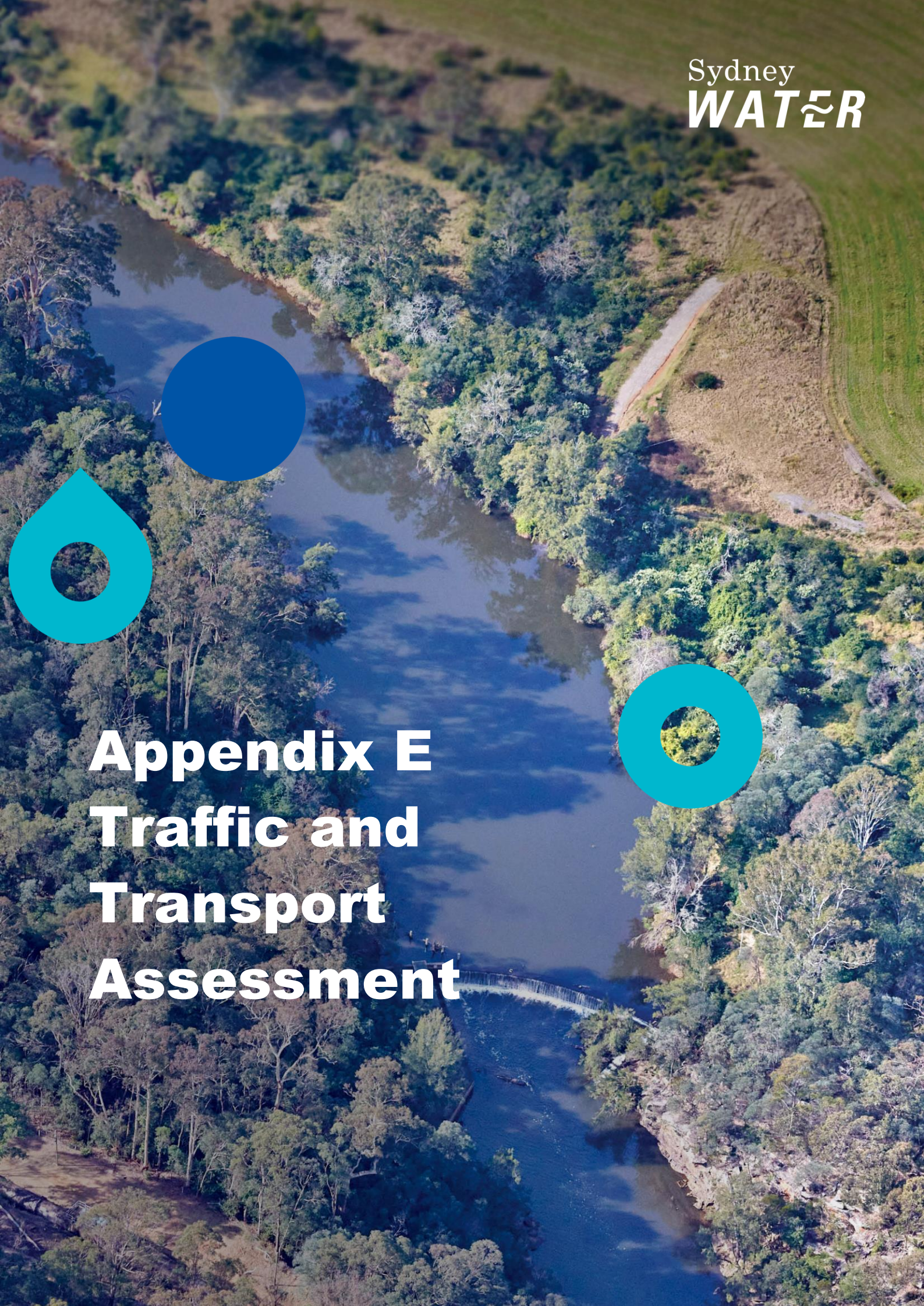

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Appendix E Traffic and Transport Assessment

