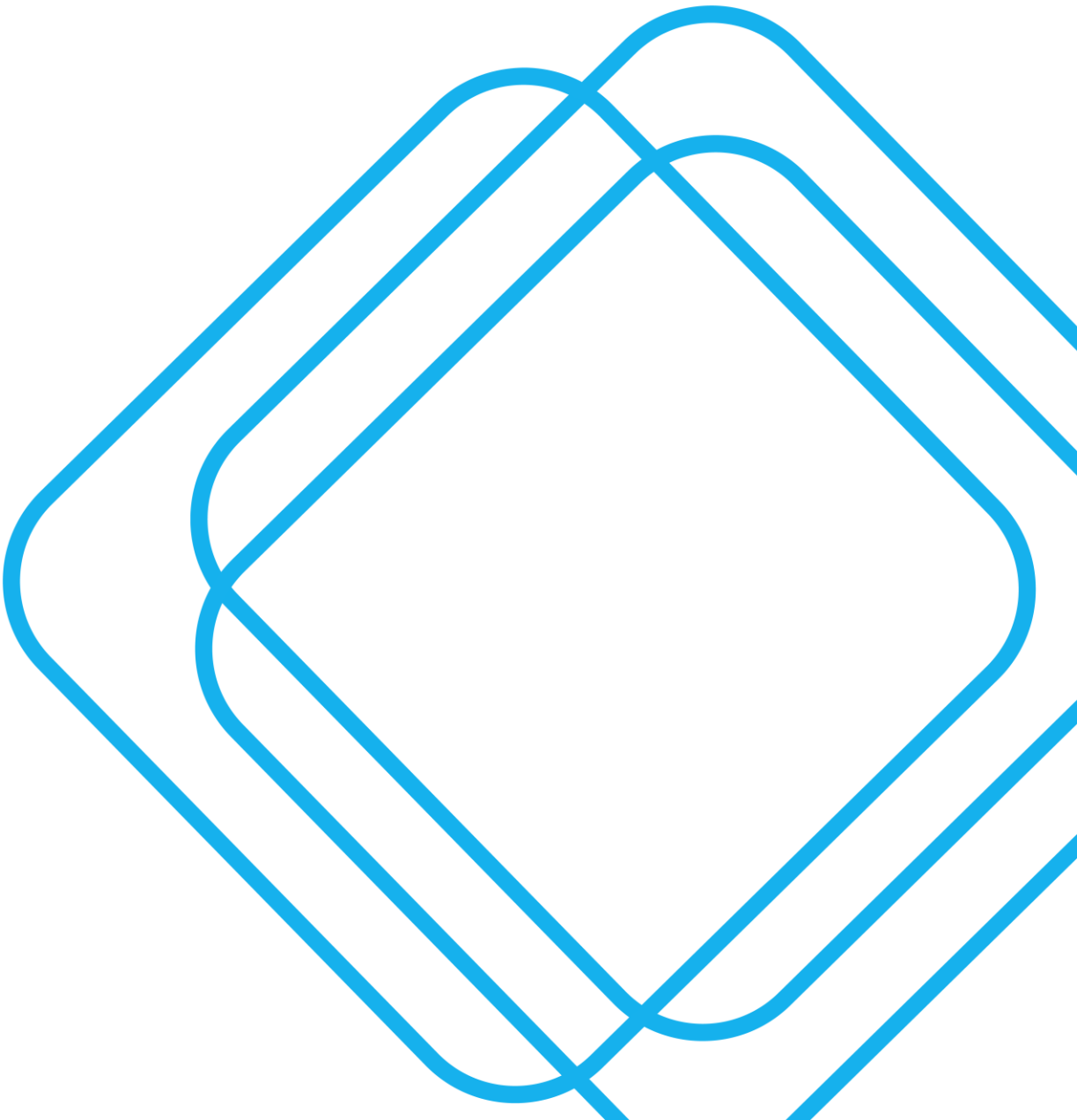
SCT Consulting

WENTWORTH HEALTH SERVICE REDEVELOPMENT REF

Traffic, Transport and Parking Assessment

26 APRIL 2023



Quality Assurance

Project Name:	Wentworth Health Service Redevelopment REF		
Project Number:	SCT_00319		
Document name:	Traffic, Transport and Parking Assessment		
Client:	Health Infrastructure	**ABN:**	89 600 377 397
Prepared by:	SCT Consulting PTY. LTD. (SCT Consulting)	**ABN:**	53 612 624 058

Information	Name	Position	Signature
Author:	Matthew Chow	Senior Consultant	
Reviewer:	Nick Bernard	Associate Director	

Version	Date	Details
1.0	22 November 2022	Draft for review
2.0	21 December 2022	Final traffic, transport and parking assessment
3.0	26 April 2023	Updated drawing set

Contents

Executive Summary

The Wentworth Health Service Redevelopment is a $30m project located in the Far West region of NSW close to the Victorian border. The project will include full asset replacement of the existing health service's ageing buildings and infrastructure, along with additional health services in line with contemporary models of care and the ongoing needs of the local area.

This Traffic, Transport and Parking Assessment Report presents a review of existing traffic and parking operations at the current health facility, describes the planned changes, and assesses the impact of these changes on traffic and transport in and surrounding the proposed facility.

Based on the assessments undertaken, a summary of the impacts are as follows:

– Traffic operations:

  The existing road network configuration and low traffic volumes mean there is significant spare capacity on the road network. The small increase in traffic due to the redevelopment of the site is forecast to have minimal impact.

  Swept path analysis indicates the proposed internal road network can cater for all user groups that require access at Wentworth Health Service, including bariatric ambulances, servicing and waste vehicles, fleet vehicles and fire brigade vehicles.

  During construction staging, the internal roadways, while not operating as in the final layout, would be able to accommodate the forecast traffic demand and operations. A Construction Traffic Management Plan (CTMP) would be developed prior to the start of construction in consultation with Transport for NSW and Wentworth Council. The CTMP would seek to minimise traffic, transport and parking impacts during the construction stages of the project, especially with the health service remaining operational during construction, and would provide details of measures to minimise conflicts with other road users or users of the site.

– Public transport:

  The impact of the Wentworth to Mildura bus service, routes 950 and 951, serving Wentworth Health Service will have a positive impact for customers trying to access health services. The route diversion is expected to add a couple of minutes to the trip, which is minimal considering the overall trip length. Health Infrastructure has provided approval for the site to be used for these routes once the infrastructure is in place, and a Bus Service Alteration Request (BSAR) is currently being prepared by the service provider.

  The infrastructure will also allow for coaches to access the site which are larger than standard public bus services, at 14.5m long.

– Walking and cycling:

  The provision of new footpaths linking the existing carpark and staff accommodation to the new main building and zebra crossings at key crossing points to improve pedestrian priority throughout the site will positively impact walking at the site. The proposal is expected to have minimal impact on cycling.

– Parking:

  The proposed parking provision for public and staff parking is sufficient to accommodate the forecast staff and visitor parking demand. The redevelopment also provides parking for the required number of fleet vehicles and staff accommodation vehicles.

1.0 Introduction

1.1 Background

The Wentworth Health Service Redevelopment is a $30m project located in the Far West region of NSW close to the Victorian border. The project will include full asset replacement of the existing health service's ageing buildings and infrastructure, along with additional health services in line with contemporary models of care and the ongoing needs of the local area.

The existing facility is located at 24 Hospital Road, Wentworth, close to the confluence of the Darling and Murray Rivers, as indicated in **Figure 1-1**.

Figure 1-1 Location of existing Wentworth Health Service facility

Source: Nearmap, 2022

1.2 Report purpose

State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) aims to facilitate the effective delivery of infrastructure across the State. Chapter 2 Division 10 of TISEPP outlines the approval requirements for health service facilities. A "hospital" is defined as a health service facility under this division.

The site is zoned RU5 – Village zone under the Wentworth Local Environmental Plan (LEP) 2011, which is a prescribed zone under the TISEPP. This redevelopment will therefore be undertaken subject to section 2.61(1)(a) and (c) and 2.61(2) of the Transport TISEPP as development without consent

Section 4.1 of the EP&A Act states that, if an environmental planning instrument provides that specified development may be carried out without the need for development consent, a person may carry the development out, in accordance with the EPI, on land to which the provision applies. However, an environmental assessment of the development is required under Part 5 of the EP&A Act.

This Traffic, Transport and Parking Assessment Report supports the required Review of Environmental Factors (REF). The report presents a review of existing traffic and parking operations at the current health facility, describes the planned changes, and assesses the impact of these changes on traffic and transport operations in and surrounding the proposed facility.

2.0 Existing conditions

2.1 Existing site access

2.1.1 Road network

The distance from the Wentworth Town Centre (about 1.3km by road) and other residential areas means that trips to the Health Service are primarily made by private vehicle or ambulance. Hospital Road provides the only road access to the existing facility and is connected to Wentworth and the wider region via the B79 Silver City Highway, a State Road, as indicated in **Figure 2-1**. The intersection of Silver City Highway and Hospital Road is a T-junction, with traffic on Hospital Road giving way to traffic on the highway and a deceleration lane for traffic turning left into Hospital Road. Hospital Road also provides access to Ski Reserve Road, which provides access for recreational water sports.

A traffic survey was undertaken on Tuesday 3 May 2022 at the Silver City Highway / Hospital Road intersection, which indicated AM and PM peak hours of 7.45-8.45am and 5.15-6.15pm. The survey indicated about 8 vehicles entering the site and 3 vehicles exiting the site in the AM peak hour, with only one vehicle entering the site and two vehicles exiting the site in the PM peak hour. About 110-160 vehicles per hour were recorded travelling in each direction on the Silver City Highway in the AM and PM peak hours. The intersection would operate with significant spare capacity.

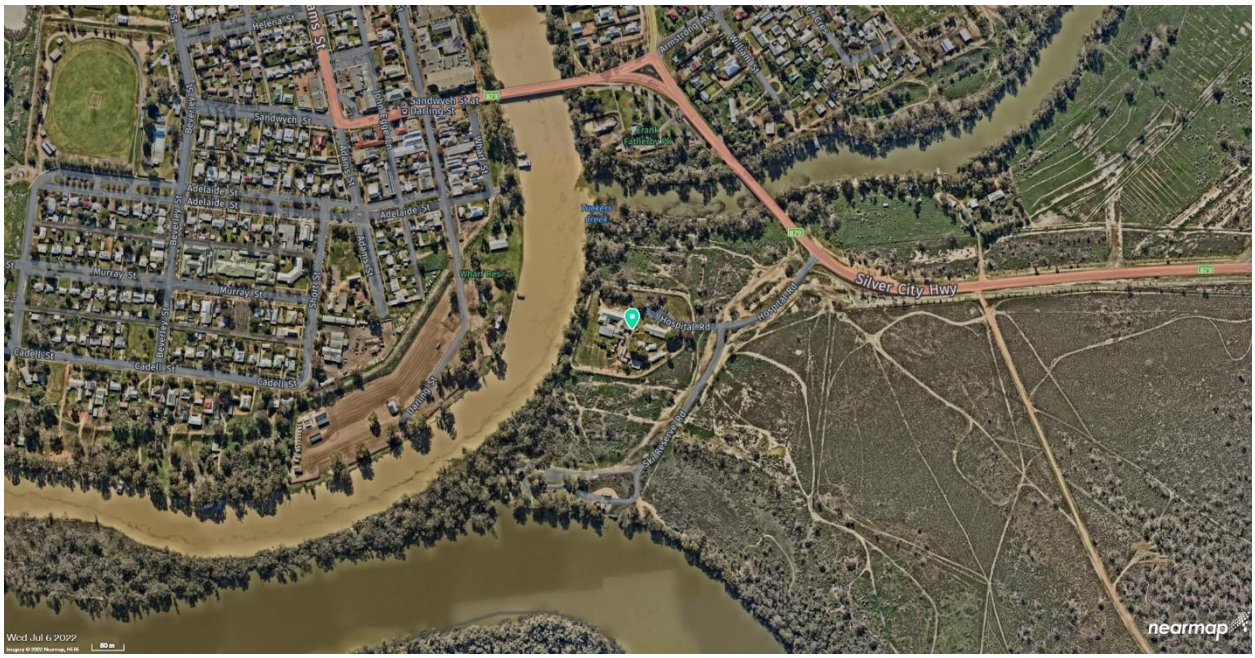
2.1.2 Public transport

There are no public transport routes that stop at Wentworth Health Service. Bus services 950 and 951, as well as the Broken Hill to Mildura Coach Service travel on Silver City Highway but only stop in Wentworth Town Centre.

