Temora Hospital Redevelopment

Temora Hospital Traffic and Access Impact Assessment Report

NSW Health Infrastructure

April 16, 2024

→ The Power of Commitment

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[Compliance statement]

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1. Background

This Traffic and Access Impact Assessment has been prepared to provide a high level assessment of traffic impacts, construction options and construction traffic management measures for the Temora Health Service redevelopment.

It is noted that some of the swept path drawings included in this memo (associated with construction activity) are based on aerial imagery and are indicative only. Further analysis will be required at a later time to confirm the manoeuvrability of heavy vehicles.

The Temora Hospital is located at the corner of Gloucester Street and Loftus Street, within the township of Temora (refer to Figure 1.1). Under the current arrangement, all vehicles (including ambulances and delivery vehicles) access the hospital via Loftus Street and egress the hospital via Gloucester Street.

An aged care facility (Whiddon Temora) is located immediately west of the hospital, with access and egress provided off Gloucester Street.

Figure 1.1 Temora Hospital current access arrangements

The current internal access/egress roads are narrow (approximately three to four metres wide), which is suitable for accommodating one way traffic flows, as per the current arrangement.

Further:

– Information provided by staff at Temora Hospital indicates that delivery vehicles consist of a relatively small number of linen trucks, food delivery, general waste collection trucks and clinical waste collection trucks.
– There are currently no public transport services operating in proximity to the hospital site.
– Pedestrian footpaths are typically provided on Loftus Street, Gloucester Street and other key roads in proximity to the subject site.

In addition to the current access/egress point on Gloucester Street and Loftus Street, there is an internal road that connects the hospital to Bundawarrah Road (at its intersection with Loftus Street), as displayed in Figure 1.2.

A small concrete median is located on Bundawarrah Road at Loftus Street.

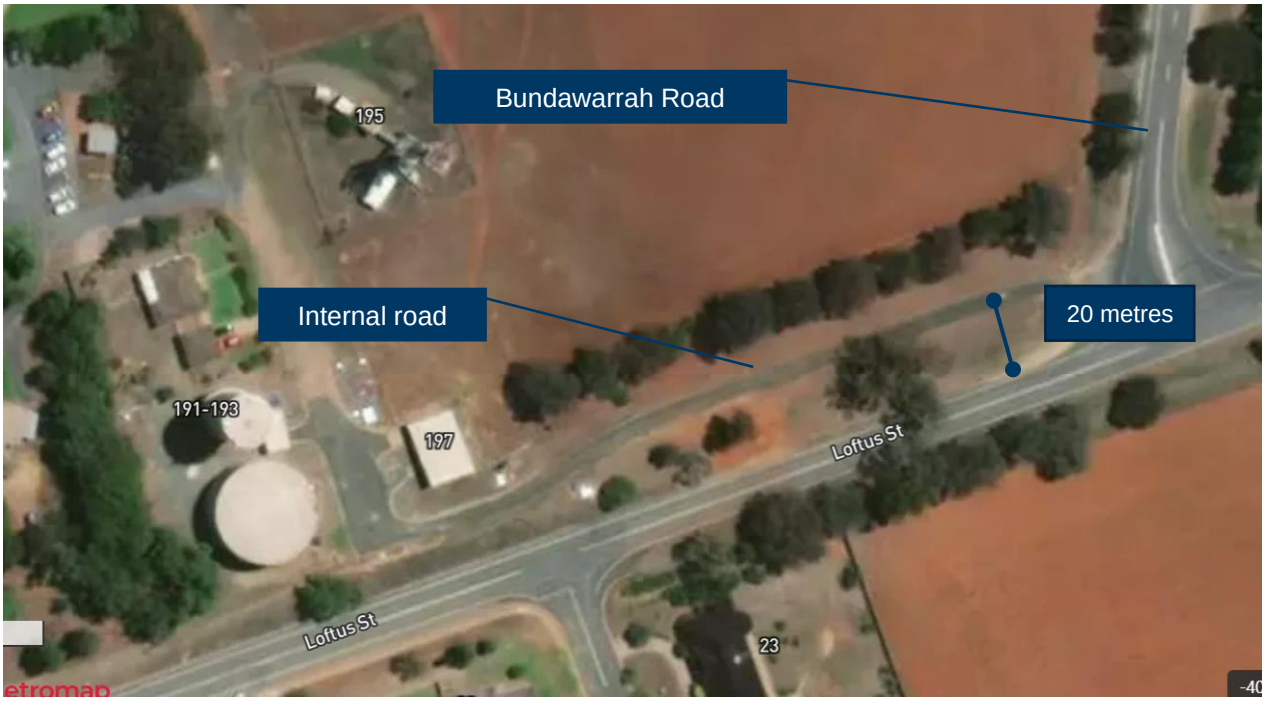

Figure 1.2 Internal access road location

As displayed in Figure 1.3, the internal road is narrow (approximately three metres wide) and does not support bi-directional traffic flow. It is understood that the hospital does not currently use the internal access road.

Figure 1.3 Internal access road layout

2. Concept plan

The concept layout of the proposed Temora Hospital redevelopment is displayed in Figure 2.1. As per the current arrangement, the majority of hospital buildings/services will be located on the north-eastern corner of the subject site.

