



Burwood North Precinct Masterplan




Rapid transport appraisal

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Quality Assurance

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[01]

Introduction

Overview

Burwood Council is preparing an updated masterplan and supporting studies for the Burwood North Precinct, building upon the work already undertaken as part of the Parramatta Road Corridor Urban Transformation Strategy (PRCUTS). The masterplan seeks to capture the opportunity afforded by a new metro station at Burwood North on the Sydney Metro West network.

The masterplan strives to deliver an outcome that is feasible, maximises public benefit and delivers high quality public domain, open spaces and community infrastructure. The masterplan articulates a cohesive vision for Burwood North that will underpin the growth and development of the precinct as a benchmark for sustainable urban renewal.

The masterplan is the result of a collaborative process that has been undertaken between Burwood Council, a wide range of government, institutional and community stakeholders, and the project's consultant team.

An Implementation Plan will also be prepared that outlines the recommended planning controls, policies and infrastructure necessary to enable the successful delivery of the masterplan. The recommendations may inform amendments to the Burwood Local Environmental Plan 2012 (LEP) and Burwood Development Control Plan 2012 (DCP).



Purpose of this report

This report documents the rapid transport appraisal undertaken to assess the viability of the proposed Burwood North Precinct Masterplan.

The analysis undertaken:

- Quantifies the total trip generation for the precinct under existing approved schemes (including PRCUTS).
- Quantifies the total trip generation with the increased densities and land-use changes proposed in the masterplan.
- Highlights the changes to mode-share (including the shift to public and active transport) which would be required to achieve a net-zero increase in private vehicle trips and the associated impact on these other modes.
- Benchmarks and recommends parking provisions for the land uses proposed in the masterplan which balance customer needs, accessibility and helps achieve the target mode-shares.

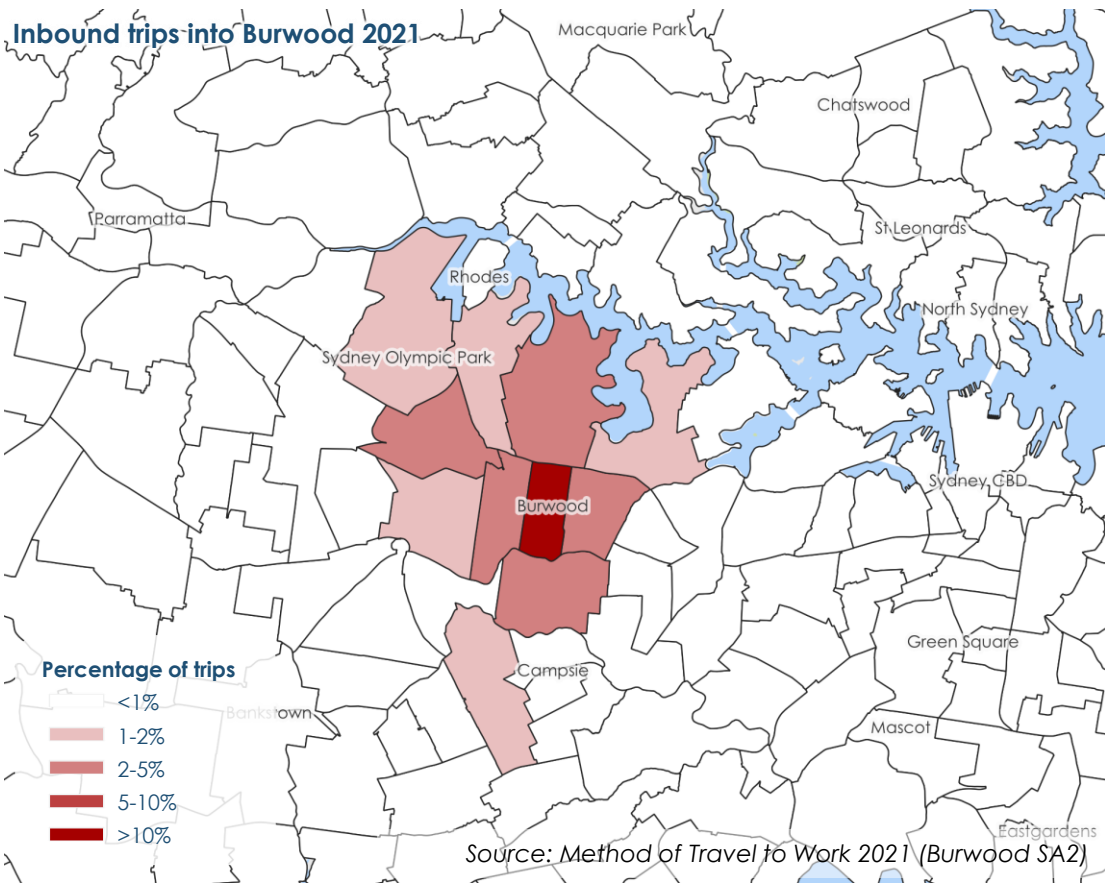
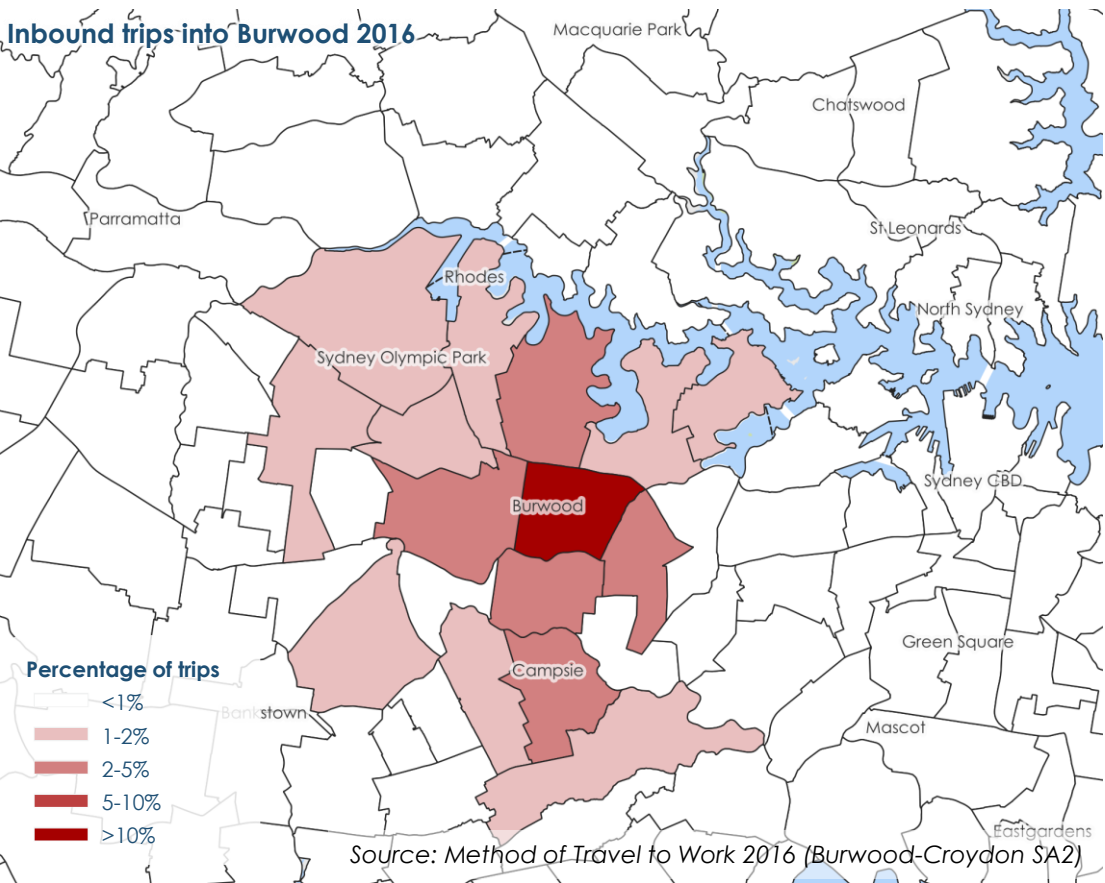
The outcomes of this report will be refined and assessed in greater detail in the next phase in the form of a transport assessment to support the Burwood North Precinct Planning Proposal (PP).



