

Issue History

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Paramatta Road Corridor Canada Bay Stage 2

Modelling Outcome

1. Introduction

1.1 Overview

Bitzios Consulting was engaged to update the Canada Bay Stage 2 development plans associated with the PRCUTS Traffic and Transport study by revising population and employment forecast for the TfNSW travel zones within the Parramatta Road Corridor 'uplift area' and identifying new locations for the new proposed Stage 2 developments within the Canada Bay LGA. This includes an update to Stage 2 (2026-2036) population growth assumptions in specific locations within the City of Canada Bay (Council) Local Government Area (LGA). The proposed uplifts are located within the following STFM travel zone numbers:

- TZ706 – Burwood (North)
- TZ707 – Burwood (South)
- TZ719 – Bakehouse (North)
- TZ735 – Kings Bay (West)
- TZ740 – Bakehouse (South)
- TZ744 – Kings Bay (East)

The location of the STFM travel zones is shown in Figure 1.1

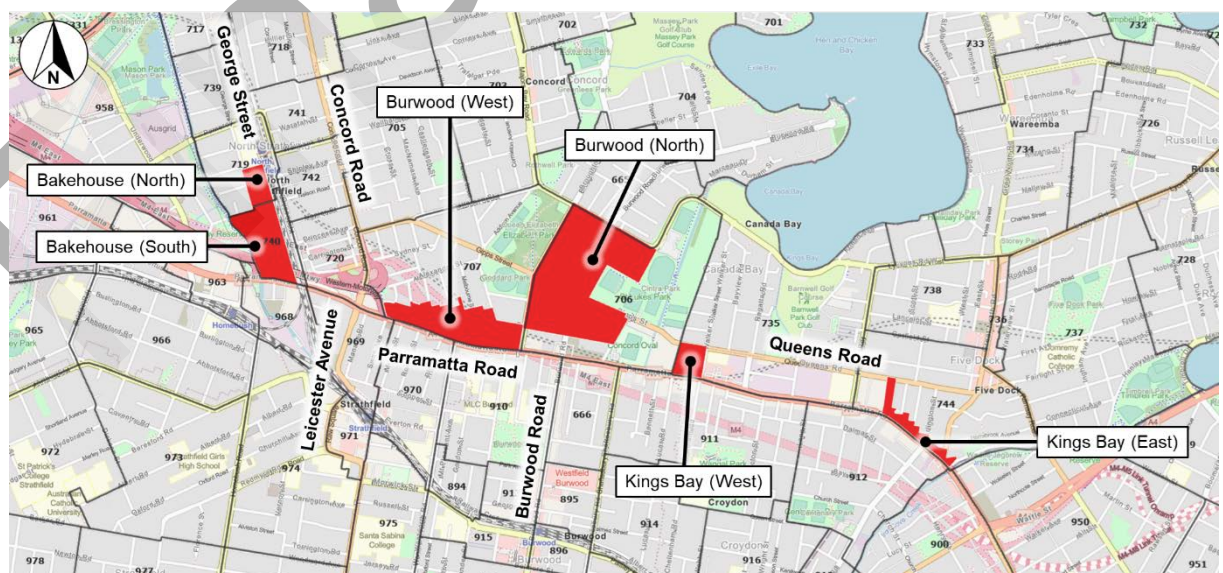


Figure 1.1: STFM Travel Zone

This technical note documents the estimation of the traffic generation of the updated Stage 2 population forecast. The estimated traffic generation figures were applied to a cordoned area of the latest PRCUTS AIMSUN microsimulation model (built in version 8.4.0 for

Strathfield, Canada Bay and Burwood LGAs PRCUTS study) to assess the traffic impact of the revised Stage 2 developments on the surrounding road network. Mitigation measures are proposed to reduce the traffic impact of updated Stage 2 population forecast.

2. Traffic Development

2.1 Population and Dwelling

Table 2.1 summarises the change in population and dwelling numbers based on the provided updated population forecast for each STFM travel zones. A population to dwelling ratio of 2.1 was used to calculate the difference in dwelling numbers due to the change in population forecast.

Table 2.1: Population and Dwelling Numbers

STFM	Precinct	Population 2036 Uplift			Difference in Dwelling Numbers
		PRCUTS	Updated	Difference	
735	Kings Bay (West)	6,531	5,767	-764	-364
744	Kings Bay (East)	970	1,382	412	196
706	Burwood (North)	3,058	5,882	2,824	1,345
707	Burwood (West)	1,697	2,507	810	386
719	Bakehouse (North)	1,280	769	-511	-244
740	Bakehouse (South)	0	905	905	431
Total		13,536	17,212	3,676	1,750

2.2 Traffic Generation

Traffic generation rate was obtained from *Transport for NSW's RMS Traffic Technical Direction TDT 2013/04 (2013)* for high-density residential development. The peak hour traffic generation rates of 0.19 trips per unit (dwelling) for AM Peak, and 0.15 trips per unit (dwelling) for PM Peak were used to calculate the traffic generation of the updated STFM travel zone locations. Furthermore, to determine the traffic distribution, the following assumptions were made:

- All traffic generations are light vehicles (cars)
- 80/20 split between in and out traffic during AM peak period, and vice versa for PM peak period
- 55/45 split between peak hour traffic and shoulder hour traffic in a two-hour period. Therefore, 82% of peak hour traffic was applied as shoulder peak hour traffic.

The traffic generation and distribution from the change in dwelling numbers, with the above assumptions, are detailed in Table 2.2 and Table 2.3 for the peak hour and shoulder hour, respectively.

Table 2.2: Traffic Generation and Distribution – Peak Hour

Precinct	AM Peak			PM Peak		
	Trips Generated	IN	OUT	Trips Generated	IN	OUT
Kings Bay (West)	-69	-14	-55	-55	-44	-11
Kings Bay (East)	37	7	30	29	24	6
Burwood (North)	256	51	204	202	161	40
Burwood (West)	73	15	59	58	46	12
Bakehouse (North)	-46	-9	-37	-37	-29	-7
Bakehouse (South)	82	16	66	65	52	13

Table 2.3: Traffic Generation and Distribution – Shoulder Peak Hour

Precinct	AM Peak			PM Peak		
	Trip Generated	IN	OUT	Trip Generated	IN	OUT
Kings Bay (West)	-57	-11	-45	-45	-36	-9
Kings Bay (East)	30	6	24	24	19	5
Burwood (North)	209	42	167	165	132	33
Burwood (West)	60	12	48	47	38	9
Bakehouse (North)	-38	-8	-30	-30	-24	-6
Bakehouse (South)	67	13	54	53	42	11

2.3 AIMSUN Zone (Centroid) Allocation

The estimated new Stage 2 traffic generation were allocated to the closest and most appropriate AIMSUN zone numbers. This also includes the inclusion of a new AIMSUN centroid (Centroid 110) for STFM 735 Kings Bay (West).

The original AIMSUN zone (Centroids 64 & 65) for STFM 735 Kings Bay (West) was an external connection located outside of the STFM zone via Harris Road. A new AIMSUN zone (Centroid 110) was added to appropriately represent the location of Kings Bay (West) Stage 2 uplift area. This process includes the removal of the original Stage 2 traffic generation from the external connection.

The new centroid location and updated Stage 2 estimated traffic generation are shown in Figure 2.1

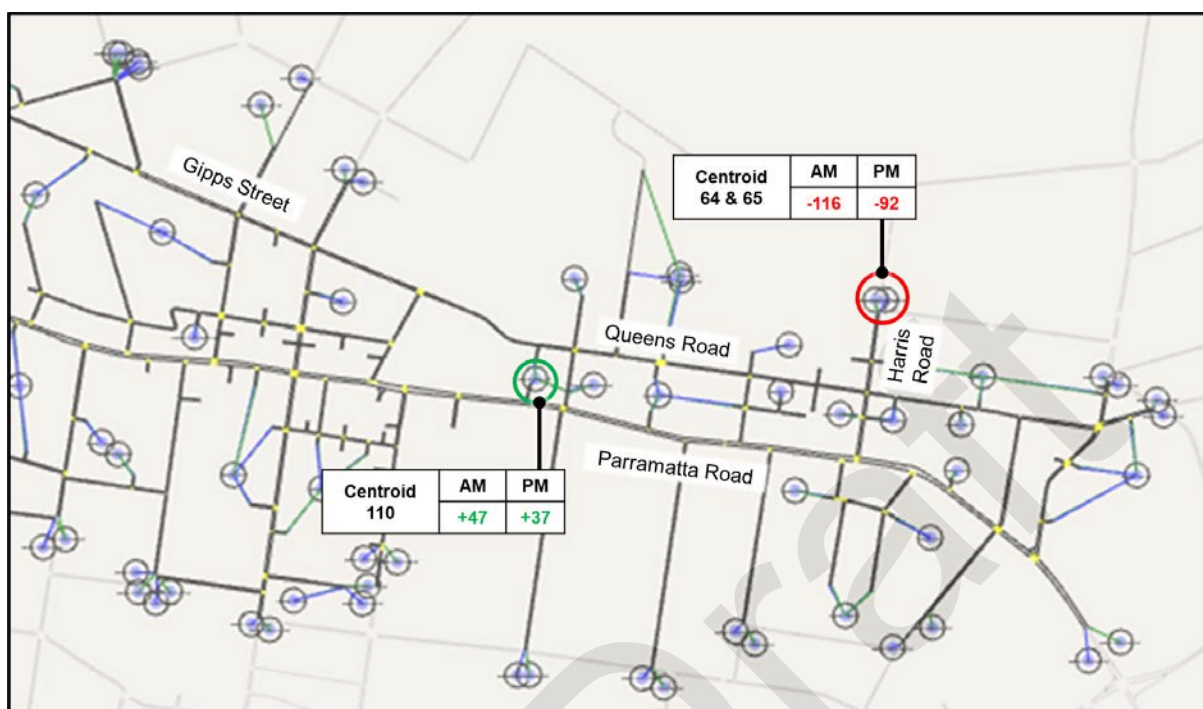


Figure 2.1: Kings Bay (West) – Centroid Relocation

Table 2.4 summarises the reallocated AIMSUN zone for the respective STFM zones.

Table 2.4: Allocated AIMSUN Zone numbers

STFM	Precinct	AIMSUN Centroid Number	
		Attraction Centroid	Generation Centroid
735	Kings Bay (West)	110	110
744	Kings Bay (East)	32	32
706	Burwood (North)	24, 58, 60	24, 59, 61
707	Burwood (West)	22, 23	22, 23
719	Bakehouse (North)	8	8
740	Bakehouse (South)	12	12

3. Traffic Impacts

3.1 Overview

The model outputs “link delays” and “link traffic flows” were used to highlight the traffic impacts of the updated Stage 2 population growth during the AM and PM peak periods. The following locations were identified to experience the most impact:

- Burwood North
- Kings Bay
- Concord
- Homebush

3.2 Concord

Parramatta Road / Leicester Avenue / Concord Road and Concord Road / Patterson Street are the main pinch points in the road network for vehicles accessing the Parramatta Road corridor. Figure 3.1 illustrates increased notable delays along Parramatta Road, Patterson Street, and Concord Road. However, the most significant increase in delay occurs along Wentworth Road depicting vehicles bypassing Leicester Avenue congestion to access Parramatta Road.



Figure 3.1: Concord Road / Patterson Street – AM Peak Link Delays (Seconds)

3.3 Burwood

The Burwood area had the highest additional traffic generated due to the updated Stage 2 population forecast, with more than 300 trips generated during the AM peak. Therefore, it is expected that the Burwood North area would be impacted by the amount of additional traffic.

Figure 3.2 shows the traffic impact occurring in the AM Peak with significant delays at the Burwood Road / Burton Street intersection on the eastern approach. This is mostly due to fewer opportunities for vehicles turning right against oncoming traffic flow on Burton Street at Burwood Road. As a result, this causes significant delays to the eastbound traffic which extend along Burton Street and Ada Street, impacting Broughton Street.



Figure 3.2: Burwood – AM Peak Link Delays (Seconds)

In the PM peak, shown in Figure 3.3, increased traffic along Gipps Street increases westbound delays from Broughton Street / Gipps Street intersection and beyond Loftus Street. Furthermore, this also impacts northbound traffic delays along Loftus Street encroaching onto Burton Street and Loftus Street intersection. The Figure 3.3 delays also depict vehicles utilising Loftus Street to bypass Burwood Road congestion.

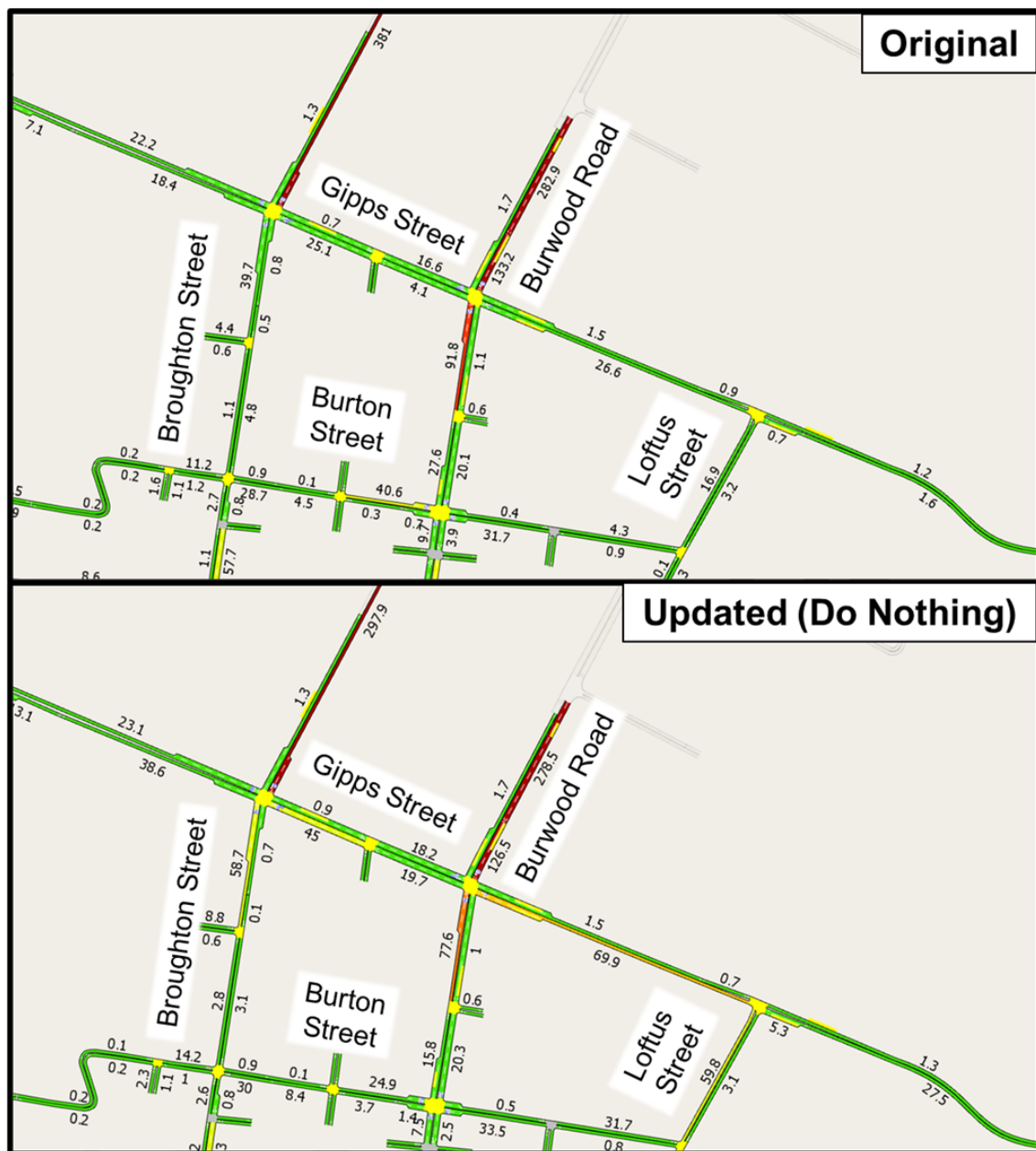


Figure 3.3: Burwood – PM Peak Link Delays (Seconds)

3.4

Kings Bay

Queens Road provides a parallel east-west connection to Parramatta Road for the Kings Bay area. Figure 3.4, shows increased delays at side streets along Queens Road. The additional traffic generated increased traffic demand along Queens Road. This results in less opportunities for vehicles from side streets to turn against the major Queens Road traffic flow, increasing delay.