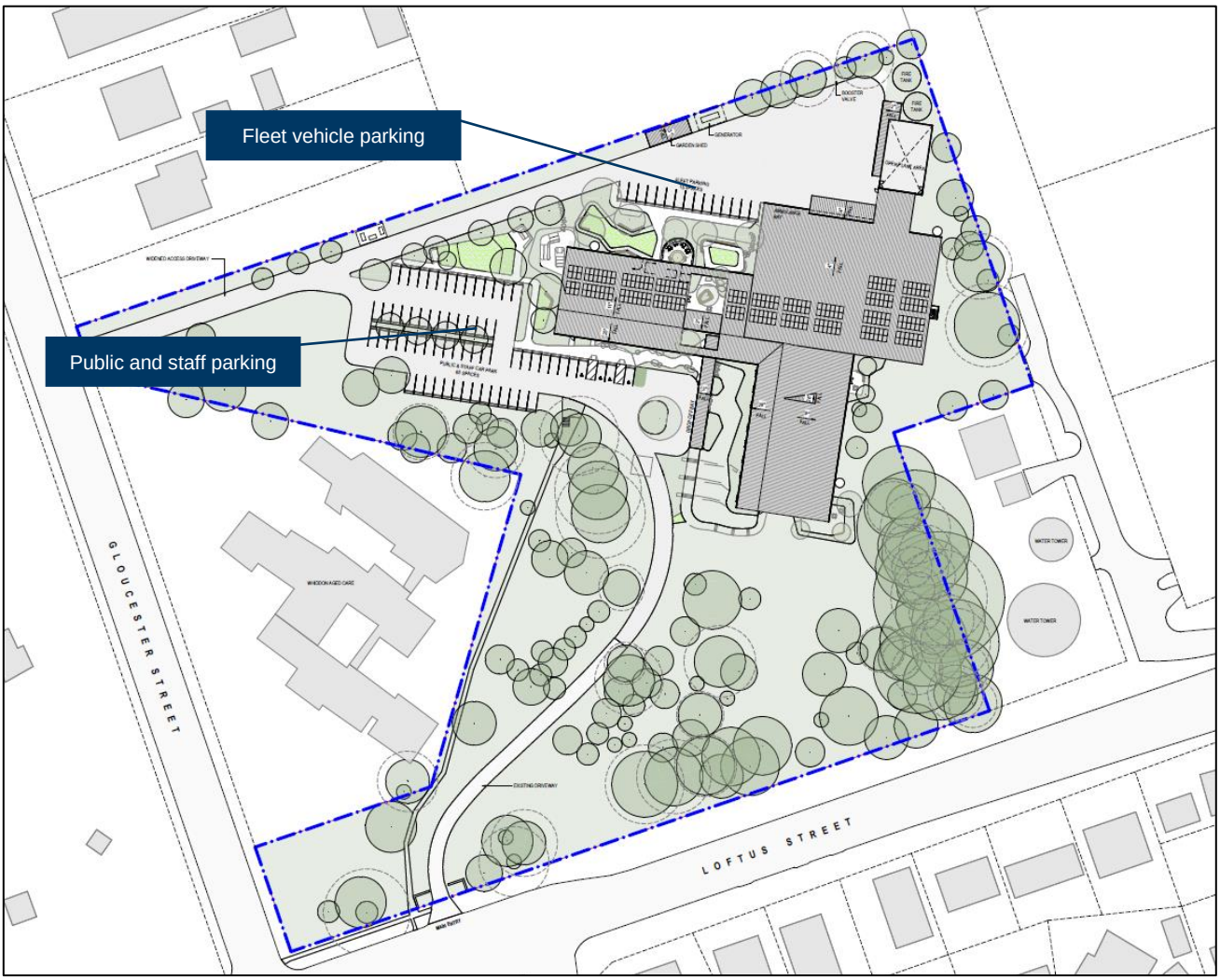

Figure 2.1 *Proposed Temora Hospital redevelopment*

Under the proposed arrangement:

- The majority of cars will continue to access the hospital via Loftus Street (using the existing driveway) and exit via Gloucester Street.
- Fleet vehicles (cars) will access and egress the hospital via Gloucester Street.
- All ambulances, waste collection vehicles and delivery vehicles will access and egress the hospital via Gloucester Street.
- The internal car park will be reconfigured and consolidated into two parking areas:
  - A main parking area for visitors and staff (65 spaces)
  - A secondary parking area in proximity to the loading dock and for fleet vehicles (15 spaces)

The internal Gloucester Street access/egress road currently has a width of approximately four metres. The volumes of ambulances and waste/delivery vehicles accessing/egressing the hospital from this point are expected to be relatively low.

However, as ambulance movements will be time critical, there may be a requirement for delivery vehicles to pass each other, and there will be additional activity associated with the fleet vehicles. As part of the hospital upgrade, it is proposed that the Gloucester Street access/egress road be widened to six metres

The location of the proposed internal road widening within Temora Hospital is displayed in Figure 2.2.

Figure 2.2 Internal road upgrades

GHD has undertaken a swept path of a 12.7 metre heavy rigid vehicle (HRV) accessing the hospital via Gloucester Street, manoeuvring internally and exiting the hospital in a forward direction (refer to Figure 2.3). A HRV is expected to be indicative of the largest vehicle that will access the hospital.