[02]

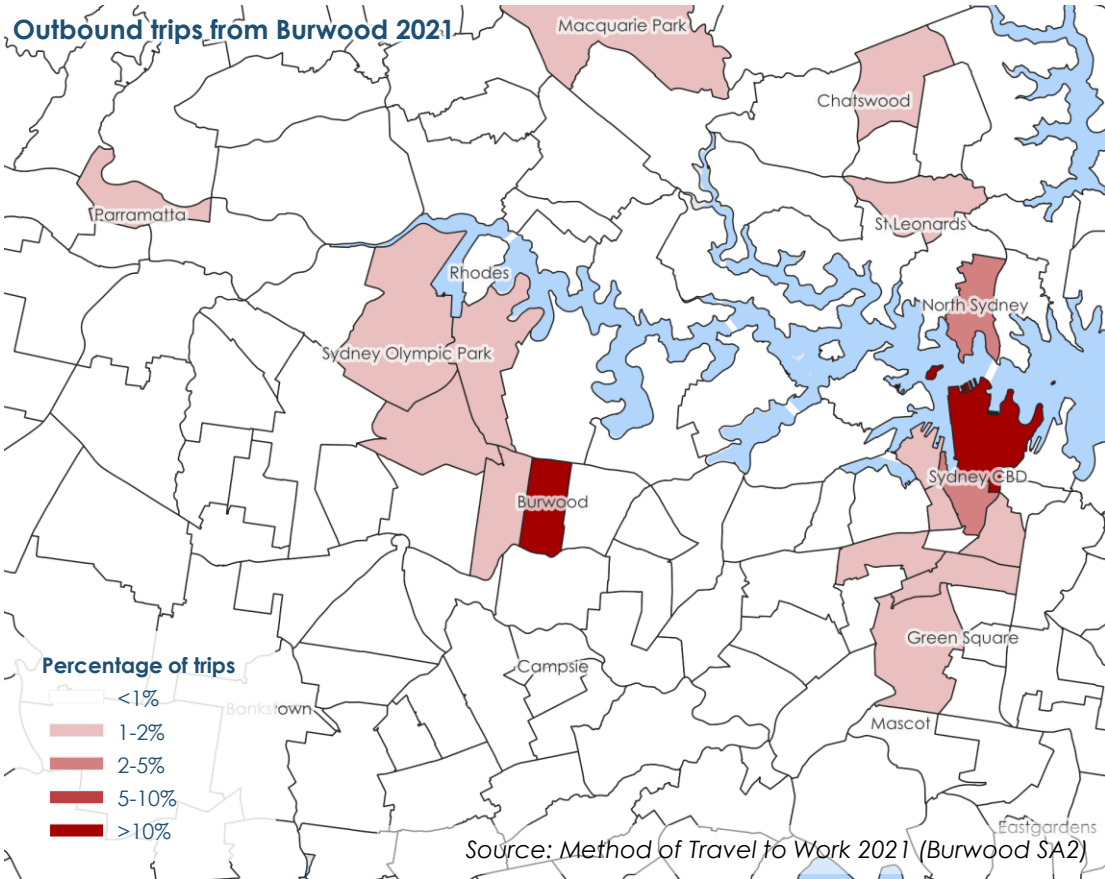
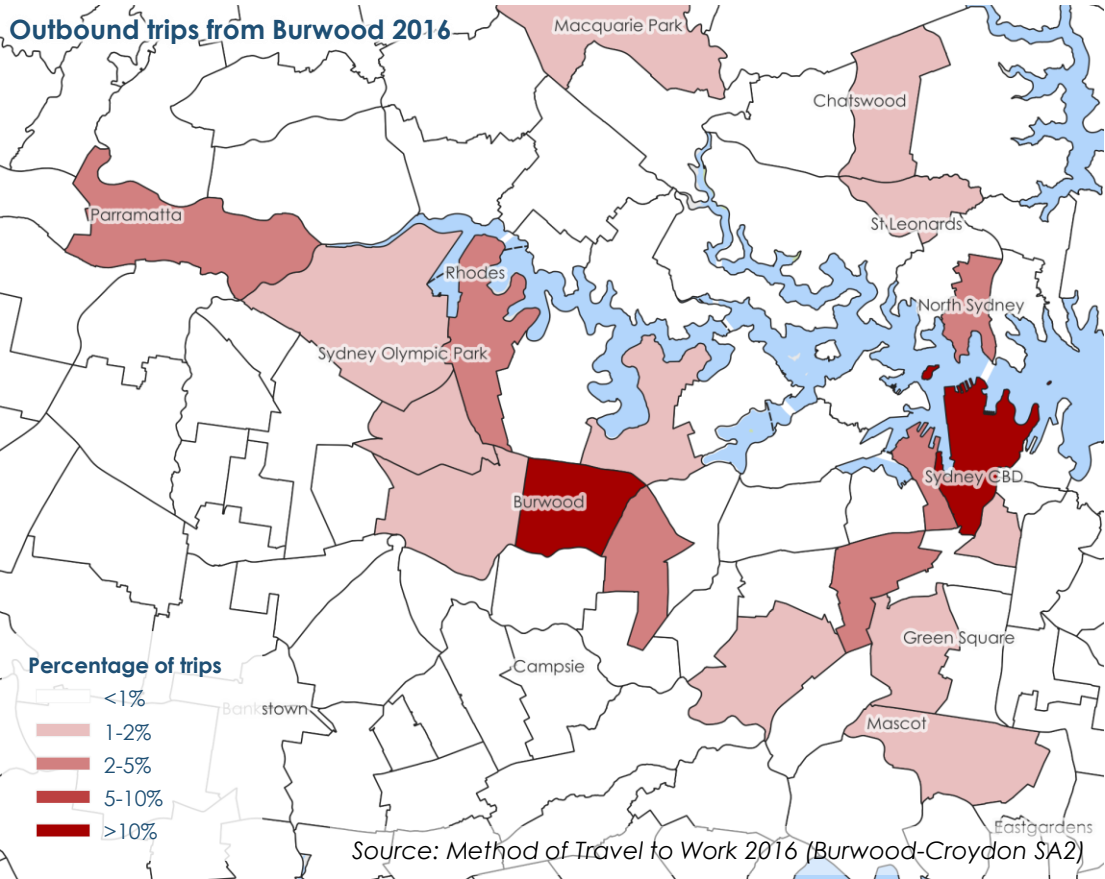
Customer characteristics and benchmarking

Method of Travel to Work behaviour – Inbound



In 2016, the highest concentration of inbound commuting trips are internal from Burwood, highlighting the sizeable local businesses and employment within the area. In 2021, the area from which people travel to Burwood has become more concentrated. This could be the result of the introduction of smaller SA2 zones by the Australian Bureau of Statistics, but more likely due to the changes in travel patterns following the COVID-19 pandemic (and associated travel restrictions). Post COVID-19, a greater proportion of individuals are working from home (part- and full-time), resulting in reduced overall travel. Nonetheless, internal trips within Burwood remain high.

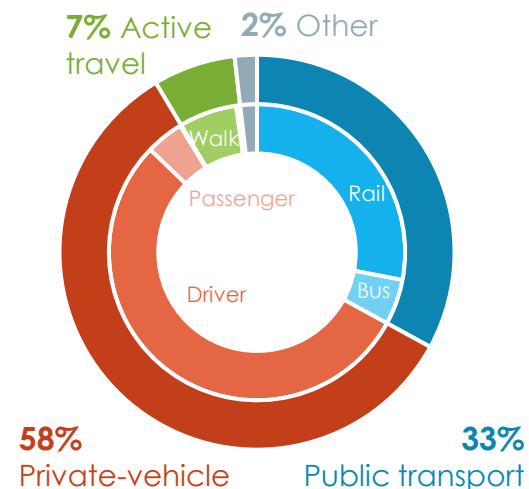
Method of Travel to Work behaviour – Outbound



In 2016, two highest concentrations of destinations for outbound trips are Burwood and Sydney CBD, followed closely by Parramatta. These areas represent major employment centres connected to Burwood by the existing rail network. Macquarie Park and Chatswood, although can be accessed by rail, are more likely to be accessed by residents through the bus network. In 2021, the widespread adoption of working from home due to COVID-19 has concentrated destinations even further to major employment centres as total travel was reduced. Overall, key destinations are those still accessible by frequent public transport.

