Randwick City Council

Kensington and Kingsford Planning Strategy

Stage 1 Transport Assessment

Stage 1 Report - Issue | 20 January 2017

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Contents

1 Introduction

Randwick City Council appointed Conybeare Morrison International to advise on new planning controls for the Kingsford and Kensington town centres. The new planning controls will comprise a key aspect of a Planning Strategy to guide the coordinated growth and renewal of these town centres into the future.

Arup has provided a Stage 1 traffic and transport advice to inform the development of the planning controls and public realm improvements. A Stage 2 report is to be prepared in 2017 which will incorporate the findings of traffic modelling to further test the proposed dwelling growth and road closures.

1.1 Background

In early 2016, Randwick City Council initiated a comprehensive planning review of the Kensington and Kingsford town centres to ensure the planning framework for these centres is up to date and aligned to meet future needs.

The review is timely as both town centres are in the process of major transition stemming from the introduction of the Sydney CBD to South East Light Rail network along Anzac Parade, which forms the main transport corridor for these centres. To be completed by 2019, the light rail will not only modify people's travel behaviour and movement patterns, but will also result in considerable changes to the public domain resulting from the new infrastructure.

The light rail is also likely to be a catalyst for urban renewal and redevelopment as evidenced in other precincts that have introduced similar infrastructure.

Kensington and Kingsford town centres are likely to be affected by the demands of population growth, with the State Government's projections indicating Randwick City's overall population will increase by around 26% by 2031. It is likely that a proportion of additional dwellings required to meet future housing needs will be accommodated within these town centres given their proximity to frequent public transport services and employment hubs.

Similarly, there will be likely demand for employment floor space, not only to accommodate traditional retail/commercial uses, but also the changing nature of the workforce. The town centres are in close proximity to the Randwick Education and Health Strategic Centre comprising the University of NSW and the Randwick Hospitals Campus. This employment hub which accounts for nearly 40% of Randwick City's workforce is evolving as an innovation centre. There is need to consider floor space demands outside the campus boundaries and within the town centres to support the innovation centre, such as incubators, start-ups, creative spaces and ancillary uses, as well as affordable housing opportunities and activation around the light rail infrastructure.

1.2 Study Area

The following maps show the town centre boundaries and key opportunity sites.