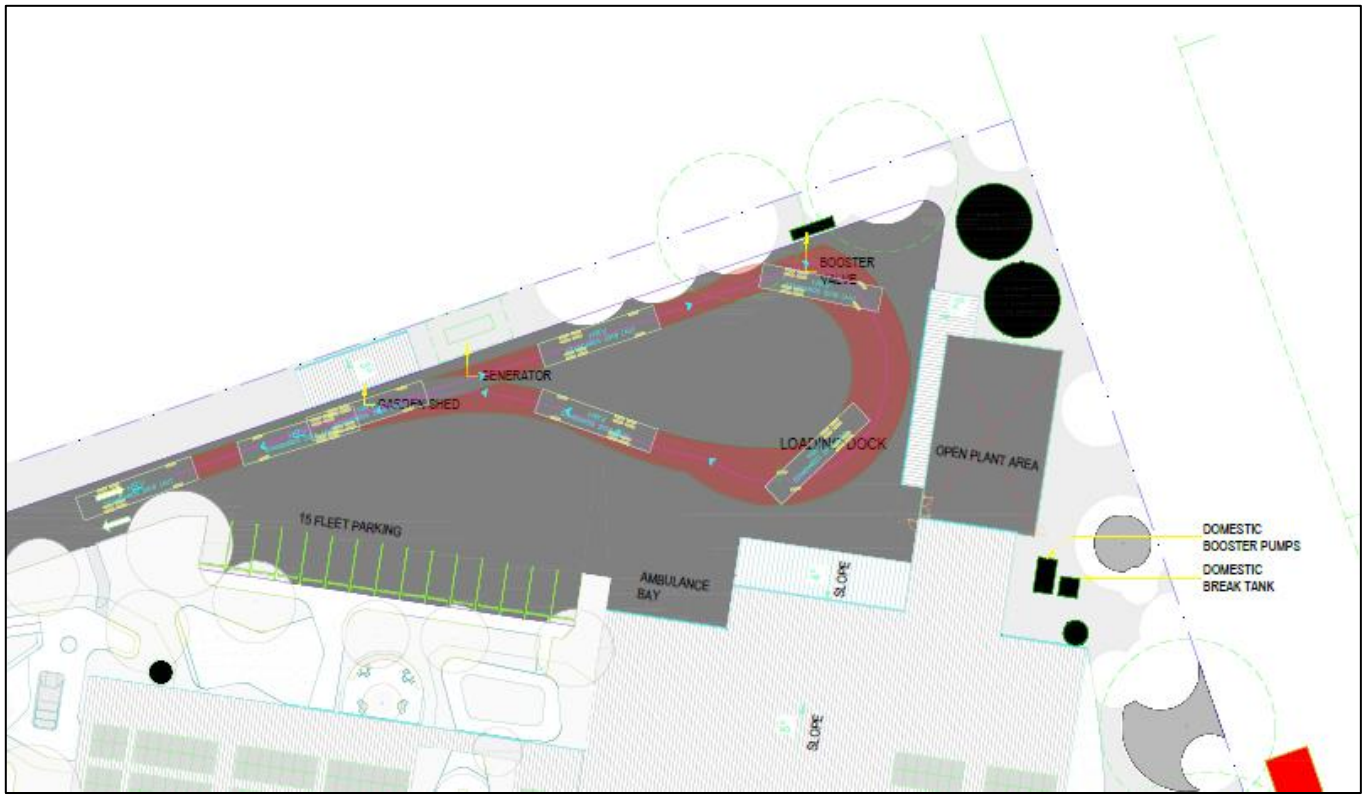

Figure 2.3 HRV manoeuvre – U-turn

It is noted that the analysis indicates that there is a minimum distance of approximately five metres between the fleet parking spaces and turning trucks.

A swept path analysis of a six metre ambulance entering the hospital and accessing the designated bay is displayed in Figure 2.4.

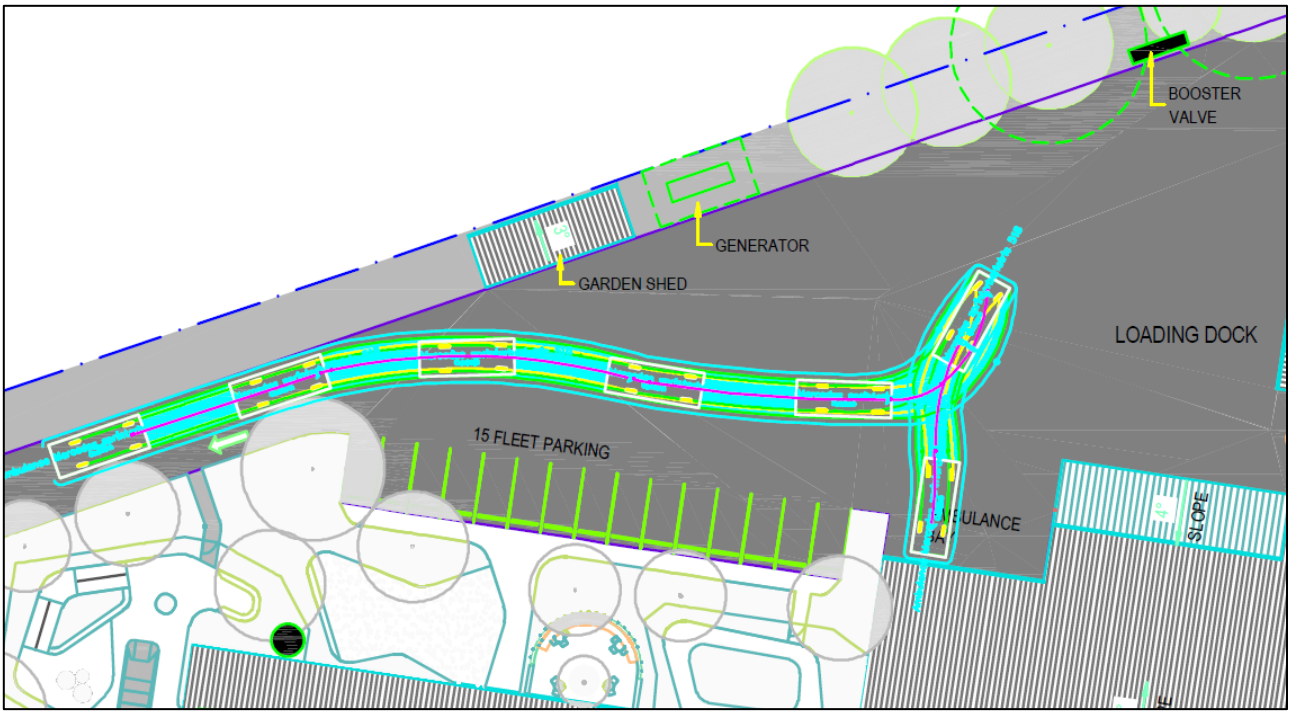

Figure 2.4 Ambulance manoeuvre

A swept path analysis of an 11.7 metre fire truck entering the hospital, manoeuvring internally and exiting in a forward direction is displayed in Figure 2.5.

