Department of Planning and Environment

Bays West Stage 1 Rezoning Package

Transport Management and Accessibility Plan

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Contents

Tables

Drawings

No table of figures entries found.

Pictures

No table of figures entries found.

Photographs

No table of figures entries found.

Attachments

No table of figures entries found.

Appendices

Glossary

Term	Meaning
CBD	Central business district
DPE	Department of Planning and Environment
DRT	Demand Responsive Transport
GCCSA	Greater Capital City Statistical Area
GFA	Gross floor area
GFLA	Gross floor leasable area
ISS	Intake substation
JTW	Journey To Work
NLA	Net leasable area
NSW	New South Wales
OPT	Overseas Passenger Terminal
PANSW	Port Authority of New South Wales
PBTS	Place Based Transport Strategy
PCG	Project Control Group
PMNSW	Placemaking NSW
PTAI	Public Transport Accessibility Index
PTAL	Public Transport Accessibility Level
PTPM	Public Transport Project Model
RMS	Road and Maritime Services (now TfNSW)
RTA	Roads and Traffic Authority (now TfNSW)
SA3	Statistical Area Level 3
SCATS	Sydney Coordinated Adaptive Traffic System
SMPM	Sydney Motorway Planning Model
Stage 1	Bays West Stage 1
STM	Strategic Travel Model
TDM	Travel demand management
TfNSW	Transport for New South Wales
TMAP	Transport Management and Accessibility Plan
TRICS	Trip Rate Information Computer System
TWG	Transport Working Group
WBCT	White Bay Cruise Terminal
WBPS	White Bay Power Station
WHT	Western Harbour Tunnel

Executive Summary

The Bays West Opportunity

Bays West represents a unique precinct in the Eastern Harbour City with the potential to support growth by delivering significant urban renewal through new dwellings, commercial use, green space, open public space, and other uses. *Future Transport 2056* identifies Bays West as a key centre on Sydney Metro West running between the Sydney CBD and Greater Parramatta. The successful business case for Sydney Metro West includes a new station within Bays West Stage 1, stimulating the area with vastly improved, high frequency public transport services, thereby unlocking the potential for increased activity and density. Situated between the Harbour CBD and Greater Parramatta, Bays West can harness the new east-west connection between these two centres to foster sustainable travel patterns for a range of users. The investment in Sydney Metro heightens the importance of delivering a precinct that leverages investment in public transport to help meet Sydney's growth in a sustainable and human-centred manner.

The NSW Government in late 2022, announced formation of zero-emission zones, these precincts would be designed as a net-zero with no fossil fuels to be used in operation, adjacent Blackwattle Bay is the first such precinct, Bays West would be a likely future such precinct.

Beyond NSW government policy, plans and investments, the Bays West precinct encompasses a physical quality that is simultaneously unique in its setting, while also quintessentially Sydney. Given its access to water and light, the shoreline, flat elevation around the water's edge, and adjacencies to Rozelle, Balmain Glebe and Pyrmont, the precinct can inherently support walking and cycling in the same way that the Glebe waterfront generates activation. A redeveloped Bays West has the potential to fill in the missing segment of a continuous waterfront between Balmain East and the Glebe Foreshore. The precinct can form an extension of the Harbour CBD, an extension of the Inner West and the Inner Harbour, reuniting communities with the water, and the potential to embrace nature.

From a heritage perspective, the White Bay Power Station, the Glebe Island Silos, and the Glebe Island Bridge present a unique setting to be celebrated alongside future development, public domain and open space. These heritage assets lend character to the place unlike anything that can be achieved in a greenfield development.

Leveraging this character and the opportunities within it, Bays West can be a place for people.

Some of the opportunities described above could also be considered extreme constraints and challenges: a site surrounded by water, motorways, and existing industrial uses. The Anzac Bridge and its access roads, Victoria Road, City-West Link Road and aspects of the Rozelle Interchange form man-made barriers casting shade, vehicle noise and pollution into the district. The road network around the precinct is constrained, provides limited access into the precinct and is approaching, or at saturation in places.

Throughout Sydney, commuters and travellers tend to have a predisposition to drive when they live or work in developments and districts that are disconnected, lacking easy, efficient, and frequent public transport services, or have harsh environments for walking and cycling. Any new development is at risk for increasing private auto travel if not planned well. The future transport network in and around Bays West will need to continue to support peak and off-peak period vehicle movements which are expected to increase into the future. As such, the surrounding road network will be even more saturated, even without any new development at Bays West.

The Bays West precinct is not currently well serviced in terms of public transport access. There are no train stations. Numerous bus services currently pass through the western edge of the precinct, but bus stop access to is impeded by a lack of pedestrian crossings at signalised intersections and frequent vertical transitions. Although the precinct is less than 600m from Light Rail services at Rozelle Bay, the walking route is approximately 3km due to lack of direct pedestrian paths. Walkers and cyclists must traverse the extreme elevation and steep grade of the Anzac Bridge to connect to Pyrmont and the Harbour CBD beyond.

Inherent in these challenges lies a great prospect: to capitalise on the opportunity of delivering a development where walking and cycling is fostered, high frequency, easy and efficient transit is available, and private vehicle travel is discouraged.

The TMAP

The purpose of this Transport Management and Accessibility Plan (TMAP) is to inform the proposed rezoning of the Bays West Stage 1 precinct (Stage 1) and the infrastructure and services measures required to create an equitable and efficient transport network for all customers and the community. The TMAP follows the Place Strategy, Place Based Transport Strategy and Exhibited Draft Stage 1 Bays West Master Plan.

The aim of the TMAP is to assist in developing a more granular set of transport measures that align with metropolitan strategies and look to deliver on the more specific precinct planning and design principles.

