



**UNLEY CODE AMENDMENT**  
**79-85 MARY ST AND 58 & 62 ARTHUR ST**  
**TRANSPORT INVESTIGATIONS REPORT**

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Transport Investigations report

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## 1. EXECUTIVE SUMMARY

CIRQA has been engaged to undertake transport investigations to inform the Code Amendment for the potential rezoning of the former “Brethren” site at 79-85 Mary Street and 58 & 62 Arthur Street, Unley. This report summarises investigations undertaken in respect to traffic and transport impacts of the proposed rezoning of the site from the existing Established Neighbourhood Zone to a Housing Diversity Neighbourhood Zone.

Specifically, this report contains advice in respect to the following matters:

- **site access** – review of the number, location and treatments for site access points;
- **external road network impacts** – comparative analysis of conditions on the adjacent road network associated with the existing zoning/land uses and the proposed zoning/land uses;
- **public transport** – review of public transport provisions for the site; and
- **walking and cycling** – review of walking and cycling provisions for the site (both internal and external).

In preparing the assessment, it has been assumed that the rezoning of the Affected Area and subsequent redevelopment could result in the creation of approximately 30 residential allotments (and dwellings).

The assessment identifies that access via both Mary Street and Arthur Street will be appropriate to balance the distribution of additional movements to and from the Affected Area. The redevelopment of the Affected Area may include provision of a new road connection between Mary Street and Arthur Street (in either a two-way or one-way arrangement). This connection (if provided) would desirably provide a slow speed, people focussed environment (albeit vehicle manoeuvring and parking provisions will still need to be appropriately accommodated).

The potential traffic generation associated with the redevelopment of the Affected Area (following its rezoning) identifies that approximately 23 additional peak hour movements could be distributed on to the adjacent road network. However, this forecast does not take into account the traffic generation associated with the former use of the site as a church (which, at times, would have been higher than the potential redevelopment for residential uses). Furthermore, the (conservatively) forecast movements would be split between the various directions on both Mary Street and Arthur Street and the increase on any one section would be lower (in the order of 5 peak hour movements on any one section of the adjacent roads which is a negligible increase).

The small level of traffic associated with the anticipated redevelopment would be well within the capacity of future access points for the Affected Area and the adjacent road network. The proposal would not alter the nature of function of Mary Street, Arthur Street or other surrounding roads. Additionally, as above, the previous use of the Affected Area (as a church) would have also distributed traffic to/from the surrounding network. The peak generation of the former use would have been much higher (albeit at different times to the commuter peak hours) than that forecast for redevelopment of the Affected Area for dwellings.

The existing public transport services in the vicinity of the Affected Area are considered sufficient to service residents (and visitors) of future development outcomes. Any internal connections achieved within the Affected Area should ensure dedicated pedestrian facilities, whereas assuming a slow speed, low volume internal road is achieved (if proposed), cyclists would be able to safely share the carriageway with vehicles.