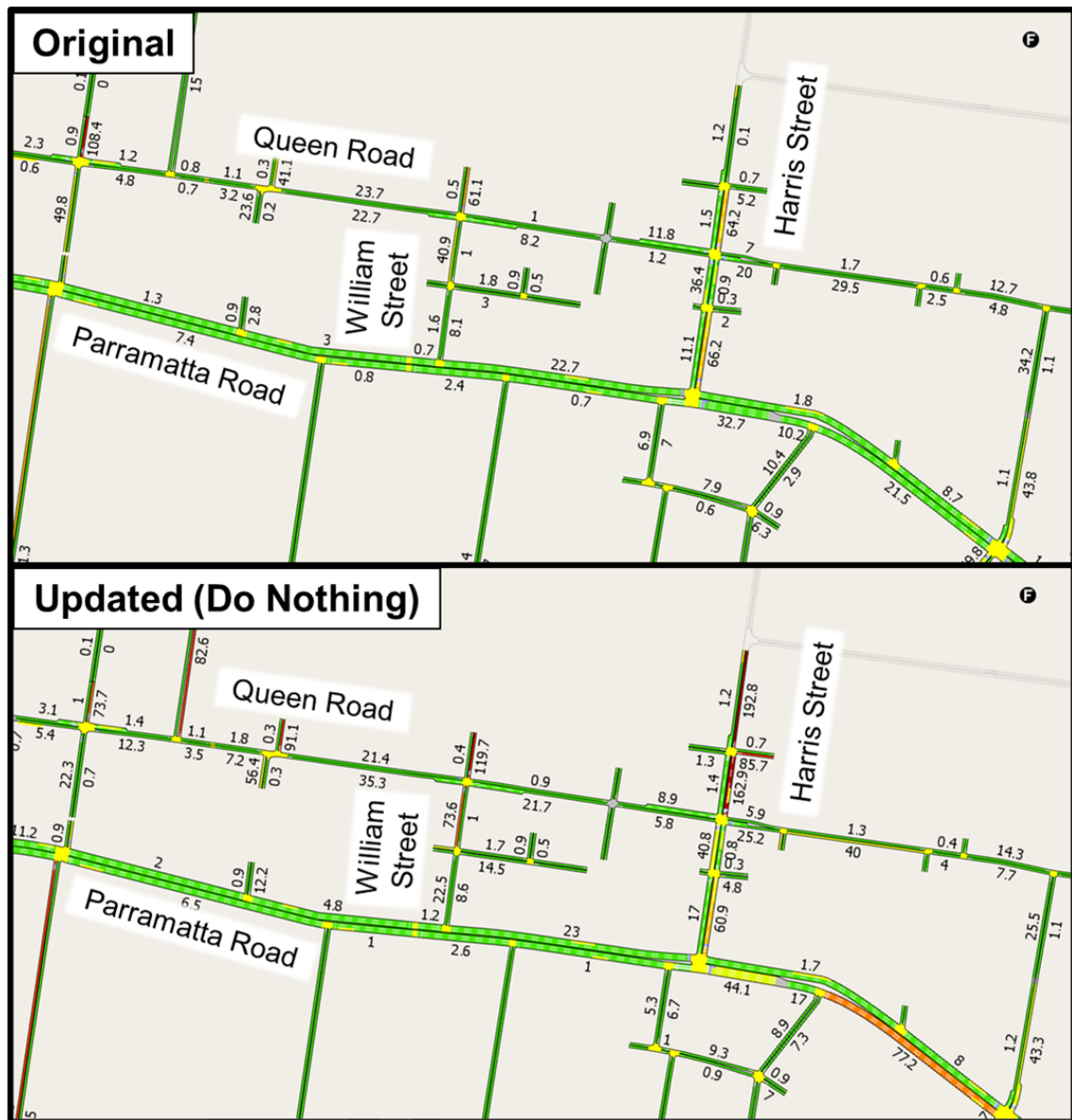


Figure 3.4: Kings Bay – PM Peak Link Delays (Seconds)

3.5 Homebush

Parramatta Road corridor provides the main eastbound connection to the eastern Sydney area for the Homebush area. However, the additional traffic generated affects the Parramatta Road corridor with increased eastbound demand. Figure 3.5 shows significant increase in delay times along Loftus Crescent and Crane Street, resulting in congestion within the Homebush area. Along Parramatta Road, eastbound delays have decreased as less traffic is able to enter from the Homebush area due to the congestion. The increased eastbound traffic along Parramatta Road impacts the Homebush area causing congestion in the local roads.

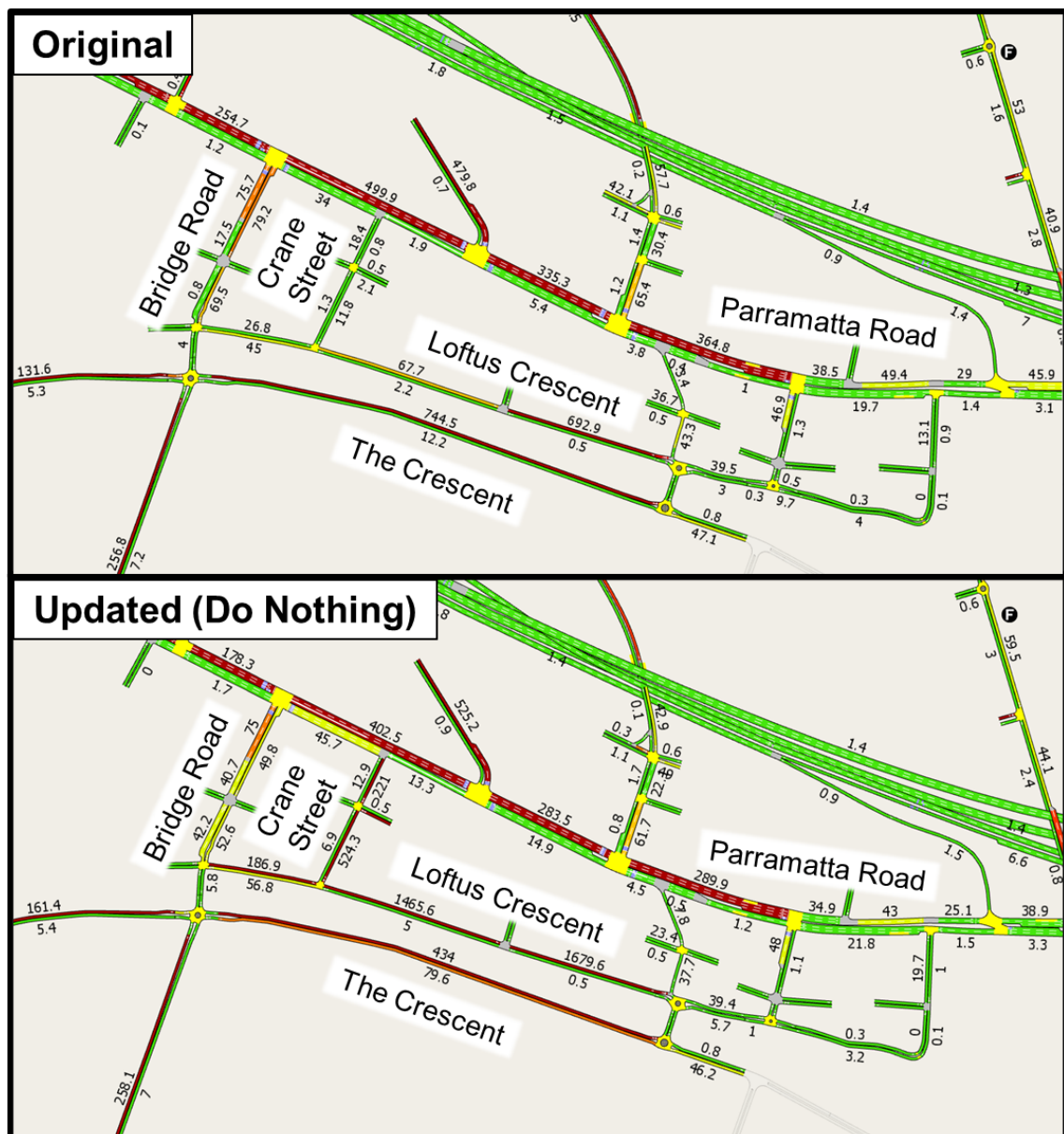


Figure 3.5: Homebush – AM Peak Link Delays (Seconds)

3.6 Traffic Flow

Figure 3.6 shows the traffic flow difference, in a 2-hour peak period, at sections along Parramatta Road, Patterson Street, Gipps Street, and Queens Road impacted by the updated Stage 2 population forecast. Although overall traffic generated had increased from the updated Stage 2 population forecast, certain areas in the road network showed decrease in traffic flow. By assessing the traffic impact, side streets and local roads are heavily impacted with increased delays, thus reducing the traffic flow entering Parramatta Road, Patterson Street, Gipps Street, and Queens Road. The shown reductions are mainly due to unreleased vehicles particularly during the PM peak when network is operating at its saturation level.

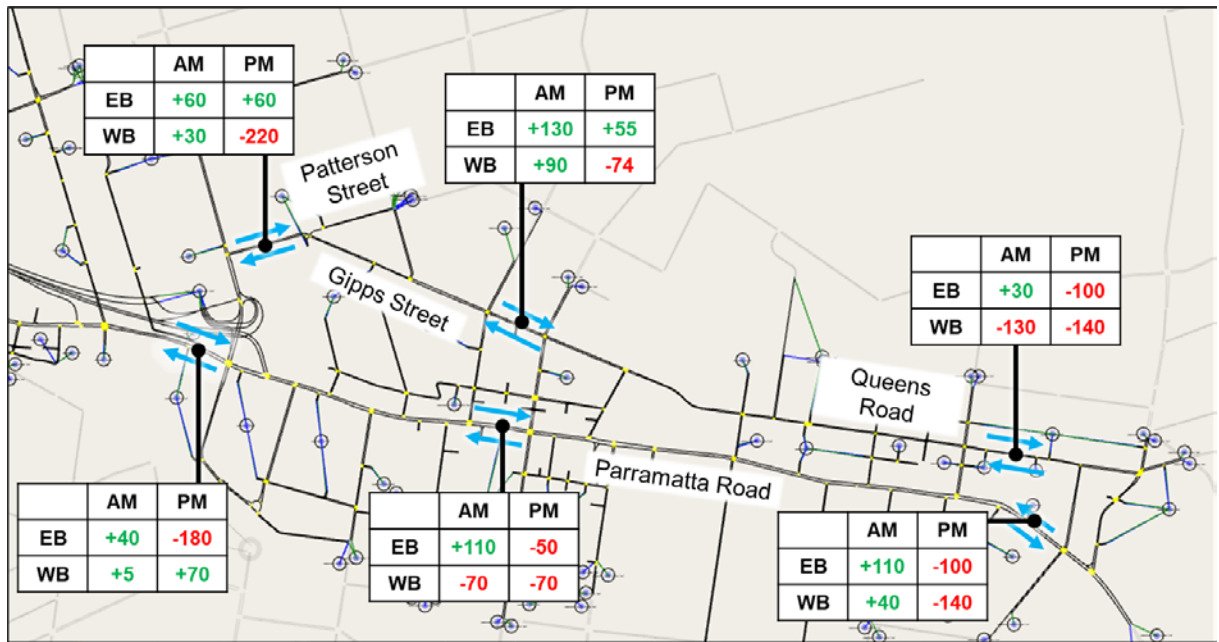


Figure 3.6: 2-Hour Traffic Flow Comparison

4. Assumption

4.1 Cordoned Off Area

To assist with the modelling process, the current AIMSUN 8.4.0 Paramatta Road model was cordoned to appropriately reflect the impacts of the updated Stage 2 population growth assumptions within the Canada Bay Local Government Area (LGA). The cordoning excluded the Homebush areas, and parts of North Strathfield and Burwood from the AIMSUN model. Furthermore, cordoning off the Homebush area helped with facilitating the congested traffic, mentioned in Section 3.5, and released the trapped flow into the AIMSUN model network. The extent of the cordoned area is shown in Figure 4.1.



Figure 4.1: Cordoned Area

5. Mitigation Measures

5.1 Overview

From Section 3, the updated Stage 2 population forecast shows traffic impacts on the Kings Bay, Burwood, and Concord areas. As such, road and intersection treatments are proposed across Council's LGA to facilitate the mitigation of the updated Stage 2 traffic impacts.

The proposed treatments are only recommendations to assist with the traffic impact mitigation. Continuous monitoring at the areas of concern would be recommended to determine if the road and intersection treatments would be required in the future. Uncertainty of the proposed mitigations are attributed to sensitivity of the AIMSUN model to traffic flow changes.

5.2 Intersection Upgrades

The following intersections are proposed to be upgraded:

- Queens Road and Arlington Street upgraded to traffic lights control
- Ada Street and Melbourne Street upgraded to a roundabout intersection

The location and the intersection layout of these proposed intersection upgrades is shown in Figure 5.1 and Figure 5.2.



Figure 5.1: Traffic Signal Upgrade – Queens Road / Arlington Street

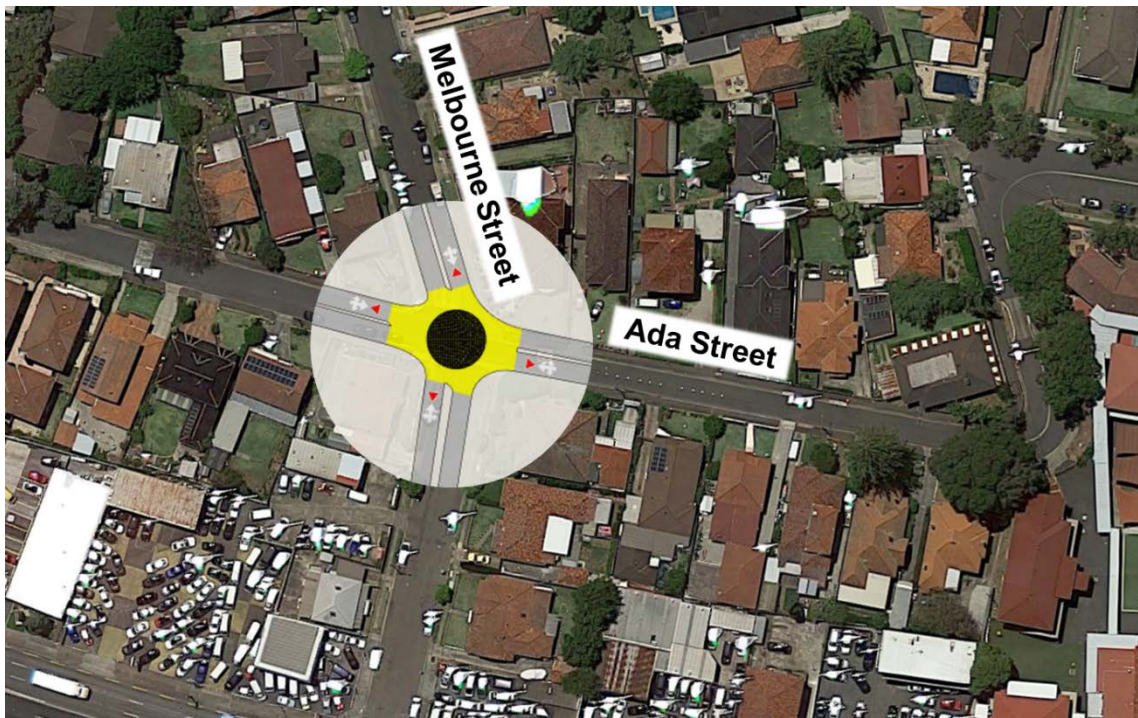


Figure 5.2: Roundabout Intersection Treatment – Ada Street / Melbourne Street

5.3 Right Turn Bans

Implementation of right turn bans would facilitate the improvement of through traffic movement and avoiding blockage of through traffic movements. These are proposed at the following locations, within Burwood North area:

- Broughton Street (South) to Gipps Street (East)
- Gipps Street (West) to Loftus Street (South)
- Burton Road (East) to Burwood Road (South)

All turn restrictions are recommended to be supported by a Traffic Management Plan (at the time of implementation) to assess the specific local impacts of any redirected traffic.