It is well understood that any future development will generate new trips to, from and within the site, and that trips need to be serviced by one mode or another. In the context of Bays West, acknowledging that the surrounding road network is unlikely to be able to handle significant additional vehicle trips, a different approach to transport and land use planning is required. As such, this TMAP proposes measures that may be new to Sydney and looks to push the boundaries of what can be achieved in a dense urban environment.

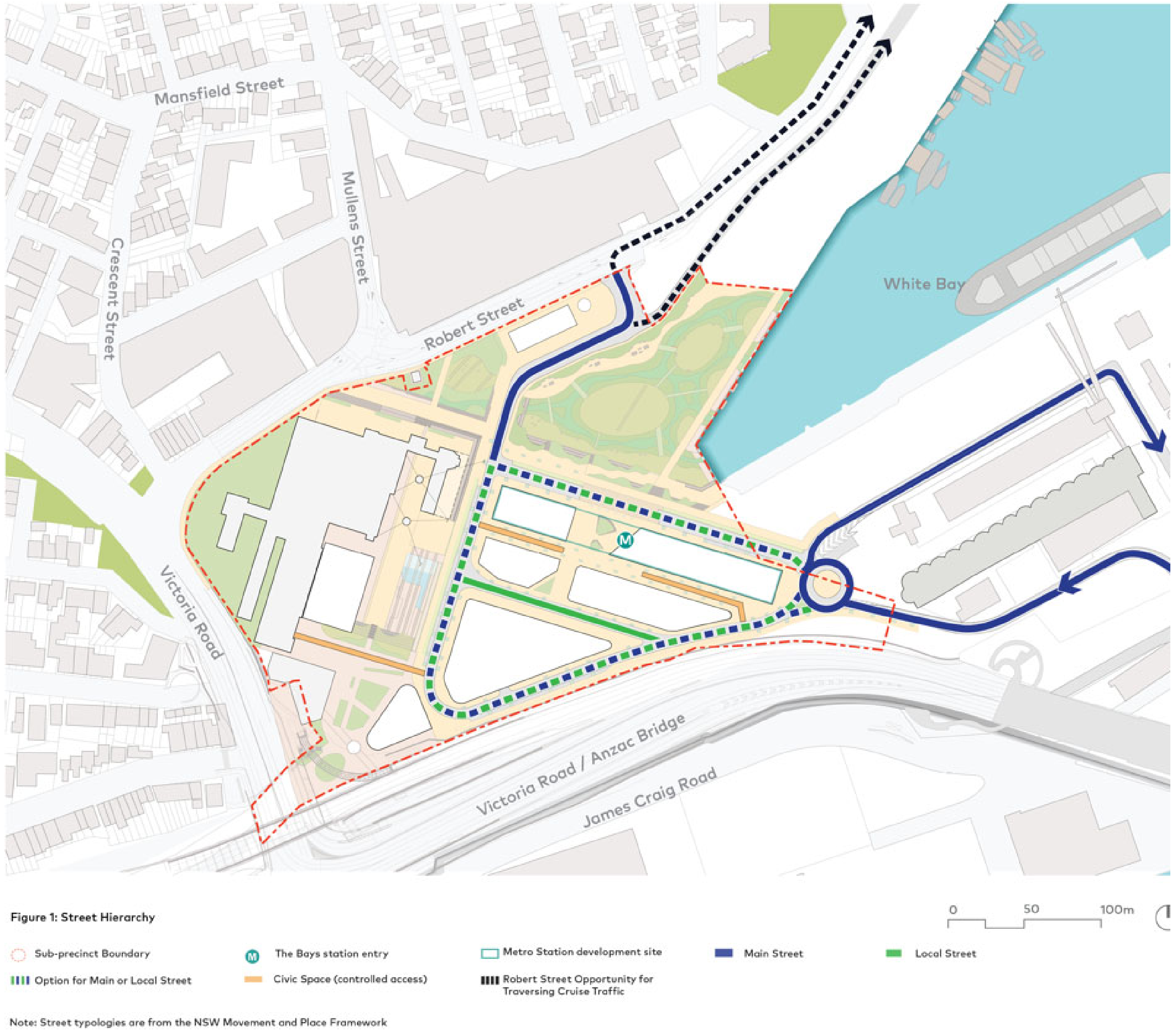
This TMAP utilises a 'Vision and Validate' process that understands the unique characteristics of the Bays West waterfront site and leverages the 'turn up and go' service that Sydney Metro West will provide. The vision sets the tone and the intent of the precinct to ensure the best possible outcome is achieved through the planning, design, and delivery of Bays West. As part of this process, validation is more than just an assessment of performance.

Traffic modelling undertaken as part of the TMAP using SIDRA shows that the baseline existing network is currently at or near saturation. Two future scenarios have been tested to review additional vehicle trips using 5% and 15% vehicle mode share. Each of these scenarios shows that intersections may exceed acceptable saturation rates. Other assessments have indicated the surrounding network will operate efficiently despite proposed infrastructure schemes. A more detailed assessment will be required to test the impacts of Bays West on the surrounding network, which is considered a sensible approach when factoring in future stages of the precinct. Nevertheless, a shift in travel behaviours is essential for the precinct to be successful.

