



# Quorn and Hawker Traffic Management and Parking Plan Final Report

**Client //** The Flinders Ranges Council  
**Office //** SA  
**Reference //** 16A1277000  
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Quorn and Hawker  
Traffic Management and Parking Plan  
Final Report

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# 1. Introduction

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## 1.1 Background

The Flinders Ranges Council (Council) is seeking to develop Traffic Management and Parking Plans for the two main townships within the Council area of Quorn and Hawker.

Both townships are popular tourist bases for visitors to the Flinders Ranges and areas to the north, either as a base for touring around the area or as stopovers as part of longer trips. A high proportion of the tourists are caravan based, requiring specific consideration in terms of access and parking. The townships therefore provide a wide range of facilities for locals and tourists as well as supporting local tourist destinations such as Pichi Richi Railway,

## 1.2 Structure of this Report

This draft report provides an assessment of the current townships of Quorn and Hawker in chapter 2 and identification of potential options for consideration by Council in chapter 3.

Further chapters providing our recommendations on the preferred Traffic and Parking Plan for each township and an Action Plan for implementation will be added to complete the report following a more extensive community engagement consultation on the identified options.

## 2. Existing Conditions

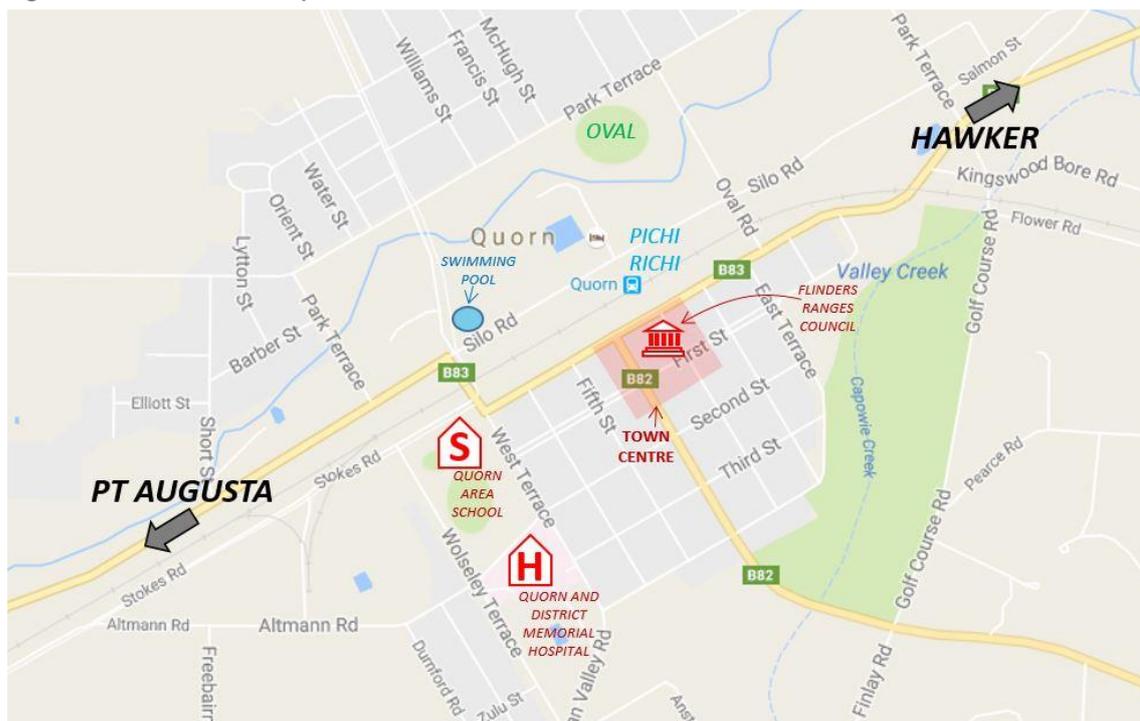
### 2.1 Quorn

#### 2.1.1 Township

Quorn provides the main commercial and administrative centre for the Flinders Ranges and therefore includes a number of local and regional facilities. This includes The Flinders Ranges Council offices, Pichi Richi Railway, Area School and Hospital. A conference centre is also currently under construction.

The two major road routes to the township are via Flinders Ranges Way from Port Augusta, Stirling North and Princes Highway or Horrocks Highway from Wilmington. Within the township, Railway Terrace (Flinders Ranges Way) and Sixth Street (Horrocks Highway) form the main traffic routes with parts of First Street and Seventh Street providing the focal points (main streets) for the township. Figure 2.1 shows Quorn township and the key facilities and routes.

Figure 2.1: Quorn Township



## 2.1.2 Traffic and Transport Networks

### Road Network

As noted above Railway Terrace and Sixth Street are the main traffic routes in to and through the township and both are under the control and management of the State Government through the Department for Planning, Transport and Infrastructure (DPTI). Both routes are part of the designated Over Dimension Vehicle Route network, which also includes sections of First Street, Fourth Street and Eighth Street. Figure 2.2 shows the designated routes, denoting the road train and B-Double permitted routes.

**Figure 2.2: Over Dimension Vehicle Route Designations in Quorn**



Traffic volumes on the local roads are generally considered low with DPTI volumes indicating around 1,400 vehicles daily on Flinders Ranges Way and 1,500 vehicles on Horrocks Highway within the township. Traffic volumes on all other roads are anticipated to be considerably lower than these volumes.

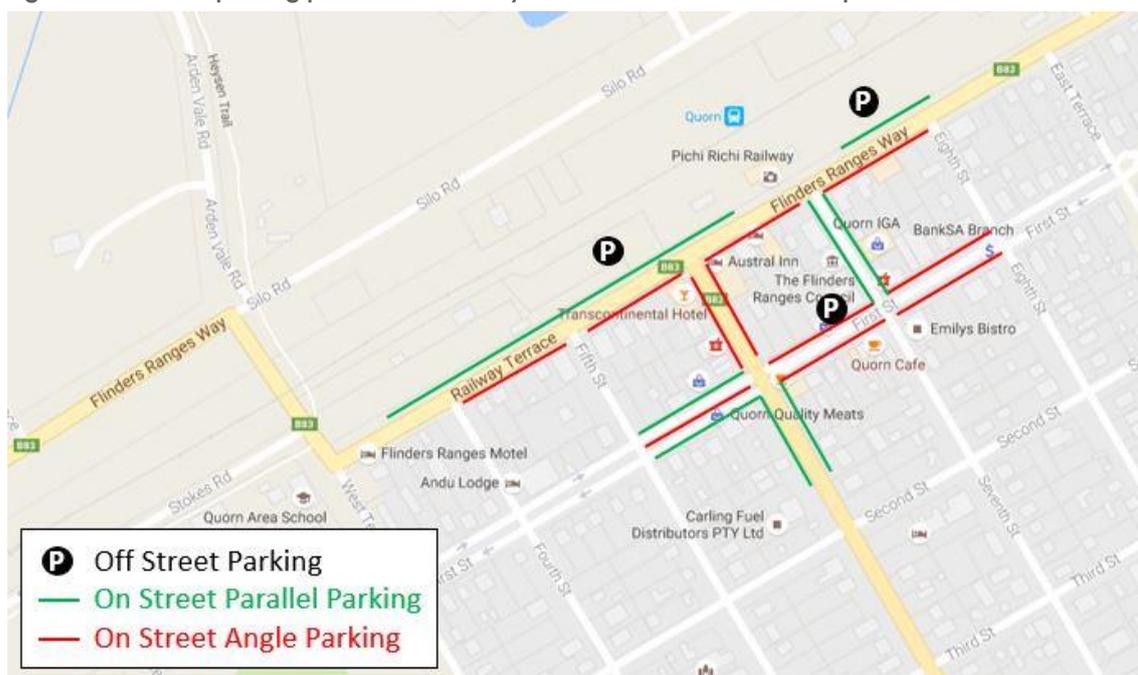
A permanent DPTI traffic monitoring site to the north of Quorn on Flinders Ranges Way indicates that the peak periods for traffic volumes are between late March and October, with localised peak volumes around Easter, June and July and September/October holiday weeks. January and February are the lowest volume months.

### Parking

Within the township, the majority of the parking is provided on-street through a mixture of parallel and angled parking. There are three specific off-street car parks that serve the town centre located behind the Council offices access from First Street and on Railway Terrace to the north and south of Pichi Richi railway. The car park to the north of Pichi Richi railway is primarily used by rail passengers but is understood to be a publicly available car park.

Figure 2.3 shows the location of the main parking areas identifying off-street and parallel and angled on-street provision in the main part of the township and specific parking provision for caravans and coaches.

**Figure 2.3: Quorn parking provision within key areas of commercial development**



In general, adequate parking capacity was observed during the weekday site inspections, with parking spaces freely available on all streets and off-street areas. The inspections took place during typical weekday conditions within the recognised holiday season, although not during the busiest periods or when the Pichi Richi railway was operating. GTA understands that during peak periods of the tourist season there can be some localised parking pressures in the town centre, and in particular around some of the hotels. This has in the past lead to concerns to be raised by nearby residents regarding overspill parking.

### Pedestrian Routes

The main pedestrian activity in Quorn is centred around the main streets of First Street, Sixth Street and Seventh Street, Pichi Richi railway, Quorn school and car parks and facilities along Railway Terrace. The majority of footpaths within the central area of the township are either paved or sealed, although the northern side of Railway Terrace adjacent to the parking and Pichi Richi railway is unsealed. Kerb ramps are provided at some of the pedestrian crossing points within the central area of the township, although not all are to current design standards and a number were noted with maintenance issues.

Pedestrian safety issues were typically perceived around the intersections along First Street and Sixth Street where the majority of the pedestrian crossing activity takes place.

### Cycling

There is currently little in the way of formal cycling provision within Quorn, with no identified bike routes or bike parking provision. Cycling activity was mostly identified to and from Quorn Area School and tourist cyclists, with very little local cycling activity within the township despite the relatively compact nature of the majority of the township (generally less than 1.5 kilometres across). Figure 2.4 illustrates the current routes used by cyclists based on Strava heatmap information.

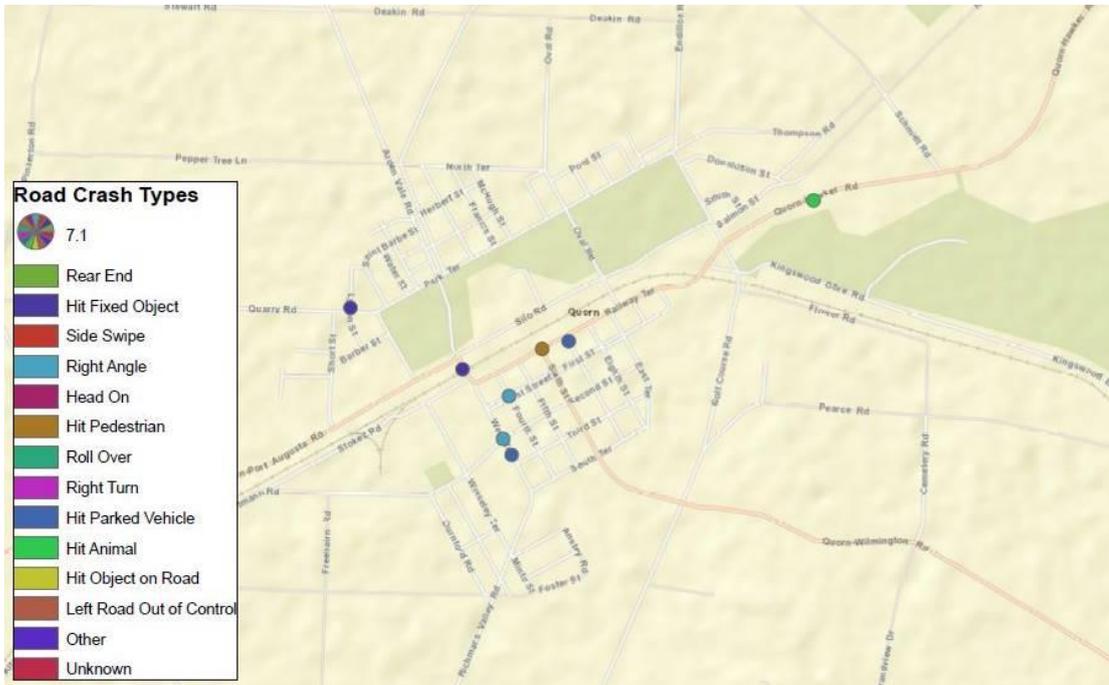
Figure 2.4: Strava Cycling Routes in Quorn



Road Safety

A review of the most recent 5 year crash history within Quorn has identified only a small number of crashes, which are all in separate locations and only 1 resulted in an injury. There is also no particular trend with the type of crashes, indicating that specific safety treatment responses are not required. Figure 2.5 shows the location of the recently reported crashes and the type of crash recorded.