2.1.3 Walking and cycling

A shared footpath for pedestrians and cyclists runs adjacent to Silver City Highway and Hospital Road. The quality of the footpath surface is quite poor and anecdotal evidence suggests it is rarely used.

Figure 2-1 Road network around the existing site



2.2 Current health service operations

The Wentworth Health Service is within the Far West Local Health District (FWLHD). It currently provides sub-acute inpatient care and the Transitional Aged Care Program within a 20-bed base with 2 bays dedicated to urgent requirements. Fifteen beds are currently operational and there is currently no Urgent Care or Emergency facility. Emergency, acute inpatient and outpatient care are provided via Mildura Base Hospital, about 25-30 minutes away.

2.2.1 Staff numbers

Wentworth Health Service is staffed in three shifts: a morning shift, an afternoon shift, and a night shift. This is complemented by administrative and maintenance staff, as well as visiting medical officers.

The largest shift is the morning shift, consisting of:

– Two nurses

– One health service manager

– One cook

– Two cleaners

– One administrator

– One maintenance staff.

The facility also hosts two district roles that base their office at Wentworth. The busiest time of day is during the afternoon shift crossover, where the two afternoon shift nurses are also on site. During this peak, there is typically 12 staff on site for the Health Service.

In addition to locally based staff, Wentworth Health Service has visiting medical officers throughout the day that tend to in-patients as well as consulting outpatients and is currently operating a drive-through COVID testing clinic.

2.2.2 Patient activity

In 2021, Wentworth Health Service saw a total of 106 acute and sub-acute episodes, with a total of 9.5 bed days. The average length of stay at the Wentworth was 16.5 days for acute patients, and 48.5 for sub-acute patients.

As the Wentworth facility does not have an Emergency Department (ED), patients are taken to the Mildura Base Hospital instead. Mildura Base Hospital had 3,148 ED presentations from the Wentworth catchment in 2021.

Visitor volumes vary based on the number of beds occupied, though the Local Health District (LHD) has advised that anecdotally there is approximately one visitor for each inpatient per day.

2.2.3 Ambulance activity

The NSW Ambulance Wentworth Station is located on Armstrong Avenue, off-site from the Wentworth Health Service. Due to the proximity to the Victorian border and Mildura Base Hospital, the Wentworth catchment is serviced by NSW Ambulance as well as Ambulance Victoria.

In 2020/21, the Wentworth Station responded to 1,058 incidents in the Wentworth Response Area, while Ambulance Victoria responded to about 320 incidents. Ambulance transport is usually taken directly to Mildura Base Hospital.

2.2.4 Hearse activity

Wentworth does not have an Emergency Department, and deaths on site are usually from the palliative care service. As a result, funeral service trips are usually expected, and relatively low in volume.

2.2.5 Servicing / waste disposal

Wentworth Health Service currently receives deliveries on a weekly basis. This includes linen, fresh food, and other medical supplies, which are delivered in trucks no larger than a Medium Rigid Vehicle (MRV). Wentworth Health Service also acts as a drop-off point for deliveries from Broken Hill.

Waste is cleared once a week for regular waste and fortnightly for medical waste. Vehicles used for disposal are of a similar size to the delivery vehicles.

2.3 Parking facilities and parking demand

The existing site has its own dedicated car park with about 24 parking spaces. There are also a few car park locations next to the existing on-site accommodation where resident staff can park. The existing car park appears to have sufficient capacity to meet demand, and the LHD has advised that visitor numbers have also dropped post COVID-19.

2.3.1 Vehicle movement and parking accumulation tube count

A two-week tube count was conducted between 25 July 2022 and 7 August 2022 to measure all vehicle activity at the existing health service and estimate parking accumulation. The daily inbound and outbound movements are shown in **Figure 2-2**, with more data provided in **Appendix A**. Over the observation period, vehicle activity at the health service peaked during the middle of the working week and dropped to minimum levels on Sundays.

Figure 2-2 Daily vehicle movements at the existing site, 25 July 2022 – 7 August 2022

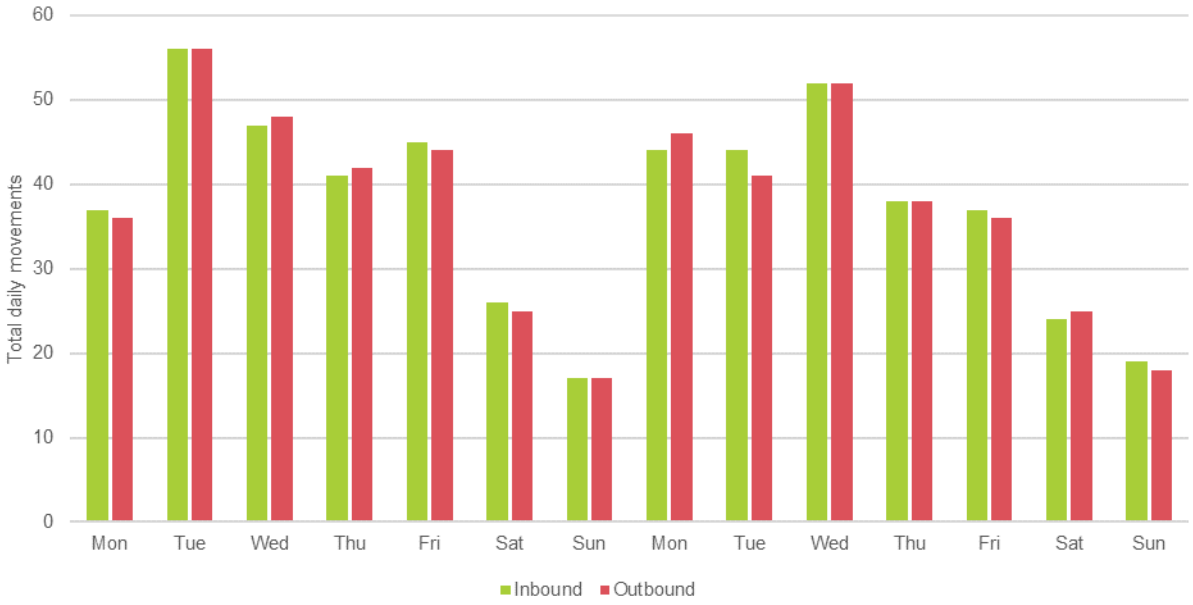
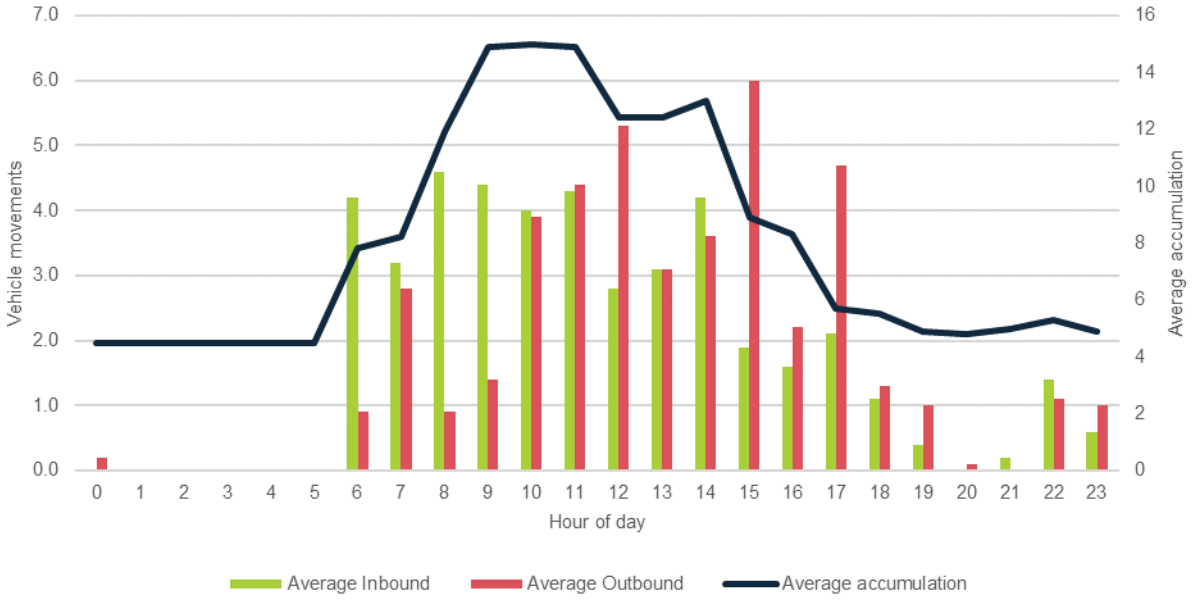


Figure 2-3 Average weekday hourly movement and average total vehicles on site



Assuming the minimum number of vehicles on site during the observation period was 2 vehicles, the site typically had the most vehicles between 9am and 11am during weekdays, averaging 15 vehicles during these peak hours.

The absolute maximum number of vehicles on site occurred outside this period however, at 2pm, with 23 vehicles total on Thursday 28 July 2022. 13 vehicles left the site in the following hour. This pattern suggests that the health service occasionally may experience a large parking demand, despite the typical usage being significantly lower than this maximum.

3.0 Proposed health service redevelopment

The Wentworth Health Service Redevelopment will include a total of 20 inpatient beds (including 1 HiTH or virtual bed) with 5 Acute, 6 Sub-acute and 8 beds under the Transitional Aged Care Program. Sub-acute inpatient beds will be utilised to rehabilitate or recondition patients either as a step-down from acute care, direct admission from the new Urgent Care Centre (UCC) or transfer from external facilities.

The introduction of the UCC and acute inpatient bed-base aims to reduce some of the demand for emergency and acute inpatient presentations at Mildura Base Hospital and reduce the NSW Ambulance transportation of patients to Mildura.

Two existing two-person staff and student accommodation buildings are proposed to be retained, with three additional accessible two-person accommodations proposed to be delivered under the scope of this project.