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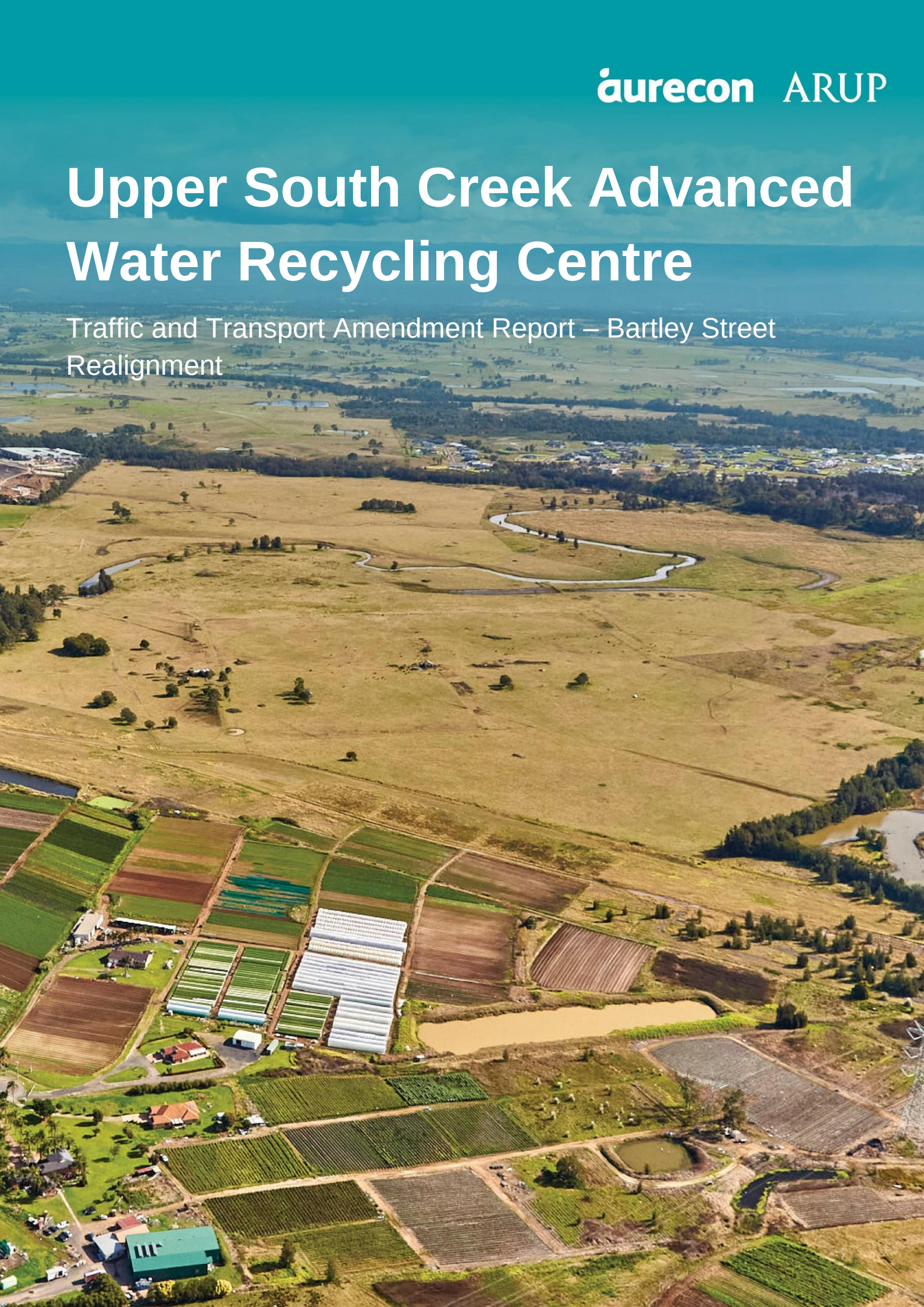
Upper South Creek Advanced Water Recycling Centre

Traffic and Transport Amendment Report – Bartley Street Realignment



Job title		Upper South Creek Advanced Water Recycling Centre		**Job number** 269002-04	
Document title		Traffic and Transport Amendment Report – Bartley Street Realignment		**File reference:** as above	
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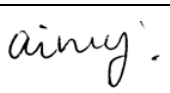
		Signature			
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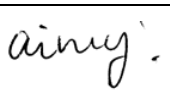
		Name	Aimy Nguyen	Sam Oswald	Sam Oswald
		Signature			
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Issue Document Verification with Document ✓

Table of Contents

1 Introduction

This Traffic and Transport report has been produced to support the Amendment Report for the Upper South Creek Advanced Water Recycling Centre (AWRC). Refinements to the design, following submission of the EIS, have resulted in changes to the brine pipeline alignment between Bartley Street and Curtin Street. The amendment will be referred to as the Bartley Street Realignment throughout this report.

The purpose of this report is to provide an update to the traffic and transport impacts and mitigation measures associated with this alignment change. This report should be read in conjunction with the project's traffic and transport report undertaken to support the Environmental Impact Statement (EIS) for the Stage 1 development of the AWRC and associated wastewater pipelines.

Given the changes to the pipeline alignment will only impact the construction process for the project, this assessment only considers impacts in the construction phase.

2 Study Area

Figure 1 displays the study area for this assessment, with a comparison of the original alignment assessed as part of the EIS in teal and the proposed update to the brine pipeline alignment in purple.

The original alignment traversed from Bartley Street to Curtin Street via Cabravale Memorial Park with an underbore beneath the railway line connecting to the western end of Curtin Street. The alignment has been updated to travel further along Bartley Street to its intersection with Railway Parade. The pipeline will then underbore the railway line and Broomfield Street and pass through the Cabravale Leisure Centre carpark and Cumberland Street before tying into Curtin Street further east. Compounds C12, C14 and C15 remain unchanged from the assessment presented in the EIS. Compound C13 has been relocated from Cabravale Memorial Park to Cabravale leisure centre to the east of the railway. This compound has been proposed to be only temporarily used as a trenchless crossing and for pipe laying in the carpark and is not expected to operation for the entire duration of construction.