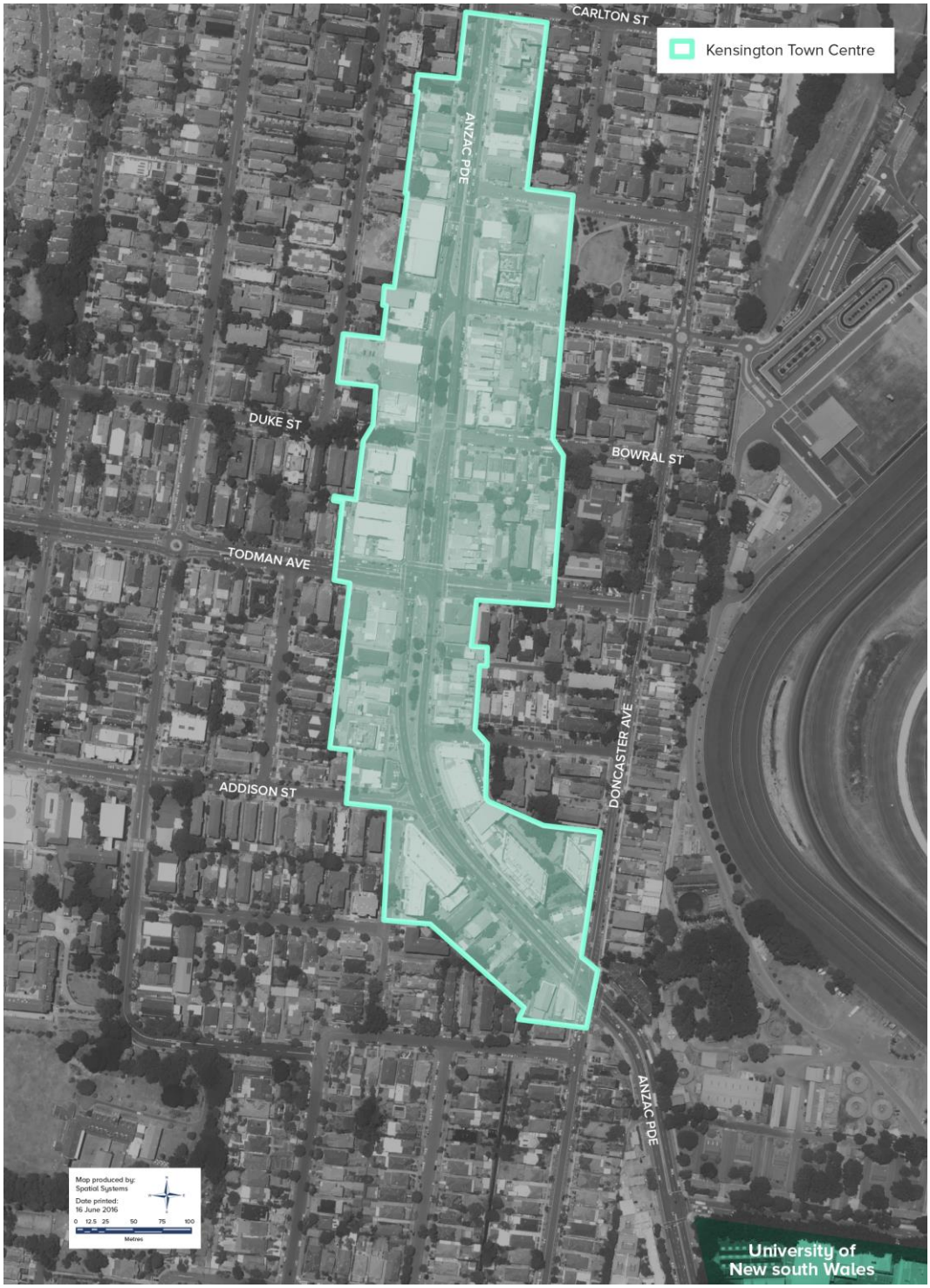


Figure 1: Kensington study area

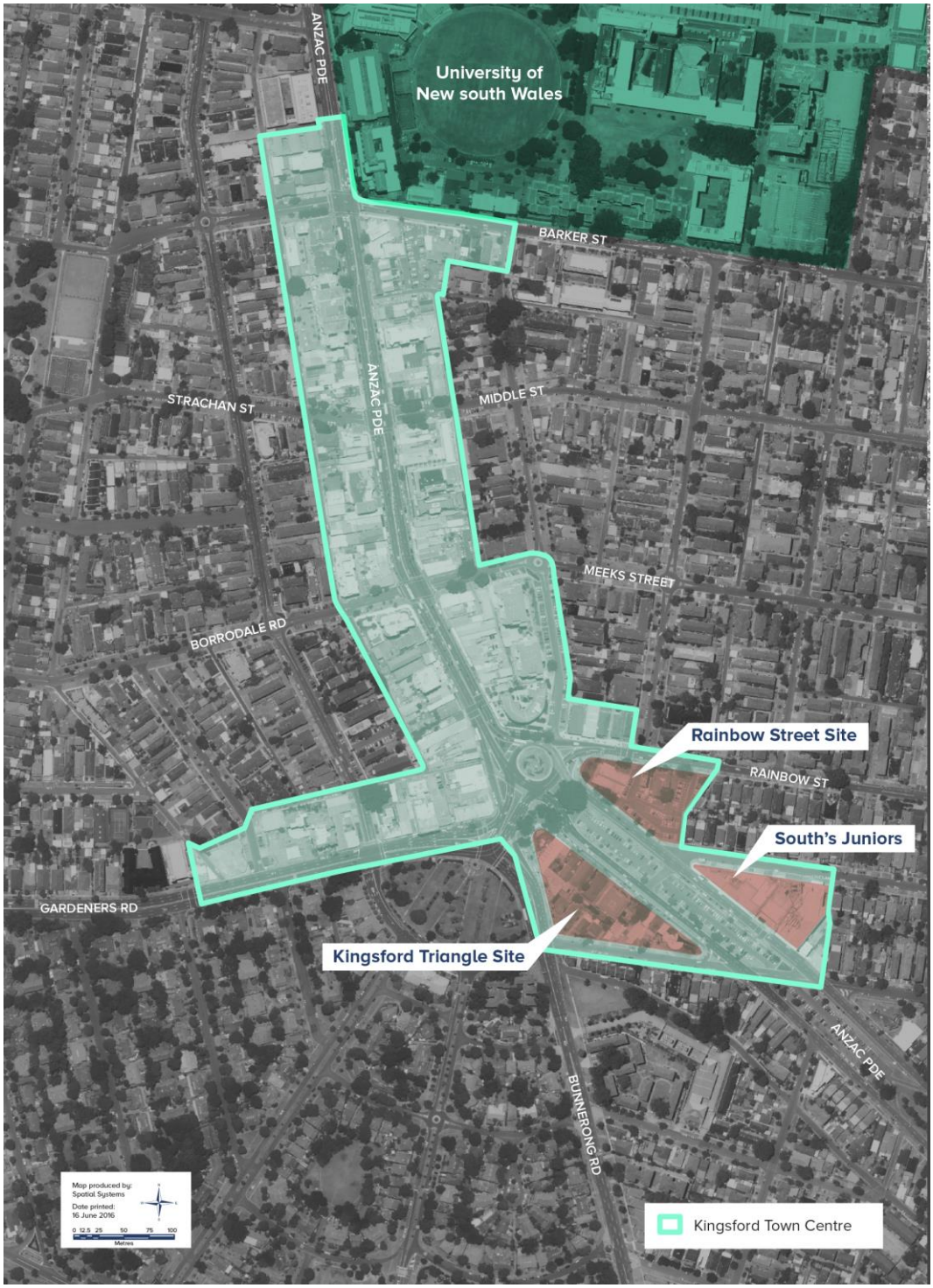


Figure 2: Kingsford study area

2 Travel Characteristics

2.1 Existing Journey to Work

The journey to work data for the relevant travel zones has been reviewed as Place of Residence and Place of Work as shown in Figure 3 and Figure 4. This indicates the current mode share of residents commuting to work outside of the town centres and how workers commute to the town centres.