Current travel behaviour – MTW mode

Inbound trips into Burwood-Croydon

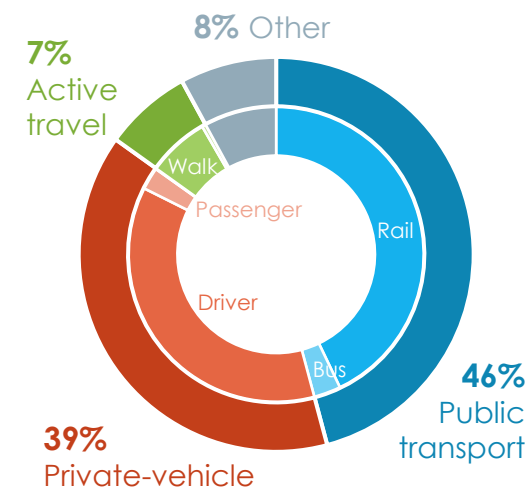


Key 2021 Changes

- 12% Public transport
- +9% Private vehicle
- +3% Active transport

Source: Method of Travel to Work 2016 & 2021

Outbound trips from Burwood-Croydon



Key 2021 Changes

- 7% Public transport
- +2% Private vehicle
- +2% Active transport

Source: Method of Travel to Work 2016 & 2021

When observing 2016 trends, there is a stark contrast between preferred mode shares of inbound and outbound trips. Public transport is the main travel mode for commute trips out of Burwood, whilst the private vehicle is the main travel mode for inbound trips. Burwood is well connected by public transport to employment centres and many residential suburbs. However, there is a large supply of parking around Burwood Town Centre which contributes to the high proportion of inbound trips by private vehicle. For both inbound and outbound trips, there is a notably low portion of trips made by active travel. Of these limited trips, most are walking trips, with very few trips made by cycling.

In 2021, the COVID-19 pandemic led to a decrease in public transport mode share in favour of car-based travel and some active transport. Furthermore, with the widespread adoption of working from home, there was an overall decrease in commuting trips.

Key implications:

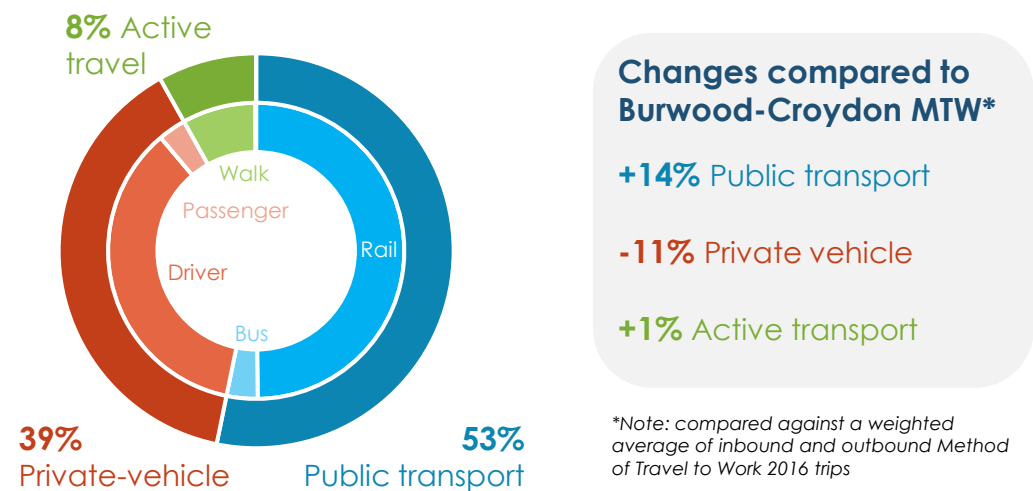
- The focus of the masterplan should be to facilitate the return of public transport mode share to levels seen in 2016 and elevate beyond this.

Current travel behaviour – MTW mode (Burwood South Only)

Burwood South Method of Travel to Work however highlights a slightly different trend compared to the overall Burwood-Croydon SA2.

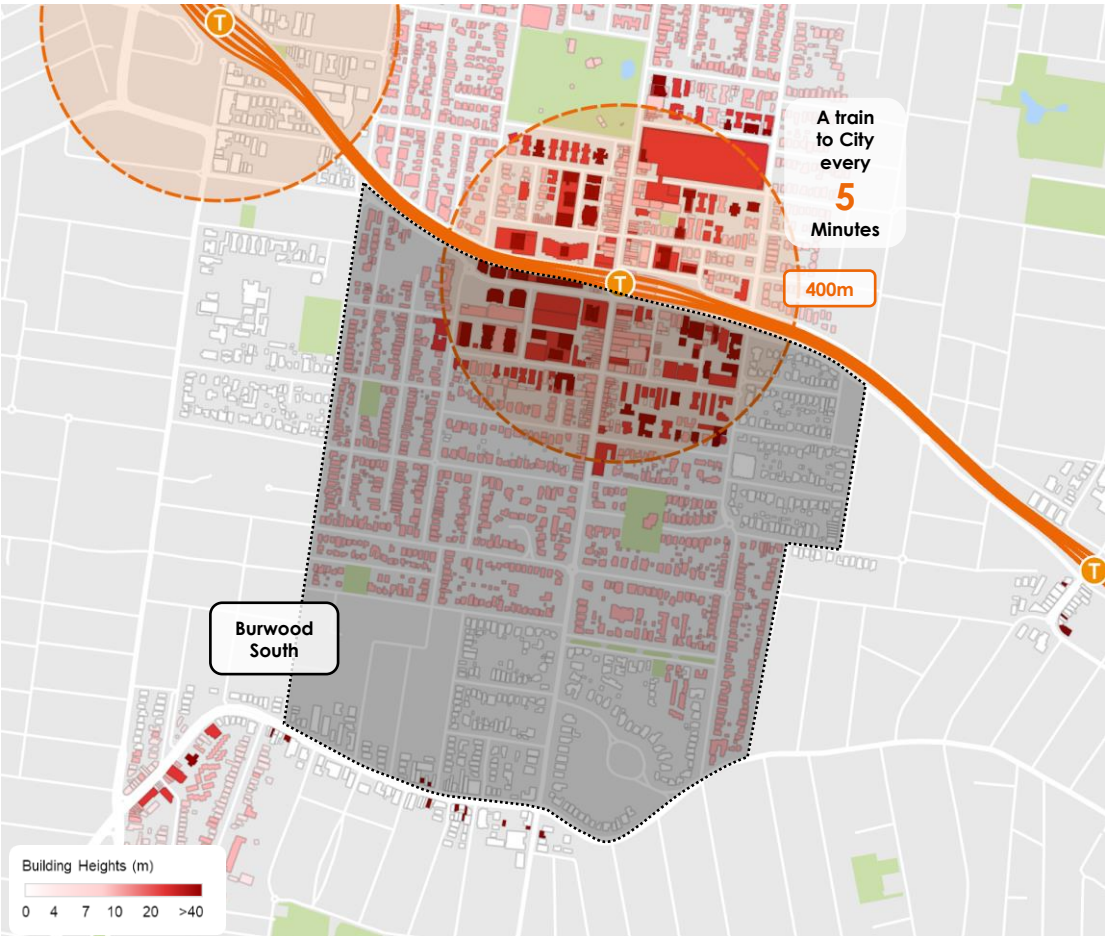
The Burwood South area (as highlighted in the adjacent figure) includes medium and high-density residential and non-residential within the immediate walking catchment of Burwood Station. The high density residential also has lower car ownership compared to the overall Burwood area.