Location of these right turn bans are shown in Figure 5.3



Figure 5.3: Right Turn Bans

5.4

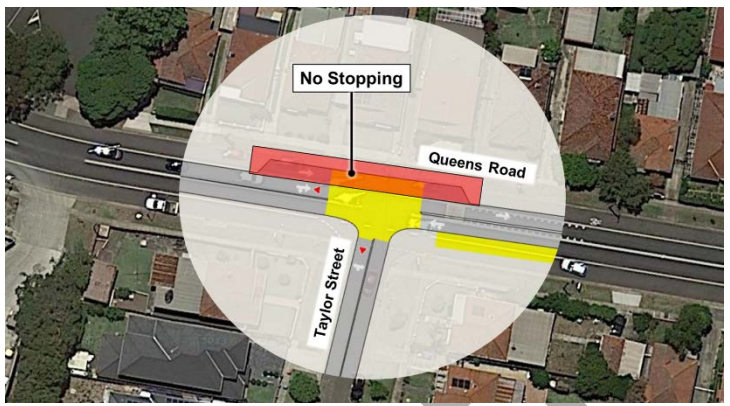

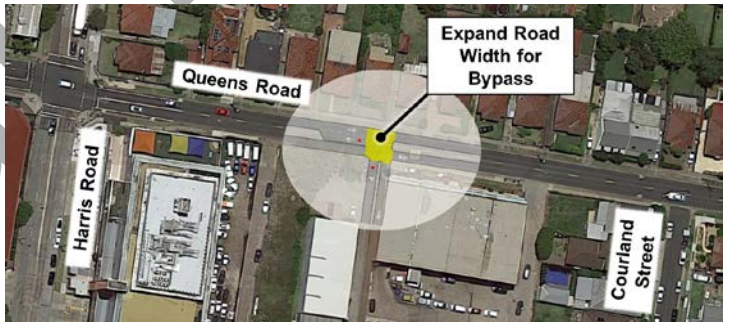
Bypasses

Bypasses are proposed along Gipps Street and Queens Road to help facilitate the flow of through movement traffic to go around right turning vehicles. The existing conditions of Gipps Street and Queens Road are two-way two-lane roadways. However, there are certain section of the roadway that are too narrow for kerbside parking. As such treatments to implement bypasses differs for each intersection along Gipps Street and Queens Road roadway.

Table 5.1 summarises the locations and the treatment required for the implementation of bypass treatment.

Table 5.1: Bypass Locations and Treatment Required

Location	Treatment Required	Photo
Gipps Street / Leigh Avenue	Change No Parking to No Stopping on the northern side	

Location	Treatment Required	Photo
Queens Road / Taylor Street	Remove parking with No Stopping on the northern side	
Queens Road / Bayview Road	Remove parking with No Stopping on the southern side	
Queens Road / Regatta Road	Remove parking with No Stopping on both sides	
Queens Road to the commercial developments, between Harris Road and Courland Street	Expand road width	

It is noted by Council that a separated cycle lane is planned along Queens Road. Therefore, implementing the treatments required along Queens Road at Bayview Road, and Regatta Road may require additional land acquisition.

5.5

New Approach Lane

A new northbound approach lane is proposed on the southern leg of Queens Road and William Street intersection to facilitate the northbound traffic flow from Parramatta Road to Queens Street. Further investigation for an alternative north-south connection showed that there are opportunities to implement this upgrade along Regatta Road. However, in the AIMSUN model, Regatta Road is disconnected into two separate roadways and does not facilitate a north-south movement. As such, continual monitoring and further investigation is required to determine the appropriate location for this upgrade treatment.

Figure 5.4 illustrates the treatment required to implement the new northbound approach lane on William Street.

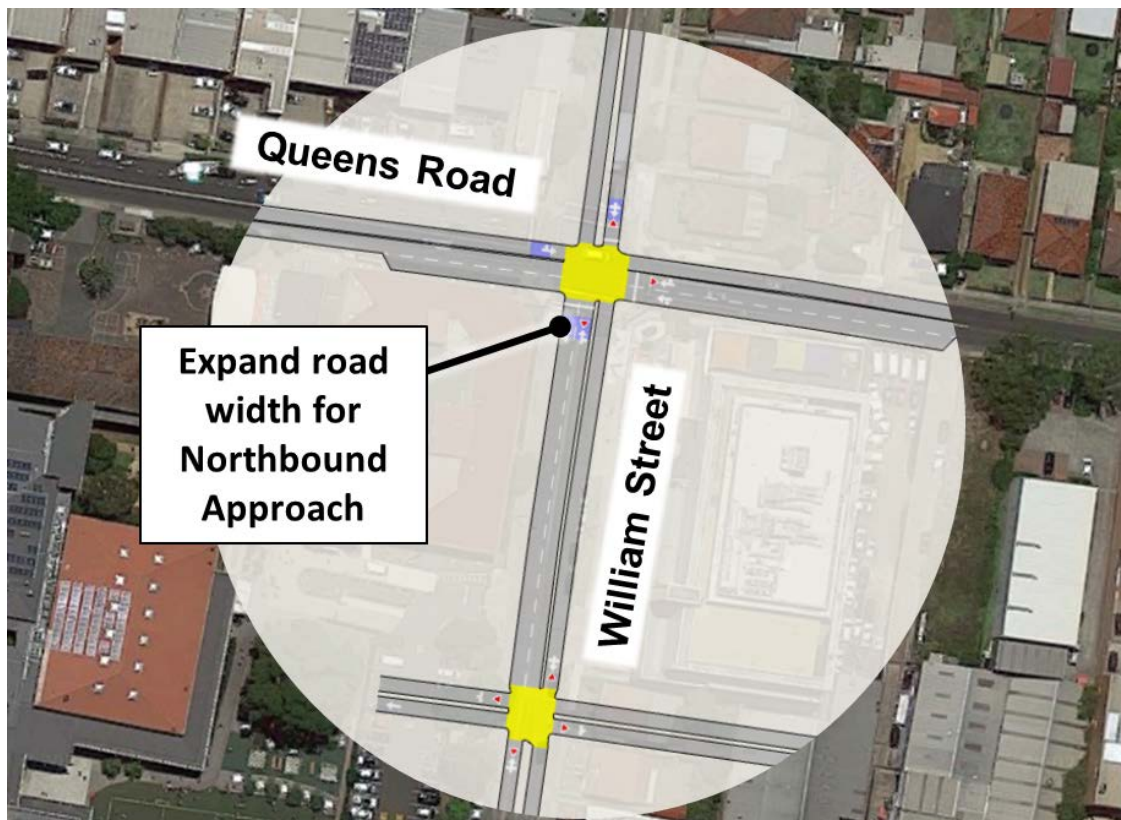


Figure 5.4: New Northbound Approach Lane on William Street

5.6 Parking Removal

Removal of kerbside parking along Harris Road is proposed to convert the roadway from two-lane to four-lane roadway during peak hours. The parking ban could be extended if required during the day. This will improve the capacity and traffic flow of the north-south movement between Parramatta Road and Queens Road.

The bus stops along Harris Road will be retained as per existing and operate as in-lane bus stops.

Figure 5.5 shows the recommended parking removal by implementing no stopping along Harris Road during peak hours.

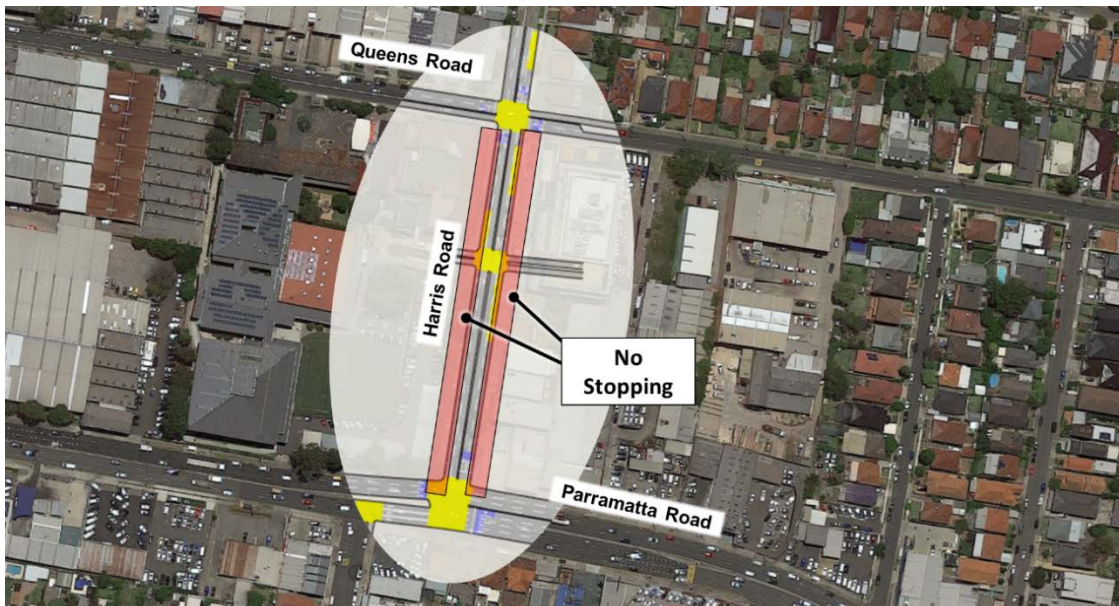


Figure 5.5: Parking Removal along Harris Street

6. Mitigation Results

6.1 Concord

Although no mitigation measures are proposed in the Concord area, it inadvertently impacted the overall road network. Figure 6.1 shows significant decrease in delay along Concord Road, Leicester Avenue, and Wentworth Road from the effects of the mitigation measures.

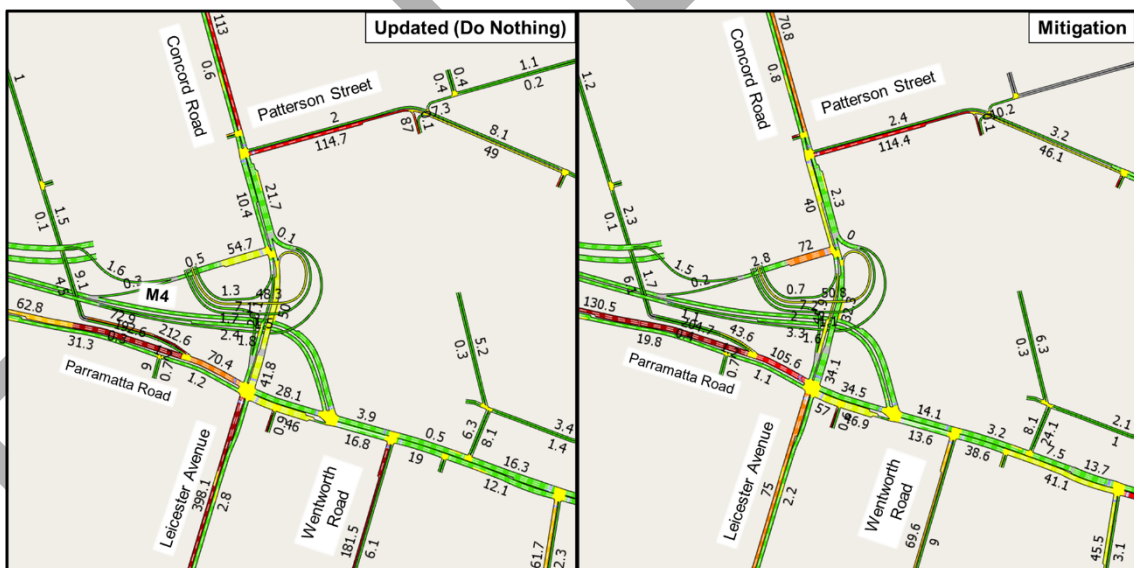


Figure 6.1: Concord – PM Peak Link Delays (Seconds)

6.2 Burwood

By implementing a right turn ban on Burton Street (west) to Burwood Road (South) alleviates the eastbound congestion at Burwood Road and Burton Street intersection. This mitigation impact of the right turn ban is shown in Figure 6.2.

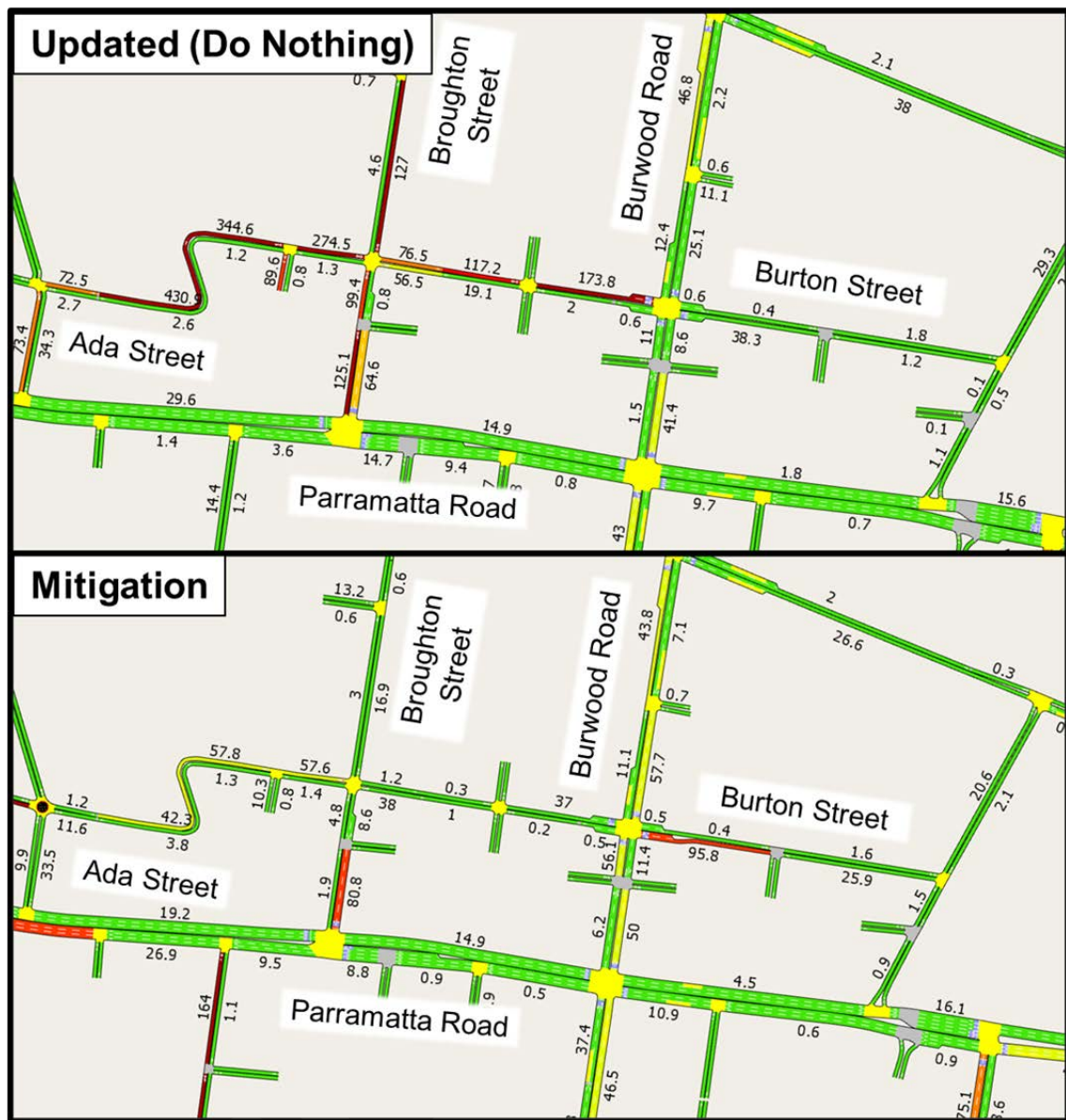


Figure 6.2: Burwood – AM Peak Link Delays (Seconds)

6.3

Kings Bay

Implementing intersection upgrades along Queens Road significantly reduces delays on the side streets. The mitigation impact is notable along William Street with northbound delays reduced by more than 100 seconds. The impact of the series of intersection upgrades is shown in Figure 6.3.



Figure 6.3: Kings Bay – AM Peak Link Delays (Seconds)

7. Strategy Updates

7.1 Overview

A Traffic and Transport Study report had been prepared for the Parramatta Road corridor area within City of Canada Bay, together with Burwood Council and Strathfield Council Local Government Area boundaries (Ref: Bitzios, *P5769.005R Parramatta Road Corridor Study Traffic and Transport Study and Action Plan*). As part of the study report, a consolidated action plan was issued that incorporated proposed road upgrades works, public and active transport improvements and upgrades, and parking policies.

As a result of modelling the traffic impacts of the updated Stage 2 population forecast, the action plan needed amendments to incorporate the mitigation measures, detailed in Section 5.

7.2 Parking Policies

The Stage 2 precincts have been assessed in terms of proximity and coverage of public transport as the basis for defining the levels of development parking that ought to be considered. The precincts have been categorised into three 'parking transition' types:

- **P1** - Excellent Public Transport Provision: Adjust parking provision rates to lowest level (e.g. near the proposed Burwood North Metro Station)
- **P2** - Good Public Transport Provisions: Adjust parking provision rates down to moderately lower rates
- **P3** - Limited or no reliable public transport provision: Unchanged parking provision rates.