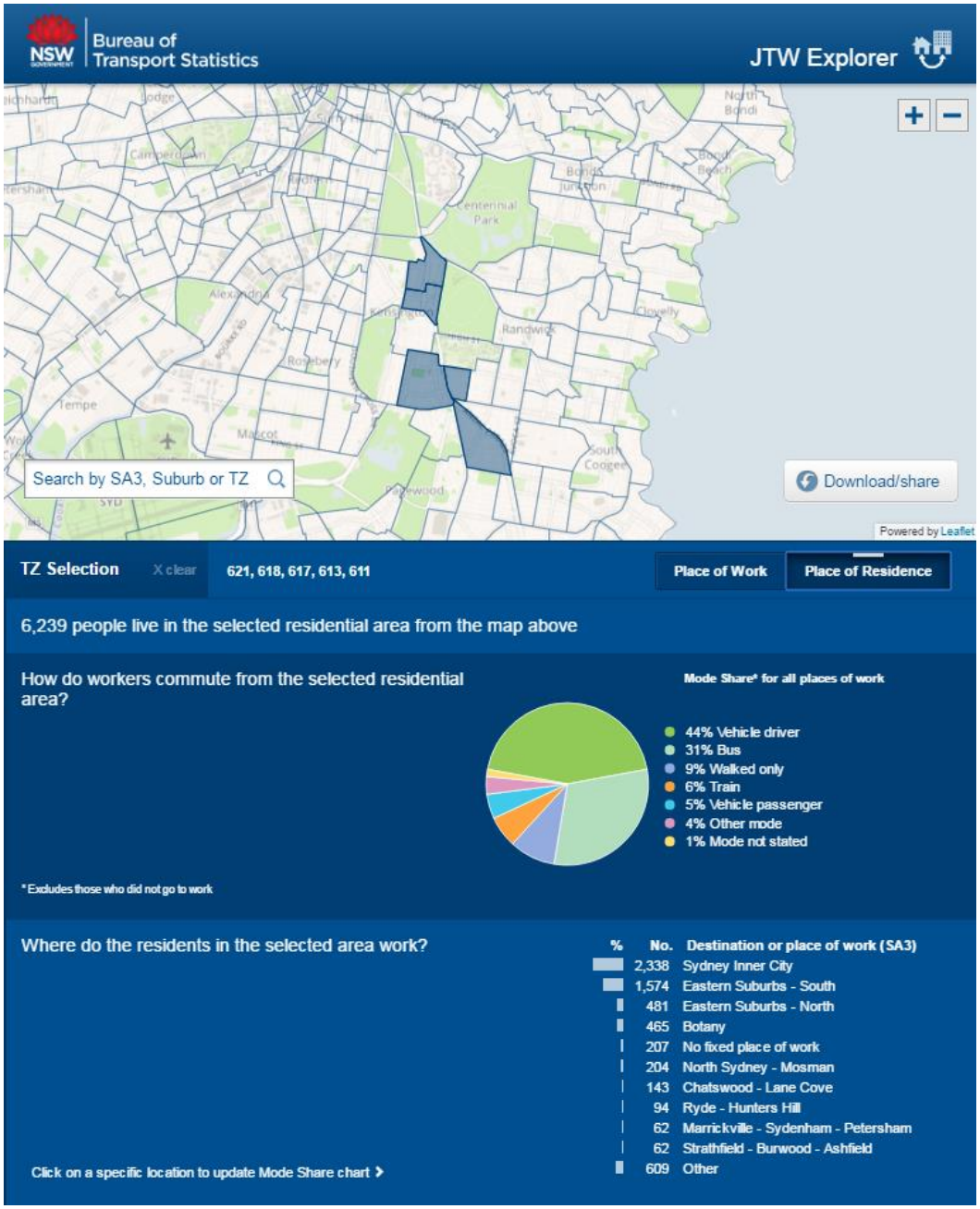


Figure 3: Journey to Work - Place of Residence

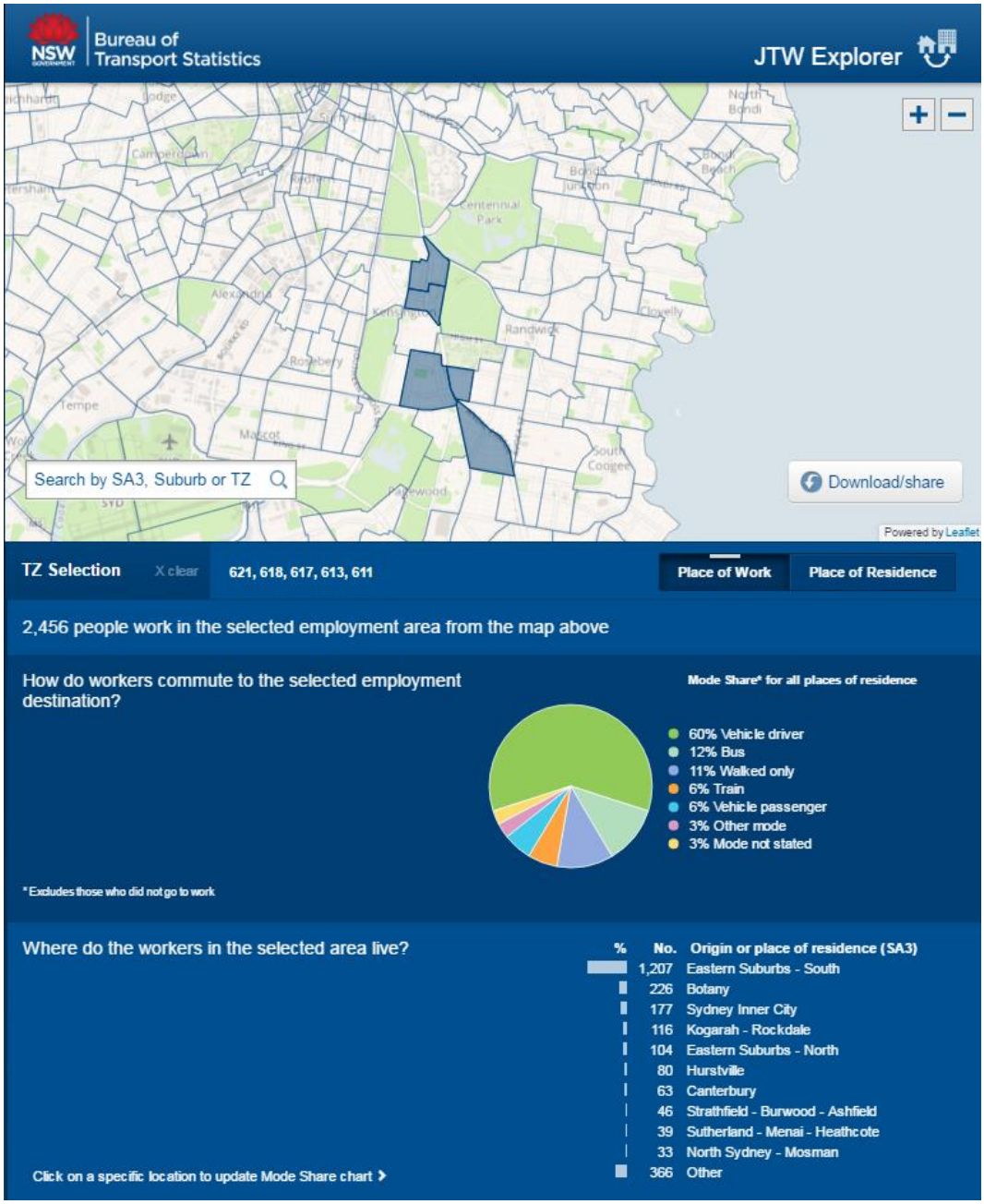


Figure 4: Journey to Work - Place of Work

Residents have a higher mode share to public transport leaving these zones to travel to work than workers commuting to work in these zones. This is primarily due to the high concentration of residents who work in the Sydney CBD where car parking supply is limited. For workers traveling into these zones, there is a wide spread of home origins and car parking is often more readily accessible at the work location.

2.2 Future Journey to Work

The existing mode of travel has been adjusted for development in the Kensington and Kingsford corridor recognising the transit oriented development with transfer of mode from both car and bus expected to light rail transit (LRT). Train travellers will also use the LRT for transfer to the area.

Our expectation is that residents moving into this highly accessible corridor and employees working in the mixed use developments will reduce their car mode.

For employees, a significant drop is forecast given the constrained car parking provision and the predicted increase in employment. There could also be expected to be a greater level of self-containment will occur with workers able to live locally.

For residents, a lesser drop is forecast given the relatively high public transport use already occurring. An increase of around 10% to public transport has been adopted.

This then aligns with the typical traffic generation rates expected for these types of development based on the latest RMS traffic generation rates.

The anticipated future mode of travel for the journey to work task is shown in Table 1.

Table 1: Anticipated future mode of travel

Future Mode	**Employees**		**Residents**	
	Existing	Future	Existing	Future
Car driver	60%	35%	44%	40%
Car passenger	6%	5%	5%	3%
Train	6%	-	6%	-
LRT (including train transfer)	-	27%	-	30%
Bus	12%	12%	31%	12%
Walk	11%	15%	9%	10%
Other	6%	6%	5%	5%
Total	100%	100%	100%	100%

2.3 Resultant Travel Mode

Residents and employees travelling in the peak one hour period have been derived based on a number of assumptions and applying the travel mode split.