Delivery of the project is proposed to be completed in three stages:

– Stage 1A, in which the new health service building is constructed

– Stage 1B, in which the existing health service building is demolished and the circulation loop at the new building is completed

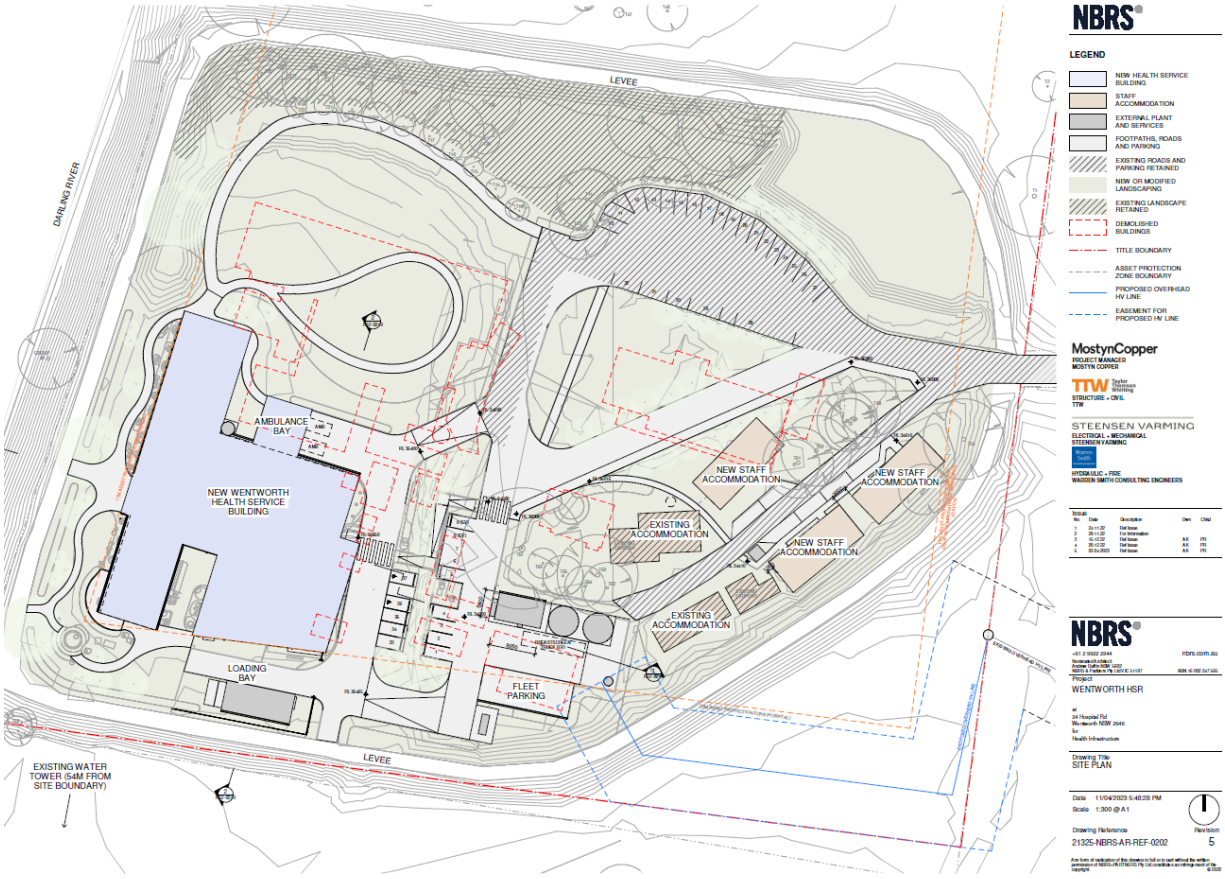
– Stage 2, in which all proposed roadworks within the site is completed, which also allows for bus access.

The remainder of this section of the report describes the aspects of the proposed redevelopment after Stage 2 is complete, while **section 3.12** describes the differences in Stages 1 and 1B.

3.1 Site plan

Figure 3-1 illustrates the schematic design site plan.

Figure 3-1 Schematic Design Site Plan (Stage 2 complete)



Source: NBRS, 2023

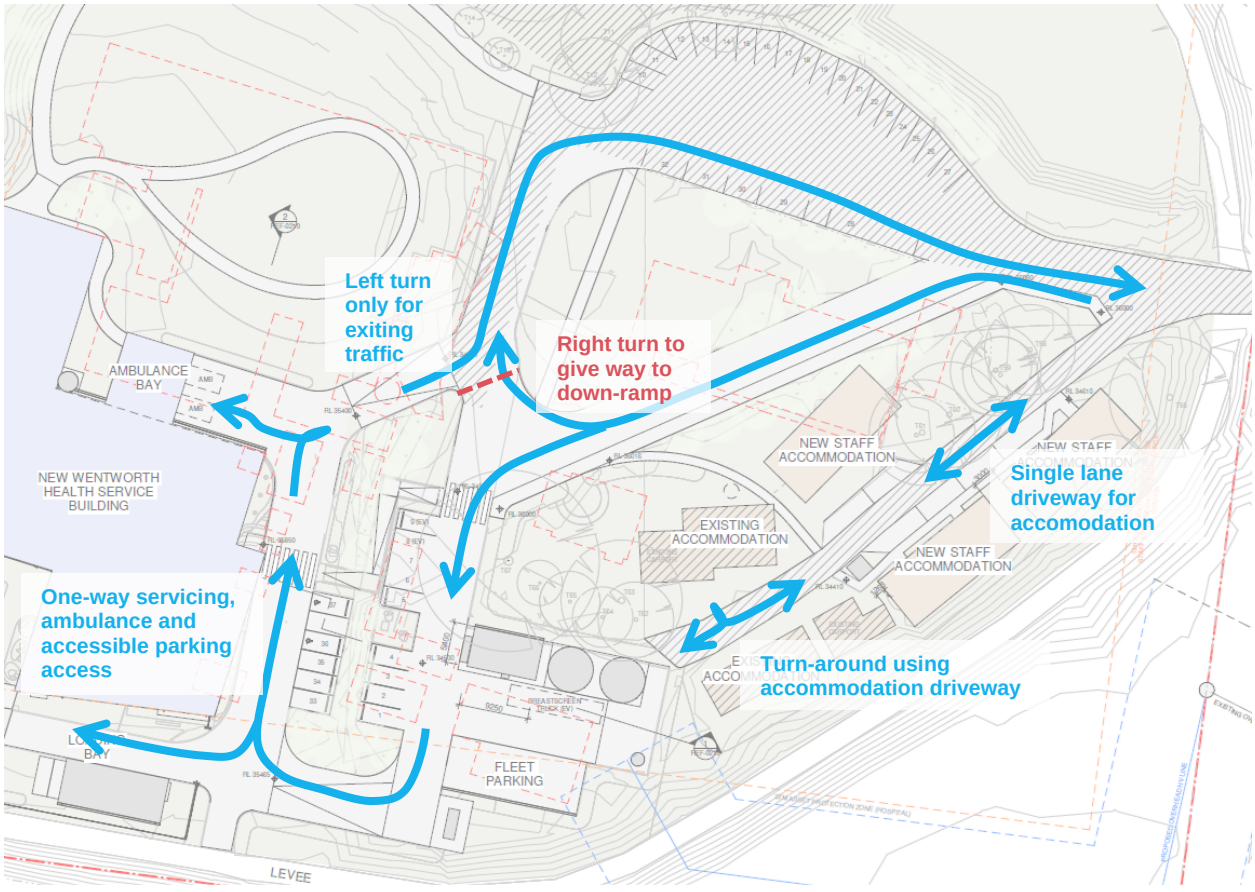
3.2 Site access and circulation

The redeveloped facility will continue to be accessed from Hospital Road at the existing entry from Silver City Highway. The proposal will include a new pedestrian footpath into and through the site. However, as a conservative estimate for traffic and parking impact assessment, all user groups are assumed to arrive on site via motor vehicle as the site is a long distance to access by walking or cycling.

As shown in **Figure 3-2**, a loop roadway will provide circulation into the site, which would also allow for bus access. A further one-way loop provides access to the new Health Service building itself, including the loading dock, pick-up / drop-off, car parking, ambulance bays and mortuary access. Staff accommodation is separated from public movement through a dedicated driveway.

Provision of footpaths within the site will be improved with the proposed redevelopment, with footpaths linking the existing carpark and staff accommodation to the new main building. Zebra crossings will be provided at key crossing points to improve pedestrian priority throughout the site.

Figure 3-2 Vehicle access and circulation in Stage 2



3.3 Staff numbers

The roster for staffing will include a morning shift, afternoon / night shift, and visiting staff for ambulatory and primary health. Staff levels will peak during the crossover period on a weekday, where both shifts will overlap, and visiting staff are present.

During this crossover period, the expected number of staff is 20 staff, broken down as:

– 13 staff in the AM shift (including Allied Health workers and 6 back of house staff)

– 4 staff in the PM shift (including 1 back of house staff)

– 3 visiting staff, assuming that the consultation rooms are 50% occupied.

3.4 Patient activity

The number of annual episodes at Wentworth Health Facility is projected to increase by 2036 to 132 acute and sub-acute episodes and 9.9 bed days. This is a marginal growth of 24 episodes and 0.4 bed days on 2021 activity.

The Health Facility is also expected to have out-patients that arrive to visit the visiting medical officers, with an assumption that each visiting staff will have one patient at a time.

3.5 Visitor activity

Visitors are expected to grow proportional to the number of patients present, with an anecdotal visitor rate of one visitor per day per patient, though this could vary based on the patient type. The expected volume of visitors in 2036 at the health service is therefore 10 visitors a day.

3.6 Meeting room / Multi-purpose room

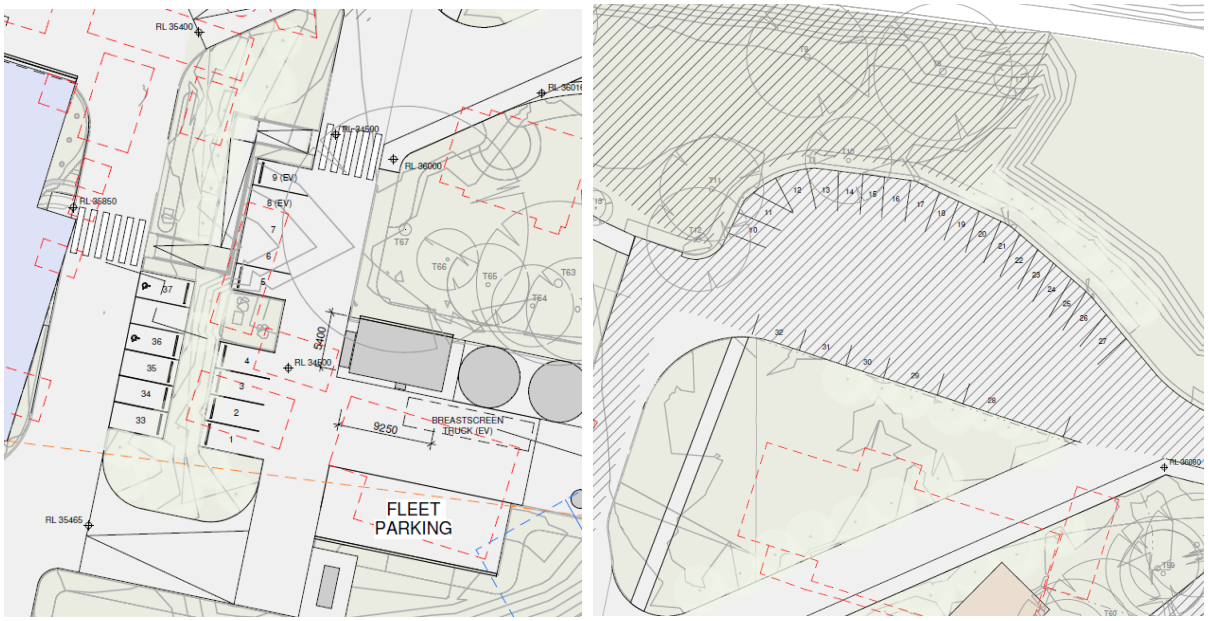
The proposed development will include a 25m^2 multi-purpose room, which will host a mixed use of meetings, community and educational activities that are in addition to the regular health service operations. The maximum expected occupancy of this room is approximately 5 persons.