The parking areas were classified based on the density of nearby public transport facilities (and their areas of influence) as well as the hierarchy of services.

7.3 Parking Restrictions

Parking restrictions were proposed as a form of a weekday peak period 'No Parking' or 'No Stopping'. It is recommended to incorporate this parking restriction with bypass treatments along Queens Road and Gipps Street, described in Section 5.4, to cater for right turn movements into the side streets. Furthermore, peak hour parking restrictions would not actively encourage traffic to bypass through local side streets. The locations are, including both new and previously proposed:

- P1 – Bridge Road, Homebush between Parramatta Road and Loftus Crescent
- P2 – Burwood Road, Burwood between Wilga Street to the south and Burton Street north of Parramatta Road
- P3 – Harris Road, Five Dock between Parramatta Road and Kings Road
- P4 – Queens Road, Five Dock between Arlington Street and Great North Road
- P5 – Gipps Street / Leigh Avenue, Concord eastbound kerbside parking
- P6 – Queens Road / Taylor Street, Canada Bay eastbound kerbside
- P7 – Queens Road / Bayview Road, Canada Bay eastbound kerbside parking on approach
- P8 – Queens Road / Regatta Road, Canada Bay on both approaches

Both new and previously proposed parking restrictions are shown in Figure 7.1.

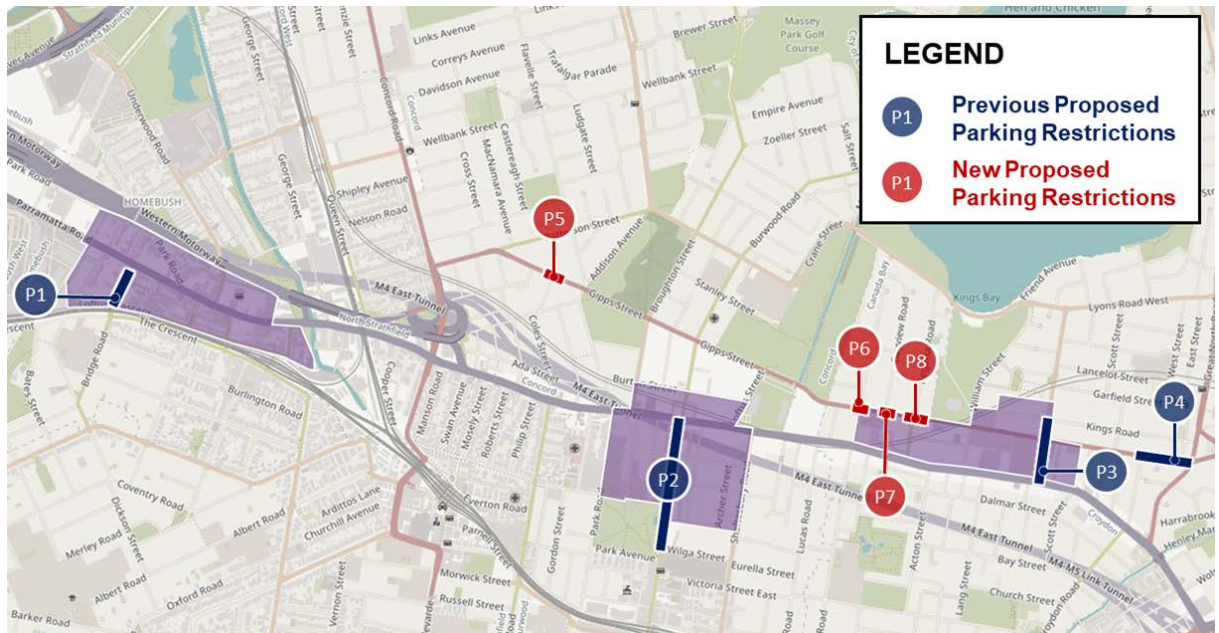


Figure 7.1: Proposed Peak Hour Parking Restrictions

7.4 Bakehouse

7.4.1 Development Summary

Bakehouse precinct is comprised of both Bakehouse North and Bakehouse South areas. The Bakehouse precinct is centred along George Street, north of Parramatta Road. The precinct primarily consists of commercial centre (E2) along George Street and some medium density residential (R3) along the rail corridor. The precinct's residential land use will be retained but with higher densities. However, the commercial centre rezoned will need to be rezoned to residential, or similar, to accommodate the additional population forecast by Stage 2.

The precinct proposed Stage 2 zoning area is shown in Figure 7.8.



Figure 7.2: Bakehouse Precinct Stage 2 Zoning Area

7.4.2 Integrated Strategic Response

An integrated local area strategic response has been developed for the Bakehouse precinct, with the following measures considered:

- Public transport upgrades
- New pedestrian connections and footpaths
- New cycleway connections
- Parking provision strategies and restrictions
- Car share provisions
- Local street network changes.

The Burwood North Precinct integrated strategic response is shown in Figure 7.9.

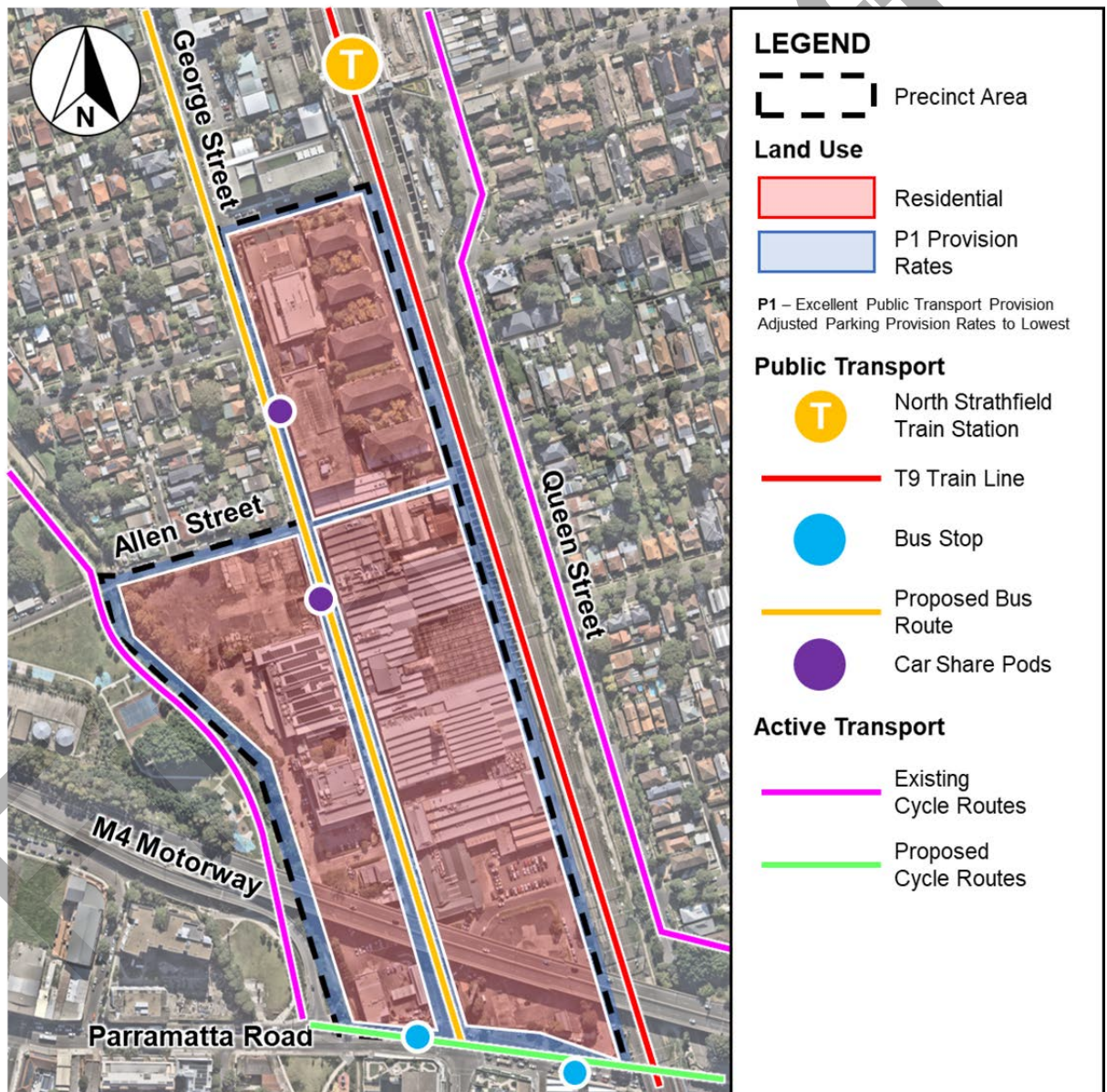


Figure 7.3: Bakehouse Precinct Integrated Strategic Response

7.4.3 Public Transport Initiative

Bakehouse precinct is adjacent to the T9 Line and North Strathfield Station, North of the precinct. South of the precinct is service by buses that provides key connections to Burwood, Strathfield, Parramatta and Rhodes.

As part of the key public transport initiatives for the Homebush North precinct, north of the Bakehouse precinct, a new bus route is proposed to connect Homebush North and Concord West via North Strathfield along George Street, including the Bakehouse precinct area. This will provide bus connectivity to the surrounding residential and commercial neighbourhoods. Consultation with TfNSW is required for the ultimate route design.

The existing and proposed public transport improvements in the Bakehouse precinct are shown in Figure 7.4.



Figure 7.4: Bakehouse Precinct – Public Transport Improvements

7.4.4 Active Transport Initiative

Commercial development surrounds the George Street corridor from Parramatta Road, therefore, it is expected that pedestrian activity in is relatively high. Pedestrian facilities along George Street have been well provided with wide footpaths, pedestrian crossings, High Pedestrian Activity Area, and kerb extensions to promote walking activity within the precinct.

The precinct is well connected to the surrounding cycle network. Currently, there are two cycle routes adjacent to the precinct:

- Along Queen Street, east of the rail corridor
- Along the western side of Powells Creek,

To further encourage cycling activity in the precinct, east-west cycle route along Parramatta Road should be provided to connect the Queen Street and Powells Creek cycle routes..

The proposed active transport improvements in the Bakehouse precinct are shown in Figure 7.5.



Figure 7.5: Bakehouse Precinct – Active Transport Improvements

7.4.5 Parking Initiative

Bakehouse precinct has excellent public transport coverage with a train station on the north of the precinct, bus facilities on the south of the precinct, and a proposed bus route along George Street allows resident to access key destinations around Sydney and Parramatta. Therefore, this precinct should be suitable for a 'P1' parking supply categorisation, shown in Figure 7.6.



Figure 7.6: Bakehouse Precinct – Parking Initiatives

7.4.6 Car Share Initiative

Bakehouse precinct is well covered with two carshare pods located centrally within the precinct, along George Street. As the proposed parking is adjusted to the lowest, additional car share pods would benefit the precinct. Ideally, additional car share pods should be located near the train station, along or near Hamilton Street East.

Figure 7.7 shows the existing car share pods located within Bakehouse precinct.

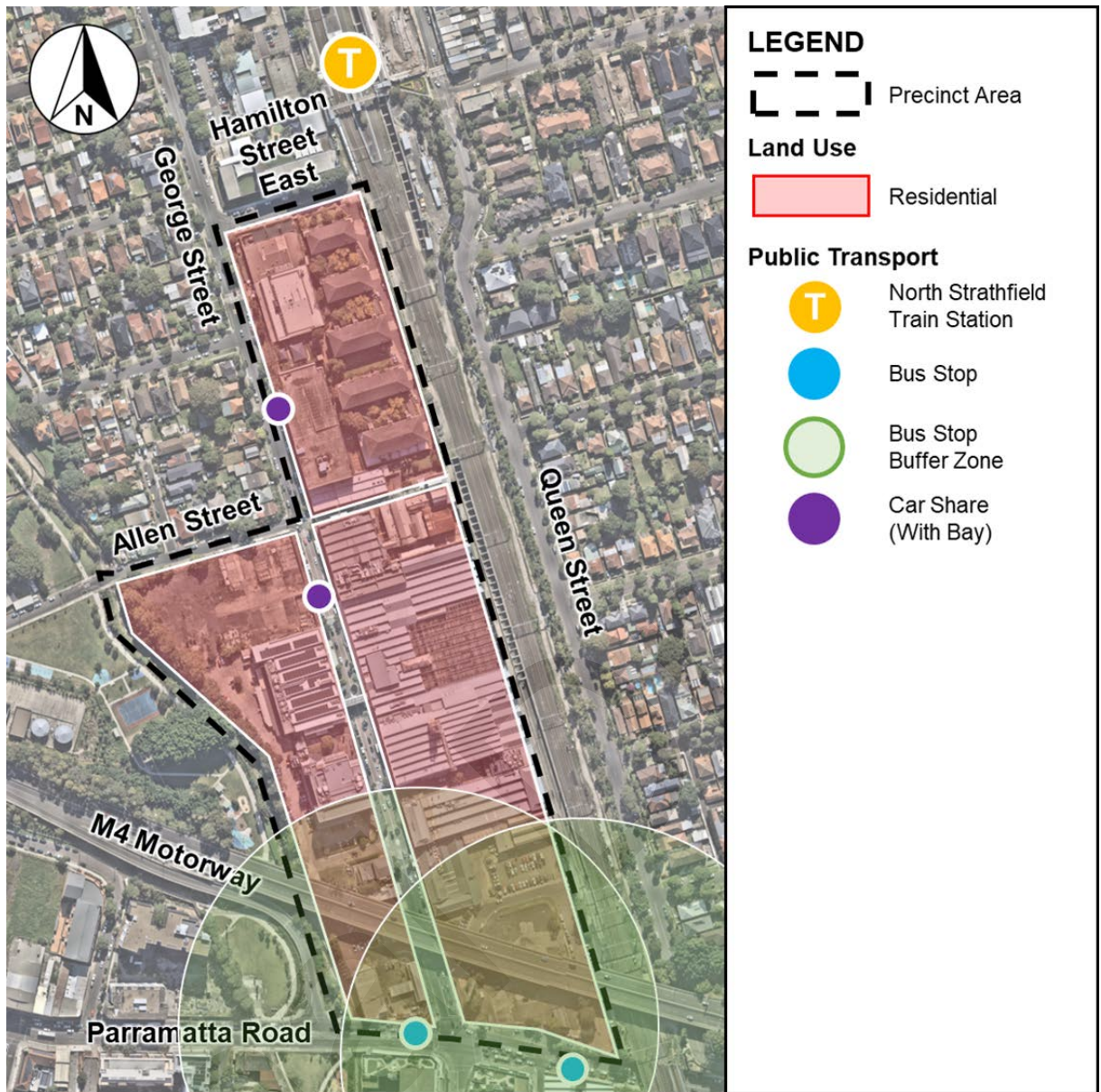


Figure 7.7: Bakehouse Precinct – Car Share Initiative

7.5 Burwood North Precinct

7.5.1 Development Summary

The Burwood North Precinct is centred along Burwood Road, between Burton Street and Stanley Street. the precinct current land use is comprised of a mixture of low density (R2) and medium density (R3) residential with some local centres (E1) along Crane Street intersections. The precinct residential land use will be retained but with higher densities. Most of the residential developments are located within convenient walking distance to the proposed Burwood North Metro Station and bus stops. The precinct Stage 2 zoning area and the future Burwood North Metro Station is shown in Figure 7.8.