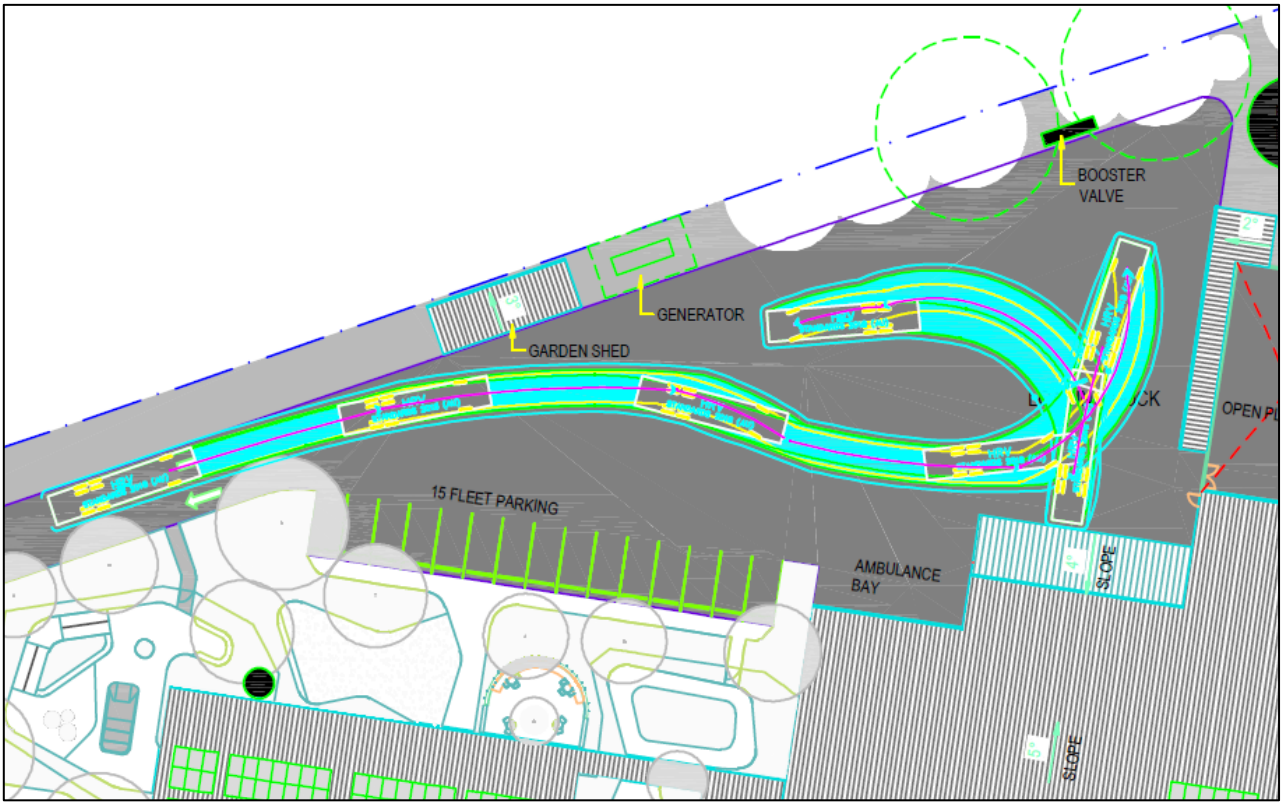

Figure 2.5 Fire truck manoeuvre

In summary, the swept path analysis indicates that the upgraded hospital will provide sufficient space to accommodate the vehicles expected to access it.

3. Traffic impacts

Temora Shire Council have provided traffic count data for Loftus Street at the frontage to the hospital from July 2019 to June 2020. The data indicates that:

– Loftus Street accommodates approximately 850 (bi-directional) vehicles per day
– Cars constitute approximately 80 percent of total vehicles
– Trucks constitute approximately 20 percent of total vehicles

Peak hour flows are typically in the order of 15 percent – 20 percent of daily flows. Therefore, it is expected that Loftus Street currently accommodates approximately 170 vehicles during peak periods of road network activity.

Information from the Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis indicates that kerbside lanes adjacent to parking lanes have one-way mid-block capacities of approximately 900 vehicles per hour.

The available data indicates that Loftus Street is operating well within its mid-block capacity.

Outputs from Google Maps (as displayed in Figure 3.1) indicate that key roads in proximity to Temora Hospital currently operate with a good level of service.

