

Transport
for NSW

WestConnex Stage 3 Road Network Performance Plan

November 2023





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Acknowledgement of Country

Transport for NSW (Transport) acknowledges the traditional custodians of the land on which we work and live.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

Transport is committed to honouring Aboriginal peoples' cultural and spiritual connections to the lands, waters and seas and their rich contribution to society.

Table of Contents

Executive Summary	7
1. Introduction	16
1.1 Background	16
1.2 Overview of the project.....	17
1.2.1 WestConnex.....	17
1.2.2 WestConnex - Stage 3	18
1.3 Purpose of this Plan	18
1.4 Extent of this Plan.....	19
1.5 Structure of this Plan.....	21
2. Methodology	22
3. Intersection performance	24
3.1 Summary of intersection performance.....	24
3.2 Haberfield Interchange.....	26
3.2.1 Intersection 1 – Parramatta Road/Wattle Street/Frederick Street	26
3.2.2 Intersection 2 – City West Link/Timbrell Drive	27
3.2.3 Intersection 3 – Parramatta Road/Liverpool Road.....	29
3.2.4 Wolseley Street, Haberfield	31
3.3 Rozelle Interchange.....	31
3.3.1 Intersection 4 – Victoria Road/Lyons Road	31
3.3.2 Intersection 5 – Victoria Road/Darling Street.....	33
3.3.3 Intersection 6 – Victoria Road/City West Link	35
3.3.4 Intersection 7 – The Crescent/Johnston Street.....	36
3.3.5 Intersection 8 – Harris Street/Allen Street	38
3.4 St Peters Interchange.....	40
3.4.1 Intersection 9 – Princes Highway/Canal Road	40
3.4.2 Intersection 10 – Princes Highway/Railway Road	42

3.4.3	Intersection 11 – Campbell Road/Bourke Road.....	43
3.4.4	Intersection 12 – Princes Highway/Campbell Street	45
3.4.5	Intersection 13 – Ricketty Street/Kent Road	46
3.4.6	Intersection 14 – Unwins Bridge Road/Campbell Street	48
3.4.7	Intersection 15 – Gardeners Road/Bourke Road.....	49
3.4.8	Intersection 16 – Gardeners Road/O’Riordan Street	51
3.4.9	Intersection 17 – Sydney Park Road/Euston Road	52
3.4.10	Intersection 18 – Euston Road/Campbell Road	54
4.	Traffic analysis by other projects.....	56
4.1	M4 East traffic analysis	56
4.2	M8 Motorway traffic analysis.....	58
5.	Movement and Place	60
5.1	Sydney Park Junction	60
5.2	Airport East, North and West Precinct Upgrades	60
5.2.1	Airport East.....	61
5.2.2	Airport North	61
5.2.3	Airport West.....	61
5.3	More Trains More Services.....	61
5.4	Frederick Street Speed Reduction.....	61
5.5	Victoria Road Bus Lane Enhancements.....	61
6.	Road safety performance.....	63
6.1	Parramatta Road.....	63
6.2	Frederick Street/Milton Street	64
6.3	City West Link.....	65
6.4	Victoria Road.....	67
6.5	Western Distributor	68
6.6	Campbell Street/Bedwin Road/Edgeware Road	69
6.7	Princes Highway	70
6.8	Gardeners Road	71

6.9	Euston Road	72
7.	Mitigations and Opportunities.....	74
8.	Summary & Conclusions.....	80
9.	References.....	81

Executive Summary

The WestConnex Stage 3 project is a critical part of the larger WestConnex program, which aims to provide a more efficient and reliable road network, connecting Stage 1 (M4 Widening and M4 East) with Stage 2 (M8 Motorway, previously known as new M5) of WestConnex between Haberfield and St Peters and will form the vital link between the southwest and west of Sydney with its international gateways and key places of business.. The WestConnex Stage 3 project includes two sections:

- M4 and M8 extensions (Stage 3a), previously known as the M4-M5 Link tunnels, which comprises a multi-lane road link between the M4 East Motorway at Haberfield and the M8 Motorway at St Peters.
- Rozelle Interchange and Iron Cove Link (Stage 3b) which includes an interchange at Lilyfield and Rozelle (the Rozelle interchange) and a tunnel connection between Anzac Bridge and Victoria Road, east of Iron Cove Bridge (Iron Cove Link).

The WestConnex Stage 3 project (the Project) was approved by The Department of Planning and Environment (DPE), previously the Department of Planning, Industry and Environment, provided that the Conditions of Approval (CoA) are satisfied. As per CoA E63, this Project is required to prepare a pre-opening Road Network Performance Plan (the Plan).

WestConnex M4 and M8 extensions (Stage 3a) opened in January 2023 and Rozelle Interchange including Iron Cove Link (Stage 3b) is planned to open in late 2023. Stage 3a involved the construction of a tunnel system between the M4 Motorway at Haberfield and the M8 Motorway at St Peters. Stage 3b involves the construction of underground tunnels connecting the M4 and M8 extensions with Victoria Road and The Crescent, the Anzac Bridge, and the City West Link; including stubs to eventually connect to the Western Harbour Tunnel. This Plan assesses the potential impacts of the opening of WestConnex Stage 3a and 3b on the adjacent road network and associated mitigations for implementation prior to the opening of Stage 3b.

Background & purpose

This Plan has been prepared by Transport for NSW (Transport) to address Condition E63, which forms part of the EIS Conditions of Approval (CoA) for the Project and states the following:

- **Condition E63** – “Prior to the commencement of operation of the full Critical State Significant Infrastructure (CSSI) (mainline WestConnex tunnel and the Rozelle Interchange), the Proponent must prepare a Road Network Performance Plan in consultation with Transport for NSW and the relevant council(s).

Assessment scope

This Plan assesses areas likely to be impacted by the opening of the Project. This is done through updated traffic modelling, consideration of movement and place analysis, and identification of mitigation measures to manage forecast impacts. Noting this assessment considers impacts and associated mitigations that can be commenced prior to the full operation of the CSSI (i.e. prior to the operation of Stage 3b).

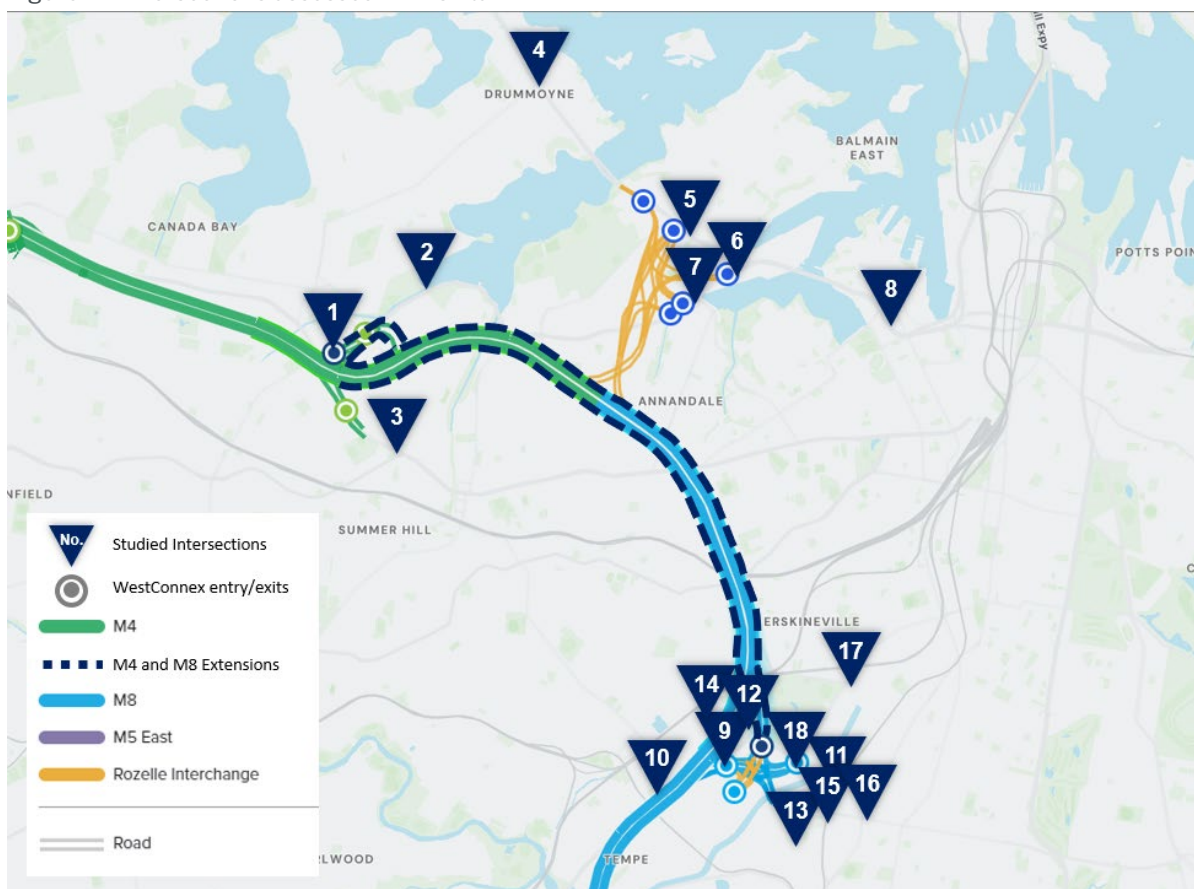
The assessment in this Plan extends to key surface road corridors including Parramatta Road, City West Link, Victoria Road, Gardeners Road and Princes Highway.

Summary of assessment

Intersections

The intersections assessed as part of this plan were identified based on the intersections modelled in the M4-M5 Link Environmental Impact Statement (EIS) as well as additional intersections of concern identified based on proximity to motorway entries and exits. This included potential ‘pinch-points’ where the merging of tunnel exit traffic and surface traffic would occur at the Haberfield Interchange, the St Peters Interchange and Rozelle Interchange and Iron Cove Link. Figure E-1 illustrates the intersections within the study area that were assessed as a part of this plan.

Figure E-1 Intersections assessed in this Plan



Base map source: WestConnex Interactive Map (accessed April 2023)

Haberfield Interchange:

1. Parramatta Road/Wattle Street/ Frederick Street
2. City West Link/Timbrell Drive
3. Parramatta Road/Liverpool Road

Rozelle Interchange:

4. Victoria Road/Lyons Road
5. Victoria Road/Darling Street
6. Victoria Road/City West Link
7. The Crescent/Johnston Street
8. Harris Street/Allen Street

St Peters Interchange:

9. Princes Highway/Canal Road
10. Princes Highway/Railway Road
11. Campbell Road/Bourke Road
12. Princes Highway/Campbell Street
13. Ricketty Street/Kent Road
14. Unwins Bridge Road/Campbell Street
15. Gardeners Road/Bourke Road
16. Gardeners Rd/O'Riordan Street
17. Sydney Park Road/Euston Road
18. Euston Road/Campbell Road

Intersection analyses

The intersection analysis presented in this Plan has been compared against the forecasted EIS post opening of WestConnex Stage 3. Updated post opening forecast refers to an updated future 2023 scenario with the Project in operation.

Alternative layouts for some intersection have been developed to mitigate impacts or provide public transport improvements. The updated post opening forecast with alternative layout refers to a future case scenario with the Project in operation as well as proposed changed to the intersection layout, as applicable.

The existing condition results refer to a past scenario with the Project not in operation (i.e. prior to the opening of WestConnex Stage 3a in January 2023).

For further details of the scenarios assessed for each intersection, refer Section 2.

The results of the intersection analyses are presented in Table E-1 Table E-2.

Table E-1 Intersection performance summary for Haberfield Interchange and Rozelle Interchange

Modelling Scenario	Haberfield Interchange						Rozelle Interchange									
	Parramatta Road / Wattle Street / Frederick Street		City West Link / Timbrell Drive		Parramatta Road / Liverpool Road		Victoria Road / Lyons Road		Victoria Road / Darling Street		Victoria Road/City West Link		The Crescent / Johnston Street		Harris Street / Allen Street	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing Condition	D	E	F	C	C	C	C	B	C	C	B	C	C	D	C	C
Post-opening forecast (EIS)	E	D	D	E	C	C	F	F	F	D	C	C	C	E	-	-
Post-opening forecast (updated)	C	C	D	D	D	C	F	B	D	C	C	C	C	D	C	C
Post-opening forecast (alternative layout)	-	-	-	-	-	-	-	-	D	C	-	-	-	-	C	B

Table E-2 Intersection performance summary for St Peters Interchange

Modelling Scenario	St Peters Interchange																			
	Princes Highway / Canal Road		Princes Highway / Railway Road		Campbell Road / Bourke Road		Princes Highway / Campbell Street		Ricketty Street / Kent Road		Unwins Bridge Road / Campbell Street		Gardeners Road / Bourke Road		Gardeners Rd / O'Riordan Street		Sydney Park Road / Euston Road		Euston Road / Campbell Road	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing Condition	B	C	D	D	B	C	D	D	B	B	E	E	D	C	D	D	C	D	C	C
Post-opening forecast (EIS)	F	C	F	F	D	C	F	E	D	D	D	E	E	F	F	F	C	D	C	D
Post-opening forecast (updated)	C	C	D	D	D	E	D	D	D	D	F	F	C	D	E	F	C	D	F	F
Post-opening forecast (alternative layout)	-	-	-	-	C	D	-	-	B	B	-	-	C	C	D	C	-	-	D	D

Movement and Place

The opening of the Project will allow traffic to bypass roads such Parramatta Road and Princes Highway, creating the opportunity for improved placemaking and renewal. Movement and Place opportunities have been considered in the projects listed below and detailed in Table E-3 below;

- Sydney Park Junction
- Airport East, North and West Precinct upgrades
- More Trains More Services
- Frederick Street speed reduction
- Victoria Road bus lane enhancements

Mitigations and Opportunities

In preparation of the opening of WestConnex Stage 3a and 3b, numerous sites within the study area were identified as potential locations for mitigation measures to minimise the impacts of the Project on the surrounding road network. Movement and Place opportunities were also considered where traffic volumes on surface roads are likely to be significantly reduced. The mitigations and opportunities include:

Table E-3 Mitigations measures & Movement and Place opportunities (in no order of priority)

Location	Scope	Status
Airport West – Marsh Street	<p>Increase traffic capacity and reduce congestion on Marsh Street, the primary connection to Sydney Airport T1 international terminal and key access point to M5 Motorway and Sydney’s southern suburbs.</p> <ul style="list-style-type: none"> • Widening Marsh Street to three lanes • Providing a dedicated cycleway on the southern side to connect the existing path on the bridge to the Eve Street cycleway. • Providing a pedestrian crossing at the intersection of Marsh Street and Flora Street • Minor widening of the existing eastbound and westbound lanes to provide wider, safer lanes for motorists 	Completed
Airport North – O’Riordan Street	<p>Improve traffic flow and connections to the airport and Port Botany.</p> <ul style="list-style-type: none"> • Converting southern sections of Robey Street & O’Riordan Street into one-way roads • Widening O’Riordan Street to provide six through lanes between Bourke Road and Robey Street • Re-configuring the existing traffic lights on O’Riordan Street between Qantas Drive and Bourke Road • Upgrading the footpath on the eastern side of O’Riordan Street 	Completed

Location	Scope	Status
Airport East – General Holmes Drive Mill Pond Road Wentworth Avenue Botany Road	Improve traffic flow and connections to the airport and Port Botany. <ul style="list-style-type: none"> • Replacing the General Holmes Drive rail level crossing with a road underpass that links General Holmes Drive, Botany Road and Wentworth Avenue • Improving the Mill Pond Road intersections with General Holmes Drive and Botany Road • Widening Joyce Drive and General Holmes Drive between O’Riordan Street and Mill Pond Road to three lanes in each direction • Creating a new shared path to link to the existing cycle way on Wentworth Avenue on Botany Road • Retaining the northbound bus stop on Botany Road • Reinstate pedestrian crossing on southern approach of Botany Road & Wentworth Avenue intersection • Existing pedestrian path to be removed on Joyce Drive and replaced with a shared path along Baxter Road between Botany Road and O’Riordan Street 	Completed
Parramatta Road/Wattle Street/Frederick Street	<ul style="list-style-type: none"> • Early lane guidance –direct exiting traffic into correct target lanes for either Frederick Street or Parramatta Road • Preventing late lane changing near the stop line – solid line marking to restrict lane change for 120m back from the stop-line. 	Completed
Frederick Street Ashfield – Safety upgrade	Improve safety on Frederick Street, between Hume Highway, Ashfield and Parramatta Road, Haberfield. <ul style="list-style-type: none"> • Speed reduction from 60km/h to 50km/h 	Completed
Gladesville Bridge Bus Lane Extension	Provide a continuous bus lane from Gladesville to Anzac Bridge and prioritise the 40–50 buses carrying 1,600 passengers citybound over the Gladesville Bridge during morning peak hour. Additionally, maintain current bus performance on Victoria Road. <ul style="list-style-type: none"> • Replace existing citybound T3 lane with a 6am to 7pm lane between Huntleys Point Road, Huntleys Point and Westbourne Street, Drummoyne 	Completed

Location	Scope	Status
Victoria Road Bus Lane Enhancements (between Iron Cove Link Portal and City West Link)	<p>Prioritise bus movements to improve reliability and travel times, particularly for express services. And improve local access, reducing conflict with traffic moving through Rozelle.</p> <ul style="list-style-type: none"> • Citybound Travel: <ul style="list-style-type: none"> – Shift the bus lane from kerbside to lane two, clear of any interference caused by stopping buses and left turning traffic (between Terry Street and Robert Street). – Dedicated left turn only lanes with buses excepted on approach to Darling Street, Evans Street and Robert Street. – Only on right turn lane maintained from Victoria Road citybound into Darling Street southbound. – Reducing citybound through movement to only two traffic lanes. – Introduce calmer kerbside lane based on left turn movements. – 24 hour operation. • Outbound Travel: <ul style="list-style-type: none"> – New kerb side bus lane between Quirk Street and Clubb Street. – Operation Monday to Friday 6am to 10am and 3pm to 7pm. 	Delivery to commence Q4 2023
Western Distributor Smart Motorway	<p>Improve motorway experience, assist with congestion using real time speed limit management, reduce stop-start traffic, and create more reliable travel times.</p> <ul style="list-style-type: none"> • Install up to 16 gantries along the Western Distributor between Sydney Harbour Bridge. • Install new smart motorway devices on two existing sign bars on the Anzac Bridge A-Frames. 	In progress
Harris Street/Allen Street Intersection upgrade	<p>Better manage exit-ramp congestion and traffic flow through Pyrmont.</p> <ul style="list-style-type: none"> • Conversion of Allen Street eastbound to Harris Street from two to three lanes • Removal of parking on Allen Street westbound and Harris Street northbound • Removal of existing pedestrian crossing on the southern leg of Harris Street 	Delivery to commence Q4 2023
Ramp Metering	<p>Regulate traffic entering the Anzac Bridge citybound with ramp metering. Vehicles will be gradually released on approach to Anzac Bridge to allow a smoother and safer merge for motorists and maintain traffic flow. Ramp metering sites will be at the following locations:</p> <ul style="list-style-type: none"> • Iron Cove Link to Anzac Bridge • City West Link to Anzac Bridge • Victoria Road to Anzac Bridge 	Delivery to commence Q4 2023

Location	Scope	Status
Sydney Harbour Bridge Movable median upgrade	<p>Prioritise Western Distributor traffic by removing the merge with Kent Street/Clarence Street on-ramp traffic and providing three lanes of through traffic.</p> <ul style="list-style-type: none"> The construction of a new moveable median and permanent medians for the Kent St/Clarence St on-ramp to the Sydney Harbour Bridge Northbound 	Delivery to commence Q4 2023
Sydney Park Junction Intersection changes and cycleways	<p>Improve connectivity on Princes Highway King Street corridor around St Peters and Sydney Park. Scope includes (pending approval):</p> <ul style="list-style-type: none"> Increasing pedestrian and bike links and crossings Upgrading bus stops Improving landscaping Improving links to Sydney Park’s green space. Reducing speed limits to 40 kilometres per hour on Princes Highway between Campbell Street and Goodsell Street Creating a permanent two-way separated cycleway on the western side of King Street between Sydney Park Road and Barwon Park Road Reducing Sydney Park Road carriageway from four lanes to two lanes, accommodating a permanent solution for the existing temporary cycleway. 	<p>Interim lane configurations completed (King Street & Sydney Park Rd intersection)</p> <p>Remaining scope to commence Q3 2024</p>
Bourke Street/Coward Street Intersection upgrade	<p>Part of a five-intersection upgrade in Mascot, an area with growing freight and travel demand, to manage congestion and safety in the area, including better management of heavy vehicle movements.</p> <ul style="list-style-type: none"> Banning right turns at Coward Street (westbound) into Bourke Street (northbound) Banning right turns from Bourke Street (northbound) to Coward Street (eastbound) for all vehicles except buses. 	Completed
Gardeners Road/Botany Road Intersection upgrade	<p>Part of a five-intersection upgrade in Mascot.</p> <ul style="list-style-type: none"> Extending Gardeners Road’s existing, eastbound right turn bay and constructing an additional right turn lane onto Botany Road (involves removal of 14 parking spaces in total) 	Completed
	<ul style="list-style-type: none"> Reconfiguring Gardeners Road’s eastbound lanes to establish a shared left/through lane, a dedicated through lane, and dual right turn lanes 	In progress

Location	Scope	Status
Kent Road/Coward Street Intersection upgrade	Part of a five-intersection upgrade in Mascot. <ul style="list-style-type: none"> Installing a new left turn slip lane on Kent Road (southbound) into Coward Street (eastbound) Installing a new pedestrian crossing and new traffic island at Kent Road on the northern side of the intersection Installing a new pedestrian crossing at traffic lights at Coward Street, on the eastern side of the intersection. 	Completed
O’Riordan Street/Gardeners Road Intersection upgrade	Part of a five-intersection upgrade in Mascot. <ul style="list-style-type: none"> Banning right turns for all vehicles from Gardeners Road (westbound) into O’Riordan Street (northbound) Banning left turns from Gardeners Road in both directions into O’Riordan Street for vehicles over 12.5m and adding a dedicated left turn lane on Gardeners Road (westbound). 	Completed
Kent Road/Ricketty Street Intersection upgrade	Part of a five-intersection upgrade in Mascot. <ul style="list-style-type: none"> Reconfiguring the pedestrian crossing at Kent Road, on the southern side of the intersection, and providing a new, larger traffic island. 	Completed
Mascot Station More Trains, More Services	Reduce overcrowding within the station and reduce traffic congestion on Bourke Street between the intersection of Church Avenue and John Street by reducing pedestrian usage of the zebra crossing. <ul style="list-style-type: none"> The Mascot Station Upgrade is building a new station entrance on the western side of Bourke Street. 	In progress, planned for completion in December 2023

1. Introduction

1.1 Background

On 17 April 2018, the New South Wales (NSW) Minister for Planning granted approval to the Critical State Significant Infrastructure (CSSI) application for WestConnex Stage 3 project (“the Project”). The infrastructure approval, which is regulated under Section 115ZB of the *Environmental Planning and Assessment Act 1979*, is subject to the Minister’s conditions of approval for the State Significant Infrastructure (SSI).