Resident Assumptions:

- 2.2 people per apartment
- 68% of residents are employed in the workforce
- 35% of employed residents travel in the peak 1 hour

Employee Assumptions:

- 20m^2 per employed person
- 70% employees travel in the peak 1 hour

The resultant number of trips for the peak hour for light rail mode, bus mode and car mode are shown in Table 2.

Table 2: Anticipated peak hour travel

		People/ Employees	Residents employed	Travel in peak 1 hour	Light Rail mode	Bus mode	Car mode
Residents			68%	35%	30%	12%	40%
Employees				70%	27%	12%	35%
Kingsford							
Dwellings	2,772	6,098	4,147	1,451	435	52	581
Commercial	36,000 m^2	1800		1260	340	151	441
Kensington							
Dwellings	1,855	4,081	2,775	971	291	35	389
Commercial	18,000 m^2	900		630	170	76	221
Total							
Dwellings	4,627	10,179	6,922	2,423	727	87	969
Commercial	54,000 m^2	2700		1890	510	227	662
Total				**4313**	**1237**	**314**	**1631**

2.4 Traffic Distribution

The distribution of the development generated traffic is shown in Figure 5 and Figure 6. The residential and commercial car trips are shown separately and will occur in opposite directions on the road system, i.e. in the morning, residential trips are generally outbound and commercial trips are inbound. They travel in the opposite direction in the afternoon peak.

It would be expected that the majority of this traffic would access developments from the rear lanes and streets to the east and west of Anzac Parade allowing dispersion on local streets. The anticipated level of traffic should be able to be accommodated both from a traffic capacity and an environmental capacity on the access street system.