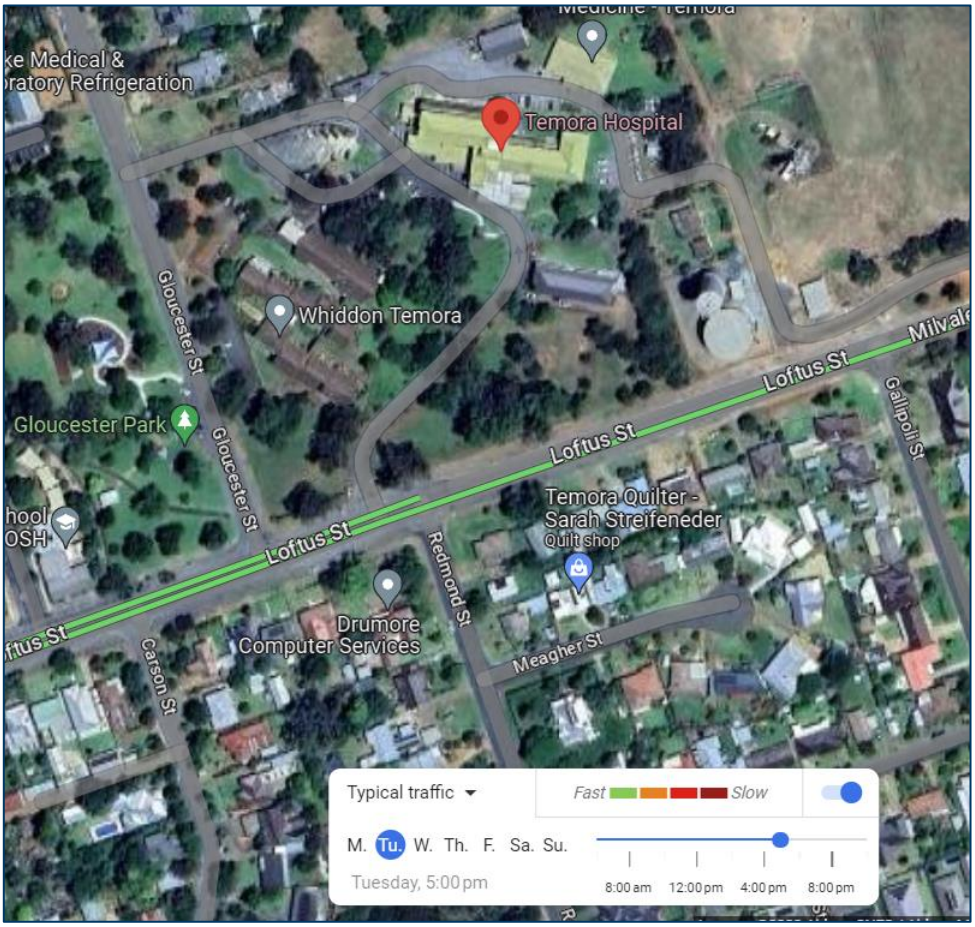

Figure 3.1 Road network operation (weekday at 5:00 pm)

Source: Google Maps

The available information indicates that the Temora Health Service redevelopment is not expected to generate significant additional traffic volumes associated with the movement of staff, patients, visitors, ambulances and delivery vehicles.

Accordingly, the upgrade to Temora Hospital is expected to have a negligible impact on the operation of the adjoining road network, which is expected to continue to operate with a good level of service.

4. Parking impacts

As displayed in Figure 1.1, at-grade parking is currently provided throughout the hospital site. Excluding the parking adjacent to the aged care facility, a desktop review indicates that there are approximately 80 parking spaces within the hospital grounds for workers and visitors. No electric vehicle charging spaces are currently provided within the Temora Hospital Car Park.

Information provided by staff from Temora Hospital detailing (current) staffing numbers are provided in Table 1. The data reflects weekdays, as this is when peak staffing activity occurs.

Table 1 Staffing data (daily)

Type	Full-time	Part-time
Allied Health	10	4
Administration	5	-
Health Share	Morning shifts up to 6 Afternoon shifts up to 2	-
Mental Health	14	4
Asset	Up to 2	-
Nursing (including wards persons)	Monday to Friday - Morning - 9 - Evening -6 - Night - 4	
Community Nurse	3	
Child and Family Nurse	1	1
Total	62	9

The data in Table 1 indicates that up to 62 full-time staff and nine part-time staff access/egress the hospital on a daily basis over multiple shifts.

Information provided by hospital staff indicates:

– The key shift change over times for clinical staff occurs between 1:30 pm and 3:30 pm on weekdays.
– Staff parking is provided at the side and rear of the hospital building.
– Typically, there is enough parking at Temora Hospital to accommodate demand (staff and visitors), however, this is challenging on busy days, i.e. theatre days.

The proposed hospital redevelopment will result in the relocation of approximately 30 parking spaces, as displayed in Figure 4.1.

Figure 4.1 Location of lost parking spaces

As displayed in Figure 2.1, the Temora Hospital redevelopment will provide 80 parking spaces, with no reduction in the existing provision.

There are also significant on-street parking opportunities on the roads adjacent to the hospital.

5. Construction access

5.1 Trucks

In determining the potential construction access arrangements, effort should be made where possible to minimise interactions between construction vehicles (light and heavy) and visitors/staff at the hospital. To support this outcome, there is a potential for heavy vehicles to utilise the internal road to access and or egress the site during construction.

Challenges associated with the potential use of the internal road include:

– It's close proximity to Loftus Street (approximately 20 metres).
– Its narrowness, i.e. it does not support bi-directional activity.

Additionally, the surface of the access road will need to be assessed to ensure it is suitable to accommodate heavy vehicles.

5.1.1 Heavy Rigid Vehicle

A swept path analysis using a 12.7 m standard heavy rigid vehicle (HRV) indicates that:

– HRV vehicles accessing the site from the east (refer to Figure 5.1) can manoeuvre into the access road

– HRV vehicles accessing the site from the west (refer to Figure 5.2) are required to undertake a U-turn to turn into the access road. The swept path analysis indicates a small section of land to the north of the road is required to support this manoeuvre.

Accordingly, it is preferable that heavy vehicles access the site from the east.