The Proposed Transport Network

The proposed Bays West precinct incorporates:

- Transit, pedestrian and bike friendly streets, civic spaces and paths.
- Land uses that support local, public transport, and active transport trips.
- New pedestrian and cycling infrastructure to connect the precinct with adjoining neighbourhoods by opening new pathways and access to public transport and active transport modes.
- A pedestrian-centric network that incorporates short walking distances between activity areas, footpaths on all streets, pedestrian priority crossings, intuitive links between the Bay Metro Station and bus interchange, and space for tree canopies to support shaded walking and cycling.
- A cycle network that supports new and less confident cyclists with protected cycleways, and more confident users and long-distance trips through connections with the regional cycle network.
- Recognition that the Bays Metro Station will be a significant source for trips into and out of the precinct by creating density and activity generators that support mass transit use.
- Streets within the precinct are low speed and relatively short so that noise and pollution related to vehicles can be kept to a minimum, and crossings can be pedestrian-priority.
- A bus interchange and street circulation plan that expects a high number of local and regional services with direct connections to the Bays Metro Station.
- An appreciation of the natural and heritage assets inherent in the precinct, and leveraging their expected popularity and use by connecting with pedestrian and cycling
- Lessons learned from other successful high-density, ultra-low car precincts, and
- An expectation that Travel Demand Management will be deployed to support an ultra-low private vehicle mode share.



Proposed Bays West Stage 1 Precinct Street Network

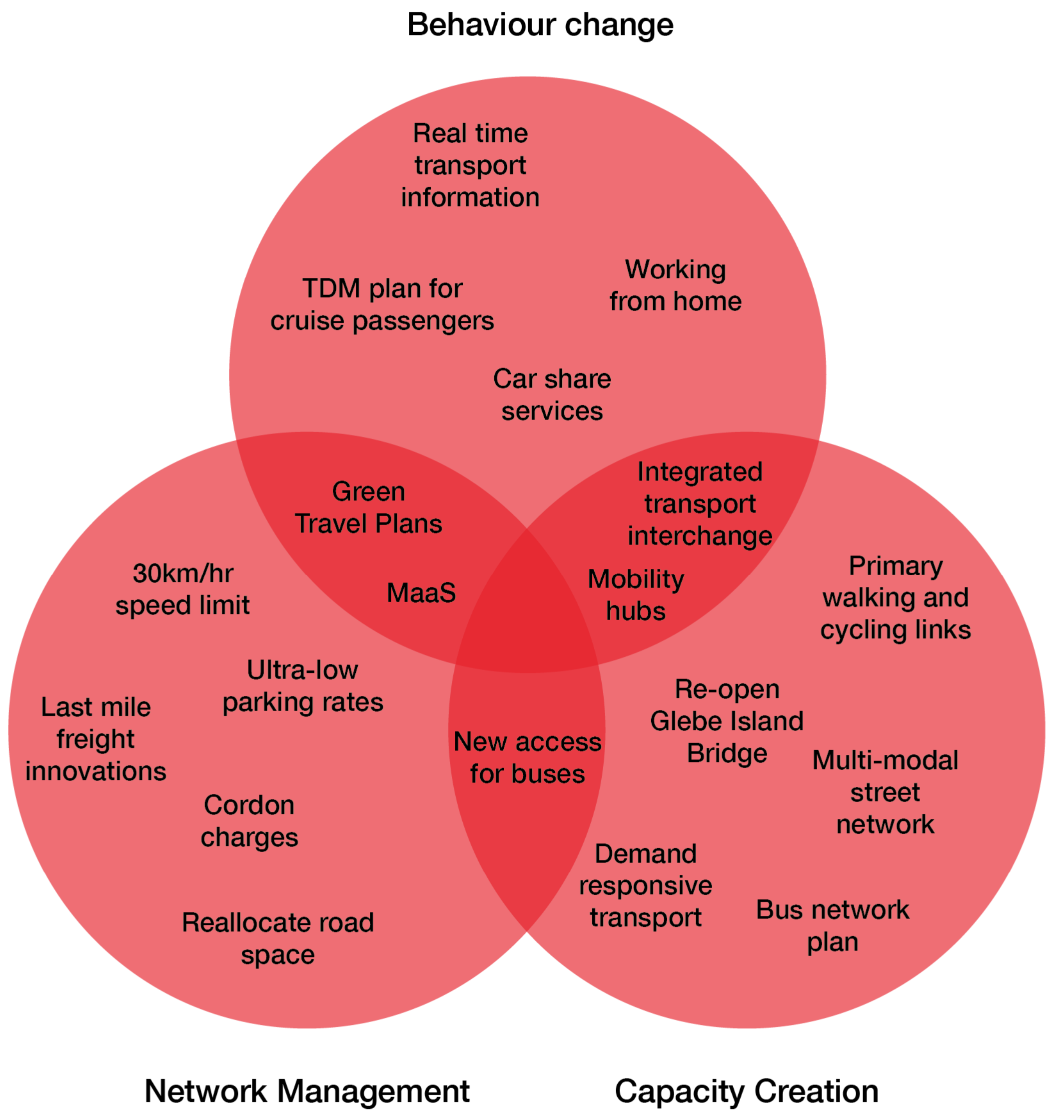
While new development is expected to add vehicle trips to the network, based on other Sydney and international examples, it is feasible that trips generated by the future commercial, residential, and retail uses can be serviced primarily by Metro, bus, Light Rail, walking, cycling and other emerging modes of transportation and micro-mobility.

Enabling Success

Bays West's aspirations to achieve a 95% sustainable mode share is a challenge that has been attempted but not yet attained in a Sydney context. To be successful, the precinct will need to stride beyond business as usual and set a new benchmark for urbanism. Evoking such a seismic change to the way people travel will require efforts beyond the planning and design aspects of the precinct and will necessitate a multi-faceted approach to influencing travel behaviour and managing network operations. Travel demand management relies upon a combination of human tendencies and physical systems to drive change. All interventions aim to adjust travel patterns through a combination of:

- Behaviour of customers and the community
- Delivery of infrastructure and services to provide choice and capacity
- Management and ownership of the network

This approach will need to be implemented from inception and evolve alongside the precinct, responding to changes in residents, visitors, and travel patterns; integrating into overall policy and planning decisions and governed by a Delivery Authority. Examples of various measures that can be used in the context of Bays West to drive behaviour change, create capacity, and manage transport networks can be seen overleaf.