Figure 2.5: Quorn Crash Records 2011-2015



### 2.1.3 Community and Stakeholder Engagement

A community drop-in session was held in Quorn Town Hall on Wednesday 14<sup>th</sup> September. A number of local residents attended as well as representatives of IGA, Quorn Meat Store and Pichi Richi Railway. Separate formal discussions were also held with Quorn Area School and Quorn Hospital as well as anecdotal discussions with Quorn Café.

Resident concerns focused mostly on the potential impact of the proposed conference centre. This including the risk of coach and visitor parking blocking access to resident driveways, limiting resident parking in proximity to their houses or creating amenity issues when arriving and departing the centre.

IGA in Quorn indicated potential support for the development of angle parking along the section of Seventh Street outside the IGA. This would not impact on truck deliveries, which currently take place on Tuesday and Thursday afternoons (generally between 3 and 5.30pm) from First Street.

The IGA operator also owns and operates Quorn Meat Store on First Street to the west of Sixth Street. A suggestion was proposed to convert part of the median on this section of First Street to additional parallel parking. The first angled parking space closest to Sixth Street was also noted to result in reversing vehicles being very close to vehicles entering from Sixth Street.

Pichi Richi Railway raised a number of comments and suggestions. Of greatest concern were sight distance limitations to the level crossing on West Terrace as a result of increased vegetation and operation of the level crossings on Stokes Road for access to the workshops. Recommendations for the upgrade of the Stokes Road level crossings could significantly impact on the operation of the railway. Discussions also considered the options for improvements and extension of the railway car park on the north side of the station.

Quorn Area School noted localised concerns with pedestrians walking through the staff car park and the lack of parking space delineation within the adjoining recreation centre car park. Overall the school has around 140 enrolments, with up to 15 students cycling and 30 walking to school. There are currently no school buses. The crossing arrangement to access the car park on the east side of West Terrace was seen to work well.

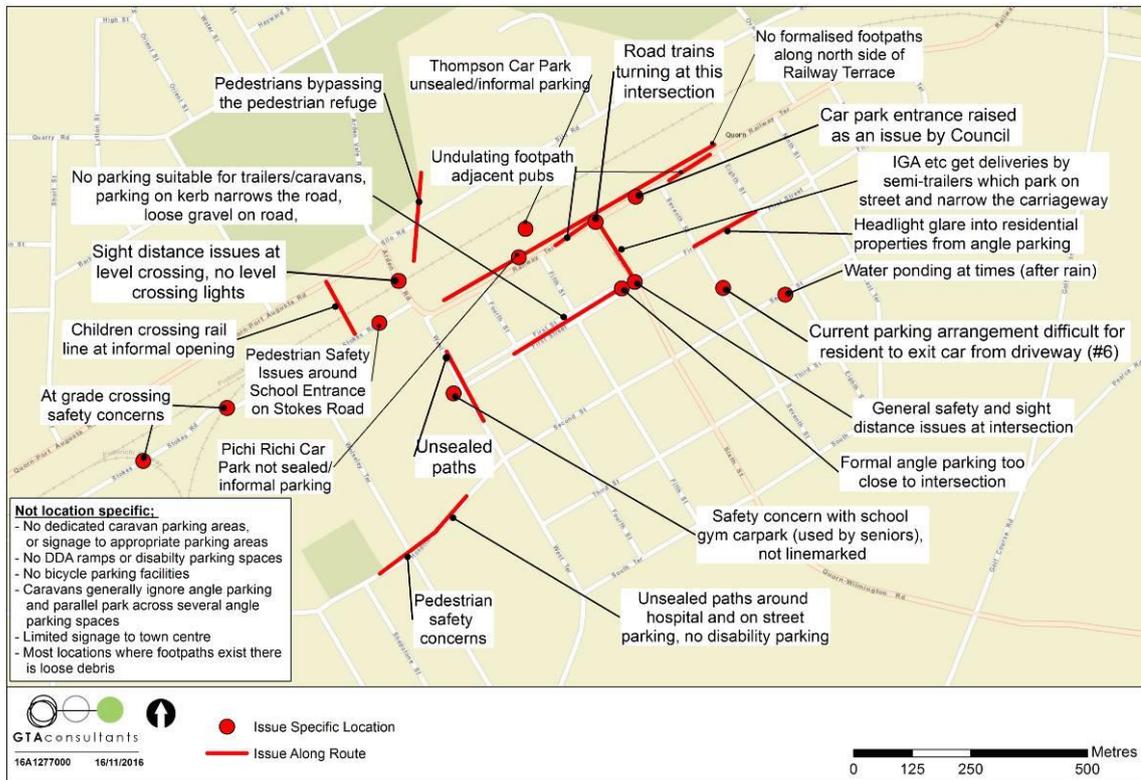
Issues related to the hospital and medical centre were discussed at a specific meeting with representatives of the hospital. The main concerns related to the lack of delineation of the parking area which often resulted in pedestrian access being blocked or restricted, particularly for elderly residents from the site opposite. The lack of formal disabled parking was also noted.

Anecdotal discussions with Quorn Café identified that they would be keen to explore the development of areas for outdoor dining and landscape improvements. They had previously sought to provide some planter boxes within the street but had not progressed this due to concerns from Council. The impact of the currently vacant building opposite was also a concern in terms of trade within the street.

### 2.1.4 Issues and Opportunities

Based on site observations and input from the community and stakeholder engagement, a number of local issues have been identified. These are indicated on Figure 2.6.

Figure 2.6: Quorn Traffic and Transport Issues Map



The primary issues in Quorn can be summarised as follows:

- Insufficient or poorly signed/marked parking for caravans and coaches;
- Pedestrian and driver sightline safety issues arising from parking in close proximity to intersections or missing footpaths adjacent roadways;
- Residential amenity impact of some angled parking (direct headlight glare into houses);
- Poor quality/unsealed footpaths and lack of safe pedestrian crossing opportunities around and linking to key destinations/attractions;
- Stormwater management and ponding;
- Limited public realm and outdoor dining areas around the main streets (particularly First Street);
- The need to maintain heritage aesthetics of street scapes
- Impact of occasional over dimension vehicles through the township;
- Poor or limited wayfinding signage within the township; and
- Parking and pedestrian access around the hospital / medical centre.

Public realm improvements and outdoor dining areas were seen by a number of stakeholders as significant opportunities to enhance the offer and appeal of the main streets.

## 2.2 Hawker

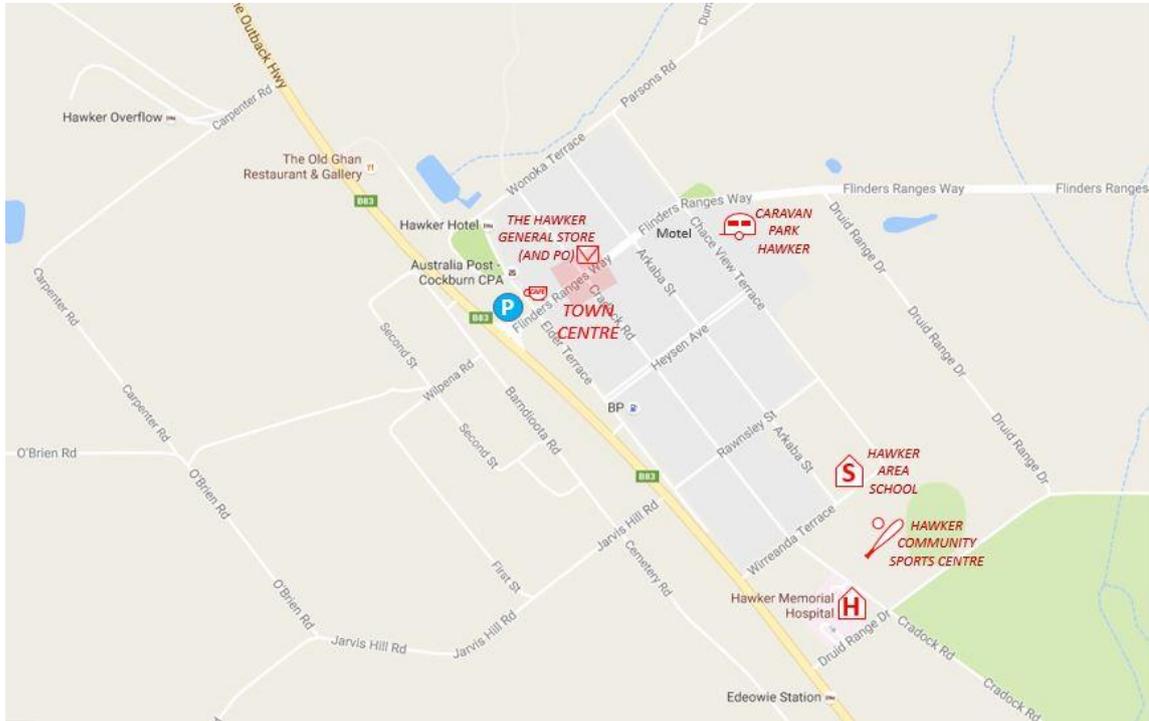
### 2.2.1 Township

Hawker is the secondary township within the Council area and is the gateway to the Outback and Wilpena Pound tourist areas. It provides a smaller range of commercial facilities than Quorn, covering retail, campgrounds, hotels and cafes, the majority of which are located on Wilpena

Road, Cradock Road and Elder Terrace. There is also a small school and medical centre at the southern end of the township.

Figure 2.7 shows Hawker township and the key facilities.

**Figure 2.7: Hawker Township**



## 2.2.2 Traffic and Transport Networks

### Road Network

Flinders Ranges Way provides access in to the town from the south western side connecting to Quorn in the south. This road continues as the Outback Highway to Parachilna and Leigh Creek in the north with Finders Ranges Way heading north east through Hawker as Wilpena Road, forming the main street through the township. Wilpena Road and Cradock Road intersection provides the focal point of the township with most of the local services close to this intersection. The main hotels and the campsite are also accessed from Wilpena Road.

Figure 2.8 shows the designated Over Dimension Vehicle routes, denoting the road train and B-Double permitted routes.

**Figure 2.8: Over Dimension Vehicle Route Designations**



B-Double Route

Road Train and B-Triple Route

### Parking

The majority of the parking available within Hawker is in the form of parallel on-street parking. This is generally available along all streets, including Wilpena Road, although a number of locations were identified where parking occurs within the restricted zones around intersections, resulting in safety issues for vehicles and pedestrians.

There is a formal off-street car park accessed from Elder Terrace. This includes designated caravan parking, although this is not signed. An informal off-street parking area is also available on Wirreanda Terrace which is primarily used by the school.

### Pedestrian Routes

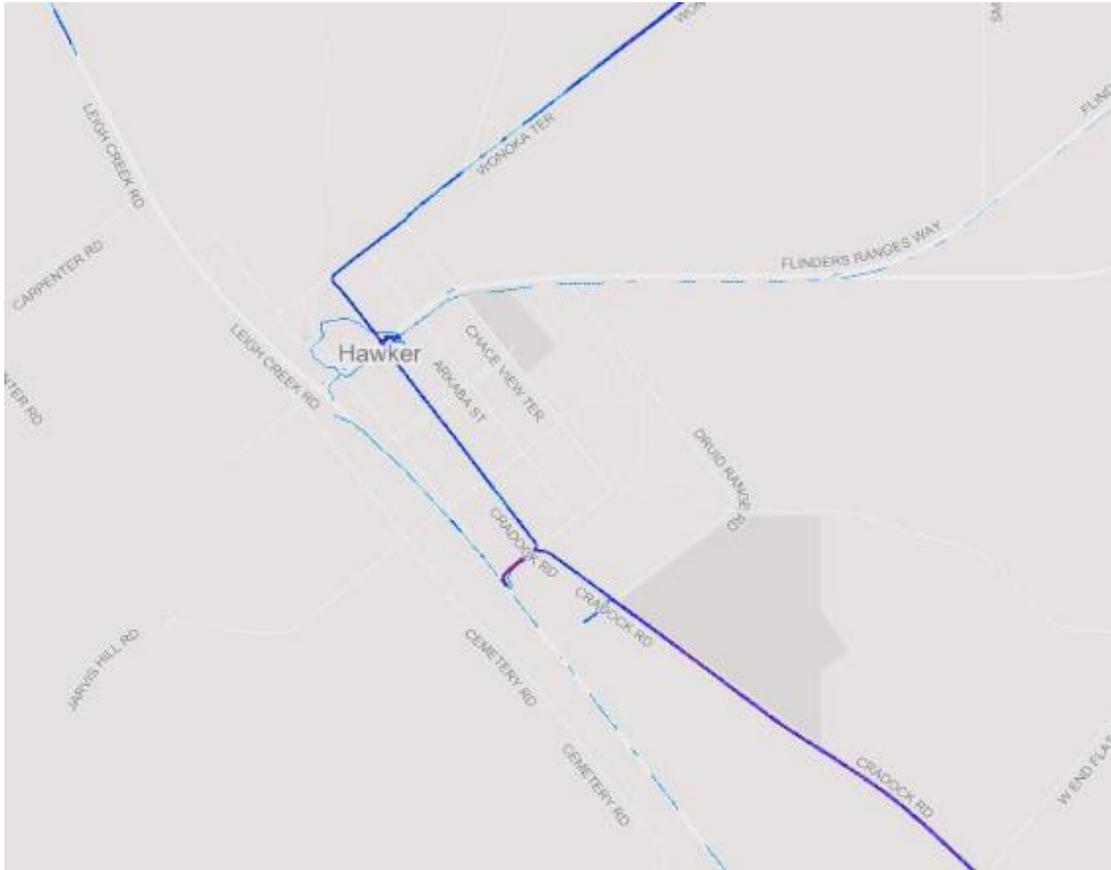
The majority of pedestrian activity in Hawker is focused around the Wilpena Road and Cradock Road intersection. Kerb ramps are provided at this intersection, although not all are fully compliant to Australian Standards and illegal parking and stormwater ponding were both observed to impact on the safety and amenity of pedestrians around the intersection. Ponding and the subsequent build-up of debris and mud was also noted around a number of kerb ramps within the township, including several close to the school.