This culminates in comparatively higher public transport mode share, and a corresponding reduction in private vehicle travel.



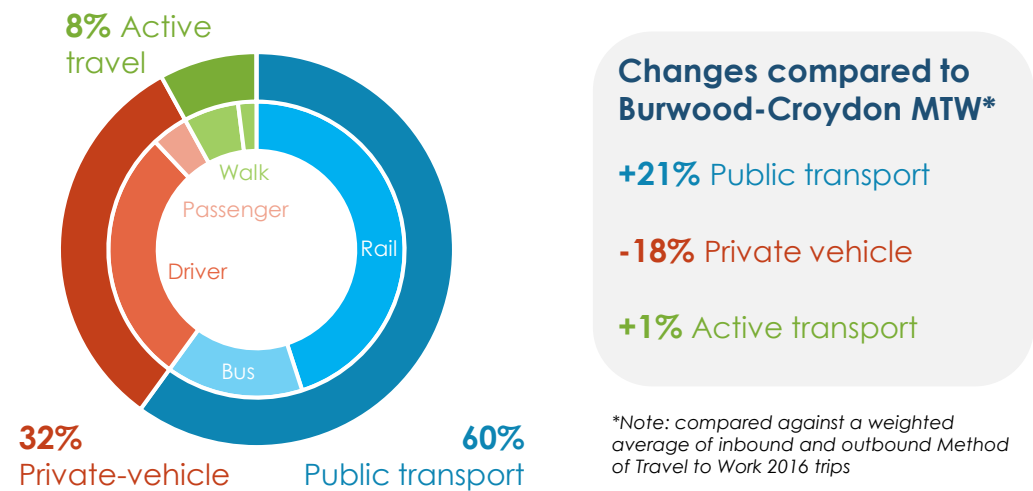
Key implications:

- Adopted as the baseline mode-share as the land-use mix, proximity to public transport and amenities and the likely demographic is more representative of the proposed Burwood North (compared to the wider SA2).



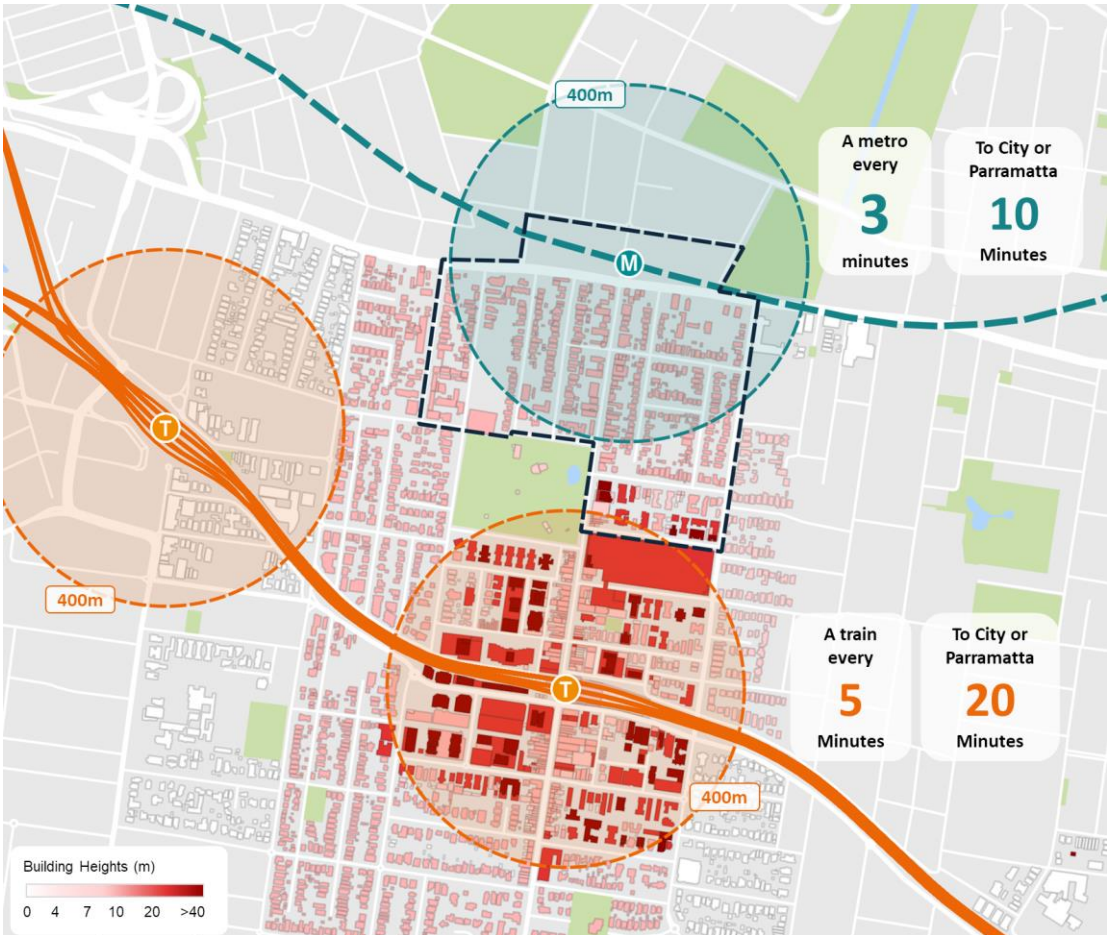
Potential travel behaviour – Post-Metro

The Strathfield Burwood Canada Bay Traffic and Transport Strategy, prepared by Bitzios (and used to support the Canada Bay Planning Proposal), assumed mode share targets for Burwood (and Strathfield) Precincts (as summarised below).



Key implications:

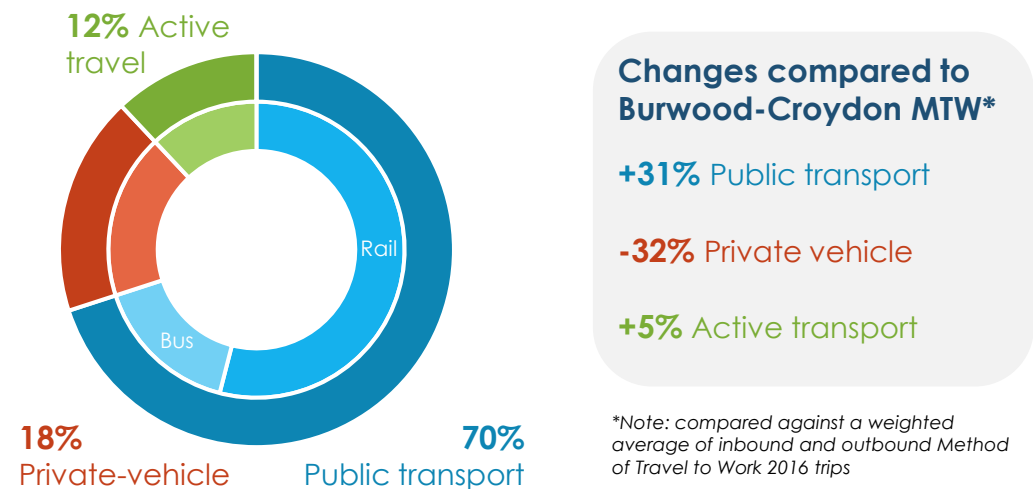
- Adopted as the base case following the introduction of Sydney Metro.
- Rail mode share of 45%, which is 10% higher than the current Burwood-Croydon SA2. Increase may be attributed to a combination of both the introduction of Sydney Metro and a higher proportion of the Burwood area being within immediate walking distance to a high-frequency rail service (both Sydney Trains and Sydney Metro – see adjacent figure).
- Given that majority of the Burwood North Precinct is within the Metro catchment, there is an opportunity for higher metro (hence rail) mode-share.