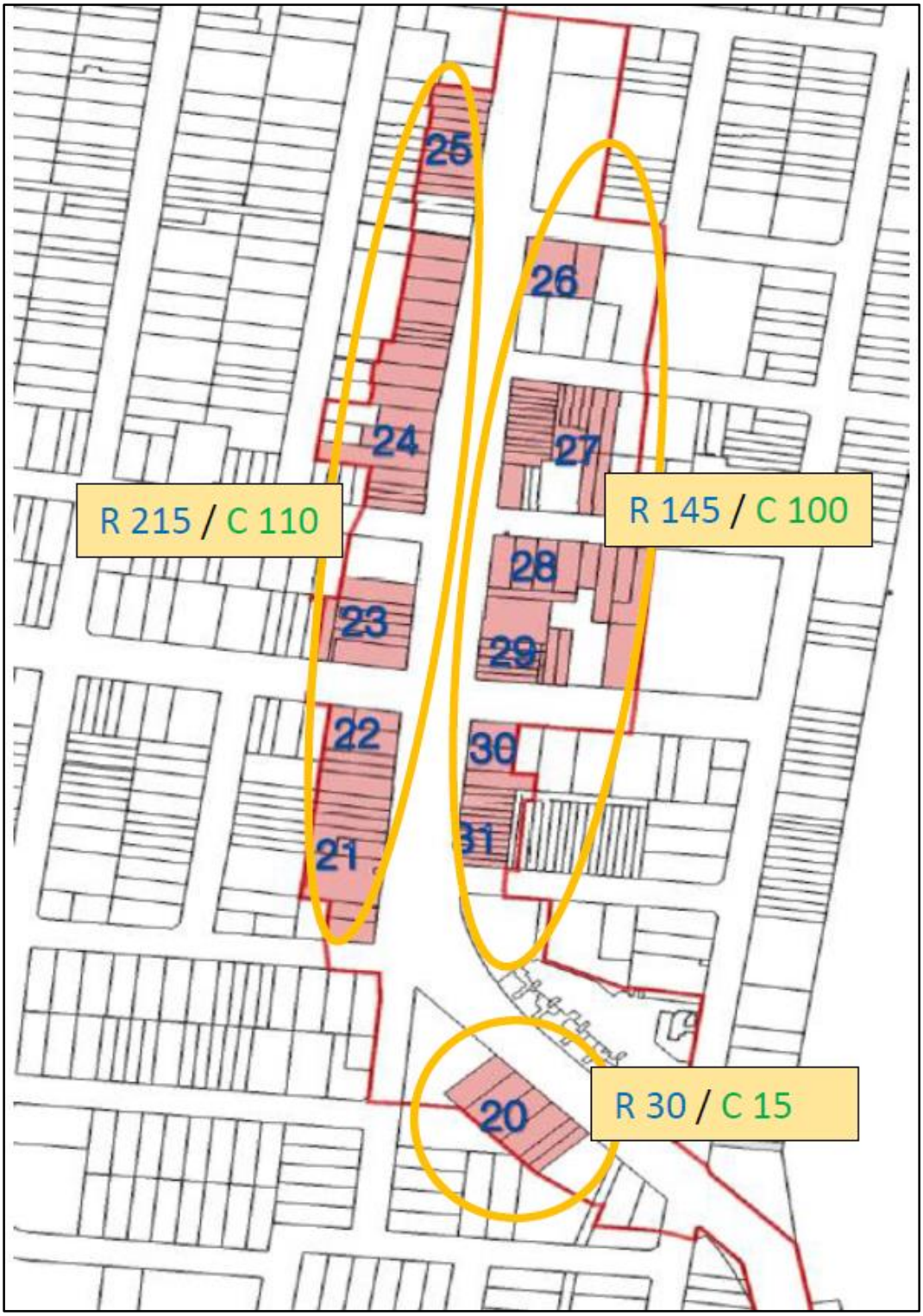


Figure 5: Kensington Traffic Generation in peak one hour

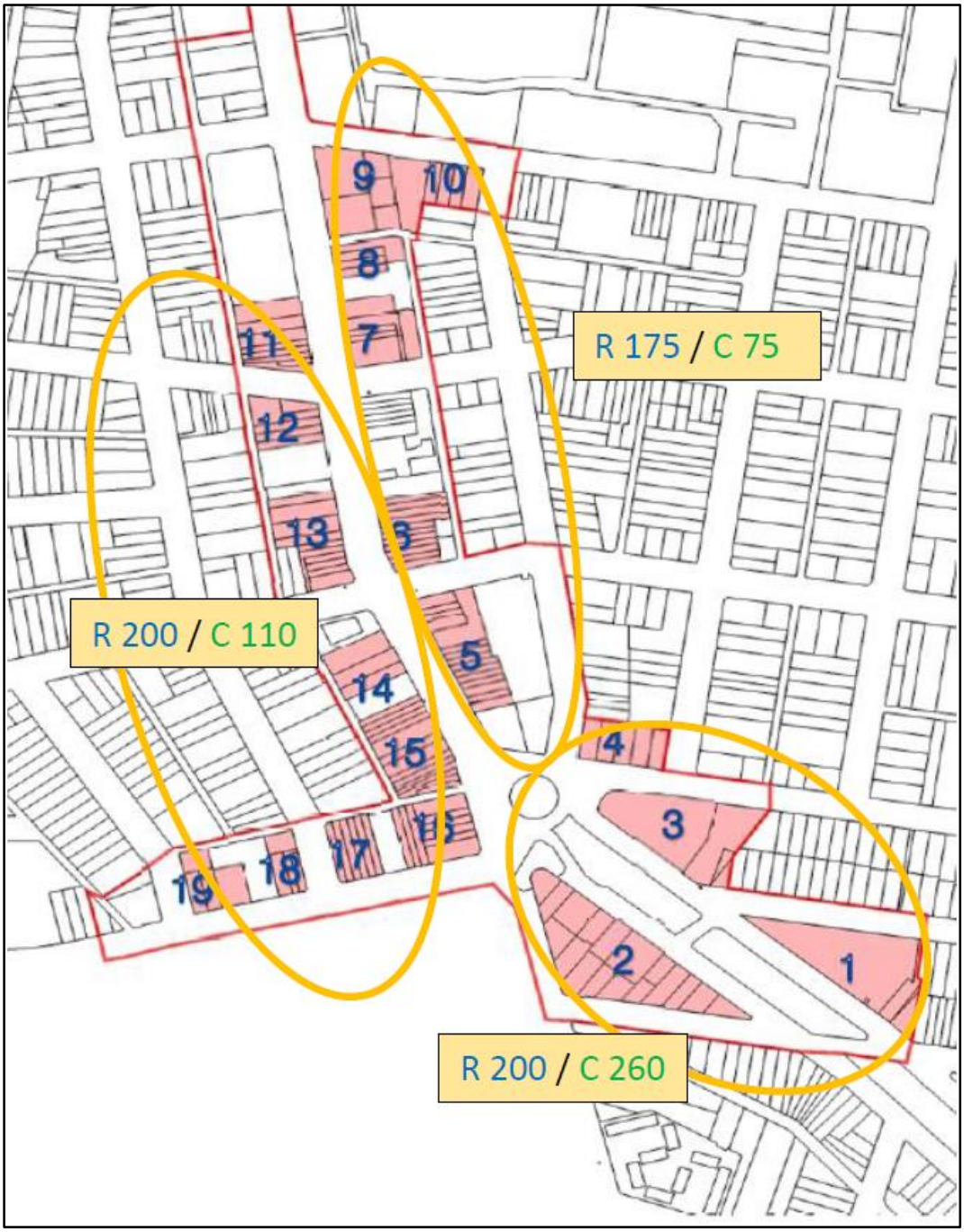


Figure 6: Kingsford Traffic Generation in peak one hour

3 Traffic Commentary on Proposed Public Realm and Footpath Upgrades

3.1 Public Realm Upgrades

The public realm upgrades proposed include footpath widening and full road closures. A high level assessment of their viability from a traffic movement and capacity viewpoint has been undertaken. Each proposal is discussed below and shown on the following pages. The plans show the Level of Service of each intersection expected in 2021 with LRT operational (Source: CSELR EIS Technical Paper 1 – Traffic Operations Nov 2013). Further traffic modelling will be undertaken as a second stage transport assessment to ensure integration of the proposed upgrades with the light rail implementation works.