Pedestrian routes are also identified to the off-street car park on Elder Terrace, school, campground and the Hawker Hotel on the corner of Elder Terrace and Wonoka Terrace.

### Cycling

There is currently no formal cycling provision within Hawker, with no identified bike routes or bike parking provision. Cycling activity was identified to and from Hawker School and tourist cyclists, with very little local cycling activity within the township. The compact nature of Hawker (less than 1 kilometre from Wonoka Terrace to Wirreanda Terrace) means that most non-car trips would be catered for by walking. Figure 2.9 illustrates the current routes used by cyclists based on Strava heatmap information.

Figure 2.9: Strava Cycling Routes in Hawker



### Road Safety

An investigation of the DPTI crash database has indicated no recent reported crashes within the last five years within the township. There are however perceived safety issues of pedestrians crossing around the Wilpena Road and Cradock Road intersection and associated with the spoon drain dips across Wilpena Road at Elder Terrace and Cradock Road. Signage of the dips along Wilpena Road is also poor with limited visibility by drivers when turning left on to Wilpena Road due to encroaching vegetation and poor sign placement.

### 2.2.3 Community Engagement

A community drop-in session was held in Hawker Community Hall on Tuesday 13<sup>th</sup> September. Attendees comprised representatives of the Hawker Community Development Board, business owners John Teague and Geoff Morgan and local Councillors. The main concerns expressed were the design issues with the profile of Wilpena Road, pedestrian safety, stormwater management and the need to maintain safe and clear access and parking for caravans, which were seen as essential to the township. Local pedestrian access to Hawker Hotel, particularly in the evening was also noted with poor lighting and unsealed footpaths and the limited provision for touring cyclists was not felt to support their use of the township.

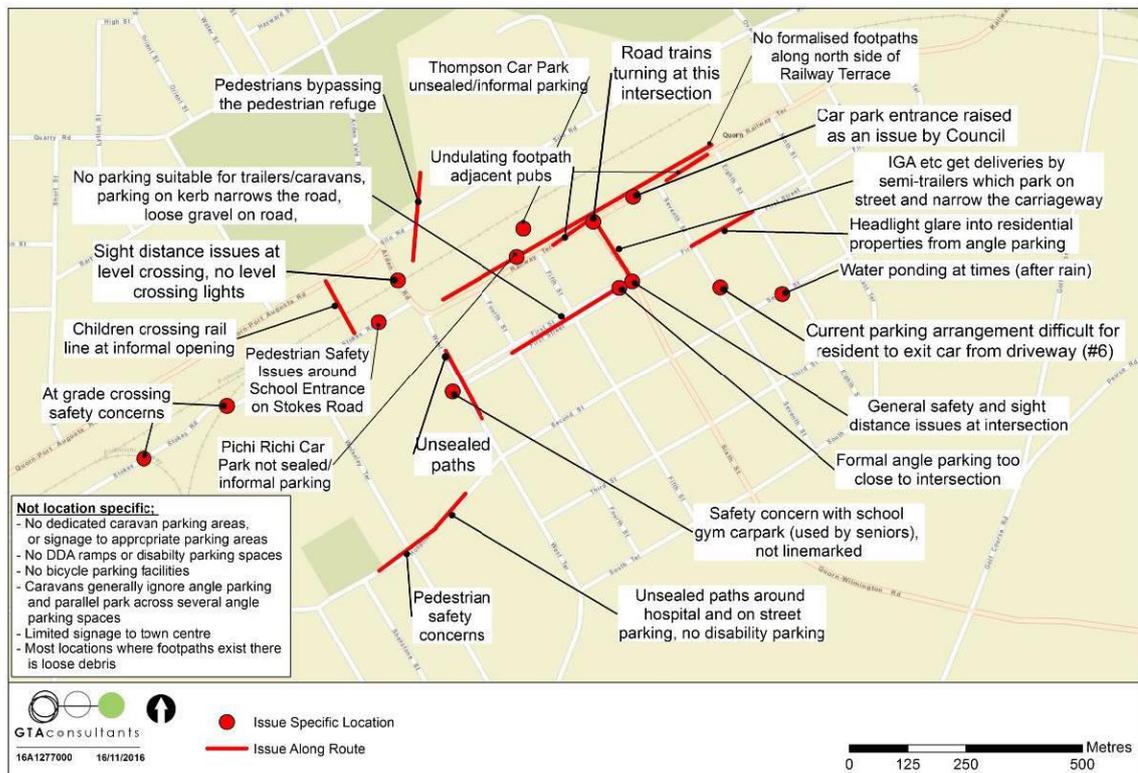
Options for providing an alternative route for trucks around the township were not viewed as a benefit, with the risk of loss of trade. Many of the trucks were noted to be accessing businesses in Hawker and the development of a formal truck stop on the west side of the highway was seen as a potential benefit to the township and a safety improvement as trailers are often left parked on the edge of the highway.

Discussions with Hawker School did not highlight any significant issues with many students arriving by school bus, walking or cycling. Better delineation of the pedestrian and parking areas on parts of Arkaba Street would assist pedestrian and parking safety and the school zone markings were noted to be in need of renewal as well as covering an extensive distance that does not reflect the key locations for school access. The lack of delineation of the parking areas on Chace View Terrace outside the ELC was also noted as a concern.

## 2.2.4 Issues and Opportunities

Based on site observations and input from the community and stakeholder engagement, a number of local issues have been identified. These are indicated on Figure 2.10.

**Figure 2.10: Hawker Traffic and Transport Issues**



The primary issues in Hawker can be summarised as follows:

- Insufficient or poorly signed/marked parking for caravans and coaches;
- Pedestrian safety issues arising from parking in close proximity to intersections, particularly Cradock Road/Wilpena Road;
- Noise, amenity and safety issues with the excessive depth of dips through the spoon drains across Wilpena Road;
- Lack of sealed footpaths connecting to the caravan park;
- Limited street lighting, notably for pedestrian access to/from Hawker Hotel;
- Stormwater management and ponding, particularly along Cradock Road;
- Impact of occasional over dimension vehicles through the township, including parking on Flinders Ranges Way/Outback Highway on the west side of the town;
- Poor or limited wayfinding signage within the township; and
- Safety of the area around the school and the delineation and maintenance of school zones.

The provision of a formal truck stop adjacent to Flinders Ranges Way/Outback Highway on the west side of the town was seen as a potential benefit in removing the safety concern of trucks and trailers parking on the roadway and encouraging trucks to utilise Hawker as a rest area.

## 3. Option Identification and Assessment

### 3.1 Option Development

From the site inspections, initial community and stakeholder engagement and available data, a series of potential options were developed for the two townships for Council's consideration. Through further consultation with Council and community consultation on the draft options, the following identified options form the recommendations for each of the relevant locations.

### 3.2 Quorn Options

As identified in the existing conditions, many of the issues in Quorn focus on the town centre area. This broadly covers the Town Centre area defined in the Development Plan (consolidated 20 June 2013), although there were less issues noted for the section west of Fifth Street and North of First Street.

A number of concerns were raised regarding the potential impact of the proposed Conference Centre (under construction at the time of developing the options and recommendations) on parking demand and adjoining residential amenity. It is understood that similar issues have been raised in the past with regard to parking and amenity impact from the existing hotels and therefore the options should enable a consistent response to all issues within the town centre zone. It is however noted that the proposed conference centre is not located within the currently defined town centre zone, but bordering the town centre zone within the residential zone.

As the actual impact arising from the Conference Centre is unknown until such time as it has opened and been operational for a full season, there are some options that will need to be reviewed. The actual scale of the operation that will be achieved at the conference centre is also uncertain, with the size, nature and frequency of events not confirmed. Monitoring of the operation and impact of the Conference Centre will therefore be essential in the first few months to confirm if there are any significant impacts and, if so, what options will be appropriate to manage the impact.

The identified options have been considered under a series of topics as set out in the following sections.

#### 3.2.1 Parking

The options for parking have considered the need to ensure:

- accessible parking (increased in number where feasible) to support the key town centre functions;
- safe parking for larger vehicles; and
- convenient longer term parking that does not impact on the prime parking locations essential to local businesses or residential amenity.

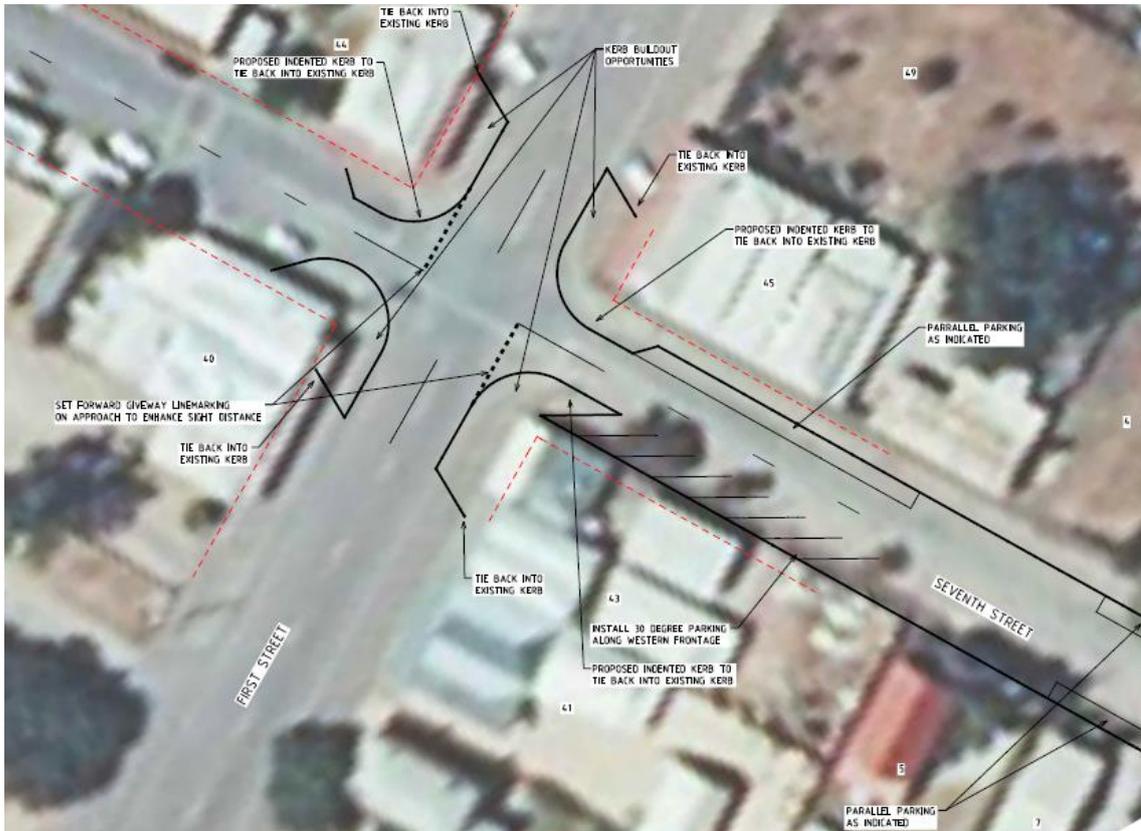
A series of options have therefore been recommended and are shown on Figure 3.1 with additional commentary.