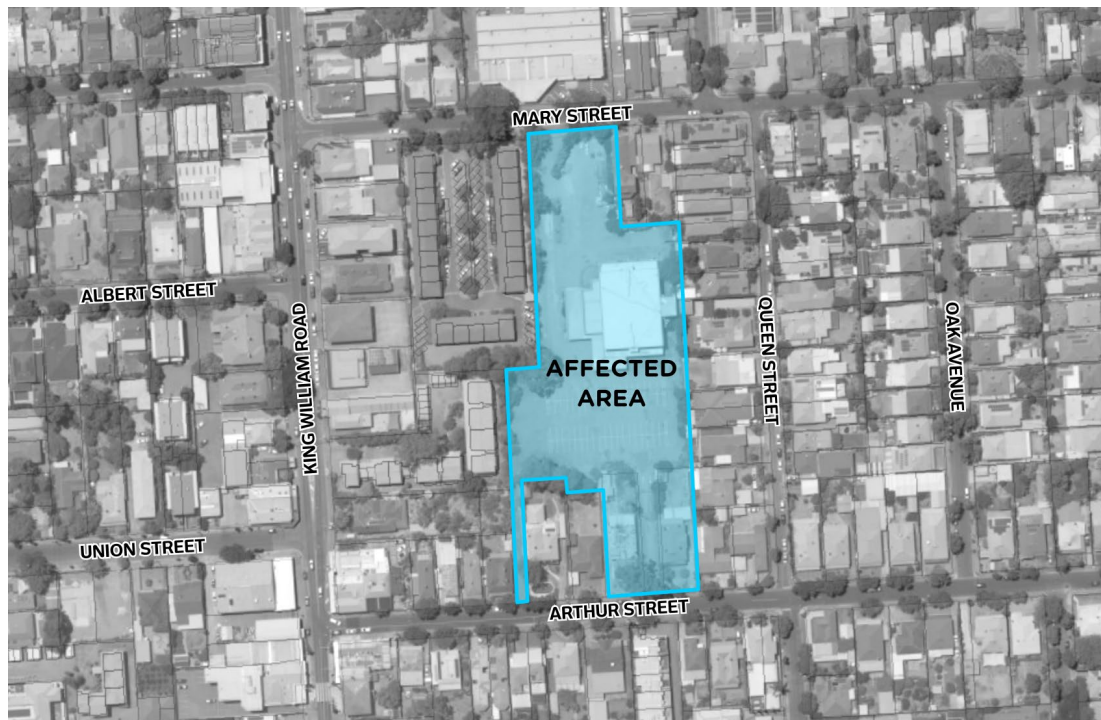
## **2. BACKGROUND**

### **2.1 AFFECTED AREA**

The Affected Area comprises approximately 1.14 ha of land located between Mary Street and Unley Street at Unley. Specifically, the Affected Area comprises the following allotments:

- 79-85 Mary Street;
- 58 Arthur Street; and
- 62 Arthur Street.

Figure 1 illustrates the location and extent of the Affected Area with respect to the adjacent road network.



*Figure 1 – Location of the Affected Area with respect to the adjacent road network*

The Planning and Design Code identifies that the Affected Area is located within an Established Neighbourhood Zone, with the following Overlays applicable:

- Airport Building Heights (Regulated) (All structures over 45 metres);
- Building Near Airfields;
- Historic Area (Un7);
- Heritage Adjacency;
- Hazards (Flooding - General);
- Prescribed Wells Area;
- Regulated and Significant Tree;
- Stormwater Management; and
- Urban Tree Canopy.

The Mary Street allotment contains the former Brethren site (church). The Brethren site includes an extensive area of off-street car park (over 100 spaces could have easily been accommodated within the site). The remaining allotments (58 and 62 Arthur Street) contain detached dwellings (one per allotment). Access to the Affected Area is currently provided via:

- a two-way access point with associated driveway located between 66 and 68 Arthur Street (servicing 79-85 Mary Street);

- a residential driveway for 58 Arthur Street;
- a two-way access width associated driveway connection located between 58 and 62 Arthur Street (servicing 79-85 Mary Street);
- a residential driveway for 62 Arthur Street; and
- a wide two-way access point on Mary Street (servicing 79-85 Mary Street).

## **2.2 ADJACENT ROAD NETWORK**

Mary Street is under the care and control of the City of Unley. The road comprises a two-way carriageway of approximately 7.0 m width. In the vicinity of the Affected Area, on-street parking is permitted on the southern side of Mary Street but restricted ("No Parking") on the northern side. High level data provided by the City of Unley indicates traffic volumes are in the order of 2,000 vehicles per day (vpd). The City of Unley has noted that this data is from a brief 'snapshot' (2-day) count. For the purposes of the subject Code Amendment, this data is considered sufficient, however, additional data collection may be desired to inform development applications associated with specific proposals for the Affected Area. The volumes provided indicate that Mary Street operates at the cut-off between the typical classification of a local road and a minor collector road. Adjacent the Affected Area, the general urban speed limit of 50 km/h speed limit applies on Mary Street.

