Transport Assessment

Planning Proposal

Holdmark Sites, Melrose Park South

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Revision History

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Executive Summary

Overview

Ason Group has been commissioned by Holdmark Property Group to undertake a detailed assessment of a Planning Proposal for the development of the Holdmark Sites within Melrose Park South. The Planning Proposal provides for a mix-used development, including:

- 1,925 residential dwellings;
- 600m^2 of retail GFA;
- Two 80 place child care centres with a total GFA of 400m^2 GFA;
- Significant internal and interface road infrastructure; and
- New open space, pedestrian and cycle infrastructure.

The development provided for in the Planning Proposal provides for approximately 50% of the development proposed in the 2019 Melrose Park South Structure Plan, which provides for the following overall development within Melrose Park South:

- 3,855 residential dwellings; and
- 3,800m^2 of commercial/retail GFA.

Assessment Conclusions

Ason Group has examined the access, traffic and parking characteristics of the Planning Proposal; and the future operation of the road, public and active transport and parking environments further to development of the Holdmark Site in accordance with the Planning Proposal. Further to our assessment, Ason Group provides the following conclusions:

- The trip generation of the Holdmark Sites further to the Planning Proposal will be significantly lower than forecast and then modelled in the Transport Management & Accessibility Plan 2018 (the TMAP) prepared by Jacobs on behalf of the proponents of both Melrose Park South (including Holdmark) and Melrose Park North in 2018; this is a result of reduced yields across the Holdmark Sites compared to those adopted in the TMAP.
- With reference to the trip rates adopted in the TMAP, it is estimated that the Planning Proposal will result in the trip generation of the Holdmark Sites being some 20% lower than modelled in the TMAP in both the AM and PM peak periods.
- The internal and adjacent road network provided in the Planning Proposal is essentially identical to that adopted in the TMAP model, and as such there is no information to suggest that the general distribution of vehicle trips to and through the local road network would be any different to that assigned in the TMAP model.

- Given that the TMAP determined that the trip generation of the Holdmark Sites (and broader Melrose Park) could – further to the works and strategies identified in the TMAP Implementation Plan – be appropriately accommodated by the future road network, it is therefore inherently the case that the Planning Proposal can be supported in consideration of traffic conditions.
- Parking across the Holdmark Sites will be provided in accordance with the maximum parking rate recommendations detailed in the TMAP; while noting the parking may be provided at higher (average) rates in the short term, the maximum parking further to the completion of development will not exceed 1,534 parking spaces.
- The Planning Proposal provides for the appropriate future allocation of on-street and car share parking spaces, again in accordance with the recommendations of the TMAP; final details in this regard would be determined as part of a future Development Application process.
- The Planning Proposal provides for the appropriate future allocation of accessible, motorcycle and bicycle parking spaces in accordance with the City of Parramatta Council Development Control Plan (CoP DCP); final details in this regard would be determined as part of a future Development Application process.

Recommendations

The singular most important recommendation that can be provided by Ason Group is compliance with the recommendations of the TMAP as summarised in the TMAP Implementation Plan. Holdmark has fully committed to such compliance, and in time will work with the key stakeholders and other Melrose Park proponents to ensure the timely implementation of all the works and strategies identified in the Implementation Plan as development proceeds across Melrose Park.

In addition, and further to the underlying Objectives of the TMAP, Ason Group recommends the following:

- That future developments within the Holdmark Sites be required to develop Green Travel Plans so as to maximise the take-up of the substantial public and active transport opportunities which will be available to residential, employees and visitors.
- That a monitoring program be developed and implemented in consultation with the key stakeholders and Melrose Park proponents to ensure that the average level of off-street parking across Melrose Park does not exceed the maximum parking provisions as determined in the TMAP.
- That Holdmark and Melrose Park South proponents work diligently with CoP and in establishing appropriate time restrictions for on-street parking across Melrose Park South so as to discourage the use of private vehicles/long term parking.

Summary

It is the conclusion of Ason Group that the Planning Proposal is entirely supportable further to all access, traffic, parking and implementation considerations.

1 Introduction

1.1 Planning Proposal Overview

Ason Group has been engaged by Holdmark Property Group (Holdmark) to prepare a Transport Assessment (TA) in regard to a Planning Proposal for the Holdmark land holdings (the Holdmark Sites) within Melrose Park South. The Holdmark Sites represent 50% of the total gross floor area (GFA) of Melrose Park South.

The Planning Proposal provides for a mix-used development, including:

- 1,925 residential dwellings;
- 600m^2 of retail GFA;
- Two 80 place child care centres, with a total GFA of 400m^2;
- Significant internal and interface road infrastructure; and
- New open space, pedestrian and cycle infrastructure.

The development provided for in the Planning Proposal provides for approximately 50% of the development proposed in the 2019 Melrose Park South Structure Plan, which provides for the following overall development within Melrose Park South:

- 3,855 residential dwellings; and
- 3,800m^2 of commercial/retail GFA, which may include additional child care facilities.

1.2 Transport Assessment Tasks

This TA provides an assessment of the relevant access, traffic and parking characteristics of the Planning Proposal, which has included detailed consideration of the following:

- Future base transport conditions within and external to the Holdmark Sites, and more broadly across Melrose Park;
- Existing and future public and active transport services and infrastructure;
- The staging of key public and active transport infrastructure, including the proposed bridge over the Parramatta River connecting Melrose Park to Wentworth (termed the Melrose Bridge for ease of reference);
- The future peak vehicular trip generation of the Holdmark Sites, and the potential impact of those trips on the local road network;
- Parking requirements and provision; and
- The general design of local roads and access infrastructure within and adjacent to the Holdmark Sites.

1.3 Melrose Park Transport Management & Accessibility Plan

From the outset, it is important to note that the assessment of the primary traffic implications of the Planning Proposal specifically references the Melrose Park Transport Management & Accessibility Plan 2018 (the TMAP) prepared by Jacobs on behalf of the proponents of both Melrose Park South (including Holdmark) and Melrose Park North.

The TMAP examines the transport characteristics of the development of all of Melrose Park so that a consolidated suite of infrastructure upgrades and other strategies can be provided to allow for the development of all of Melrose Park.

More details in regard to the development, conclusions and recommendations of the TMAP are provided in later sections of this TA.

1.4 Additional Melrose Park Development

Further to the above, this TA necessarily considers the planning currently being undertaken for the remainder of Melrose Park South, and for Melrose Park North.

At this time, a Planning Proposal for Melrose Park North (Melrose Park North PP) is still before the Department of Planning, Industry and Environment (DPIE), but there is no information to suggest that the proponents of Melrose Park North propose any increases to the yields and landuses detailed in the TMAP for Melrose Park North.

Similarly, our discussions with the proponents of the remaining lands within Melrose Park South – which are equal in size to that of the Holdmark Sites - indicate that they will also provide development in line with the yields and land uses detailed in the TMAP.

Moreover of course, it will be the responsibility of the other Melrose Park proponents to ensure that land uses and yields for individual sites/precincts proportionally align with those adopted in the TMAP, as is the case for the Planning Proposal for the Holdmark Sites.

1.5 Reference Documents

1.5.1 Planning Controls

Melrose Park lies within the City of Parramatta (CoP) Local Government Area (LGA), and as such key CoP planning controls and reports referenced in the preparation of this TA include:

- Parramatta Local Environmental Plan 2011 (CoP LEP);
- Paramatta Development Control Plan 2011 (CoP DCP);

1.5.2 Transport and Planning Assessments

This TA references a number of transport and planning assessments relating to recent planning for Melrose Park South and Melrose Park North, including:

- The TMAP;
- The Melrose Park South Structure Plan, 2019, prepared for CoP by the Melrose Park South proponents, Cox Architecture and City Plan;
- The Melrose Park South Structure Plan Traffic & Transport Assessment 2017, prepared by ARC Traffic + Transport; and
- Melrose Park Planning Proposal Traffic and Transport Study 2016, prepared by Aecom.

1.5.3 Transport Guidelines

This TA also references general access, traffic and parking guidelines, including:

- Guide to Traffic Generating Developments 2002, Roads & Maritime Services (RMS Guide);
- Guide to Traffic Generating Developments – Updated Traffic Surveys 2013, Roads & Maritime (RMS Guide Update);
- Australian Standard 2890.1: Parking Facilities – Off-Street Car Parking (AS 2890.1);
- Australian Standard 2890.2: Parking Facilities – Off-Street Commercial Vehicle Facilities (AS 2890.2);
- Australian Standard 2890.3: Parking Facilities – Bicycle Parking (AS 2890.3);
- Australian Standard 2890.6: Parking Facilities – Off-Street Parking for People with a Disability (AS 2890.6);
- Environmental Impact Statement Guidelines, Department of Planning & Environment;
- Transport for NSW (TfNSW) Guide to Transport Impact Assessments; and
- Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area, TfNSW.

1.6 Consultation

Over recent years, Ason Group has had the opportunity to discuss key traffic and transport issues relating to the development of Melrose Park at length with officers of CoP, TfNSW, Roads & Maritime, and the [now] Department of Planning, Industry & Environment (DPIE). This included our representation in the Project Control Group (PCG) that oversaw the preparation of the TMAP.

Ason Group acknowledges the valuable insights provided by these officers in regard to the key traffic and transport issues detailed in this TA.

2 The Holdmark Sites

2.1 The Holdmark Sites and Melrose Park South

The Holdmark Sites lie within Melrose Park South, and consist of two primary land holdings which are referred to as the East Site (south of Mary Street and west of Wharf Road) and West Site (centred on the former Glaxo Smith Kline site). The Holdmark Sites, and Melrose Park South in which they lie, are shown in **Figure 1**.