**Figure 3.1: Quorn Parking Options**



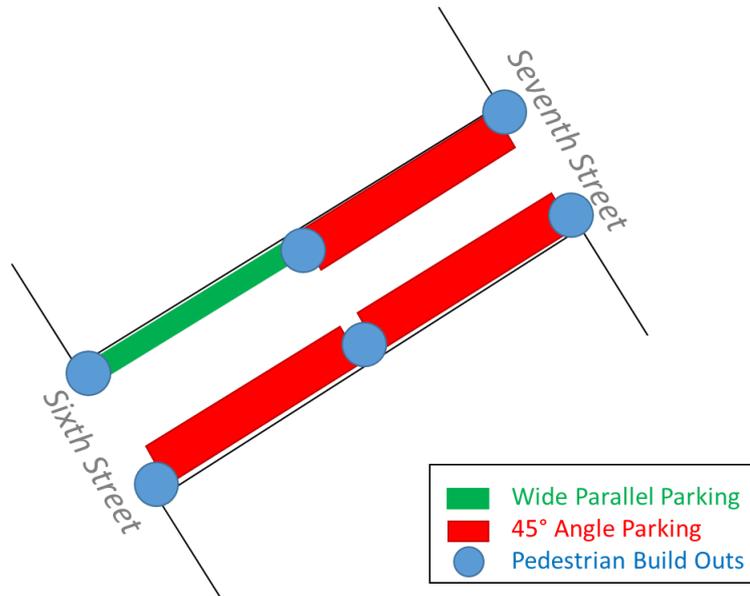
- 30 degree angle parking on the west side of Seventh Street between First Street and the conference centre access/church and formalise parallel parking on the east side.
- Figure 3.2 shows a concept layout for this proposal and a larger version is included in Appendix A.

Figure 3.2: Seventh Street Parking Layout Concept



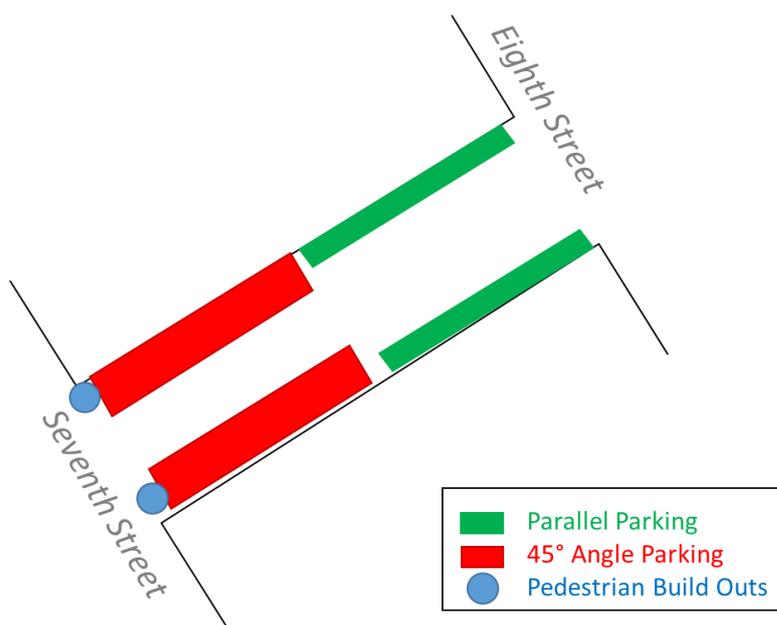
- Conversion of existing 8 angle parking spaces on First Street between Sixth Street and the first crossover to wide parallel parking suitable for caravans and coaches, providing up to 5 spaces, subject to the nature of the vehicles, retaining the rest of the parking as 45 degree angle parking.
- The above concept layouts are shown on Figure 3.3.

Figure 3.3: First Street Parking Layout Concept



- Upgrade, line mark and sign the existing car park to the rear of the Council offices;
- 45 degree angle parking on First Street south side between the Conference Centre access and Seventh Street and parallel parking on First Street south side between the Conference Centre access and Eighth Street.
- 45 degree angle parking on First Street north side between the eastern edge of 46A First Street and Seventh Street and parallel parking on First Street north side between the western edge of 48 First Street and Eighth Street.
- The proposed parking arrangements are shown in Figure 3.4.

**Figure 3.4: First Street Parking Arrangements east of Seventh Street**



- Seal the existing shoulder on the north side of Railway Terrace between West Terrace and Eighth Street to provide wide parallel parking (suitable for caravans and coaches), other than in front of Quorn Railway Station.
- Seal and mark the existing off-street Thompson Park car park area located between the bowls club and War Memorial garden, incorporating 1-2 disabled spaces and designated coach/caravan parking (not overnight).
- Upgrade and extend Pichi Richi car park to the north of the station as identified by the railway, utilising the existing access for entry and the proposed new access for exit.
- Remove the sub-standard parking distance along First Street west of Sixth Street
- Kerb and seal the shoulder area in front of Quorn Hospital and Kanyaka Surgery along Hospital Road between West Terrace and Wolseley Terrace to provide a formal parking area, incorporating 1-2 disabled spaces.
- Figure 3.5 shows a concept design plan for the recommended arrangement and a larger version is included in Appendix A.

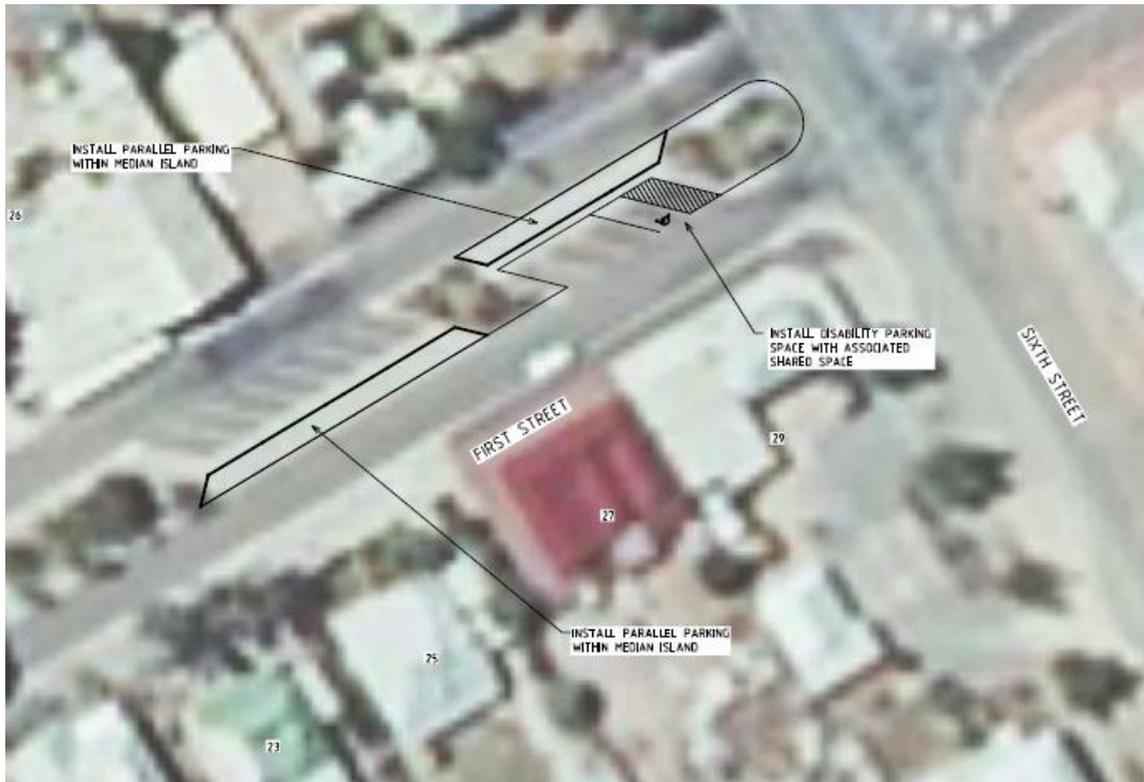
Figure 3.5: Parking and Footpath Concept Layout around Hospital



During the formal consultation with stakeholders and the community, options for changes to the layout within the existing median between Sixth Street and Fifth Street were suggested. As well as the option to convert the two parking spaces at the eastern end to a disabled space and shared space to overcome safety concerns, an option was suggested to add parallel parking in the median, providing two separate schemes in this location, which are noted below. These options also have streetscape implications, which is considered further in section 3.2.5.

- Leave the existing arrangement other than converting the two parking spaces at the eastern end to a disabled space and shared space to overcome safety concerns.
- Convert the section of median on First Street adjacent to the western block of angled parking to provide up to 4 parallel spaces.
- Figure 3.6 shows the proposed options and a larger version is included in Appendix A.

Figure 3.6: First Street west of Sixth Street Additional Parallel Parking Option



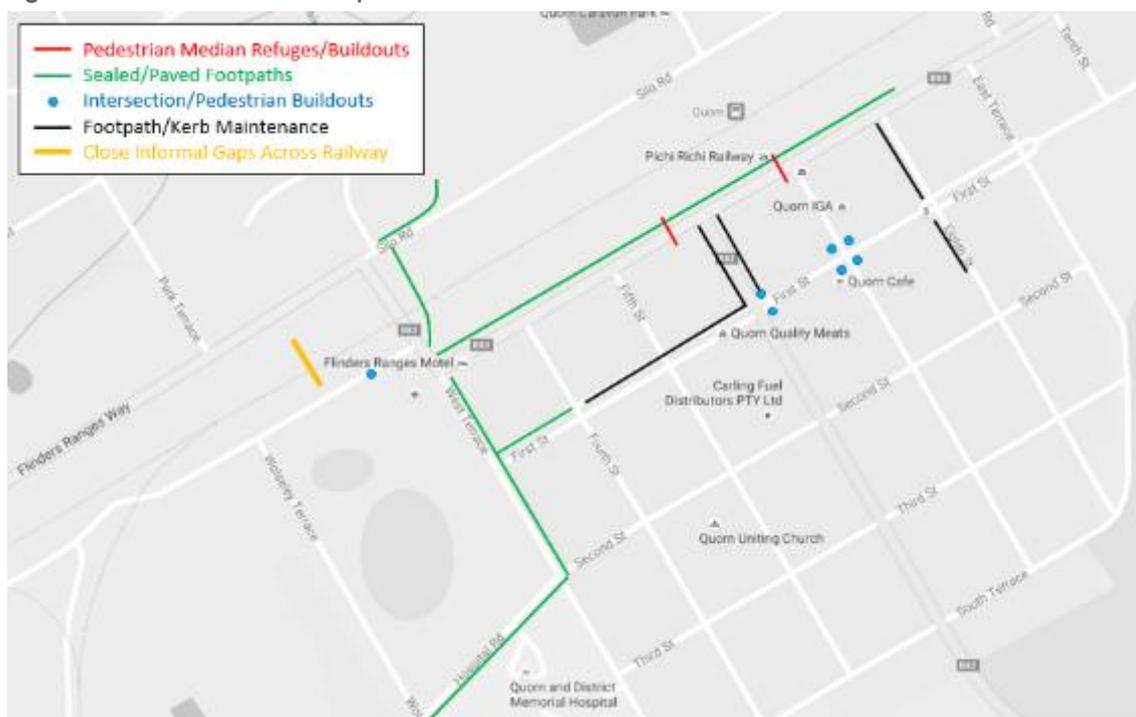
### 3.2.2 Pedestrians

The pedestrian options have focused on ensuring that the core town centre area is highly walkable for pedestrians, linking the station, cafes, hotels and retail shops to encourage and facilitate as much cross-visitation as possible. Within this area the pedestrian routes should also provide crossing points that are safe and highly visible. Options to support local walking access to the school and other community facilities such as the library, hospital, medical centre and swimming pool have also been identified, reflecting that the majority of local destinations are within walkable distances for most residents and visitors other than in extreme weather events.

References to sealed footpaths are not intended to specify the actual surface treatment, as different footpath treatments will be appropriate in different locations. For example heritage paving may be desirable in front of the railway station whilst outside the heritage areas a more cost effective bitumen or concrete footpath may be appropriate.

The following pedestrian options have therefore been identified, shown on Figure 3.7 and discussed subsequently.