The conditions of approval are administered by the NSW Department of Planning and Environment (previously the NSW Department of Planning, Industry and Environment) and delivered by the Proponent – Transport for NSW (previously NSW Roads and Maritime Services).

Part E of the Conditions of Approval outlines conditions for environmental management, reporting and auditing during operations of the project. Condition E63 lists the requirement for the preparation of a Road Network Performance Plan as per the following requirements:

“Prior to the commencement of operation of the full CSSI (mainline tunnel and Rozelle Interchange), the Proponent must prepare a Road Network Performance Plan in consultation with Transport for NSW and the relevant council(s). The Plan should incorporate operational traffic modelling results from the M4 East and New M5 (SSI 6307 and SSI 6788) projects, and include:

- a) consideration of movement and place analysis and local initiatives, such as local area improvement strategies and potential land use changes, and any traffic changes as a result of other major road projects within the project area;*
- b) an updated analysis, including modelling of traffic impacts to the adjoining road network (including impacts on local roads from rat-running), as a consequence of the CSSI;*
- c) an assessment of the performance of the road network, including potential ‘pinch-points’ where the merging of tunnel exit traffic and surface traffic would occur at the Haberfield Interchange, the St Peters Interchange and Rozelle Interchange and Iron Cove Link; and*
- d) mitigation measures to manage predicted traffic performance impacts including local area traffic management and bus priority measures as relevant.*

The Road Network Performance Plan must be submitted to the Secretary and relevant council(s). The implementation of the Plan must have commenced prior to the full operation of the CSSI. The Proponent is responsible for the implementation of the identified measures under Condition E63(d).

Note: Identified mitigation measures may need to be further assessed under the Environmental Planning and Assessment Act, 1979. Works will need to meet relevant design standards and be subject to independent road safety audits.”

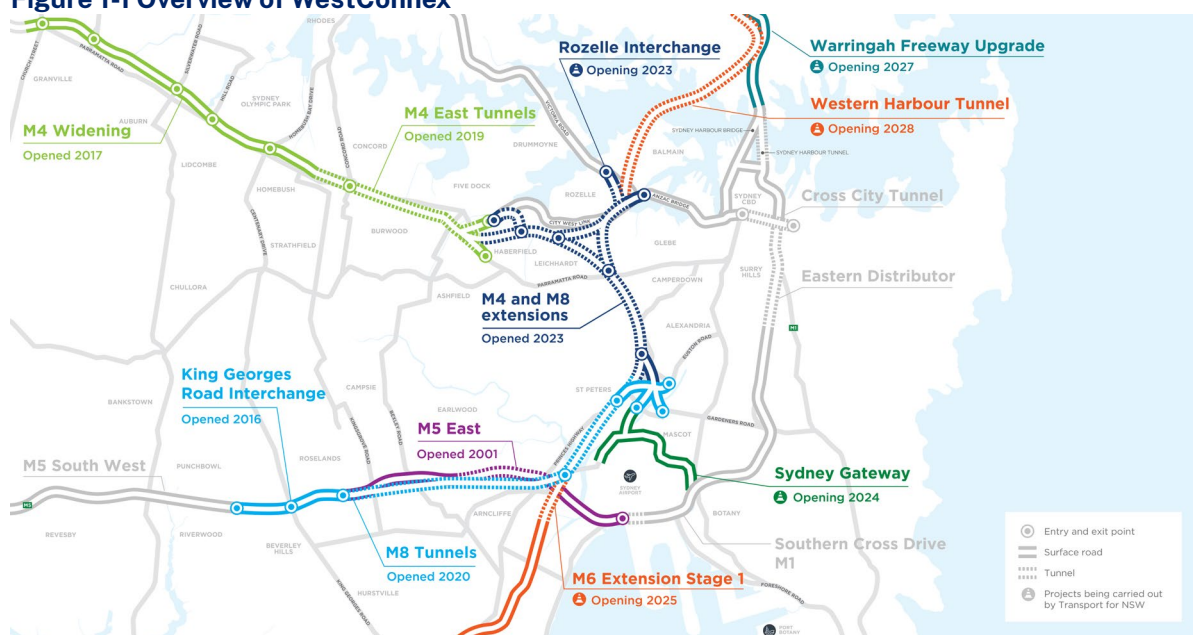
1.2 Overview of the project

1.2.1 WestConnex

WestConnex is a significant investment in Sydney’s road infrastructure by the NSW and Australian governments. It is the largest urban road project currently underway in Australia and comprises a series of interconnected motorways and road upgrades to increase the capacity of the M4 and M8 Motorways and provide a vital underground link between the two motorways.

WestConnex is 33 kilometres in length, which includes capacity improvements on existing motorways as well as new sections of motorway. It aims to better link Sydney’s west with its international gateways and key places of business. WestConnex will act as a catalyst to renew and transform parts of Sydney, creating urban renewal and public transport improvement opportunities. An overview of the WestConnex project is shown in Figure 1-1.

Figure 1-1 Overview of WestConnex



Source: Transport for NSW (August 2023)

Efficient and reliable access to and from these gateways supports some of the state’s most important economic journeys and is a critical element in sustaining the future productivity and global competitiveness of Sydney and NSW.

With more than two-thirds of WestConnex being built in underground tunnels, this project will ease congestion on surface roads and improve productivity and efficiency for all road users, including buses, freight, and light commercial vehicles.

WestConnex is being delivered in three stages. Stage 1, comprising the M4 Widening and the M4 East, and Stage 2, comprising the M8 Motorway, are complete and open to traffic. Stage 3, comprising the M4 and M8 extensions (completed), and Rozelle Interchange and Iron Cove Link is currently in delivery. The schedule for WestConnex is indicated in Figure 1-1.

1.2.2 WestConnex - Stage 3

WestConnex Stage 3 (the Project) comprises of two stages, Stages 3a and 3b. Stage 3a is the M4 and M8 Extensions (previously known as the M4-M5 Link Tunnels). This section is twin 7.5km tunnels connecting Stage 1 (M4 Widening and M4 East) with Stage 2 (M8 Motorway) between Haberfield and St Peters and forms a vital link between the southwest and west of Sydney with its international gateways and key places of business. Stage 3a opened in January 2023.

Stage 3b comprises of the Rozelle Interchange and Iron Cove Link, connecting the mainline tunnels directly to/from the M8 and M4 Motorway with City-West Link Road, Western Distributor and Victoria Road via an underground interchange, with a future connection to the Western Harbour Tunnel. Stage 3b is planned to open in late 2023.

1.3 Purpose of this Plan

This pre-opening Stage 3 Road Network Performance Plan (the Plan) is an assessment of the potential impacts the Project is expected to have on the adjacent surface road network once Stage 3 is fully operational. This Plan outlines associated mitigations that can commence prior to the full operation of WestConnex Stage 3, as per CoA E63. This includes locations surrounding Haberfield Interchange, Rozelle Interchange, Iron Cove Link and St Peters Interchange. Mitigations that can commence prior to the full operation of the CSSI include, but are not limited to, minor civil works and intersection upgrades, lane reprioritisation, demand management measures and changes to phasing of signalised intersections.

In addition, the Plan identifies opportunities for Movement and Place revitalisation of neighbourhoods along key corridors which are predicted to experience reduction in through traffic volumes with the opening of the WestConnex Stage 3. As per CoA E64, an Operational Road Network Performance Review (ORNPR) will be prepared within 12 months and five years after the commencement of operation of the full CSSI (of the mainline tunnels and Rozelle Interchange) and will confirm the adequacy of the mitigation measures identified in this Plan.

This Plan also assesses the road safety performance of surrounding key road corridors considered as part of this pre-opening plan. The assessment identifies the road safety performance trends prior to the operation of Stage 3 and the potential changes to the road safety performance in the post opening scenario.

Further mitigation measures, if required, will be included in the ORNPR at both 12 months and five years post opening of the Rozelle Interchange.

Table 1-1 describes the alignment of the mitigation measures that will be developed out of the Plan with the relevant Transport policies, strategies and/or initiatives.

Table 1-1 Project mitigation measures alignment with relevant NSW strategic policies

Strategic policy	Description	Alignment with mitigation measures
Future Transport 2056	<ul style="list-style-type: none"> • Outlines the NSW Government’s strategy for creating and maintaining a ‘world-class, safe, efficient and reliable transport system over the next 40 years. • Safe, healthy, sustainable, accessible and integrated journeys in NSW. • Stabilise Greater Sydney’s traffic. 	Customer-centric principles will inform the development of project mitigation measures, including ways of optimising the road network through managing demand and performance.

Strategic policy	Description	Alignment with mitigation measures
2026 Road Safety Action Plan	Aims to ensure safety is designed into the transport network as NSW grows.	Will inform the design of project mitigation measures, in the context of road safety.
Movement and Place Framework	To create successful streets and roads by balancing the movement of people and goods with the amenity and quality of places.	Customer-centric principles will inform the development of project mitigation measures.
Active Transport Strategy	Prioritising walking, bike riding and personal mobility for short trips and a viable, safe and efficient option for longer trips.	Consideration of active transport requirements to inform design of project mitigation measures.

1.4 Extent of this Plan

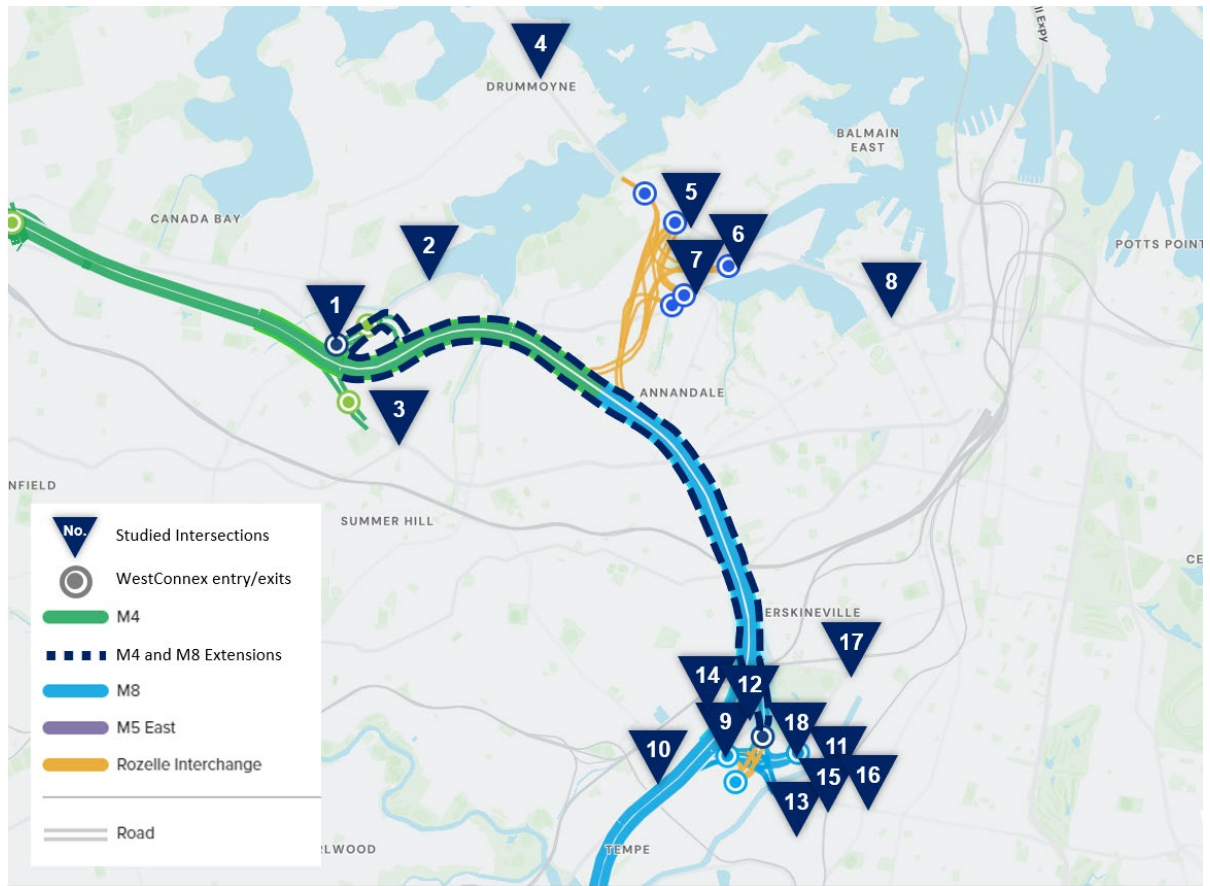
The scope of this Plan encompasses areas of the surface road network likely to be impacted by the opening of the Project, with a focus on localities surrounding the entries and exits to WestConnex Stage 3 including key intersections in the vicinity of the Haberfield Interchange, Rozelle Interchange and Iron Cove Link as well as the St Peters Interchange. This Plan also extends to the Western Distributor and key intersections in Pymont, which are expected to be impacted by the future opening of Rozelle Interchange.

Key intersections assessed in this Plan have been previously identified and modelled in the M4-M5 Link EIS. Additional intersections of concern were identified based on proximity to motorway entries and exits, including potential ‘pinch-points’ where the merging of tunnel exit traffic and surface traffic would occur at the Haberfield Interchange, the St Peters Interchange and Rozelle Interchange, as shown in Figure 1-2.

The Movement and Place assessment considered local initiatives in City of Sydney, Inner West and Bayside councils, such as local area improvement strategies and any traffic changes as a result of other major road projects within the project area. The Plan includes opportunities to revitalise place and movement corridors near the project in line with local initiatives, where traffic volumes on surface roads are likely to be reduced as a result of the Project.

The road safety performance assessment considered key road corridors considered as part of this pre-opening plan. This includes, but is not limited to, the road corridors of Parramatta Road, City West Link, Victoria Road, the Western Distributor, and Princes Highway.

Figure 1-2 Intersections assessed in this Plan



Base map source: WestConnex Interactive Map (accessed April 2023)

Haberfield Interchange:

1. Parramatta Road/Wattle Street/Frederick Street
2. City West Link/Timbrell Drive
3. Parramatta Road/Liverpool Road

Rozelle Interchange:

4. Victoria Road/Lyons Road
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6. Victoria Road/City West Link
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16. Gardeners Rd/O'Riordan Street
17. Sydney Park Road/Euston Road
18. Euston Road/Campbell Road

1.5 Structure of this Plan

This Plan has been prepared to address the requirements of Condition E63 discussed in Section 1.1. Table 1-2 presents the sections of this document relevant to the E63 conditions of approval.

Table 1-2 Plan structure and relevant items addressed from Condition E63

Condition E63 item	Item requirements	Relevant section
A	<i>“consideration of movement and place analysis and local initiatives, such as local area improvement strategies and potential land use changes, and any traffic changes as a result of other major road projects within the project area;”</i>	Section 5
B	<i>“an updated analysis, including modelling of traffic impacts to the adjoining road network (including impacts on local roads from rat-running), as a consequence of the CSSI;”</i>	Section 3
C	<i>“an assessment of the performance of the road network, including potential ‘pinch-points’ where the merging of tunnel exit traffic and surface traffic would occur at the Haberfield Interchange, the St Peters Interchange and Rozelle Interchange and Iron Cove Link; and”</i>	Section 3
D	<i>“mitigation measures to manage predicted traffic performance impacts including local area traffic management and bus priority measures as relevant.”</i>	Section 6.9

2. Methodology

The intersections assessed as part of this Plan were identified based on the intersections modelled in the M4-M5 Link EIS as well as additional intersections of concern identified based on proximity to motorway entries and exits, including potential ‘pinch-points’ where the merging of tunnel exit traffic and surface traffic would occur at the Haberfield Interchange, the St Peters Interchange and Rozelle Interchange and Iron Cove Link.

As outlined in Section 1, this Plan examines the performance of key intersections likely to be impacted by the opening of the project through updated traffic modelling completed post EIS approval and part of this plan. The traffic modelling software used for the updated traffic modelling for each intersection is detailed in Table 2-1.

Table 2-1 Traffic modelling software used to assess impacts

Intersection	Traffic modelling software used
1. Parramatta Road/Wattle Street/Frederick Street	SIDRA
2. City West Link/Timbrell Drive	SIDRA
3. Parramatta Road/Liverpool Road	SIDRA
4. Victoria Road/Lyons Road	VISSIM
5. Victoria Road/Darling Street	VISSIM
6. Victoria Road/City West Link	VISSIM
7. The Crescent/Johnston Street	SIDRA
8. Harris Street/Allen Street	VISSIM
9. Princes Highway/Canal Road	SIDRA
10. Princes Highway/Railway Road	SIDRA
11. Campbell Road/Bourke Road	AIMSUN
12. Princes Highway/Campbell Street	SIDRA
13. Ricketty Street/Kent Road	AIMSUN
14. Unwins Bridge Road/Campbell Street	SIDRA
15. Gardeners Road/Bourke Road	AIMSUN
16. Gardeners Rd/O'Riordan Street	AIMSUN
17. Sydney Park Road/Euston Road	SIDRA
18. Euston Road/Campbell Road	AIMSUN

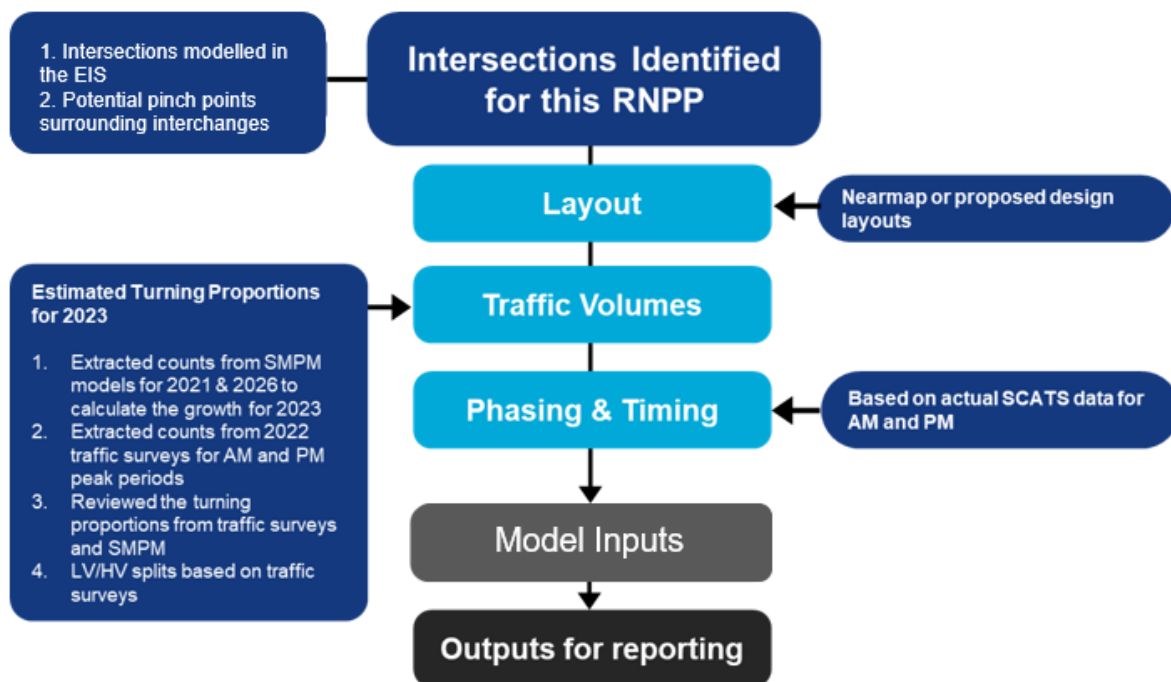
The performance of each intersection has been compared against one or two scenarios using outputs from updated traffic modelling. The scenarios considered as part of this plan include the Stage 3 post opening assessments completed as part of the approved M4-M5 Link EIS (where available), an updated Stage 3 post opening 2023 scenario using current network and land use assumptions (Scenario 1), and a future case scenario with proposed changes to the intersection layout (Scenario 2), as applicable.

Land Use assumptions

The land use forecasts and assumptions were considered using the standard land use projections for year 2023. These land use projections were considered in the Strategic Motorway Project Model (SMPM) model, which has been used to derive the future traffic demand for the intersections.

The process adopted for undertaking updated traffic modelling as part of this Plan is presented in Figure 2-1.

Figure 2-1 Methodology for updated traffic modelling



Traffic volume surveys were undertaken at the intersections identified in Section 1.4 on Thursday 1 December 2022 during AM and PM peak periods. It is noted at the time of the traffic volume surveys, a lane closure on Victoria Road (citybound) near Terry Street Rozelle was in place due to construction work, potentially impacting Victoria Road citybound traffic volumes. These traffic volumes were used to estimate future traffic volumes in late 2023 after the opening of Stage 3 (both Stage 3a and 3b), using growth calculated from the Strategic Motorway Planning Model (SMPM). Historical SCATS cycle time data was also extracted for AM and PM peak periods in December 2022 and used as inputs for the modelled intersections to ensure consistency with the operations of the SCATS system.

Post WestConnex Stage 3 scenarios for some intersections have been modelled previously using AIMSUN, VISSIM and SIDRA modelling software as part of multiple recent investigations as noted above. The modelling results have been extracted from those investigations and used for comparison in this review.

Updated pre-opening of WestConnex Stage 3 scenarios were also modelled using AIMSUN, VISSIM and SIDRA. Extracted results have been included in Section 3.

Based on the conditions of approval, this Plan has also considered the movement and place analysis and local initiatives, such as local area improvement strategies and any traffic changes as a result of other major road projects within the project area.

3. Intersection performance

As outlined in Section 2, intersection performance included as part of this Plan is based on multiple recent investigations that used SIDRA Intersection 9.0, AIMSUN and VISSIM modelling software.

The standard measure of intersection performance is vehicle delay. Traffic modelling software determines the average delay that vehicles encounter at the intersection and provide a measure of the Level of Service (LoS).

Table 3-1 indicates the criteria that is adopted in assessing the LoS, in line with Transport for NSW’s traffic modelling guidelines.



Average Delay
(seconds)



**Intersection
LoS**

Table 3-1 Intersection LoS criteria

Level of Service (LoS)	Average delay per vehicle (s/veh)	Traffic signals, roundabouts
A	Less than 14	Good operation
B	15 to 28	Good with acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Near capacity
E	57 to 70	At capacity, at signals incidents will cause excessive delays
F	Greater than 70	Extra capacity required

3.1 Summary of intersection performance

The intersection analysis presented in this Plan has been compared against the forecasted EIS post opening of WestConnex Stage 3. Updated post opening forecast refers to an updated future 2023 scenario with the Project in operation.