Figure 1: The Holdmark Sites and Melrose Park South

Source: Cox Architecture

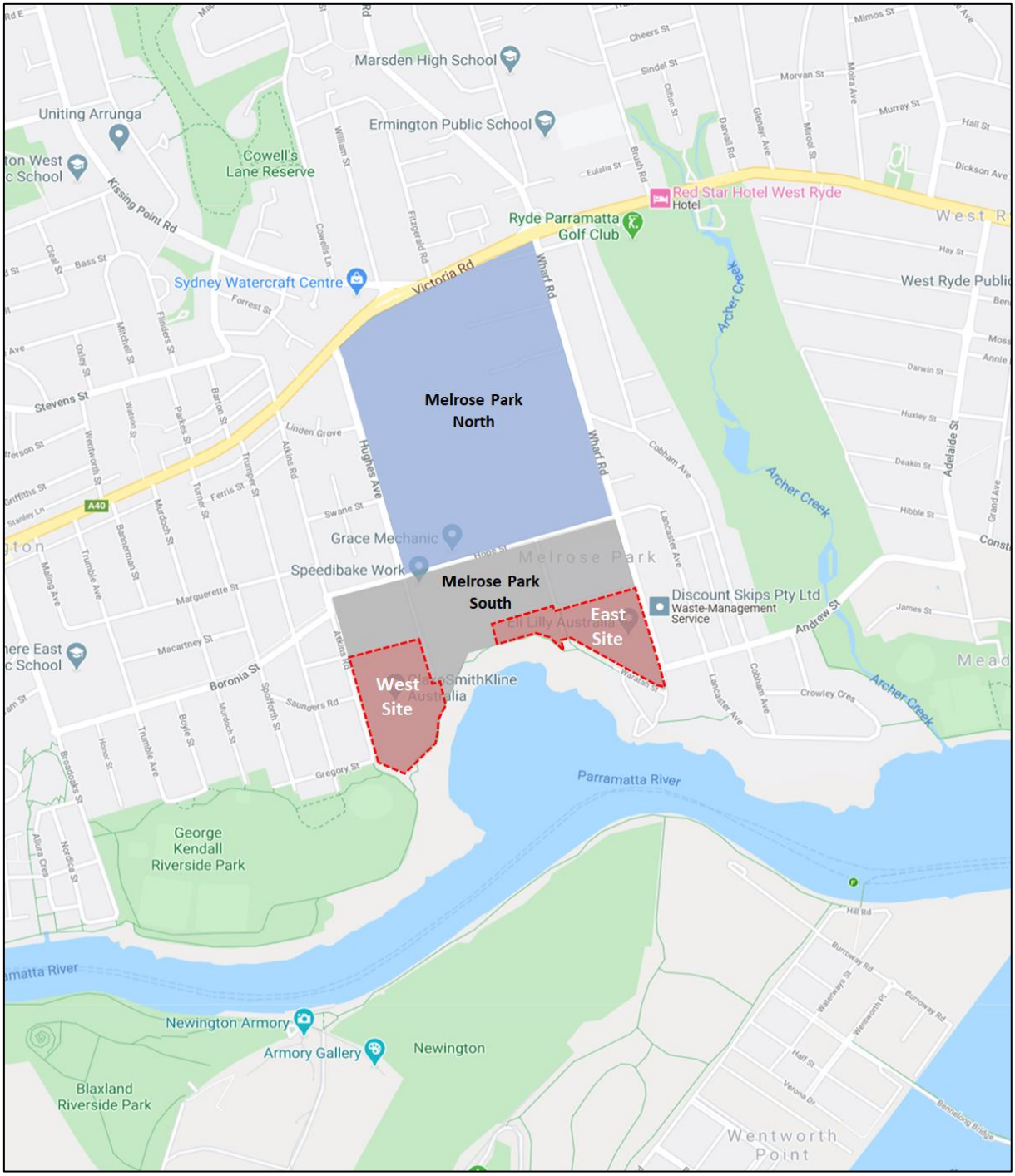
2.2 Melrose Park North

Melrose Park North is generally bordered by Victoria Road to the north, Wharf Road to the east, Hope Street to the south, and [residential dwellings fronting] Hughes Avenue to the west.

It is noted that (for planning purposes, and per the TMAP assessment), Melrose Park North includes the Bartlett Site, located on the south-west corner of the intersection of Victoria Road & Wharf Road. The Bartlett Site has been previously approved for residential development (1,200 dwellings).

The Holdmark Sites, Melrose Park South and Melrose Park North are shown in **Figure 2**.

Figure 2: Melrose Park Sites



2.3 Existing Land Use

The majority of Melrose Park South (including the Holdmark Sites) is currently zoned IN1 General Industrial under LEP 2011. Melrose Park South also accommodates the Melrose Park Public School (generally bordered by Hope Street, Wharf Road, Mary Street and Waratah Street); and public recreational areas adjacent to the Ermington Boat ramp at the southern end of Wharf Road, and along Parramatta River.

Melrose Park North is also predominantly zoned IN1 General Industrial.

Reference to the Bureau of Transport Statistics' recent Journey to Work (JTW) data indicates a significant reduction in employees in Melrose Park over the past 10 – 15 years; this is demonstrably related to the restructuring of many of the key pharmaceutical companies that are located in Melrose Park, including Pfizer, Reckitt Benckiser, Eli Lilly and Glaxo Smith Kline. This change in land use demand is obviously a significant driver of the Planning Proposal and broader redevelopment proposed for Melrose Park.

3 Existing Road Network

3.1 Road Classification

Roads & Maritime and Austroads guidelines provide guidance in regard to the classification of roads so as to appropriately determine the road hierarchy, and to allow for an assessment of (potential impacts associated with) traffic flow changes within the context of that hierarchy.

The Roads & Maritime Network Planning Practice Notes (2008) provide the following general classifications relevant to the road network providing for the Site: -

- An Arterial Road will typically have traffic volumes of over 15,000 vehicles per day (or over 1,500 vehicles per peak hour) and provide major inter-regional linkages;
- A Sub-Arterial Road will typically have traffic volumes of between 5,000vpd and 20,000vpd (or 500vph – 2,000vph) and provide secondary inter-regional linkages;
- A Collector Road will typically have traffic volumes of between 2,000vpd and 10,000vpd (or 200vph – 1,000vph) and provide the link between local roads and regional (Arterial/Sub-Arterial) roads; and
- A Local Road will typically have traffic volumes of less than 2,000vpd (or less than 200vph) and provide direct access from local areas to the collector, sub-arterial or arterial road network.

3.2 Key Roads

3.2.1 Victoria Road

Victoria Road is a State (Arterial) Road and provides a key east-west arterial connectivity between Sydney City and Parramatta. In the vicinity of Melrose Park, Victoria Road provides a divided carriageway with 3 traffic lanes in each direction, and significant additional lane infrastructure at key intersections (see also **Section 3.3** below). Victoria Road adjacent to Melrose Park has a posted speed limit of 70km/h.

3.2.2 Wharf Road

Wharf Road is a collector road which runs north-south from the intersection of Victoria Road & Marsden Road to a terminus at the Ermington boat ramp respectively. Wharf Road provides 1 traffic lane in each direction, and additional kerbside lanes which are generally utilised for on-street parking and bus zones, as well as to provide additional approach capacity to its intersection with Victoria Road. Wharf Road has a posted speed limit of 50km/h, with additional School Zone speed limits (40km/h during school peak periods) adjacent to the Melrose Park Public School.

3.2.3 Hope Street

Hope Street is a collector road which runs east-west between Wharf Road and Atkins Road respectively. Hope Street provides 1 traffic lane in each direction, and additional kerbside lanes which are generally utilised for on-street parking and bus zones. Like Wharf Road, Hope Street has a posted speed limit of 50km/h, with additional School Zone speed limits on the approach to Wharf Road (commencing west of Waratah Street).

3.2.4 Andrew Street

Andrew Street is a collector road which runs east-west between Adelaide Street and Wharf Road respectively. Andrew Street provides 1 traffic lane in each direction, and additional kerbside lanes which are generally utilised for on-street parking and bus zones. Andrew Street has a posted speed limit of 50km/h.

3.2.5 Hughes Avenue

Hughes Avenue is a local road which runs north-south from Victoria Road to a terminus at the Parramatta River respectively. Hughes Avenue provides 1 traffic lane in each direction, and additional kerbside lanes which are generally utilised for on-street parking. Hughes Avenue has a posted speed limit of 50km/h.

3.2.6 Atkins Road

Atkins Road is a local road which runs north-south from Victoria Road to Gregory Street respectively, though for the short distance between Hope Street and Boronia Street it effectively operates as a collector road as part of the broader Andrew Street - Wharf Road - Hope Street - Atkins Road - Boronia Street southern collector route. Atkins Road provides 1 traffic lane in each direction, and additional kerbside lanes which are generally utilised for on-street parking. Atkins Road has a posted speed limit of 50km/h.

3.2.7 Boronia Street

Boronia Street is a collector road which runs east-west between Hope Street and Spurway Street respectively. Boronia Street provides 1 traffic lane in each direction, and additional kerbside lanes which are generally utilised for on-street parking and bus zones. Boronia Street has a posted speed limit of 50km/h.

3.2.8 Waratah Street and Mary Street

Waratah Street and Mary Street are minor local roads which provide a connection between Hope Street and Wharf Street, as well as access for adjacent sites. They provide 1 traffic lane in each direction and kerbside lanes generally utilised for on-street parking.

Waratah Street and Mary Street both have posted speed limits of 50km/h, with additional School Zone speed limits adjacent to the Melrose Park Public School.

It is note that Waratah Street along the waterfront (directly south of the Hope Street Site) has now been closed.

3.3 Key Intersections

3.3.1 Existing Intersection Geometry

As detailed in the TMAP, the majority of key interface intersections and a number of local intersections will require upgrades to accommodate the future traffic generated by the development of Melrose Park, as well as future public transport services and active transport infrastructure. As such, a detailed review of the existing geometry of these intersections is not essentially relevant to this Planning Proposal TA.

3.3.2 Existing Intersection Operations

Notwithstanding the above, the TMAP provides an analysis of the existing operation of the key intersections, essentially providing the benchmark by which to assess the relative impacts of the development of Melrose Park. In this regard, the existing operation of the key intersections – based on Roads & Maritime Level of Service criteria - is shown in the figures below.

Figure 3: Existing PM Peak Hour Intersection Operations

Source: TMAP

Figure 4: Existing PM Peak Hour Intersection Operations

Source: TMAP

With reference to the figures above, the TMAP states the following in regard to existing intersection operations:

- *Significant delays are observed along Victoria Road near Melrose Park at Wharf Road. The remaining intersections on Victoria Road perform satisfactorily with the exception of Church Street intersection in both peak periods and the West Parade intersection in the PM peak.*
- *Significant eastbound delays are observed on the Kissing Point Road/Stewart Street corridor in the AM peak, particularly at the Stewart Street/Marsden Road intersection*.

With reference to sections below, these two intersections are particularly targeted for upgrades to accommodate the Melrose Park development, while Melrose Park North will also provide a number of new north-south collector roads and east-west local roads (see further in **Section 5.3**) to improve access across Melrose Park.

4 Public & Active Transport

The successful management of the future trip generation of the Holdmark Sites, and indeed all of Melrose Park, will rely in large part on access to existing and future public transport services, and specifically access to the metropolitan rail network; to the Victoria Road Rapid Bus Route; and to local bus services. Access to these services will in turn rely on a high-quality active transport environment, facilitating walk and cycle trips not only within Melrose Park and to the immediately adjacent public transport routes, but also broader trips – and specifically cycle trips – to key sub-regional destinations.

Existing and future public and active transport service and infrastructure are examined in sections below.

4.1 Rail

4.1.1 Existing Rail Network

Melrose Park is located approximately 2km to the west of both West Ryde Station and Meadowbank Station, both of which are located on the T1 Northern Line of the Sydney Trains Network. The T1 Northern Line in turn provides direct access to key sub-regional and regional centres, and to major transport interchanges at Epping (for trips to Hornsby, Macquarie Park and Chatswood) and Strathfield (for trips to Parramatta, Westmead and Penrith).

T1 Northern Line services through both stations provide 5 trains per hour in the AM commuter peak, then 4 services per hour across the rest of the day.

Noting current capacity constraints on the T1 Northern Line, TfNSW is currently investigating its potential duplication, as well as timetabling benefits which will arise from the future expansion of the Sydney Metro network. Stage 2 of the Northern Sydney Freight Corridor project will also provide capacity benefits further to the separation of freight and passenger services along this key corridor.

Of course, high quality connections will be required between Melrose Park and the T1 Northern Line stations; these are discussed further below, while the Sydney Trains Network is shown in **Figure 5**.

Figure 5: Sydney Trains Network

4.1.2 Future Rail Opportunities

Sydney's Rail Future acknowledges capacity constraints within the existing rail network, and that without major capacity improvements by 2031, the CBD, Western, Northern, North Shore, Bankstown, East Hills & Airport lines will reach crowding levels during the morning peak period that are deemed 'high' or above. This suggests that these lines will reach maximum capacity limits, or even already exceed capacity.