3.7 Proposed parking provision

As shown in **Figure 3-3**, the redevelopment will retain the existing carpark while delivering an additional 14 spaces outside the new building. One space in the existing carpark will be removed to better enable vehicle movement, bringing the total public and staff parking to 37 spaces, two of which are accessible parking spaces.

Parking spaces are sized for User Class 3 according to AS2890.1, which is suitable for parking with high turnover.

Figure 3-3 New additional parking provision (left) and existing car park to be retained (right)



Source: NBRS, 2023

3.7.1 Accessible parking spaces

Based on the volume of patients and turnover rates, the two accessible parking spaces are expected to be sufficient for staff, visitors, or self-presenting patients. These spaces have been located at the entrance of the building, providing a direct route into the health service without the need to use ramps.

3.7.2 Electric vehicles

Designing for Green Star rating requires that 5% of parking on site is dedicated to electric vehicles with charging infrastructure provided for each space. The redevelopment will provide two parking spaces that are future proofed for EV charging, meeting the Green Star requirements.

This will also meet Health Infrastructure's Design Guidance Note (DGN) number 046 which states that car parks should provide for and/or facilitate EV charging, future proofing (power and communication conduits) for 2% of the total number of parking spaces.

3.7.3 Fleet parking

Separate to the public / staff parking spaces, 6 parking spaces have been dedicated to the LHD's fleet vehicles. This consists of 4 car spaces, 1 space for a 12-seater community transport van (sized for an SRV) and 1 space for the dental van that is stored seasonally on site.

The FWLHD dental van is a trailer from which dental services are provided to the local schools and is stored at the Wentworth Health Service site during school breaks. The trailer is pictured in **Figure 3-4**.

Figure 3-4 FWLHD's dental van

Source: Far West Local Health District, 2022

3.7.4 Breast Cancer Screening truck

The Breast Cancer Screening service has both trailers and trucks in its fleet. The internal circulation roadways of the redevelopment are designed for HRV access and therefore will not support the "Large Trailer", which is 2.43m wide and 12.5m long without a tractor head. The Breast Cancer Screen service to the site is therefore limited to use of the "Medium Rigid Truck", a vehicle the size of a HRV (12.5m long), which will be able to fit through the internal roadways.

Other locations are available in the Wentworth region for the larger truck when required. The current arrangement at nearby Fotherby Park is able to service the larger Breast Cancer Screening fleet.

3.8 Servicing / waste management

A dedicated loading dock / truck parking adjacent to the service entry is a functional requirement of the new Wentworth Health Service. This will allow logistics, waste and hearse vehicles to service the site. The frequency of servicing is assumed to remain the same as existing events, with a maximum of two logistics / waste vehicles a week. At this volume, a single bay for delivery or servicing is sufficient.

3.9 Emergency vehicles / patient transport

The new Wentworth Health Service will include a new UCC that caters for low acuity emergencies. The new ambulance bay will have capacity for two ambulances and is located on the northern side of the building with a dedicated entrance. The bays have been sized to allow for the use of the NSW Ambulance Bariatric fleet, which has a maximum width of 2.6m wide and 7.3m long.

3.10 Bus access

It is proposed that the Wentworth to Mildura bus service, routes 950 and 951, will serve Wentworth Health Service with a bus stop being provided within the site. Transport for NSW is open to considering this and a Bus Service Alteration Request (BSAR) is being prepared by the service provider for submission, conditional on the delivery of suitable infrastructure.

Internal roadways delivered in Stage 2 will allow bus access through the first one-way loop of the site, illustrated in **Figure 3-5**. This will allow routes 950 and 951 to serve Wentworth Health Service. The internal roadways will also be wide enough to allow coach services (14.5m long buses), such as the Broken Hill to Mildura service, to access the site if required.

Figure 3-5 14.5m Coach swept path around bus capable one-way loop

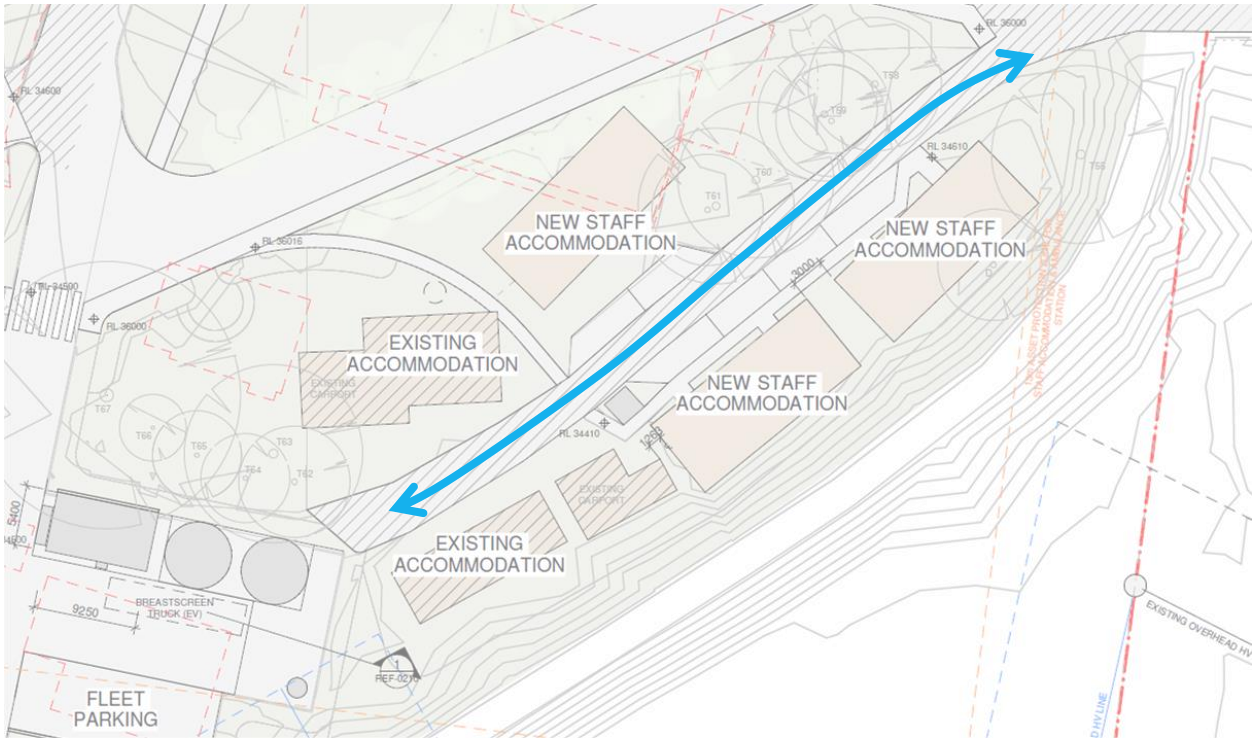
3.11 Staff accommodation

Additional staff accommodation will be delivered next to the existing facilities, with three additional accessible two-person accommodation, each with their own parking space.

The new internal road layout allows the staff accommodation area to be separated from public thoroughfare, with the existing roadway acting as a single lane driveway. A single lane is suitable for this location as sightlines and the road reserve width is adequate to allow drivers to yield to opposing traffic, and the driveway will at most service the 10 staff residing in the accommodation.

A turnaround bay will be constructed at the southwest end of the driveway to allow cars to turn around.

Figure 3-6 Proposed staff accommodation location and access



Source: NBRS, 2023

Figure 3-7 View down the proposed staff accommodation driveway

3.12 Staging

To allow for the existing facility to continue to operate during construction of the project, the redevelopment will be constructed in multiple stages. Stage 1A will deliver the new facility and allow the relocation of the existing services. Once the old building has been vacated, Stage 1B will be delivered, demolishing the old building, and delivering the new ambulance bays and circulation. Finally, Stage 2 will be delivered, which will complete the planned internal road network and allow for bus access to the site.

A Construction Traffic Management Plan would be developed to minimise impacts during the construction stages of the project, especially while the existing building remains operational.

3.12.1 Stage 1A

Stage 1A includes all components that can be constructed while the existing building is still operational.

Figure 3-8 Proposed site plan at Stage 1A

Source: NBRS, 2023

The following items are **yet to be delivered** in Stage 1A when compared to Stage 2:

– Exit ramp (heading northeast) outside the new building: Due to the footprint of the existing building, the ramp down from the new building cannot be constructed until the old is demolished. This means that rather than being a one-way loop, the new roadway will need to act temporarily as a two-way road.

  The roadway is capable of two-way traffic flow as per Australian Standards for circulating roadways adjacent to 90-degree parking and vehicle access to the entrance of the new building is still possible despite the missing exit ramp. A turnaround bay is provided adjacent to the new building's entrance in the interim period.

– Ambulance bays: Due to the building footprint of the existing health service, the ambulance bays cannot be constructed until the old building is demolished. During this period, the end of the constructed roadway will act as a temporary ambulance bay, illustrated in **Figure 3-8**. This temporary bay will have the capacity for one ambulance only.

  One ambulance bay is considered sufficient considering the temporary nature of this stage, the low volume of ambulances visiting Wentworth Health Service and the low acuity nature of presentations at this facility.

– Three parking spaces outside of the new building: The road configuration in Stage 1A requires a turnaround bay outside the entrance of the new building. As such, only the two accessible parking spaces are provided on the entrance level.

  This means that at Stage 1A, the total number of staff / public parking spaces is 34, which is still exceeds the expected peak demand of 32. The delay in delivering the additional three parking spaces is therefore acceptable, and people with disabilities will continue to get direct access to the building entrance without the need for ramps.

– Future road and footpath providing bus capable loop road: The agreement with the bus service provider (CDC) is that buses will not be diverted onto site until the bus capable loop road is provided. The implication of this is that the existing carpark will service two-way vehicle traffic, including service / waste vehicles during this stage.

  The roadways are at minimum 6.4m wide, enough to accommodate two-way vehicle traffic, and the twice a week frequency of large vehicles accessing the site mean that the occasions in which cars will need to yield to opposing traffic are rare.

– One accommodation unit capable of housing two staff: While an additional two accommodation units (housing two staff each) are delivered with Stage 1A, the final accommodation unit will not be delivered until Stage 2. This has no impact on circulation and insignificant impact on traffic volumes on site.

3.12.2 Stage 1B

Stage 1B includes demolition of the old building, construction of the exit ramp and delivering the new ambulance bays.

Figure 3-9 Proposed site plan at Stage 1B

Source: NBRS, 2023

The following items are **yet to be delivered** in Stage 1B when compared to Stage 2:

– Future road and footpath providing bus capable loop road: The agreement with the bus service provider (CDC) is that buses will not be diverted onto site until the bus capable loop road is provided. The implication of this is that the existing carpark will service two-way vehicle traffic, including service / waste vehicles during this stage.

  The roadways are at minimum 6.4m wide, enough to accommodate two-way vehicle traffic, and the twice a week frequency of large vehicles accessing the site mean that the occasions in which cars will need to yield to opposing traffic are rare.

– One accommodation unit capable of housing two staff: The final accommodation unit will not be delivered until Stage 2. This has no impact on circulation and insignificant impact on traffic volumes on site.

4.0 Traffic, Transport and Parking Impact Assessment

4.1 Traffic

4.1.1 Network performance

A Construction Traffic Management Plan (CTMP) would be developed prior to the start of construction. The CTMP would be prepared in consultation with Transport for NSW and Wentworth Council and would seek to minimise traffic, transport and parking impacts during the construction stages of the project, especially while the health service remains operational. The CTMP would address aspects such as type of construction vehicles, construction transport routes, dilapidation surveys, traffic control plans, including detours and signage, and details of measures to minimise conflicts with other road users or users of the site.