Potential Bays West Travel Demand Management Approach

1. Introduction

1.1 Purpose of the TMAP

The purpose of this Transport Management and Accessibility Plan (TMAP) is to inform the proposed rezoning of the Bays West Stage 1 precinct (Stage 1) and the infrastructure and services measures required to create an equitable and efficient transport network for all users. Development of this TMAP involved:

- A combination of strategic directions drawn from the Place Strategy and supporting Place Based Transport Strategy (PBTS);
- An assessment of the existing and future transport network in the vicinity of Stage 1;
- Engagement with key stakeholders through the Project Control Group and Transport Working Group;
- Technical analysis of future land use inputs to understand potential impacts to traffic and transport;
- Development of concepts for the transport network within the master plan; and
- Producing a list of measures that will be required to deliver the transport vision for Stage 1.

It should be noted that the traffic and transport analysis presented in this report is only a portion of the assessment that will be undertaken to support the development and delivery of Bays West. This TMAP has been prepared for Stage 1 only and further TMAPs would need to be prepared for subsequent stages of Bays West underpinned by the principles and assessment processes outlined in this TMAP.

Figure 1 outlines the ongoing Stage 1 planning process. The Department of Planning and Environment (DPE) will continue to engage stakeholders using a co-design approach throughout this process to ensure these stakeholders are appropriately informed and enabled to provide input and critique at suitable hold points.

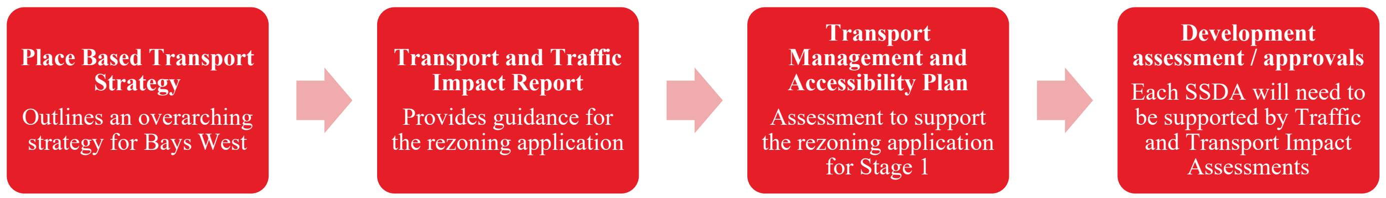


Figure 1: Stage 1 Planning Progression

1.2 Document structure

The structure of this TMAP has been summarised in Table 1 to confirm the key purpose of each section.

Table 1: Document structure

Section	Purpose
1. Introduction	Outlines the document purpose, study area, expected users of the future development, and stakeholder engagement undertaken
2. Strategic Context	Presents information from previous planning phases of Bays West including the precinct vision. Highlights key overarching policies that have been considered
3. Understanding Movement	Reviews the existing transport network, discusses future infrastructure that will impact the precinct and analyses existing and future travel patterns
4. The Master Plan	Presents the master plan being tested as part of the rezoning package, explains the transport network within Stage 1 and the Movement and Place process applied
5. Transport Modelling	Outlines the process for understanding travel demands relating to the precinct, methodology developed to undertake transport modelling and the results from the baseline analysis
6. Transport Network Validation	Reviews the network accessibility and service capacity of different modes to develop a range of traffic and transport measures to implement a Travel Demand Management approach for the precinct
7. Implementation	Summarises all traffic and transport measures proposed as part of this TMAP

1.3 TMAP principles

Stage 1 will aim to drive an urban form within Sydney that integrates land use and transport to deliver a low car precinct that prioritises walking, cycling and public transport. In contrast to most auto-centric Sydney suburbs, a low-car precinct would enable development whilst maintaining satisfactory operation of the surrounding road network. Achieving a sustainable mode share is key to capitalising on the significant state investment in Sydney Metro West including a station within Stage 1.

In addition to this, plans for Stage 1 will need to continue to support existing uses within Bays West that are operated by Port Authority NSW (PANSW) including the maritime uses on Glebe Island and the White Bay Cruise Terminal (WBCT). Bays West also presents a rare opportunity to deliver improved access to the harbour foreshore for the local community and celebrate the industrial heritage of the area through the revitalisation of the White Bay Power Station.

Transport infrastructure and services to support Stage 1 will require careful planning and implementation to ensure an optimal outcome for residents, workers, ports and maritime uses, visitors and the local community. The principles identified in the Bays West Place Based Transport Strategy (PBTS) are presented in Table 2 and will guide the development of Stage 1.

Table 2: Stage 1 TMAP principles

Code	Principle
C01	Implement a visionary low-car precinct
C02	Connect and integrate Bays West with the Eastern Harbour 30-minute City, the Innovation Corridor and the Inner West
C03	Harness opportunities provided by wider transport investment such as Sydney Metro and Rozelle Interchange and potential government investment such as the Glebe Island Bridge active transport connection between Rozelle and Pyrmont
C04	Integrate a core multimodal network that is equitable, people-focused and planned around seamless interchange at transport nodes
C05	Leverage opportunities to support Bays West using emerging technology and smart cities thinking
E01	Implement a low (or zero) carbon precinct
E02	Exceptional connections that activate the heritage, landmarks, harbour and open space of Bays West
I01	Preserve and enhance working harbour and port operations, servicing requirements and freight in line with urban renewal
I02	Recognise the evolving transport demands of Bays West and plan and respond flexibly
I03	Provide safe and equitable access to a range of modes
I04	Align the Safe System approach to deliver, design and operation of the transport network
P01	Deliver outcomes for the community and stakeholders through application of the Movement and Place Framework
P02	Establish a precinct-wide Travel Demand Management philosophy from opening
P03	Implement flexible uses and spaces that can adapt to changing functions and temporal travel patterns

1.4 TMAP study area

Bays West is located two kilometres west of the Sydney CBD and has been segregated into numerous sub-precincts as presented in the Bays West Place Strategy. All sub-precincts are presented in Figure 2.