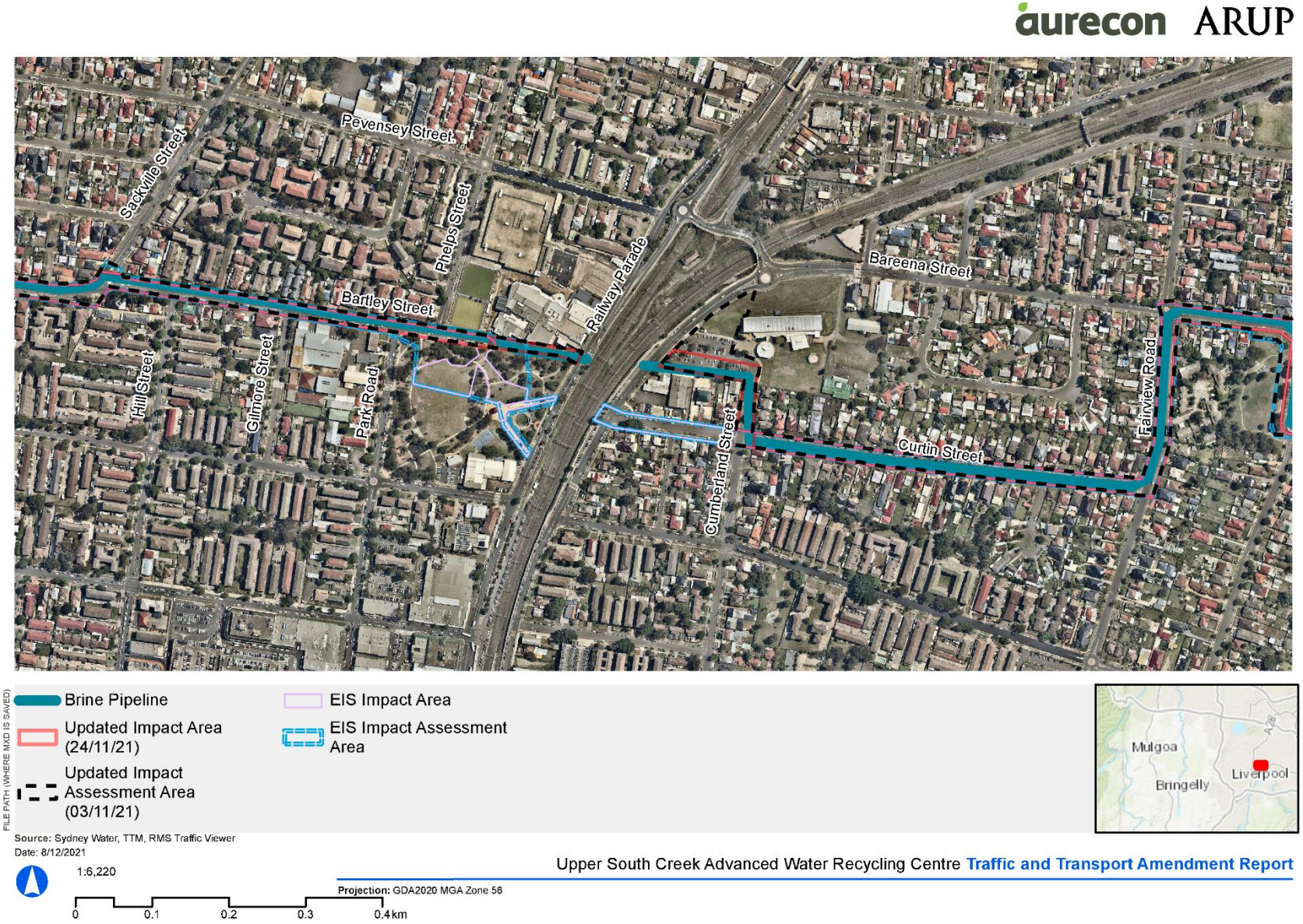

Figure 1: Updated impact area and impact assessment area

3 Existing Transport Conditions

This updated assessment has used the same methodology as outlined in Section 2 of the project's traffic and transport impact assessment (Appendix U in the EIS) to develop the traffic baseline for assessment year 2023 (peak construction year).

As Bartley Street and Curtin Street were considered in the assessment which supported the EIS, the traffic baseline assumptions associated with these links have been maintained.

Cumberland Street has been identified as a new link which has not been included in the previous assessment. As traffic data was not available for this link, the traffic flows from a neighbouring local road (Curtin Street) have been applied to this link. This was considered a robust assumption as these roads intersect and have a similar hierarchy.

Table 1 outlines the traffic baseline data for Bartley Street, Cumberland Street and Curtin Street with the road classification for each link summarised in Table 2.

Table 1: AM Peak baseline traffic (7:30-8:30am)

Road	AM Peak baseline traffic ('Without Project' scenario)		
	Existing	Year	2023
Bartley Street (between St Johns Road and Railway Parade)	750	2020	787
Cumberland Street (between Broomfield Street and Curtin Street)*	998	2020	1,048
Curtin Street (between Broomfield Street and Fairview Road)	998	2020	1,048

* Curtin Street baseline traffic assumed to be reflective of traffic on this link

Table 2: Link road hierarchy

Link road hierarchy	
Link	**Classification**
Bartley Street	Sub-arterial road
Cumberland Street	Local road
Curtin Street	Local road

4 Impact Assessment

This section summarises the key changes to the impact assessment associated with the Bartley Street Realignment. Overall, there are no changes to construction segments, construction phasing and programming, construction traffic generation and distribution as described in the EIS. The key change is moving construction compound C13 from Cabravale Memorial Park to Cabravale Leisure Centre car park, however this is still within Segment 5 and represents a minor change to traffic conditions overall.

Similar to the assessment that supported the EIS, a link-based approach has been used to identify where uplifts in traffic relating to the construction of the project may cause flows to exceed the estimated link capacity.