In response, a range of network improvements and enhancements are proposed, the key components of which include:

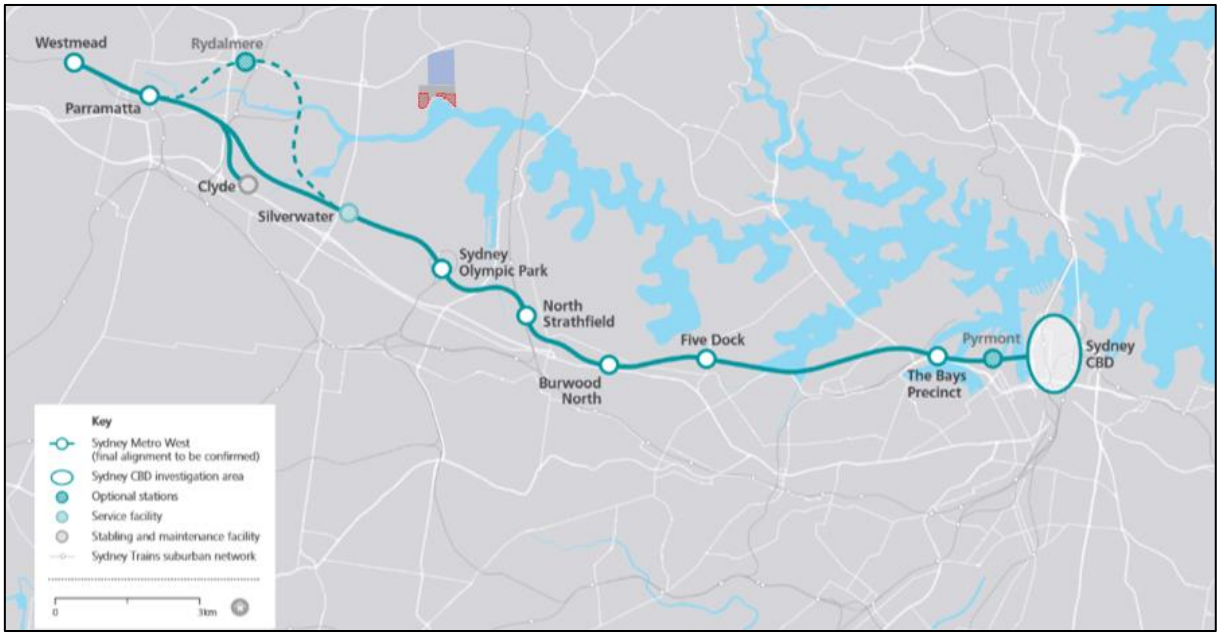
- Operational efficiencies, including timetable revisions, platform access and incident response management;
- Network efficiencies, including the completion of the South West Rail Links, station upgrades, automatic train operations, dedicated fleet types and additional track infrastructure;
- The implementation of a new rapid transport system, including more efficient services on existing lines and the completion and integration of the North-West Rail Line with the existing Epping to Chatswood;
- A second Sydney Harbour crossing and new CBD rail line, providing direct access from the North-West Rail Line into the Sydney CBD and as importantly freeing up significant capacity within the broader rail network; and
- The extension of new single deck services to Bankstown and Hurstville and broader capacity improvements within the southern rail network.

4.1.3 Sydney Metro West

More recently, the NSW State Government has committed to the Sydney Metro West project, which will provide a direct connection between Parramatta and Sydney via key precincts including Sydney Olympic Park and the Bays Precinct.

The Sydney Metro West line is shown in **Figure 6**.

Figure 6: Sydney Metro West



Sydney Metro West will effectively double the capacity of the (currently constrained) T1 Western Line between Parramatta and the City, and in turn free up capacity across the rail network. Further, and as discussed in **Section 4.1.4** below, the proposed Stage 2 of the Parramatta Light Rail line (PLR Stage 2) would run directly past the Holdmark Sites along Hope Street and Wharf Road, and provide an immediate connection south to Sydney Metro West at Sydney Olympic Park.

It is noted that the State Government has announced (April 2020) that Sydney Metro West will not be diverted to provide a new station at Rydalmere. However, the provision of such was not fundamental to the conclusions of the TMAP.

4.1.4 Parramatta Light Rail

Stage 1 of Parramatta Light Rail line (PLR Stage 1) is currently under construction, and will connect Westmead and Carlingford via the Parramatta CBD and Camellia. As discussed in the TMAP, PLR Stage 1 in and of itself provides opportunities for future Melrose Park residents to access key employment and general growth precincts via Rydalmere Station, which is readily accessible to Melrose Park by Victoria Road bus services (see **Section 4.3** below), providing more route choice for future residents, employees and visitors.

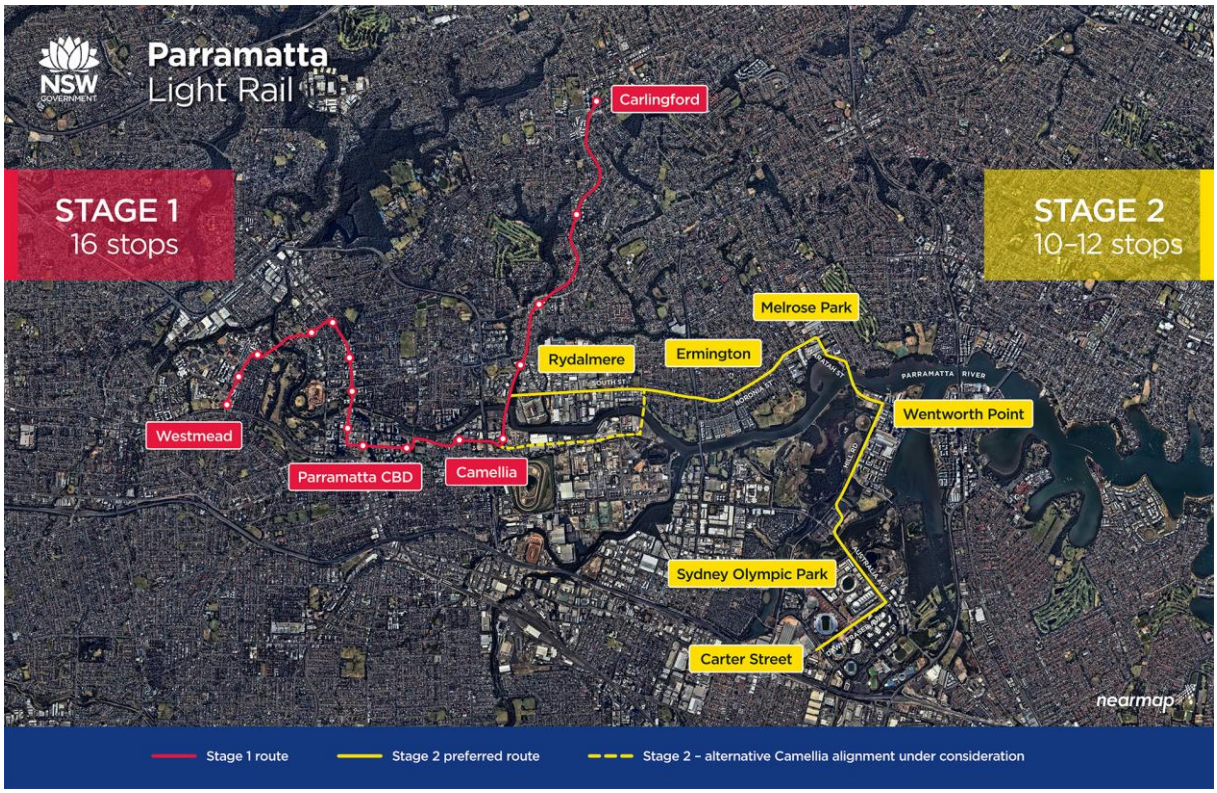
More significantly, the State Government has announced their preferred option for PLR Stage 2 which would run north of the Parramatta River from Rydalmere through Ermington and Melrose Park, and then across the Parramatta River via the Melrose Bridge to Wentworth Point and Sydney Olympic Park.

As stated in the announcement, this route – including the Melrose Bridge (see also **Section 4.4** below) - was considered the best option as it achieves a fully integrated transport and land use plan for Greater Parramatta and the Sydney Olympic Park peninsula, and connects directly with fast rail and future metro services to the Sydney CBD.

While no funding commitments have been made towards PLR Stage 2, during the preparation of this TA (April 2020) the NSW Government has specifically raised the potential development of PLR 2 as part of the economic and infrastructure response to (what are current) Covid-19 conditions. In addition, as discussed in **Section 4.1.3** the Sydney Metro West will not be extended to provide a station at Rydalmere; this is likely to provide even more impetus to the provision of PLR Stage 2 to provide the extra connectivity for the development of sites north of the Parramatta River including Rydalmere itself, Ermington and of course Melrose Park.

PLR Stage 1 and the preferred alignment of PLR Stage 2 are shown **Figure 7**.

Figure 7: Parramatta Light Rail Stage 1 and Stage 2



4.2 Existing Bus Services

Primary bus services are provided in Victoria Road, including regional and sub-regional routes connecting Sydney (City) and Parramatta (with connections to rail and major centres). Key bus routes – the majority of which also connect to railway stations, transport interchanges and sub-regional and regional centres - are reported in **Table 1**, and shown in the figures below.

Table 1: Existing Bus Services

Route	Origin-Destination	Peak Headway	Off-Peak Headway
M52	Parramatta to Sydney City via Ryde	10 min	15 min
520	Parramatta to Sydney City via Ryde	30 min	60 min
513	Carlingford to Meadowbank Ferry Wharf	30 min	60 min
523	Parramatta to West Ryde via Ermington	30 min	60 min
524	Parramatta to West Ryde via Melrose Park	30 min	60 min
544	Auburn to Macquarie Park	30 min	60 min