The study area assessed in this TMAP is shown in Figure 3 and includes the Stage 1 extent, which comprises of the White Bay Power Station and Metro sub-precinct. This sub-precinct is vital to the urban renewal of Bays West, as it includes the White Bay Power Station (WBPS) and future Bays West Metro Station. Acting as the central node for Bays West, this sub-precinct will be the key centre of activity connecting employment, cultural, recreational, and social uses.

Through discussions with Transport for NSW (TfNSW) it was agreed that seven intersections on the road network surrounding Bays West would be included in the study area, which are assessed in Section 5. These intersections are likely to require assessment in all subsequent TMAPs.

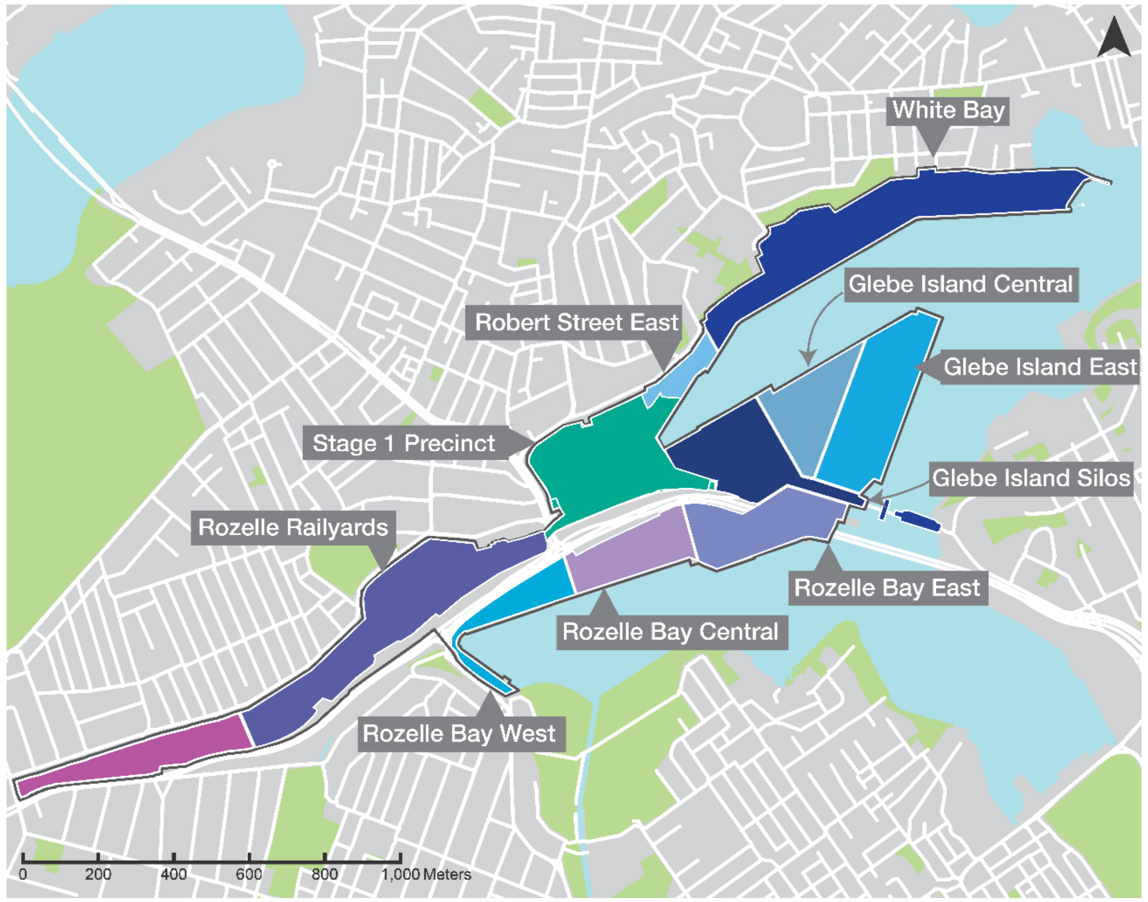


Figure 2: Bays West sub-precincts and Stage 1 extent

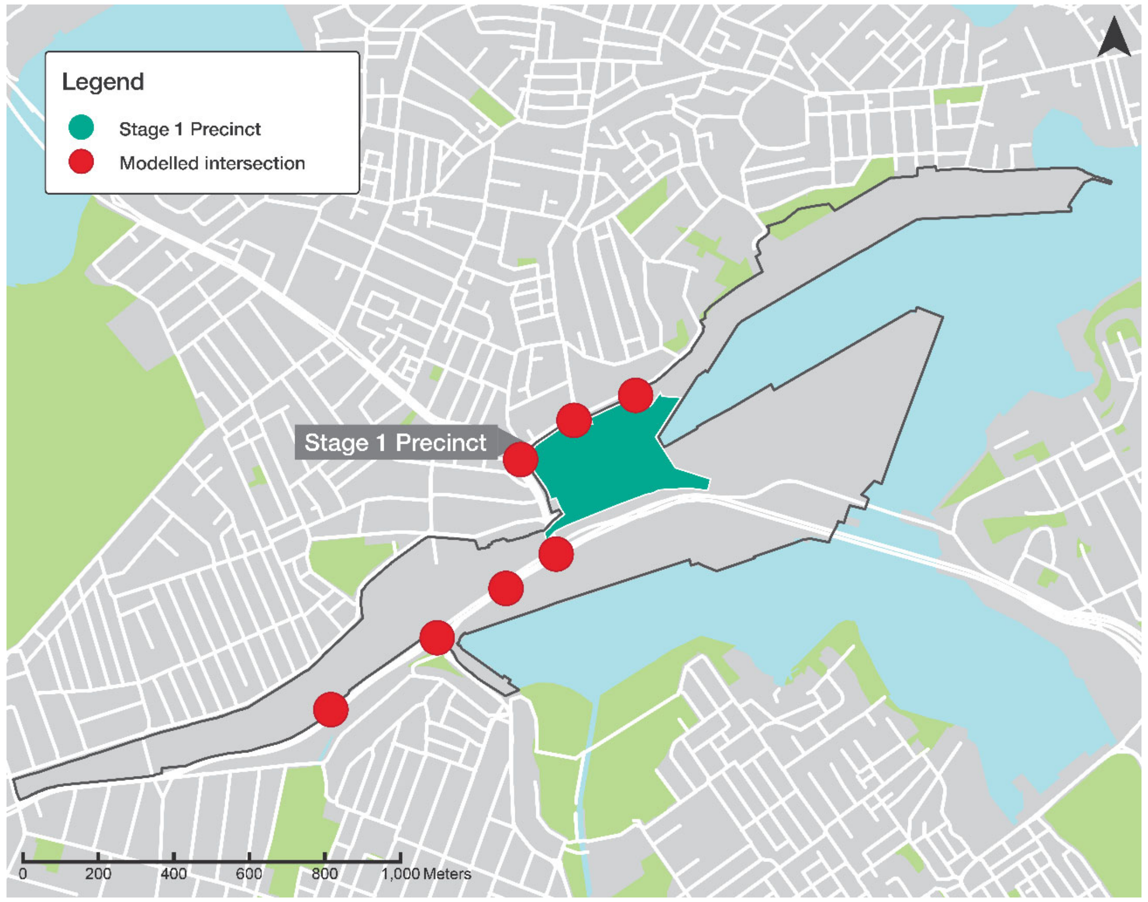
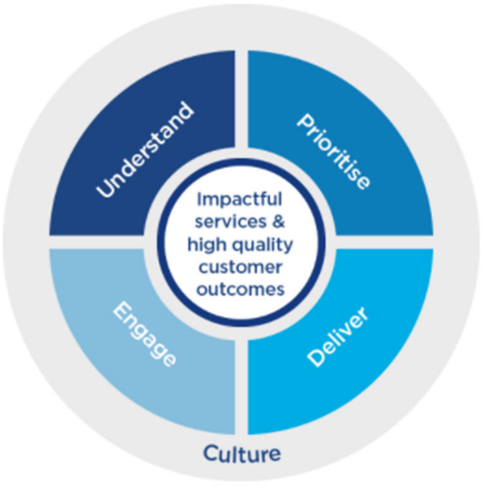


Figure 3: Stage 1 extent and study area

1.5 Introducing our precinct customers

The NSW Government is aiming to put the customers at the centre of everything that it does to achieve high quality customer outcomes and world-class leading customer experiences and is a core value embedded into the planning, delivery and operation of transport in NSW.

Figure 4 outlines a summary of the NSW Government framework and the five key focus areas:



1. **Understand** customer needs based on data and insights.
2. **Prioritise** based on what creates the most impact for customers.
3. **Deliver** a seamless and high quality experience to customers.
4. **Engage** with customers meaningfully on priorities for the future.
5. Embed a customer service **culture** across the public service.

Figure 4: NSW Government Customer Framework (Source: *NSW Government Customer Strategy*, 2021)