Alternative layouts for some intersection have been developed to mitigate impacts or provide public transport improvements. The updated post opening forecast with alternative layout refers to a future case scenario with the Project in operation as well as proposed changed to the intersection layout, as applicable.

The existing condition results refer to a past scenario with the Project not in operation (i.e. prior to the opening of WestConnex Stage 3a in January 2023).

Table 3-2 and Table 3-3 presents a summary of the intersection LoS for the AM and PM peak periods.

Table 3-2 Summary of performance at Haberfield Interchange and Rozelle Interchange

Modelling Scenario	Haberfield Interchange						Rozelle Interchange									
	Parramatta Road / Wattle Street / Frederick Street		City West Link / Timbrell Drive		Parramatta Road / Liverpool Road		Victoria Road / Lyons Road		Victoria Road / Darling Street		Victoria Road/City West Link		The Crescent / Johnston Street		Harris Street / Allen Street	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing Condition	D	E	F	C	C	C	C	B	C	C	B	C	C	D	C	C
Post-opening forecast (EIS)	E	D	D	E	C	C	F	F	F	D	C	C	C	E	-	-
Post-opening forecast (updated)	C	C	D	D	D	C	F	B	D	C	C	C	C	D	C	C
Post-opening forecast (alternative layout)	-	-	-	-	-	-	-	-	D	C	-	-	-	-	C	B

Table 3-3 Summary of performance at St Peters Interchange

Modelling Scenario	St Peters Interchange																			
	Princes Highway / Canal Road		Princes Highway / Railway Road		Campbell Road / Bourke Road		Princes Highway / Campbell Street		Ricketty Street / Kent Road		Unwins Bridge Road / Campbell Street		Gardeners Road / Bourke Road		Gardeners Rd / O'Riordan Street		Sydney Park Road / Euston Road		Euston Road / Campbell Road	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing Condition	B	C	D	D	B	C	D	D	B	B	E	E	D	C	D	D	C	D	C	C
Post-opening forecast (EIS)	F	C	F	F	D	C	F	E	D	D	D	E	E	F	F	F	C	D	C	D
Post-opening forecast (updated)	C	C	D	D	D	E	D	D	D	D	F	F	C	D	E	F	C	D	F	F
Post-opening forecast (alternative layout)	-	-	-	-	C	D	-	-	B	B	-	-	C	C	D	C	-	-	D	D

3.2 Haberfield Interchange

3.2.1 Intersection 1 – Parramatta Road/Wattle Street/Frederick Street

The Parramatta Road, Frederick Street and Wattle Street intersection is part of the Haberfield Interchange with the eastern approach serving as an entry/exit point to the M4 and M8 extensions. It is a four-way signalised intersection with pedestrian crossings on all approaches except for the north-western leg.

At this intersection, Parramatta Road is part of the Great Western Highway (A44), one of Sydney's major east-west arterial roads. The north-western approach provides connectivity to Western Sydney, whilst the south-eastern approach provides access to the CBD's south. In the southbound direction Parramatta Road widens to five lanes on approach to the intersection allowing for two dedicated right lanes onto Frederick Street, before narrowing back to three lanes. From the southern approach, vehicles are not permitted to turn right onto Wattle Street.

Wattle Street travels towards the CBD in the east whilst Frederick Street connects southwest to Liverpool Road. Wattle Street is configured with three dedicated right turn lanes for vehicles travelling northwest onto Parramatta Road, two through lanes onto Frederick Street and a slip lane for left turning vehicles heading southeast. Frederick Street has three through lanes travelling east towards the CBD, one right turn lane onto Parramatta Road heading southeast and a slide lane for left turning vehicles heading northwest. The left-most through lane is road-marked for Wattle Street which continues onto City West Link, whilst the right-most lane feeds into the M4 and M8 extensions.

Figure 3-1 illustrates the current layout of the intersection (post M4 and M8 extensions tunnels).

Figure 3-1 Intersection of Parramatta Road/Frederick Street/Wattle Street



Imagery Source: Nearthmap (March 2023)

Based on average daily traffic volumes along Parramatta Road and City West Link, it is observed that the current traffic levels are lower than the EIS forecasts for 2023 pre-opening of Stage 3 ("without project" scenario) by 30%. This appears to be a trend across the key corridors in the Haberfield interchange area.

Scenario 1 was modelled based on the approach outlined in Figure 2-1 and using the existing intersection layout (post M4 and M8 extension tunnels). The reduction in through lanes for surface traffic from Wattle Street to Frederick Street from two lanes pre-M4 and M8 extensions to one lane post M4 and M8 extensions was expected to cause long queues on Wattle Street for surface road traffic in the EIS, contributing to LoS of E and D in the AM and PM peaks. The reduction in lanes, coupled with potential merging and weaving issues of surface traffic and M4 and M8 extension tunnel exit bound for the left slip lane onto Parramatta Road southeast from Wattle Street or right turn to Parramatta Road northwest was expected to create safety and



intersection performance issues. Pre-opening mitigations including robust lane guidance and implementing solid lines to deter weaving has been completed to mitigate the expected issue and is detailed in Section 6 – Mitigations.

The Stage 3 post opening intersection performance forecasted in the EIS has been compared with Scenario 1. The intersection was expected to operate better in the AM and PM peak in the updated Scenario 1 modelling compared to the EIS modelling, due to less demand in the SMPM strategic models than in the EIS WestConnex Road Traffic Model (WRTM) strategic models.

The overall performance of the intersection improved from LoS E to LoS C in the AM peak and remained at LoS C in the PM peak compared to the forecasts included in the EIS.

Table 3-4 presents a performance summary of this intersection based off the updated modelling.

Table 3-4 Summary of performance at Parramatta Road/Frederick Street/Wattle Street

Parramatta Road/Frederick Street/Wattle Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	-	LoS D
	PM	-	LoS E
M4-M5 Link EIS (initial post opening forecast)	AM	70	LoS E
	PM	56	LoS D
Scenario 1 (updated post opening forecast)	AM	39	LoS C
	PM	42	LoS C

Although the intersection is likely to perform better than expected, Frederick Street is still expected to experience an increase in traffic post opening of Stage 3 from more vehicles using the M4 and M8 extension tunnels. Since there is a history of collisions on Frederick Street between traffic and pedestrians, a speed limit reduction from 60km/h to 50km/h has been implemented to avoid exacerbation of the existing safety issue.

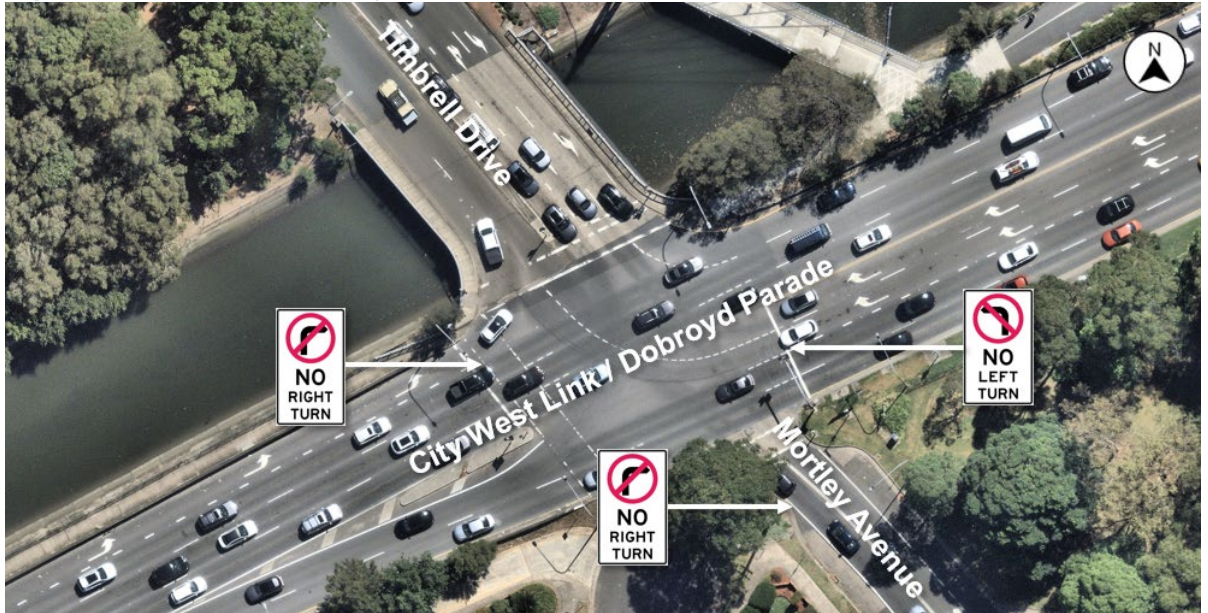
3.2.2 Intersection 2 – City West Link/Timbrell Drive

The City West link/Dobroyd Parade, Timbrell Drive and Mortley Avenue intersection is a four-way signalised intersection with pedestrian crossings on the north, south and west approaches.

City West Link (A4) is a link road that connects Parramatta Road (A44) and WestConnex M4 East in Sydney’s inner west with the Western Distributor (A4) in the city centre. In the eastbound direction City West Link widens to four lanes on approach to the intersection with one left turn lane onto Timbrell Drive, before narrowing back to three lanes. Whilst travelling in the westbound direction, City West Link operates with two through lanes and two dedicated right turn lanes onto Timbrell Drive. Vehicles on City West Link are not permitted to turn onto Mortley Avenue as indicated by ‘No Right Turn’ and ‘No Left Turn’ signage. Vehicles on Mortley Avenue are not permitted to right turn onto City West Link towards to the CBD.

Figure 3-2 illustrates the current layout of the intersection.

Figure 3-2 Intersection of City West Link/Timbrell Drive



Imagery Source: Nearthmap (March 2023)



Based on average daily traffic volumes along City West Link, it is observed that the current traffic levels are lower than the EIS forecasts for 2023 pre-opening of Stage 3 (“without project” scenario) by 30%. This appears to be a trend across the key corridors in the Haberfield interchange area.

Scenario 1 (updated Stage 3 post opening) was modelled based on the approach outlined in Figure 2-1 and using the existing intersection layout. The post opening intersection performance forecast in the EIS has been compared with Scenario 1. The intersection is forecast to operate similarly in the AM peak and better in the PM peak in the updated Scenario 1 modelling compared to the EIS modelling. The improvement in the PM model is due to a decrease in traffic demand from a difference between WRTM strategic model and most current SMPM strategic model factoring in post COVID-19 travel patterns (including work from home and peak spreading). Therefore, it is reasonable for the Level of Service to improve from the EIS forecast in the PM.

The overall performance of the intersection remained the same at LoS D in the AM peak and improved from LoS E to LoS D in the PM peak compared to the forecasts included in the EIS.

Table 3-5 presents a performance summary of this intersection based off the updated modelling.

Table 3-5 Summary of performance at City West Link/Timbrell Drive

City West Link/Timbrell Drive			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	73	LoS F
	PM	42	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	56	LoS D
	PM	70	LoS E
Scenario 1 (updated post opening forecast)	AM	48	LoS D
	PM	54	LoS D

There are no mitigations proposed for this intersection before the opening of Rozelle Interchange as the intersection performance is expected to improve compared to current performance as more traffic choose to use the new tunnels to reach their destinations, rather than the surface road.

3.2.3 Intersection 3 – Parramatta Road/Liverpool Road

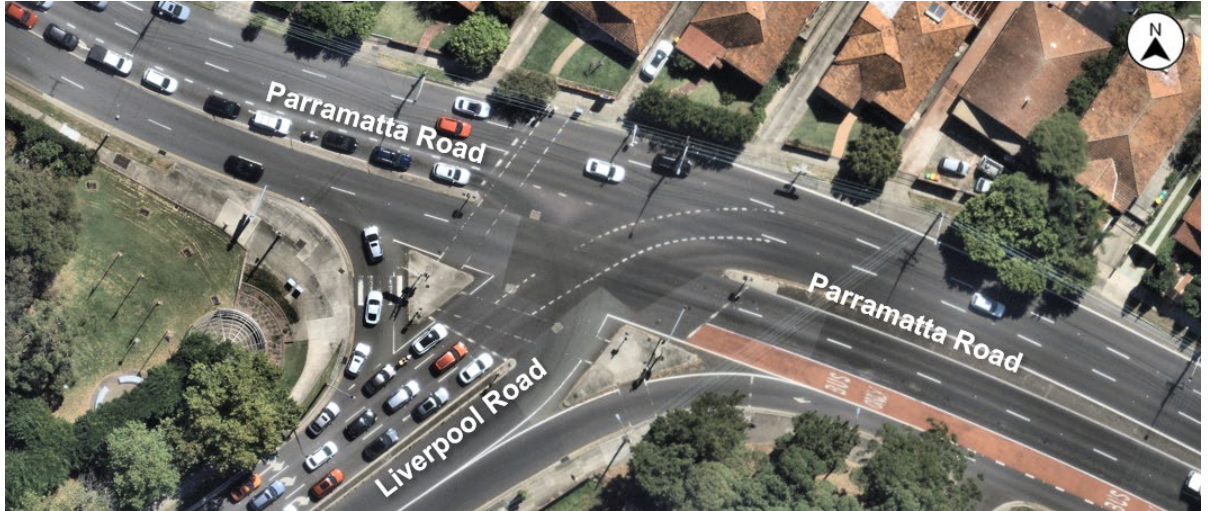
The Parramatta Road and Liverpool Road intersection is a three-way signalised intersection with pedestrian crossings on the southern and western approaches.

This intersection is the starting point of the Liverpool Road, the eastern end of the Hume Highway (A22) which is an arterial road to Sydney’s southwest. On approach to the intersection Liverpool Road’s three lanes turn right to travel east towards the CBD in continuation of the A22 corridor. For vehicles heading west from Liverpool Road, a slip lane allows traffic to left turn onto Parramatta Road.

Parramatta Road is a major arterial road which provides east-west connection between the inner west and Parramatta city centre. The western approach of Parramatta Road is configured with three through lanes and one dedicated right turn lane, whilst the eastern approach has two through lanes as well as a slip lane and dedicated bus lane.

Figure 3-3 illustrates the current layout of the intersection.

Figure 3-3 Intersection of Parramatta Road/Liverpool Road





Imagery Source: Nearthmap (March 2023)

Based on average daily traffic volumes along Parramatta Road at this intersection, it is observed that the current traffic levels are lower than the EIS forecasts for 2023 pre-opening of Stage 3 (“without project” scenario) by 15% and marginally higher for the right turn from Parramatta Road eastbound onto Liverpool Road.

Scenario 1 (updated Stage 3 post opening) was modelled based on the approach outlined in Figure 2-1 and using the existing intersection layout. The post opening intersection performance forecast in the EIS has been compared with Scenario 1. The intersection is forecast to operate worse in the AM peak and similarly in the PM peak in the updated Scenario 1 modelling compared to the EIS modelling. The reduction in performance in the AM peak from LoS C to LoS D is due to marginally more demand for the right turn from Parramatta Road eastbound onto Liverpool Road than forecasted in the EIS demand modelling. This is likely due to updated land use assumptions between the models. Table 3-6 presents a performance summary of this intersection based on the updated modelling.

Table 3-6 Summary of performance at Parramatta Road/Liverpool Road

Parramatta Road/Liverpool Road			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	41	LoS C
	PM	31	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	42	LoS C
	PM	42	LoS C
Scenario 1 (updated post opening forecast)	AM	55	LoS D
	PM	35	LoS C

There are no mitigations proposed for this intersection before the opening of Stage 3 since the

demand increase for Liverpool Road and reduction in performance at the intersection was marginal. The intersection will be monitored post Stage 3 opening and will be assessed as part of the 12 month post-opening Operational Road Network Performance Review.

3.2.4 Wolseley Street, Haberfield

Increased traffic using local street Wolseley Street was observed after the opening of Stage 3a (M4 and M8 extension) early 2023. Vehicles turn left into Wolseley Street from Ramsay Street northbound, turning left onto Parramatta Road southbound and left onto Wattle Street eastbound to access the Wattle Street tunnel portals. The increase in traffic on Wolseley Street is currently undergoing review and no mitigations will be in place prior to Stage 3b opening. Transport will consult with Inner West Council on potential mitigation measures.

3.3 Rozelle Interchange

Pinch points surrounding Rozelle Interchange are expected to cause an impact to the adjoining road network. Anzac Bridge is currently over capacity and forecasted to grow in demand following the opening of Rozelle Interchange, which is forecasted to impact adjoining roads including Victoria Road and City West Link. Impacted intersections are documented below. Downstream constraints on the Western Distributor, CBD and the bridge itself limit the scale of mitigation measures that can be implemented pre-opening of Rozelle Interchange. Similarly, merging of traffic lanes between Victoria Road and City West Link approaching Anzac Bridge is also expected to create a pinch point impacting some intersections upstream. The following section details the expected impacts to these locations.

Key observations from traffic modelling concludes that once the project is operational traffic will shift onto the motorway and traffic volumes on the surface road network would decrease in most cases except along the Sydney Harbour Bridge, Gladesville Bridge, as vehicles are attracted to use the Iron Cove Link, and on Johnston Street as traffic seek to access the Rozelle Interchange. However, it should be noted that while there is a reduction in traffic volumes, it is not equal throughout the day. We anticipate that delays on Victoria Road and City West Link in the AM peak period citybound will continue, however delays on surface roads at other times will decrease.

3.3.1 Intersection 4 – Victoria Road/Lyons Road

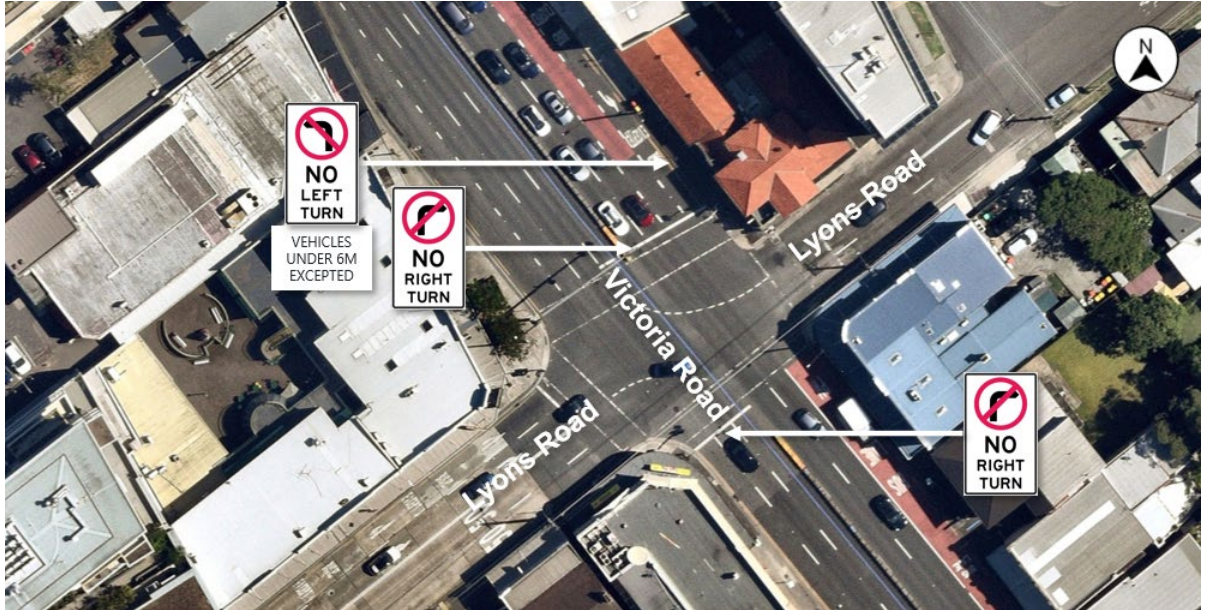
The intersection of Victoria Road and Lyons Road is a signalised four-way intersection with pedestrian crossings available on all sides.

Victoria Road (A40) is one of the longest arterial roads in Sydney, connecting Parramatta in the west to Anzac Bridge in the east. At this intersection, Victoria Road operates with five lanes on the north-western approach (with tidal flow) including a bus lane and a dedicated left turn lane. 'Buses Excepted' road markings on the left turn lane and 'No Left Turn except for vehicles under 6m' signage indicate that buses may only continue with through movement on Victoria Road from this approach. Right turns onto Lyons Road are not permitted from Victoria Road as indicated by 'No Right Turn' signage.

Lyons Road is a main road which traverses through Drummoyne, Russell Lea and Five Dock in a north east-south west direction. On the south-western approach, Lyons Road operates with a dedicated right turn lane and a shared left and through lane with 'Buses Excepted' road markings, indicating that buses are permitted to turn right onto Victoria Road from both lanes.

Figure 3-4 illustrates the current layout of the intersection.

Figure 3-4 Intersection of Victoria Road/Lyons Road



Imagery Source: Nearmap (March 2023)

Victoria Road and Lyons Road intersection is currently at or near capacity. With the opening of Rozelle Interchange, it is expected more traffic will be attracted to this intersection than current conditions, due to the new Iron Cove Link.

Scenario 1 (updated Stage 3 post opening) was modelled using the existing intersection layout. The post opening intersection performance forecasted in the EIS has been compared with Scenario 1. The intersection is forecast to operate better in the AM and PM peak in the updated Scenario 1 modelling compared to the EIS modelling.



The overall performance of the intersection has remained at LoS F in the AM peak and improved from LoS F to LoS B in the PM peak when compared to the forecasts included in the EIS.

Even with improvements in expected performance of the intersection when compared to the EIS forecast, significant queuing is still expected on the Victoria Road and Lyons Road approaches.

The signal phasing of this intersection will be monitored and modified on opening of Rozelle Interchange if required, to support the needs of the intersection and/or wider network.

Table 3-7 presents a performance summary of this intersection based off the updated modelling.