Potential travel behaviour – Benchmarking other areas

In support of development of the Redfern-Eveleigh Precinct, Transport for NSW commissioned a review of mode-share for South Eveleigh (summarised below).

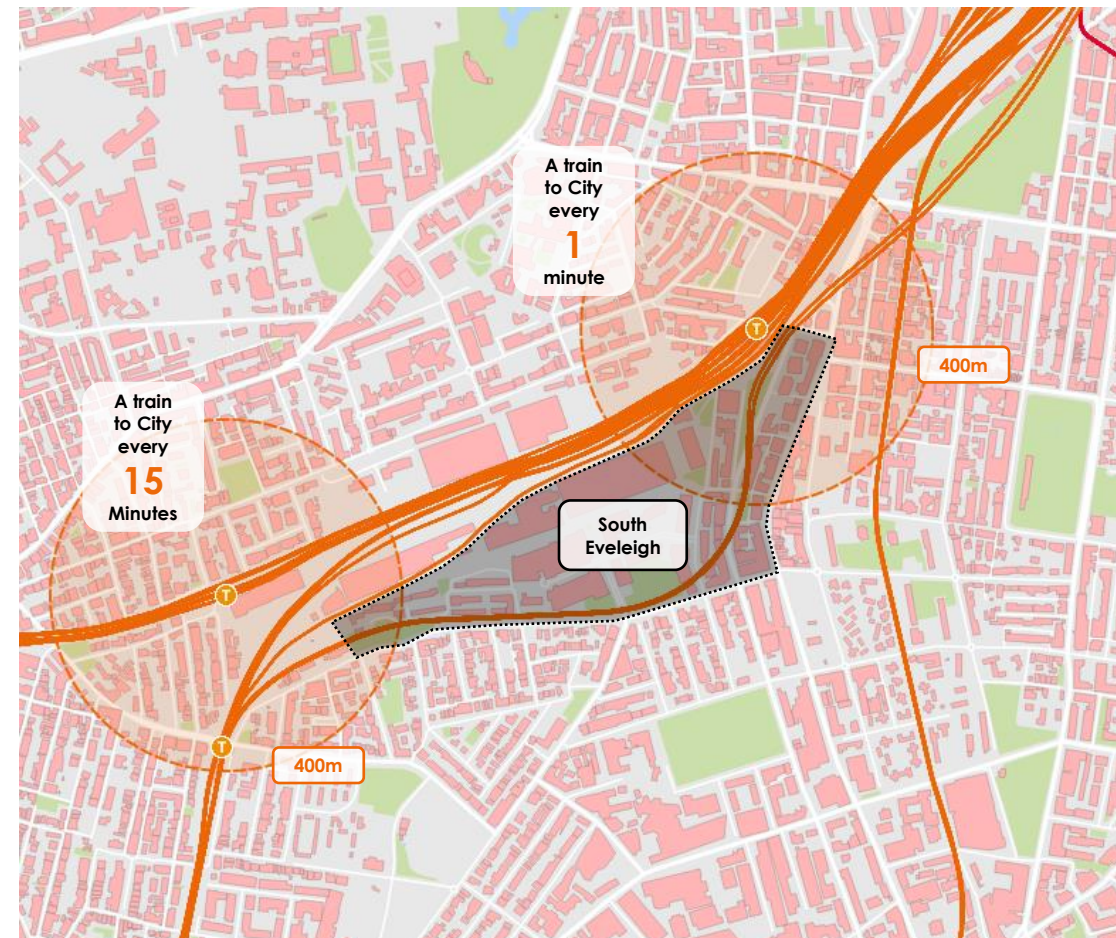
South Eveleigh Mode Share Review



Source: South Eveleigh Development from Redfern North Eveleigh SSP Paint Shop Sub-Precinct Transport Strategy and Traffic Impact Statement (SCT Consulting, 2023)

Key implications:

- Significant public transport mode-share observed when high-density is located within the immediate walking catchment of a key transport interchange. Mode share is 17% higher compared to the Burwood South region (which is in a similar proximity to transport nodes).
- Increased active travel mode share due to internal trips (between residential and non-residential land-uses) within the 2km catchment.



[03]

Draft masterplan option and yield

Burwood North Masterplan Option

- COX has provided a revised masterplan option study for Burwood North Precinct (dated 20 July 2023).
- Development blocks were identified, with constrained sites identified for each development block that excludes heritage items, recent developments, strata developments, schools and open spaces.
- A proposed FSR has been identified for each block, responding to the strategic, transport and development context.
- The proposed FSR controls are translated into quantification of residential GFA and non-residential GFA. This represents the maximum development outcome for the precinct at built out.
- Precinct capacity for jobs, dwellings and population capacities have been calculated for each block using the following assumptions:
 - 90m² GFA per dwelling
 - 35m² GFA per job
 - 2.5 persons per dwelling



Burwood North Masterplan Yield

The transport assessment compares the proposed masterplan to the baseline scenario, which as agreed with Transport for NSW, includes:

- Existing development to be retained
- Maximum development FSRs as approved by PRCUTS.

The relative change in yield from the baseline scenario to the proposed masterplan is summarised below:

	Baseline (PRCUTS + Existing)	Proposed (Burwood North PP)	Change
Non-residential (m ² of GFA)	25,621*	42,155*	(▲ 16,534)
Residential (no. of dwellings)	4,476	6,243	(▲ 1,767)

Note (*) This excludes the precinct to the north of Parramatta Road that is part of the Canada Bay Parramatta Road Corridor Planning Proposal, and Block E1 (Sydney Metro) which may be subject to a separate Planning Proposal.

The Burwood North Masterplan Planning Proposal (PP) will consider the potential transport implications of the increase of:

- ~16,500m² of non-residential GFA
- ~1,750 additional residential units



[04]

Transport appraisal

Assessment scenarios and assumptions

The assessment will consider scenarios:

- **Baseline:** development of Burwood North based on existing developments and the PRCUTS maximum approved FSRs with **existing Burwood South mode-share**. The mode-share targets associated with the PRCUTS FSR and associated approval are not publicly available. Consequently, the existing mode-share has been adopted as a proxy.
- **Project (do nothing):** development based on the revised Burwood North masterplan with **existing Burwood South mode-share**.
- **Project (post-Metro):** development based on the revised Burwood North masterplan with **mode-share as per the Canada Bay PP**.
- **Project (with intervention):** development based on the revised Burwood North masterplan with a **revised mode-share** to achieve a net-zero increase in private vehicle trips (compared to the previously approved scenario – baseline). The intervention includes measures such as changes to parking policies and improvements to active/public transport accessibility.