Several customer personas were created for the PBTS, presented in Table 3, these have been used to guide the assessment and development of traffic and transport measures to support the precinct.

Table 3: Bays West Customer Personas

	Ahmed	Alex	Eliza	Akira
				
Demographics	29 year old professional who works in the Sydney CBD	45 year old health care worker who works at Westmead Hospital (Balmain Local)	42 years old and lives in Burwood with 2 primary school aged children	65 year old couple. Visiting from Queensland with my wife who has a mobility impairment
Behaviours	I don't own a car and prefer to use public transport, active transport, demand responsive transport services or micromobility I need a quiet and relaxing setting after a long day at work I like to go out for dinner close to home with friends in the evening I am interested in being able to walk and cycle to the CBD	I share a car with my son. I want to use public transport at the last minute if I don't have access to the car I am happy to walk or cycle to access the Sydney Metro West Station but want somewhere safe to store my bike if I do cycle	I currently drive to work in Bays West every day as I need to drop-off and pick-up my kids from school I need to drop my children to school 3 days a week and pick them up twice a week I would like to commute less in my car and more via public transport. The new Sydney Metro West Station at Burwood North gives me direct accesso to Bays West and is a very attractive option which I'm aiming to use 1-2 times a week	We will probably take a taxi from the cruise terminal to our family in Parramatta We are staying with family in Parramatta We speak limited English and require intuitive wayfinding where we can rely on maps rather than text