Once the new health service is operational, there would be a small increase in vehicles accessing the site due to the increase in staffing levels. However, current traffic volumes are low, and the increase would have a minimal impact on traffic operations at the Silver City Highway / Hospital Road intersection.

4.1.2 Swept path analysis

Swept path analysis was conducted on the proposed site plan to check if the schematic design has provided adequate space to facilitate vehicle movement. Swept paths show that the proposed internal road network is sufficient to cater for all user groups that require access at Wentworth Health Service, including bariatric ambulances, servicing and waste vehicles, fleet vehicles and fire brigade vehicles. The swept paths are provided in **Appendix B**.

4.1.2.1 Fire & Rescue NSW access

Fire & Rescue NSW will be required to access the booster assembly with their largest vehicle, an HRV. As the internal roadways have been designed to cater for HRVs, the brigade will be able to enter and exit the site in a forward direction.

The booster assembly is located such that a fire truck will is able to stop within 8m of the booster assembly as per the *Fire safety guideline* (October 2019).

4.1.2.2 Servicing / waste management

A dedicated loading dock / truck parking adjacent to the service entry is a functional requirement of the new Wentworth Health Service. This will allow logistics, waste and hearse vehicles to service the site. The frequency of servicing is assumed to remain the same as existing events, with a maximum of two logistics / waste vehicles a week. At this volume, a single bay for delivery or servicing is sufficient.

Swept path analysis of the movement into the loading dock area shows that a HRV can access the dock with the proposed roadway widths. To enter the loading dock, a HRV will be required to use the full roadway width prior to reversing as shown in **Figure 4-1**.

While the reversing manoeuvre of a HRV may temporarily impede vehicle flow on the circulating loop, the configuration is considered a balance between minimising movement conflicts and avoiding overdesign of the facility. Wentworth Health Service has low vehicle volumes of less than 10 vehicles an hour (paired with a servicing frequency of two vehicles per week) and a low acuity emergency service (non-time critical), therefore making the proposed configuration an acceptable arrangement for the site.

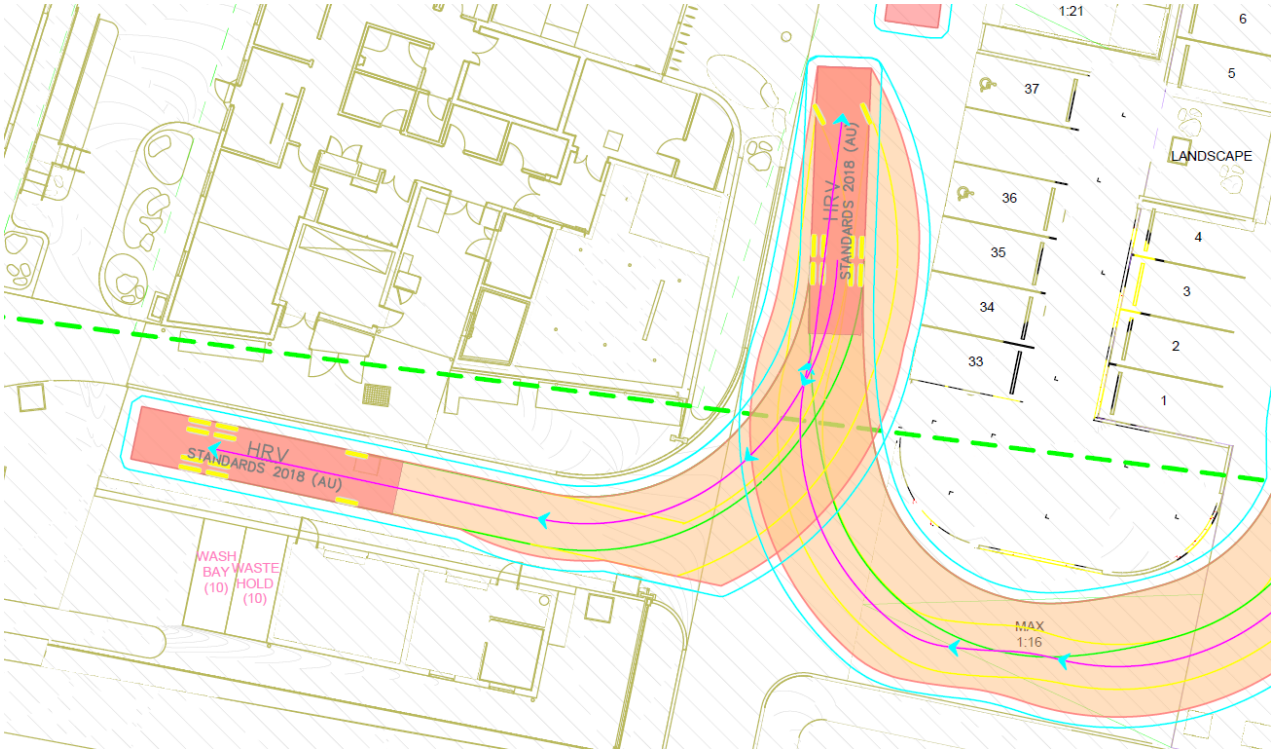
4.1.2.3 Emergency vehicles / patient transport

The new Wentworth Health Service will include a new UCC that caters for low acuity emergencies. The new ambulance bay will have capacity for two ambulances and are located on the northern side of the building with a dedicated entrance. The bays have been sized to allow for the use of the NSW Ambulance Bariatric fleet, which has a maximum width of 2.6m wide and 7.3m long. This meets the requirements as set out in the Functional Design Brief.

Swept path analysis shows that ambulances can reverse into their bays without crossing onto any ramps, illustrated in **Figure 4-2**.

This space can also be used by patient transfer vehicles that require access to Wentworth Health Service where patients can be transferred to and from other health facilities, mainly Mildura Base Hospital.

Figure 4-1 Heavy Rigid Vehicle reversing into the logistics / service bay



Source: NBRS, 2023

Figure 4-2 Ambulance bay and reversing manoeuvre

Source: NBRS, 2023

4.2 Public transport

The impact of the Wentworth to Mildura bus service, routes 950 and 951, serving Wentworth Health Service will have a positive impact for customers trying to access health services, as no public transport to the facility currently exists. The route diversion is expected to add a couple of minutes to the trip, which is minimal considering the overall trip length.

4.3 Walking and cycling

The provision of new footpaths linking the existing carpark and staff accommodation to the new main building and zebra crossings at key crossing points to improve pedestrian priority throughout the site will positively impact walking at the site. The proposal is expected to have minimal impact on cycling.

4.4 Parking assessment

4.4.1 General parking demand

Most of the parking demand at the new health service will come from staff, with each staff member assumed to be driving their own car to work, as a conservative estimate. Additional parking demand will be related to emergency service drop-offs, self-presentations, out-patients, and visitor activity.

The expected peak demand for parking spaces is 32 spaces. The demand, along with assumptions, are detailed in **Table 4-1**. The peak parking demand is likely to be relatively short, as the crossover period is generally only an hour long. The proposed parking provision for public and staff parking is 37 spaces, which is sufficient to accommodate the forecast parking demand.

Table 4-1 General car parking demand estimates

User group	Demand	Assumption
Staff	20	– Each staff member drives to work – The consultation rooms used by the visitor medical officers are utilised at 50% at any one time
Out-patients	3	– Assumption of one patient per consult at a time, with no queueing
In-patients	1	– Patients rarely present themselves at the health service, however, the new emergency service may result in an occasional self-presentation.
Visitors	3	– One visitor per day per patient – Visitors stay at the health service for 2.5 hours (an estimate from other hospital data), and there is an 8-hour visiting window
Multi-purpose room	5	– While not always used, the multi-purpose room may bring a surge in parking demand as this activity may be separate to regular health service operations
TOTAL	**32**	

4.4.2 Fleet parking demand

FWLHD has a fleet of vehicles that are parked at the Wentworth site, comprising 4 cars, a 12-seater community transport van and a dental van. The redevelopment provides parking for all fleet vehicles required on site

4.4.3 Staff accommodation parking demand

Wentworth Health Service will have increased staff accommodation after the redevelopment. The staff accommodation facilities have one parking space per staff provided directly adjacent to the accommodation facilities, separated from the public parking. Therefore, the proposal accommodates sufficient parking for staff accommodation needs.

5.0 Summary

This Traffic, Transport and Parking Assessment Report presents a review of existing traffic and parking operations at the current Wentworth Health Service facility, describes the planned changes, and assesses the impact of these changes on traffic and transport in and surrounding the proposed facility.

Based on the assessments undertaken, a summary of the impacts are as follows:

– Traffic operations:

  The existing road network configuration and low traffic volumes mean there is significant spare capacity on the road network. The small increase in traffic due to the redevelopment of the site is forecast to have minimal impact.

  Swept path analysis indicates the proposed internal road network can cater for all user groups that require access at Wentworth Health Service, including bariatric ambulances, servicing and waste vehicles, fleet vehicles and fire brigade vehicles.

  During construction staging, the internal roadways, while not operating as in the final layout, would be able to accommodate the forecast traffic demand and operations. A CTMP would be developed prior to the start of construction in consultation with Transport for NSW and Wentworth Council. The CTMP would seek to minimise traffic, transport and parking impacts during the construction stages of the project, especially with the health service remaining operational during construction, and would provide details of measures to minimise conflicts with other road users or users of the site.

– Public transport:

  The impact of the Wentworth to Mildura bus service, routes 950 and 951, serving Wentworth Health Service will have a positive impact for customers trying to access health services. The route diversion is expected to add a couple of minutes to the trip, which is minimal considering the overall trip length.

– Walking and cycling:

  The provision of new footpaths linking the existing carpark and staff accommodation to the new main building and zebra crossings at key crossing points to improve pedestrian priority throughout the site will positively impact walking at the site. The proposal is expected to have minimal impact on cycling.

– Parking:

  The proposed parking provision for public and staff parking is sufficient to accommodate the forecast staff and visitor parking demand. The redevelopment also provides parking for the required number of fleet vehicles and staff accommodation vehicles.