Figure 3.7: Quorn Pedestrian Options

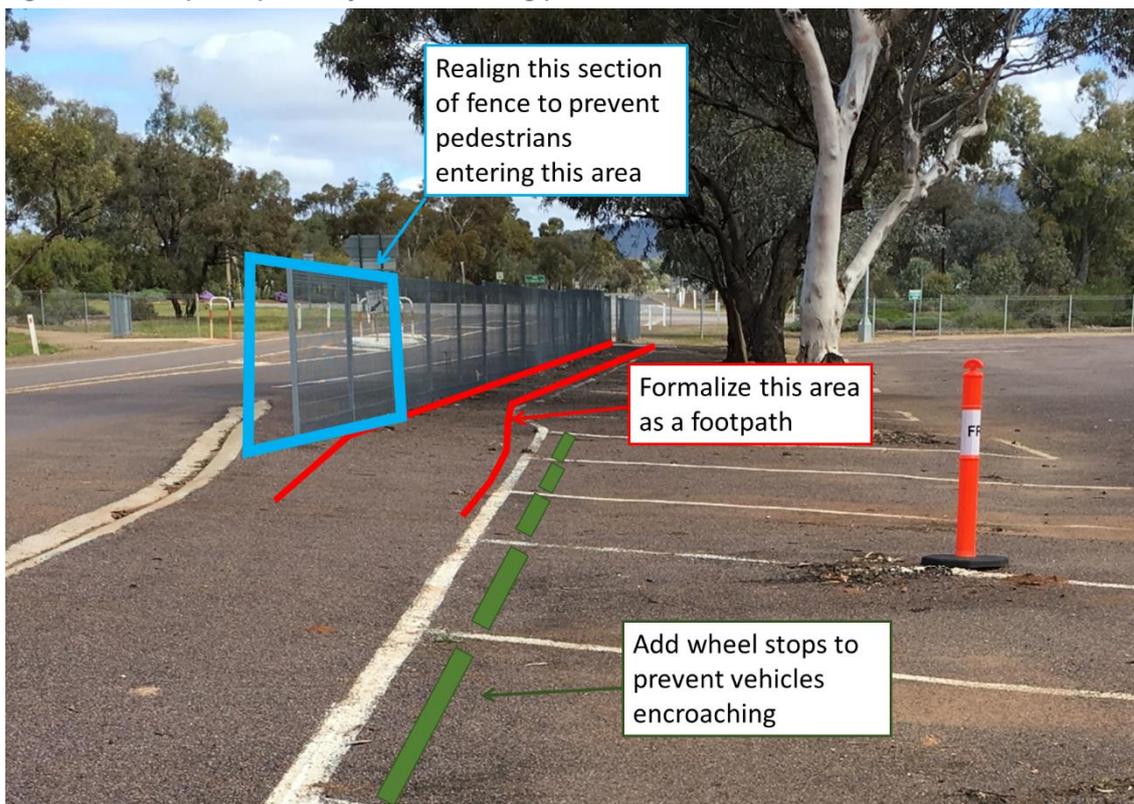


- Provision of kerbside build outs and/or pedestrian refuges across Railway Terrace to the south of Seventh Street (Town Hall to station) and to the south of Sixth Street and Intercontinental Hotel opposite Thompson Park, subject to the proposed changes to the over dimension routes within Quorn.
- Provision of a continuous sealed footpath along the north side of Railway Terrace from West Terrace to the existing Pichi Richi car park access.
- Build-outs around the intersection of Seventh Street and First Street to assist pedestrian safety and accessibility and facilitate outdoor dining space for adjoining cafes. These are shown on Figure 3.2 above.
- Mid-block pedestrian build outs to the edge of the parking on First Street between Sixth Street and Seventh Street, adjacent to the tree on the south side and between the Council and Criterion Hotel car park entrances on the north side, replacing one car parking space on each side, included in the parking estimates above.
- Provision of sealed footpaths and integrated kerb ramps along the north side of First Street between Sixth Street and West Terrace, comprising a mixture of existing footpath maintenance and new footpath.
- Provision of sealed footpaths and integrated kerb ramps along the east side of West Terrace between Railway Terrace and the south side of Hospital Street to facilitate pedestrian access to the school and hospital.
- Upgrade the existing footpath on the south side of Railway Terrace between Fourth Street and West Terrace to provide full width footpath, kerb and kerb ramp renewal as required.
- Maintenance of existing footpath on the west side of Eighth Street and installation of kerb ramps, particularly between First Street intersection and Railway Terrace.
- Provision of sealed footpath and integrated kerb ramps on the south side of Hospital Street between West Terrace and Wolseley Terrace between the car parking and

existing property boundary, including sealed pedestrian connections in to hospital and medical centre. This is shown on Figure 3.5 above.

- Provision of a pedestrian route with associated kerb ramps through the disabled shared space to connect to the residential aged care facility on the north side of Hospital Street, with localised sealing as required.
- Upgrade kerb ramps with adjoining sealing as required to provide connectivity between the west side of West Terrace and south side of Hospital Street.
- Remove encroaching landscape on the south side of the railway north of West Terrace to improve sight distance to/from railway.
- Modification of the footpath routes on the north side of Silo Road in front of the swimming centre to direct pedestrians inside the fence line and physically prevent use of the footpath in front of the fence.
- This option would overcome current safety concerns of pedestrians, including school students using the area outside the fence as a footpath and large vehicles encroaching in to this area when travelling north along Silo Road. The option would also connect to the existing informal path towards Williams Street and Francis Street, observed to be used by school students.
- The recommended option showing an indicative option for adjustment to the fence at the northern end is shown in Figure 3.8.

**Figure 3.8: Footpath option adjacent swimming pool access**



- Close existing informal path routes and gaps in the fence across the railway line between Stokes Road and Flinders Ranges Way;
- Provide a pedestrian build-out in front of the school entrance on to Stokes Road to remove the ability for vehicles to stop immediately adjacent to the entrance and assist the visibility for and to pedestrians seeking to cross to vehicles parked on the opposite side of Stokes Road;

- Review, upgrade and develop a maintenance strategy for pedestrian kerb ramps within the township to ensure compliance to current standards, clarity of desire lines and avoid ponding and debris build-up;
- Consider a future footpath sealing program to incrementally extend the sealed footpath provision within the township.

### 3.2.3 Cycling

The cycling options have focused on signage and wayfinding for the routes identified to be used by tourist cyclists and supporting local cycling access to the school and other community facilities such as the library, hospital, medical centre and swimming pool. The majority of the township is potentially suited to cycling with most travel distances less than 2 kilometres and low traffic volumes and speeds on the majority of the roads. Supporting end of trip bicycle parking facilities have also been identified. The cycling options that have been identified are shown on Figure 3.9 and discussed in the subsequent points.

**Figure 3.9: Quorn Cycling Options**

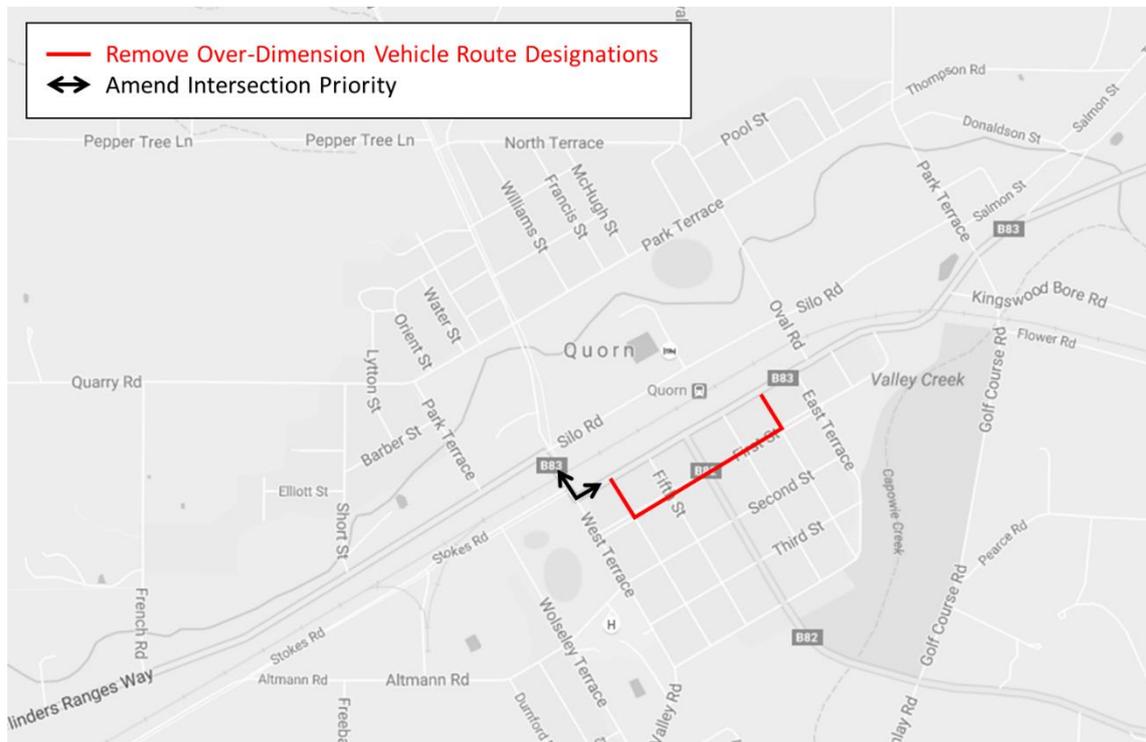


- Provision of bike parking at a number of locations within the township, including First Street, Thompson Park, Pichi Richi railway and hospital/medical centre;
- Provision of local cycle advisory road markings along First Street (connecting from Flinders Ranges Way at the northern end), West Terrace and Hospital Road;
- Implementation of local and directional cycle signage at key locations within the township;
- Development of a sealed shared path to connect from the school, initially to the swimming pool and in the long term using the informal path to Park Terrace; and
- Footpath upgrades on First Street, West Terrace and Railway Terrace to be suitable to support cycling access to Quorn School.

### 3.2.4 Traffic Management

Traffic management options have focused on assisting the safety and efficiency of vehicle movements where this is desirable and supporting the essential loading and delivery access for the township. The following options have therefore been identified. Details of the proposed traffic management options are shown on Figure 3.10 and discussed subsequently.

**Figure 3.10: Quorn Traffic Management Options**



- Remove redundant over dimension vehicle route designations on First Street, Fourth Street and Eighth Street.
- Intersection priority change at Railway Terrace and West Terrace. A concept design for this is shown on Figure 3.11 and a larger version is included in Appendix A.

Figure 3.11: West Terrace and Railway Terrace Intersection



- Pavement markings and kerb adjustments at the Wolseley Terrace and Hospital Street intersection to better delineate the roadway and give way location. This is shown on Figure 3.5 above.
- Delivery requirements for the IGA could be formally accommodated on First Street by designating a section of car parking as a loading zone between 3pm and 6pm on Tuesdays and Thursdays.

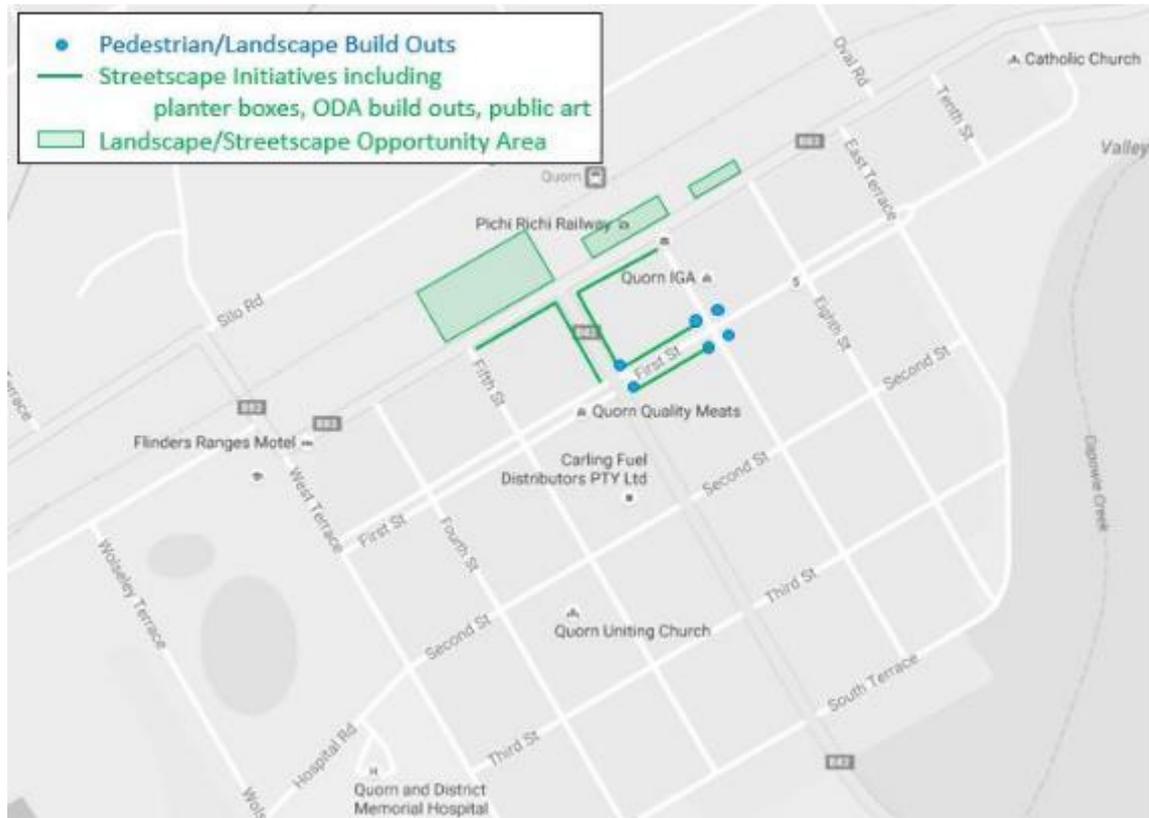
### 3.2.5 Streetscape

Council has previously developed urban design concept plans for the central area of Quorn around the town centre, Railway Terrace and connecting through to the school and swimming pool area. Streetscape options have therefore considered the previous urban design proposals which can be integrated with the identified options. The area around the railway station and Town Hall has been a particular focus as a key pedestrian, public realm and heritage area.