Arthur Street is also under the care and control of the City of Unley. The road comprises a two-way carriageway of approximately 8.2 m width. Such a width accommodates on-street parking on both sides of the road. The City of Unley's snapshot traffic data indicates traffic volumes of approximately 3,600 vpd are accommodated on Arthur Street. This indicates that Arthur Street functions well within the typical limits associated with a collector road (3,000 to 6,000 vpd). It is acknowledged, however, the existing cross section is more akin to a local road. Adjacent the Affected Area, the general urban speed limit of 50 km/h speed limit applies on Arthur Street.

Both Mary Street and Arthur Street extend east-west between King William Road and Unley Road. Each street intersects King William Road at priority-controlled T-intersections (King William Road is assigned priority at both intersections). No separation turn treatments are provided at these intersections. At Unley Road, Mary Street forms a priority-controlled T-intersection with Unley Road (slightly staggered from an opposite intersection with Marion Street). No separated turn facilities are provided at this intersection. The intersection of Arthur Street and Unley Road is signalised (and integrated with the signalised intersection of Unley Road/Oxford Terrace). This intersection accommodates general movements on Arthur Street as well as additional movements associated with the adjacent Unley Shopping Centre.

## **2.3 WALKING AND CYCLING**

Paved footpaths are provided on both sides of Mary Street and Arthur Street. These paths provide connection to the broader pedestrian network (including paths on King William Road and Unley Road).

No formal bicycle facilities are provided on Mary Street, Arthur Street or the nearby section of King William Road (albeit cyclists are legally permitted to utilise the roads as well as the footpaths). Part-time bicycle lanes are provided on Unley Road. The City of Unley's "Unley Cycling Routes" map indicates a neighbourhood cycling route crossers both Mary Street and Arthur Street via Beech Avenue and Austell Street. This neighbourhood route connects to the broader cycling network including the Charles Walk designated bicycle boulevard and the Rugby/Porter Bikeway (via a signalised crossing point on Unley Road).

## **2.4 PUBLIC TRANSPORT**

Public bus services operate on both King William Road and Unley Road. Both roads are classified as high frequency "Go Zones" (with regular connections to/from the Adelaide CBD as well as other destinations). Bus stops are provided within approximately 150 m of the Affected Area on King William Road (served by Route 200). The bus stops on Unley Road approximately 600 m from the Affected Area and served by Routes 190, 195 and 196.

In addition, the Stop 2 Wayville tram stop is located approximately 640 m ('as the crow flies') to the north-west of the Affected Area.

## **3. POTENTIAL REZONING AND FUTURE DEVELOPMENT**

The Affected Area is proposed to be rezoned to accommodate residential development. It is understood that the Affected Area would be defined as being within Housing Diversity Neighbourhood Zone should the Code Amendment be enacted. For the purposes of these investigations, it has been assumed that the future division and development of the Affected Area would accommodate in the order of 30 dwellings in a medium density format (townhouses, row dwellings, etc.).

It is anticipated that there may be a mix of dwellings accessed directly via Mary Street and/or Arthur Street as well as the potential for dwellings to be accessed via a new public road bisecting the Affected Area (between Mary Street and Arthur Street). Given the width of the overall site and potential allotment sizes, consideration may need to be given to a reduced cross section (compared to a typical local road) and/or one-way flow arrangement. However, this could be supported with high level urban design outcomes (i.e. people focussed design rather than vehicle focussed). Nevertheless, design of any new roads would need to ensure appropriate accommodation of likely vehicle movements (including



waste collection, emergency services access), driveway provisions, on-street parking and pedestrian/cycling provisions.

## **4. TRANSPORT INVESTIGATIONS**

Traffic impact analysis has been prepared in relation to the potential future development of the Affected Area in line with the proposed rezoning. This has been prepared to inform the Code Amendment processes.

### **4.1 TRIP GENERATION**

Daily traffic generation rates of 7.5 to 8.0 trips per dwelling are typically adopted within metropolitan Adelaide for traditional, detached dwellings. However, noting the Affected Area's locality, level of public transport servicing and the higher density of development anticipated lower traffic generation rates would be likely (medium density development is often assessed with lower daily generation rates in the order of 6 trips per dwellings). However, to provide a conservative assessment of the potential impacts of the rezoning and subsequent development, a rate of 7.5 trips per dwelling is considered appropriate for assessment of the proposal.