4.1 Construction segments and compounds

The amendment study area is situated within Segment 5 of the overall project extents as displayed in Figure 2. Within this segment are the following site compounds:

- C12: East Parade, Fairfield – Brine pipeline satellite compound;
- C13: Cabramatta Rail underbore crossing – Cabravale leisure centre car park;
- C14: Lansvale Park, Lansdowne - west of Henry Lawson Drive and Prospect Creek; and
- C15: Lansdowne east of Henry Lawson Drive – NGRS connection location.

Compounds C12, C14 and C15 remain unchanged from the assessment presented in the EIS. Compound C13 has been relocated from Cabravale Memorial Park to Cabravale leisure centre to the east of the railway but is still located within Segment 5. This compound will only temporarily used as a trenchless crossing and for pipeline construction in the carpark and is not expected to operate for the entire duration of construction.

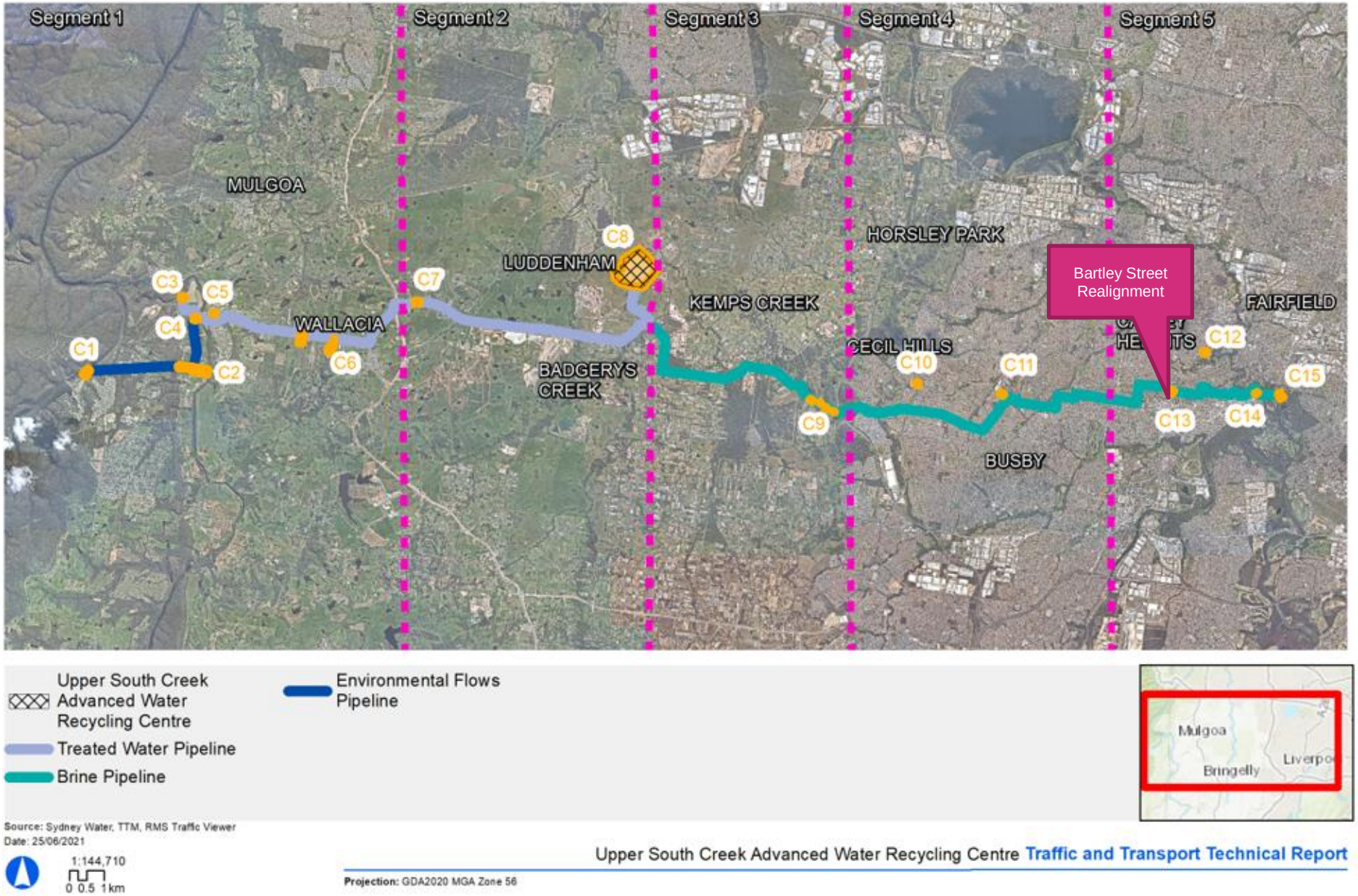

Figure 2: Construction segments and site compounds

4.2 Construction phasing and programme

Table 3 provides an indicative timeline of the main construction activities for the site compounds within Segment 5The separate construction phases are highlighted using different colours.

Table 3: Indicative construction programme

Activity	FY 2022-2023			FY 2023-2024						FY 2024-2025			
	Q3		Q4	Q1		Q2		Q3		Q4		Q1		Q2		Q3		Q4	
Segment 5																			
C12																			
C13																			
C14																			
C15																			

Site establishment | Earthworks and civil works | Structure construction | Mechanical and electrical installation | Commissioning | Landscaping and restoration

4.3 Construction traffic generation

Construction traffic related to the project will be generated by the following activities:

- Worker crews – crews undertaking horizontal directional drilling (HDD) / open trenching along the pipeline alignment;
- Light vehicles accessing site compounds, including the AWRC construction site; and
- Heavy vehicles accessing site compounds, including the AWRC construction site.