The streetscape options have also included consideration of the median treatments in First Street. There are existing median treatments between West Terrace and Sixth Street and between Eighth Street and East Terrace. Council has previously identified an option for continuing the median along the remaining section of First Street between Sixth Street and Eighth Street.

Details of the proposed streetscape options are shown on Figure 3.12 and discussed subsequently.

Figure 3.12: Quorn Streetscape Options



- Build-outs around the intersection of Seventh Street and First Street to assist pedestrian safety and accessibility and facilitate outdoor dining space for adjoining cafes. This is included in Figure 3.2.
- Option to widen the footpaths on Seventh Street south of First Street in conjunction with the build-outs and parking changes on Seventh Street to facilitate outdoor dining, landscape or general pedestrian amenity.
- Landscape opportunity for Quorn railway station frontage to connect to pedestrian facilities across to Seventh Street and proposed footpath along north side of Railway Terrace.
- Landscape opportunity in front of existing Pichi Richi car park.
- Landscape opportunities associated with any future pedestrian crossings or build-outs across Railway Terrace.
- Landscape opportunities associated with upgrade to Thompson Park car park.

A landscaped median in First Street between Eighth Street and Sixth Street is not recommended. The assessment of a median has identified the following:

- impact on parking manoeuvres in First Street as a median may result in some drivers having difficulty entering and exiting parking spaces .
- limiting the general pedestrian permeability across First Street, although a gap could be provided in the median where the mid-block build-outs are identified.
- whilst landscape in the median would add to the greening of the street, it is likely to be harder to maintain and would be of less benefit to the pedestrian amenity than landscape and greening within the existing footpath areas.

Furthermore, during the formal consultation with stakeholders and the community, options for changes to the layout within the existing median between Sixth Street and Fifth Street were suggested. The options relate more to parking and were therefore identified and discussed in the parking section (section 3.2.1), which also includes a concept design in Figure 3.6. However, the options also have streetscape implications and the potential options identified are considered below in this context:

- Leaving the existing arrangement other than creating the disabled parking space would retain the existing landscape treatments and there would be opportunities to extend the landscape planting.
- Converting the section of median to additional parallel parking would not impact on the landscape as the area under consideration is currently gravel. There would still remain some opportunity to enhance the landscape.

### 3.2.6 Long Term Opportunities

#### **Skate Park and Recreational Precinct**

Council is considering the development of a Skate Park on a site to the west of Arden Vale Road on the opposite side of the road from the swimming centre, although this has not been determined or endorsed as the final location by Council. There is a current pedestrian refuge across Silo Road in front of the swimming centre, although the adjoining footpath facilities are sub-standard, giving rise to pedestrian safety concerns, and have been identified within this report for upgrade. Given the nature of the likely users of the proposed skate park, additional pedestrian facilities will be required across Arden Vale Road, should the skate park proceed on this site.

Consideration could be given to the possibility of closing the section of Arden Vale Road between Park Terrace and Flinders Ranges Way/Silo Road to provide an opportunity for a fully integrated pedestrian and cyclist friendly precinct of the recreational facilities including the proposed skate park and the existing swimming pool. Alternative road connection between Quorn (north) and Quorn (south) could be maintained via Park Terrace. As well as a safer pedestrian environment, this will provide some benefits in respect to vehicular road safety as it will remove the current limited separation between West Terrace and Arden Vale Road where they intersect with Flinders Ranges Way. An arrangement using Park Terrace will also remove right turns on to the main road (Flinders Ranges Way) for travel between Quorn (north) and Quorn (south).

An alternative option could be to provide the skate park on the north side of Arden Vale Road closer to the swimming pool. This would relate more to the previous Quorn Oval masterplan prepared by One Eighty Sports and Leisure Solutions, which envisaged the relocation of bowls and netball facilities close to the Oval, potentially creating the area bounded by Park Terrace, Arden Vale Road, Silo Road and Oval Road as the leisure and recreation precinct.

#### **Land to the rear of Austral Hotel**

The current vacant area to the south of the Austral hotel, on the corner of First Street and Sixth Street is included within the Quorn Urban Design Plan as part of the potential focal area within the township. Future development of the site may include an off-street parking area, which may facilitate integration with parking areas on adjoining sites, including across to the Council offices parking area.

A conjoined parking area to the rear of any new properties, with car park access from Sixth Street (as vehicular access in to the site from the DPTI road is already established) and pedestrian access to First Street could provide economic development for the main street and maintain a suitable parking supply.

### West Terrace/Railway Terrace intersection precinct

Changing the priority of the West Terrace and Railway Terrace intersection has been recommended to support the primary traffic movement to and from the town and a concept design is shown as Figure 3.11. Observations on site indicated that traffic volumes on West Terrace were generally low, with little use by school traffic and little through traffic. As a follow on from the recommended change in priority at the intersection, there would be an opportunity to create a local precinct outside the school, library and recreation centre, extending the public realm area in to the road reserve verge, reducing the extent of roadway and improving the pedestrian provision. Subject to ongoing school drop-off and pick-up parking arrangements, the school crossing could be relocated to be south of Railway Terrace and provide a threshold entry in to the local precinct.

## 3.3 Hawker Options

As identified in the existing conditions, many of the issues for Hawker relate to the Wilpena Road section through the township and the immediately adjoining streets and nearby commercial properties. As the secondary and smaller town within the Council area, the extent of traffic, parking and pedestrian demand issues are lower. However there are a number of options that have been recommended that would support the town centre and local accessibility for residents and visitors arriving by car, caravan or bicycle.

Figure 3.13 shows the proposed options identified within Hawker township and they are discussed in more detail in the subsequent text.

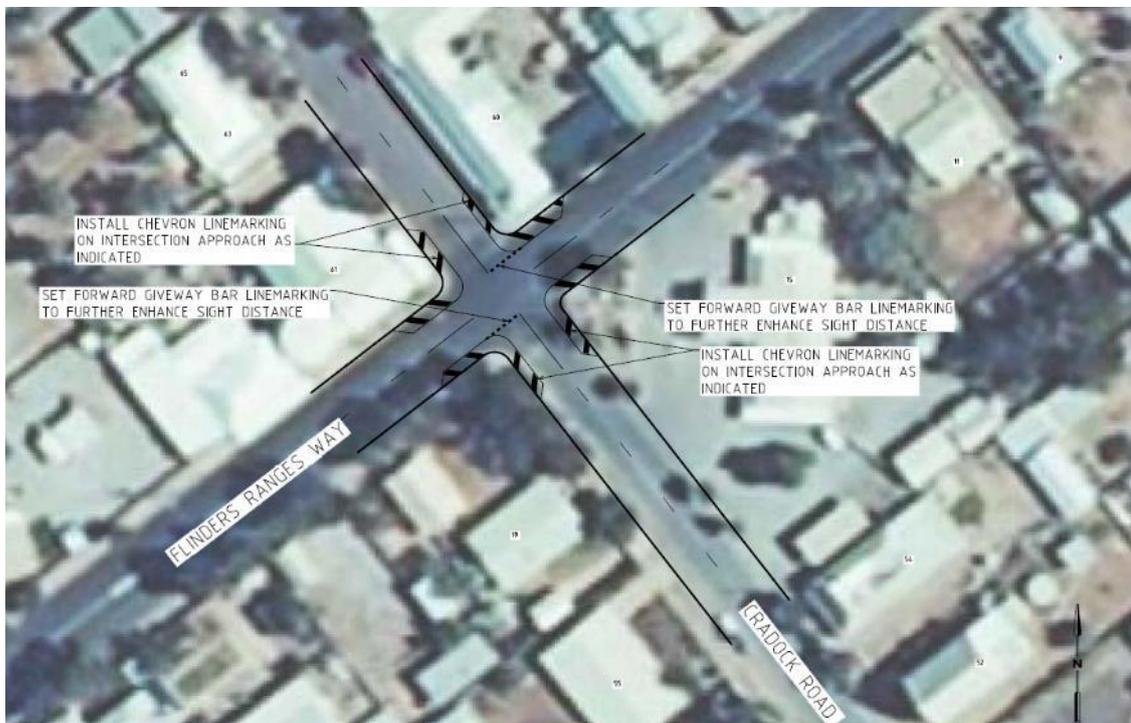
Figure 3.13: Hawker Township Options



- Improvements to parking signage to Elder Terrace parking area, including specific caravan parking signage.
- Improvements to pedestrian lighting along Cradock Road and Wonoka Terrace to connect to Hawker Hotel.

- Upgrade pedestrian kerb ramps at Cradock Road and Wilpena Road intersection. Figure 3.14 shows an option without any build-outs that would rely on line marking to delineate the parking areas. A larger version of the figure is included in Appendix A.

**Figure 3.14: Wilpena Road and Cradock Road Intersection without Build-outs**



- Develop a stormwater management plan for Cradock Road from south of Wilpena Road to Wonoka Terrace.
- Re-profiling of Wilpena Road and spoon drains and development of a future maintenance strategy with DPTI.
- Review location of signage on approach to the dips to ensure appropriate sight distances and driver awareness.
- Pedestrian footpath sealing/paving along Cradock Road and Wilpena Road within the township to strengthen the connections between the township, caravan park, Hawker Hotel, school, medical centre and recreation centre.
- Pedestrian footpath sealing/paving along sections of Rawnsley Street, Arkaba Street and Wirreanda Terrace to connect to the school from Cradock Road.
- Review, upgrade and develop a maintenance strategy for pedestrian kerb ramps within the township to ensure compliance to current standards and avoid ponding and debris build-up.
- Review the existing maintenance and extent of school zones along Chace View Terrace, Rawnsley Street and Arkaba Street in accordance with current guidance for the location and delineation of school zones and associated road markings.
- Development of a formal truck stop on the western side of the township and highway with access via Jarvis Hill Road and Barndioota Road, which are already approved as Over Dimension Vehicle Routes.
- Develop walkway from truck stop on Barndioota Road to Town Centre;
- Provision of bike parking on Cradock Road adjacent to Jeff Morgan Gallery, Elder Terrace and at the recreation centre, local cycle advisory road markings and signage along Cradock Road and cycle signage along Wilpena Road and Elder Terrace.

- Road renewal on the corner of Chace View Terrace and Wirreanda Terrace where road surface has eroded.
- Vegetation maintenance to ensure that appropriate sight distances are maintained at intersections and to road signs.

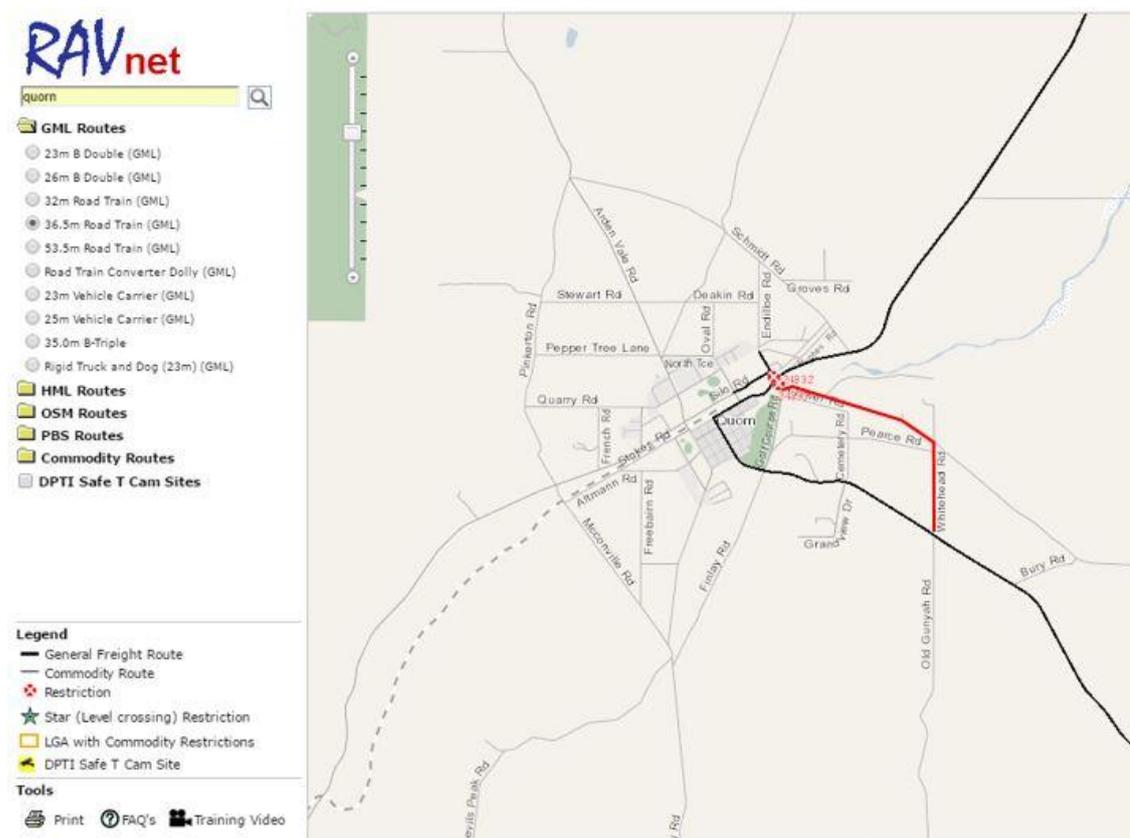
### 3.4 Over Dimension Vehicle Route Assessment

In addition to the traffic and parking assessment, Council requested an initial assessment of two alternative over dimension vehicle restricted access routes for Quorn and Hawker.