Figure 8: Bus Route M52 and 520

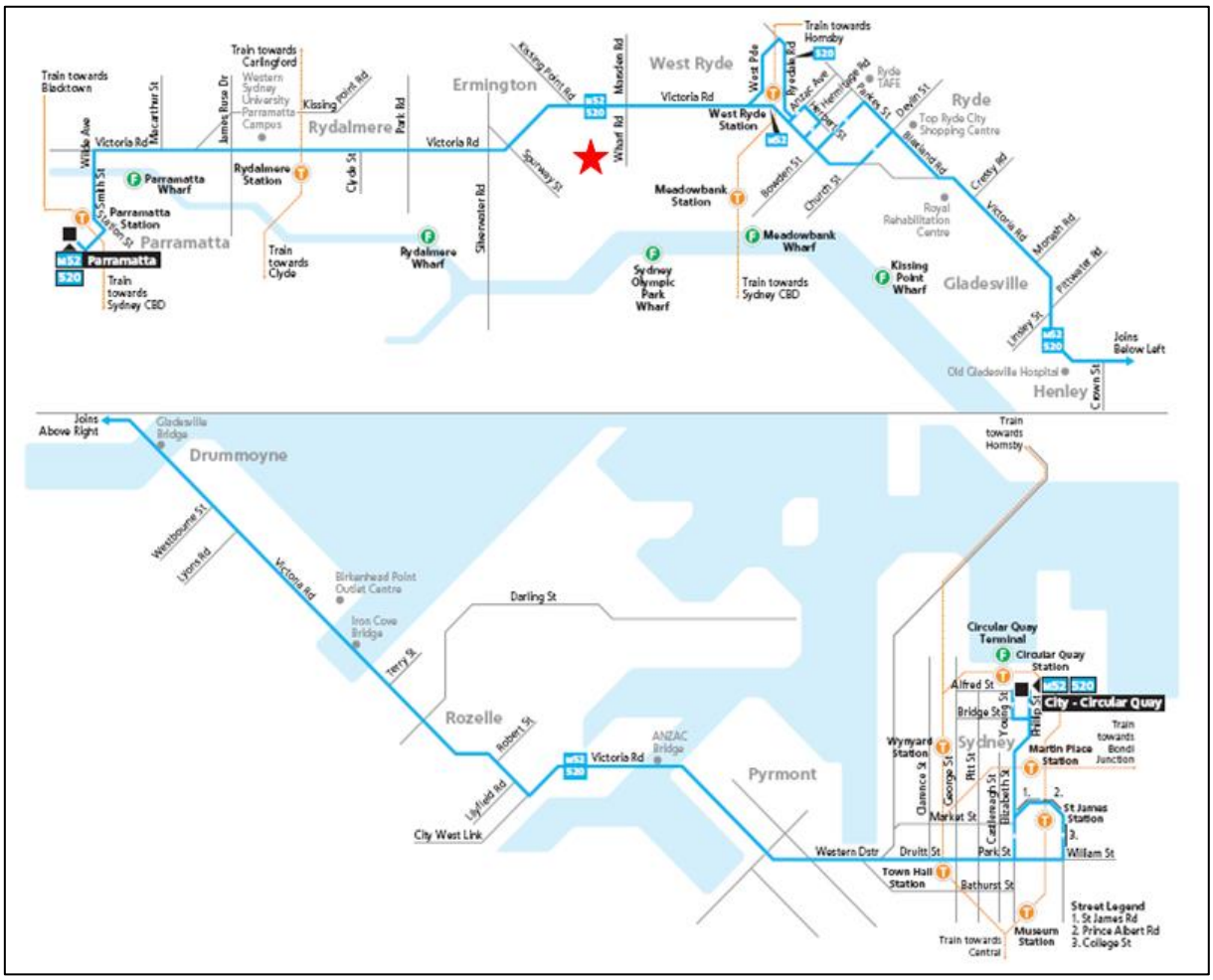


Figure 9: Bus Route 513

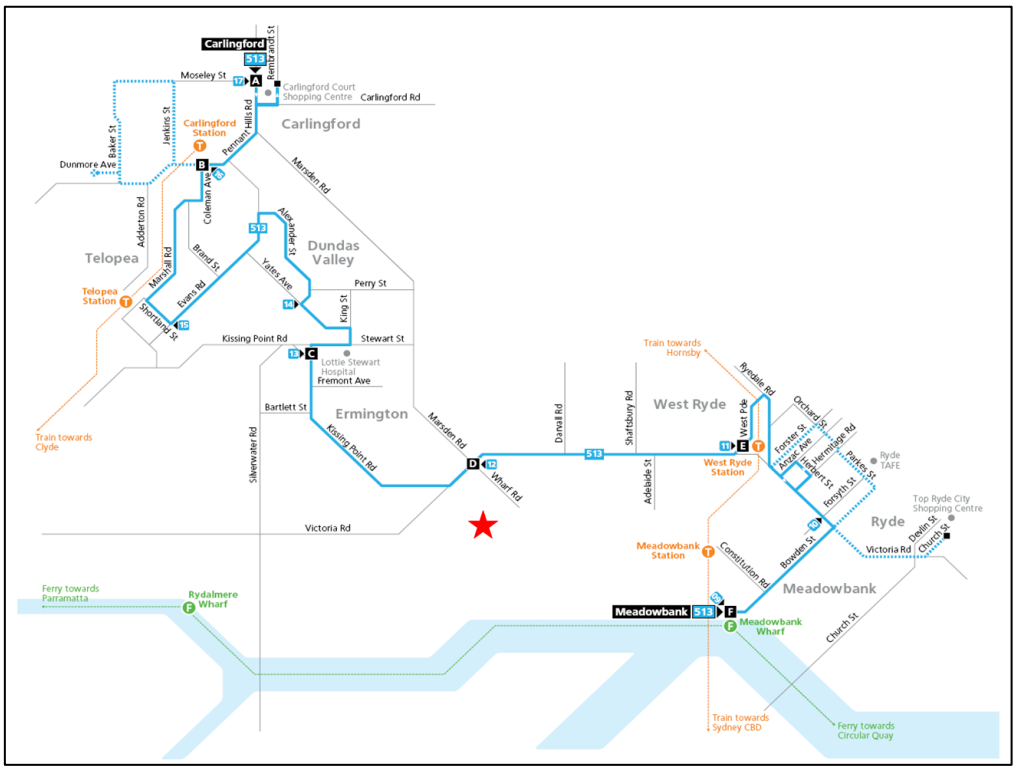


Figure 10: Bus Routes 523 and 524

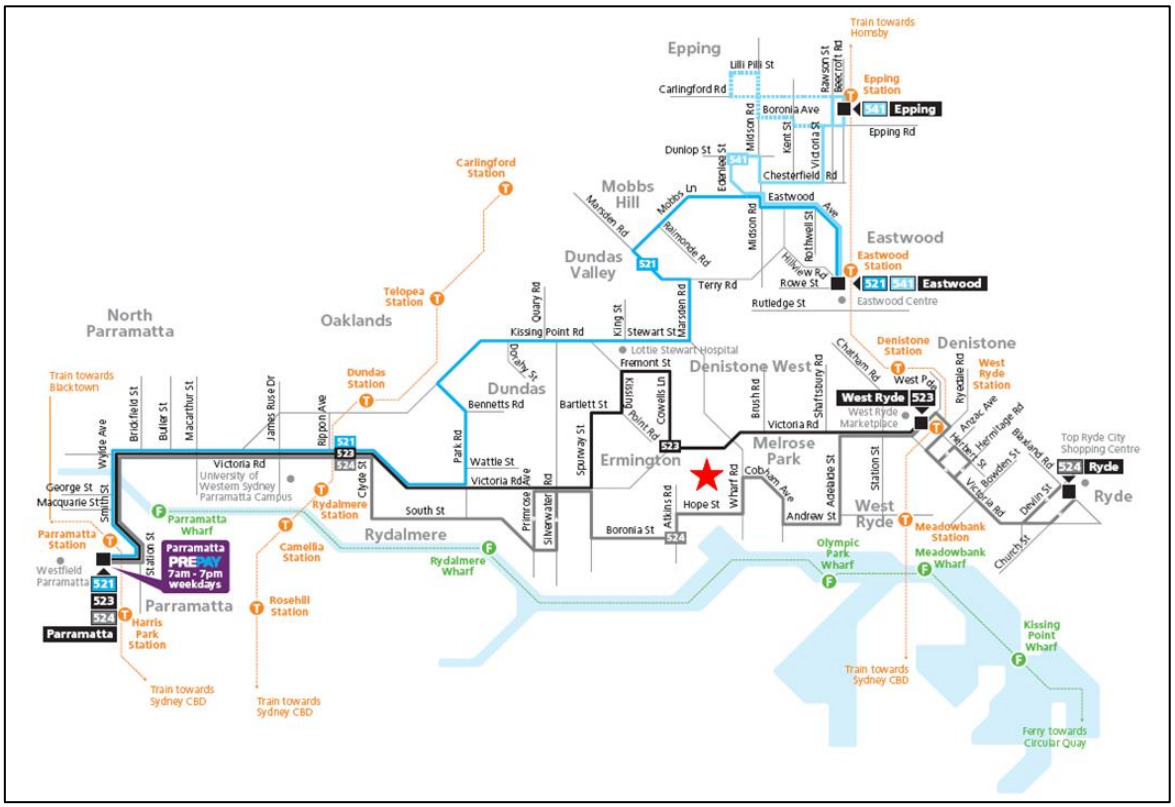
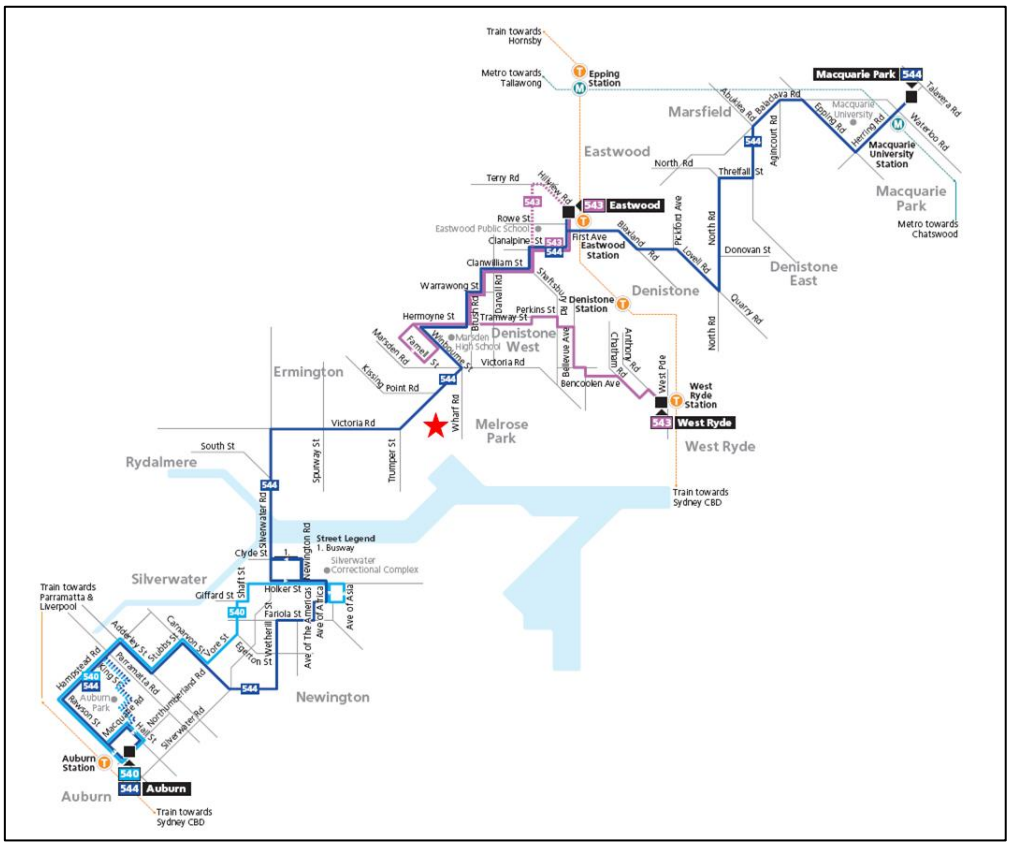


Figure 11: Bus Route 544



4.3 Future Bus Services

4.3.1 Victoria Road Corridor

Sydney's Bus Future specifically identifies Victoria Road as a Rapid Bus Route (between Parramatta and the Sydney CBD via Ryde) running directly past Melrose Park, and is forecast to provide 40 additional bus services every weekday, or the ability to carry more than 2,000 additional customers per day. In addition, key bus prioritisation initiatives are forecast to significantly reduce travel times.

The Victoria Road Rapid Bus Corridor is shown in **Figure 12**, while **Figure 13** shows its connectivity to broader Sydney Metropolitan Rapid Bus Network.