	Martina	Lucas	Noor	Albert	Jeanine
					
Demographics	35 years old	17 years old	50 years old, visiting for two weeks from abroad with her husband and teenage son	65 years old, retired, living in Lilyfield	47 years old
Behaviours	I drive a heavy vehicle loading dry bulk products at the port and delivering them across Sydney I visit daily and sometimes multiples times per day Interested in efficient, seamless and safe access to and from the port	I go on runs and bike rides with my friends or younger siblings in the evenings and on the weekends Improved access to green spaces and the harbour Safe and suitable walking and cycling routes via high quality separated bike, foot or shared paths	Our family loves to walk and spend time outside visiting landmarks We are staying in a hotel in the Sydney CBD To see as much of Sydney's harbour on foot including heritage landmarks at Bays West	To safely kayak on Sydney Harbour in Rozelle Bay without fear of harm from larger vessels on the water	Shipmaster for a cruise ship homeporting at WBCT once a week in the peak cruise season To efficiently embark/disembark passengers and goods and depart without delay

1.6 Scope and assumptions

Given that Stage 1 is still in the early phases of the planning process, several assumptions and limitations have been adopted for this assessment. The key assumptions relating to the analysis undertaken in the TMAP are as follows:

- The assumed land use yields and development staging and timing is based on the most up-to-date estimates from DPE;
- 2030 and 2040 have been adopted as the assessment years in alignment with the PBTS;
- Future road network assumptions for roads near Stage 1 were assumed from the most recent publicly available documents or information provided by TfNSW (discussed further in Section 5.7.1);
- A fixed percentage of total vehicles on the road network were assumed to be heavy vehicles based on traffic surveys undertaken in 2021;
- The future bus network surrounding the precinct was assumed to be the same as the existing bus network. TfNSW provided forecasts for buses accessing Stage 1 in 2030 (discussed further in Section 5.8);
- Wider road network assumptions were based on the latest TfNSW strategic modelling assumptions, which only include committed and approved future projects (discussed further in Section 5.8);
- Signal phasing was assumed to be the same as those presented in 2022 SCATS data files. Where intersections are to be upgraded in the future, signal phases were adopted from provisional signals plans developed by TfNSW for other major projects in the area;
- Traffic surveys provided by PANSW have been used to assess existing traffic volumes within Bays West during a cruise and non-cruise day.
- All recommendations for transport network upgrades have only been assessed on the basis of traffic and transport and are subject to further assessments including civils, services, feasibility, flooding etc.

1.7 Stakeholder engagement

The 'Vision and Validate' process centres around a co-design approach, and forging partnerships with key stakeholders. This starts with co-developing shared visions for places through understanding the needs of stakeholders, customers and communities and validating the visions through scenario testing, stakeholder engagement and policy alignment.

Co-design was used to engage and develop the Bays West Place Strategy, PBTS and Exhibited Stage 1 Master Plan, and has been a fundamental pillar in the development of this TMAP.

A governance and engagement framework was established by DPE that included a formal Project Control Group (PCG) and Transport Working Group (TWG) which both met regularly to discuss design, development, and endorsement. The TWG was also used to host a workshop series on the Movement and Place approach to planning within Stage 1.

Governance meetings consisted of representatives from the following:

- Department of Planning and Environment (DPE).
- Transport for NSW (TfNSW).
- Sydney Metro.
- Port Authority of NSW (PANSW); and
- Placemaking NSW (PMNSW).

As the TMAP was prepared regular meetings were held to confirm the scope and structure of the TMAP, agree assumptions and transport modelling requirements. Subject matter experts were engaged and consulted from across TfNSW including:

- TfNSW, Easter Harbour City (CST & Greater Sydney)
- TfNSW, Land Use, Network & Place Planning
- TfNSW, Advanced Analytics and Insights
- TfNSW, Integrated Journeys (Bus Service Planning)
- TfNSW, Urban Freight.

DPE coordinated and led the community consultation for the Exhibited Draft Master Plan and supporting Traffic and Transport Report which were placed on exhibition in May 2022. Feedback from the community was consolidated into a submissions report, and key actions and focus areas were used to prepare this TMAP document. The submissions report highlighted a range of key themes such as the congested nature of existing road network, reopening Glebe Island Bridge being a key enabler for the precinct and a need for travel to and from Bays West to be predominantly by public transport, walking and cycling.

As Bays West will be progressively delivered over several years and stages to 2040 and beyond. Current engagement has been focussed on Stage 1, however, engagement, consultation and co-design will continue to be a critical element in the planning and design for all subsequent stages.

2. Strategic context

This section outlines the district and local context of Stage 1 and the state and local government strategies that will guide future land use and transport outcomes for the precinct.

2.1 Metropolitan and district context

Bays West is a predominantly industrial precinct located two kilometres west of the Sydney CBD. It is home to a range of different ports and maritime uses managed by PANSW, including deep-water berths for ship movements into Sydney Harbour. Many of these uses are integral to the Greater Sydney Metropolitan area and their operations are planned to continue into the future.

As shown in Figure 5, the *Eastern City District Plan* has forecast an additional 325,000 people living in the district by 2036 with 157,500 dwellings needed to support this growth (see Figure 5). As the Harbour CBD has acted as Sydney's commercial and geographic centre since its inception, land available to support this growth is limited.

Bays West represents one of only a few remaining precincts with significant urban renewal potential and will be key in delivering dwellings and other uses to support growth in the Eastern City District. *Future Transport 2056* identifies Bays West as a key centre sitting on the Olympic Park Line running between the Harbour CBD and Greater Parramatta. This wider commitment to serve the precinct with improved public transport services further unlocks the potential for increased density. These strategic policy aspirations have now been realised through the successful business case for Sydney Metro West which includes a station in Stage 1. State government investment heightens the importance of delivering a precinct that meets Sydney's future needs whilst revitalising its unique nature.