#### 3.4.1 Quorn

The preferred alternate route identified by Council for the assessment involved a section of Golf Course Road, Kingswood Bore Road and Whitehead Road. This is illustrated in Figure 3.15.

Figure 3.15: Quorn Alternate Over Dimension Vehicle Route



The entire section of the alternate route was identified to be unsealed. The proposed alternate route was observed to generally be sufficiently wide enough to be readily upgraded to accommodate B-doubles and possibly road trains. However, there is a critical sight distance issue for drivers (looking to the left or east) when exiting Whitehead Road intersecting with Main North Road. There is a crest immediately east of this intersection and there is an achievable sight distance of approximately 200m. Given the posted speed limit along this section is 110km/h (the Safe Intersection Sight Distance (SISD) criteria for a design speed of 120km/h would require 403m. Accordingly, the proposed route would not be possible based on the sightline criteria at the Whitehead Road intersection with Main North Road.

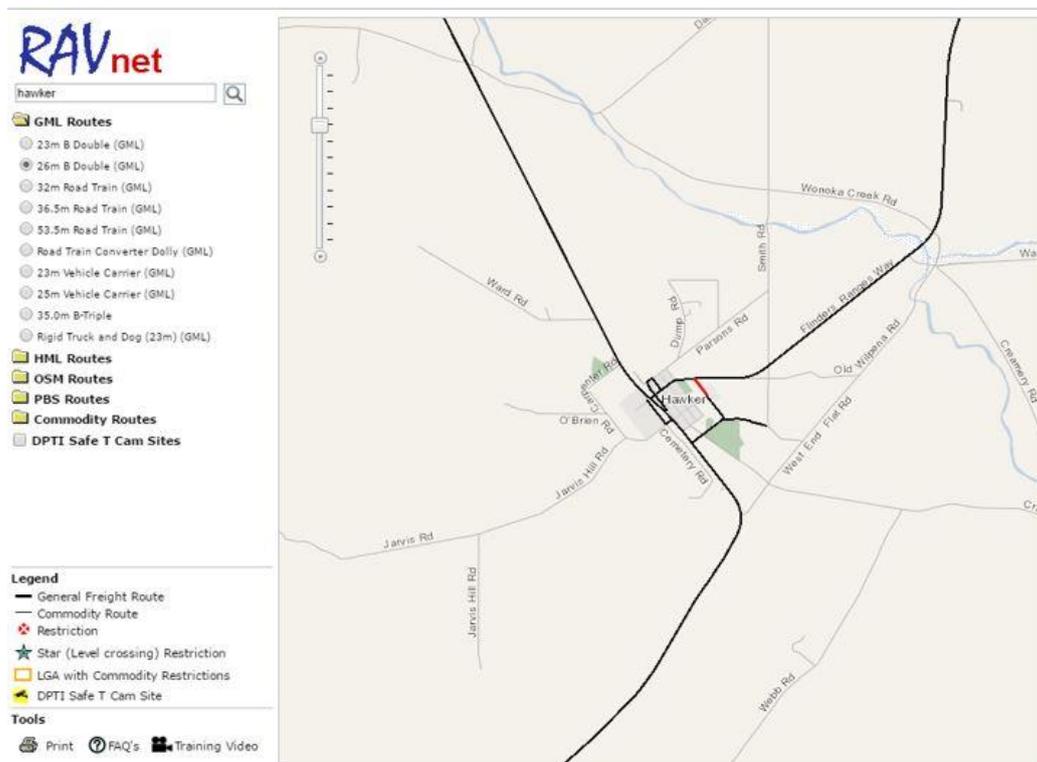
It is also noted from RAVnet that along the current section of Golf Course Road approved for Road trains, it identifies that "The use of tri-axle dollies is not permitted on this road". Upgrade of the route would be likely to enable removal of this restriction to be considered.

Subject to resolving the sight distance issue the alternate route is considered feasible. It is however noted that the impact of over dimension vehicles within the township was not raised as a major issue by the community as such vehicle volumes are generally very low. Therefore the level of benefit derived from the alternate route may not be comparable to the implementation cost.

### 3.4.2 Hawker

Council's preferred alternate route to be assessed included the section of Druid Range Drive between Flinders Ranges Way (South) and Flinders Ranges Way (North), of which part is already approved as an access route for B-doubles. Council's preferred B-Double route is illustrated in Figure 3.16.

Figure 3.16: Hawker Alternate Over Dimension Vehicle Route



Druid Range Road is sealed from the intersection of Flinders Ranges Way (South) through to approximately mid-block between Cradock Road and Yednalua Drive. Site observations identified that there is a historical memorial existing on the south eastern corner of the Flinders Ranges Way (north) and Druid Range Drive intersection. The swept paths of the B-double would impact on this memorial should the intersection remain as per the existing location. Adequate sightlines are achieved at the critical intersections.

Should the above be addressed, it is considered that the proposed route could be a feasible route for Council to consider. However, while it is not a traffic related issue, it was noted during the consultation phase with key stakeholders, there is some resistance towards the proposal as there is a general perception that this would divert drivers away from the township and impact on the economic sustainability of the town.

## 4. Action Plan

### 4.1 Introduction

Based on the recommended schemes identified in section 3, an action plan has been developed to assist Council in prioritising scheme delivery. These have been considered as short, medium and long term schemes, reflecting the proposed timescale for the overall implementation of the plan and the likely timescale for delivery of some of the recommended schemes.

The concept plans prepared for this report do not provide a suitable basis from which to prepare reliable cost estimates. However, in order to provide an order of magnitude cost estimate to assist Council with planning scheme delivery, the following cost estimate indication has been provided:

- \$ - low cost scheme, less than \$10,000 and predominantly signage and line marking with little or no civil works;
- \$\$ - medium cost scheme, \$10,000 to \$25,000 with some civil works required;
- \$\$\$ - high cost scheme \$25,000 to \$50,000 with significant civil works required; and
- \$\$\$\$ - very high cost scheme, above \$50,000, which is likely to be considered a major project.

Where more than one cost estimate indicator is provided, this indicates the potential for the scheme to be split in to smaller components with the range reflecting the individual components and the overall scheme.

### 4.2 Short Term

Short term schemes are recommended for implementation within 1-2 years and reflect schemes that are either responding to identified road safety issues or are of a scale that can be readily implemented within that timescale and do not rely on any other schemes or third parties. Table 4.1 summarises the recommended short term priorities for Quorn and Table 4.2 summarises the recommended short term priorities for Hawker.

**Table 4.1: Short Term Priority Schemes in Quorn**

Scheme	Cost Estimate
Wide Parallel Parking on First Street	\$
First Street parking changes, Seventh to Eighth Street	\$
First Street Disabled parking west of Sixth Street	\$
Parallel parking in First Street west of Sixth Street	\$\$
Seventh Street and First Street pedestrian and landscape build-outs	\$\$
Eighth Street west side footpath maintenance and kerb ramp renewal	\$\$
Landscape maintenance around railway and West Terrace	\$
Silo Road footpath modifications and car park wheel stops	\$\$
Informal path and fence closures Stokes Road across railway line	\$
Stokes Road pedestrian build out in front of school	\$
Implement bike parking at key locations in township	\$ - \$\$
Remove redundant over dimension vehicle designated routes	\$
IGA delivery and loading zone arrangements on First Street	\$
Pre-planning activities for medium and long term project schemes	-

**Table 4.2: Short Term Priority Schemes in Hawker**

Scheme	Cost Estimate
Cradock Road and Wilpena Road kerb ramp upgrades and line marking	\$\$
Review & adjust as necessary location of signage on approach to dips on Wilpena Rd	\$
Review and upgrade the school zone markings and extent	\$
Implement bike parking at key locations in township	\$
Chace View Terrace and Wirreanda Terrace road renewal	\$\$
Landscape and vegetation maintenance around intersections and signage	\$
Elder Terrace parking signage, including caravan parking signage	\$
Pre-planning activities for medium and long term project schemes	-

### 4.3 Medium Term

Medium term schemes are recommended for implementation in a timescale of 3-5 years. Table 4.3 summarises the recommended medium term priorities for Quorn and Table 4.4 summarises the recommended short term priorities for Hawker.

**Table 4.3: Medium Term Priority Schemes in Quorn**

Scheme	Cost Estimate
Seventh Street parking changes south of First Street and associated footpath upgrades	\$\$
Council car park upgrade	\$\$\$
Railway Terrace shoulder sealing	\$\$
Railway Terrace footpath sealing	\$\$
Kerbing and shoulder sealing on Hospital Road	\$\$\$
Mid-block pedestrian build-outs in First Street, Sixth to Seventh Street	\$\$
Footpath & kerb ramps, sealing & upgrades, First St north side from Sixth St to West Terrace	\$ - \$\$\$
Sealed footpaths and kerb ramps, West Terrace east side, Railway Tce to Hospital St	\$ - \$\$\$
Sealed footpaths and kerb ramps, Hospital St from West Terrace to Wolseley Tce	\$\$
Pedestrian connections aged care to hospital, Hospital Street	\$
Develop and implement a kerb ramp maintenance and upgrade strategy for Quorn	\$ - \$\$
Implement local cycling advisory road markings on identified township routes	\$
Develop and implement local cycling wayfinding	\$ - \$\$
Footpath upgrades in First St, West Tce and Railway Tce to support cycling to school	\$\$
Upgrade existing path from the school to swimming centre to a shared path	\$ - \$\$
Wolseley Terrace and Hospital Street intersection kerbing and line marking	\$ - \$\$
Landscape upgrades in First Street west of Sixth Street	\$

**Table 4.4: Medium Term Priority Schemes in Hawker**

Scheme	Cost Estimate
Development and implement a stormwater management plan for Cradock Road	\$\$\$
Reprofile Wilpena Road and associated spoon drains in conjunction with DPTI	\$\$\$
Develop a maintenance strategy for Wilpena road in conjunction with DPTI	\$
Footpath sealing and kerb ramp upgrades on Wilpena Road and Cradock Road	\$ - \$\$\$
Develop and implement a kerb ramp maintenance and upgrade strategy for Hawker	\$ - \$\$
Street lighting upgrades on Cradock Road and Wonoka Terrace	\$\$

## 4.4 Long Term

Long term schemes are recommended for implementation in a timescale of 6-10 years. Table 4.5 summarises the recommended longer term schemes for Quorn and Table 4.6 summarises the recommended short term priorities for Hawker.

**Table 4.5: Longer Term Schemes in Quorn**

Scheme	Cost Estimate
Seal and mark Thompson Park car park	\$\$\$
Upgrade and extend Pichi Richi car park	\$\$\$
Railway Terrace Pedestrian Build-outs/crossing facilities	\$\$
Railway Terrace south side footpath and kerb ramp upgrade, Fourth St to West Tce	\$\$
Develop and implement a footpath sealing strategy	\$\$ - \$\$\$
Implement a sealed shared path from swimming pool to Park Tce and Quorn Oval	\$\$\$
Intersection modifications at West Terrace and Railway Terrace	\$\$\$
Quorn railway station and adjoining Railway Tce landscape and streetscape upgrades	\$\$
Pedestrian and Cyclist access improvements; town centre to sports/Oval precinct	\$ - \$\$\$
Seek to implement the revised over dimension vehicle routes	\$\$\$\$

**Table 4.6: Longer Term Schemes in Hawker**

Scheme	Cost Estimate
Footpath sealing and kerb ramp upgrades in Rawnsley St, Arkaba St & Wirreanda Tce	\$ - \$\$
Develop a formal truck stop for the township with associated footpath connections	\$\$\$
Seek to implement the revised over dimension vehicle routes	\$\$\$\$

## 5. Summary and Recommendations

### 5.1 Summary

This report has considered the existing traffic, parking, pedestrian, cyclist and over dimension vehicle networks and travel patterns within the townships of Quorn and Hawker in the Flinders Ranges Council area.