Table 4 outlines the peak daily construction vehicle volumes (one-way) expected within and outside of standard working hours for light vehicles (LV) and heavy vehicles (HV) for Segment 5 described in the EIS. Traffic flows will not change as a result of the amendment

Table 4: Peak daily vehicle volumes (one-way) during and outside standard hours of construction

Site compound	During standard hours of construction		Outside standard construction hours	
	LV	HV	LV	HV
C12	30	25	30	25
C13	15	0	0	0
C14	10	0	10	0
C15	10	0	10	0
Horizontal Directional Drilling (HDD)	10	4	0	0
Open trenching	40	0	20	0
Total	**115**	**29**	**70**	**25**

4.4 Construction traffic distribution

Construction traffic has been distributed based on the same methodology as the assessment which supported the EIS. This assumed the following:

- All heavy vehicle and compound volumes have been distributed evenly across standard working hours (Monday to Friday, 7am-6pm). Directionally, these volumes have been split evenly 50% in and 50% out.
- 50% of construction worker and crew traffic arrives during the AM peak hour.
- Construction traffic associated with site compounds and worker crews will only be applicable to links within their respective segment.

Based on this approach, the impact of construction traffic on the links impacted by the Bartley Street Realignment are shown in Figure 3. No additional construction traffic is expected for Bartley Street and Curtin Street therefore no uplift on traffic flows when compared to the previous assessment. For Cumberland Street, Segment 5 construction traffic will now apply, and the uplift aligns the construction traffic impact on traffic flows with those predicted on Bartley Street and Curtin Street. This change will not cause an uplift in traffic volumes, rather the same volumes will be applied to different streets.

Table 5 provides a summary of the traffic flows for the 'With Project' scenario where the project's construction traffic has been added to the traffic baseline.

Table 5: Without project' and 'with project' traffic flows (7:30-8:30am)

Road	AM Peak baseline traffic ('Without Project' scenario)		AM Peak 'With Project' scenario
	Existing	2023	2023
Bartley Street (between St Johns Road and Railway Parade)	750	787	843
Cumberland Street (between Broomfield Street and Curtin Street)	998	1,048	1,104
Curtin Street (between Cumberland Street and Fairview Road)	998	1,048	1,104