Figure 12: Parramatta to CBD Rapid Bus Improvements

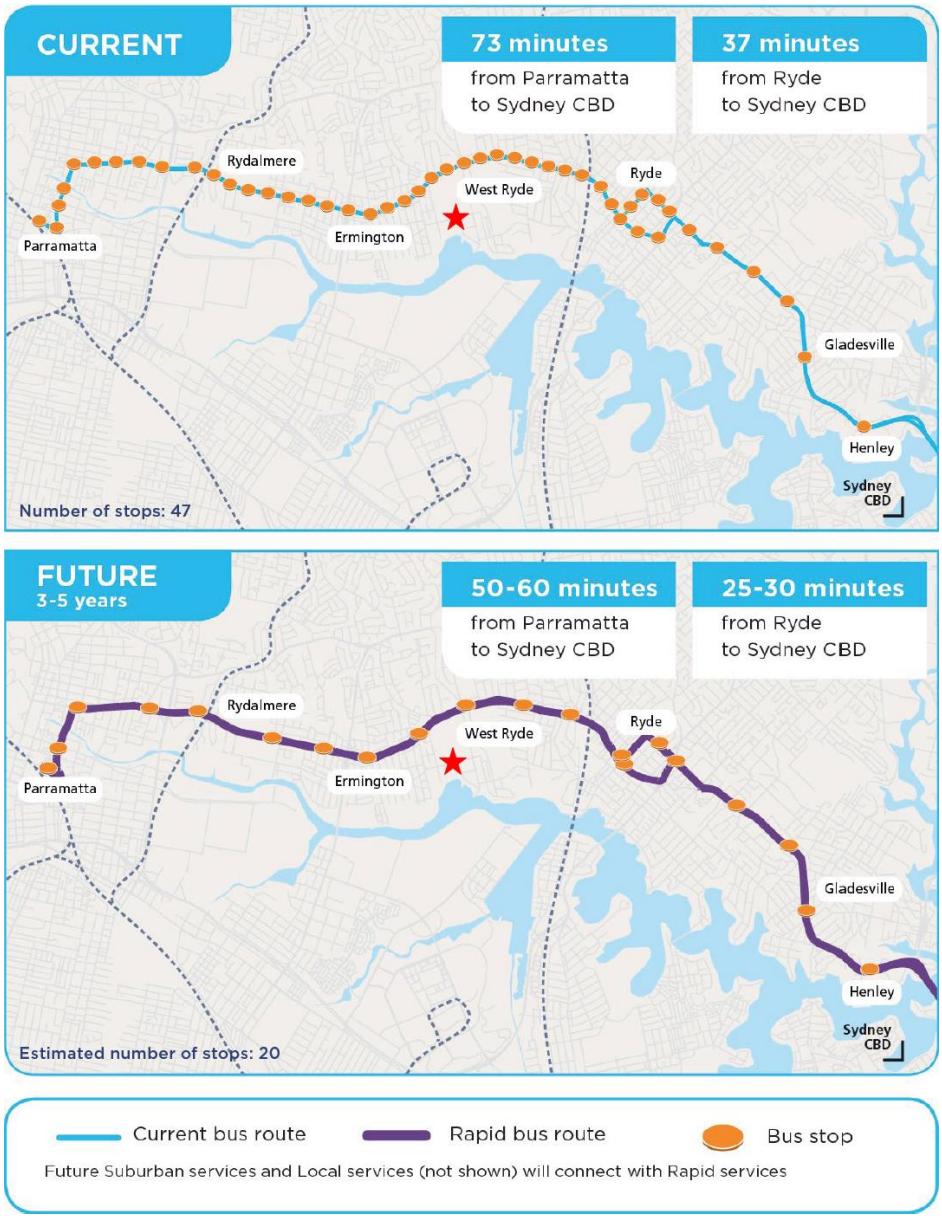
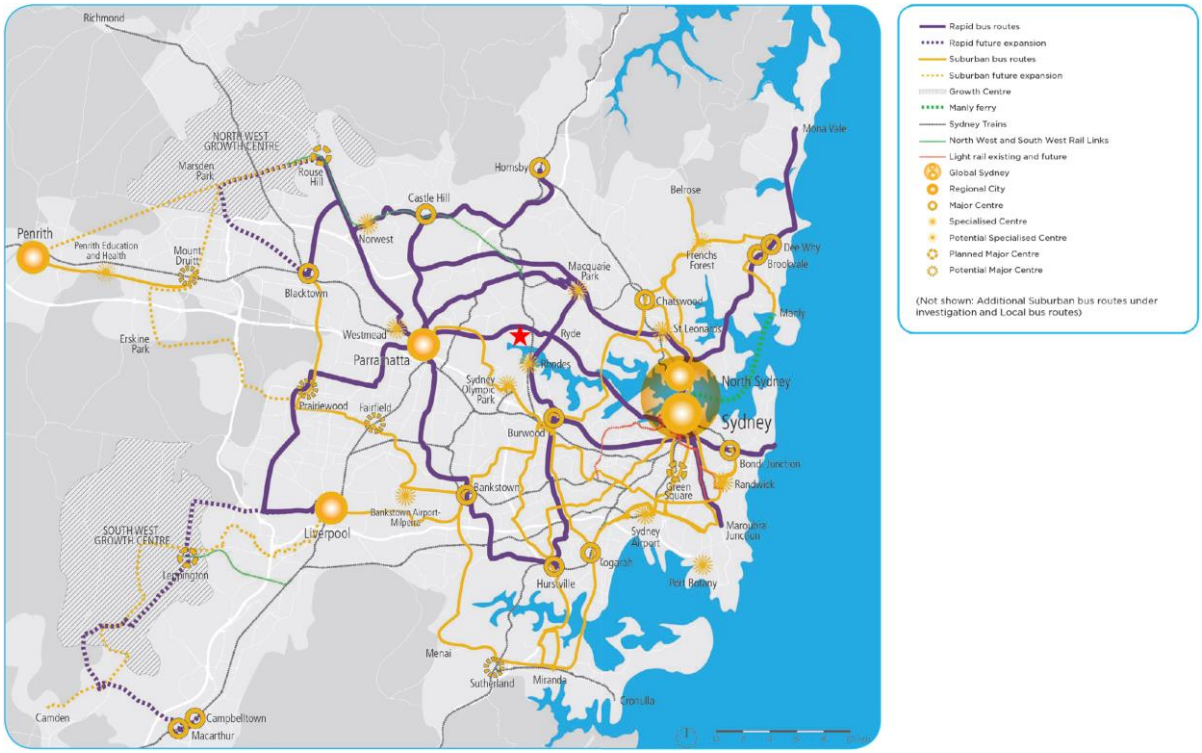


Figure 13: Sydney Metropolitan Rapid Bus Network



In regard to the provision of additional bus lane infrastructure (such as will provide for these reduced travel times) it is noted that the Melrose Park North PP provides for a new bus lane in Victoria Road between Wharf Road and Hughes Avenue – the 'missing link' along the Victoria Road bus lane network at this time – as part of future upgrades of the Victoria Road intersections at Wharf Road & Marsden Road, and at Kissing Point Road (see also **Section 5.3**).

It is further noted that the existing Victoria Road bus stops are located east of Wharf Road, and west of Hughes Avenue. Given the proposed central north-south spine road from Melrose Park South through Melrose Park North to the Victoria Road & Kissing Point Road intersection, it is anticipated that these bus stops will be relocated to provide more immediate access for future residents and employees, i.e. to provide bus stops in Victoria Road immediately east of Kissing Point Road and the new spine road.

4.3.2 Future Local Bus Services

There will be a significant demand for higher frequency 'local' services further to the broader redevelopment of Melrose Park, and particularly for services linking to local rail stations and sub-regional centres (for example Top Ryde, West Ryde, Meadowbank and Rydalmere). While a shuttle service will operate between Melrose Park and Meadowbank Station from inception, it is anticipated that additional higher frequency local services will be required (and well used) as the local population increases.

Until such time as PLR Stage 2 is completed, high frequency buses will operate along the PLR Stage 2 route, providing the vital connection between Melrose Park and Sydney Olympic Park via the Melrose Bridge (see further below).

4.4 Parramatta River Active Transport Bridge

Further to sections above, the most significant piece of major infrastructure identified in the TMAP as being essential to the transport network to accommodate the development of Melrose Park is an active and public transport bridge over the Parramatta River to Wentworth Point. The TMAP determined that the Melrose Bridge will be required by 2028, by which time some 6,700 dwellings would be occupied within Melrose Park based on projections available at the time of the TMAP modelling.

The Melrose Bridge provides the essential active and public transport connection to the broader Sydney Metropolitan transport network, including:

- A direct link to the Sydney Metro West station at Sydney Olympic Park;
- New bus services between Top Ryde and Concord Hospital via Melrose Park;
- New public and active transport connections to the future Rhodes East Ferry Wharf (see **Section 4.5**);
- Direct access to the emerging Sydney Olympic Park and Rhodes regional centres; and
- Provisions for the introduction of PLR Stage 2 in the future.

Perhaps the most significant finding of the TMAP is that the Melrose Bridge – and moreover the active and public transport opportunities it creates – will reduce the private vehicle trip generation of Melrose Park to such a level that it can (further of course to other road network upgrades and transport strategies) appropriately accommodate the future trip demands of Melrose Park; critically, this is the case regardless of whether PLR Stage 2 is constructed.

While final designs for Melrose Bridge will require detailed consultation with TfNSW and other key authorities, the Planning Proposal incorporates an anticipated connection from the southern end of Wharf Road (in the vicinity of Waratah Street) to Wentworth Point in the vicinity of Louise Savage Pathway.

Finally, it is noted that earlier proposals for the development of Melrose Park suggested the potential for a new bridge between Melrose Park and Wentworth Point providing for all vehicle and active movements. However, the TMAP modelling of such reported the introduction of very significant traffic flows in Wharf Road and across Wentworth Point and Sydney Olympic Park, and as such it was agreed with the PCG that the Melrose Bridge would provide for active and public transport only.

4.5 Ferry Services

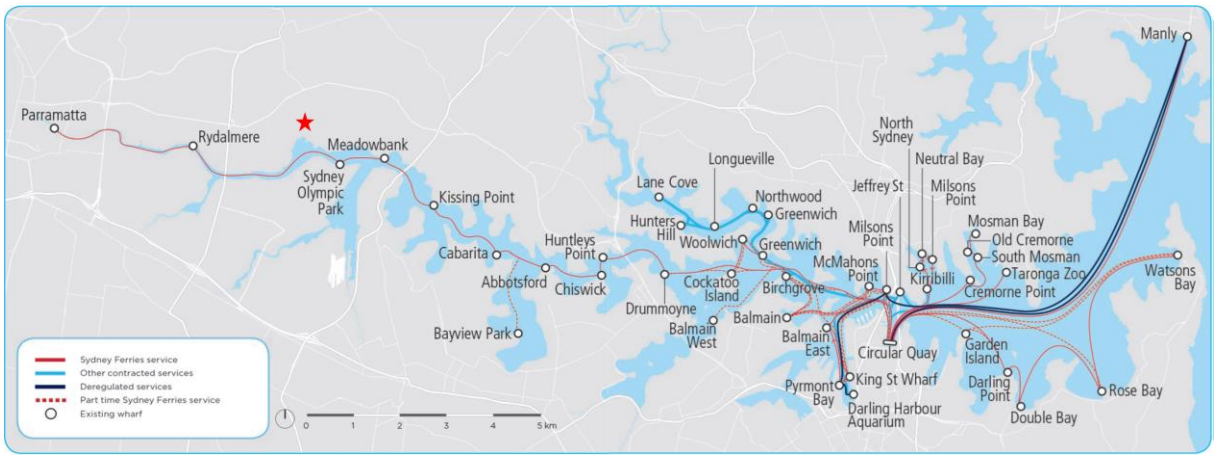
4.5.1 Existing Ferry Services

At present, ferry services operating along the Parramatta River between Parramatta and to/from Sydney Olympic Park Wharf (on the other side of the Parramatta River from Melrose Park) and Meadowbank Wharf offer travel times to the Sydney CBD and emerging centres such as Darling Harbour and Barangaroo similar to those provided by bus/rail connections.

Sydney's Ferry Future reports increases in ferry patronage over the past 10 years, with key demand for trips to/from the Sydney CBD, as well as forecast population growth in areas services by the Parramatta River wharves, and particularly those at Sydney Olympic Park, Meadowbank and Cabarita. Notwithstanding, there remains spare capacity over most of the ferry network to accommodate additional growth.

The Sydney ferry network is shown in **Figure 14**.

Figure 14: Sydney Ferry Network



4.5.2 Future Ferry Services

TfNSW is investigating the provision of a new wharf at Rhodes East, likely between the John Whitton Rail Bridge and Ryde Bridge, with a decision on the final location to be based on operational and navigational parameters. It is acknowledged that while TfNSW had previously indicated the development of an East Rhodes Wharf by 2020, planning for such is still being undertaken.

While a future ferry wharf at Melrose Park has previously been examined, the TMAP determined that a new wharf was *not an essential component of* [the] *Melrose Park transport network*, but that the broader suite of proposed public and active transport services and infrastructure can accommodate the future trip demands without ferry services.

4.6 Walking & Cycling

4.6.1 Existing Walking & Cycling Infrastructure

The Holdmark Sites are ideally located immediately adjacent to the Parramatta Valley Cycleway, which provides a primarily off-road cycleway between Parramatta and Tennyson Point (Morrison Park). In turn, the Parramatta Valley Cycleway provides on and off-road cycle links to key destinations including Westmead, Silverwater, Sydney Olympic Park, Rhodes and Gladesville, and to sub-regional transport interchanges.

The cycle path network available to the Holdmark Sites and Melrose Park is shown in **Figure 15**.