Trip rates

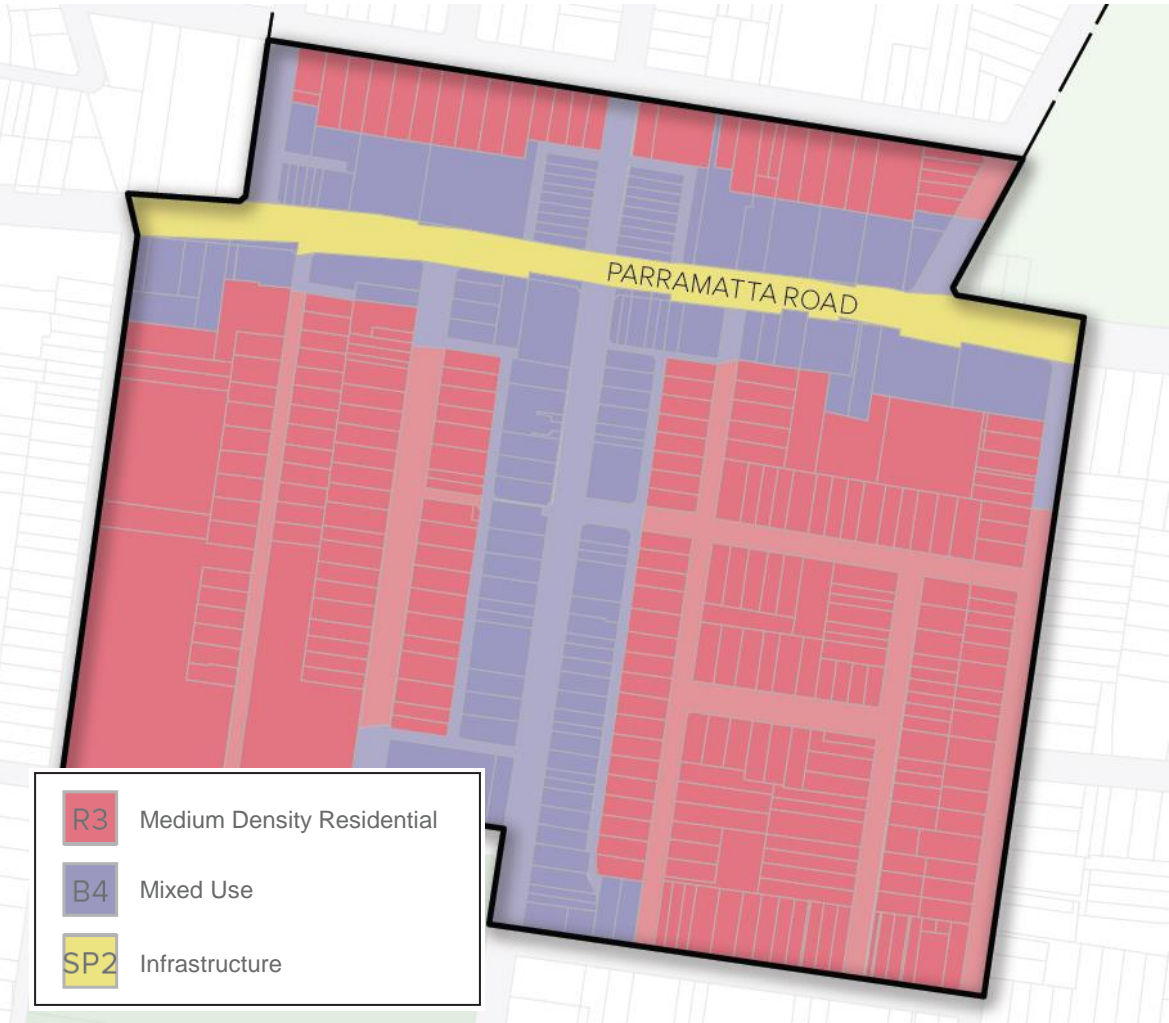
The total trips expected to be generated by the baseline and the Burwood North Masterplan PP, were estimated using surveyed trip rates according to TfNSW Technical Direction (TD 2013-04a) and baseline mode share targets.

- The residential rates derived from the average of Sites 1, 2, 5 and 8 for high-density residential from the TD 2013 | 04a.
- The non-residential rates are derived from the average of office sites 1 to 8 from the TD 2013 | 04a and factored to an occupancy density of 1:35 (employees per square metre of GFA).

Person trip rates	AM	PM
Non-residential (trips per 100m ² of GFA)	2.04	1.51
Residential (trips per unit)	0.73	0.62

Refer to **Appendix A** for details of these sites.

Baseline scenario



Source: PRCUTS Controls Built Form Testing – Burwood, Roberts Day

Under the baseline scenario (existing + PRCUTS approved FSR with existing mode share), the redevelopment of the sites would generate up to 3,800 and 3,150 total trips in the AM and PM peak hours respectively.

AM peak total trips	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger	Total
Non-residential	42	0	18	260	186	16	522
Residential	262	3	110	1,628	1,164	100	3,268

PM peak total trips	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger	Total
Non-residential	31	0	13	193	138	12	387
Residential	221	2	93	1,378	985	84	2,764

AM Peak summary (values are rounded)

Active Transport	Public Transport	Private Vehicle
305	2,015	1,350

Project (do nothing) scenario



Under the Project (do nothing) scenario with the proposed masterplan densities (with existing mode share) will generate up to 5,400 and 4,500 total trips in the AM and PM peak hours respectively.

AM peak total trips	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger	Total
Non-residential	69	1	29	428	306	26	858
Residential	365	4	154	2,271	1,624	139	4,557

PM peak total trips	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger	Total
Non-residential	51	1	21	317	227	19	636
Residential	309	3	130	1,921	1,374	118	3,855

AM Peak comparison to baseline (values are rounded)

Active Transport	Public Transport	Private Vehicle
440	2,880	1,930
(▲ 135)	(▲ 865)	(▲ 580)

Project (post-metro) scenario



Under the Project (do nothing) scenario with the proposed masterplan densities (with the Canada Bay PP post-metro mode-share) will generate up to 5,400 and 4,500 total trips in the AM and PM peak hours (as per *Project Do Nothing*).

AM peak total trips	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger	Total
Non-residential	52	17	129	386	240	34	858
Residential	273	91	684	2,051	1,276	182	4,557

PM peak total trips	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger	Total
Non-residential	38	13	95	286	178	25	636
Residential	231	77	578	1,735	1,079	154	3,855

AM Peak comparison to baseline (values are rounded)

Active Transport	Public Transport	Private Vehicle
430	3,250	1,515
(▲ 125)	(▲ 1,235)	(▲ 165)

Project (with intervention) scenario

Under the Project (with intervention) scenario, several measures (including parking policy and improvements to active/public transport accessibility) to reduce private vehicle mode-share. Mode-share is also compared and changed compared to the Canada Bay PP to reflect an approved Post-Metro scenario in the same region.

Mode Share Targets	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger
Existing Burwood South	8%	<1%	3%	50%	36%	3%
Canada Bay PP (post-metro)	6%	2%	15%	45%	28%	4%
Proposed	10%	3%	5%	53%	25%	4%
Change from existing	(▲ 2%)	(▲ 3%)	(▲ 2%)	(▲ 3%)	(▼ 11%)	(-)

Key Changes:

- Bus mode-share has been reduced to reflective of the lower bus accessibility for Burwood North (compared to the Canada Bay PP) and more reflective of current observations (~5% in 2016 Method of Travel to Work data for the overall Burwood SA2).
- Rail mode share marginally increased to reflect the study area being in the walking catchments of two rail stations, hence improved coverage and reliability.
- Overall public transport mode share target (58%) is still less than the observed South Eveleigh mode share (70%), hence representing an achievable (and conservative) target.

Under the Project (with intervention) scenario with the proposed masterplan densities will generate up to 5,400 and 4,500 total trips in the AM and PM peak hours respectively (unchanged from the *Project Do Nothing* scenario).

AM peak total trips	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger	Total
Non-residential	86	26	43	456	214	34	858
Residential	456	137	228	2,420	1,135	182	4,557

PM peak total trips	Walk	Bicycle	Bus	Train	Car as Driver	Car as Passenger	Total
Non-residential	64	19	32	338	158	25	636
Residential	386	116	193	2,047	960	154	3,855

AM Peak comparison to baseline (values are rounded)

Active Transport	Public Transport	Private Vehicle
705	3,150	1,350
(▲ 400)	(▲ 1,130)	(-)

Project (with intervention) scenario

Key implications:

- By achieving net zero increase in car trips (and likely decrease), there will be an increase in up to 400 active and 1,130 public transport trips respectively during peak hours.
- This level of increase in walking and cycling trips can be accommodated by the proposed street network in Burwood North with significant investment in the public domain and improved environment and infrastructure for pedestrians and cyclists.
- The increase of 1,130 public transport trips would be spread across buses (approximately 10%) and rail (approximately 90%).
 - Improved bus services, which predominately operate north-south, and potential new bus services along the Parramatta Road corridor. Buses would likely accommodate the 10% increase and serve customers with an origin or destination not directly served by the two rail modes.
 - Existing train services from Burwood Station may be able to accommodate some of the increased rail trips, as capacity on the T1 Western Line and T2 Inner West Line is freed up following the introduction of Sydney Metro West. However, given the increased distance (compared to Sydney Metro) to the station and the comparatively slower journey time to Parramatta and the Sydney CBD, it is assumed majority of Burwood North customers will opt for Sydney Metro West.
 - If a significant majority of the new customers opt for the high-frequency Sydney Metro West services from Burwood North Station, the increase in customers may have an impact on the capacity of the station (refer to adjacent commentary).