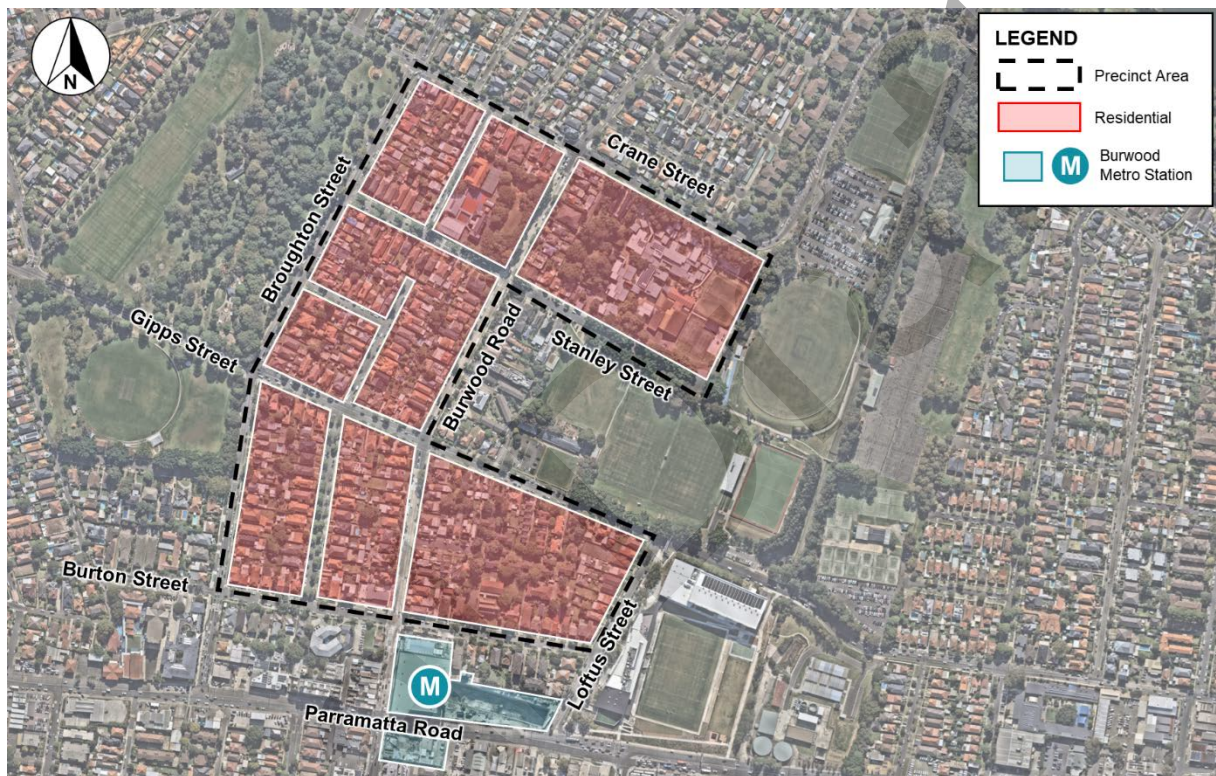


Figure 7.8: Burwood North Precinct Stage 2 Zoning Area

7.5.2 Integrated Strategic Response

The Stage 2 population forecast from the Burwood North Precinct have triggered the need for a set of road network upgrades as well as active transport and public transport improvements to cater for future Stage 2 traffic demands. The following measures have been considered:

- Road network upgrades, including new and upgraded traffic signals
- New pedestrian connections and footpaths
- New cycleway connections
- Parking provision strategies and restrictions
- Local street network changes.

The Burwood North Precinct integrated strategic response is shown in Figure 7.9.



Figure 7.9: Burwood North Precinct Integrated Strategic Response

7.5.3 Public Transport Initiatives

The Burwood North Precinct is adjacent to the future Burwood North Metro Station, southwest corner of Burwood Road / Burton Street intersection. The future Metro West line will provide excellent public transport connectivity to Parramatta, Sydney CBD, Bankstown and northwest Sydney.

The existing and planned public transport facilities in the Burwood North Precinct are shown in Figure 7.10.

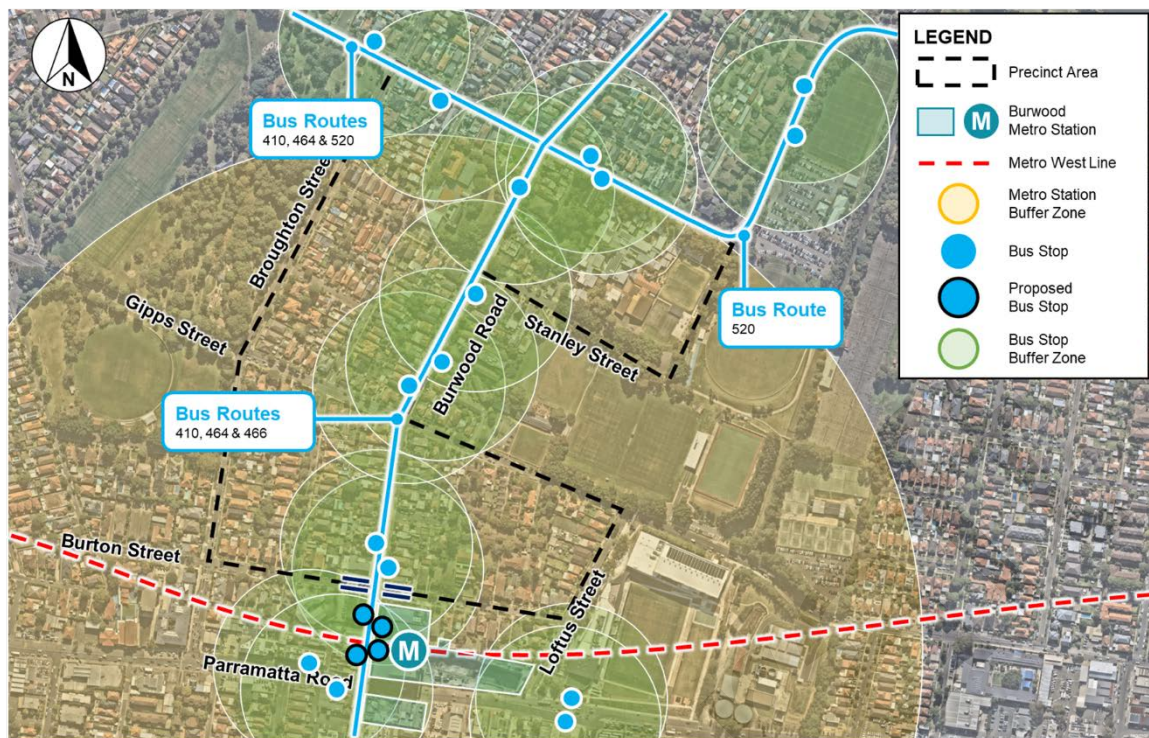


Figure 7.10: Burwood North Precinct – Public Transport Coverage

7.5.4 Active Transport Initiatives

To encourage increased walking and cycling to, from and within this precinct, east-west and north-south pedestrian links have been proposed for the residential areas of the Burwood North Precinct. The residential areas are still quite large and could be divided further by local laneways as redevelopment occurs. Furthermore, these laneways would provide a pedestrian link to St Lukes Park, and to Burwood North Metro Station.

Additional cycle routes are proposed along the following:

- Along Burton Street, between Broughton Street and Loftus Street. This aims to connect the future Burwood North Metro Station and surrounding precinct with the existing cycle network via the off-road cycleway on Broughton Street.
- Along Parramatta Road, between Neich Parade and Burwood Road. With Neich Parade being the premier north-south cycle route within the precinct, an enhancement of route connectivity to and from the existing facilities links the route between Park Road and Neich Parade, improving cycling options around the future Burwood North Metro Station.

Council has proposed a shared path along the northern side of Parramatta Road. This would enhance the east-west cycling connectivity between existing north-south cycle routes that crosses Parramatta Road.

Burwood North Metro Station has planned laneways, pedestrian footpaths and shared zones around the Metro station and proposes an underground pedestrian tunnel crossing Parramatta Road (to be accessible during Metro operating hours). The laneways and pedestrian tunnels provide pedestrian links across Parramatta Road and between Parramatta Road and Burton Street as part of the Burwood North Metro station structure plan. These facilities links will improve active transport connectivity between Burwood North precinct and Parramatta Road.

The existing infrastructure and proposed active transport improvements are shown in Figure 7.11.

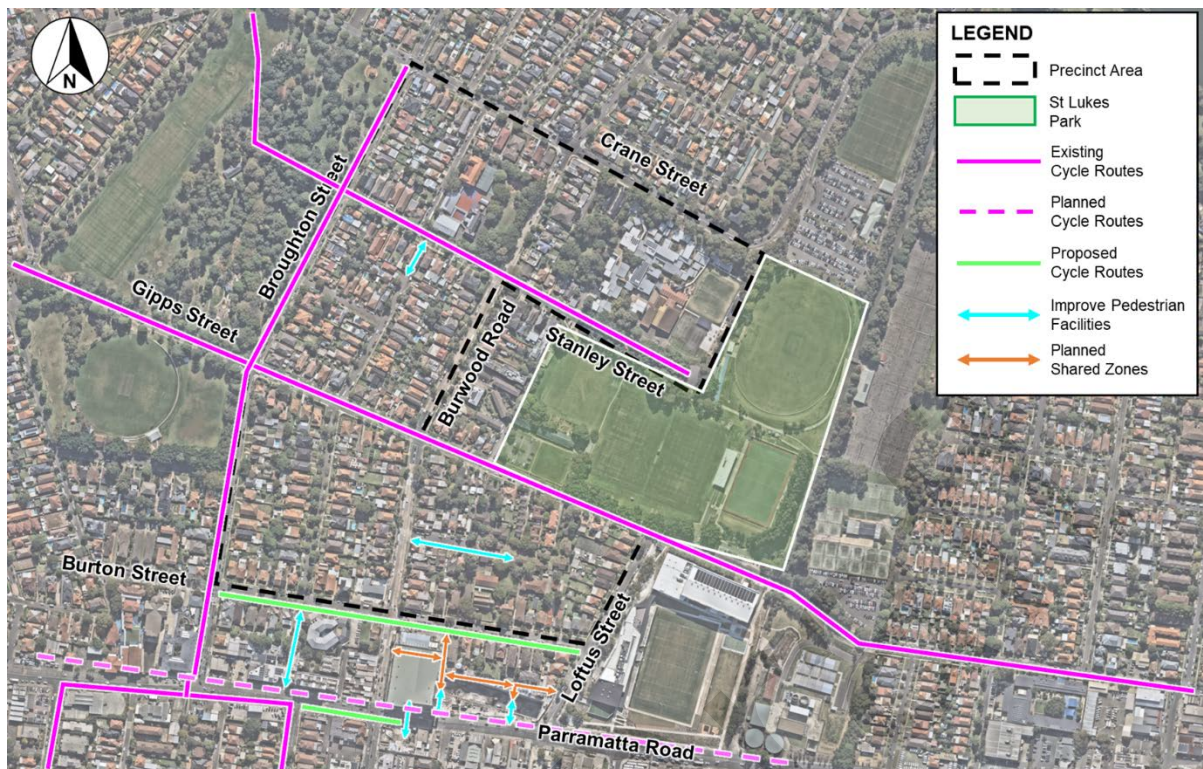


Figure 7.11: Burwood North Precinct – Active Transport Improvements

7.5.5 Parking Initiatives

The Burwood - Concord precinct has excellent public transport coverage, with most of the precinct within a reasonable walking distance of high frequency bus routes along Burwood Road and Crane Street. In conjunction with the incoming Metro station on the southern side of the precinct, the entire precinct should be subject to the 'P1' parking category with maximum parking rates used rather than minimum rates.

The proposed traffic upgrade at Burwood Road / Burton Street will require removal of on-street parking south of the precinct border. This will result in a loss of around 8 on-street parking spaces along Burton Road.

The proposed changes to parking rates and parking restrictions are shown in Figure 7.12.

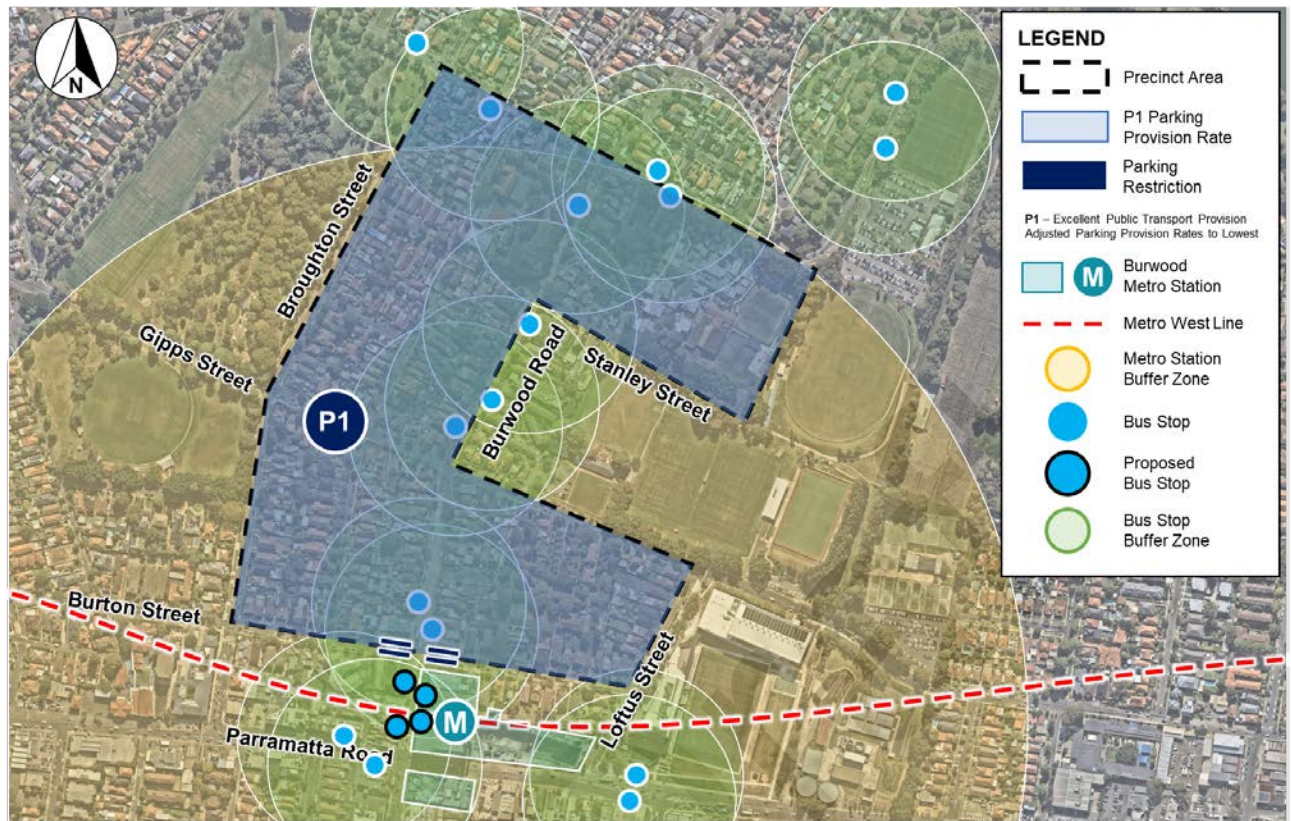


Figure 7.12: Burwood North – Proposed Parking Initiatives

7.5.6 Car Share Initiative

No car share pods are located within or proximity to the Burwood North precinct. Redevelopment of the precinct provides an opportunity to provide more dedicated shared parking bays. These should be located along Burwood Road to be centrally located within the precinct, and along Burton Street to be in proximity to the Burwood North Metro Station. Implementing dedicated shared parking bay will facilitate with the proposed 'P1' parking provision adjustment to the lowest.

7.6 Burwood West Precinct

7.6.1 Development Summary

The Burwood West Precinct is along the northern side of Parramatta Road, between the M4 Motorway interchange and Broughton Street. The precinct existing land use is primarily comprised of medium density residential (R3) with productivity support (E3) along Parramatta Road. The precinct's residential land use will be retained but with higher densities than the existing development. However, the productivity support should be rezoned to residential, or similar, to accommodate the additional population forecast by Stage 2.

The precinct Stage 2 proposed zoning area is shown in Figure 7.13

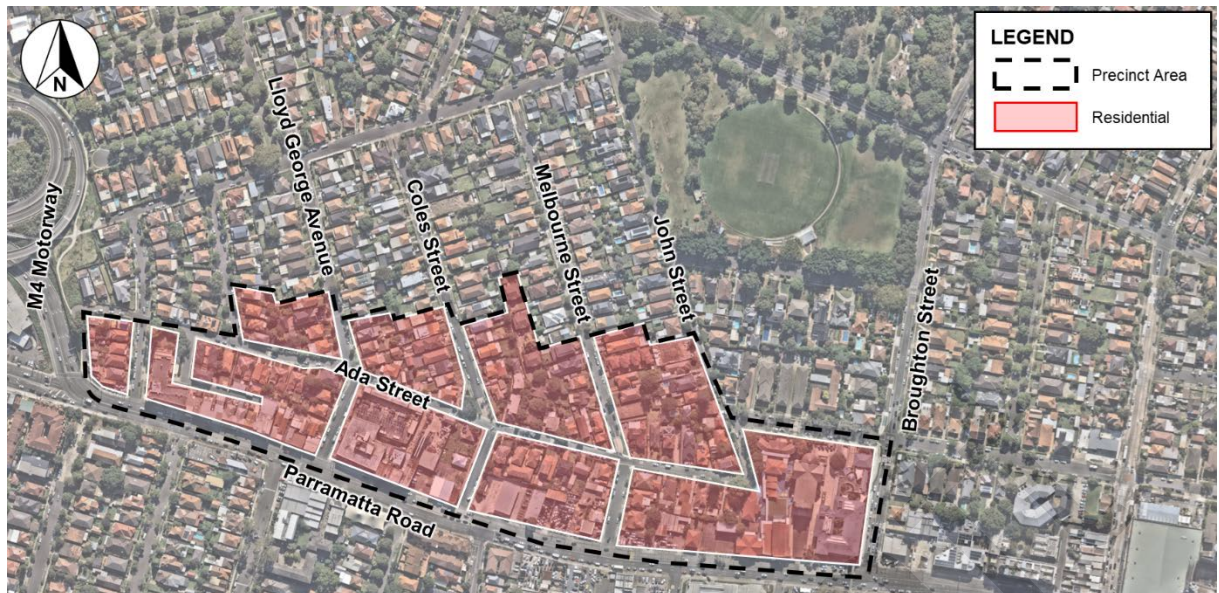


Figure 7.13: Burwood West Precinct Stage 2 Zoning Areas

7.6.2 Integrated Strategic Response

The Stage 2 population forecast from the Burwood North Precinct have triggered the need for a set of road network upgrades as well as active transport and public transport improvements to cater for future Stage 2 traffic demands. The following measures have been considered:

- Road network upgrades
- New pedestrian connections and footpaths
- New cycleway connections
- Parking provision strategies and restrictions

The Burwood West precinct integrated transport strategic response is shown in Figure 7.14.