3.1.1 Kensington (Plan 1)

Kensington Public School Playground (1)

No impact on traffic.

Duke Street Plaza (2)

Duke Street is currently one-way westbound with left turn entry only from Anzac Parade. Alternative access is available via Kensington Street from Todman Avenue with approximately 20 vehicles per hour expected to be diverted. The existing car parking can be retained in the dead end section of Duke Street that is not part of the plaza.

Bowral Street Plaza (3)

Bowral Street currently has left turn entry and left turn exit at Anzac Parade. Alternative access is available on parallel east west streets to the north and south and the level of traffic diversion will low on these local streets.

Uni Lodge Plaza (4)

This is an existing road closure and there will be no impact on traffic movements.

Addison Street Triangle Plaza (5)

There is a small car park for 9 cars including 1 accessible bay and 1 car share bay. The replacement of these car parking spaces should be factored into the wider LRT on-street car parking replacement program.

Kokoda Park (6)

No impact on traffic.

Todman Avenue Plaza (7)

No impact on traffic.

3.1.2 Kingsford (Plan 2)

Meeks Street Plaza (8)

Meeks Street provided all movement access at the traffic lights on Anzac Parade prior to its closure in July 2016 to facilitate the LRT Construction works. In March 2016, Council's traffic committee endorsed the permanent closure of Meeks Street to create a new public space.

According to Council, the recent Meeks Street closure has not created any significant access issues.

This will have a number of impacts:

- Access to Middle Lane, the local business and the Middle Land car park will be reduced.
- Additional right turn movements will occur at Barker Street which may impact traffic capacity.

Borrodale Road Widening (9)

This is an existing road widening and there will be no impact on traffic movements. No further widening of the footpath is possible.

Town Square (10)

No impact on traffic.

Market Site Corner (11)

Needs to be coordinated with the Nine Ways intersection upgrade to traffic signals which will dictate the extent of plaza possible.

Triangle Site Corner (12)

Needs to be coordinated with the Nine Ways intersection upgrade to traffic signals which will dictate the extent of plaza possible.

Daceyville Park (13)

No impact on traffic.

Nine Ways

The left turn slip lane from Gardeners Rd to Anzac Parade has been retained by the RMS in the proposed traffic signal upgrade of the intersection. If the slip lane was removed it would compromise the operations of the proposed traffic signals and impact on the bus stops that are located in the slip lane. The Anzac Parade to Rainbow Street left turn slip lane is also retained in the current RMS planning, however TfNSW has agreed to the closure of this slip lane.

Harbourne Road provides left turn out traffic movement only at Rainbow Street. I would recommend retaining the Harbourne Road exit as this provides a local circulation route for traffic, particularly trucks making deliveries to businesses and cars accessing car parks and on-street spaces.

3.2 Proposed Footpath Extensions

3.2.1 Kensington (Plan 1)

Carlton Street

The footpath extension could be accommodated with the removal of car parking.

Goodwood Street

The footpath extension could be accommodated when the petrol station is redeveloped.

Ascot Street

The footpath extension could be accommodated with the removal of car parking.

Todman Avenue East

There are two through traffic lanes at the traffic lights and a short third left turn lane. The left turn lane could be removed to accommodate the kerb extension if modelling shows that the capacity at the traffic lights is not impacted significantly.

Todman Avenue West

Widening of the footpath would be possible when the corner petrol station site is redeveloped. The existing bus stop would need to be accommodated immediately to the west of the footpath widening.

3.2.2 Kingsford (Plan 2)

Barker Street East

There are 2 westbound traffic lanes in Barker Street that will need to be retained for traffic capacity at the traffic lights. This footpath widening is not possible.

Barker Street West

This footpath widening is on the entry lane and could be accommodated. The traffic lane width to be retained needs to be checked against the turning path for the largest vehicle turning right from Anzac Parade if this movement is retained after introduction of the LRT.