Table 3-7 Summary of performance at Victoria Road/Lyons Road

Victoria Road/Lyons Road			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	30	LoS C
	PM	18	LoS B
M4-M5 Link EIS (initial post opening forecast)	AM	71	LoS F
	PM	71	LoS F
Scenario 1 (updated post opening forecast)	AM	86	LoS F
	PM	15	LoS B

3.3.2 Intersection 5 –Victoria Road/Darling Street

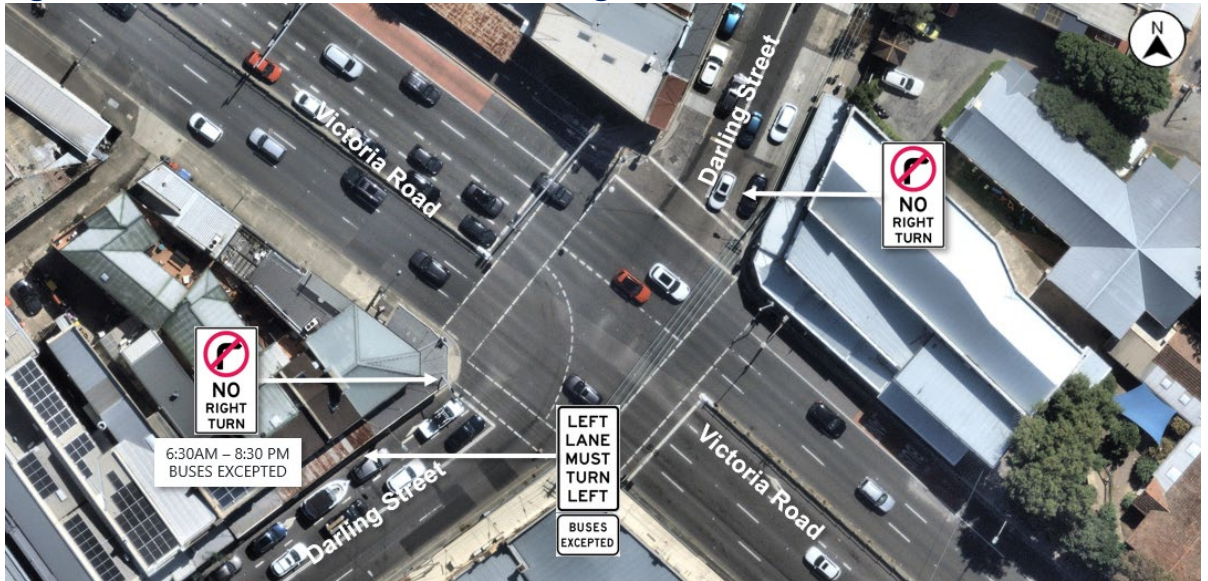
The Victoria Road and Darling Street intersection is a four-way signalised intersection with pedestrian crossings provided on all approaches.

Victoria Road facilitates travel between Sydney’s west and the city centre. At this intersection, Victoria Road operates with two separate configurations on its north-western approach. The AM peak configuration (6:00AM to 10:00AM) comprises a bus lane towards the CBD, three through lanes and a right turn lane into Darling Street southbound. The alternative configuration (10:00AM to 6:00AM) comprises three through lanes and two right turn lanes into Darling Street southbound. Left turn into Darling Street northbound is available during both configurations from Lane 1. Victoria Road south-eastern approach operates with three through lanes and a right turn lane for vehicles turning into Darling Street northbound.

Vehicles on Darling Street cannot right turn onto Victoria Road with the exception of buses between 6:30AM to 8:30AM on the south-western approach. On the same approach, signage indicates that ‘Left Lane Must Turn Left, Buses Excepted’.

Figure 3-5 illustrates the current layout of the intersection.

Figure 3-5 Intersection of Victoria Road/Darling Street





Imagery Source: Nearthmap (March 2023)

Scenario 1 (updated Stage 3 post opening) was modelled using the existing intersection layout. The post opening intersection performance forecasted in the EIS has been compared with Scenario 1. The intersection is forecast to operate better in the AM peak and the PM peak when comparing the updated Scenario 1 modelling to the EIS modelling.

The overall performance of the intersection improved from LoS F to LoS D in the AM peak and improved from LoS D to LoS C in the PM peak compared to the forecasts included in the EIS.

Table 3-8 presents a performance summary of this intersection based off the updated modelling.

Table 3-8 Summary of performance at Victoria Road/Darling Street

Victoria Road/Darling Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	37	LoS C
	PM	33	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	71	LoS F
	PM	56	LoS D
Scenario 1 (updated post opening forecast)	AM	53	LoS D
	PM	37	LoS C
Scenario 2 (alternative layout)	AM	53	LoS D
	PM	37	LoS C

With the reduction in traffic expected on Victoria Road south of Iron Cove Link, there is an opportunity to reconfigure and reallocate lane space to prioritise bus movements. As part of Transport’s plan to prioritise bus movements along Victoria Road and improve local access by reducing conflict with through traffic, a ‘Do Something’ scenario (Scenario 2) with an updated intersection layout is proposed. The ‘Do Something’ layout involves relocating the existing bus lane in the citybound direction on Victoria Road from the kerbside lane into the second lane from the kerb and implementing a kerbside bus lane away from the city on the southeast approach along Victoria Road that operates from 6am – 7pm. Based on modelling undertaken for Scenario 2 with the proposed layout changes, the intersection is forecast to operate at LoS D in the AM and LoS C in the PM.

3.3.3 Intersection 6 – Victoria Road/City West Link

The Victoria Road and City West Link intersection is a three-way signalised intersection, including an eastbound underpass, and with a pedestrian crossing on the western approach.

Victoria Road facilitates travel north towards Drummoyne, whilst City West Link provides east-west travel between Sydney’s inner west and city centre. The upgraded layout will maintain current road configurations on the western City West Link approach. The eastern approach will be reconfigured with smaller median island, creating room for an additional through lane on City West Link westbound, as well as maintaining the northbound right turn bus lane. The northern Victoria Road approach will also be reconfigured as three right turn lanes onto City West Link-The Crescent, two left turn lanes for general traffic to the city and a short left turn bus lane on the kerb side lane (AM peak only). **Error! Reference source not found.** Figure 3-6 illustrates the current layout of the intersection as of October 2023, noting ongoing construction.

Figure 3-6 Intersection of Victoria Road/City West Link





Imagery Source: Nearmap (March 2023)

Scenario 1 (updated Stage 3 post opening) was modelled using the existing intersection layout. The post opening intersection performance forecasted in the EIS has been compared with Scenario 1. The intersection is forecast to operate similarly in the AM and PM peaks in the updated Scenario 1 modelling compared to the EIS modelling, with LoS remaining at C in both peaks. Queueing is expected at the merge point between Victoria Road and City West Link traffic on the eastbound approach to Anzac Bridge.

Table 3-9 **Error! Reference source not found.** presents a performance summary of this intersection based off the updated modelling.

Table 3-9 Summary of performance at Victoria Road/City West Link

Victoria Road/City West Link			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	22	LoS B
	PM	33	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	42	LoS C
	PM	42	LoS C
Scenario 1 (updated post opening forecast)	AM	32	LoS C
	PM	37	LoS C

To regulate traffic approaching Anzac Bridge from Victoria Road citybound, ramp metering will be implemented. Vehicles will be gradually released at the ramp meter to allow a smoother and safer merge for motorists and maintain traffic flow. Refer to Section 7 – Mitigations and Opportunities for further information.

3.3.4 Intersection 7 – The Crescent/Johnston Street

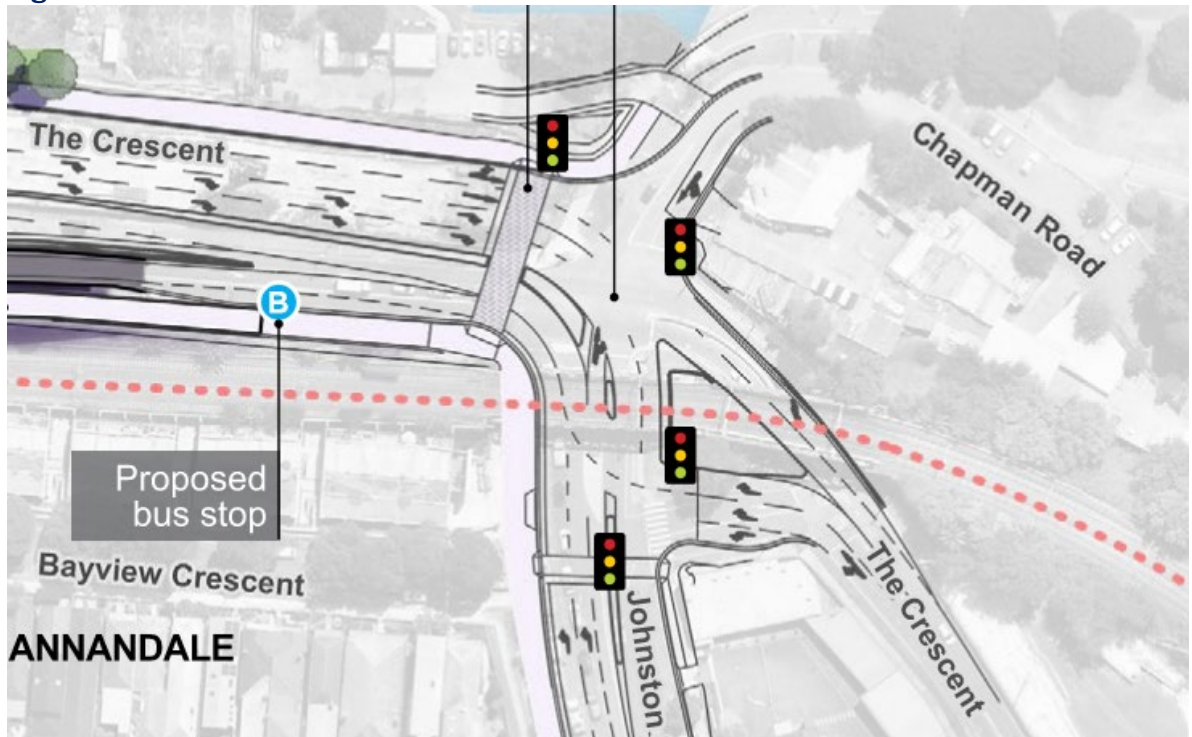
The Crescent, Johnston Street and Chapman Road intersection is a four-way signalised intersection with pedestrian crossings on the northern and western approaches.

The Crescent provides the inner west with a north-south connection to the City West Link. In the southern approach to the intersection, The Crescent veers left and widens to form three lanes comprising a dedicated left turn lane onto Johnston Street, and two dedicated right turn lanes which continue north on The Crescent where line markings direct traffic in the middle lane towards the City and traffic on the outer lane towards Leichhardt. From the northern approach, signage indicates ‘No Left Turn’ for vehicles over 9 meters.

Johnston Street travels in a south-west direction and provides connectivity to the Great Western Highway/Parramatta Road. On approach to this intersection and as part of the Stage 3 project, The Crescent will be widened to four approach lanes, two of which will be dedicated right turn lanes onto Johnston Street, a through lane heading southbound onto The Crescent and the kerbside through lane, allows travel onto Chapman Road and southbound on The Crescent.

Figure 3-7 illustrates the future intersection layout.

Figure 3-7 Intersection of The Crescent/Johnston Street



Imagery Source: WestConnex M4-M5 Link Rozelle Interchange – Modification: The Crescent overpass and active transport links (April 2020)

Based on average daily traffic volumes along The Crescent near Johnston Street, it is observed that the current traffic levels are lower than the EIS forecasts for 2023 pre-opening of Stage 3 (“without project” scenario) by 5%.



Scenario 1 (updated Stage 3 post opening) was modelled using the existing intersection layout. The post opening intersection performance forecasted in the EIS has been compared with Scenario 1. The intersection is forecast to operate similarly in the AM peak and improve in the PM peak, when comparing the updated Scenario 1 modelling with to the EIS modelling from EIS Modification 2 Report.

The improvement is due to a decrease in traffic demand between WRTM strategic model used in the EIS and the most current SMPM strategic model, which factors in post COVID-19 travel patterns (including work from home and peak spreading).

The overall performance of the intersection remained at LoS C in the AM peak and improved from LoS E to LoS D in the PM peak compared to the post opening forecasts included in the EIS.

Table 3-10 presents a performance summary of this intersection based off the updated modelling.

Table 3-10 Summary of performance at The Crescent/Johnston Street

The Crescent/Johnston Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	33	LoS C
	PM	50	LoS D
M4-M5 Link EIS (initial post opening forecast)	AM	32	LoS C
	PM	67	LoS E
Scenario 1 (updated post opening forecast)	AM	38	LoS C
	PM	46	LoS D

Although the intersection will be upgraded as part of the Stage 3 project, further changes to this intersection, if required, may be limited due to the constraints of the light rail bridge which traverses over top of the intersection.

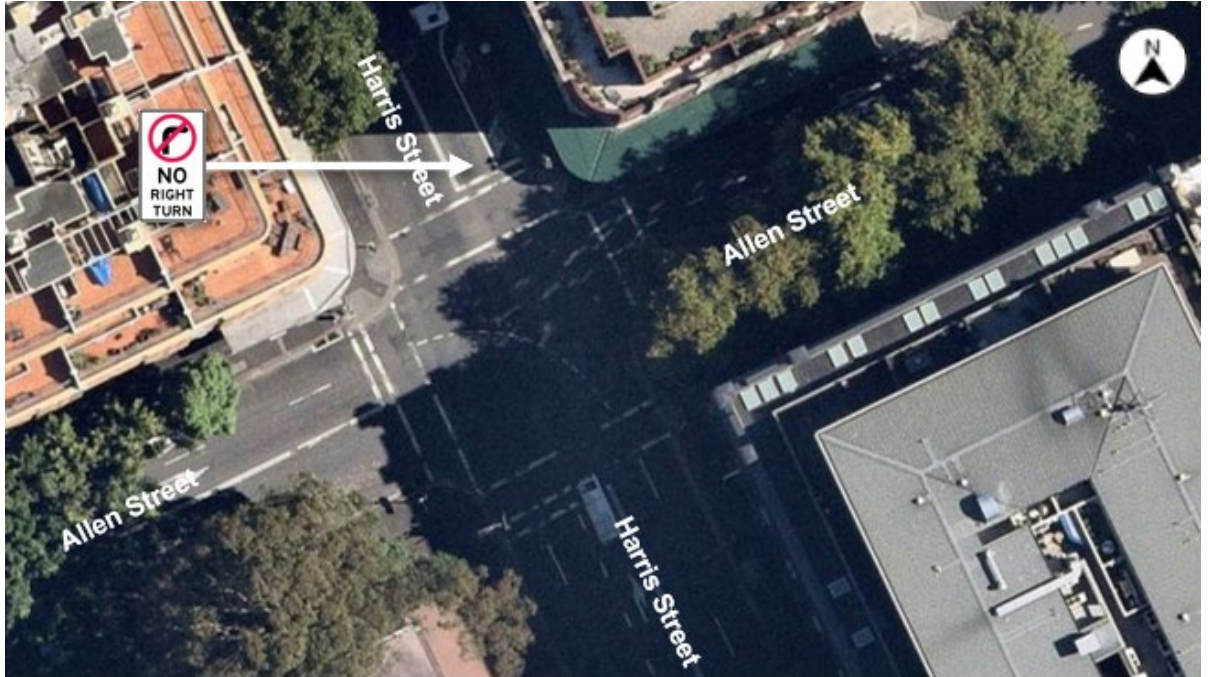
The signal phasing of this intersection will be monitored and modified on opening of Rozelle Interchange, if required, to support the needs of the intersection and/or wider network.

3.3.5 Intersection 8 – Harris Street/Allen Street

This is a four-way signalised intersection between Harris Street and Allen Street. Harris Street facilitates travel north towards the end of Pyrmont Bay and south towards Haymarket. Allen Street on the eastern side of Harris Street facilitates one way travel east towards Darling Harbour. The western side of Allen Street has two eastbound lanes, from the Western Distributor off-ramp & Bulwara Road and a single westbound lane towards Bulwara Road. The southbound approach on Harris Street doesn't allow a right-hand turn onto Allen Street. Pedestrian crossings are provided on all approaches.

Figure 3-8 illustrates the current layout of the intersection.

Figure 3-8 Intersection of Harris Street/Allen Street





Imagery Source: Nearmap

This intersection has been identified as an impacted intersection after the M4-M5 Link EIS and therefore this report does not include any forecasts from the M4-M5 Link EIS. For this intersection, Scenario 1 relates to the expected performance of the intersection once Stage 3 is operational (post opening).

Table 3-11 presents a performance summary of this intersection based off the updated modelling.

Table 3-11 Summary of performance at Harris Street/Allen Street

Victoria Road/Darling Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	30	LoS C
	PM	30	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	-	-
	PM	-	-
Scenario 1 (updated post opening forecast)	AM	33	LoS C
	PM	35	LoS C
Scenario 2 (alternative layout)	AM	42	LoS C
	PM	27	LoS B

Although the intersection performs at LoS C, traffic modelling indicates that without intervention, queues are expected to extend onto the Western Distributor from the Harris Street and Allen Street intersection during peak hours.

An alternative layout has been modelled (Scenario 2), whereby Allen Street is converted from two lanes to three lanes eastbound towards Harris Street and the southern pedestrian crossing at the intersection has been removed. Modelling concluded in Scenario 2 the intersection is forecast to remain at LoS C in the AM and improve from LoS C to LoS B in the PM peak. Queues are expected to be reduced between 50 and 190 metres on the off-ramp and be contained within the length of the off-ramp for majority of peak hours.

Refer to Section 6 – Mitigations for more information.

Pedestrian Impacts

With the removal of the southern Harris Street pedestrian crossing, a pedestrian impact assessment was undertaken based on SIDRA model outputs. Based on surveys undertaken in December 2022, 16% of pedestrians using the intersection crossed at the southern pedestrian crossing. This percentage includes pedestrians that may continue to make a second crossing across Allen Street, therefore the amount of pedestrians exclusively using the southern pedestrian crossing is less than 16%.

The average pedestrian travel times for prior to the removal is 59 seconds in the AM and 51 seconds in the PM. With the crossing removal pedestrian travel times are shown to increase by approximately 110 seconds in the AM and 95 seconds in the PM, for less than 16% of pedestrians who are exclusively using the removed crossing. Other crossings such as a single cross on Allen Street or a double cross on Allen Street and then Harris Street are unaffected.

3.4 St Peters Interchange

3.4.1 Intersection 9 – Princes Highway/Canal Road

The Princes Highway and Canal Road intersection is a four-way signalised intersection with pedestrian crossings on all approaches except for the western Princes Highway approach.

Near the intersection, Princes Highway (A36) has a northeast to southwest alignment, facilitating connection to the CBD in the northeast and Sydney Kingsford Smith Airport's International Terminal in the southwest. Canal Road provides connection to the Eastern suburbs as well as the Domestic Airport Terminal. Mary Street is a one-way road, only accessible by light vehicles, that links to Unwins Bridge Road just to the north. Right turn onto Mary Road from the north-eastern approach of Princes Highway is not permitted.

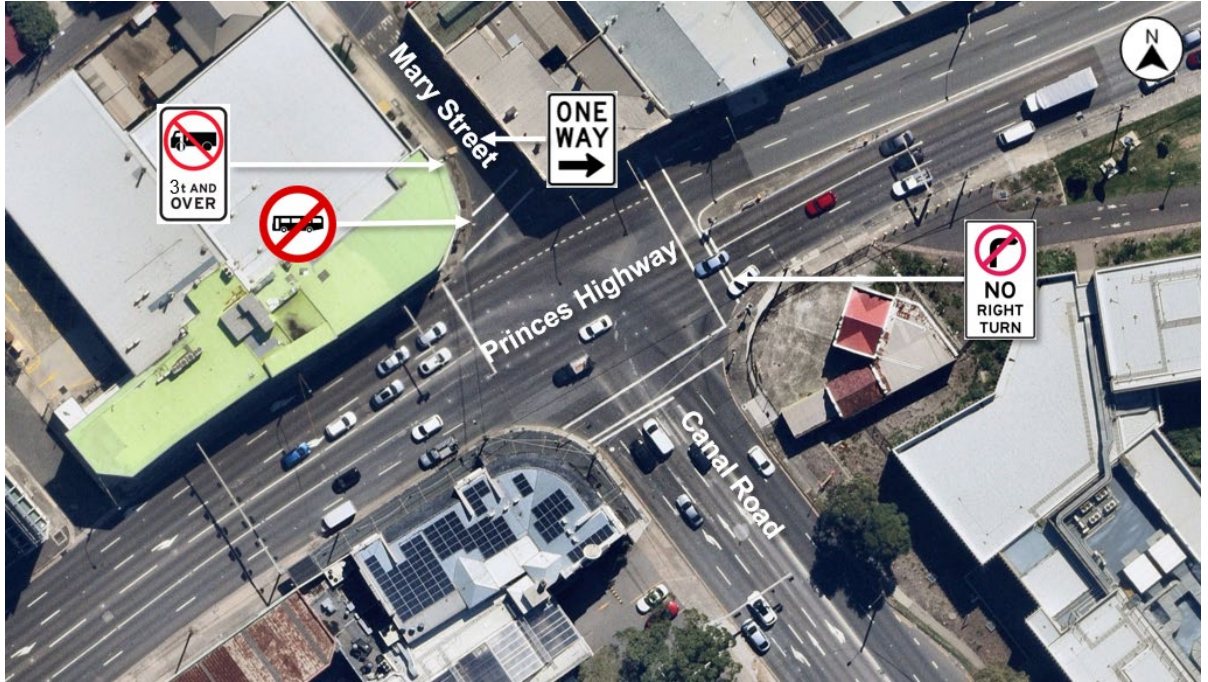
A tidal sequence operates at the intersection, creating two southwest bound lanes and four northeast bound lanes in the AM peak, and reconfiguring to form three southwest bound lanes and three northeast bound lanes in the PM.

In the AM period, the four northeast bound lanes comprise a left turn/through lane, a through lane and two dedicated right turn lanes. In the PM peak, the three northeast bound lanes comprise a left turn/through lane, a through/right turn lane and a right turn lane.

The tidal sequence also reconfigures the Canal Road approach, removing the use of the leftmost left turn lane in the AM configuration.

Figure 3-9 **Error! Reference source not found.** illustrates the current layout of the intersection.

Figure 3-9 Intersection of Princes Highway/Canal Road



Imagery Source: Nearmap (March 2023)



Based on average daily traffic volumes along Canal Road, it is observed that the current traffic levels are lower than the EIS forecasts for 2023 pre-opening of Stage 3 (“without project” scenario) by 25%.

Scenario 1 (updated Stage 3 post opening) was modelled based on the approach outlined in Figure 2-1 and using the current intersection layout and function of the tidal sequence on Princes Highway. The post opening intersection performance forecast in the EIS has been compared with Scenario 1 (updated modelling).

The overall intersection performance is forecast to improve in Scenario 1 compared to the EIS during both AM and PM peaks. The LoS in the AM peak is forecast to improve from LoS F to LoS C, while the LoS in the PM peak is forecast to remain at LoS C. The improvement in the AM model is due to a decrease in traffic demand between WRTM strategic model and most current SMPM strategic model factoring in post COVID-19 travel patterns (including work from home and peak spreading). Therefore, it is reasonable for the Level of Service to improve from the EIS forecast in the AM peak.

Table 3-12 presents a performance summary of this intersection based off the updated modelling.

Table 3-12 Summary of performance at Princes Highway/Canal Road

Princes Highway/Canal Road			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	28	LoS B
	PM	39	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	71	LoS F
	PM	42	LoS C
Scenario 1 (updated post opening forecast)	AM	35	LoS C
	PM	39	LoS C

No mitigations are proposed at this intersection.

3.4.2 Intersection 10 – Princes Highway/Railway Road

This is a three-way signalised intersection between Princes Highway and Railway Road. Princes Highway facilitates travel south towards Rockdale and north towards the Sydney city centre whilst Railway Road facilitates an east-west connection towards Sydenham Rail Station. Pedestrian crossings are provided on the northern and eastern approaches.