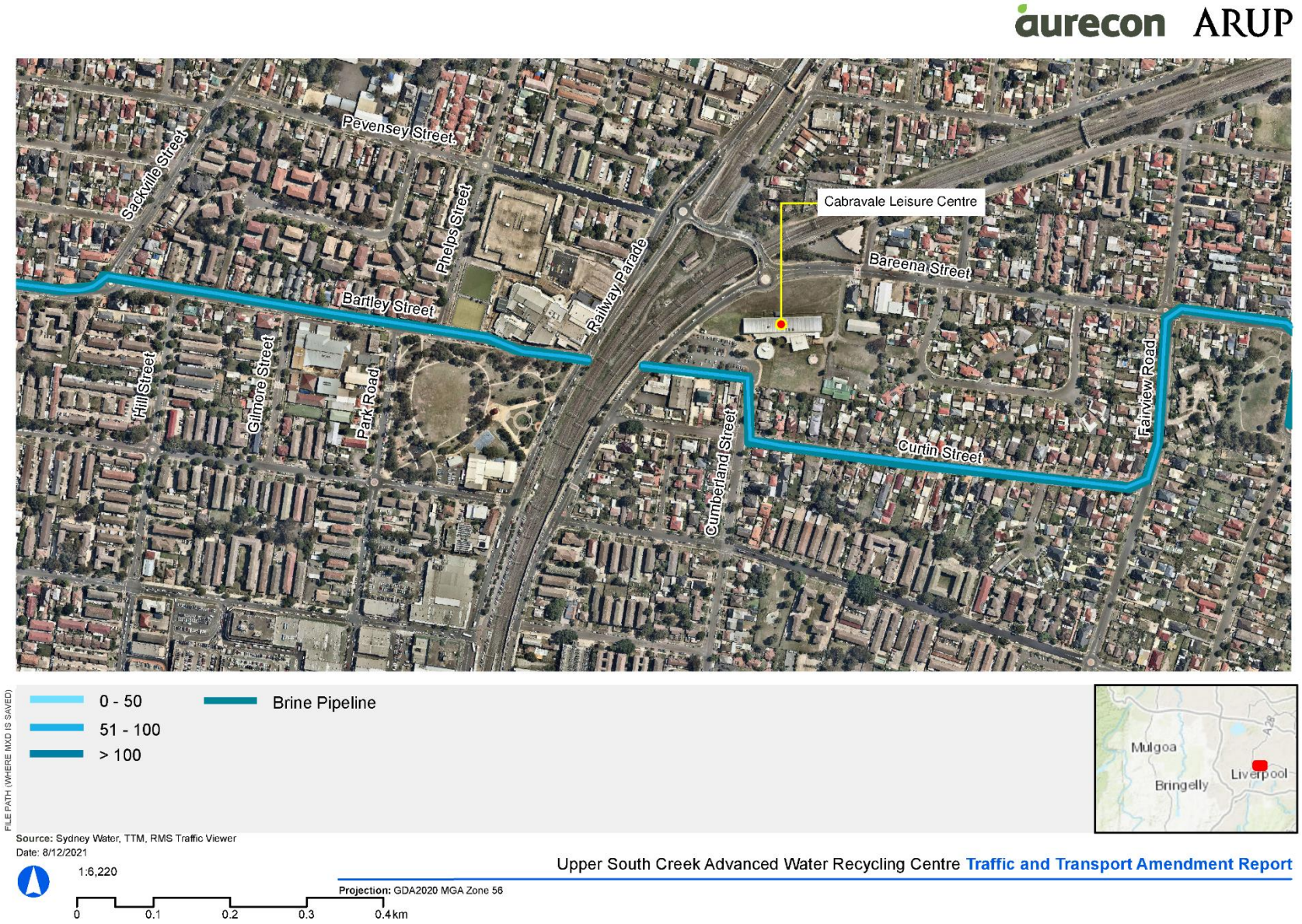

Figure 3: Additional construction traffic by link

4.5 Transport network impacts

This section details the impacts of the construction phase on the surrounding transport network.

4.5.1 Traffic impacts

Two criteria were used to identify links where construction traffic may have a detrimental impact:

- Criteria 1 - additional construction traffic relating to the project has generated an increase in traffic greater than 5% compared to the baseline flows on the link; and
- Criteria 2 - the traffic flow per lane increases beyond 900 pcu per hour with the addition of construction traffic relating to the project. This value is consistent with the Austroads Guide to Traffic Management Part 3 (2013) which provides guidance on the lane capacity of urban roads and traffic lanes

Figure 4 has highlighted roads within the study area as orange which indicate that these links have met Criteria 1 only. As the increase in traffic is expected to be less than 10% on these links it is not anticipated that detrimental impacts will occur. This analysis indicates that for the links being assessed the traffic flows will not exceed the theoretical link capacity and the impacts are the same as those described in the EIS but they will occur on different streets (name streets). Despite this, the mitigation measures described in the EIS should be considered to further reduce the associated impact on the surrounding transport network. Traffic flow per lane does not exceed 900pcu per hour therefore Criteria 2 is not met.