Figure 15: Local and Sub-Regional Cycle Paths

Source: TMAP

4.6.2 Future External Walking & Cycling Infrastructure

As discussed in **Section 4.4**, the Melrose Bridge will provide a new active transport connection to the south including key retail, social and recreational centres such as Sydney Olympic Park and Rhodes; as well as connections to the broader public transport network.

Of course, the provision of a safe and permeable pedestrian and cycle network throughout the Holdmark Sites and across Melrose Park is also essential to reducing internal vehicle trip generation, which in turn allows for internal road infrastructure to be minimised. New infrastructure providing for both walking and cycling – pedestrian shelters, cycle parking, storage lockers, showers – will be provided across the Holdmark Sites and Melrose Park.

More broadly, internal roads will provide for safe pedestrian and cycle access through specific design profiles (see **Section 6.2**) while the central (north-south) Spine Road through Melrose Park provides essential north-south connectivity between Victoria Road, the Melrose Park North Town Centre, through Melrose Park South to the Melrose Bridge and the Parramatta Valley Cycleway.

5 The Melrose Park TMAP

5.1 Overview

As stated in the Introduction, the TMAP was specifically recommended by Ason Group as the best – if not only – way to ensure that future transport needs of both Melrose Park South (including the Holdmark Sites) and Melrose Park North were considered rigorously in full consultation with the key authorities, all of who were represented in the PCG. Jacobs in turn provided the following as key objectives of the TMAP:

- *Address movement to, from and within Melrose Park in a sustainable manner*
- *Ensure the provision of infrastructure and services will satisfy the forecast growth in travel demand generated by Melrose Park and is consistent with those planned for the wider region, taking into consideration potential development staging*
- *Present an integrated transport system that integrates all travel modes with a focus on encouraging the use of public transport, walking and cycling*
- *Ensure the development integrates seamlessly with the surrounding street environment*
- *Determine the changes in transport infrastructure that will satisfy the target objectives of more travel by alternative non car modes*
- *Examine the relationship between parking provision and the achievement of higher mode share to public transport, cycling and working*
- *Prepare a multi-modal transport network and services action plan including staging and trigger points of infrastructure upgrades*.

5.2 Land Uses and Yields

The land uses and yields adopted in the TMAP were taken directly from the earlier Structure Plans developed for Melrose Park South and Melrose Park North. **Table 2** provides a summary of these key TMAP inputs, noting again that 1,200 of the dwellings assigned within Melrose Park North (the Bartlett Site) have been previously been approved.

Table 2: Melrose Park TMAP Yields

TMAP Yields	Dwellings	Commercial m^2	Retail m^2
Melrose Park South	4,238	4,400	3,100
Melrose Park North	6,850	15,000	12,500
Total	**11,088**	**19,400**	**15,600**

Source: TMAP

5.3 Road Network Design

5.3.1 Internal Access

The Melrose Park road network adopted in the TMAP was again based on the road networks detailed in the earlier Structure Plans developed for Melrose Park South and Melrose Park North, as shown in **Figure 16**. From a trip distribution perspective, it is important to note that this network also specifically accounts for the location of the future Town Centre north of Hope Street; and the proposed location of access to basement parking for the Holdmark Sites and key sub-precincts within both Melrose Park South and Melrose Park North.

Figure 16: Melrose Park TMAP Road Network

Source: TMAP

5.3.2 Intersection Upgrades

The TMAP road network upon which the assessment of Melrose Park was ultimately based necessarily considered upgrades of the key interface intersections, and particularly those along Victoria Road. These upgrades were largely in line with those previously identified in the transport reports supporting the Melrose Park North PP, and would be staged as development progresses across Melrose Park.

The timing of these upgrades is summarised in **Table 3** upgrades and shown in the figures below, noting that these upgrades would all be required as part of Stage 1 development of Melrose Park, which provides for up to 6,700 dwellings prior to the construction of Melrose Bridge (Stage 2, by 2028).

Table 3: TMAP Victoria Road Upgrade Staging

Stage	Total Dwellings Supported
Existing Network	0 - 1,100
Stage 1A	1,100 - 1,800
Stage 1B	1,800 - 3,200
Stage 1C	3,200 - 6,700
Stage 2	> 6,700

Figure 17: Victoria Road Intersection Upgrades Stage 1A

Source: TMAP/Northrop

Figure 18: Victoria Road Intersection Upgrades Stage 1B

Source: TMAP/Northrop

Figure 19: Victoria Road Intersection Upgrades Stage 1C

Source: TMAP/Northrop

5.4 Trip Generation

5.4.1 Residential Trip Rates

Residential trip generation rates adopted in the TMAP were determined further to analysis using the Sydney Public Transport Project Model (PTPM) and Sydney Strategic Travel Model (STM).

The STM provides an assessment of overall growth factors before the PTPM undertakes a mode choice assignment using generalised costs. In addition, an assessment of private vehicle trips rates was also undertaken with reference to the RMS Guide Update, and its background technical assessments.

Further to this assessment, a trip rate of 0.25 trips per dwelling in both the AM and PM peak hours was adopted for the TMAP modelling.

5.4.2 Retail Trip Rates

Retail trip generation rates adopted in the TMAP were based on surveys of the East Village Shopping Centre, which were undertaken as part of the preliminary planning for Melrose Park North. Rates of 2.5 trips per 100m^2 and 5.0 trips per 100m^2 in the AM and PM peak hours respectively were adopted for the TMAP modelling, noting a further 20% reduction in retail trips to account for those trips being generated within Melrose Park itself (i.e. by residents as internal trips).

5.4.3 Commercial Trip Rates

Commercial trip generation rates adopted in the TMAP were based on the summary commercial trip rates provided in the RMS Guide Update. Rates of 1.6 trips per 100m^2 and 1.2 trips per 100m^2 in the AM and PM peak hours respectively were adopted for the TMAP modelling.

5.4.4 Total Trip Generation

Further to sections above, the total trip generation of Melrose Park is summarised in Table 5.3 of the TMAP, which is reproduced below.

Table 4: Melrose Park Total Trip Generation

		AM PEAK HOUR		PM PEAK HOUR	
		Trip generation rate	**Vehicle trips**	**Trip generation rate**	**Vehicle trips**
Dwellings (Bartlett site)	1,200	0.19 per dwelling	228	0.15 per dwelling	180
Dwellings	9,886	0.25 per dwelling	2,471	0.25 per dwelling	2,471
Commercial GFA	19,400m²	1.6 per 100m²	310	1.2 per 100m²	233
Retail GFA	15,600m²	2.5 per 100m²	390	5.0 per 100m²	780
Total			**3,399**		**3,664**

Source: TMAP

5.5 Trip Distribution

The distribution of trips in the TMAP model reflects the outputs of the PTPM, which specifically identifies future travel patterns based on factors such as proximity to employment and population centres across the metropolitan area.

Importantly, the PTPM considers future land use projections (again across all of Sydney), one of the results of which is an increase in trips generated within the Central City centred around Parramatta rather than the more Sydney (CBD) orientated trips currently generated to/from Melrose Park. As noted in the TMAP, this also results in a higher number of shorter trips, which are more easily undertaken by active and public transport rather than private vehicle.

5.6 Future Road Network Operations

Further to the upgrade of key parts of the network, and particularly the Victoria Road intersections as described in **Section 5.3.2** above, the TMAP determined that the future road network will operate at an appropriate level of service further to the development of all of Melrose Park in line with the Melrose Park South and Melrose Park North Structure Plan yields and land uses. The figures below provide a summary of future Level of Service at the key intersections servicing Melrose Park.

Figure 20: Future AM Peak Hour Intersection Operations

Source: TMAP

Figure 21: Future PM Peak Hour Intersection Operations

Source: TMAP

5.7 Parking

5.7.1 Overview

The overall transport objective of Melrose Park is to reduce the impact of the private car trips and promote alternative modes of transportation, particularly given that all residents will be provided with access to high frequency public transport services as well as excellent active transport infrastructure.

While the TMAP acknowledges (and in turn recommends) that a higher amount of parking will be required in the short term as development commences across Melrose Park and new public and active services and infrastructure come on-line, in the medium to long term average parking provision for residential units will be reduced to ensure that the underlying private vehicle trip rates remain controlled.

5.7.2 Parking Rates

Further to the above, the TMAP provides a set of parking rates for the short term, and then for the medium-long term, which it is anticipated will be adopted in a future site-specific DCP for Melrose Parking. All parking rates are proposed to be maximum rates to ensure there is not an oversupply of parking but a constant sustainable level of parking, though the TMAP acknowledges that in order to appropriately balance demands through the initial stages of development

It may be appropriate for earlier stages of the development to apply slightly higher rates if deemed appropriate and lower rates applied in the longer term.

The maximum parking rates recommended in the TMAP are summarised in **Table 5**.

Table 5: Melrose Park TMAP Maximum Parking Rates

Melrose Park TMAP Maximum Parking Rates	Residential (spaces per dwelling)					GFA (per space)	
	Studio	1 Bed	2 Bed	3 Bed +	Visitor	Commercial	Retail
Short Term	1	1	1	1.2	0.25	50m^2	30m^2
Medium - Long Term	0	0.3	0.7	1	0.1	50m^2	30m^2

Source: TMAP

5.7.3 On-Street Parking

The majority of residential parking for the Melrose Park precinct will be provided off-street, including visitor parking. To provide for additional visitor demand, on-street parking will be provided on all internal streets, and (further to the TMAP recommendation) be time restricted to as great an extent as possible to ensure parking spaces are allocated efficiently around the Town Centre and public and active transport hubs; and of course to prevent an additional demand for long-term parking and therefore the generation of more private vehicle trips (i.e. residents owning additional vehicles).

5.7.4 Car Share

A car share space target of 1 space per 40 spaces is recommended in the TMAP, based on successful car share projects in the City of Sydney and Leichhardt Council areas, noting that car share schemes have a significantly greater positive take-up rate in higher density areas with limited off-street parking and high-quality public transport.

Car share spaces will be located on-street in and around key locations within Melrose Park, including the Town Centre and public and active transport hubs.

5.8 Melrose Park TMAP Implementation Plan

As stated in **Section 5.6**, the ultimate conclusion of the TMAP is that – further to a suite of infrastructure upgrades, parking strategies and targeted public and active transport improvements – the road network can accommodate the development of Melrose Park in line with the yields and land uses outlined in the Structure Plans for both Melrose Park South and Melrose Park North.

To ensure that this suite of works continues to meet the demands of Melrose Park as it develops through to completion, the TMAP provides a detailed Implementation Plan, which specifies the objectives, timeframes and responsibilities for these works. The Implementation Plan is reproduced below for reference, with key actions relative to this Planning Proposal including the following:

- **Short Term (up to 6,700 dwellings):**
  - Internal road network works;
  - Stage 1 (A, B and C) upgrades of the key Victoria Road intersections;
  - On-demand and local bus services; and
  - Local active transport infrastructure and cycle facilities.
- **Short to Medium Term (more than 6,700 dwellings)**:
  - Refined Parramatta Bike Plan; and
  - Additional bus and ferry services.
  - Local intersection upgrades to accommodate PLR Stage 2;
  - Melrose Bridge; and
  - Sub-regional public and active transport infrastructure.