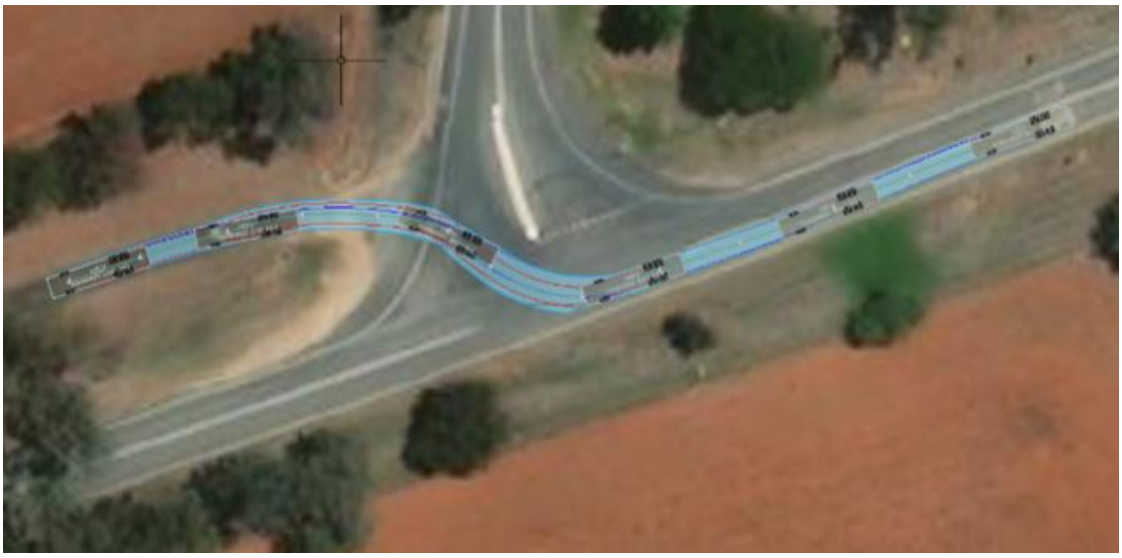

Figure 5.1 HRV access from the east

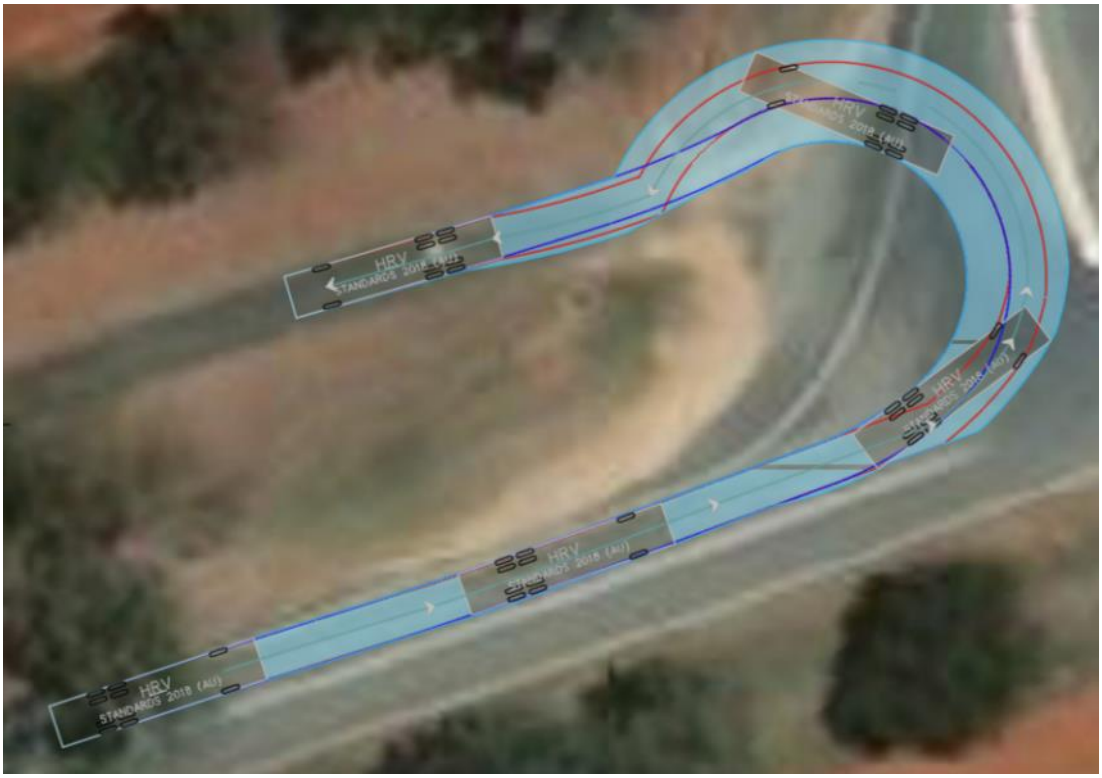

Figure 5.2 HRV access from the west

Trucks egressing the site have a number of options, including:

1. Vehicles enter the site via the access road and egress in another location, i.e. via the existing exit onto Gloucester Road

2. Vehicles enter and exit the site via the internal road.

A key disadvantage of the first option is that the trucks would utilise the same egress as staff/visitors at the hospital. These interactions would need to be carefully managed with the use of signage, traffic controllers, etc., to support the safety of hospital users.

For the second option, as the access road is not bi-directional, the movement of trucks would need to be carefully controlled. Traffic controllers (with radios) would be required at both ends of the access road for the duration of construction. Inbound trucks would be given priority, while outbound trucks would need to be held at a prescribed location while inbound vehicles completed their manoeuvre into the hospital (refer to Figure 5.3).

Figure 5.3 HRV inbound manoeuvre and hold point

Swept paths showing HRV egressing the internal road onto Loftus Street are displayed in Figure 5.4 and Figure 5.5. The figures indicate that heavy vehicles can exit the access road onto Loftus Street in both directions.