Figure 3-10 illustrates the current layout of the intersection.

Figure 3-10 Intersection of Princes Highway/Railway Road



Imagery Source: Nearthmap (March 2023)



Scenario 1 (updated Stage 3 post opening) was modelled based on the approach outlined in Figure 2-1 and using the existing layout. Compared to the post opening forecast in the M4-M5

Link EIS, the overall performance of the intersection is forecast to improve from LoS F to a LoS D in the AM peak and from LoS F to LoS D in the PM peak.

Based on average daily traffic volumes along Princes Highway, it is observed that the current traffic levels are lower than the EIS forecasts for 2023 pre-opening of Stage 3 (“without project” scenario) by 10%. The improvement in both the AM and PM models are due to a decrease in traffic demand between WRTM strategic model and most current SMPM strategic model factoring in post COVID-19 travel patterns (including work from home and peak spreading). Therefore, it is reasonable for the Level of Service to improve from the EIS forecast.

Table 3-13 presents a performance summary of this intersection based off the updated modelling.

Table 3-13 Summary of performance at Princes Highway/Railway Road

Princes Highway/Railway Road			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	43	LoS D
	PM	56	LoS D
M4-M5 Link EIS (initial post opening forecast)	AM	71	LoS F
	PM	71	LoS F
Scenario 1 (updated post opening forecast)	AM	49	LoS D
	PM	56	LoS D

There are no mitigations proposed at this intersection before the opening of Stage 3. The signal phasing of this intersection will be monitored and modified if required to support the needs of the intersection and/or wider network.

3.4.3 Intersection 11 – Campbell Road/Bourke Road

This is a four-way signalised intersection between Campbell Road and Bourke Road. Campbell Road facilities travel west towards St Peters whilst Bourke Road facilitates travel north towards Surry Hills. The south approach on Bourke Road provides a slip lane onto Campbell Road. The eastern approach provides access to commercial buildings and warehouses. Pedestrian crossings are provided on all approaches.

Figure 3-11 illustrates the current layout of the intersection.

Figure 3-11 Intersection of Campbell Road/Bourke Road



Imagery Source: Nearmap (March 2023)

The Stage 3 post opening intersection performance forecast in the M4-M5 Link EIS has been compared with Scenario 1 (updated post opening modelling). The intersection is forecast to operate at the same level during Scenario 1 AM but performance decreases in the PM operating at LoS E.

Table 3-14 presents a performance summary of this intersection based off the updated modelling.

Table 3-14 Summary of performance at Campbell Road/Bourke Road

Campbell Road/Bourke Road			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	21	LoS B
	PM	32	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	56	LoS D
	PM	42	LoS C
Scenario 1 (updated post opening forecast)	AM	51	LoS D
	PM	60	LoS E
Scenario 2 (alternative layout)	AM	30	LoS C
	PM	45	LoS D

Intersection upgrades and turn bans completed nearby have impacted the traffic patterns and operations at this intersection. These changes listed below have been modelled as Scenario 2 to show any intersection performance changes.

Key proposed upgrades in Scenario 2 include:

- Banned southbound right turn form O’Riordan Street into Gardeners Road
- Dual right turn into Kent Road from Gardeners Road southbound
- Banned westbound right turns into the Old Bunnings building and Goodman shopping centre to provide additional space for westbound right turn queues at the intersection with Bourke Road

Compared to Scenario 1, the overall performance of the intersection is forecast to improve under Scenario 2 from LoS D to a LoS C in the AM peak and from LoS E to LoS D in the PM peak.

Upgrades as described above were completed before the opening of Stage 3A (M4 and M8 extensions).

3.4.4 Intersection 12 – Princes Highway/Campbell Street

This is a four-way intersection between Princes Highway and Campbell Street. Princes Highway facilitates north-south travel between Sydney’s southern suburbs and the city centre. Campbell Street facilitates east-west travel between Sydney’s inner west and southern suburbs. On the eastern approach, Campbell Street has a two-lane slip road onto Princes Highway. Pedestrian crossings are provided at all approaches. A separated two-way cycleway is also provided on the northern side of Campbell Street.

Figure 3-12 illustrates the current layout of the intersection.

Figure 3-12 Intersection of Princes Highway/Campbell Street



Imagery Source: Nearmap (March 2023)



Based on average daily traffic volumes along Princes Highway, it is observed that the current traffic levels are lower than the EIS forecasts for 2023 pre-opening of Stage 3 (“without project” scenario) by 10%.

Scenario 1 (updated Stage 3 post opening) was modelled based on the approach outlined in Figure 2-1 and using the existing intersection layout. The post opening intersection performance forecast in the EIS has been compared with Scenario 1. The intersection is forecast to improve in the AM and PM peaks in the updated Scenario 1 modelling compared to the EIS modelling. The improvement in both models is due to a decrease in traffic demand from a difference in strategic demands between WRTM strategic model and most current SMPM strategic model factoring in post COVID-19 travel patterns (including work from home and peak spreading). Therefore, it is reasonable for the Level of Service to improve from the EIS forecast in the PM.

The overall performance of the intersection improved from LoS F to LoS D in the AM peak and improved from LoS E to LoS D in the PM peak compared to the forecasts included in the EIS.

Table 3-15 presents a performance summary of this intersection based off the updated modelling.

Table 3-15 Summary of performance at Princes Highway/Campbell Street

Princes Highway/Campbell Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	52	LoS D
	PM	53	LoS D
M4-M5 Link EIS (initial post opening forecast)	AM	71	LoS F
	PM	70	LoS E
Scenario 1 (updated post opening forecast)	AM	52	LoS D
	PM	53	LoS D

There are no mitigations proposed at this intersection before the opening of Stage 3. The signal phasing of this intersection will be monitored and modified if required to support the needs of the intersection and/or wider network.

3.4.5 Intersection 13 – Ricketty Street/Kent Road

This is a three-way intersection between Ricketty Street and Kent Road. Ricketty Street facilitates travel from the west connecting to the Princess Highway. Kent Road facilitates north-south travel connecting to Gardeners Road and the M8 Motorway entry. Pedestrian crossings are provided on the southern and northern approach.

Figure 3-13 illustrates the current layout of the intersection.



Figure 3-13 Intersection of Ricketty Street/Kent Road



Imagery Source: Nearmap (March 2023)

The Stage 3 post opening intersection performance forecast in the M4-M5 Link EIS has been compared with Scenario 1 (updated post opening modelling). The intersection is forecast to operate at the same level during Scenario 1 as forecast in the EIS in both AM and PM peaks, operating at LoS D. Table 3-16 presents a performance summary of this intersection based off the updated modelling.

Table 3-16 Summary of performance at Ricketty Street/Kent Road

Ricketty Street/Kent Road			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	14	LoS B
	PM	17	LoS B
M4-M5 Link EIS (initial post opening forecast)	AM	56	LoS D
	PM	56	LoS D
Scenario 1 (updated post opening forecast)	AM	44	LoS D
	PM	50	LoS D
Scenario 2 (alternative layout)	AM	25	LoS B
	PM	23	LoS B

Intersection upgrades and turn bans completed nearby have impacted the traffic patterns and operations at this intersection. These changes listed below have been modelled as Scenario 2 to show any intersection performance changes.

Key proposed upgrades in Scenario 2 include:

- Banned southbound right turn from O’Riordan Street into Gardeners Road
- Dual right turn into Kent Road from Gardeners Road southbound
- Banned westbound right turns into the Old Bunnings building and Goodman shopping centre to provide additional space for westbound right turn queues at the intersection with Bourke Road

The overall performance of the intersection is forecast to improve during Scenario 2 from LoS D to LoS B in the AM peak and from LoS D to LoS B in the PM peak.

Upgrades as described above were completed before the opening of Stage 3a (M4 and M8 extensions).

3.4.6 Intersection 14 – Unwins Bridge Road/Campbell Street

This is a four-way signalised intersection between Unwins Bridge Road, Bedwin Street, May Street and Campbell Street. Unwins Bridge Road and May Street facilitate travel east towards St Peters and west towards Sydenham. It also provides a slip lane onto Bedwin Road. Campbell Street and Bedwin Road facilitate travel north towards Stanmore and south towards Mascot. Pedestrian crossings are provided on all approaches.

Figure 3-14 illustrates the current layout of the intersection.

Figure 3-14 Intersection of Unwins Bridge Road/May Street



Imagery Source: Nearmap (March 2023)



Scenario 1 (updated Stage 3 post opening) was modelled based on the approach outlined in Figure 2-1 and using the existing layout. The post opening intersection performance forecasted in the EIS has been compared with Scenario 1

The overall performance is forecast to degrade with average delays reaching over 75 seconds with the LoS degrading from LoS D to LoS F in the AM and LoS E to LoS F in the PM. Queuing is

expected on the Bedwin Road approach southbound in both peaks and on the Unwins Bridge western approach for vehicles turning left onto Bedwin Road northbound.

Table 3-17 presents a performance summary of this intersection based off the updated modelling.

Table 3-17 Summary of performance at Unwins Bridge Road/Campbell Street

Unwins Bridge Road/Campbell Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	57	LoS E
	PM	64	LoS E
M4-M5 Link EIS (initial post opening forecast)	AM	56	LoS D
	PM	70	LoS E
Scenario 1 (updated post opening forecast)	AM	85	LoS F
	PM	77	LoS F

Although the intersection performance has degraded compared to the M4-M5 Link EIS assessment, the delays and queues at the intersection are expected to be manageable and not warranting of an intersection upgrade prior to the opening of Stage 3. The signal phasing will be monitored and modified if required to support the needs of the intersection and/or wider network.

3.4.7 Intersection 15 – Gardeners Road/Bourke Road

This is a four-way intersection between Gardeners Road and Bourke Road. Gardeners Road facilitates travel from the exit of the M8 Motorway and the eastern suburbs. Bourke Road facilitates travel north towards Waterloo and facilitates travel south towards Mascot. Signage on the western Gardeners Road approach indicates ‘No Right Turn’ onto Bourke Road. As indicated by signage on the south approach, heavy vehicle access onto Bourke Road in the southbound direction is not permitted. Pedestrian crossings are provided on all approaches.

Figure 3-15 illustrates the current layout of the intersection.

Figure 3-15 Gardeners Road/Bourke Road




Imagery Source: Nearmap (March 2023)

The Stage 3 post opening intersection performance forecasted in the M4-M5 Link EIS has been compared with Scenario 1 (updated post opening modelling). The intersection is forecast to improve in the AM and PM, going from LoS E to C and LoS F to D respectively. This notable improvement can be attributed to a difference in strategic demands between WRTM strategic model and most current SMPM strategic model factoring in post COVID-19 travel patterns (including work from home and peak spreading). Therefore, it is reasonable for the Level of Service to improve from the M4-M5 Link EIS forecast.

Table 3-18 presents a performance summary of this intersection based off the updated modelling.

Table 3-18 Summary of performance at Gardeners Road/Bourke Road

Gardeners Road/Bourke Road			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	42	LoS D
	PM	39	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	70	LoS E
	PM	71	LoS F
Scenario 1 (updated post opening forecast)	AM	41	LoS C
	PM	45	LoS D
Scenario 2 (alternative layout)	AM	39	LoS C
	PM	41	LoS C

Intersection upgrades and turn bans completed nearby have impacted the traffic patterns and operations at this intersection. These changes listed below have been modelled as Scenario 2 to show any intersection performance changes.

Key proposed upgrades in Scenario 2 include:

- Banned southbound right turn from O’Riordan Street into Gardeners Road
- Dual right turn into Kent Road from Gardeners Road southbound
- Banned westbound right turns into the Old Bunnings building and Goodman shopping centre to provide additional space for westbound right turn queues at the intersection with Bourke Road

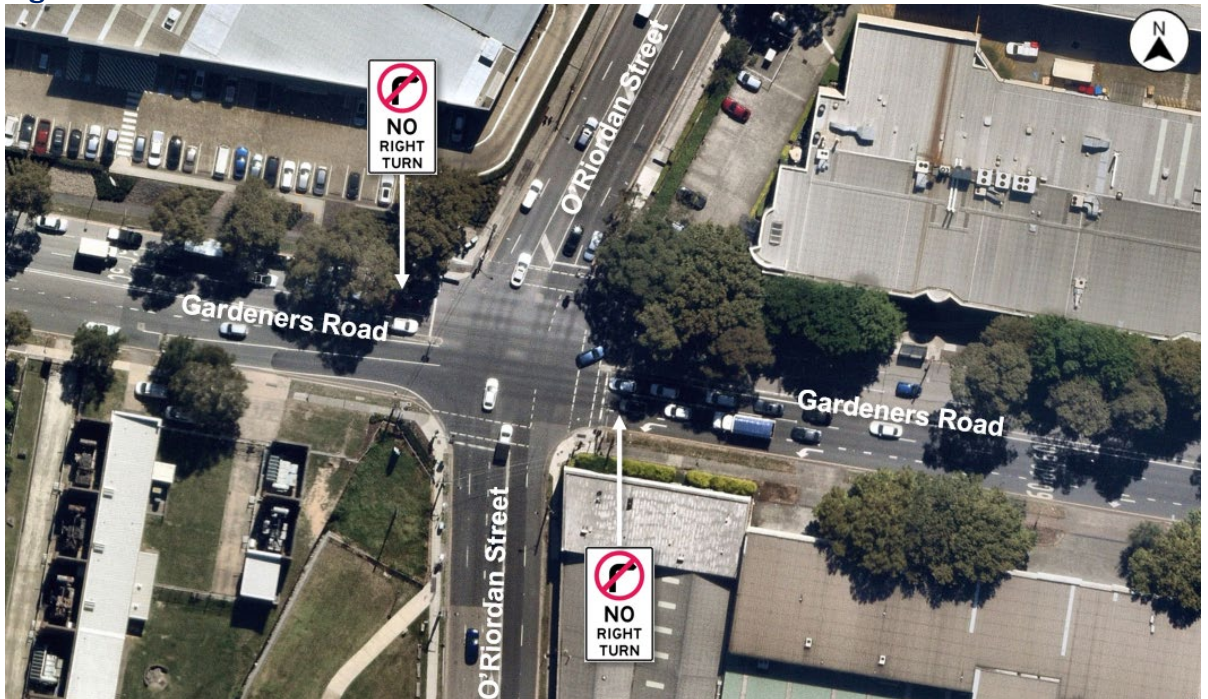
The overall performance of the intersection is forecast to remain the same during the AM peak in both scenarios while it is forecast to improve from LoS D to LoS C during the PM peak during Scenario 2.

Upgrades as described above were completed before the opening of Stage 3A (M4 and M8 extension).

3.4.8 Intersection 16 – Gardeners Road/O’Riordan Street

This is a four-way signalised intersection between Gardeners Road and O’Riordan Street. Gardeners Road facilitates travel east towards the eastern suburbs and west towards the WestConnex M8 entry. O’Riordan Street facilitates travel north towards Waterloo and south towards Mascot. Right turns onto O’Riordan Street from the Gardeners Road east and west approach are not permitted. Pedestrian crossings are provided on the north, south and east approaches. Figure 3-16 illustrates the current layout of the intersection.

Figure 3-16 Intersection of Gardeners Road/O’Riordan Street





Imagery Source: Nearmap (March 2023)

The Stage 3 post opening intersection performance forecast in the M4-M5 Link EIS has been compared with Scenario 1 (updated post opening modelling). The intersection is forecast to improve from LoS F to E in the AM and remain at LoS F in the PM.

Table 3-19 presents a performance summary of this intersection based off the updated modelling.

Table 3-19 Summary of performance at Gardeners Road/O’Riordan Street

Gardeners Road/O’Riordan Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	44	LoS D
	PM	50	LoS D
M4-M5 Link EIS (initial post opening forecast)	AM	71	LoS F
	PM	71	LoS F
Scenario 1 (updated post opening forecast)	AM	58	LoS E
	PM	94	LoS F
Scenario 2 (alternative layout)	AM	42	LoS D
	PM	40	LoS C

In order to improve the intersection performance an alternative layout (Scenario 2) was proposed as a mitigation.

Key proposed upgrades in Scenario 2 include:

- Banned southbound right turn form O’Riordan Street into Gardeners Road
- Dual right turn into Kent Road from Gardeners Road southbound
- Banned westbound right turns into the Old Bunnings building and Goodman shopping centre to provide additional space for westbound right turn queues at the intersection with Bourke Road

Some of these changes directly impact the traffic patterns and operations at this intersection and have been considered in the modelling. The overall performance of the intersection is forecast to improve during Scenario 2 with the LoS improving from LoS E to LoS D in the AM peak and LoS F to LoS C in the PM peak.

Upgrades as described above were completed before the opening of Stage 3a (M4 and M8 extension).

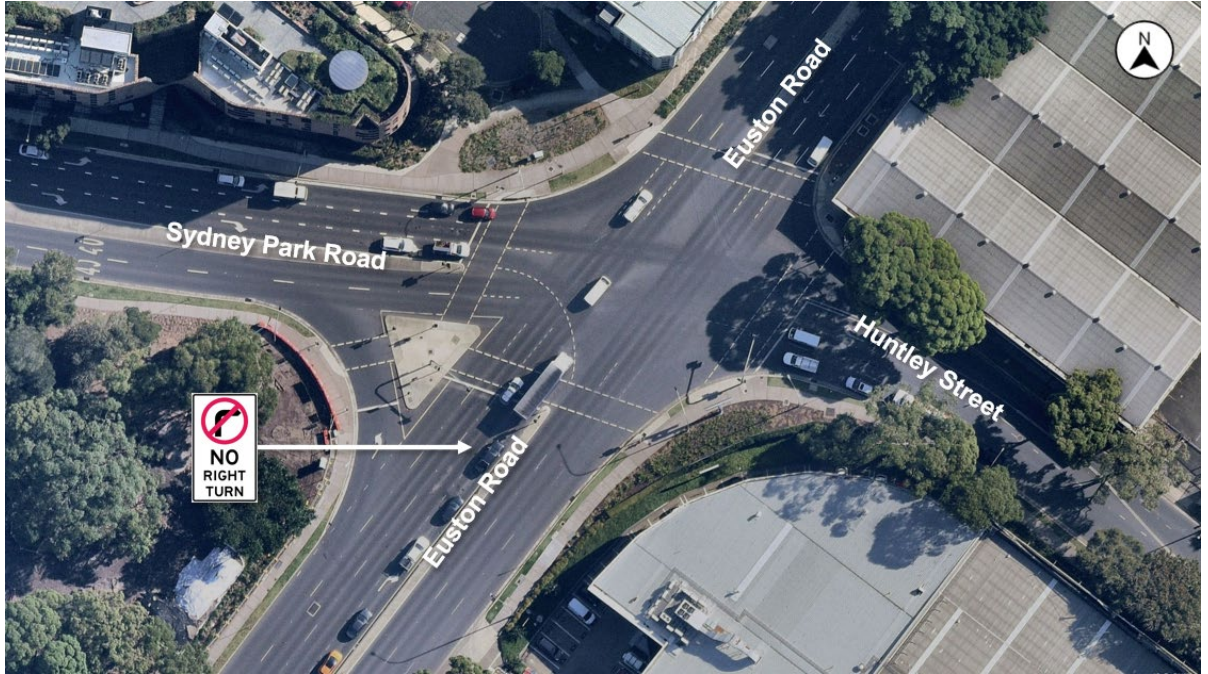
3.4.9 Intersection 17 – Sydney Park Road/Euston Road

This is a four-way signalised intersection between Sydney Park Road, Huntley Street and Euston Road. Sydney Park Road and Huntley Street facilitate travel west towards St Peters and east towards Green Square. Euston Road facilitates travel north towards Waterloo and south towards Mascot. On the southern approach a slip lane is provided for Sydney Park Road westbound. The

Euston Road north approach does not permit a right-hand turn onto Huntley Street. Pedestrian crossings are provided at all approaches.

Figure 3-17 illustrates the current layout of the intersection.

Figure 3-17 Intersection of Sydney Park Road/Euston Road





Imagery Source: Nearmap (March 2023)

Scenario 1 (updated Stage 3 post opening) was modelled based on the approach outlined in Figure 2-1 and using the existing layout. The post opening intersection performance forecast in the EIS has been compared with Scenario 1.

The intersection is forecast to operate at LoS C during the AM peak and at LoS D during the PM peak in Scenario 1, consistent with the EIS forecasts.

Table 3-20 presents a performance summary of this intersection based off the updated modelling.

Table 3-20 Summary of performance at Sydney Park Road/Euston Road

Unwins Bridge Road/Campbell Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	41	LoS C
	PM	44	LoS D
M4-M5 Link EIS (initial post opening forecast)	AM	42	LoS C
	PM	56	LoS D
Scenario 1 (updated post opening forecast)	AM	42	LoS C
	PM	54	LoS D

There are no mitigations proposed at this intersection before the opening of Stage 3.

3.4.10 Intersection 18 – Euston Road/Campbell Road

The Campbell Road and Euston Road intersection is part of the St Peters Interchange with the south-western approach serving as an entry/exit point to the M8 Motorway. It functions as a four-way signalised intersection with pedestrian crossings on all approaches except for the south-western approach. For vehicles exiting the M8 Motorway, signage on the south-western approach forbids right turn movements onto Campbell Road. On approach to the intersection, the north-eastern leg of Euston Road has five lanes, comprising three dedicated right turn lanes and two through lanes feeding into the M8 Motorway. The outer lane is directed towards Parramatta, as indicated by road markings, whilst the other through lane is bound for Liverpool.

Campbell Road facilitates travel southeast towards Bourke Road and connects northwest to Unwins Bridge Road. On the south-eastern approach to the intersection, Campbell Road functions with three lanes, including a dedicated right turn lane that is separated by medians on either side. On the north-western approach to the intersection, Campbell Road has two dedicated right turn lanes onto the M8 Motorway. The inner-most and middle right turn lane are bounded for Liverpool and Parramatta respectively as indicated by road markings.

Figure 3-18 illustrates the current layout of the intersection.

Figure 3-18 Intersection of Euston Road/Campbell Road





Imagery Source: Nearmap (March 2023)

The Stage 3 post opening intersection performance forecast in the M4-M5 Link EIS has been compared with Scenario 1 (updated post opening modelling). The intersection is forecast to degrade in the AM and PM, from LoS C to F and LoS D to F respectively.

Table 3-21 presents a performance summary of this intersection based off the updated modelling.

Table 3-21 Summary of performance at Euston Road/Campbell Road

Gardeners Road/O’Riordan Street			
		Average Delay (sec) 	Intersection LoS 
Existing Condition (updated pre-opening)	AM	35	LoS C
	PM	39	LoS C
M4-M5 Link EIS (initial post opening forecast)	AM	42	LoS C
	PM	56	LoS D
Scenario 1 (updated post opening forecast)	AM	>100	LoS F
	PM	72	LoS F
Scenario 2 (alternative layout)	AM	41	LoS D
	PM	47	LoS D

Intersection upgrades and turn bans completed nearby have impacted the traffic patterns and operations at this intersection. These changes listed below have been modelled as Scenario 2 to show any intersection performance changes.