Figure 7.14: Burwood West Precinct Integrated Transport Strategic Response

7.6.3 Public Transport Initiatives

Two bus stops, located along Parramatta Road, provide coverage for the western area of the precinct. Furthermore, these bus stops only services night bus routes that provides a connection between Sydney CBD and Parramatta.

The future Burwood North Metro, east of the precinct, will provide excellent public transport connectivity to Parramatta, Sydney CBD, Bankstown and northwest Sydney. The eastern area of the precinct will be within 800 m walk of the future metro station.

As the precinct forecasted to have an increased population of 1,382 by Stage 2, there would be an increased demand for public transport. Additional or extended bus routes that operate during the day should be introduced to the two existing bus stops along Parramatta Road. This requires consultation with TfNSW.

The existing and planned public transport facilities and coverage in the Burwood West Precinct are shown in Figure 7.15



Figure 7.15: Burwood West Precinct – Public Transport Coverage

7.6.4 Active Transport Facilities

There are two cycle routes proximity to the precinct:

- Along Broughton Street that provides a north-south connection connects the Gipps Street and Parramatta Road cycle route
- Along the eastern boundary of the M4 Motorway, between Concord Road and Alexander Street

To promote cycling activity, an east-west cycleway along the northern side of Parramatta Road has been planned by Council to connect the two north-south cycle routes via Parramatta Road. This will improve cycle connectivity of the Burwood West residential developments and to the broader cycleway network.

Furthermore, it is recommended the extend the cycle route along the eastern boundary of the M4 Motorway from Alexander Street to Parramatta Road.

From aerial observation, for the residential development in Burwood West precinct to access Goddark Park is by travelling via Alexandria Street and Broughton Street. It is recommended to provide a pedestrian connection between Ada Street and John Street that would provide a shorter and direct connection to Goddark Park.

The existing infrastructure and proposed active transport needs within the Burwood West precinct are shown in Figure 7.16. It should be noted that the proposed cycle route along Ada Street is indicative. Further investigation is required to determine the most appropriate cycle route to connect the precinct to the surrounding cycle network.



Figure 7.16: Burwood West Precinct – Active Transport Improvements

7.6.5 Parking Initiatives

Burwood West Precinct has a decent coverage of public transport services on the eastern area of the precinct from the future Burwood North Metro Station coverage. Given that the Metro provides access to several key destinations, the eastern area of the precinct is suitable for a 'P1' parking supply.

The western area of the precinct has adequate public transport coverage from the nearby bus stops. However, the bus stops only services night bus routes and do not operate during the day. Thus, the western area of the precinct has been categorised as 'P2' due to time restricted access to public transport.

The parking categorisation between the eastern and western areas of the precinct is shown in Figure 7.17



Figure 7.17: Burwood West – Parking Initiatives

7.6.6 Car Share Initiative

A car share pod is located on the western area of the Burwood West precinct, located on the northeast corner of Parramatta Road / Franklyn Street. This car share provides direct access to eastbound travel lanes along Parramatta Road.

Although the whole precinct is within the 800 m coverage of the car share pod, the precinct would benefit with additional car share pods located at the central of the precinct, or on the eastern area of the precinct to provide closer access to the Metro Station. Side streets of Ada Street are opportune locations for new car share pods.

Figure 7.18 shows the existing car share pod and coverage within the precinct area.

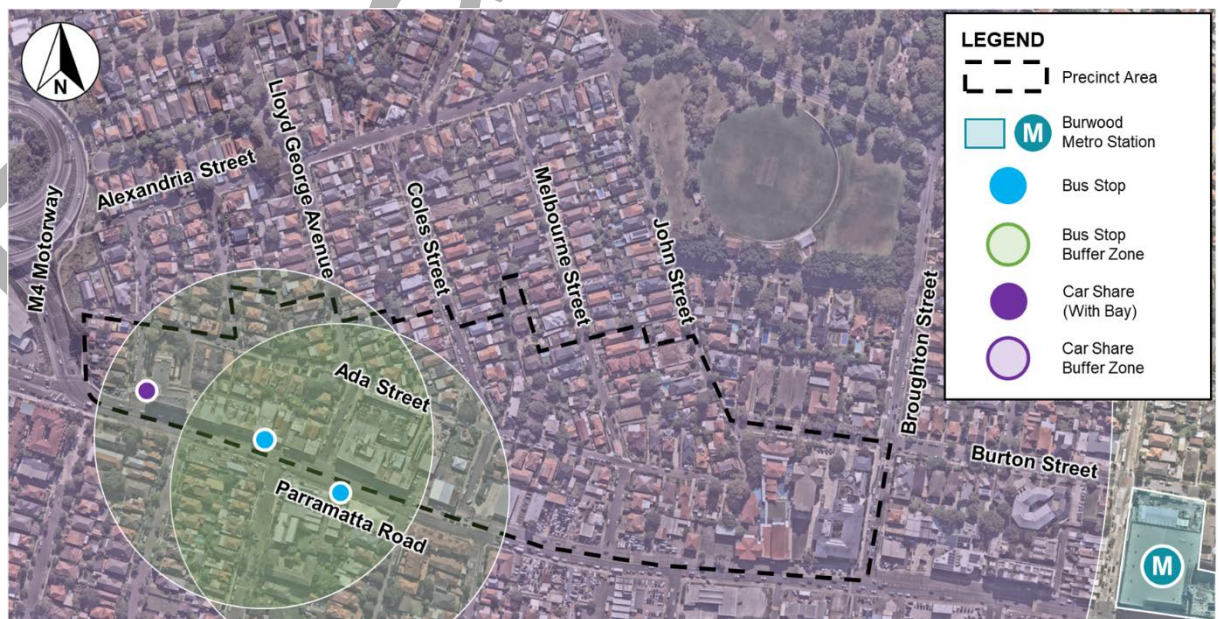


Figure 7.18: Burwood West Precinct – Car Share Pod Coverage

7.7 Kings Bay West

7.7.1 Development Summary

Kings Bay West Precinct is centred along Taylor Street, bordered between Queens Road and Parramatta Road. The precinct existing land use is primarily comprised of low density residential (R2) with productivity support (E3) along Parramatta Road. Furthermore, the precinct is surrounded by residential areas on the north and south, commercial areas on the east and south with further planned on the west. The precinct's residential land use will be retained but with higher densities than the existing development. However, the productivity support should be rezoned to residential, or similar, to accommodate the additional population forecast by Stage 2.

The precinct proposed Stage 2 zoning area is shown in Figure 7.19.



Figure 7.19: Kings Bay West Precinct Stage 2 Zoning Areas

7.7.2 Integrated Strategic Response

The Stage 2 population forecast from the Burwood North Precinct have triggered the need for a set of road network upgrades as well as active transport and public transport improvements to cater for future Stage 2 traffic demands. The following measures have been considered:

- New pedestrian connections and footpaths
- New cycleway connections
- Parking provision strategies and restrictions
- Car Share Initiatives

The Burwood West precinct integrated transport strategic response is shown in Figure 7.14.

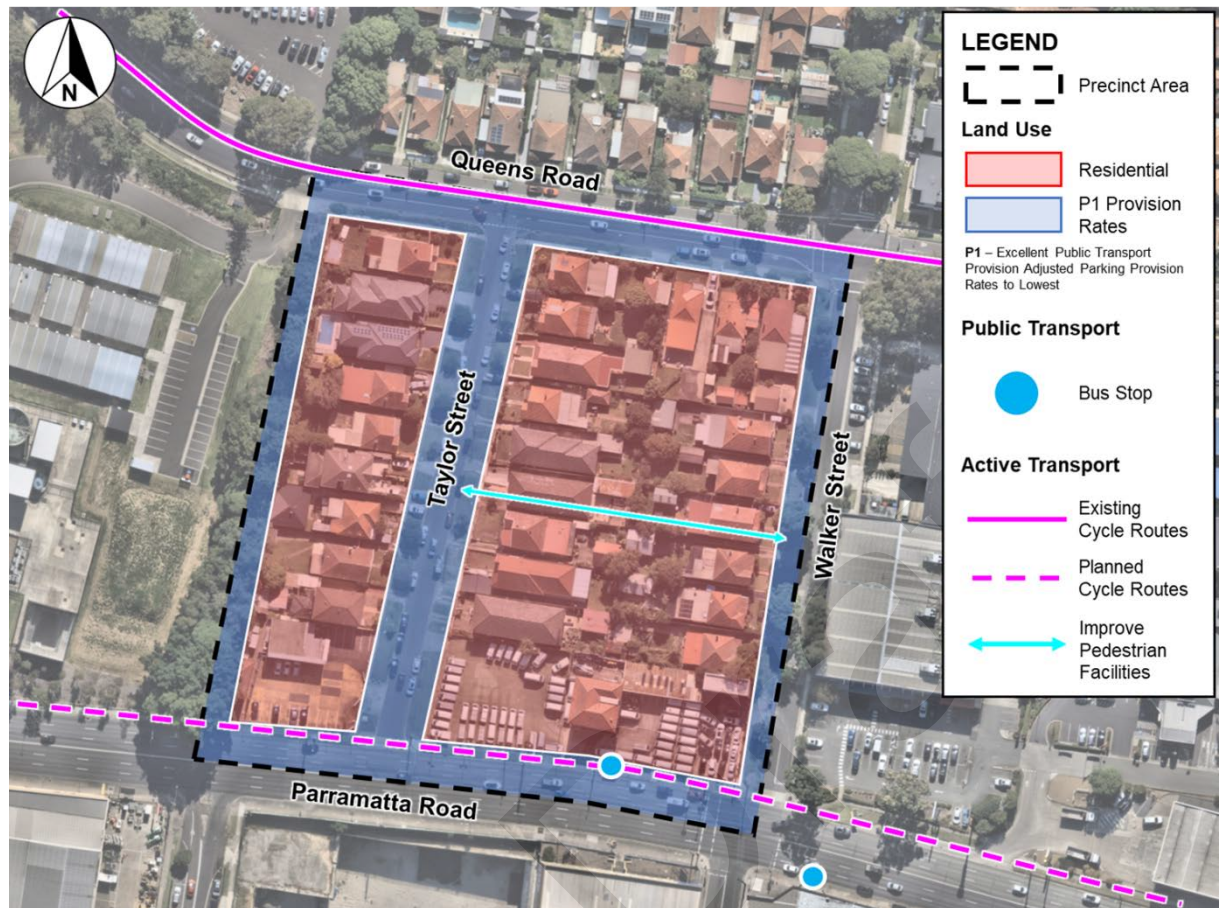


Figure 7.20: Kings Bay West Precinct – Integrated Transport Strategic Response

7.7.3 Public Transport Initiative

Two bus stops, located along Parramatta Road, provide coverage for the southern area of the Kings Bay West precinct. These bus stops are well serviced and frequent with bus routes connecting Burwood, Parramatta, Strathfield and the Sydney CBD. Furthermore, the whole precinct is within 800 m walk of the future Burwood North Metro, west of the precinct. Therefore, Kings Bay West precinct is well serviced with nearby public transport.

The existing and planned public transport facilities and in the Kings Bay West precinct are shown in Figure 7.21.

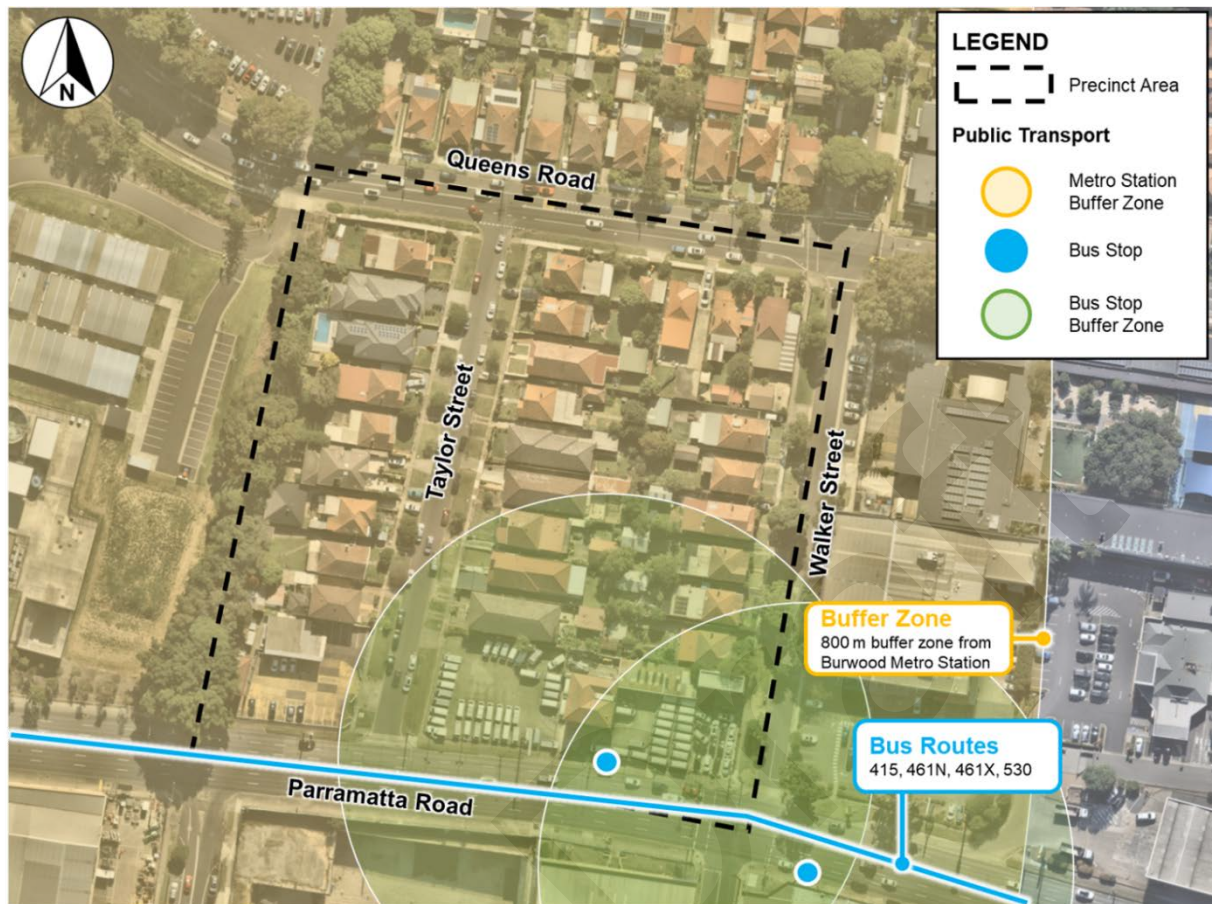


Figure 7.21: Kings Bay West Precinct – Public Transport Coverage

7.7.4 Active Transport Facilities

Currently, there is an existing cycleway route along Queens Road, north of the King Bay West precinct. Shared path along the northern side of Parramatta Road has been proposed as a east-west cycle route to encourage cycling activity. To encourage walkability as the Kings Bay West precinct area redevelops, east-west pedestrian link has been proposed to connect the residential areas to the surrounding commercial areas.

The existing infrastructure and proposed active transport improvements within the Kings Bay West precinct are shown in Figure 7.22.