APPENDIX A

Tube count results

Table A-1 Inbound vehicle traffic, Monday 25 July 2022 to Sunday 07 August 2022

Time (hour)	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	1	1
6	3	2	5	5	4	2	3	7	6	3	4	3	1	1
7	2	4	3	2	4	1	0	4	4	4	2	3	1	0
8	6	6	6	5	4	2	1	2	4	5	5	3	1	1
9	3	6	4	2	4	1	1	5	5	8	3	4	2	0
10	2	6	4	5	5	1	0	3	5	5	2	3	2	0
11	3	5	4	9	4	4	1	2	1	5	5	5	1	3
12	2	2	3	1	4	4	3	4	3	3	4	2	2	2
13	2	7	4	1	2	1	2	3	4	4	3	1	2	3
14	5	5	5	7	4	4	1	2	3	2	3	6	3	4
15	1	1	3	1	2	1	1	2	3	5	1	0	2	0
16	3	4	1	0	2	1	0	2	2	0	0	2	1	0
17	1	4	3	1	3	0	0	4	1	3	1	0	1	0
18	1	2	0	0	1	2	2	1	1	2	1	2	1	2
19	0	0	0	0	0	0	0	1	0	1	1	1	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1	0	0	0	0	0	0	0	1	0	0	0	1	0
22	2	1	1	1	1	2	1	1	1	2	2	2	1	1
23	0	1	1	1	1	0	1	1	0	0	1	0	1	1
Daily total	37	56	47	41	45	26	17	44	44	52	38	37	24	19

Table A-2 Outbound vehicle traffic, Monday 25 July 2022 to Sunday 07 August 2022

Time (hour)	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	1	0	0	0	0	0	0	0
6	0	1	0	0	1	0	1	2	2	0	1	2	0	0
7	4	2	5	4	2	4	1	2	0	4	3	2	3	2
8	1	3	1	0	1	0	0	1	1	1	0	0	1	0
9	1	1	2	0	2	2	1	2	1	2	1	2	2	0
10	3	7	4	0	3	0	1	4	5	8	1	4	1	0
11	3	6	5	6	4	4	0	3	4	4	5	4	2	2
12	4	9	7	4	7	4	4	4	5	4	6	3	1	3
13	3	4	2	1	4	1	2	5	4	4	2	2	4	3
14	4	4	6	3	4	5	1	5	3	2	3	2	2	3
15	4	5	4	13	3	1	2	5	6	10	5	5	1	2
16	2	4	2	3	1	1	0	2	3	1	2	2	1	0
17	4	4	6	5	7	0	1	3	4	7	5	2	3	1
18	0	3	1	0	1	1	1	3	0	1	0	4	1	0
19	1	1	1	1	1	1	1	1	1	2	1	0	0	0
20	0	0	0	0	0	0	0	1	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	1	1
22	2	1	1	1	1	0	0	1	1	1	1	1	1	1
23	0	1	1	1	1	1	0	1	1	1	2	1	1	0
Daily total	36	56	48	42	44	25	17	46	41	52	38	36	25	18

Table A-3 Cumulative vehicles on site, Monday 25 July 2022 to Sunday 07 August 2022

Time (hour)	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
0	4	5	5	4	2	4	5	4	3	6	6	6	7	6
1	4	5	5	4	2	4	5	4	3	6	6	6	7	6
2	4	5	5	4	2	4	5	4	3	6	6	6	7	6
3	4	5	5	4	2	4	5	4	3	6	6	6	7	6
4	4	5	5	4	2	4	5	4	3	6	6	6	7	6
5	4	5	5	4	2	4	4	4	3	6	6	6	8	7
6	7	6	10	9	5	6	6	9	7	9	9	7	9	8
7	5	8	8	7	7	3	5	11	11	9	8	8	7	6
8	10	11	13	12	10	5	6	12	14	13	13	11	7	7
9	12	16	15	14	12	4	6	15	18	19	15	13	7	7
10	11	15	15	19	14	5	5	14	18	16	16	12	8	7
11	11	14	14	22	14	5	6	13	15	17	16	13	7	8
12	9	7	10	19	11	5	5	13	13	16	14	12	8	7
13	8	10	12	19	9	5	5	11	13	16	15	11	6	7
14	9	11	11	23	9	4	5	8	13	16	15	15	7	8
15	6	7	10	11	8	4	4	5	10	11	11	10	8	6
16	7	7	9	8	9	4	4	5	9	10	9	10	8	6
17	4	7	6	4	5	4	3	6	6	6	5	8	6	5
18	5	6	5	4	5	5	4	4	7	7	6	6	6	7
19	4	5	4	3	4	4	3	4	6	6	6	7	6	7
20	4	5	4	3	4	4	3	3	6	6	6	7	6	7
21	5	5	4	3	4	4	3	3	7	6	6	7	6	6
22	5	5	4	3	4	6	4	3	7	7	7	8	6	6
23	5	5	4	3	4	5	5	3	6	6	6	7	6	7

Note: Largest vehicle detected on site was TB3 medium truck, 3 axles

APPENDIX B

Swept path analysis

REV	DESCRIPTION	DATE
A	Schematic Design Review	21/11/2022
B	Swept Path Review	26/04/2023

PREPARED FOR
HEALTH INFRASTRUCTURE

QUALITY INFORMATION	
DATE	04/23
PREPARED	
REVIEWED	
AUTHORISED	

0 3 6
1:300

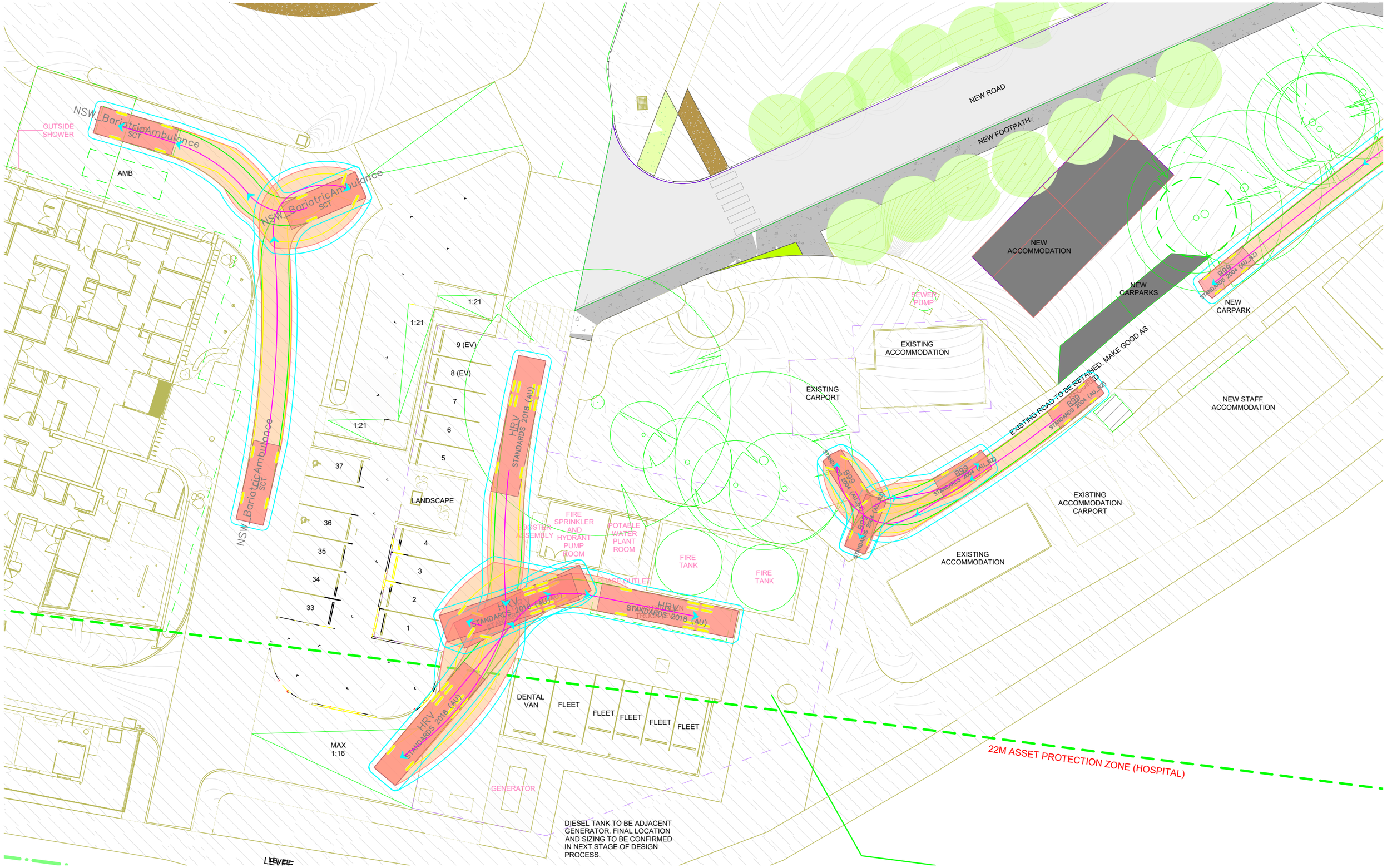
PROJECT
WENTWORTH HEALTH SERVICE REDEVELOPMENT
SWEPT PATH ANALYSIS

TITLE
Long Rigid Bus Site Access - 14.5m
NOT FOR CONSTRUCTION

DRAWING NUMBER
SCT_00319-07-001

SHEET 01 OF 06

A3



REV	DESCRIPTION	DATE
A	Schematic Design Review	21/11/2022
B	Swept Path Review	26/04/2023

PREPARED FOR
HEALTH INFRASTRUCTURE

QUALITY INFORMATION	
DATE	04/23
PREPARED	
REVIEWED	
AUTHORISED	

0 3 6
1:300

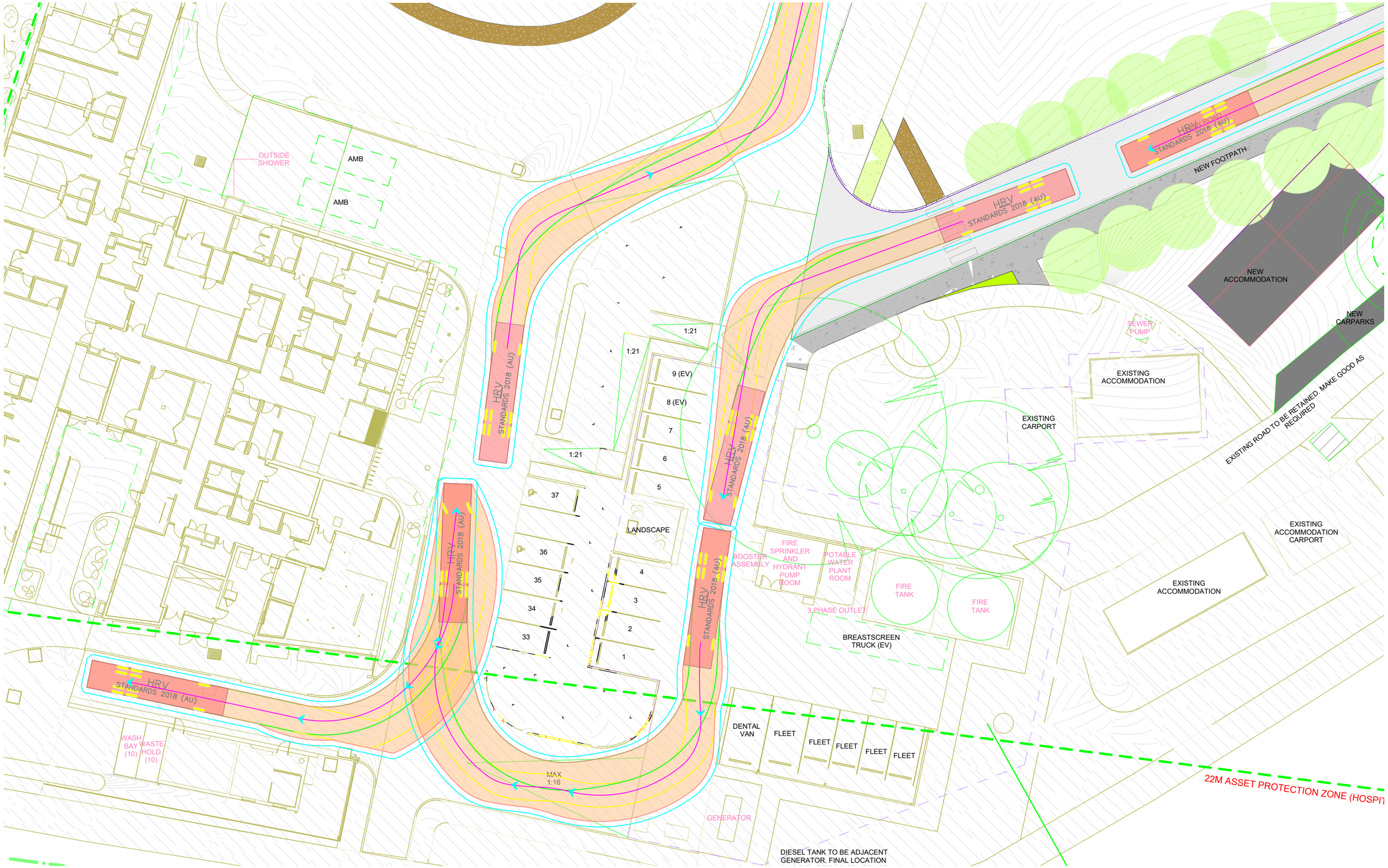
PROJECT
WENTWORTH HEALTH SERVICE REDEVELOPMENT
SWEPT PATH ANALYSIS

TITLE
Bariatric Ambulance, Breastscreen Truck and Resident Parking
NOT FOR CONSTRUCTION