On this basis, the development of up to 30 dwellings within the Affected Area is (conservatively) forecast to be associated with the generation of up to 225 daily traffic movements. With approximately 10% of movements typically generated during the am and pm peak hours (each), there would be approximately 23 peak hour movements associated with the future development of the Affected Area.

It should be noted that the above forecasts do not include consideration of the traffic generation associated with the previous use of the Brethren site nor the two existing detached dwellings. Noting the extent of parking provided within the Brethren site, it is highly likely that peak hour volumes would previously have been higher than are forecast to be associated with the rezoning and subsequent redevelopment of the Affected Area. It is acknowledged that the peak periods associated with the former use would have differed from the commuter periods). However, some staff/volunteer movements would still have been likely during the weekday am and pm commuter periods.

It is also noted that the provision of a new public road connection between Mary Street and Arthur Street (if proposed), could accommodate some additional traffic associated with drivers seeking to park on-street for access to King William Road. Such circulatory movements would not be additional trips (as they would effectively be a redistribution of existing movements). This could result in a reduction in movements undertaken on other streets (particularly Queen Street) and provide a positive outcome for existing residents. If such a connection is proposed, its design should consider the potential for such additional



movements (and not just the traffic volumes forecast for new residential development).

## **4.2 TRIP DISTRIBUTION**

The distribution of the forecast trips will be dependent on the ultimate access and traffic flow arrangements proposed for future development of the Affected Area and general layout of the future dwellings. However, it is anticipated that access would be achieved via both Mary Street and Arthur Street resulting in a relatively even distribution of movements between to the two roads.

Assuming creation of a new central road, there may be a greater weighting of the distribution to/from the north (i.e. Mary Street) if two-way access arrangements are achieved (due to greater distribution of movements to/from the north). Alternatively, if the new central road is defined with one-way flow, a more even distribution of movements would be achieved.

In addition, drivers will be likely to select their travel routes to/from the Affected Area based on the type of movement and associated delays and conflict risk required at the intersections of Mary Street and Arthur Street with King William Road and Unley Road. For instance, a driver exiting the Affected Area seeking to head to the CBD during am peak hour conditions would be more likely to utilise Unley Road (via a left-out movement) than turn right-out to King William Road.

## **4.3 TRAFFIC IMPACT**

As detailed above, the potential development of the Affected Area will distribute a very low level of traffic to the adjacent road network (i.e. an increase in the order of 5 to 6 peak hour movements on any one section of Mary Street and Arthur Street). In respect to daily traffic volumes, this would equate to approximately 50 to 60 additional movements. Such movements would be well within the capacity of access points associated with the redevelopment of the Affected Area as well as the adjacent roads and intersections. The rezoning and subsequent development of the Affected Area would not change the nature or function of Mary Street, Arthur Street or other surrounding roads.

Noting that these movements would be further distributed between various turn movements at the (four) intersections of Mary Street and Arthur Street with King William Road and Unley Road (as well as other potential minor local road routes), detailed traffic analysis (such as SIDRA modelling) is not considered warranted. The additional movements associated with any one turn at these intersections would be minimal. Furthermore, as noted above, these forecasts do not include allowance for the traffic volumes generated by the existing/previous uses associated with the Affected Area. Compared to the former use of the Brethren site, the anticipated residential use would likely have a lower level of traffic

generation and a positive impact (compared to the previous generation of that use).

#### **4.4 PUBLIC TRANSPORT**

The existing public transport services available within the vicinity of the Affected Area are considered sufficient to service the anticipated future development.

#### **4.5 WALKING AND CYCLING**

The design of new road(s) within the site should include consideration of pedestrian and cyclist connectivity and safety. Given the relatively low volumes forecast, it is considered appropriate that cyclists share the carriageway with vehicles. However, footpaths should be provided and, desirably, a low speed, 'people' focussed street design should be sought within the site.