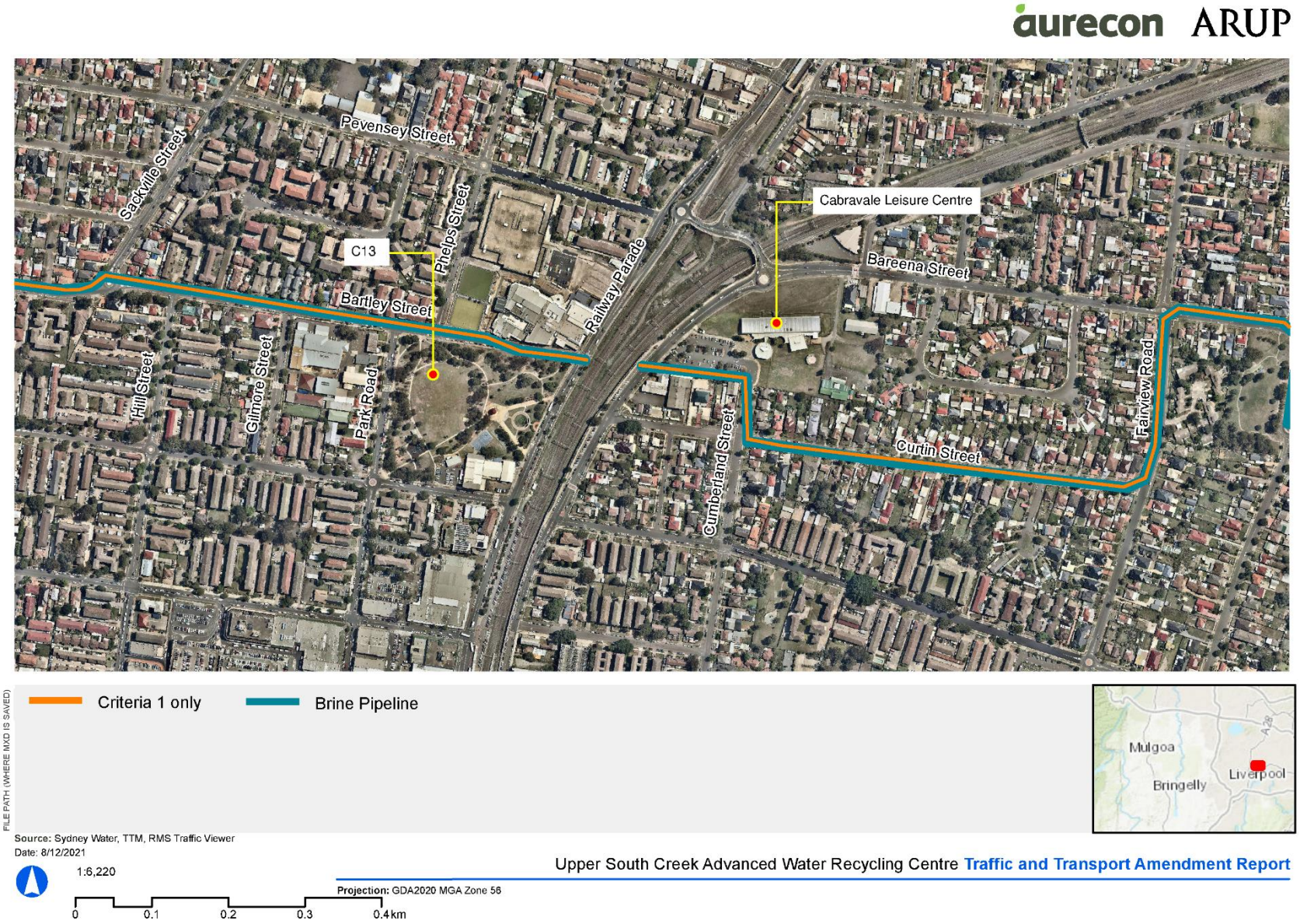

Figure 4: 2023 Construction traffic link assessment

4.6 Road closure

The EIS indicates no permanent road closures are planned as part of the works. It is likely there will be instances where roads may need to be shut temporarily to manoeuvre larger plant. Permanent road closures will not be required as a result of the amendment.

The EIS assessed the need for partial road closures restricting traffic flow. These were predicted to have a low impact significance with an impact duration of 2-3 weeks at each location. With the proposed realignment, full road closure of some sections of roads, principally Bartley Street at the Cabravale Diggers Club, will be required.

Due to the adjustments to the pipeline alignment, the following temporary road closures have been considered to inform the assessment:

- Bartley Street between Phelps Street and Railway Parade for a period of four (4) weeks to account for open trenching and microboring beneath the railway crossing; and
- Cumberland Street north of Curtin Road for a period of 2-3 weeks.

The relevant state and local authorities will need to be engaged in the case of any road closures or Road Occupancy Licences (ROLs). However, road closures will be confirmed during detailed design and recommendations included with in the site specific CTMP. The framework CTMP provides further detail around these requirements and which authorities to engage for different areas of corridor. A management measure TT06 has been added that requires consultation with the Cabravale Diggers Club and ensuring emergency access off Bartley Street for the Club is planned to be maintained and included in the SSCTMPs.

4.6.1 Bartley Street closure

In order to maintain access connectivity for vehicles, diversion routes will need to be provided as part of the traffic management measures during construction. A summary of the potential diversion routes during the temporary road closure of Bartley Street is provided below.

- North to West: Railway Parade, McBurney Road and Park Road;
- West to South: Park Road and McBurney Road;
- West to North: Phelps Street and Pevensey Street; and
- South to West: McBurney Road and Park Road.

4.6.2 Cumberland Street closure

This closure will restrict access to the Cabravale Leisure Centre carpark from Curtin Road. During this closure, access can be maintained via Broomfield Street where two accesses currently exist. Appropriate signage will be provided on Curtin Road to direct vehicles to the access points on Broomfield Street.

4.7 Parking impacts

Parking will be impacted during the temporary road closure on Bartley Street and during works at the Cabravale Leisure Centre carpark. The estimated temporary parking loss is within the impact area shown on Figure 5 and summarised below:

- Approximately 15 parking bays on the southern kerbside of Bartley Street (between Phelps Street to Railway Parade); and
- 83 parking bays are shown within the impact area within the Cabravale Leisure Centre car park. 33 parking bays directly impacted on the southern extent of the carpark and a further 50 bays to the north.

During construction, Cabravale Leisure Centre carpark will be used as a launch site for tunnelling activities under the Cabramatta rail line and to undertake trenching works. The timing of tunnelling and trenching works will be confirmed as detailed design progresses however it is expected that the Leisure centre carpark will be used for the duration of works required at this location only. Timing considerations will inform a parking management plan as part of the site specific CTMP and this will outline management of impacted parking spaces during the construction period and minimise the impact to the local area resulting from the temporary loss in parking spaces.