Table 6: Melrose Park TMAP Implementation Plan

ID	Description	Responsibility	Background	Objective	Timing
Road network					
1	Internal road network	Proponents	The internal road network will be delivered in lockstep with the staged development of Melrose Park. It is proposed to develop internal roads progressively to provide access to core development areas as they come online.	2,5,6	Ongoing
2	Wharf Road intersection upgrade at Victoria Road	Proponents/ RMS	Proposed upgrade to the Victoria Road/Wharf Road intersection will improve access to and from Melrose Park whilst also improving efficiency for buses, freight and general traffic on Victoria Road.	2,4,5,6	Short term
3	Kissing Point Road - new access at Victoria Road	Proponents/ RMS	New left-in/left-out access into the precinct via the Victoria Road/Kissing Point Road intersection. This will be required in the initial stages of the development to allow for local access.	2,4,5,6	Short term
4	Intersection upgrades - As part of PLR Stage 2	TfNSW	Intersections along Hope Street will require adjustments as PLR stage 2 is delivered. This will result in consolidation of right turn provision at newly signalised intersections at Hughes Avenue, NSR1 and NSR2.	2,4,5,6	Medium term
5	Kissing Point Road - intersection upgrade at Victoria Road	Proponents/ RMS	Full upgrade of the Victoria Road/Kissing Point Road intersection. This will provide full access into and out of the Melrose Park precinct whilst also improving efficiency for buses, freight and general traffic on Victoria Road.	2,4,5,6	Medium term
6	Victoria Road upgrade between Wharf Road and Kissing Point Road	Proponents/ RMS	Widening of Victoria Road between Kissing Point Road and Wharf Road to allow for extended turning lanes and a continuous bus lane in each direction.	2,4,5,6	Medium term
Public transport network					
7	On-demand services	TfNSW	On-demand services to Macquarie Park are currently being trialled in the Melrose Park area. The possible expansion of these services to other hubs will reduce car reliance for Melrose Park residents and workers.	1,2,5,7	Short term
8	Local bus shuttle services	Proponents	The provision of bus shuttle services to promote integration with local bus and rail services at Meadowbank. Staged provision of buses to allow an ultimate Stage 1 (pre-bridge) headway of 5 minutes in the weekday peak period. 4 buses required to support up to 6,700 dwellings.	1,2,5,7	Short term
9	Bus service enhancements	TfNSW	The following improvements will provide efficient and sustainable travel options for residents and visitors of Melrose Park in the short to medium term: • Increased frequency on M52 to cater for both background growth and Melrose Park demand along Victoria Road to Parramatta and the Eastern City • Potential new service Top Ryde to Concord Hospital via a new bridge over Parramatta River • New and upgraded bus stops on Wharf Road to ensure a maximum 400m spacing and to provide increased waiting areas and passenger amenity	1,2,5,7	Short to medium term
10	Ferry services	TfNSW	Investigations into the following ferry service improvements are recommended: • Service improvements for F3 Parramatta River services to cater for future commuter ferry and tourist patronage demand • Investigate and consult with TfNSW and RMS on ferry shuttles between Olympic Park and Parramatta and a potential new wharf at Melrose Park	1,2,5,7	Short to medium term
11	New bridge across Parramatta River	Proponents/ TfNSW	A new bridge connecting Melrose Park and Wentworth Point will have a transformative impact on Melrose Park and the wider region. Rapid transport connections via bus or light rail will directly connect Melrose Park with jobs, services and key transport corridors at Rhodes and Sydney Olympic Park.	1,2,3,4,5,7	Medium term
12	PLR Stage 2	TfNSW	A new light rail line will be provided connecting Melrose Park with Parramatta CBD and Olympic Park. At least two stops will be provided within Melrose Park to cater for central / northern and southern precinct access to the light rail corridor. The structure plans makes provision for a LRT corridor along Hope Street.	1,2,4,5,7	Medium term
13	Sydney Metro West	TfNSW	New metro line connecting Westmead, Parramatta CBD, Olympic Park, the T1 Northern rail line, Bays Precinct and Sydney CBD. This will be a key connection for Melrose Park residents who can access the line at Sydney Olympic Park via PLR Stage 2.	1,2,4,5,7	Medium term
14	Victoria Road bus improvements	TfNSW	As outlined in Future Transport 2056 - Improvements will include upgrading bus services and infrastructure on the Victoria Road corridor, through the Bus Priority Infrastructure Program. Improvements will transform the Victoria Road Corridor into a more attractive place to live and work. Improvements would enhance access for Melrose Park residents traveling to Parramatta or the Eastern City.	1,2,4,5,7	Medium term
15	T1 Northern Line improvements	TfNSW	Investigations into capacity improvements for the T1 Northern Line are currently underway. TfNSW has indicated improvements will be necessary within the next 10 years. Improved services would enhance access for Melrose Park residents who could reach West Ryde/Meadowbank via bus or on-demand services before transferring to the T1 Northern Line	1,2,4,5,7	Medium term
16	T1 Western Line improvements	TfNSW	The T1 Western Line Rail Upgrade Program is recommended to be implemented in order to provide more capacity for Northern Line services	1,2,4,5,7	Medium term

Source: TMAP

Table 7: Melrose Park TMAP Implementation Plan (Continued)

ID	Description	Responsibility	Background	Objective	Timing
Active transport network					
17	Walking and cycling infrastructure on internal network	Proponents	The internal road network within the Melrose Park precinct will include provision for safe, efficient and attractive walking and cycling trips, particularly to/from Melrose Park Primary School. A midblock crossing on Hope Street between Wharf Road and Waratah Street is recommended to be investigated to facilitate safe connections between the northern precinct and the school. This will encourage local trips to be undertaken via active modes whilst also enhancing access to nearby public transport services. A shared path will be provided on the western side of Wharf Road.	1,2,3,7	Ongoing
18	Enhanced local connections	Proponents/ CoP	Enhancements to active transport infrastructure linking Melrose Park Precinct to the surrounding activity areas through new connections via the internal road network to the Parramatta River foreshore shared path and to George Kendall Reserve	1,2,3,7	Short term
19	Cycle parking and end of trip facilities	Proponents	End of trips facilities and secure and visible cycle parking should be provided at all commercial centres and other major trip generators Adopt bicycle parking provision of: • 1 per dwelling + 1 visitor space per 10 dwellings • 1 per 150m² commercial GFA + 1 visitor space per 450m² commercial GFA • 1 per 250m²retail GFA + 1 visitor space per 100m² retail GFA	1,2,5,7	Short term
20	Implement and refine Parramatta Bike Plan 2017	Proponents/ CoP	• Fully separated cycleway for Hope Street providing a new high quality east-west connection between Melrose Park and Rydalmere • Painted lanes on Wharf Road connecting Hope Street cycleway to existing Parramatta Valley cycleway • New shared path connecting north-south through the Melrose Park precinct and connecting with the Parramatta Valley cycleway	1,2,3,7	Short to medium term
21	Shared mobility facilities	Proponents	Shared mobility pods to be provided within Melrose Park for bike share, as well as emerging forms of shared mobility such as electric mopeds.	1,5,7	Medium term
22	New bridge across Parramatta River	Proponents/ TfNSW	A new bridge connecting Melrose Park and Wentworth Point will include dedicated walking and cycling infrastructure. This will provide direct active transport connections between Melrose Park and key centres such as Rhodes and Sydney Olympic Park.	1,2,3,4,5, 7	Medium term
23	Walking and cycling facilities to be delivered as part of PLR Stage 2	TfNSW	Improved cycling and pedestrian facilities should be investigated during planning and delivery of PLR Stage 2 along the Hope Street and Waratah Street corridors.	1,2,3,7	Medium term
Policy					

24	Parking policy	CoP/ Proponents	• Consider maximum parking rates for Melrose Park in the long term with parking provision of:
			  • 0.73 spaces per dwelling (average based on currently assumed dwelling mix)
			  • 1 space per 30m² commercial GFA
			  • 1 space per 50m² retail GFA
			• Prioritise on-street car share within Melrose Park at a residential car share rate of 1 space per 40 dwellings
			• On-street parking to be provided within the internal road network and be designed to support the function for the street.
			• Provide real-time parking information along key access streets and the proposed town centre
			• Unbundling /decoupling parking from the sale of apartments, to deliver housing choice and efficient allocation of parking across the development.
			• Monitor on-street parking activity on the surrounding street network at Wharf Road, Hope Street and Hughes Avenue to minimise over flow parking from Melrose Park
				1,6,7	Ongoing

25	Demand management	Proponents	• Ensure that transport information is up to date and liaise with the local residential and business communities on transport issues • Aligning information at stops and streets with digital transport information provided through websites, apps and electronic information displays • Liaise with transport providers to resolve any impediments to their efficient service and promote regular improvements • Enabling significant investment in car share, providing accessible mobility choice to households without parking or who choose not to own a car • Introduce parking management and control measures e.g. parking charges, constraining parking supply, unbundled/decoupled off-street parking • Facilitate car-sharing to reduce the need for private car ownership • Provide shared work spaces and 'smart hubs' to facilitate flexible working arrangements and minimise the need for peak hour commute trips • Provide opal cards to initial residents of the precinct	1,2,6,7	Ongoing

Source: TMAP

6 The Holdmark Sites Planning Proposal

6.1 The Planning Proposal

6.1.1 Master Plan

The Planning Proposal provides for the development of the Holdmark Sites in accordance with the Melrose Park South Structure Plan, and moreover in accordance with the detailed consultation with key stakeholders, and the land uses and yields assessed in the TMAP.

The Planning Proposal Land Use Plan is shown in **Figure 22**.

Figure 22: Holdmark Sites Land Use Plan

Source: Cox Architecture

6.1.2 Yield

The Planning Proposal provides for:

- 1,925 residential dwellings;
- 600m^2 of retail GFA;
- Two 80 place child care centres with a total GFA of 400m^2 GFA;
- Significant internal and interface road infrastructure; and
- New open space, pedestrian and cycle infrastructure.

From the outset, it is important to note that the residential yield provided for in the Planning Proposal is lower than the 2,115 units assigned for the Holdmark Sites in the TMAP, a reduction of some 190 units, or 9% of the originally estimated yield of the Holdmark Sites.

Similarly, the retail GFA has been reduced by some 80%, while commercial floorspace will now be utilised for a child care centre in line with the requests of Council.

6.2 Access

6.2.1 Internal Street Network

The proposed road network within and adjacent to the Holdmark Sites builds on the existing road network, and will include:

- The extension of Mary Street to form a new waterfront road that extends to Saunders Road at Atkins Road;
- The reopening of Waratah Street to link to Wharf Road as a one-way street; this specifically is provided to facilitate the future delivery of PLR Stage 2; and
- A new north-south road linking to the primary spine road through Melrose Park North to Victoria Road.

The proposed internal road network within and adjacent to the Holdmark Sites is shown in **Figure 23**.

Figure 23: Holdmark Sites Local Road Network

Source: Cox Architecture

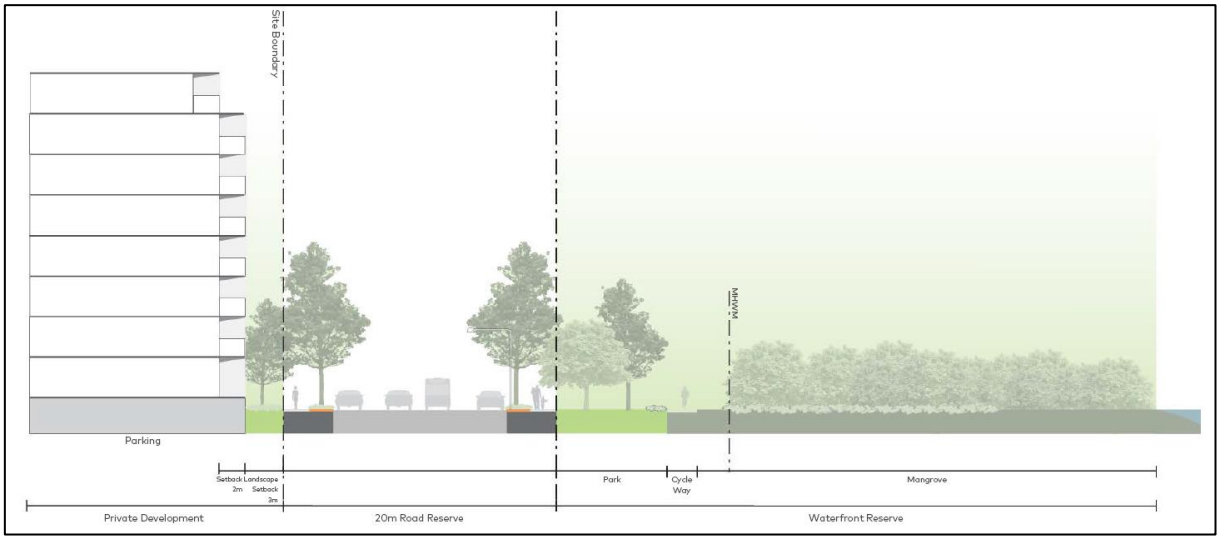
6.2.2 Road Profiles

Indicative road profiles for the Holdmark Sites' internal and adjacent roads are shown in the figures below, and would be finalised as part of a future Development Application process.