DRAWING NUMBER
SCT_00319-07-002

SHEET 02 OF 06

A3



REV	DESCRIPTION	DATE
A	Schematic Design Review	21/11/2022
B	Swept Path Review	26/04/2023

PREPARED FOR
HEALTH INFRASTRUCTURE

QUALITY INFORMATION	
DATE	04/23
PREPARED	
REVIEWED	
AUTHORISED	

0 3 6
1:300

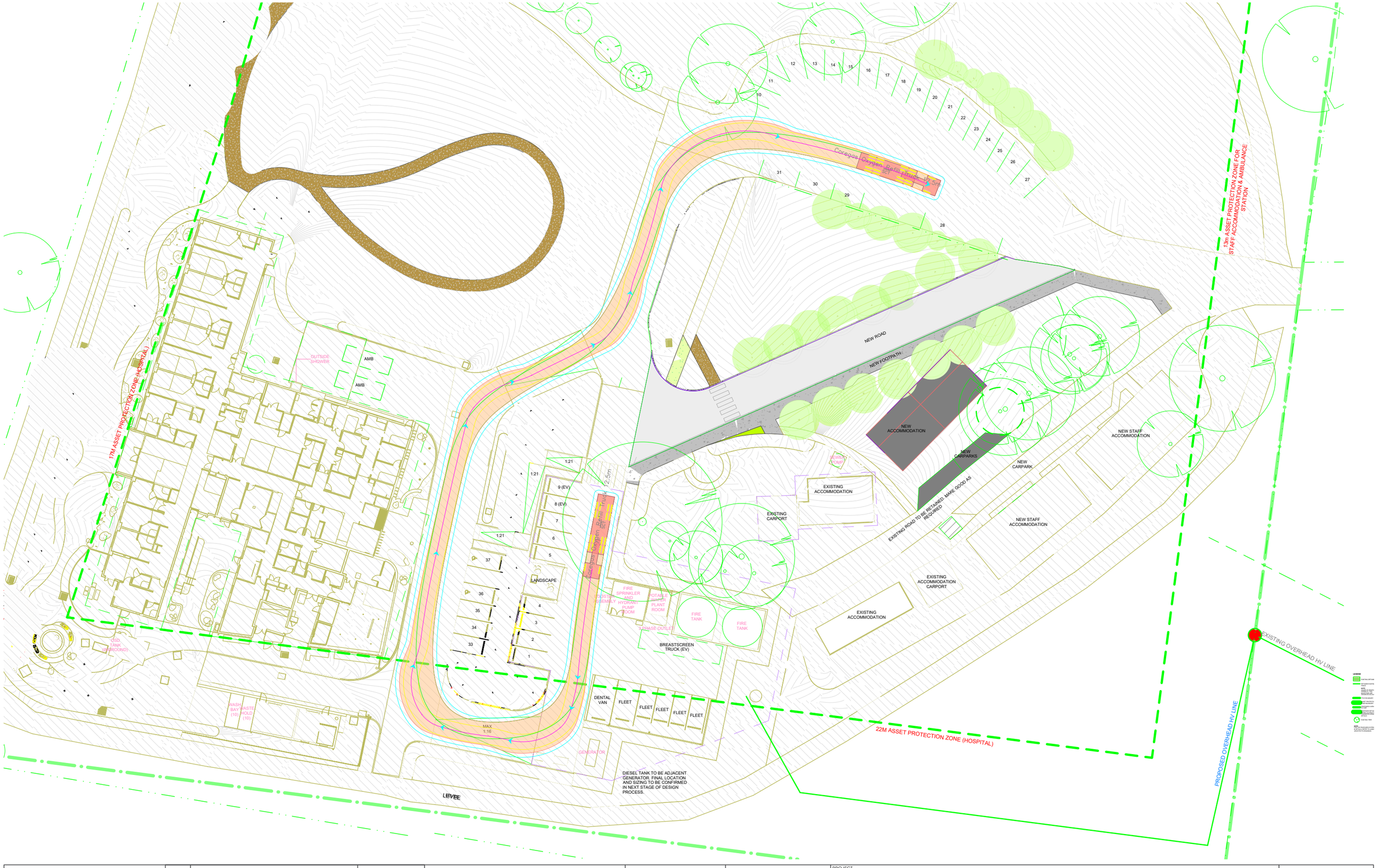
PROJECT
WENTWORTH HEALTH SERVICE REDEVELOPMENT
SWEPT PATH ANALYSIS

TITLE
HRV access for servicing and waste
NOT FOR CONSTRUCTION

DRAWING NUMBER
SCT_00319-07-003

SHEET 03 OF 06

A3



REV	DESCRIPTION	DATE
A	SWEPT PATH CHECK	26/04/2023

SCT Consulting

PREPARED FOR
HEALTH INFRASTRUCTURE

QUALITY INFORMATION	
DATE	04/23
PREPARED	
REVIEWED	
AUTHORISED	

0 5 10

1:500

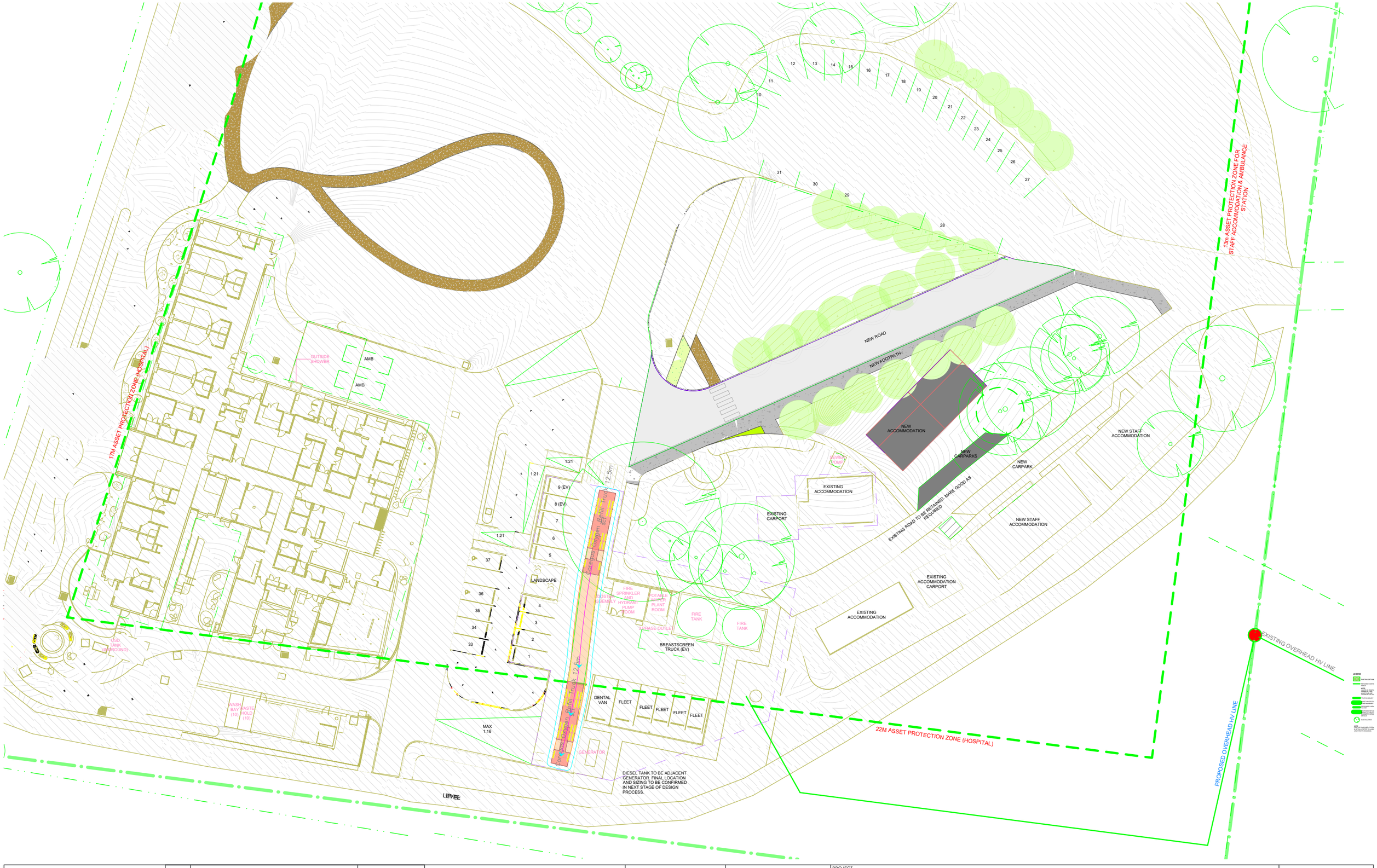
PROJECT
WENTWORTH HEALTH SERVICE REDEVELOPMENT
SWEPT PATH ANALYSIS

TITLE
Coregas Oxygen Refill Truck - 12.5m
NOT FOR CONSTRUCTION

DRAWING NUMBER
SCT_0319-07-004

SHEET 04 OF 06

A3



REV	DESCRIPTION	DATE
A	SWEPT PATH CHECK	26/04/2023

SCT Consulting

PREPARED FOR
HEALTH INFRASTRUCTURE

QUALITY INFORMATION	
DATE	04/23
PREPARED	
REVIEWED	
AUTHORISED	

0 5 10
1:500

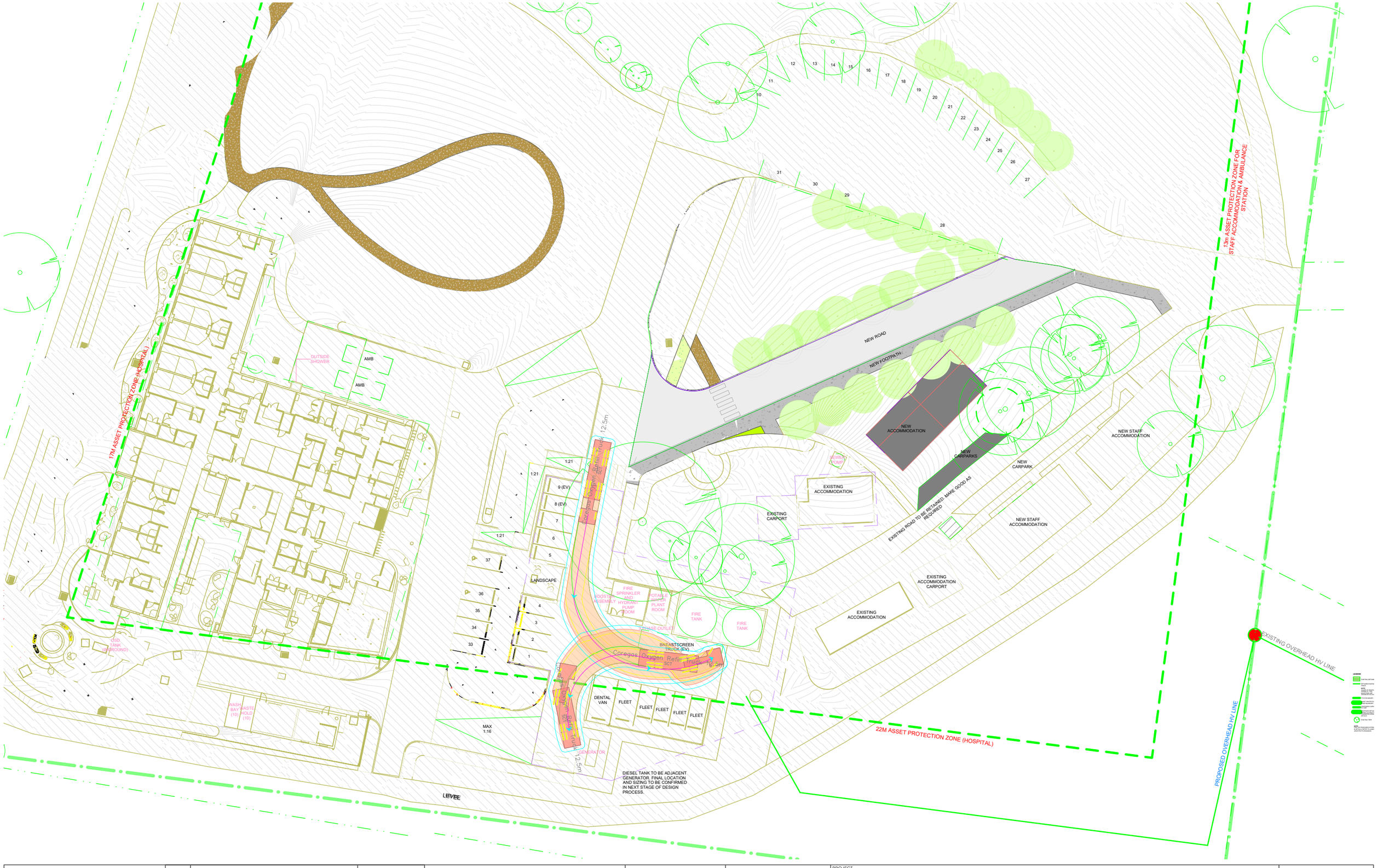
PROJECT
WENTWORTH HEALTH SERVICE REDEVELOPMENT
SWEPT PATH ANALYSIS

TITLE
Coregas Oxygen Refill Truck - 12.5m
Expected refuel position of truck - NOT FOR CONSTRUCTION

DRAWING NUMBER
SCT_0319-07-005

SHEET 05 OF 06

A3



REV	DESCRIPTION	DATE
A	SWEPT PATH CHECK	26/04/2023

SCT Consulting

PREPARED FOR
HEALTH INFRASTRUCTURE

QUALITY INFORMATION	
DATE	04/23
PREPARED	
REVIEWED	
AUTHORISED	

0 5 10
1:500

PROJECT
WENTWORTH HEALTH SERVICE REDEVELOPMENT
SWEPT PATH ANALYSIS

TITLE
Coregas Oxygen Refill Truck - 12.5m
U-Turn without one-way loop - NOT FOR CONSTRUCTION

DRAWING NUMBER
SCT_0319-06-006

SHEET 06 OF 06

A3

APPENDIX C

AS2890 Review

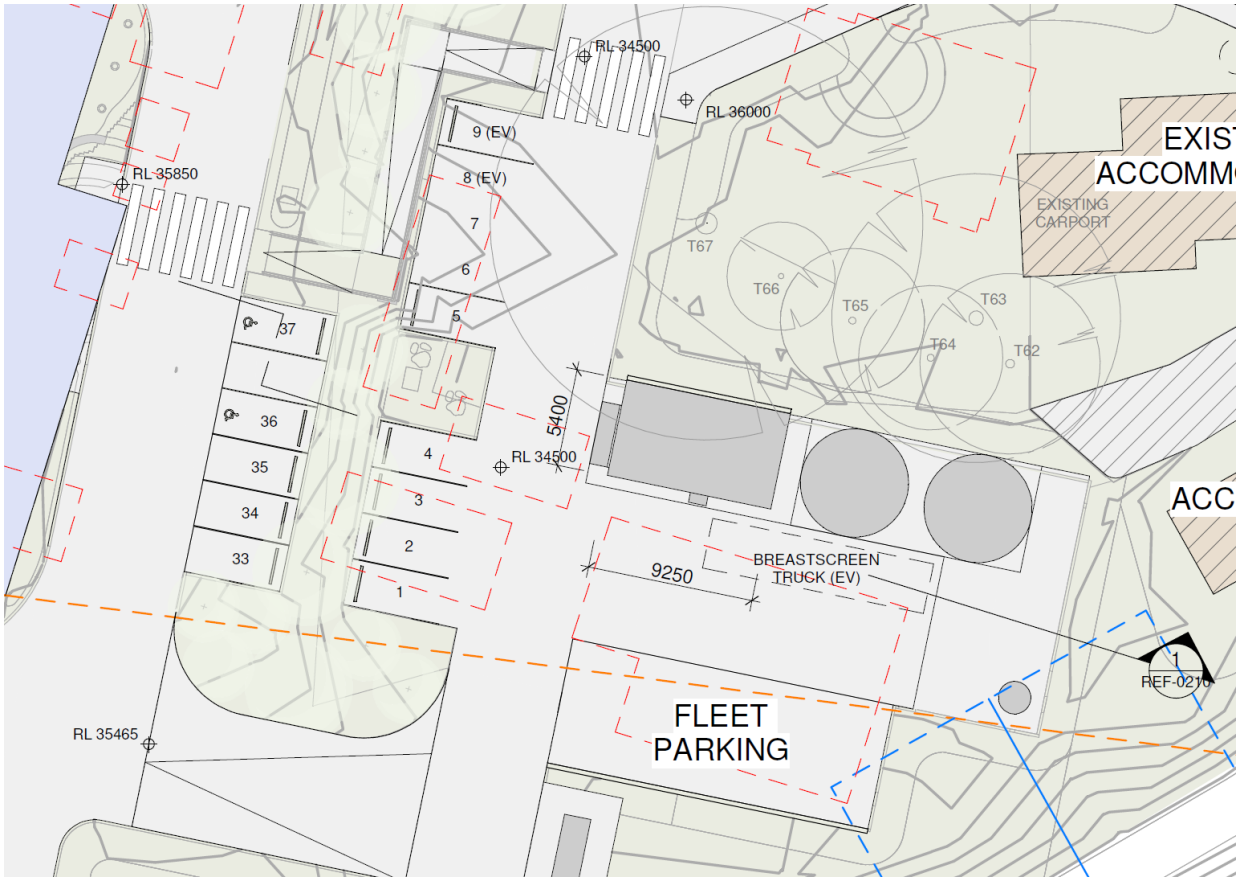
AS2890 Car Park Review

Quality Information		
Project:	Wentworth Health Service Redevelopment	
Project Number:	SCT_00319	
Document Name:	AS2890 Car Park Review	
Date:	26/04/2023	
Prepared:	Esta Qiu, Senior Consultant	
Reviewed:	Matthew Chow, Senior Consultant	
Authorised:	Nick Bernard	

Background

SCT Consulting is supporting Health Infrastructure in the redevelopment of Wentworth Health Service. As part of the redevelopment, new parking facilities will be constructed to support additional staff and visitor activity. This new parking area is illustrated in **Figure 1**. A review of the car park layout was conducted against AS2890.1 (Off-street car parking) and AS2890.6 (Off-street parking for people with disabilities) and presented in this document.

Figure 1 Proposed new parking facilities (public and fleet)



Source: NBRS, 2022

AS2890 Car Park Review

AS2890.1 – Off-street car parking

AS2890.1	Consistent	Comment
2.3 Design Coordination	Yes	– Carpark comprised of 90 degree angle parking. – Parking aisle length does not exceed 100m in length.
2.4.1 Angle parking spaces	Yes	– 90 degree angle parking spaces – All 14 spaces for public / staff are 5.4m long and 2.6m wide – All 4 fleet car spaces are 5.4m long and 2.6m wide – This matches User Class 3 (Suitable for high turnover)
2.4.2 Angle parking aisle	Yes	– Parking aisle ranges from 6.5m wide to 8.6m wide – Aisle extends for 1.5m at the end of the blind aisle, which meets requirements – Blind aisle is wide enough (8.6m) for a B99 to complete a 3-point turn around within the aisle space