Figure 5.4 HRV egress to the east

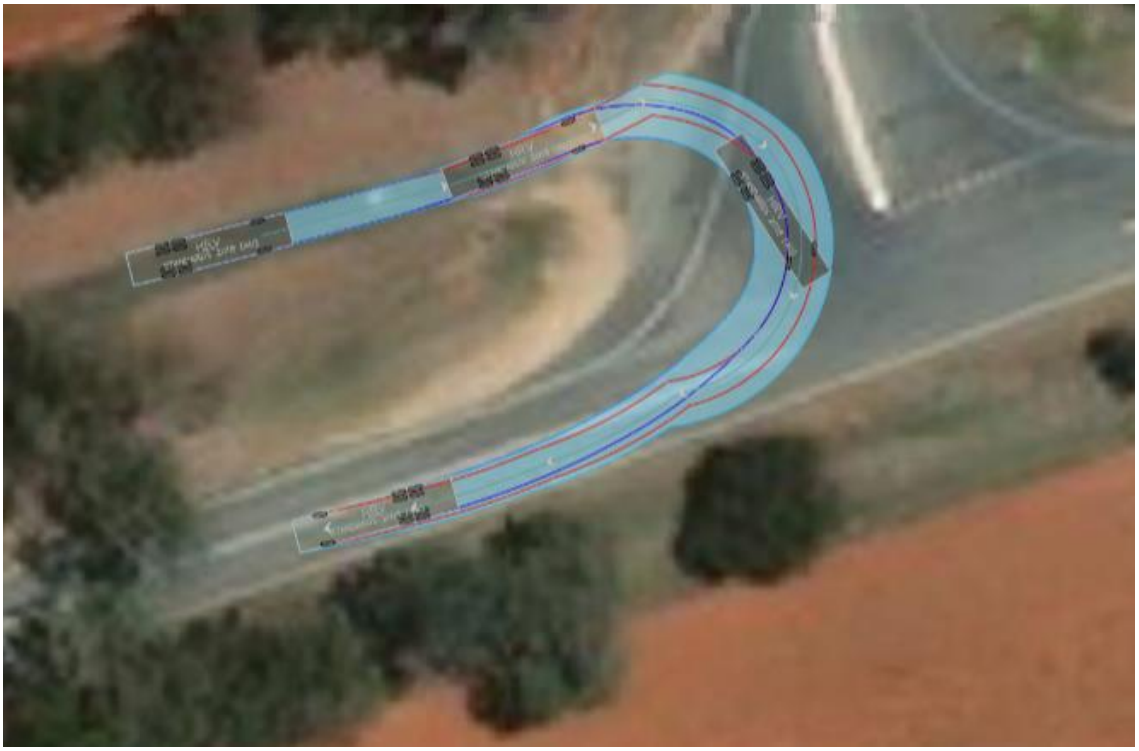

Figure 5.5 HRV egress to the west

It is noted, however, that in order to undertake a U-turn, the HRV would have to travel in the wrong direction on Bundawarrah Road for a short length. This manoeuvre would need to be managed with traffic controllers. Alternatively, all heavy vehicles would need to depart the site in an easterly direction.

An image displaying a HRV manoeuvring internally in order to egress the hospital is displayed in Figure 5.6.

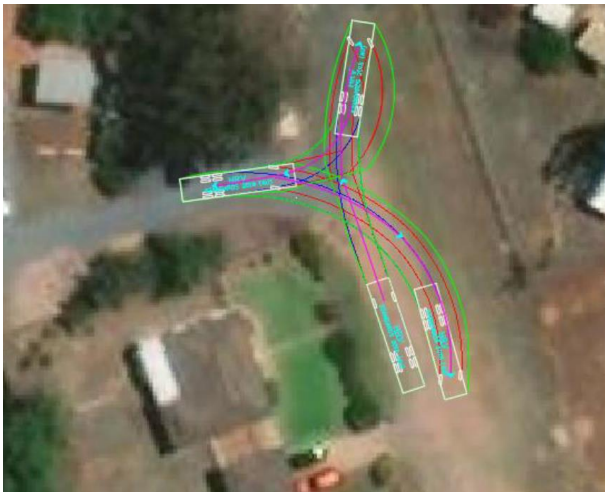

Figure 5.6 HRV (construction vehicle) turnaround manoeuvre

As the manoeuvre requires a vehicle to reverse, it should be managed by a traffic controller to support the safety of construction workers and other hospital users.

5.1.2 19-metre semi-trailer

Similar swept path analyses have been completed using a 19-metre semi-trailer as the design vehicle.

The swept path displayed in Figure 5.7 indicates that a semi-trailer could access the internal road from the east. Figure 5.8 indicates that semi-trailers from the west would need to utilise the opposite travel lane or undertake a multi-point turn to access the internal road.

Figure 5.7 19m semi trailer access from the east

Figure 5.8 19m semi trailer access from the west

The above figures indicate that semi-trailers should not be permitted to access the internal road from the west.

The data in Figure 5.9 indicates that there is sufficient space within the hospital site (to the north of the internal road) to enable two semi-trailers to pass each other.

Figure 5.9 19m semi-trailer inbound manoeuvre and hold point

Figure 5.10 indicates that an eastbound semi-trailer could egress from the internal road onto Loftus Street. While Figure 5.11 indicates that a westbound semi-trailer could egress from the internal road onto Loftus Street, however, this would need to be managed by traffic controllers.

In summary, it is recommended that 19-metre semi-trailers (if required) access/egress the internal road to/from the east.