Key proposed upgrades in Scenario 2 include:

- Banned southbound right turn form O’Riordan Street into Gardeners Road
- Dual right turn into Kent Road from Gardeners Road southbound
- Banned westbound right turns into the Old Bunnings building and Goodman shopping centre to provide additional space for westbound right turn queues at the intersection with Bourke Road

Compared to Scenario 1, the overall performance of the intersection in Scenario 2 is forecast to improve from LoS F to LoS D in the AM peak and from LoS F to LoS D in the PM peak.

Upgrades as described above were completed before the opening of Stage 3a (M4 and M8 extension).

4. Traffic analysis by other projects

Based on the M4-M5 Link EIS conditions of approval, the operational traffic modelling results from the M4 East and M8 (SSI 6307 and SSI 6788) projects have been included in this section.

4.1 M4 East traffic analysis

The M4 East and the M4 Widening projects, which opened in 2019 and 2017 respectively, formed Stage 1 of WestConnex. The M4 East EIS was prepared by Transport in 2015 to assess the current and future performance of the surrounding road network with and without this project. Projected traffic volumes were reported for 'do minimum' and 'do something' scenarios in 2021 and 2031. The following assumptions were adopted in modelling for each scenario:

- 2021 & 2031 "do minimum" – King Georges Road Interchange upgrade and M4 Widening complete, no other stages of WestConnex completed.
- 2021 "do something" – as above with M4 East completed and open to traffic, new bus lanes operational on Parramatta Road between Burwood Road and Haberfield.
- 2031 "do something" – as above with all other stages of WestConnex completed, new bus lanes operational on Parramatta Road eastbound between Ashfield and Haberfield, and westbound between Leichardt and Ashfield.

The projected traffic volumes in the M4 East EIS were prepared prior to the COVID-19 pandemic and associated changes in movement behaviour. This Plan incorporates projected traffic volumes for 2023 based on post-COVID movement behaviour and traffic survey data.

Based on a comparison of survey data from 2019 and 2022 within Stage 3 study area, traffic volumes in 2022 have largely returned to pre-COVID levels (2019) within the study area, therefore it is considered reasonable that the projected 2021 traffic volumes from the M4 East EIS can form the pre-opening scenario for Stage 3. Bus lanes are not currently operational on Parramatta Road between Burwood Road and Haberfield, as assumed in the original modelling.

The M4 East EIS reported the performance of 40 intersections within the study area for this project.

Figure 4-1 illustrates the M4 East EIS study area.

Figure 4-1 M4 East EIS study area



Source: M4 East EIS (2015)

The “do something” scenario in 2021 forms the pre-opening conditions for Stage 3, whilst the same scenario in 2031 forms a future scenario when all stages of WestConnex are operational. A summary of the findings for the 2021 and 2031 “do something” scenarios is provided below:

2021 – “do something”

- AM Peak - intersection performance was LoS C or better at half of the intersections, whilst the other half of intersections observed LoS D or worse.
- PM peak - intersection performance was LoS C or better at 58% of intersections, with the remainder of intersections (42%) observing LoS D or worse.

2031 – “do something”

- AM Peak - intersection performance remains consistent with 2021, with half of the intersections observing LoS C or better, whilst the other half of observed LoS D or worse.
- PM Peak - intersection performance was LoS C or better at 38% of intersections, with the remainder of intersections (62%) observing LoS D or worse.

Following the opening of Stage 3 in 2023, vehicles travelling on the M4 East will be able to continue south towards the Rozelle Interchange and M8 Motorway without using the local road network.

It is noted that intersection performance degrades at a number of intersections between 2021 and 2031. Under the 2031 “do minimum” scenario, the number of intersections performing at LoS D or worse would increase from 50% to 65% during the AM peak and 62% to 73% during the PM peak.

Without Stage 3, congestion is also expected to increase around the M4 East interchanges in Haberfield on Dobroyd Parade and Parramatta Road, with average travel speeds dropping to less than 15km/h during peak periods. Intersections on these corridors are forecast to be unable to accommodate future traffic demands without the completion of WestConnex.

4.2 M8 Motorway traffic analysis

The M8 Motorway (formerly the new M5) formed Stage 2 of WestConnex, opening in 2020. The M8 EIS was prepared by Transport in 2015 to assess the current and future performance of the surrounding road network with and without this project. Projected traffic volumes were reported for ‘without project’ and ‘with project’ scenarios in 2021 and 2031. The following assumptions were adopted in modelling for each scenario:

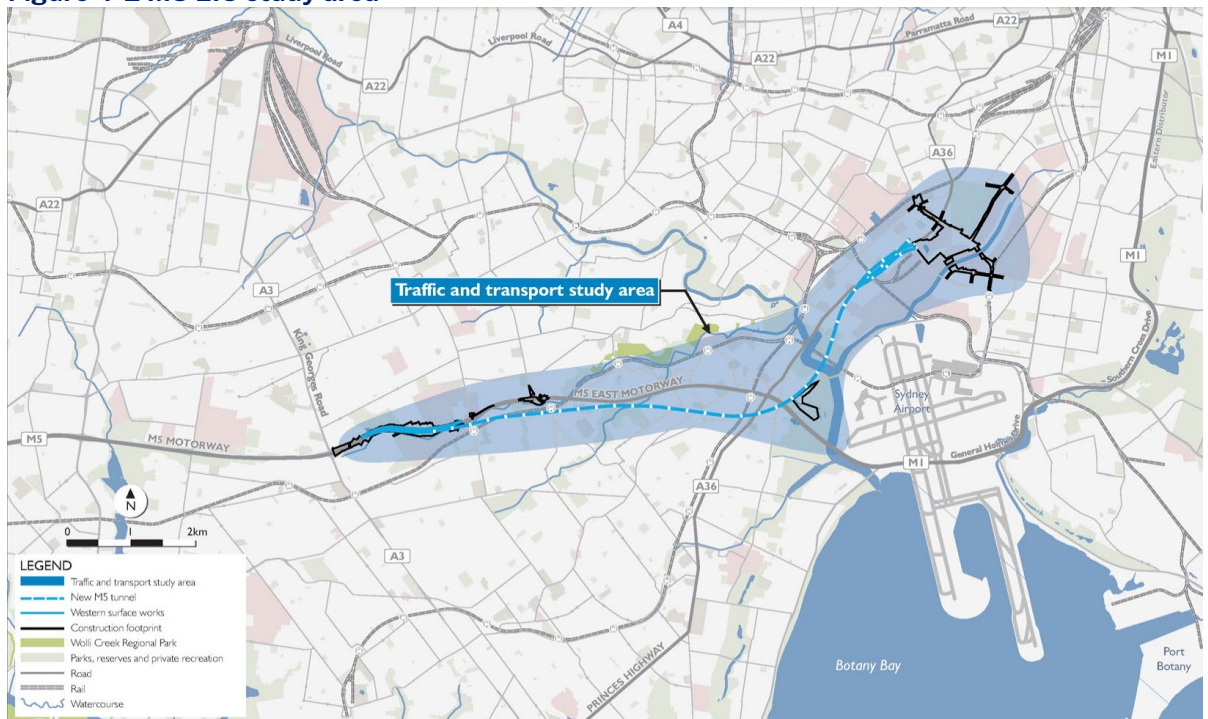
- 2021 & 2031 “without project” –King Georges Road Interchange upgrade, M4 Widening and some upgrades to broader transport network complete, no other stages of WestConnex completed.
- 2021 “with project” –as above with M8 completed and open to traffic.
- 2031 “with project” –as above with all other stages of WestConnex completed.

The projected traffic volumes in the M8 EIS were prepared prior to the COVID-19 pandemic and associated changes in movement behaviour. The M4-M5 Link Pre-Opening Assessment, as discussed in Section 3, incorporates projected traffic volumes for 2023 based on post-COVID movement behaviour and traffic survey data.

Based on a comparison of survey data from 2020 and 2021 within the Stage 3 study area, traffic volumes in 2022 have largely returned to pre-COVID levels (2019) within most of the study area, therefore it is considered reasonable that the projected 2021 traffic volumes from the M8 EIS can form the pre-opening scenario for Stage 3.

The M8 EIS reported the performance of 14 intersections within the study area for this project. Figure 4-2 illustrates the M8 EIS study area.

Figure 4-2 M8 EIS study area



Source: M8 EIS (2015)

The “with project” scenario in 2021 forms the pre-opening conditions for Stage 3, whilst the same scenario in 2031 forms a future scenario when all stages of WestConnex are operational. A summary of the findings for the 2021 and 2031 “with project” scenarios is provided below:

2021 – “with project”

- AM Peak -intersection performance was LoS C or better at 57% of intersections, with the remainder of intersections (43%) observing LoS D or worse.
- PM peak –intersection performance at LoS C or better at 43% of intersections, with the remainder of intersections (57%) observing LoS D or worse.

2031 – “with project”

- AM Peak -intersection performance was LoS C or better at 43% of intersections, with the remainder of intersections (57%) observing LoS D or worse.
- PM Peak –intersection performance remains consistent with 2021, with LoS C or better at 43% of intersections, with the remainder of intersections (57%) observing LoS D or worse.

Following the opening of the Stage 3 in 2023, vehicles travelling on the M8 will be able to continue north towards the Rozelle Interchange and M4 East without using the local road network.

It is noted that intersection performance degrades at a number of intersections in the PM peak between 2021 and 2031. Under the 2031 “without project” scenario, all reported intersections would perform at LoS D or worse during the PM peak, noting that three intersections are not reported on in these scenarios.

Without Stage 3, congestion is also expected to increase around the St Peters interchange on Gardeners Road, O’Riordan Street, Botany Road and Princes Highway with queue lengths increasing and average travel speeds significantly dropping during peak periods. Intersections on these corridors are forecast to be unable to accommodate future traffic demands without the completion of Stage 3.

5. Movement and Place

In addition to improving the connectivity of Sydney's motorway network, Stage 3 presents the opportunity to revitalise places and movement corridors nearby where traffic volumes on surface roads are likely to be significantly reduced.

The opening of Stage 3 will allow traffic to bypass roads such as Parramatta Road and Princes Highway, opening the opportunity for improved placemaking and renewal. Movement and place have been considered in the projects and strategies discussed in this section.

5.1 Sydney Park Junction

The opening of WestConnex Stage 3 in combination with the upgraded Campbell Road and Euston Road changes traffic patterns through and around St Peters. The change provides an opportunity to improve safety, connectivity, efficiency and accessibility for pedestrians and cyclists between Princes Highway and Sydney Park. This project aims to make St Peters a more enjoyable place to walk, cycle and socialise by reallocating the road space on Princes Highway and Sydney Park Road and is developed in collaboration with the City of Sydney and Inner West Council. Key features include (pending approval):

- Two way on-road segregated cycleway on the western side of King Street between Sydney Park Road and Barwon Park Road with additional landscaping and community spaces to increase urban amenity.
- Reducing Sydney Park Road carriageway from four lanes to two lanes, accommodating a permanent solution for the existing temporary cycleway.
- New mid-block pedestrian crossing to improve access across Princes Highway/King Street
- Reducing posted speed limits
- Removing the Princes Highway and Sydney Park Road corridors from approved B-double freight access network.

These movement and place upgrades as part of Sydney Park Junction project align with City of Sydney's *Community Strategic Plan, Delivering Sustainable Sydney 2030-2050, Direction 5: A city for walking, cycling and public transport*, which aims to deliver a greener and calmer space, with more space for people on the streets.

Similarly, the project aligns with the *Inner West Council community strategic plan, Strategic Direction 2: Liveable, connected places and transport*, with *Outcome 2.6: People are walking, cycling and moving around the Inner West with ease*.

5.2 Airport East, North and West Precinct Upgrades

Road upgrades around Sydney Airport were separated into three separate projects, located to the east (Botany Road & Wentworth Avenue), north (O'Riordan Street & Robey Street) and west (Marsh Street). The project objectives were to improve traffic flow and access around the airport and Port Botany, being two of the most important international gateways facilitating the movement of people and goods around New South Wales.

As part of these projects, better place outcomes and improved amenity for the movement of pedestrians and cyclists were included in their scope, which are listed below.

5.2.1 Airport East

- A new shared path linking to the existing cycleway at Todd Reserve on Wentworth Avenue.
- A new shared path on Botany Road from the Botany Road and Wentworth Avenue intersection to Baxter Road.

5.2.2 Airport North

- Landscaping and retaining wall modifications to facilitate footpath improvements.
- New shared path on the north side of Robey Street.
- New footpath on O’Riordan Street between High Street and King Street.

5.2.3 Airport West

- A new dedicated cycleway on the southern side of Marsh Street to connect the existing path on the bridge to the Eve Street cycleway.
- A new pedestrian crossing at the intersection of Marsh Street and Flora Street.

These movement and place upgrades as part of three Airport Precinct Upgrades align with Bayside Council’s *Bayside 2032 – Community Strategic Plan 2018-2032, Theme 1: Bayside’s places are dynamic and connected, 1.2.3 Facilitate greater connectivity through active transport.*

5.3 More Trains More Services

The More Trains More Services program will provide more frequent train services, less wait times, and less crowding. As part of the program, Mascot Station is being upgraded with the construction of a second station entrance on the western side of Bourke Street. This will improve access and enhance pedestrian flow in and around Mascot Station.

5.4 Frederick Street Speed Reduction

Frederick Street in Ashfield is a state road that has one lane of travel in each direction connecting two arterial roads, Parramatta Road and Hume Highway. It also links into City West Link, the M4 and M8 extensions and Rozelle Interchange.

Transport undertook an independent road safety review of Frederick Street, between Hedger Avenue and Henry Street Ashfield. Poor sight distances for both pedestrians and motorists were identified, along with motorists taking additional risks by accepting small gaps in traffic. To improve pedestrian safety the speed limit was reduced from 60km/h to 50km/h.

5.5 Victoria Road Bus Lane Enhancements

As part of the Future Transport’s Strategy to improve public transport options and encourage more people onto public transport, the Victoria Road bus lane enhancements between Iron Cove Link Portal and City West Link will:

Citybound Travel

- Shift the current citybound kerbside bus lane to lane two, clear of any interference caused by stopping busses and left turning traffic.
- Dedicated left turn only lanes with buses excepted on approach to Darling Street, Evans Street and Robert Street.

- Facilitate a calmer kerbside lane based on left turn movements.
- 24 hour operation.

Outbound Travel

- New kerb side bus lane between Quirk Street and Clubb Street.
- Operation Monday to Friday 6am to 10am and 3pm to 7pm.

These changes will prioritise bus movements in the corridor, improving reliability and travel times, particularly for express services. It will also improve local access by reducing conflict with traffic moving through Rozelle.

These changes and road space reallocation align with the *Inner West Council community strategic plan, Strategic Direction 2: Liveable, connected places and transport*, with *Outcome 2.5: Public Transport is reliable, accessible, connected and interconnected*.

6. Road safety performance

Crash data was reviewed along key road corridors that form part of this plan, to assess their road safety performance prior to the opening of Stage 3. The following road sections were analysed as part of this assessment:

- Parramatta Road, between Concord Road and Missenden Road
- Frederick Street/Milton Street, between Parramatta Road and Georges River Road
- City West Link, between Victoria Road and Parramatta Road
- Victoria Road, between Gladesville Bridge and City West Link
- Western Distributor, between Victoria Road and Bradfield Highway
- Campbell Street/Bedwin Road/Edgeware Road, between Bourke Road and Alice Street
- Princes Highway, between Railway Road and Sydney Park Road
- Gardeners Road, between WestConnex and Botany Road
- Euston Road, between Campbell Road and Sydney Park Road.

Crash data was obtained for the period between 1st January 2017 and 31st December 2021; however, it is noted that this includes the period when Greater Sydney was in lockdown in response to the COVID-19 pandemic, and therefore usual travel behaviours were not likely to be reflected in the dataset. Analysis of the five years of crash data resulted in lower average yearly trends in comparison to the analysis of the pre-pandemic years i.e. 2017 to 2019. As such, the road safety performance trends assessed from the crash data summarise the trends for the 2017 to 2019 period only.

In addition to the crash data, Sydney Strategic Motorway Planning Model (SMPM) forecasts for the post-opening scenario were reviewed to understand the forecast changes in traffic volumes in the post-opening scenario. These insights have been used to provide a qualitative assessment of the potential road safety performance of the key corridors in the 2023 post-opening scenario. It is acknowledged that changes in traffic volumes along a corridor is only one of the factors that contributes to the changes in road safety performance.

6.1 Parramatta Road

Average yearly crash trends along Parramatta Road, between Concord Road in Strathfield and Missenden Road in Camperdown, within the 2017 to 2019 period include:

- Ninety-two (92) crashes categorised as follows: 23 per cent non-casualty, 29 per cent minor/other injury, 29 per cent moderate injury, 17 per cent serious injury, and two per cent fatal crashes.
- The most prevalent type of crash was *rear end* collisions, comprising 33 per cent of all road incidents.
- The number of pedestrian-related crashes was seven with a maximum number of nine recorded in 2017.

Based on a review of the crash data, there were a total of 277 crashes distributed along Parramatta Road, between Concord Road and Missenden Road, within the 2017 and 2019 period.

The intersection of Parramatta Road, Frederick Street and Wattle Street recorded the highest number of crashes totalling 18, none of which were serious injury or fatal crashes. In particular,

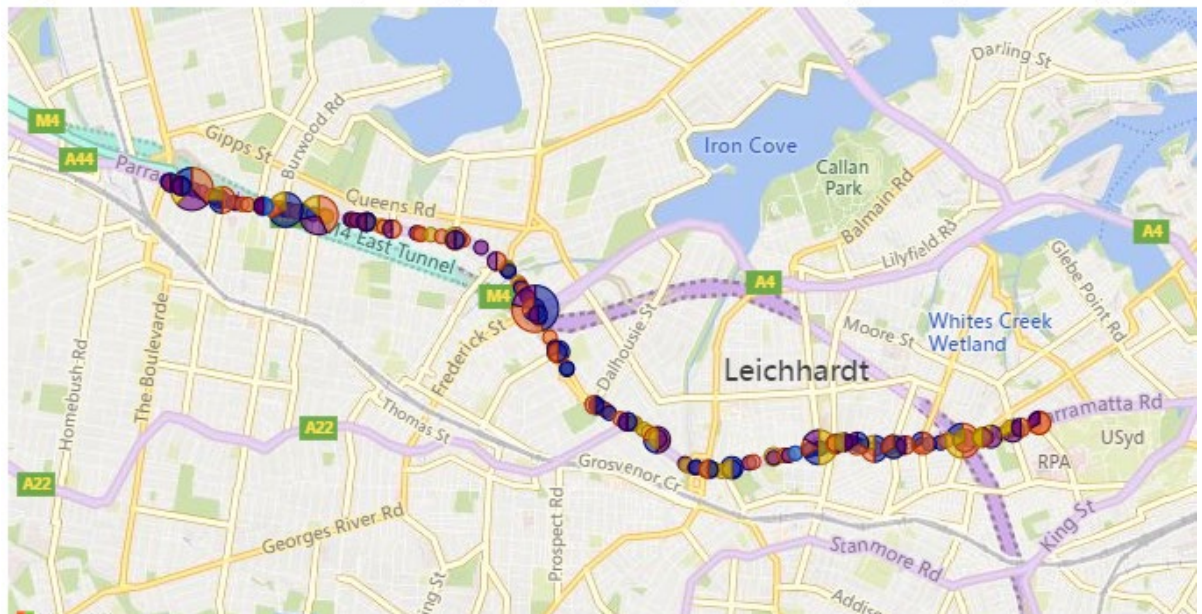
the intersection recorded 10 crashes in 2017, four in 2018 and four in 2019. This intersection has since been upgraded as part of the WestConnex M4 East project.

In 2018, one fatal crash was recorded at the intersection of Parramatta Road and Broughton Street, as well as the intersection of Parramatta Road and Rofe Street.

Figure 6-1 illustrates crash locations for the 2017 to 2019 period on Parramatta Road, between Concord Road and Missenden Road.

Figure 6-1 Crash locations on Parramatta Road

Degree of crash ● Fatal ● Minor/Other Injury ● Moderate Injury ● Non-casualty (towaway) ● Serious Injury



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

Based on the SMPM forecasts, the traffic volumes along segments of the Parramatta Road corridor, between Concord Road and Missenden Road, are likely to:

- increase between Concord Road and Frederick Street with a likely reduction in road safety performance in response to the traffic volume changes.
- decrease between Frederick Street and Missenden Road with a likely improvement in road safety performance in response to the traffic volume changes.

6.2 Frederick Street/Milton Street

Average yearly crash trends along Frederick Street/Milton Street, between Parramatta Road in Ashfield and Georges River Road in Ashfield, within the 2017 to 2019 period include:

- Twenty (20) crashes categorised as follows: 26 per cent non-casualty, 21 per cent minor/other injury, 26 per cent moderate injury, 21 per cent serious injury, and five per cent fatal crashes.
- The most prevalent type of crash was *rear end* collisions, comprising 27 per cent of all road incidents, followed by *right through* and *cross traffic* crashes, accounting for 12 per cent each.
- The number of pedestrian-related crashes was three with a maximum number of four recorded in 2019.

Based on a review of the crash data, there were a total of 59 crashes distributed along Frederick Street/Milton Street, between Parramatta Road and Georges River Road, within the 2017 to 2019 period.

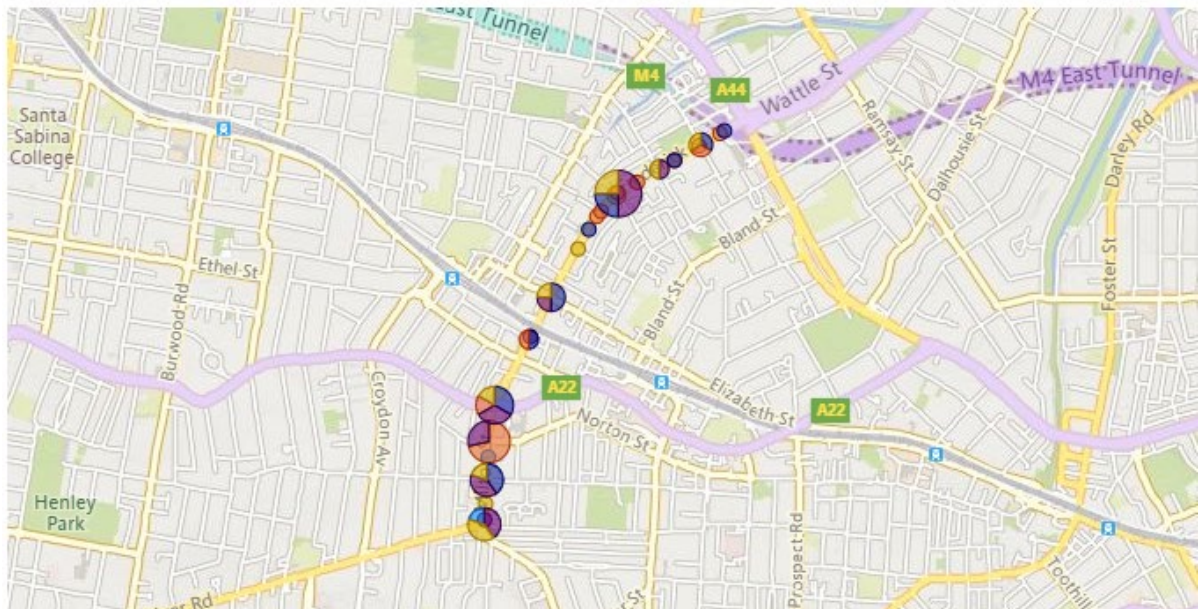
Frederick Street has been previously identified as a location of concern by Transport, the local council and community. The intersection of Frederick Street and John Street recorded the highest number of crashes totalling 11, none of which were fatal crashes. In particular, the intersection recorded seven crashes in 2017, one in 2018 and three in 2019. It is noted that this intersection was upgraded around mid-2018 with the introduction of an island and painted median on Frederick Street (north-east approach) and the pedestrian crossing on Frederick Street (south-west approach) was set-back approximately 15 metres with kerb extensions.