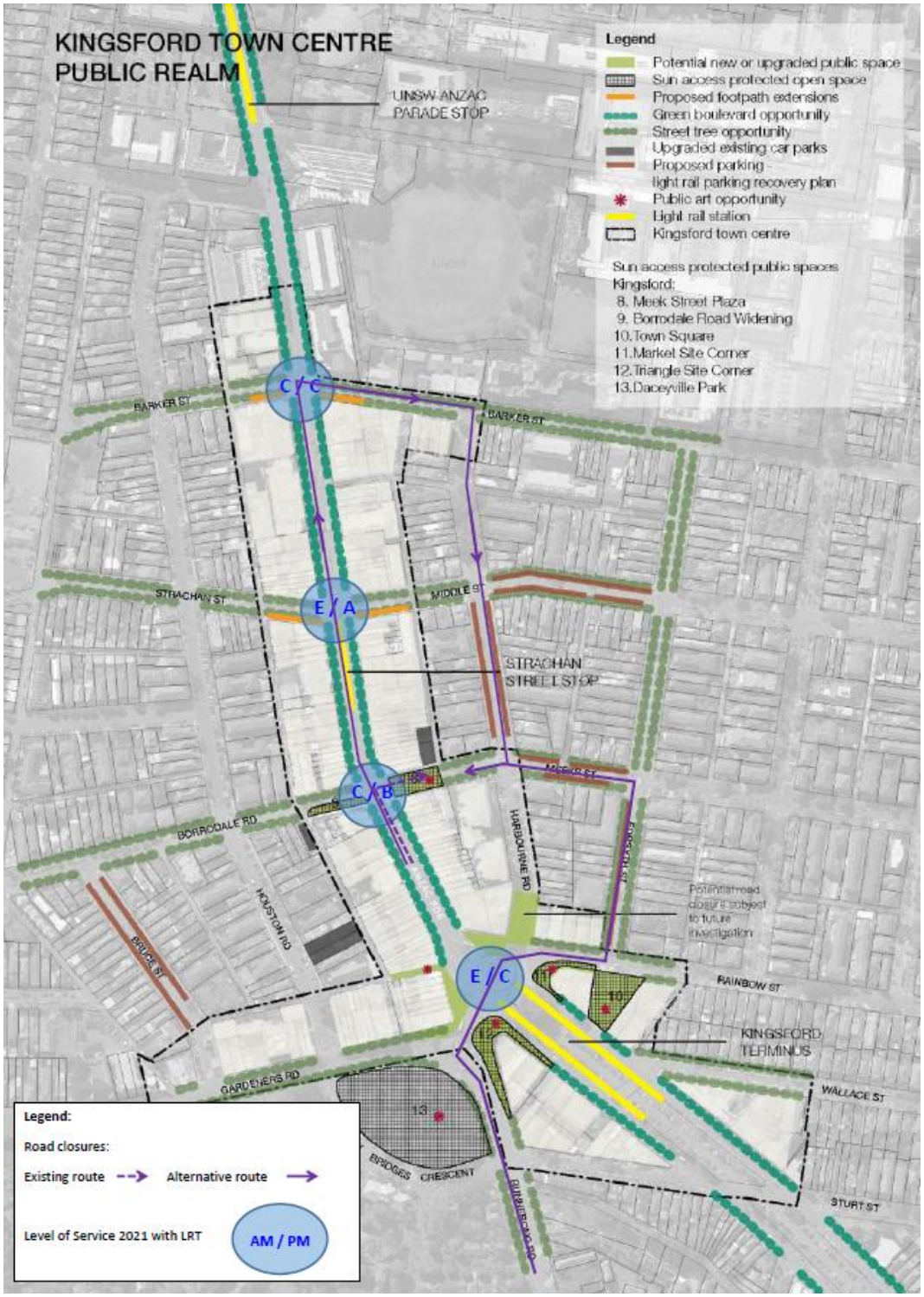
Middle Street

A footpath widening is already in place. This could be extended along Middle Street if required. Increasing the width via further extension into Middle Street would reduce traffic capacity at the traffic lights and is not recommended.

Strachan Street

A footpath widening is already in place. This could be extended along Strachan Street if required. Increasing the width via further extension into Strachan Street is not possible due to the single entry and exit lanes already at the minimal width at the traffic lights.

Plan 1 – Kensington public realm and footpath upgrades



Plan 2 – Kingsford public realm and footpath upgrades

4 Conclusions

Arup has provided a Stage 1 traffic and transport advice to inform the preparation of new planning controls for the Kingsford and Kensington town centres. A Stage 2 report is to be prepared in 2017 which will incorporate the findings of traffic modelling to further test the proposed dwelling growth and road closures.

The comprehensive planning review of the Kensington and Kingsford town centres is timely as both town centres are in the process of major transition stemming from the introduction of the Sydney CBD to South East Light Rail network along Anzac Parade, which forms the main transport corridor for these centres. To be completed by 2019, the light rail will not only modify people's travel behaviour and movement patterns, but will also result in considerable changes to the public domain resulting from the new infrastructure.

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The anticipated level of peak hour traffic has been considered for the potential development in the corridor. It would be expected that the majority of this traffic would access developments from the rear lanes and streets to the east and west of Anzac Parade allowing dispersion on local streets. The anticipated level of traffic should be able to be accommodated both from a traffic capacity and an environmental capacity on the access street system.

The public realm upgrades proposed include footpath widening and full road closures. A high level assessment of their viability from a traffic movement and capacity viewpoint has been undertaken. The majority are considered viable and will assist with creating a highly accessible precinct for public transport and active transport modes of travel. Further traffic modelling is required to ensure integration of the proposed upgrades with the light rail implementation works.