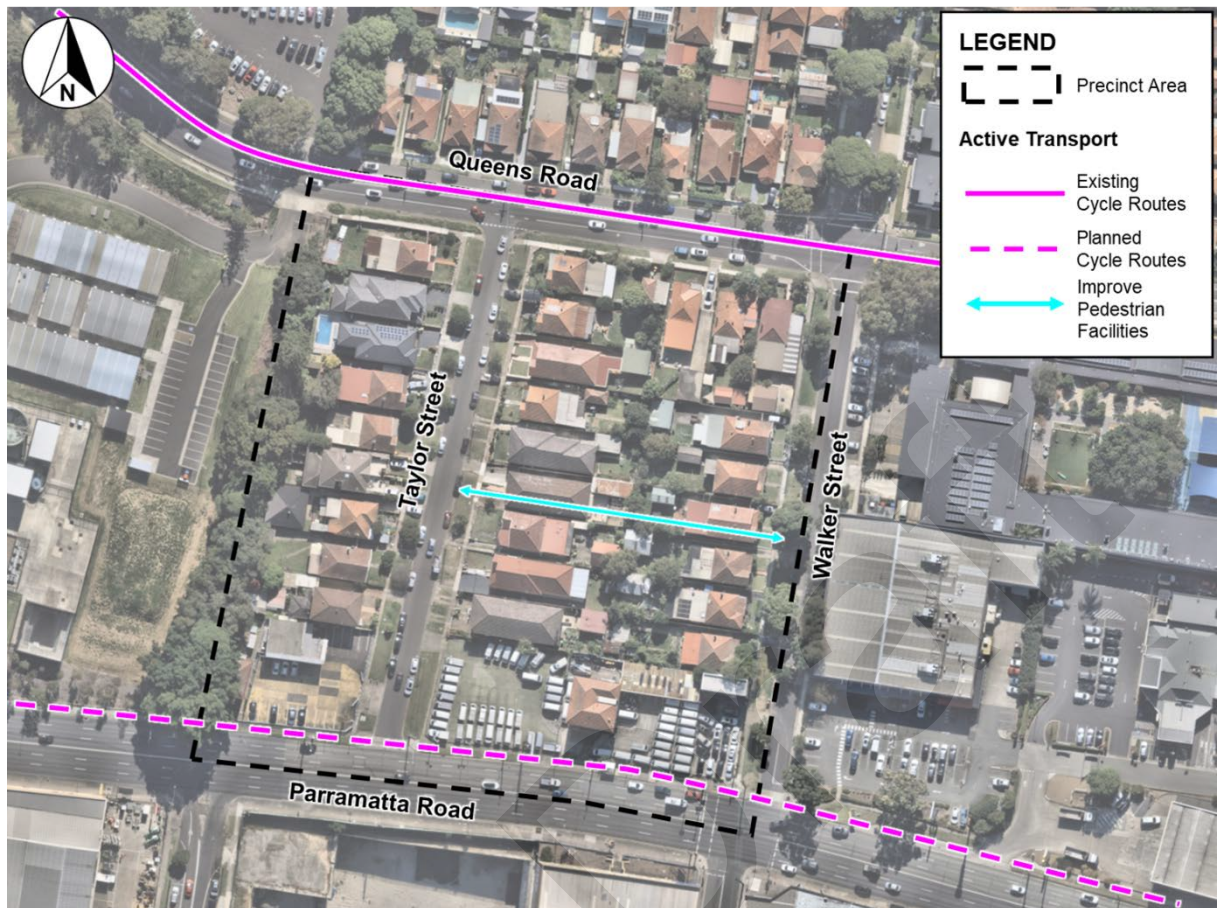


Figure 7.22: Kings Bay West Precinct – Active Transport Improvements

7.7.5 Parking Initiatives

Kings Bay West precinct has a decent coverage of public transport services from the future Burwood North Metro Station coverage, and the two bus stops along Parramatta Road. As such, it is suitable for the precinct to be categorised for a 'P1' parking supply.

The parking categorisation Kings Bay West precinct is shown in Figure 7.23.

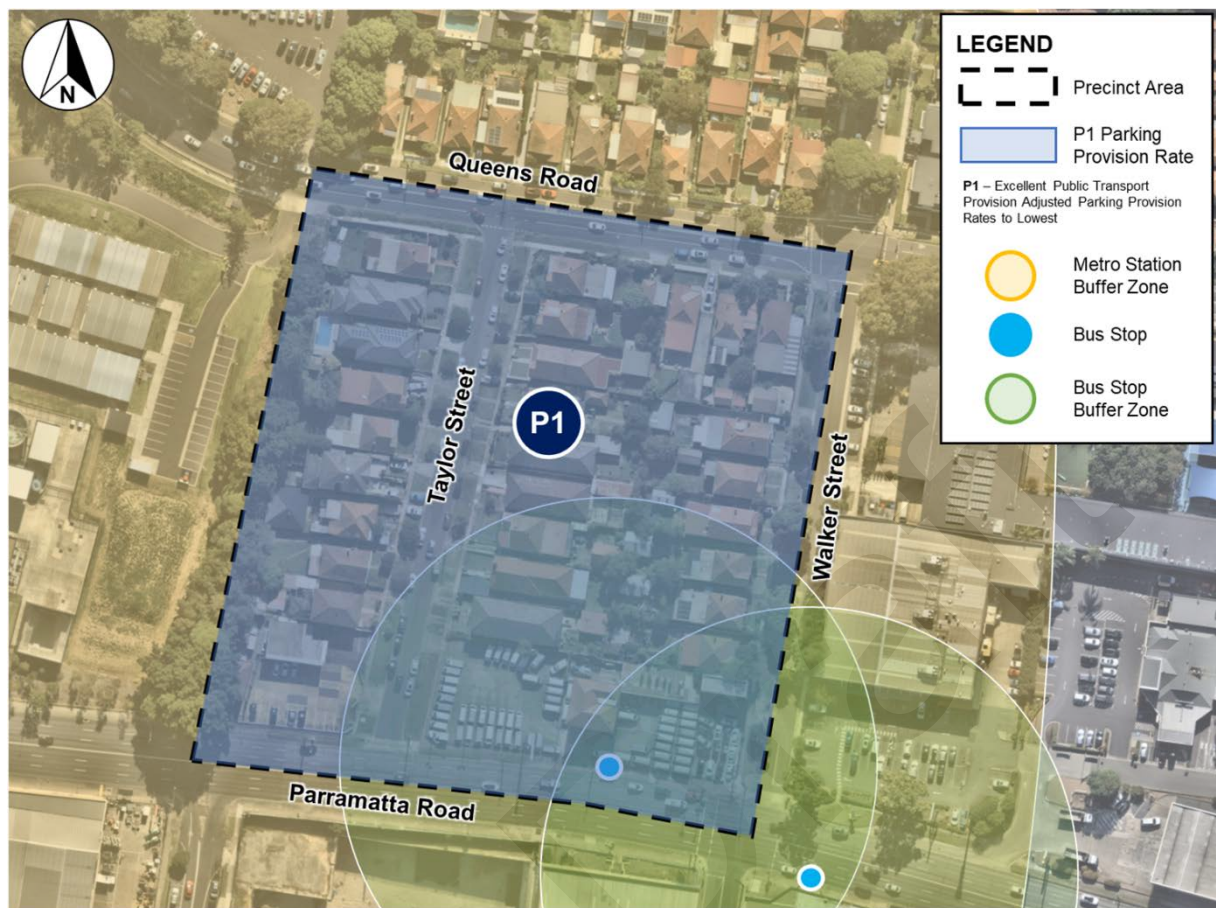


Figure 7.23: Kings Bay West Precinct – Parking Initiatives

7.7.6 Car Share Initiatives

No car share pods are located within or proximity to the Kings Bay West precinct. Redevelopment of the precinct provides an opportunity to provide more dedicated shared parking bays along Taylor Street to be centrally located within the precinct. Implementing dedicated shared parking bay will facilitate with the proposed P1 parking provision adjustment to the lowest.

7.8 Kings Bay Precinct

7.8.1 Overview

There are overlaps between the Kings Bay East area and the Kings Bay precinct from the study report. Therefore, the action plan for the Kings Bay precinct will include the Kings Bay East area, and as an amendment to the proposed action detailed in the study report.

7.8.2 Development Summary

The Kings Bay Precinct is proposed to form a new urban village between Parramatta Road and Queens Road, with a central core of (B4) Mixed Use around Spencer Street. The scheme comprises a shopping precinct with grocery stores and destination retail. The surrounding residential land use is retained but with higher densities than the existing development. The Kings Bay East area will need to be rezoned into residential land use with higher density. Most of the proposed residential and mixed-use land is located within walkable distances to bus routes. The proposed land use map for the Kings Bay precinct is shown in Figure 7.24.



Figure 7.24: Kings Bay Precinct Stage 2 Zoning Areas

7.8.3 Integrated Strategic Response

The Stage 2 population forecast from the Burwood North Precinct have triggered the need for a set of road network upgrades as well as active transport and public transport improvements to cater for future Stage 2 traffic demands. The following measures have been considered:

- Road network upgrades, including new and upgraded traffic signals
- New pedestrian connections and footpaths
- New cycleway connections
- A new mid-block pedestrian and cyclist crossing opportunity across Parramatta Road
- Parking provision strategies and restrictions
- Car Share Initiatives
- Local street network changes.

The Burwood West precinct integrated transport strategic response is shown in Figure 7.25.

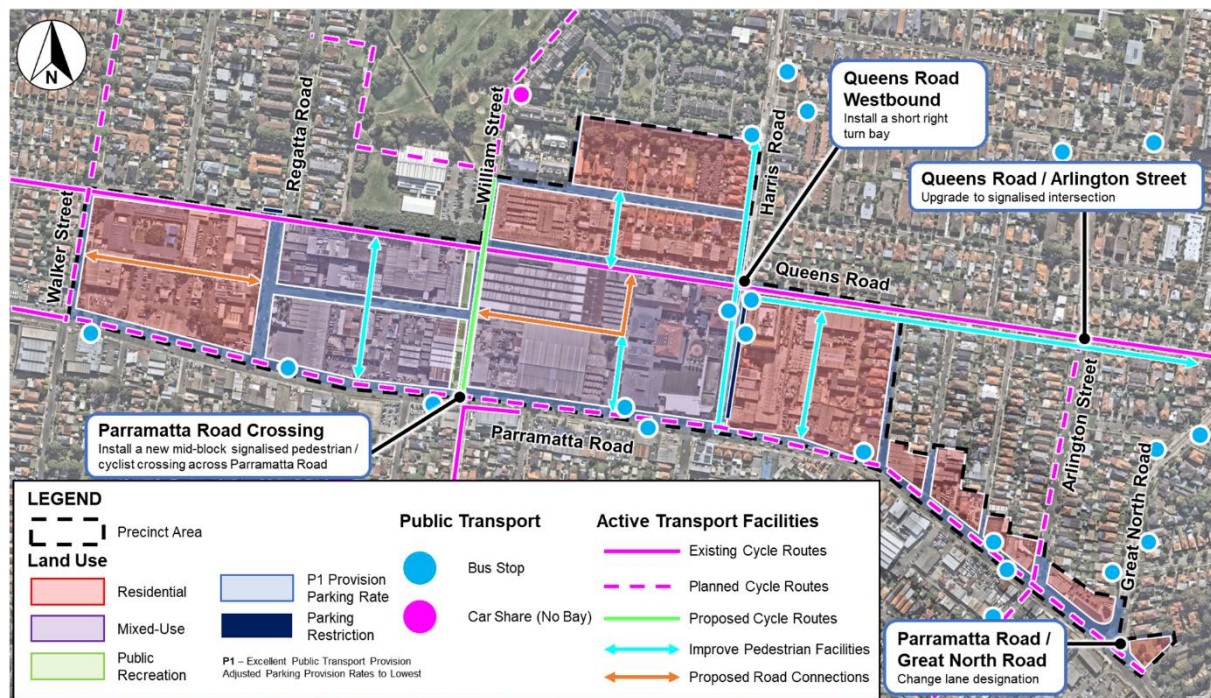


Figure 7.25: Kings Bay Precinct – Integrated Transport Strategic Response

7.8.4 Road Network Upgrades

Harris Road

Harris Road is a key link in the road network, servicing a large residential catchment and multiple schools between Lyons Road and Parramatta Road. The road is also used by a number of bus services travelling to Five Dock and beyond.

Harris Road is the main north-south road passing through the Kings Bay redevelopment precinct. Due to increased traffic by 2036 and the Stage 2 population forecast, delays and queues along Harris Road (due to Parramatta Road) cause significant impacts to its intersecting east-west road such as Queens Road.

To address this, the following actions are proposed:

- **New peak hour parking restrictions:** Sections of Harris Road already feature peak hour parking restrictions. It is proposed that these restrictions eventually be extended to the entire length of Harris Road between Queens Road and Parramatta Road. This initiative will affect the existing timed No Parking zone on the northbound kerbside which supports Rosebank College as a pick-up and drop-off (PUDO) zone. While this is an important facility for the school, the friction of high-frequency kerbside parking manoeuvres causes severe disruptions to traffic flows.

With the redevelopment of the precinct, there is an opportunity to relocate the school PUDO zone to the western side of the school on a new eastern extension of Spencer Street. Any relocations would be expected to be undertaken in coordination with the College administration and would only be required once enough redevelopment has occurred (closer to 2036) such that the Spencer Street extension is available.

- **Short turning bay on Queens Road:** The Queens Road westbound approach at the Harris Road / Queens Road intersection consistently experiences flows and exceeding 1,000 vehicles, per hour by 2036, with long queues and delays caused by the single-lane approach to the signals (due to the narrow carriageway), and the filtering of right turning vehicles at the intersection. As part of the redevelopment of the surrounding properties, the roadway at this location could be widened to allow for a short turning bay for right turning vehicles to allow them to store clear of the heavier through traffic flows. The road widening will require property acquisition.

Bus stops along Harris Road will be retained as per existing.

The proposed upgrades are shown in Figure 7.26

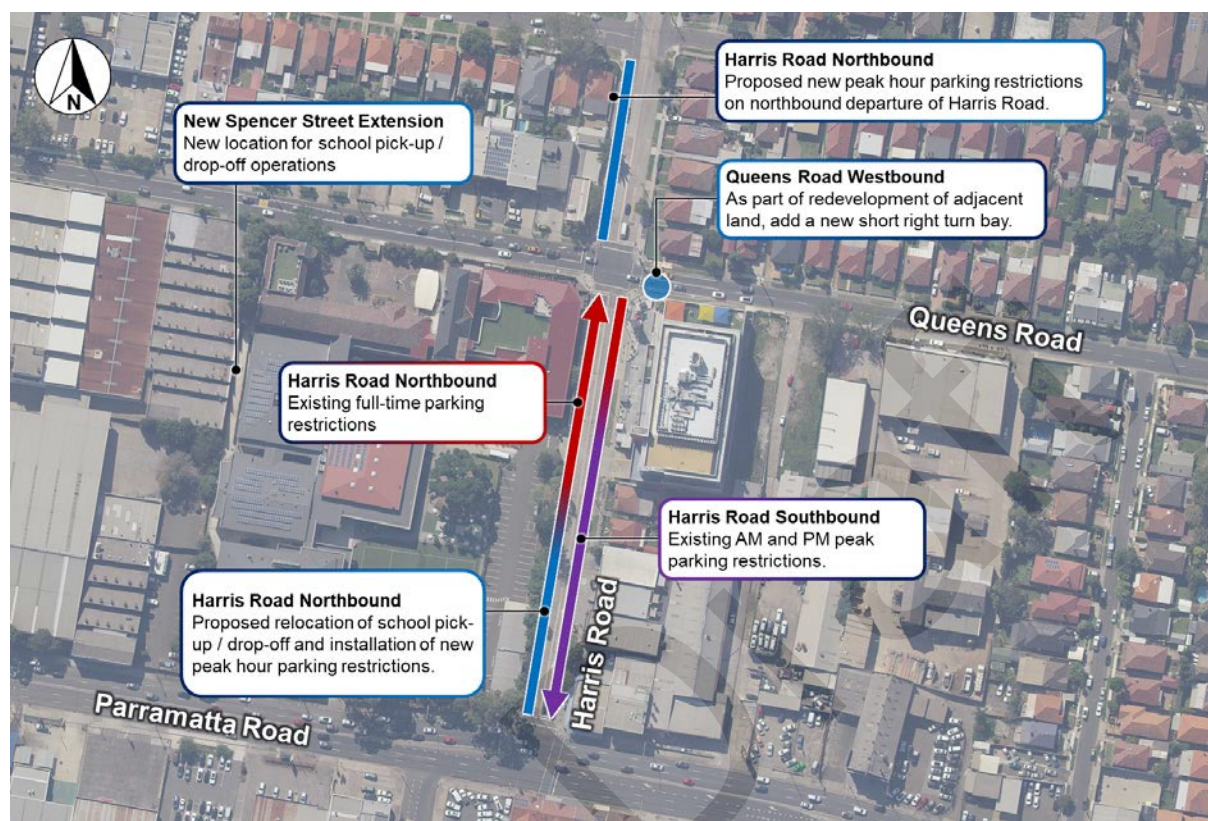


Figure 7.26: Proposed Road Network Upgrades – Harris Road

New Pedestrian and Cyclist Mid-block Crossings

PRCUTS originally envisioned a number of traffic interventions along Parramatta Road and Queens Street near the Kings Bay Precinct, including the signalisation of the Regatta Road and William Street intersections. In the Phase 2 Rapid Intersection Assessment (2022) undertaken by Turnbull Engineering, these interventions were reviewed and updated.