A noticeable number of crashes was observed at each intersection along Milton Street, between Liverpool Road and Georges River Road. In 2018, one fatal crash was recorded at the intersection of Milton Street and Somerville Avenue, and in 2019, one fatal crash was recorded at the intersection of Milton Street and Georges River Road.

Figure 6-2 illustrates crash locations within the 2017 to 2019 period on Frederick Street/Milton Street, between Parramatta Road and Georges River Road.

Figure 6-2 Crash locations on Frederick Street/Milton Street

Degree of crash ● Fatal ● Minor/Other Injury ● Moderate Injury ● Non-casualty (towaway) ● Serious Injury



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

On 10th May 2023, a new speed limit of 50km/h was implemented for all motorists along Frederick Street and Milton Street to further improve safety.

Based on the SMPM forecasts, the traffic volumes along segments of the Frederick Street/Milton Street corridor, between Parramatta Road and Georges River Road, are likely to increase or remain similar during the post-opening scenario. Based on the changes in traffic volumes, it is anticipated that the road safety performance along the same segments would likely reduce or remain similar.

6.3 City West Link

Average yearly crash trends along City West Link, between Victoria Road in Rozelle and Parramatta Road in Haberfield, within the 2017 to 2019 period include:

- Thirty (30) crashes categorised as follows: 17 per cent non-casualty, 40 per cent minor/other injury, 23 per cent moderate injury, 17 per cent serious injury, and three per cent fatal crashes.
- The most prevalent type of crash was *rear end* collisions, comprising 34 per cent of all road incidents, followed by *cross traffic* crashes, accounting for seven per cent.

- The number of pedestrian-related crashes was one with a maximum number of one recorded in 2017 and 2018.

Based on a review of the crash data, there were a total of 89 crashes distributed along City West Link, between Victoria Road and Parramatta Road, within the 2017 to 2019 period.

A number of intersections were identified to have a significant cluster of crashes in comparison to other intersections along City West Link, including the intersections of:

- Wattle Street and Ramsay Street
- City West Link and James Street
- City West Link and Norton Street
- City West Link and Balmain Road.

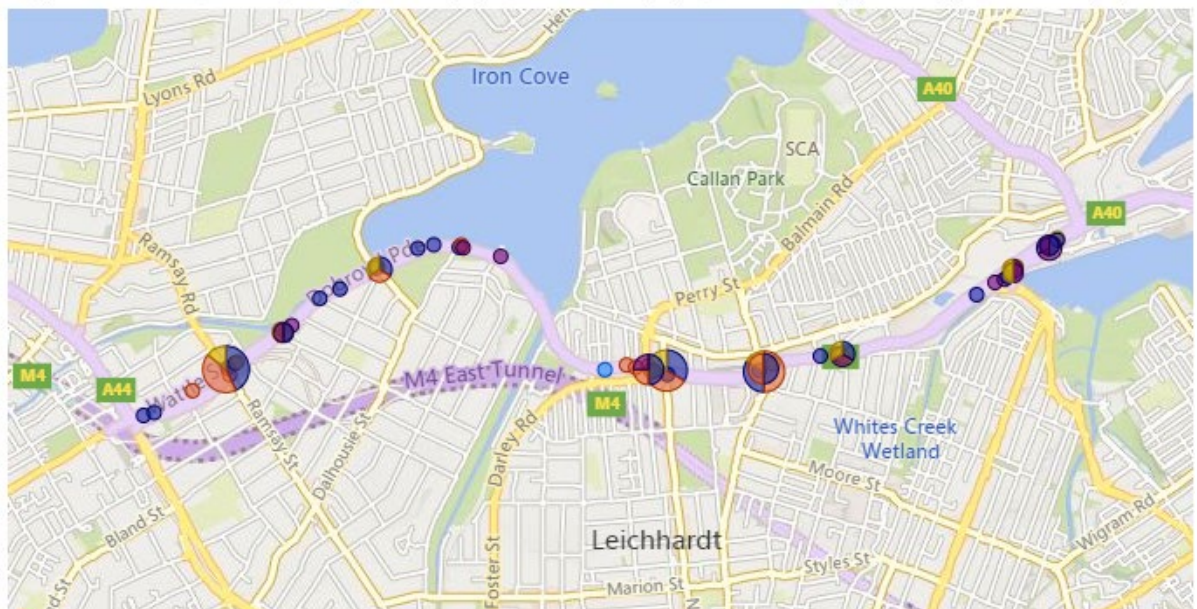
The intersection of City West Link and Balmain Road recorded the highest number of crashes totalling 12, none of which were fatal. In particular, the intersection recorded five crashes in 2017, two in 2018 and five in 2019. Similarly, the intersection of Wattle Street and Ramsay Street experienced 11 crashes, and none of them resulted in fatalities. The intersections of City West Link and James Street and City West Link and Norton Street operate within close proximity and recorded a combined total of 16 crashes.

In 2019, one fatal crash was recorded along City West Link, west of James Street.

Figure 6-3 illustrates crash locations within the 2017 to 2019 period on City West Link, between Victoria Road and Parramatta Road.

Figure 6-3 Crash locations on City West Link

Degree of crash ● Fatal ● Minor/Other Injury ● Moderate Injury ● Non-casualty (towaway) ● Serious Injury



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

Based on the SMPM forecasts, the traffic volumes along segments of the City West Link corridor, between Victoria Road and Parramatta Road, are likely to reduce in the post-opening scenario. Based on the forecast changes in traffic volumes, it is anticipated that the road safety performance along these segments would likely improve.

6.4 Victoria Road

Average yearly crash trends along Victoria Road, between Gladesville Bridge in Rozelle and City West Link in Rozelle, within the 2017 to 2019 period include:

- Forty-one (41) crashes categorised as follows: 22 per cent non-casualty, 29 per cent minor/other injury, 34 per cent moderate injury, 15 per cent serious injury, and no fatal crashes.
- The most prevalent type of crash was *rear end* collisions, comprising 35 per cent of all road incidents, followed by *lane change left* crashes, accounting for seven per cent.
- The number of pedestrian-related crashes was eight with a maximum number of four recorded in 2018.

Based on a review of the crash data, there were a total of 122 crashes distributed along Victoria Road, between Gladesville Bridge and City West Link, within the 2017 to 2019 period.

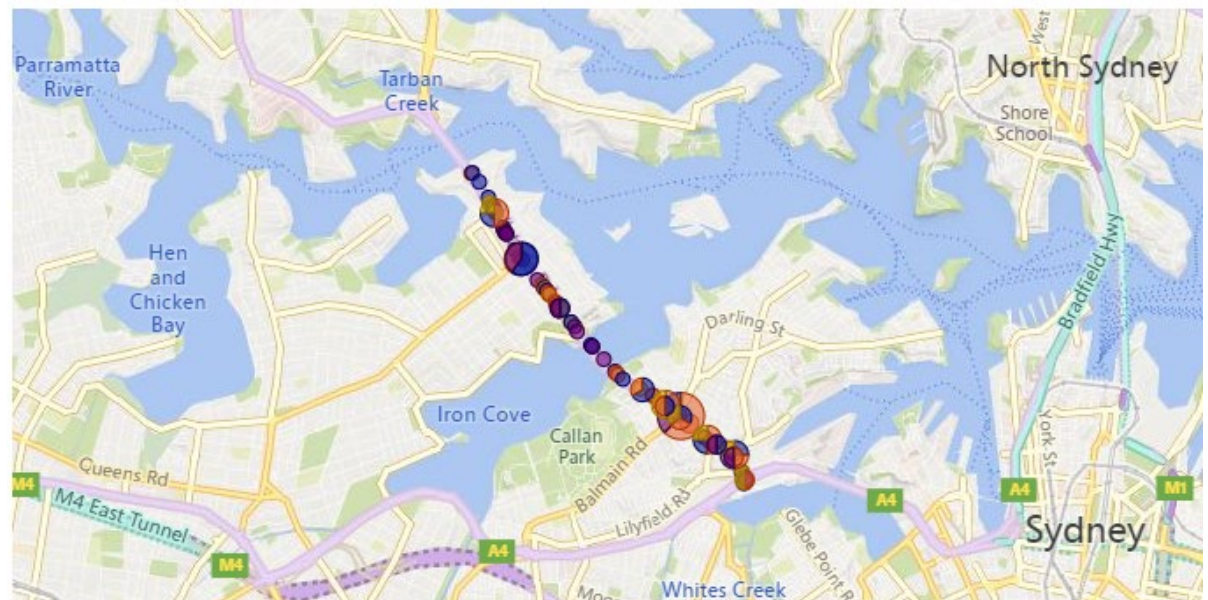
Both the intersections of Victoria Road and Lyons Road and Victoria Road and Darling Street recorded the highest number of crashes totalling 12 each, none of which were fatal crashes. The intersection with Lyons Road recorded four crashes in 2017, three crashes in 2018 and five crashes in 2019. The intersection with Darling Street recorded six crashes in 2017, four crashes in 2018 and two crashes in 2019.

No fatal crashes were recorded along Victoria Road, between Gladesville Bridge and City West Link within the 2017 to 2019 period.

Figure 6-4 illustrates crash locations within the 2017 to 2019 period on Victoria Road, between Gladesville Bridge and City West Link.

Figure 6-4 Crash locations on Victoria Road

Degree of crash ● Minor/Other Injury ● Moderate Injury ● Non-casualty (towaway) ● Serious Injury



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

Based on the SMPM forecasts, the traffic volumes along segments of the Victoria Road corridor in the post-opening scenario are likely to:

- increase between Gladesville Bridge and Iron Cove Bridge with a likely reduction in road safety performance in response to the traffic volume changes.

- decrease between Iron Cove Bridge and City West Link due to the opening of Iron Cove Link, with a likely improvement in road safety performance in response to the traffic volume changes.

6.5 Western Distributor

Average yearly crash trends along the Western Distributor, between Victoria Road in Rozelle and Bradfield Highway in Millers Point, within the 2017 to 2019 period include:

- Thirty-seven (37) crashes categorised as follows: 29 per cent non-casualty, 26 per cent minor/other injury, 24 per cent moderate injury, 18 per cent serious injury, and three per cent fatal crashes.
- The most prevalent type of crash was *rear end* collisions, comprising 29 per cent of all road incidents.
- The number of pedestrian-related crashes was one with a maximum number of one recorded in 2017 and 2018.

Based on a review of the crash data, there were a total of 110 crashes distributed along the Western Distributor, between Victoria Road and Bradfield Highway, within the 2017 to 2019 period.

In 2018, one fatal crash was recorded along the Western Distributor, adjacent the intersection of Bank Street and Quarry Master Drive.

There was a significant crash cluster along the Western Distributor at the Darling Harbour weave area, a section of the Western Distributor where merging traffic from the Pyrmont Street on-ramp, Fig Street on-ramp meet with eastbound Western Distributor traffic heading to Sydney Harbour Bridge or Kent Street in the CBD.

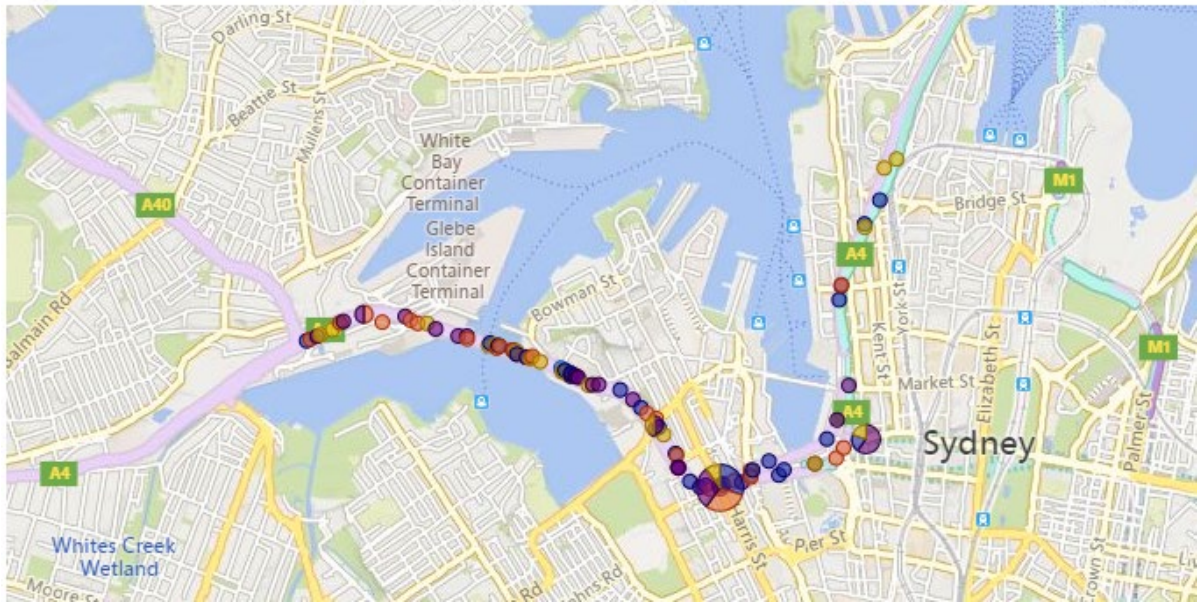
A standalone crash assessment was undertaken separate to this Plan for the Darling Harbour weave area. The assessment used data from the Centre for Road Safety, Transport Management Centre CCTV camera observations, community reports and specific camera surveys throughout October 2019. The CCTV footage showed there were 512 crashes and 44 near misses, averaging just over 100 incidents a year. The specific camera surveys throughout October 2019 observed on average two crashes or near misses a week, correlating with the CCTV footage of approximately 100 crashes and near misses per year.

It is noted that a significant crash cluster was also recorded at the intersection of Harris Street and Fig Street; however, this intersection operates underneath the Western Distributor.

Figure 6-5 illustrates crash locations within the 2017 to 2019 period on the Western Distributor, between Victoria Road and Bradfield Highway.

Figure 6-5 Crash locations on the Western Distributor

Degree of crash ● Fatal ● Minor/Other Injury ● Moderate Injury ● Non-casualty (towaway) ● Serious Injury



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

Based on the SMPM forecasts, the traffic volumes along segments of the Western Distributor corridor, between Victoria Road and Bradfield, are forecast to increase during the post-opening scenario. Based on the forecast changes in traffic volumes, it is anticipated that the road safety performance along such segments would likely reduce.

6.6 Campbell Street/Bedwin Road/Edgeware Road

On average, two crashes were recorded along Campbell Street/Bedwin Road/Edgeware, between Bourke Road in Alexandria and Alice Street in Newtown, each year within the 2017 to 2019 period. In addition to this, average yearly trends in the same period include:

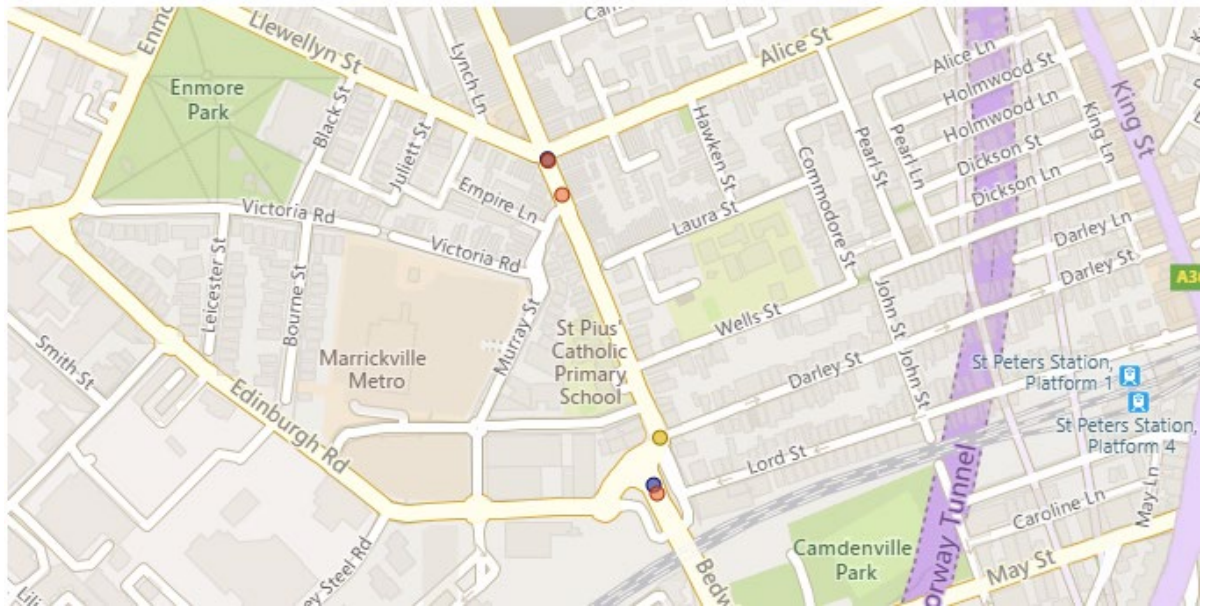
- No particular crash type was prevalent.
- No pedestrian-related crashes were recorded.

Based on a review of the crash data, there were a total of six crashes distributed along Campbell Street/Bedwin Road/Edgeware Road, between Bourke Road and Alice Street, within the 2017 to 2019 period.

There were no significant crash clusters along Campbell Street/Bedwin Road/Edgeware Road; rather, they were distributed along the corridor. No fatal crashes were recorded along Campbell Street/Bedwin Road/Edgeware Road within the 2017 to 2019 period.

Figure 6-6 illustrates crash locations within the 2017 to 2019 period on Campbell Street/Bedwin Road, between Bourke Road and Alice Street.

Figure 6-6 Crash locations on Campbell Street/Bedwin Road/Edgeware Road
Degree of crash ● Minor/Other Injury ● Moderate Injury ● Serious Injury



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

Based on the SMPM forecasts, the traffic volumes along segments of the Campbell Street/Bedwin Road/Edgeware Road corridor in the post-opening scenario are forecast to:

- decrease between Alice Street and Princes Highway with a likely improvement in road safety performance in response to the traffic volume changes.
- increase between Princes Highway and Euston Road with a likely reduction in road safety performance in response to the traffic volume changes.
- remain similar between Euston Road and Bourke Road with road safety performance likely to remain similar in response to the similar traffic volumes.

6.7 Princes Highway

Average yearly crash trends along Princes Highway, between Railway Road in Sydenham and Sydney Park Road in Alexandria, within the 2017 to 2019 period include:

- Nineteen (19) crashes categorised as follows: 26 per cent non-casualty, 26 per cent minor/other injury, 32 per cent moderate injury, 11 per cent serious injury, and five per cent fatal crashes.
- The most prevalent type of crash was *rear end* collisions, comprising 19 per cent of all road incidents, followed by *lane sideswipe* crashes, accounting for nine per cent each.
- The number of pedestrian-related crashes was two with a maximum number of two recorded in 2018 and 2019.

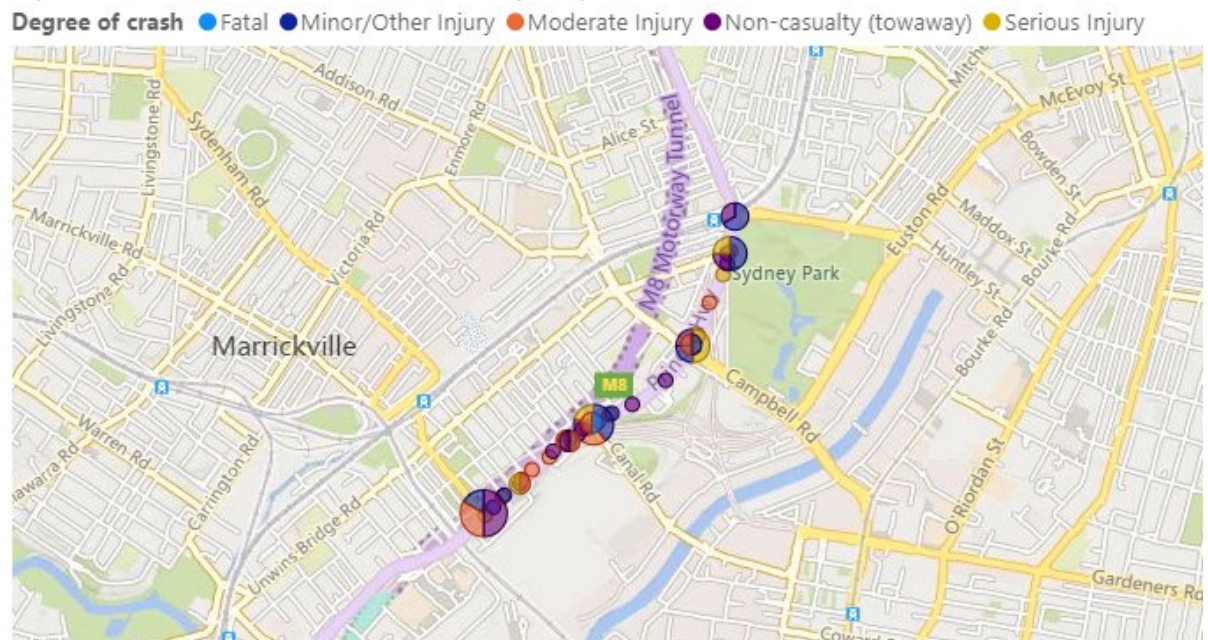
Based on a review of the crash data, there were a total of 57 crashes distributed along Princes Highway, between Railway Road and Sydney Park Road, within the 2017 to 2019 period.

The intersection of Princes Highway and Canal Road recorded the highest number of crashes totalling 11, none of which were fatal crashes. In particular, the intersection recorded three crashes in 2017, five in 2018 and three in 2019.

