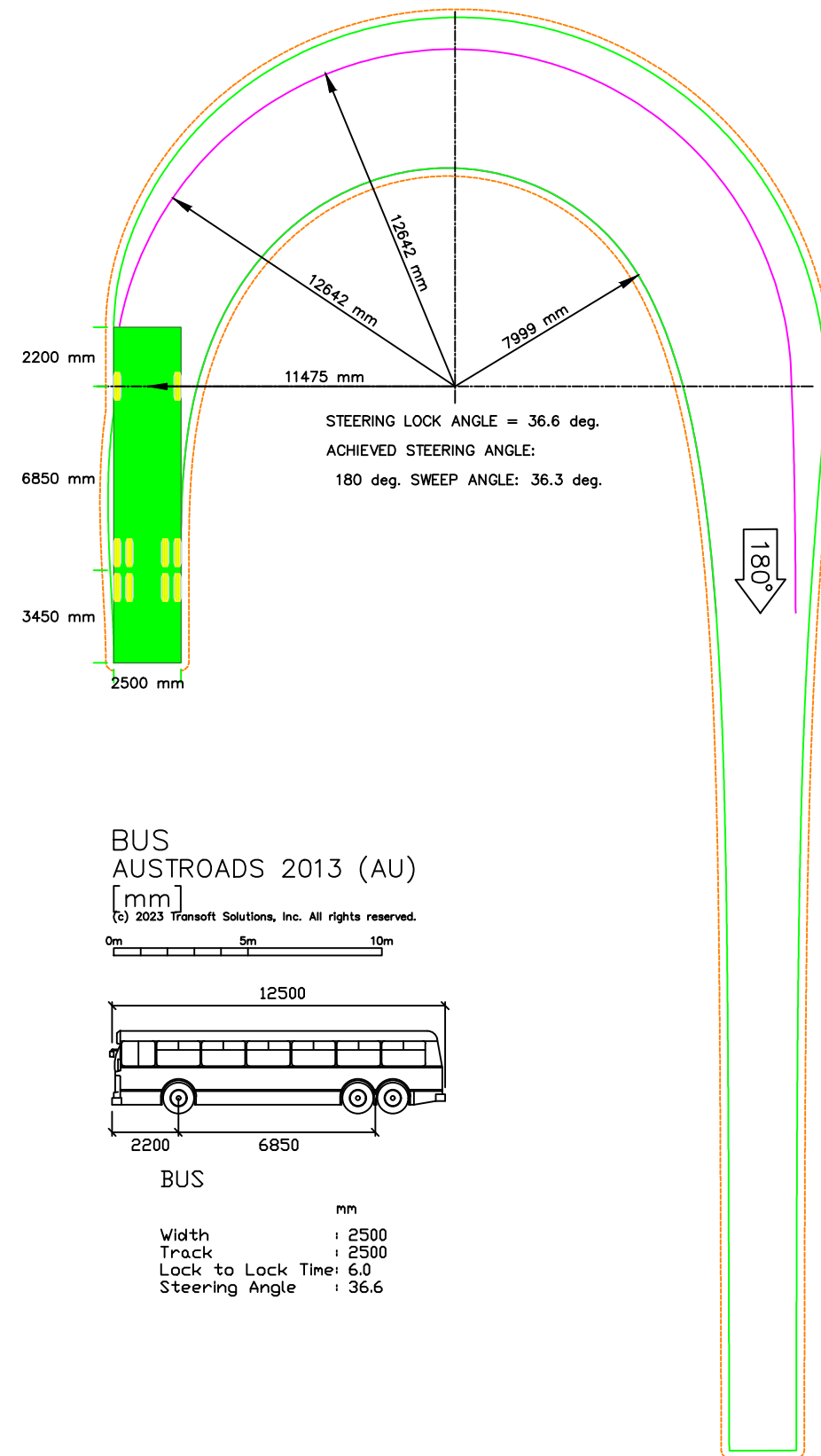
SRV
STANDARDS 2018 (AU)
[mm]
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0m 5m 10m

6400

1050 3800

Width : 2300 mm
Track : 3800 mm
Lock to Lock Time : 6.0
Steering Angle : 38.1



BUS
AUSTROADS 2013 (AU)
[mm]
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0m 5m 10m

12500

2200 6850

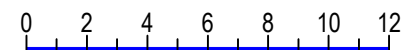
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Track : 6850 mm
Lock to Lock Time : 6.0
Steering Angle : 36.6



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Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Diagram	J.I	15.03.2023

Scale @ A3



1:250

Project Eurobodalla Hospital Traffic and Transport Study	Design J.I	Drawn J.I	Checked J.BR
	CONCEPT ONLY		
Title Vehicle Template 1	Project Number P5059	Sheet Number 15	Date 15.03.2023
			Issue 001