The interventions from the Turnbull Engineering work for the Kings Bay Precinct and which have been adopted in this study are:

- A new mid-block crossing on Parramatta Road in vicinity of Regatta Road and William Street
- A new mid-block crossing on Queen Street between Bayview Road and Regatta Road.

The redevelopment of the precinct provides an opportunity to improve pedestrian and cyclist amenity and safety by locating a safe crossing facility in the 800 m section of Parramatta Road between the Harris Road and Cheltenham Road signalised intersections. The mid-block facility will support a connection of the proposed cycle route along William Street across Parramatta Road, joining the existing route to Wangal Park and the nearby Burwood Girls High School.

A similar facility is proposed on Queen Street, indicatively located between Bayview Road and Regatta Road. The traffic signals will assist pedestrians and cyclists crossing Queen Street, particularly as traffic volumes increase in the future. This crossing will support the redevelopment of the Kings Bay Precinct to address increased active transport needs

around the new local centre. The specific need and location of the crossing will be dependent on the precinct masterplan and structure plan.

Pedestrian crossings were included in the traffic model at these locations with the following assumptions on phase timing and actuation:

- Walk time of 5 seconds
- Clearance time based on road width and average pedestrian walking speeds (14 seconds for Parramatta Road, 9 seconds for Queen Street)
- Pedestrian crossings called once per five (5) minutes during peak hours.

The new pedestrian crossings are shown in Figure 7.27.



Figure 7.27: Proposed Road Network Upgrades – New Signalised Pedestrian Crossings

Great North Road and Surrounds

The Great North Road connects between Parramatta Road and Five Dock Town Centre and is impacted by the congestion issues around Harris Road and Queens Road. Downstream blockages often push back to Great North Road (e.g. westbound queues on Queens Road), affecting the traffic performance at key intersections such as Great North Road / Queens Road / Fairlight Street, Great North Road / Parramatta Road, and including Queens Road / Arlington Street.

To address these issues the following actions are proposed in addition to the works along Great North Road:

- New peak hour parking restrictions: new parking restrictions along the Queens Road westbound carriageway near Great North Road, extending the existing section of two-lane westbound carriageway up to Arlington Street. This will minimise congestion along Queens Road, between Great north Road and Arlington Street. Any removal of parking which will impact residents will be subject to consultation with the affected community, and dependent on future plans for Queens Road as outlined in the City of Canada Bay's Public Domain Plan.
- Changed lane designations: adjustments to the lane designations at Parramatta Road / Great North Road to allow a double right turn movement. This upgrade will encourage the use of Parramatta Road instead of Queens Road for westbound traffic from Great North Road. The proposed change will allow greater usage of the available road capacity without compromising the adjacent left turn movements.

The proposed upgrades are shown Figure 7.28.

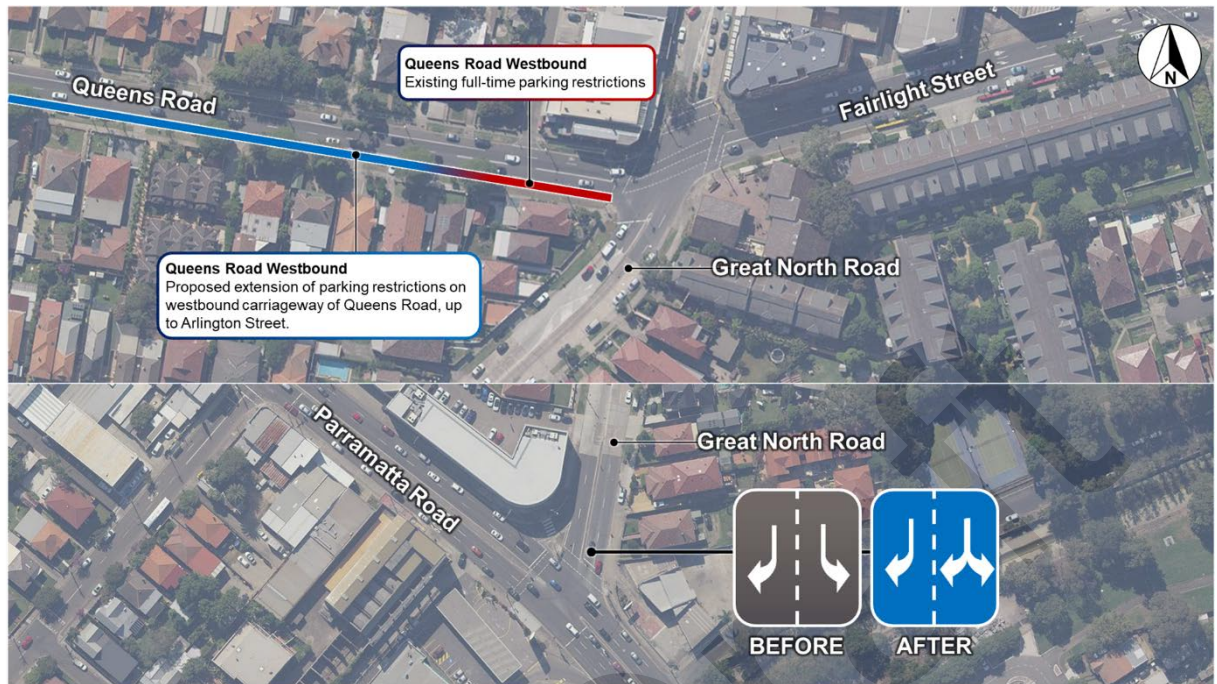


Figure 7.28: Proposed Road Network Upgrades – Great North Road and Queens Road

7.8.5 Public Transport Initiatives

The Kings Bay precinct has a good coverage of bus services generally along Parramatta Road and Harris Road connecting to major transport hubs including Sydney CBD, Burwood, Parramatta and Strathfield. Furthermore, the eastern area of the precinct is within 800 m coverage of the future Five Dock Metro station, northwest of the precinct, providing connection to the Metro West line. Therefore, Kings Bay precinct is well serviced with nearby public transport.

The public transport infrastructure and coverage of Kings Bay precinct is shown in Figure 7.29

The northern parts of Kings Bay precinct, along Queens Road, would benefit from additional bus services and stops possibly as an extension of the existing bus services. The provision of additional / extended bus services at the northern end of the precinct should be considered further in consultation with TfNSW, including new bus stops along Queens Road.



Figure 7.29: Kings Bay Precinct – Public Transport Infrastructure & Coverage

7.8.6 Active Transport Initiatives

To encourage increased walking and cycling to, from and within the redevelopment area, a number of east-west and north-south pedestrian links have been proposed for the precinct.

On-road cycle lanes along the northern edge of the precinct at Queens Road, which crosses the precinct parallel to Parramatta Road, are a long-term proposal for the area. Canada Bay Council has also proposed new routes connecting existing cycle routes at St Lukes Park, Cheltenham Road and Bevin Avenue via the following:

- Parramatta Road
- Arlington Street
- Walker Street
- Renown Street
- Watts Street
- William Street.

Masterplan Urban Design Report prepared by GroupGSA for Council had proposed two east-west road connections, and extension to Spencer Street:

- West of Spencer Street to Walker Street
- East of Spencer Street to Queens Road

The proposed roadway design of Spencer Street includes narrowing of the existing roadway, wide footpaths and landscape median in between to separate the pedestrians from the roadway. This proposed design will encourage walkability along Spencer Street. The proposed cross-sectional road design for Spencer Street is shown in Figure 7.30

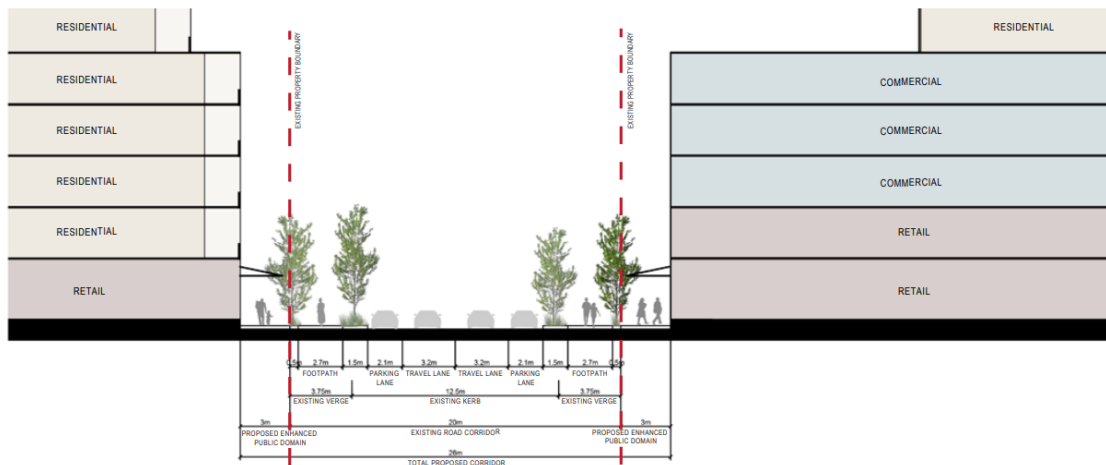
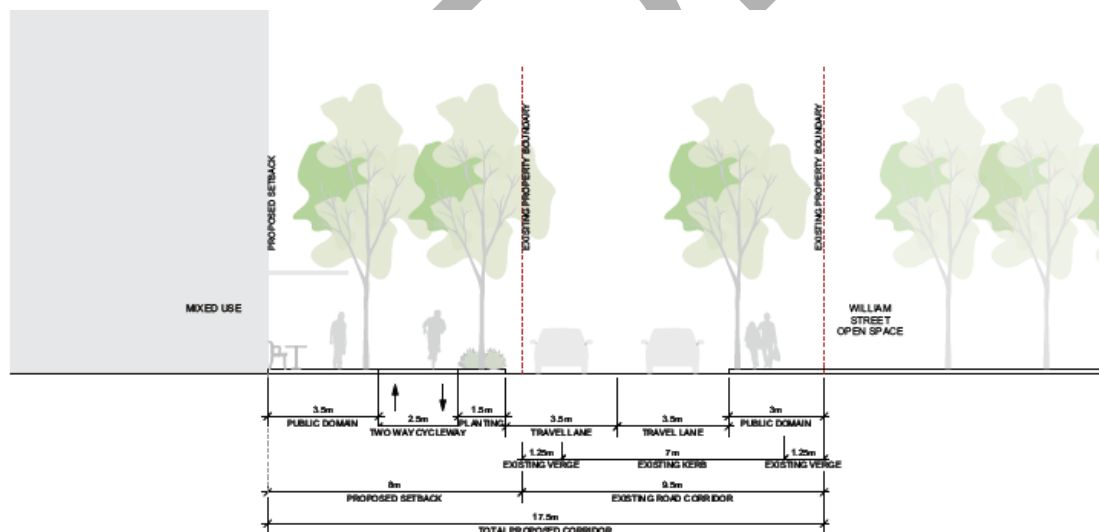


Figure 7.30: Proposed Road Design for Spencer Street

An additional cycle link along William Street is proposed by Council to connect the existing shared path on Parramatta Road at Short Street and the cycle route along Bevin Avenue. From Council's Stage 1 Public Domain Plan, William Street is proposed to be widened along the eastern side, with a bidirectional cycleway located along the western side. This link will connect to the proposed cycle facilities along East Street near the nearby Five Dock Metro Station. Council's cross-section design of William Street, including the proposed cycleway, is shown in Figure 7.31



TYPICAL SECTION - WILLIAM STREET

Figure 7.31: Stage 1 Public Domain Plan – William Street

The existing and proposed active transport infrastructure for this precinct is shown in Figure 7.32.

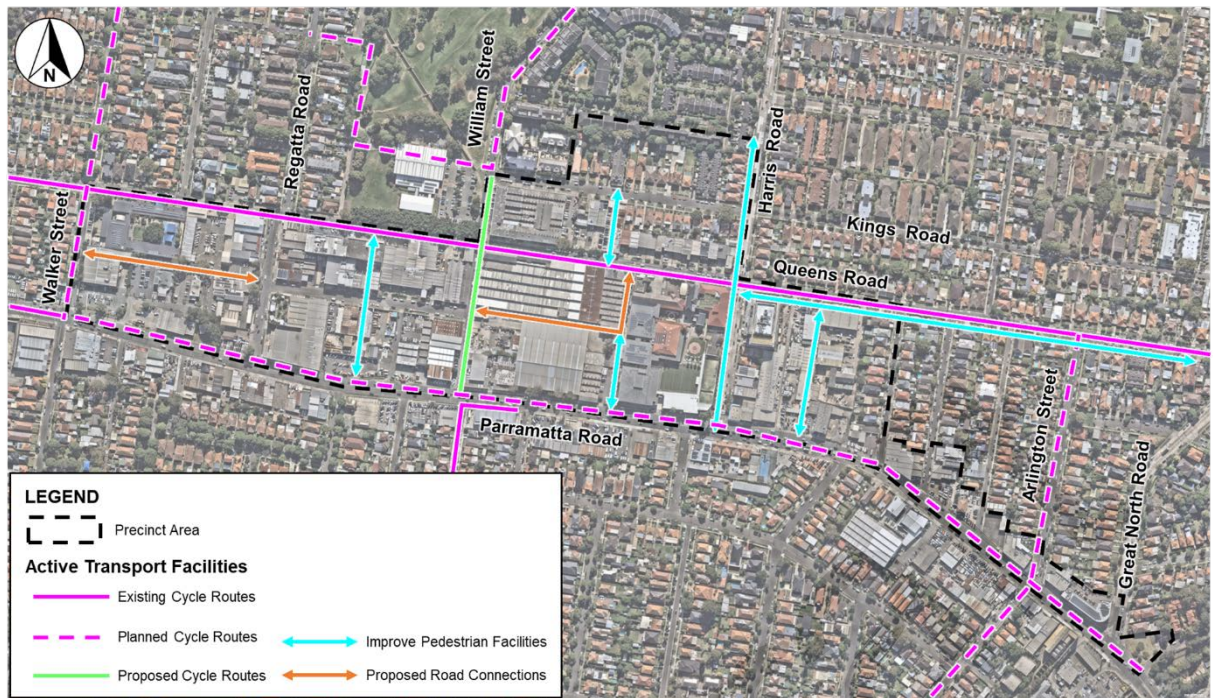


Figure 7.32: Kings Bay Precinct – Active Transport Initiatives

7.8.7 Parking Initiatives

Off-Street Development Parking

The Kings Bay precinct has reasonably good coverage of bus-based public transport services. The precinct will benefit from two future Metro Stations, with one to its west (Burwood North-Concord) and one to its north-east (Five Dock). The 'P1' category has been nominated appropriately for this precinct.

On-Street Parking

Peak period parking restrictions have been proposed along Harris Road and Queens Road within the precinct

Development in the Kings Bay precinct will result in an increased demand of parking on side streets such as Harris Road, Walker Street and residential streets north of Queens Road. It is likely that greater restrictions would evolve in these areas as this development occurred

Proposed Parking adjustments and restrictions in the Kings Bay precinct is shown in Figure 7.33.



Figure 7.33: Kings Bay Precinct –Parking Initiatives

7.8.8 Car Share Initiatives

There are currently three car share pods located in vicinity of the Kings Bay Precinct, with two having dedicated parking bays located east of the precinct near the Five Dock town centre. The other two car share pods are located closer to the precinct, within a few hundred metres walking distance.

There would be benefits in providing additional car share pods within the precinct itself and particularly to the south and east of the precinct, given the proposed commercial and residential developments and the proposed parking policies. Additional car share pods should be considered in the vicinity of Kings Road and Queens Road, west of Harris Road, to cover both the residential and commercial development areas in the precinct.

Figure 7.34 shows the existing car share pod and coverage within the precinct area.



Figure 7.34: Kings Bay Precinct – Existing Car Share Coverage

Final Draft