#### 5.1.1 Quorn

Railway Terrace (Flinders Ranges Way) and Sixth Street (Horrocks Highway) form the main traffic routes through Quorn with parts of First Street and Seventh Street providing the focal points (main streets) for the township. Traffic volumes on the local roads in Quorn are generally low with around 1,400 vehicles daily on Flinders Ranges Way and 1,500 vehicles on Horrocks Highway within the township and other local roads considerably lower.

The main pedestrian activity in Quorn is centred around First Street, Sixth Street and Seventh Street, Pichi Richi railway, Quorn school and car parks and facilities along Railway Terrace with the majority of footpaths in these areas paved or sealed and kerb ramps provided at most pedestrian crossing points. Pedestrian safety issues were identified around the intersections on First Street and Sixth Street where the majority of the pedestrian crossing activity takes place.

There is currently little in the way of formal cycling provision within Quorn, with no identified bike routes or bike parking provision. Cycling activity was mostly identified through Strava heatmap information showing primarily use of the major roads in to and through the township.

The primary issues in Quorn can be summarised as follows:

- Insufficient and poorly signed/marked parking for caravans and coaches;
- Pedestrian and driver sightline safety issues at intersections;
- Residential amenity impact of some angled parking;
- Poor quality/unsealed footpaths and lack of safe pedestrian crossing opportunities around and linking to key destinations/attractions;
- Stormwater management and ponding;
- Limited public realm and outdoor dining areas around the main streets;
- The need to maintain heritage aesthetics of street scapes
- Impact of occasional over dimension vehicles through the township;
- Poor or limited wayfinding signage within the township; and
- Parking and pedestrian access around the hospital / medical centre.

Public realm improvements and outdoor dining areas were seen by a number of stakeholders as significant opportunities to enhance the offer and appeal of the main streets.

#### 5.1.2 Hawker

Flinders Ranges Way provides access in to Hawker from the south west and north east, with the Outback Highway connecting to the north. Flinders Ranges Way as Wilpena Road forms the main street through the township with the Wilpena Road and Cradock Road intersection providing the focal point of the township with most of the local services and the main pedestrian activity close to this intersection.

There is currently no formal cycling provision within Hawker, with some cycling activity identified to and from Hawker School and tourist cyclists typically using Wonoka Terrace and Cradock Road.

The primary issues in Hawker can be summarised as follows:

- Insufficient and poorly signed/marked parking for caravans and coaches;
- Pedestrian safety issues arising from parking in close proximity to intersections, particularly Cradock Road/Wilpena Road;
- Noise, amenity and safety issues with the excessive dips through the spoon drains across Wilpena Road;
- Lack of sealed footpaths connecting to the caravan park;
- Limited street lighting, notably for pedestrian access to/from Hawker Hotel;
- Stormwater management and ponding, particularly along Cradock Road;
- Impact of occasional over dimension vehicles through the township, including parking on Flinders Ranges Way/Outback Highway on the west side of the town;
- Poor or limited wayfinding signage within the township; and
- Safety of the area around the school and the delineation and maintenance of school zones.

The provision of a formal truck stop adjacent to Flinders Ranges Way/Outback Highway on the west side of the town was seen as a potential benefit in removing the safety concern of trucks and trailers parking on the roadway and encouraging trucks to utilise Hawker as a rest area.

## 5.2 Recommendations

Based on the site observations, background data and stakeholder and community feedback, a series of recommendations have been developed for each of the townships.

The recommendations have sought to achieve the following objectives for the townships:

- Improve the layout, operation, signage and capacity of parking within the townships;
- Improve access, signage and parking arrangements for Caravans and Coaches;
- Improve pedestrian safety, amenity, wayfinding and accessibility within the townships for visitors and residents;
- Provide defined cyclist routes through the townships and local cycling facilities to assist residents, local visitors and touring cyclists to navigate the townships;
- Improve streetscape and amenity of the townships to support economic development, visitor attraction and growth for local businesses;
- Minimise the impact of over dimension vehicle operations on the townships whilst still reflecting and accommodating the economic benefit they provide; and

Implementation of the recommendations of a staged basis should assist Flinders Ranges Council to enhance the township facilities and local environment for residents and visitors, accommodate the required parking demand and provide a safe and welcoming pedestrian environment, minimising the impact of through traffic.

# Appendix A

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## Concept Design Plans



ON 01-Sep-17 AT 4:10:58 PM

PLOTTED BY : Timothy Jones



Melbourne 03 9851 9600  
 Sydney 02 9448 1800  
 Brisbane 07 3113 5000  
 Canberra 02 6243 9400  
 Adelaide 08 8334 3600  
 Gold Coast 07 5510 4814  
 Townsville 07 4722 2365  
 Perth 08 6169 1000



**PRELIMINARY PLAN**  
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**WARNING**  
 BE AWARE OF UNDERGROUND SERVICES  
 THE LOCATIONS OF UNDERGROUND SERVICES ARE  
 APPROXIMATE ONLY AND THEIR EXACT POSITION  
 SHOULD BE PROVEN ON SITE. NO GUARANTEE IS  
 GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED  
 R. FRIMPONG

DESIGN CHECK  
 D. KWONG

APPROVED BY  
 D. KWONG

DATE ISSUED  
 1 SEPTEMBER 2017

SCALE  
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CAD FILE NO.  
 16A1277000-01-P3.dgn

FLINDERS RANGES TRAFFIC & PARKING PLAN  
 SEVENTH STREET/FIRST STREET INTERSECTION  
 QUORN  
 CONCEPT PLAN

DRAWING NO. 16A1277000-SK01-01P3 SHEET 01 OF 05 ISSUE P3



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DESIGNED  
 R. FRIMPONG  
  
 APPROVED BY  
 D. KWONG

DESIGN CHECK  
 DESIGN CHECK  
  
 DATE ISSUED  
 1 SEPTEMBER 2017

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 CAD FILE NO.  
 16A1277000-01-P3.dgn

**FLINDERS RANGES TRAFFIC & PARKING PLAN**  
**HOSPITAL ROAD/WOLESELEY TERRACE INTERSECTION**  
**QUORN**  
**CONCEPT PLAN**  
 DRAWING NO. 16A1277000-SK04-01P2 SHEET 02 OF 05 ISSUE P2



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 Gold Coast 07 5510 4814  
 Townsville 07 4722 2745  
 Perth 08 6169 1000



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DESIGNED  
 R. FRIMPONG

DESIGN CHECK  
 D. KWONG

APPROVED BY  
 D. KWONG

DATE ISSUED  
 1 SEPTEMBER 2017

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**FLINDERS RANGES TRAFFIC & PARKING PLAN**  
**FIRST STREET**  
**QUORN**  
**CONCEPT LAYOUT**

DRAWING NO. 16A1277000-SK06-01P3 SHEET 03 OF 05 ISSUE P3



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Melbourne 03 9851 9600  
 Sydney 02 9446 1800  
 Brisbane 07 3113 5000  
 Canberra 02 6243 9400  
 Adelaide 08 8334 3600  
 Gold Coast 07 5510 4814  
 Townsville 07 4722 2765  
 Perth 08 6169 1000



**PRELIMINARY PLAN**  
 FOR DISCUSSION PURPOSES  
 ONLY SUBJECT TO CHANGE  
 WITHOUT NOTIFICATION

**WARNING**  
 BEWARE OF UNDERGROUND SERVICES  
 THE LOCATIONS OF UNDERGROUND SERVICES ARE  
 APPROXIMATE ONLY AND THEIR EXACT POSITION  
 SHOULD BE PROVEN ON SITE. NO GUARANTEE IS  
 GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED  
 R. FRIMONG

DESIGN CHECK  
 D. KWONG

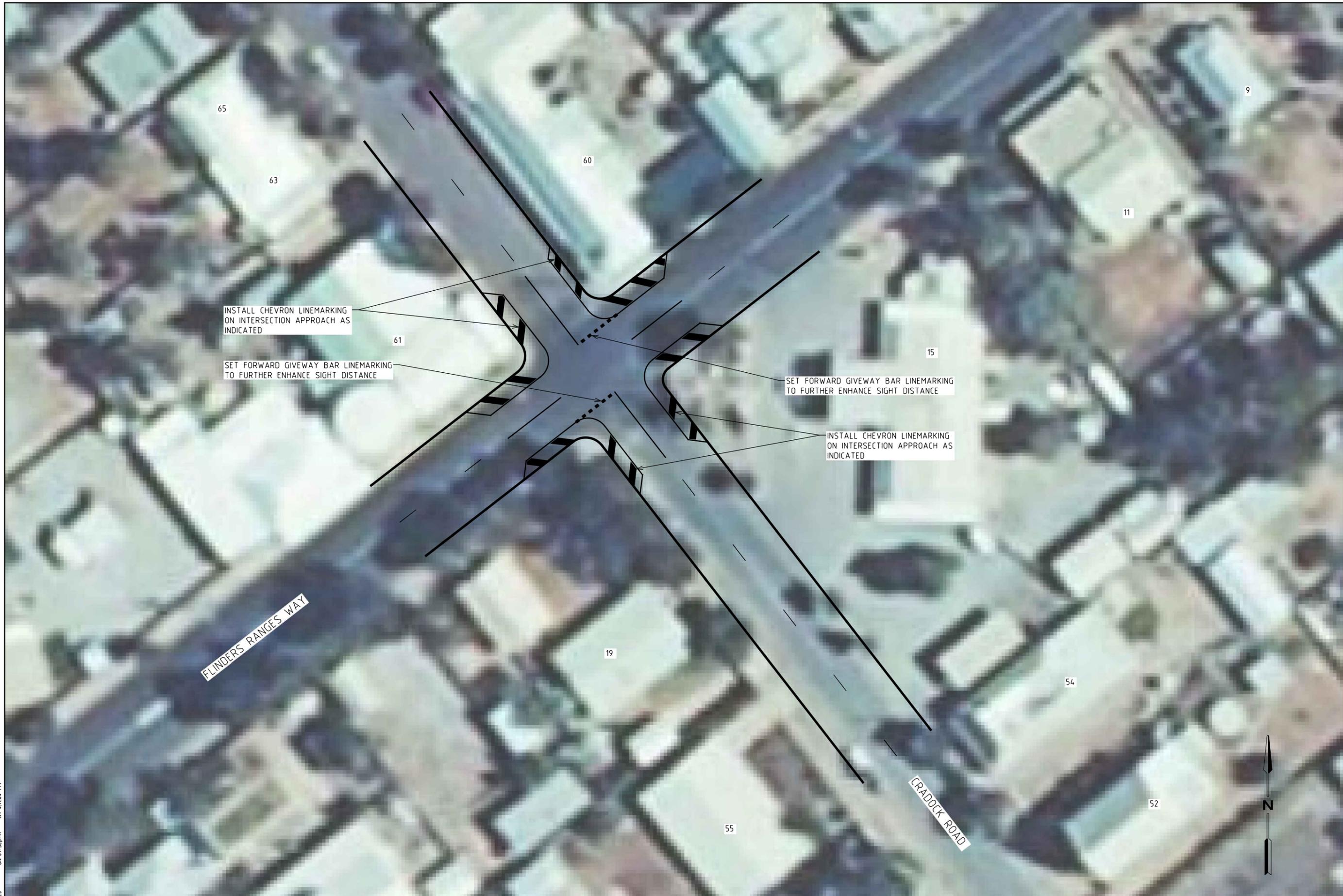
APPROVED BY  
 D. KWONG

DATE ISSUED  
 1 SEPTEMBER 2017

SCALE  
 A3 1:500

CAD FILE NO.  
 16A1277000-01-P3.dgn

**FLINDERS RANGES TRAFFIC & PARKING PLAN**  
**FLINDERS RANGES WAY/WEST TERRACE INTERSECTION**  
**CONCEPT PLAN**  
 DRAWING NO. 16A1277000-SK03-01P2 SHEET 04 OF 05 ISSUE P2



ON 01-Sep-17 AT 4:16:04 PM

PLOTTED BY : Timothy Jones



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 Brisbane 07 3113 5000  
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 Adelaide 08 8334 3600  
 Gold Coast 07 5510 4814  
 Townsville 07 4722 2765  
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DESIGNED  
 R. FRIMPONG

DESIGN CHECK  
 D. KWONG

APPROVED BY  
 D. KWONG

DATE ISSUED  
 1 SEPTEMBER 2017

SCALE  
 A3 0 5 10 1:500

CAD FILE NO.  
 16A1277000-01-P3.dgn

**FLINDERS RANGES TRAFFIC & PARKING PLAN**  
**FLINDERS RANGES WAY/CRADDOCK ROAD INTERSECTION**  
**HAWKER**  
**CONCEPT PLAN**  
 DRAWING NO. 16A1277000-SK02-02P2 SHEET 05 OF 05 ISSUE P2

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