Figure 24: Local Road Design Profile

Source: Cox Architecture

Figure 25: Foreshore Road Design Profile



Source: Cox Architecture

6.3 Trip Generation & Distribution

6.3.1 Residential Trip Generation

As suggested in **Section 6.1.2**, the residential trip generation of the Holdmark Sites will be lower than that forecast in the TMAP simply as a factor of a reduced residential yield.

Application of the TMAP residential trip rate of 0.25 vehicle trips per dwelling in the peak hours to the Planning Proposal's 1,925 residential dwellings results in a total residential trip generation of 482 vph in both the AM and PM peak periods. This represents a reduction of 48 vph in both peak periods from the Holdmark Sites' residential trip generation forecast provided in the TMAP.

6.3.2 Retail Trip Generation

As suggested in **Section 6.1.2**, the retail trip generation of Melrose Park South will also be lower than that forecast in the TMAP simply as a factor of a reduced retail floorspace yield.

Application of the TMAP retail trip rates of 2.5 and 5.0 vehicle trips per 100m^2 in the AM and PM peak periods respectively results in a total retail trip generation of 13 vph and 25 vph in the AM and PM peak periods respectively. This represents a reduction in retail trip generation of some 63 vph and 125 vph in the AM and PM peaks respectively from the Holdmark Sites' retail trip generation forecast provided in the TMAP.

6.3.3 Child Care Centre Trip Generation

As discussed, the commercial area previously proposed within the Holdmark Sites will now be utilised for two 80 place child care centres with a total GFA of 400m^2 GFA.

Trip generation rates for child care centres are provided in the RMS Guide, being 0.8 and 0.7 trips per child in the AM and PM peak hours respectively. Application of these rates results in a total child care centre trip generation of 64 vph and 56 vph in the AM and PM peak periods respectively.

However, more recent surveys undertaken for Roads & Maritime of child care centres, noting that the surveys reflected in the RMS Guide were conducted over 25 years ago. With reference to these surveys (provided in Roads & Maritime Services Validation Trip Generation Surveys: Child Care Centre Data Report, 2015 prepared by TEF Consulting), children care centres in areas with higher surrounds densities and access to public transport and general services are much lower than the RMS Guide rates.

With consideration of the more recent trip rates, and the location of the child care centres within Melrose Park, it is estimated that the children care centres would generate no more than 0.4 trips per child in both of the peak hours.

6.3.4 Trip Generation Summary

Further to sections above, **Table 8** provides a summary of the trip generation of the Holdmark Sites further to the Planning Proposal, and a comparison with the trip generation of the Holdmark Sites as modelled in the TMAP.

Table 8: Holdmark Sites Trip Generation

Holdmark Sites Trip Generation	Dwellings		Commercial		Retail		Child Care		Total	
Peak Period	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Planning Proposal	481	481	0	0	15	30	64	64	560	575
Melrose Park TMAP	530	530	70	53	78	155	na	na	678	738
Trip Changes	-49	-49	-70	-53	-63	-125	80	80	**-117**	**-162**

With reference to **Table 8**, the trip generation of the Holdmark Sites as forecast and modelled in the TMAP will be reduced by some 117 vph and 162 vph in the AM and PM peaks respectively further to the Planning Proposal, or by approximately 20% in both peaks.

6.3.5 Trip Distribution

There is no information to suggest that the distribution of the Holdmark Sites trips both within Melrose Park and to/from external roads further to the Planning Proposal would be any different to the trip distribution profiles adopted in the TMAP.

6.4 Traffic Impacts

With reference to sections above, the Holdmark Sites will generate a significant lower level of vehicle trips further to the Planning Proposal than were forecast and modelled in the TMAP, some 20% fewer trips in both the peak periods. Moreover, the Planning Proposal:

- Provides an essentially identical internal access road network to that adopted in the TMAP;
- Would not modify the trip distribution profile of Holdmark Sites' trips from that adopted in the TMAP; and
- Provides the essential commitments to the broader road, public and active transport infrastructure and service TMAP recommendations as detailed in the Implementation Plan.

As such, it can only be concluded that the Planning Proposal is acceptable in regard to traffic considerations, and indeed there would be improvements to the operation of local and interface intersections as a result of the trip reductions from those modelled in the TMAP.

6.5 Parking

6.5.1 Parking Provision

The Planning Proposal will provide parking in accordance with the maximum parking rates recommended in the TMAP as summarised previously in **Table 5**.

With regard to the child care centre, the rate provided in the CoP DCP has been adopted, being 1 space per 4 children. As with the discussion in regard to the trip generation of the child care centre, there is the potential to reduce this level of parking given further consideration of the location of the child care centre within such a high-density area where active transport is a very real option for trips.

Noting that the TMAP recommends provisions for a higher initial provision of parking as public and active transport opportunities development, the fundamental measure of compliance for the Planning Proposal in regard to parking is that the total parking provided at the completion of development of the Holdmark Sites does not exceed the medium-long term maximum parking requirements as detailed in the TMAP.

The application of these maximum rates to the Planning Proposal is summarised in **Table 9**.

Table 9: Holdmark Sites Maximum Parking Provision

Holdmark Sites Planning Proposal	Residential Bedrooms				GFA	Children	**Total**
	1 Bed	2 Bed	3 Bed +	Visitor	Commercial	Child Care	
Yield	289	1,444	193		600	160	
Maximum Parking Provision	87	1,011	193	193	12	40	**1,534**

With reference to **Table 9**, the Planning Proposal provides for a maximum of 1,514 parking spaces, and therefore compliance with the recommendations of the TMAP.

6.6 On-Street Parking

As discussed in **Section 5.3**, the internal road profiles adjacent to and within the Holdmark Site will provide on-street parking that meets the on-street parking targets recommended in the TMAP. It is noted that an allocation of 1 car share space per 40 standard parking spaces will specifically be allocated in streets in close proximity to the Hope Street and Melrose Bridge public and active transport hubs.

With regard to local on-street parking restrictions, it is anticipated that a formal direction in this regard will be determined further to consultation with Council, TfNSW and the other Melrose Park proponents as part of the future Development Application process.

6.7 Additional Parking Considerations

6.7.1 Accessible Parking

To provide compliance with the CoP DCP, a total of not less than 10% of all dwellings will be developed as adaptable dwellings that can be modified to provide an appropriate level of additional accessibility as required. This will include the provision of parking spaces that can similarly be adapted to provide accessible parking in accordance with the design requirements of AS 2890.6.

For the retail and child care centre components of the Holdmark Sites, accessible parking will be provided in accordance with Parramatta DCP and Building Code of Australia requirements.

6.7.2 Motorcycle Parking

The CoP DCP requires the provision of 1 motorcycle parking space for every 25 car parking spaces; the Planning Proposal provides for compliance with this requirement.

6.7.3 Bicycle Parking

The CoP DCP requires the provision of 1 bicycle parking space for every 2 dwellings, and 1 bicycle parking space per 200m^2 for commercial and retail floorspace. The Planning Proposal provides for compliance with these requirements, and indeed it is anticipated that future detailed Development Applications may provide additional bicycle parking spaces across the Holdmark Sites to take advantage of the excellent active transport opportunities for residents and visitors alike.

7 Conclusions & Recommendations

Ason Group has been commissioned by Holdmark Property Group to undertake a detailed assessment of a Planning Proposal for the development of the Holdmark Sites within Melrose Park South. The Planning Proposal provides for a mix-used development, including:

- 1,925 residential dwellings;
- 600m^2 of retail GFA;
- Two 80 place child care centres with a total GFA of 400m^2 GFA;
- Significant internal and interface road infrastructure; and
- New open space, pedestrian and cycle infrastructure.

The development provided for in the Planning Proposal provides for approximately 50% of the development proposed in the Melrose Park South Structure Plan, which provides for the following overall development within Melrose Park South:

- 3,855 residential dwellings; and
- 3,800m^2 of commercial/retail GFA, which may include additional child care facilities.

7.1 Conclusions

Ason Group has examined the access, traffic and parking characteristics of the Planning Proposal; and the future operation of the road, public and active transport and parking environments further to development of the Holdmark Site in accordance with the Planning Proposal. Further to our assessment, Ason Group provides the following conclusions:

- The trip generation of the Holdmark Sites further to the Planning Proposal will be significantly lower than forecast and then modelled in the Transport Management & Accessibility Plan 2018 (the TMAP) prepared by Jacobs on behalf of the proponents of both Melrose Park South (including Holdmark) and Melrose Park North in 2018; this is a result of reduced yields across the Holdmark Sites compared to those adopted in the TMAP.
- With reference to the trip rates adopted in the TMAP, it is estimated that the Planning Proposal will result in the trip generation of the Holdmark Sites being some 20% lower than modelled in the TMAP in both the AM and PM peak periods.
- The internal and adjacent road network provided in the Planning Proposal is essentially identical to that adopted in the TMAP model, and as such there is no information to suggest that the general distribution of vehicle trips to and through the local road network would be any different to that assigned in the TMAP model. The Holdmark Sites' road can be provided independently of the broader development of Melrose Park.

- Given that the TMAP determined that the trip generation of the Holdmark Sites (and broader Melrose Park) could – further to the works and strategies identified in the TMAP Implementation Plan – be appropriately accommodated by the future road network, it is therefore inherently the case that the Planning Proposal can be supported in consideration of traffic conditions.
- Parking across the Holdmark Sites will be provided in accordance with the maximum parking rate recommendations detailed in the TMAP; while noting the parking may be provided at higher (average) rates in the short term, the maximum parking further to the completion of development will not exceed 1,534 parking spaces.
- The Planning Proposal provides for the appropriate future allocation of on-street and car share parking spaces, again in accordance with the recommendations of the TMAP; final details in this regard would be determined as part of a future Development Application process.
- The Planning Proposal provides for the appropriate future allocation of accessible, motorcycle and bicycle parking spaces in accordance with the City of Parramatta Council Development Control Plan (CoP DCP); final details in this regard would be determined as part of a future Development Application process.

7.2 Recommendations

The singular most important recommendation that can be provided by Ason Group is compliance with the recommendations of the TMAP as summarised in the TMAP Implementation Plan. Holdmark has fully committed to such compliance, and in time will work with the key stakeholders and other Melrose Park proponents to ensure the timely implementation of all the works and strategies identified in the Implementation Plan as development proceeds across Melrose Park.

In addition, and further to the underlying Objectives of the TMAP, Ason Group recommends the following:

- That future developments within the Holdmark Sites be required to develop Green Travel Plans so as to maximise the take-up of the substantial public and active transport opportunities which will be available to residential, employees and visitors.
- That consideration be given to increasing the provision of motorcycle and bicycle parking across the Holdmark Sites.
- That a monitoring program be developed and implemented in consultation with the key stakeholders and Melrose Park proponents to ensure that the average level of off-street parking across Melrose Park does not exceed the maximum parking provisions as determined in the TMAP.
- That Holdmark and Melrose Park South proponents work diligently with CoP and in establishing appropriate time restrictions for on-street parking across Melrose Park South so as to discourage the use of private vehicles/long term parking.

7.3 Summary

In summary, it is the conclusion of Ason Group that the Planning Proposal is entirely supportable further to all access, traffic, parking and implementation considerations.