2.4.3 Angle parking module layout	Yes	– Carpark layout is a typical angle parking module
2.4.4 Parallel parking in aisles	N/A	– No parallel parking
2.4.5 Physical controls	N/A	– Not considered necessary – Wheel stops if implemented should be 1650 ±50 mm in width
2.4.6 Gradients within parking modules	Yes	– Gradients do not exceed maximums
2.4.7 Provision for motorcycles	N/A	– No motorcycle parking is provided
2.5 Design of circulation roadways and ramps	Yes	– Carpark has less than 50 spaces and does not connect to a frontage road – Roadways are at least 6.4m wide and meet minimum requirement of 5.5m – Ramps are 1:16 gradient and are under the maximum of 1 in 5
2.6 Design of domestic driveways	Yes	– The on-site staff accommodation driveway is as per existing and will not be modified. Width is greater than the required 3m
3.1 General	N/A	– Access facility category 2
3.2 Access driveways – width and location	No	– Driveway is 5.6m wide which meets requirements – Driveway location meets the access requirements
3.3 Gradients of access driveways	Yes	– Grade is within maximum limits
3.4 Queueing areas	N/A	– No vehicular control point
3.5 Access to mechanical parking installations	N/A	– No mechanical parking installations in car park
4.1 Pedestrian service	Yes	– No through traffic – Pedestrians have a dedicated footpath and priority crossing locations throughout the carpark
4.2 Bicycle parking	N/A	– No bicycle parking provided
4.3 Signposting	-	– Signposting to following standards as required

4.4 Pavement markings	-	– Implement appropriate pavement markings as per AS2890
4.5 Parcel pick-up	Yes	– Dedicated loading dock is provided away from circulating paths – Other parcel deliveries will be required to park using the spaces provided
4.6 Shopping trolley requirements	N/A	– No shopping trolleys present
4.7 Lighting	-	– Lighting to follow AS1680.2.1 as required
4.8 Landscaping	Yes	– No landscaping expected to obstruct sightlines
4.9 Humps	N/A	– Positive speed control not expected to be required
5.1 General	N/A	– Informational only
5.2 Column location and spacing	Yes	– Module is open air carpark
5.3 Headroom	N/A	– Module is open air carpark
5.4 Design of enclosed garages	N/A	– Not an enclosed garage

AS2890.6 – Off-street parking for people with disabilities

AS2890.6	Compliant	Comment
2.2 Parking spaces	Yes	– Designated space is 2.6m x 5.4m, wider than minimum requirements (min 2.4m) – Shared area is 2.6m wide x 5.4m long, wider than minimum requirements (min 2.4m) – Bollard to be added in position specified by the standard
2.3 Pavement slope and surface	Yes	– Pavement slope does not exceed maximum gradient
2.4 Headroom	Yes	– Module is open air carpark
2.5 Kerb Ramps	N/A	– No kerbs are present around the parking space
3.1 Space identification	-	– Space is to be identified according to AS1428.1
3.2 Space delineation	-	– Markings to be provided as specified in this section

Summary

The Car Park Review found that the proposed car park layout is consistent with the requirements of the AS2890.1 and AS2890.6 for the aspects that could be checked using the plan drawing (in **Figure 1**). The carpark is sized for short stay users (User Class 3) such as visitors and patients. Staff should be encouraged to use the existing carpark where possible, to allow for more vulnerable user groups to use this new parking area.


SCT
Consulting