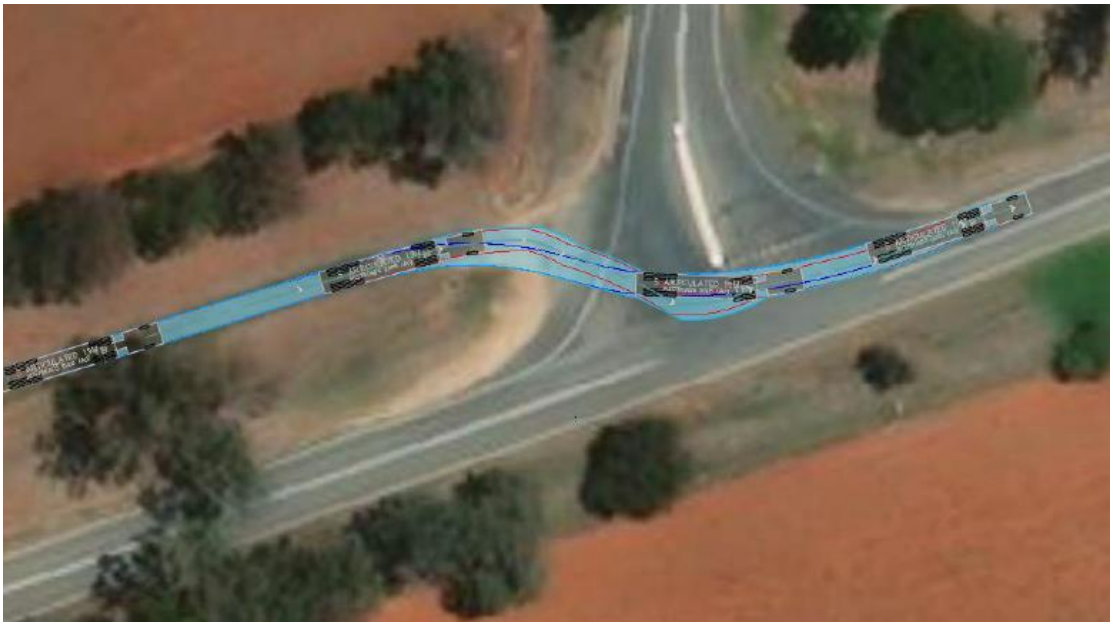

Figure 5.10 19m semi-trailer egress to the east

Figure 5.11 19m semi-trailer egress to the west

An image displaying a 19m semi-trailer manoeuvring internally in order to egress the hospital is displayed in Figure 5.12.

Figure 5.12 HRV (construction vehicle) turnaround manoeuvre

As the manoeuvre requires a vehicle to reverse, it should be managed by a traffic controller to support the safety of construction workers and other hospital users.

5.2 Light vehicles

Based on discussions with hospital staff, it is understood that the current parking facilities at the hospital can experience high demand. Accordingly, alternative parking locations will be provided for construction workers. Given the remote location of the subject site, accommodation may be provided for workers within or in proximity to Temora. The provision of accommodation would support the use of carpooling/shuttles and support the overall construction parking demand.

With respect to parking for construction workers, a number of options are available, as follows:

– An overflow parking area is provided within or in proximity to the hospital grounds.
– Construction workers are instructed to park on the road network in proximity to the hospital.

With respect to the second option, there is a dedicated on-street parking lane on the southern side of Loftus Street (refer to Figure 5.13). A review of aerial imagery indicates that the demand for these spaces is negligible, and they could provide utility construction workers.

Figure 5.13 Parking lane on the southern side of Loftus Street

6. Construction traffic management

At the time of writing this memo, the details of the expected construction activity/staging associated with the upgrade of the Temora Hospital are not currently available. It is assumed that the hospital will maintain its operation throughout the construction period.

Efforts will be made throughout the construction period to minimise the interaction between hospital traffic and construction traffic. The potential use of the internal access road provides an opportunity to support this vehicle separation.

The construction contractor will be required to prepare a detailed Construction Traffic Management Plan (CTMP) prior to the commencement of construction works.

Mitigation measures proposed to avoid or minimise traffic and transport impacts during construction works are listed in Table 2.

Table 2 Mitigation measures – traffic and transport

No.	Outcome	Mitigation measure	Timing
T1	Minimise impacts to traffic and transport networks.	Develop a construction traffic management sub-plan, prior to construction. Include, at a minimum, the following management measures: – Preparation of a Traffic Guidance Scheme, detailing adequate road signage at construction work sites to inform motorists and pedestrians of the work site ahead to ensure that the risk of road accidents and disruption to surrounding land uses is minimised. – Maintain accessibility for pedestrians and cyclists. – Identify the requirement (if needed) for traffic controllers. – Identify parking locations for construction workers. – Identify routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and businesses. – Liaison with local government as the road authority re construction access, and proposed use of kerb space for construction worker parking. – Implement measures to manage traffic flows around the area affected by the construction of the project, including, as required, regulatory and direction signposting, line marking, and variable message signs and all other traffic control devices necessary for the implementation of the construction traffic management sub-plan.	Pre-construction
T2	Minimise impacts to the operation of Temora Hospital	Separate construction vehicles from hospital vehicles including ambulances (where possible).	Construction
T3	Minimise environmental impacts associated with the movement of vehicles.	Monitor the roads leading to and from the project site and take necessary steps to rectify any road deposits caused by site vehicles, to maintain the safety of road users. Where possible, offset the construction vehicle activity from peak periods of road network/hospital activity.	Construction
T4	Minimise environmental impacts associated with the movement of vehicles.	Induct employees and contractors to raise awareness and understanding of traffic and transport mitigation measures to be implemented during construction via the CEMP.	Construction

7. Summary and conclusion

This Traffic and Access Impact Assessment has been prepared to provide a high level assessment of traffic impacts, construction options and construction traffic management measures for the Temora Health Service redevelopment. It is noted that:

– Swept path analysis indicates that the upgraded hospital will provide sufficient space to accommodate the vehicles expected to access it.
– The upgrade to Temora Hospital is expected to have a negligible impact on the operation of the adjoining road network, which is expected to continue to operate with a good level of service.
– The Temora Hospital redevelopment will provide 80 parking spaces, with no reduction in the existing provision.
– The construction contractor will be required to prepare a detailed CTMP prior to the commencement of construction works.

In summary:

– The proposed redevelopment is expected to have a negligible impact on the adjoining traffic and transport facilities.
– The Temora Hospital subject site is suitable redevelopment from a traffic and transport perspective.

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