From the *Sydney Metro West - Rail infrastructure, stations, precincts and operations EIS* (March 2022), the forecast customer demand for Burwood North is as below. Therefore, it is assumed the station has been design to accommodate these demands (at a minimum).

Forecast customers	Access	Egress	Total
2036 AM peak hour	2,600	850	3,450

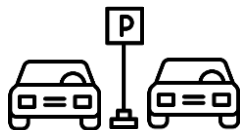
TfNSW projects typically assumed a 15% contingency during the phase to account for changes in assumptions (including land-use density). This equates to capacity for an additional 525 customers.

Forecast customers	Access	Egress	Total
2036 AM peak hour	3,000 (▲ 400)	975 (▲ 125)	3,975 (▲ 525)
Net deficit			~475

Therefore, if a significant majority of the increase of the 1,130 public transport trips opt for Sydney Metro West, the increase in customers may have an impact on the capacity of the station (net deficit of ~475). Hence it is recommended analysis be undertaken in conjunction with Sydney Metro to confirm design capacity of the station, and its implications on the station and services.

Summary

Compared to approved PRCUTS scheme



Keep existing Burwood South mode-share

▲ 135
peak hour trips

▲ 865
peak hour trips

▲ 580
peak hour cars

Adopt mode share consistent with Canada Bay (post-metro)

▲ 125
peak hour trips

▲ 1,235
peak hour trips

▲ 165
peak hour cars

Incentivise active & public transport and reduce parking provision

▲ 400
peak hour trips

▲ 1,130
peak hour trips

(-)
peak hour cars

Increased mode-share facilitated and through improved connectivity and likelihood of internal trips



May have implications on Sydney Metro West

Reduce car use in peak periods by

~10%

through parking provision reduction and car-sharing

[05]

Parking requirements

Parking requirements (residential)

To support the initiative of achieving net-zero vehicular trips (Project (with intervention) scenario), the parking rates for residential uses have been reviewed to discourage excessive on-site parking and car ownership and promote more sustainable outcomes via restrained parking policy.

The following maximum parking requirements (residential) are proposed within the Burwood North Precinct for inclusion into the LEP, as outlined in table below:

Residential parking	Studio	1 Bed	2 Bed	3+ Bed	Visitor
Proposed (maximum no. of spaces per unit)	0.1	0.3	0.7	1.0	0.1

The proposed rates have been informed by benchmarking to the existing Burwood Development Control Plan and other regions (refer to the table on the right of the page):

- Are generally aligned with the City of Sydney Category A rates (lowest rates for development with the best public transport accessibility) and PRCUTS (Category 1) rates that apply for high accessibility locations within 800m of multiple transport options.
- Are lower than those set out for the Canada Bay Burwood-Concord, Homebush North and Kings Bay Precincts and Burwood DCP (centres and corridors), but also aligned with those approved for Rhodes East and Rhodes West site-specific DCPs.
- Retain the suggested visitor parking rates for the Canada Bay Burwood-Concord, Homebush North and Kings Bay Precincts, rather than the zero-parking provision for visitors.

Benchmarking

Area	Residential Parking (spaces per unit)				
	Studio	1 Bed	2 Bed	3+ Bed	Visitor
PRCUTS (Category 1 applied for high accessibility locations)	0	0.3	0.7	1.0	0
City of Sydney (Category A)	0.1	0.3	0.7	1.0	0
Rhodes East site-specific DCP	0.1	0.3	0.7	1.0	0.05
Rhodes West site-specific DCP	0.1	0.3	0.7	1.0	0.05
St Leonards Precinct	0.25	0.25	0.5	0.5	0
PRCUTS (Category 2)	0.3	0.5	0.9	1.2	0.1
Canada Bay LEP - Burwood-Concord, Homebush North and Kings Bay Precincts	0.3	0.5	0.9	1.2	0.1
Canada Bay DCP (Category C)	0.3	0.5	0.9	1.2	0.2
Burwood (Centres and Corridors)	0.5	1.0		1.5	0.2

Parking requirements (non-residential)

To reduce the attractiveness for workers to drive to work in an area that will be supported by trains, metro and buses, the parking rates for non-residential uses have also been reviewed and benchmarked to the Burwood DCP and other similar Precincts (refer to the table on the right of the page) .

The following maximum parking requirements (non-residential) are proposed within the Burwood North Precinct for inclusion into the LEP, as outlined in the table below

Non-residential parking (maximum)	
High density commercial (i.e. office)	1 space per 400 m ²
Other commercial (i.e. medical and local business)	1 space per 150 m ²
Retail	1 space per 100 m ²

- The proposed rates are generally aligned with those suggested for the PRCUTS precincts (Category 1) for high accessibility locations within 800m of multiple transport options.
- High density commercial land-use is predominately located within 200m of the transport nodes (metro station and bus corridors), hence well served by public transport. This is consistent, if not an improvement, with the St Leonards Precinct, the corresponding parking rate has been adopted.

Benchmarking

Area	Non-residential Parking	
	Commercial	Retail
St Leonards Precinct	1 space per 400 m²	
Burwood (Centres and Corridors)	1 space for the first 400 m ² or part thereof, plus - 1 space per 120 m ² or part thereof additional to the first 400 m ²	1 space per 50 m ²
City of Sydney (Category D)	1 space per 175 m ²	1 space per 90 m ²
PRCUTS (Category 1)	1 space per 150 m²	1 space per 100 m²
Rhodes East site-specific DCP	1 space per 150 m²	1 space per 100 m²
City of Sydney (Category E)	1 space per 125 m ²	1 space per 60 m ²
PRCUTS (Category 2)	1 space per 100 m ²	1 space per 70 m ²
Canada Bay LEP - Burwood-Concord, Homebush North and Kings Bay Precincts	1 space per 100 m ²	1 space per 70 m ²
Rhodes West site-specific DCP	1 space per 40 m ²	
Canada Bay DCP	1 space per 40 m ²	

Other parking considerations

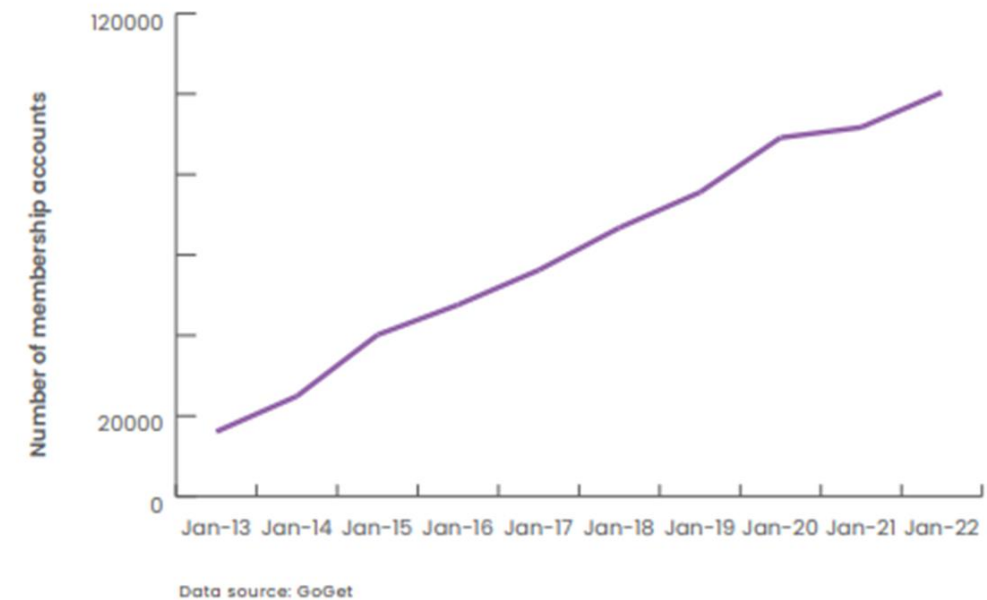
- Provide access to a car when they need one, without having to own and store one – car share and ride share
- Unbundled parking from the price of a unit – gives residents the option to rent or buy parking spaces, but also choose to save money by not having a parking space
- Making parking electric capable – requirement for all new development and retrofitting existing

Key implications:

- Objectives and controls to deliver these outcomes are proposed to be included for the Burwood North Precinct in the Burwood DCP. These amendments will be undertaken as part of the Planning Proposal phase and will be exhibited concurrently with the Planning Proposal.