In 2017, one fatal crash was recorded at the intersection of Princes Highway and Canal Road.

Figure 6-7 illustrates crash locations within the 2017 to 2019 period on Princes Highway, between Railway Road and Sydney Park Road.

Figure 6-7 Crash locations on Princes Highway



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

Based on the SMPM forecasts, the traffic volumes along segments of the Princes Highway corridor, between Railway Road and Sydney Park Road, are forecast to

- decrease between Campbell Road and Sydney Park Junction with a likely improvement in road safety performance in response to the traffic volume changes.
- increase between Railway Road and Campbell Road with a likely reduction in road safety performance in response to the traffic volume changes.

6.8 Gardeners Road

Average yearly crash trends along Gardeners Road, between the WestConnex in St Peters and Botany Road in Roseberry, within the 2017 to 2019 period include:

- Eleven (11) crashes categorised as follows: 23 per cent non-casualty, 15 per cent minor/other injury, 31 per cent moderate injury and 31 per cent serious injury.
- The most prevalent type of crash was *rear end* collisions, comprising 11 per cent of all road incidents, followed by an even distribution for all other types of crashes recorded.
- Only one pedestrian-related crash was recorded which occurred in 2018.

Based on a review of the crash data, there were a total of 32 crashes distributed along Gardeners Road, between WestConnex and Botany Road, within the 2017 to 2019 period.

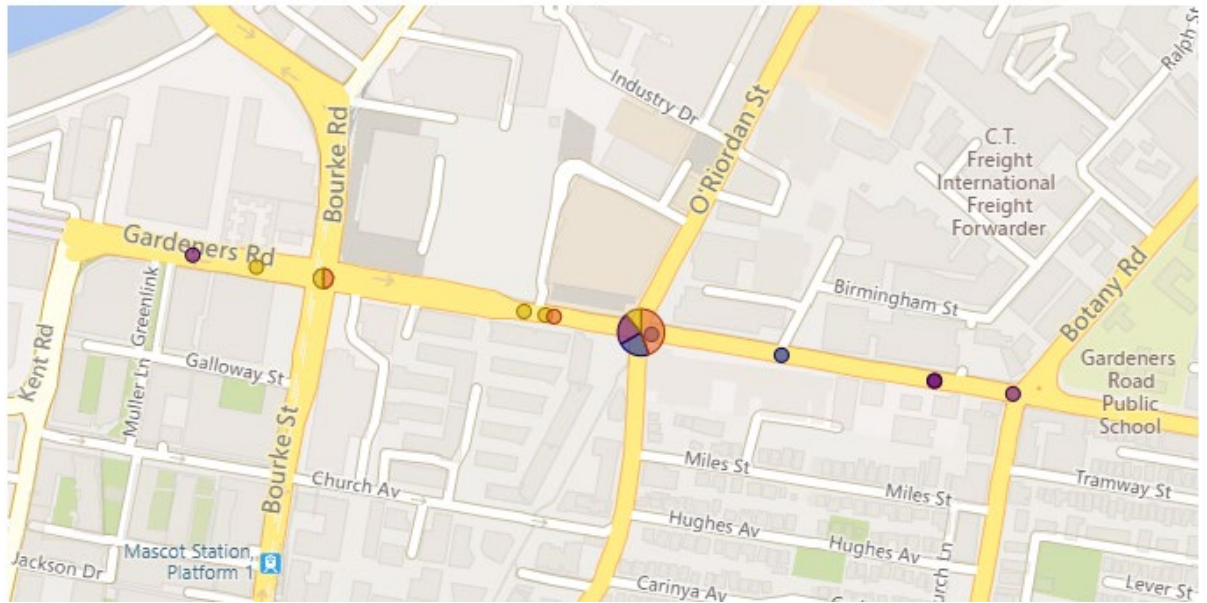
The intersection of Gardeners Road and O’Riordan Street recorded the highest number of crashes totalling 19, none of which were fatal crashes. In particular, the intersection recorded nine crashes in 2017, five in 2018 and five in 2019.

No fatal crashes were recorded along Gardeners Road within the 2017 to 2019 period.

Figure 6-8 illustrates crash locations within the 2017 to 2019 period on Gardeners Road, between WestConnex and Botany Road.

Figure 6-8 Crash locations on Gardeners Road

Degree of crash ● Minor/Other Injury ● Moderate Injury ● Non-casualty (towaway) ● Serious Injury



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

Based on the SMPM forecasts, the traffic volumes along segments of the Gardeners Road corridor, between the WestConnex and Botany Road, are forecast to increase in the post-opening scenario. Correspondingly to the changes in traffic volumes, it is anticipated that the road safety performance along these segments would likely reduce.

6.9 Euston Road

On average, three crashes were recorded along Euston Road, between Campbell Road in Alexandria and Sydney Park Road in Alexandria, each year within the 2017 to 2019 period. In addition to this, average yearly trends in the same period include:

- The most prevalent type of crash was *cross traffic* crashes, comprising 60 per cent of all road incidents, followed by an even distribution for all other types of crashes recorded.
- No pedestrian-related crashes were recorded.

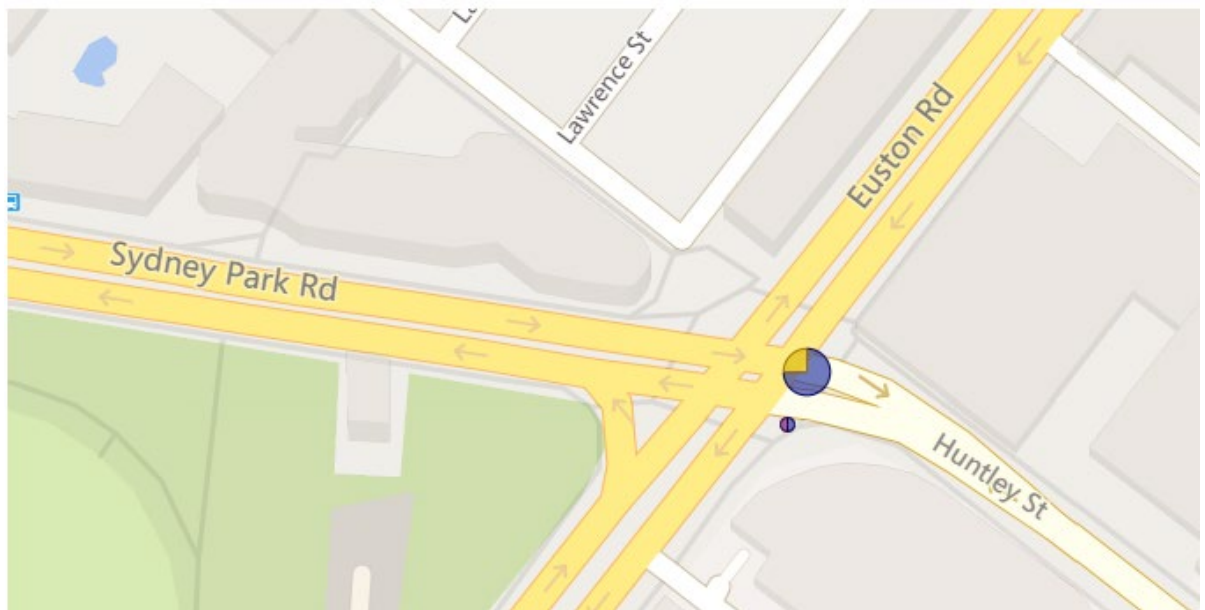
Based on a review of the crash data, there were a total of six crashes distributed along Euston Road, between Campbell Road and Sydney Park Road, within the 2017 to 2019 period.

In 2017, the intersection of Sydney Park Road, Euston Road and Huntley Street recorded five crashes, with one additional case in 2018. However, following the signalisation of the intersection at the end of 2018, no further accidents were documented until 2021, when a singular incident occurred. No fatal crashes were recorded.

Figure 6-9 illustrates crash locations within the 2017 to 2019 period on Euston Road, between Campbell Road and Sydney Park Road.

Figure 6-9 Crash locations on Euston Road

Degree of crash ● Minor/Other Injury ● Non-casualty (towaway) ● Serious Injury



Note: Crashes on map appear larger where multiple incidents have occurred at the same location

Based on the SMPM forecasts, the traffic volumes along segments of the Euston Road corridor, between the Campbell Road and Sydney Park Road, are forecast to increase in the post-opening scenario. Based on the forecast changes in traffic volumes, it is anticipated that the road safety performance along these segments would likely reduce.

7. Mitigations and Opportunities

Mitigation measures have been developed to minimise the impacts of Stage 3 on the surrounding road network. Locations have been identified as requiring mitigation measures based on the likelihood that they will be impacted by the opening of Stage 3. The identified locations for mitigation and the related mitigation measures are detailed in Table 7-1 with their completion status, in no order of priority.

Opportunities for Movement and Place upgrades such as placemaking and precinct improvements have been considered in some of the projects listed in Table 7-1 below.

Projects listed below will need to meet relevant design standards, obtain planning approval and have safety audits/reviews conducted on the proposed works, as per the standard project lifecycle process and will be managed independent to this report.

Table 7-1 Mitigation measures & Movement and Place opportunities (in no order of priority)

Location	Scope	Status
Airport West – Marsh Street	Increase traffic capacity and reduce congestion on Marsh Street, the primary connection to Sydney Airport T1 international terminal and key access point to M5 Motorway and Sydney’s southern suburbs. <ul style="list-style-type: none"> • Widening Marsh Street to three lanes • Providing a dedicated cycleway on the southern side to connect the existing path on the bridge to the Eve Street cycleway • Providing a pedestrian crossing at the intersection of Marsh Street and Flora Street • Minor widening of the existing eastbound and westbound lanes to provide wider, safer lanes for motorists Aligning with <i>TfNSW Future Transport Strategy 2056 – The ‘30-minute city’</i>	Completed
Airport North – O’Riordan Street	Improve traffic flow and connections to the airport and Port Botany. <ul style="list-style-type: none"> • Converting southern sections of Robey St & O’Riordan St into one-way roads. • Widening O’Riordan Street to provide six through lanes between Bourke Road and Robey Street. • Re-configuring the existing traffic lights on O’Riordan Street between Qantas Drive and Bourke Road • Upgrading the footpath on the eastern side of O’Riordan Street Aligning with <i>TfNSW Future Transport Strategy 2056 – The ‘30-minute city’</i>	Completed

Location	Scope	Status
<p>Airport East – General Holmes Drive Mill Pond Road Wentworth Avenue Botany Road</p>	<p>Improve traffic flow and connections to the airport and Port Botany.</p> <ul style="list-style-type: none"> • Replacing the General Holmes Drive rail level crossing with a road underpass that links General Holmes Drive, Botany Road and Wentworth Avenue • Improving the Mill Pond Road intersections with General Holmes Drive and Botany Road • Widening Joyce Drive and General Holmes Drive between O’Riordan Street and Mill Pond Road to three lanes in each direction. • Creating a new shared path to link to the existing cycle way on Wentworth Avenue on Botany Road • Retaining the northbound bus stop on Botany Road • Reinstate pedestrian crossing on southern approach of Botany Road & Wentworth Avenue intersection • Existing pedestrian path to be removed on Joyce Drive and replaced with a shared path along Baxter Road between Botany Road and O’Riordan Street <p><i>Aligning with TfNSW Future Transport Strategy 2056 – The ‘30-minute city’</i></p>	<p>Completed</p>
<p>Parramatta Road/Wattle Street/Frederick Street</p>	<ul style="list-style-type: none"> • Early lane guidance –direct exiting traffic into correct target lanes for either Frederick Street or Parramatta Road • Preventing late lane changing near the stop line – solid line marking to restrict lane change for 120m back from the stop-line. 	<p>Completed</p>
<p>Frederick Street Ashfield – Safety upgrade</p>	<p>Improve safety on Frederick Street, between Hume Highway, Ashfield and Parramatta Road, Haberfield.</p> <ul style="list-style-type: none"> • Speed reduction from 60km/h to 50km/h <p><i>Aligning with TfNSW Road Safety Action Plan 2026 – Priority area: Creating safer country roads and urban places & TfNSW Future Transport Strategy 2056 – Guiding Principle No. 4: Safety and Performance</i></p>	<p>Completed</p>

Location	Scope	Status
<p>Gladesville Bridge Bus Lane Extension</p>	<p>Provide a continuous bus lane from Gladesville to Anzac Bridge and prioritise the 40–50 buses carrying 1,600 passengers citybound over the Gladesville bridge during morning peak hour. Also, maintain current bus performance on Victoria Road.</p> <ul style="list-style-type: none"> • Replace existing citybound T3 lane with a 6am to 7pm lane between Huntleys Point Road, Huntleys Point and Westbourne Street, Drummoyne <p><i>Aligning with TfNSW Future Transport Strategy 2056 – Guiding Principle No. 4: Safety and Performance, Chapter 6: The future network – Optimising the network and also Chapter 8: Greater Sydney Network – Rapid bus network</i></p>	<p>Completed</p>
<p>Victoria Road Bus Lane Enhancements (between Iron Cove Link Portal and City West Link)</p>	<p>Prioritise bus movements to improve reliability and travel times, particularly for express services. And improve local access, reducing conflict with traffic moving through Rozelle.</p> <ul style="list-style-type: none"> • Citybound Travel: <ul style="list-style-type: none"> – Shift the bus lane from kerbside to lane two, clear of any interference caused by stopping buses and left turning traffic (between Terry Street and Robert Street). – Dedicated left turn only lanes with buses excepted on approach to Darling Street, Evans Street and Robert Street. – Only on right turn lane maintained from Victoria Road citybound into Darling Street southbound. – Reducing citybound through movement to only two traffic lanes. – Introduce calmer kerbside lane based on left turn movements. – 24 hour operation. • Outbound Travel: <ul style="list-style-type: none"> – New kerb side bus lane between Quirk Street and Clubb Street. – Operation Monday to Friday 6am to 10am and 3pm to 7pm. <p><i>Aligning with TfNSW Future Transport Strategy 2056 – Guiding Principle No. 4: Safety and Performance, Chapter 6: The future network – Optimising the network and also Chapter 8: Greater Sydney Network – Rapid bus network</i></p>	<p>Delivery to commence Q4 2023</p>

Location	Scope	Status
Western Distributor Smart Motorway	<p>Improve motorway experience, assist with congestion using real time speed limit management, reduce stop-start traffic, and create more reliable travel times.</p> <ul style="list-style-type: none"> Up to 16 gantries will be installed along the Western Distributor between Sydney Harbour Bridge. New smart motorway devices will be installed on 2 existing sign bars on the Anzac Bridge A-Frames. <p>Aligning with <i>TfNSW Future Transport Strategy 2056 – Guiding Principle No. 4 Safety and performance & Guiding Principle No. 6: Sustainability.</i></p>	In progress
Harris Street/Allen Street Intersection upgrade	<p>Better manage exit-ramp congestion and traffic flow through Pyrmont.</p> <ul style="list-style-type: none"> Conversion of Allen Street eastbound to Harris Street from two to three lanes Removal of parking on Allen Street westbound and Harris Street northbound Removal of existing pedestrian crossing on the southern leg of Harris Street <p>Aligning with <i>TfNSW Future Transport Strategy 2056 – The '30-minute city'</i></p>	Delivery to commence Q4 2023
Ramp Metering	<p>Regulate traffic entering the Anzac Bridge citybound through the use of ramp metering. Vehicles will be gradually released on approach to Anzac Bridge to allow a smoother and safer merge for motorists and maintain traffic flow. Ramp metering sites will be at the following locations:</p> <ul style="list-style-type: none"> Iron Cove Link to Anzac Bridge City West Link to Anzac Bridge Victoria Road to Anzac Bridge <p>Aligning with <i>TfNSW Future Transport Strategy 2056 – Guiding Principle No. 6: Sustainability</i></p>	Delivery to commence Q4 2023
Sydney Harbour Bridge Movable median upgrade	<p>Prioritise Western Distributor traffic by removing the merge with Kent St/Clarence St on-ramp traffic and providing three lanes of through traffic.</p> <ul style="list-style-type: none"> The construction of a new moveable median and permanent medians for the Kent St/Clarence St on-ramp to the Sydney Harbour Bridge Northbound <p>Aligning with <i>TfNSW Future Transport Strategy 2056 – Guiding Principle No. 6: Sustainability</i></p>	Delivery to commence Q4 2023

Location	Scope	Status
<p>Sydney Park Junction Intersection changes and cycleways</p>	<p>Improve connectivity on Princes Highway King Street corridor around St Peters and Sydney Park. Scope includes (pending approval):</p> <ul style="list-style-type: none"> Increasing pedestrian and bike links and crossings Upgrading bus stops Improving landscaping Improving links to Sydney Park’s green space. Reducing speed limits to 40 kilometres per hour on Princes Highway between Campbell Street and Goodsell Street Creating a permanent two-way separated cycleway on the western side of King Street between Sydney Park Road and Barwon Park Road Reducing Sydney Park Road carriageway from four lanes to two lanes, accommodating a permanent solution for the existing temporary cycleway. <p>Aligning with <i>TfNSW Road Safety Action Plan 2026 – Priority area: Creating safer country roads and urban places & TfNSW Active Transport</i></p>	<p>Interim lane configurations completed (King Street & Sydney Park Rd intersection)</p> <p>Remaining scope to commence Q3 2024</p>
<p>Bourke Street/Coward Street Intersection upgrade</p>	<p>Part of a five-intersection upgrade in Mascot, an area with growing freight and travel demand, to manage congestion and safety in the area, including better management of heavy vehicle movements.</p> <ul style="list-style-type: none"> Banning right turns at Coward Street (westbound) into Bourke Street (northbound) Banning right turns from Bourke Street (northbound) to Coward Street (eastbound) for all vehicles except buses. <p>Aligning with <i>TfNSW Future Transport Strategy 2056 – The ‘30-minute city’</i></p>	<p>Completed</p>
<p>Gardeners Road/Botany Road Intersection upgrade</p>	<p>Part of a five-intersection upgrade in Mascot.</p> <ul style="list-style-type: none"> Extending Gardeners Road’s existing, eastbound right turn bay and constructing an additional right turn lane onto Botany Road (involves removal of 14 parking spaces in total) 	<p>Completed</p>
	<ul style="list-style-type: none"> Reconfiguring Gardeners Road’s eastbound lanes to establish a shared left/through lane, a dedicated through lane, and dual right turn lanes <p>Aligning with <i>TfNSW Future Transport Strategy 2056 – The ‘30-minute city’</i></p>	<p>In progress</p>

Location	Scope	Status
Kent Road/Coward Street Intersection upgrade	<p>Part of a five-intersection upgrade in Mascot.</p> <ul style="list-style-type: none"> Installing a new left turn slip lane on Kent Road (southbound) into Coward Street (eastbound) Installing a new pedestrian crossing and new traffic island at Kent Road on the northern side of the intersection Installing a new pedestrian crossing at traffic lights at Coward Street, on the eastern side of the intersection. <p><i>Aligning with TfNSW Future Transport Strategy 2056 – The '30-minute city'</i></p>	Completed
O'Riordan Street/Gardeners Road Intersection upgrade	<p>Part of a five-intersection upgrade in Mascot.</p> <ul style="list-style-type: none"> Banning right turns for all vehicles from Gardeners Road (westbound) into O'Riordan Street (northbound) Banning left turns from Gardeners Road in both directions into O'Riordan Street for vehicles over 12.5m and adding a dedicated left turn lane on Gardeners Road (westbound). <p><i>Aligning with TfNSW Future Transport Strategy 2056 – The '30-minute city'</i></p>	Completed
Kent Road/Ricketty Street Intersection upgrade	<p>Part of a five-intersection upgrade in Mascot.</p> <ul style="list-style-type: none"> Reconfiguring the pedestrian crossing at Kent Road, on the southern side of the intersection, and providing a new, larger traffic island. <p><i>Aligning with TfNSW Future Transport Strategy 2056 – The '30-minute city'</i></p>	Completed
Mascot Station More Trains, More Services	<p>Reduce overcrowding within the station and reduce traffic congestion on Bourke Street between the intersection of Church Avenue and John Street by reducing pedestrian usage of the zebra crossing.</p> <ul style="list-style-type: none"> The Mascot Station Upgrade is building a new station entrance on the western side of Bourke Street. <p><i>Aligning with TfNSW Future Transport Strategy 2056 – Guiding Principle No. 4: Safety and Performance and Guiding Principle No. 5 Accessible services</i></p>	In progress, planned for completion in December 2023

8. Summary & Conclusions

In line with Condition of Approval E63, a Road Network Performance Plan has been undertaken to identify the changes in intersection performance upon the opening of Stage 3 including 3a and 3b. Based on the review the following findings were made:

- In general, comparing the updated Stage 3 post opening modelling (Scenario 1) with the M4-M5 Link EIS post opening forecast, most intersections maintain a similar LoS and experience a decrease in delays.
- Most intersections with a future mitigation scenario (Scenario 2) experience a decrease in delays.
- Mitigations and movement and place opportunities are either complete or in delivery;
 - Airport East, North and West upgrades
 - Parramatta Road/Wattle Street/Frederick Street early lane guidance and speed reductions.
 - Victoria Road bus lane enhancements on Gladesville Bridge and through Rozelle
 - Western Distributor Smart Motorways
 - Allen Street & Harris Street intersection upgrade (Western Distributor off-ramp)
 - Ramp metering
 - Sydney Harbour Bridge moveable median upgrade
 - Mascot Intersection upgrades
 - Mascot Station More Trains, More Services
- The Victoria Road/Lyons Road intersection (Intersection 4) is forecast to operate at unsatisfactory LoS (LoS E or below) and experience extensive queues on all approaches when the project is operational.
- The Unwins Bridge Road/Campbell Street intersection (Intersection 14) is forecast to operate at unsatisfactory LoS (LoS E or below) when the project is operational. Queuing is expected on the Bedwin Road approach and the Unwins Bridge Road eastbound approach, for vehicles turning left into Bedwin Road.
- Without Stage 3, congestion is likely to increase around the M4 East interchanges in Haberfield on Dobroyd Parade, Parramatta Road and Frederick Street, with average travel speeds dropping to less than 15km/h during peak periods.
- Without Stage 3, congestion would also increase around the St Peters interchange on Gardeners Road, O'Riordan Street, Botany Road and Princes Highway with queue lengths increasing and average travel speeds significantly dropping during peak periods.
- The opening of Stage 3 is expected to markedly reduce the number of vehicles, particularly heavy vehicles travelling along Parramatta Road and Princes Highway, opening the opportunity for improved placemaking and renewal.

9. References

- Transport for NSW, Traffic Modelling Guidelines, 2014
- Appendix H, WestConnex – M4-M5 Link, Technical working paper: Traffic and Transport, prepared by AECOM for Roads and Maritime Services in 2017.
- WestConnex M4-M5 Link, Rozelle Interchange – Modification: The Crescent overpass and active transport Links – Design amendment report, prepared by AECOM for Transport for NSW April 2020