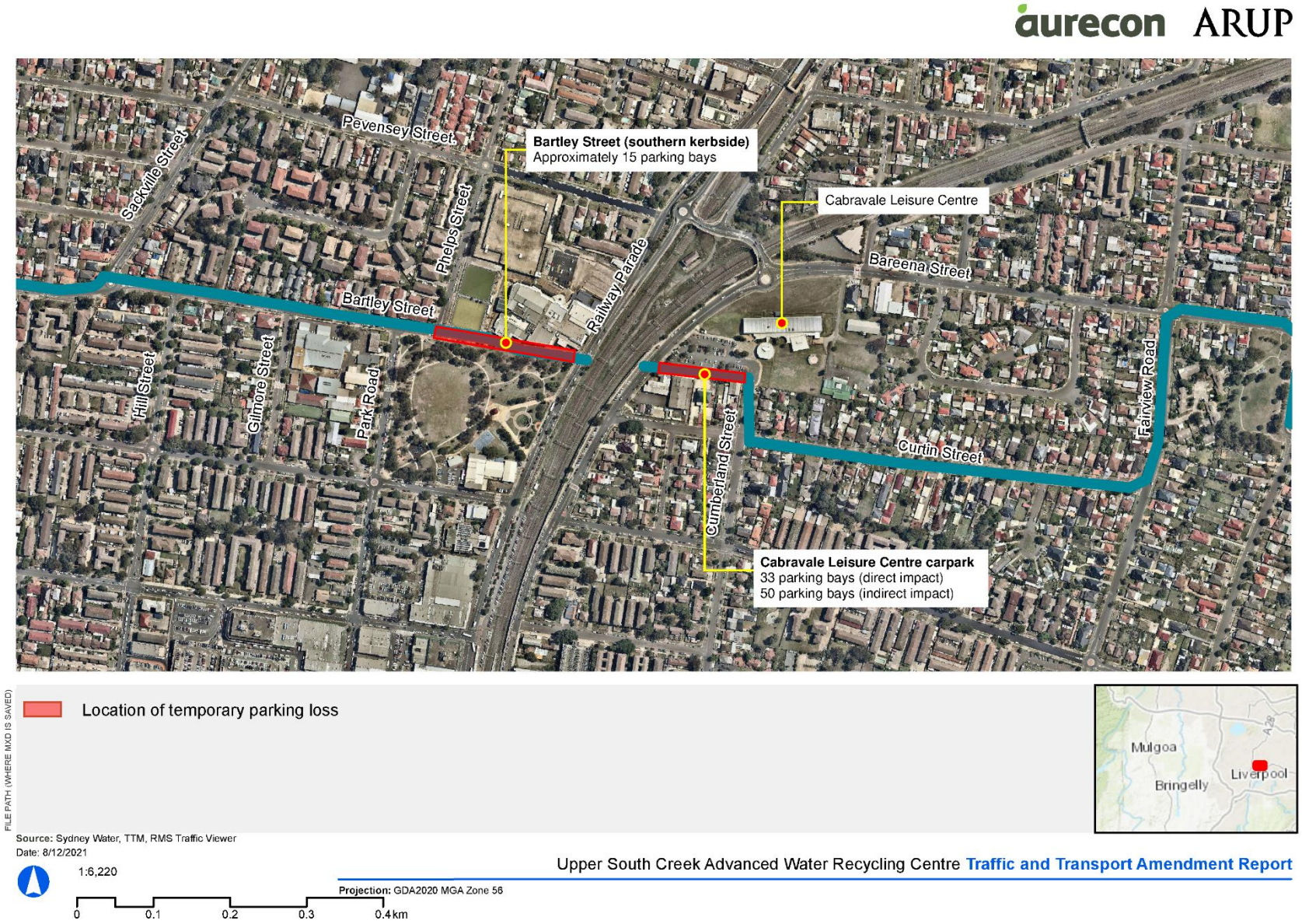

Figure 5: Location of temporary parking loss

4.8 Public transport impacts

The bus zone on the northern kerbside of Bartley Street between Phelps Street and Railway Parade will be temporarily disrupted during the Bartley Street Road closure. As part of the SSCTMP a temporary location for the bus zone will need to be found further west on Bartley Street. Bus operators will need to be engaged to confirm diversion routes proposed are appropriate or agree revised diversion routes bus services.

4.9 Impact assessment outcomes and significance

When reviewing the revised pipeline alignment, no additional potential outcomes were identified when compared to Table 23 in the project's traffic and transport impact assessment. The key change due to the realignment is that the potential outcomes now apply to additional streets or uses. The additional infrastructure impacted by the potential outcomes is outlined in Table 6 below.

Table 6: Construction impact assessment outcomes and significance

Construction impacts		
Potential impact	**Additional areas of impact**	**Impact significance**
Temporary disruption to bus stops and routes along the construction corridor	Bartley St west of Phelps Street	Medium – same impact no change
Temporary removal of both on-street and off-street parking along the construction corridor	On-street parking along – Bartley St, and Cumberland St. Off-street parking at Cabravale Leisure Centre	Low – new areas impacted by amendment but still low
Temporary road closures restricting access and diverting traffic	– Bartley St between Phelps St and Railway Pde. – Cumberland St access to Cabravale Leisure Centre carpark.	Low-Medium – different streets impacted by road closures
Temporary disruption to footpaths	Bartley St and Cumberland St	Medium – no change to Bartley Street, Cumberland Street new but impact significance still the same
Temporary impacts to dwelling and business access	All dwellings and businesses adjacent to the construction corridor (Figure 1). This includes: – Residential and commercial access on Phelps Street. – Religious centres: Shaolin Temple Australia, Thai Christian Fellowship and Russian Church. – The German-Austrian Society.	Medium – impact to additional businesses adjacent to Cumberland Street

5 Proposed mitigation measures

As all potential outcomes are similar to outcomes mitigated as part of the EIS. The same mitigation measures will be applied as those found in Table 32 of the project's traffic and transport impact assessment. Table 7 presents these mitigation measures again for clarity.

Table 7: Mitigation and effectiveness

Project specific mitigation measures		
Potential impact	**Mitigation measure**	**Impact significance following mitigation**
Temporary disruption to bus stops and routes along the construction corridor	Liaison with state authorities, local councils, stakeholders and operators to develop temporary solutions	Low
Temporary removal of both on-street and off-street parking along the construction corridor	Liaison with local councils and stakeholders to develop temporary parking solutions.	Low
Temporary road closures restricting access and diverting traffic	Liaise with state authorities, local councils and stakeholders to develop temporary solutions.	Low
Temporary disruption to footpaths	Liaise with state authorities, local councils and stakeholders to develop temporary solutions.	Low
Temporary impacts to dwelling and business access	Liaise with state authorities, local councils and stakeholders to develop temporary solutions.	Low

The SSCTMP for this section of the alignment will provide further detail on the appropriate measures to mitigate the impacts of the project on the transport network during construction. These measures will be driven by the controls outlined in the Framework CTMP.