Demand for car-share is increasing in NSW

GoGet has more than 100,000 membership accounts – there can be more than one registered driver per account.



Other parking requirements

Freight and servicing vehicle parking

- Adopt freight and servicing vehicle parking requirements as per Canada Bay DCP control as follows:

Land Use	Space required
Residential development	1 space per 50 apartments for first 200 apartments plus 1 space per 100 apartments thereafter
Commercial offices	1 space per 4,000m ² GFA for first 20,000m ² GFA and a space per 8,000m ² GFA thereafter
Retail	1 space per 500m ² for first 2,000m ² and 1 space per 1,000m ² thereafter (50% of spaces for trucks)

Motorcycle parking

- Adopt maximum provision for residential dwellings as per Canada Bay DCP control – 2 spaces per 10 dwellings.

Bicycle parking

- Adopt minimum bicycle parking and storage provision as per Canada Bay DCP control as follows:

Land Use	Resident/Staff Bicycle storage facility	Visitor Bicycle parking facility
Residential	2 per dwelling	2 per 10 dwellings
Commercial	2 per 150m ² GFA	2 per 400m ² GFA
Retail	2 per 250m ² GFA	2 per unit + 2 per 100m ² GFA

Accessible parking

- Adopt accessible parking rates as per Canada Bay DCP control – 1 space for every 100 car parking spaces or part thereof.

Car share and ride share

- Adopt car share and ride share requirements as per Canada Bay DCP control as follows:
 - One car share space is to be provide for every 20 dwellings.
 - On-site car parking can be reduced at a rate of 5 parking spaces per 1 car share space.

Electric vehicles charging facility requirements

- Adopt minimum level 1 Electric Vehicle charging facility requirements as per Canada Bay DCP control as follows:

Table B-K Minimum Level 1 electric vehicle charging facility requirements

Type of development	Type of charging facility	Minimum number of charging points/facilities/stations
Manor houses, Multi-dwelling housing, Multi-dwelling housing (terraces), Residential flat building, Shop top housing	Level 1 <ul style="list-style-type: none">Regular 240V wall socket (10amps).2.4kW - 3.7kW.No specialist installation required.16 – 20 hours to fully charge average vehicle.	1 per parking space 1 per five bicycle parking spaces (a dedicated space and charging point for electric bicycles and mobility scooters to be charged must be provided for every five bicycle parking spaces)
Non-residential	Level 1 <ul style="list-style-type: none">Level 1 Regular 240V wall socket (10amps).2.4kW - 3.7kW.No specialist installation required.16 – 20 hours to fully charge average vehicle.	1 per parking space

Appendix A



TD 2013 | 04a trip rates

Residential trip rates

APPENDIX B3 – HIGH DENSITY RESIDENTIAL – GENERATION RATES										
Site No.	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
Location	St Leonards	Chatswood	Cronulla	Rockdale	Parramatta	Liberty Grove	Strathfield	Pymont	Charlestown	Wollongong
Weekday										
AM Peak Person Trips per Unit	0.64	0.64	0.32	0.81	0.95	0.72	0.52	0.69	0.53	0.89
AM Peak Person Trips per Car Space	0.39	0.51	0.22	0.47	0.5	0.62	0.43	0.3	0.62	0.53
AM Peak Person Trips per Bedroom	0.29	0.3	0.13	0.39	0.45	0.29	0.26	0.46	0.27	0.3
PM Peak Person Trips per Unit	0.54	0.82	0.14	0.53	0.65	0.91	0.42	0.46	0.65	1.11
PM Peak Person Trips per Car Space	0.54	0.82	0.14	0.53	0.65	0.91	0.42	0.46	0.65	1.11
PM Peak Person Trips per Bedroom	0.24	0.39	0.06	0.26	0.31	0.37	0.21	0.3	0.33	0.37
Daily Person Trips per Unit	3.49	5.35	2.96	5.36	5.01	6.5	4.16	3.05	6.03	8.67
Daily Person Trips per Car Space	2.52	3.35	4.61	4.83	3.85	4.47	4.3	2.01	5.76	4.11
Daily Person Trips per Bedroom	1.56	2.51	1.19	2.61	2.39	2.67	2.08	2.01	3.11	2.89
AM Peak Vehicle Trips per Unit	0.14	0.14	0.07	0.32	0.27	0.28	0.1	0.18	0.39	0.67
AM Peak Vehicle Trips per Car Space	0.1	0.09	0.11	0.29	0.2	0.19	0.1	0.12	0.37	0.32
AM Peak Vehicle Trips per Bedroom	0.06	0.07	0.03	0.16	0.13	0.12	0.05	0.12	0.2	0.22
PM Peak Vehicle Trips per Unit	0.07	0.12	0.11	0.18	0.12	0.41	0.06	0.1	0.42	0.22
PM Peak Vehicle Trips per Car Space	0.05	0.07	0.17	0.17	0.09	0.28	0.07	0.07	0.4	0.11
PM Peak Vehicle Trips per Bedroom	0.03	0.05	0.04	0.09	0.06	0.17	0.03	0.07	0.22	0.07
Daily Vehicle Trips per Unit	0.77	1.23	0.93	2.25	1.67	3.14	1.16	1.03	4.37	4.78
Daily Vehicle Trips per Car Space	0.56	0.77	1.44	2.03	1.29	2.16	1.2	0.68	4.18	2.26
Daily Vehicle Trips per Bedroom	0.35	0.58	0.37	1.1	0.8	1.29	0.58	0.68	2.26	1.59
AM Car Driver mode split	22%	22%	22%	40%	28%	39%	19%	26%	74%	75%
PM Car Driver mode split	13%	15%	79%	34%	18%	45%	14%	22%	65%	20%
Daily Car Driver mode split	22%	23%	31%	42%	33%	48%	28%	34%	72%	55%

Office trip rates

APPENDIX D3 – OFFICE BLOCKS – PERSON-BASED TRIP RATES

	OB1 North Sydney	OB2 Chatswood	OB3 Sydney Olympic Park	OB4 Hurstville	OB5 Macquarie Park	OB6 Parramatta	OB7 Liverpool	OB8 Norwest
AM Peak Hour								
Trips	397	249	842	119	142	387	95	34
Trips/100m2 GFA	1.26	2.44	2.47	3.66	2.47	1.43	3.37	2.83
PM Peak Hour								
Trips	338	205	801	77	126	349	65	14
Trips/100m2 GFA	1.08	2.01	2.35	2.37	2.19	1.29	2.31	1.17
Daily								
Trips	2975	1691	-	802	1079	5114	700	142
Trips/100m2 GFA	9.47	16.56	-	24.65	18.77	18.94	24.85	11.83
Road Network AM Peak Hour								
Trips	391	111	-	104	142	266	58	31
Trips/100m2 GFA	1.25	1.09	-	3.2	2.47	0.99	2.06	2.58
Road Network PM Peak Hour								
Trips	338	90	-	67	86	298	48	10
Trips/100m2 GFA	1.08	0.88	-	2.06	1.5	1.1	1.7	0.83

Source: Trip Generation and Parking Generation Surveys (Office Blocks), GTA Consultants for the NSW Roads and Traffic Authority, September 2010, p116