Figure 6 presents Bays West in the context of Sydney's metropolitan transport network. Its location between the Harbour CBD and Greater Parramatta provides opportunity to harness the new east-west connection between these two centres to foster sustainable travel patterns for a range of users.

As shown in Figure 7, there is also the opportunity for Bays West to act as the northern end of the expanding Innovation Corridor as an extension of the Sydney CBD. This corridor extends to Tech Central, which is being planned by the Greater Sydney Commission to have an estimated 25,000 innovation jobs and provide a pipeline for 25,000 new students focused on science, technology, engineering and maths.

This TMAP will assist in developing a more granular set of transport measures that align with metropolitan strategies and look to deliver on the more specific precinct principles outlined in Section 1.2.

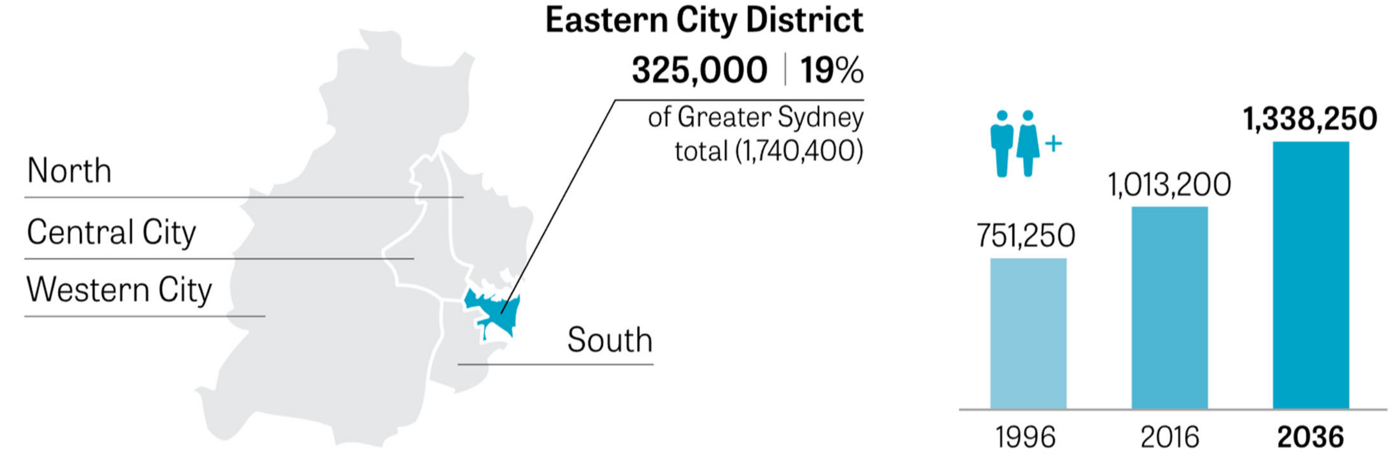


Figure 5: Population growth in the Eastern City District (Source: *Eastern City District Plan*, March 2018)

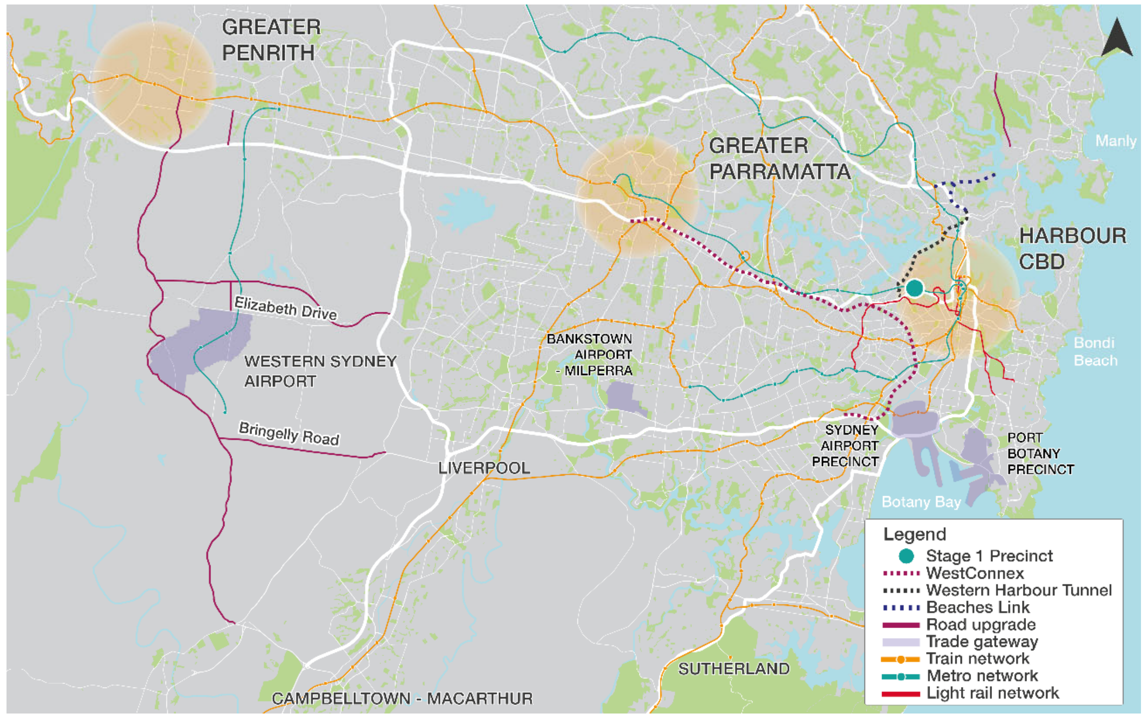


Figure 6: Bays West in the context of Sydney's transport network

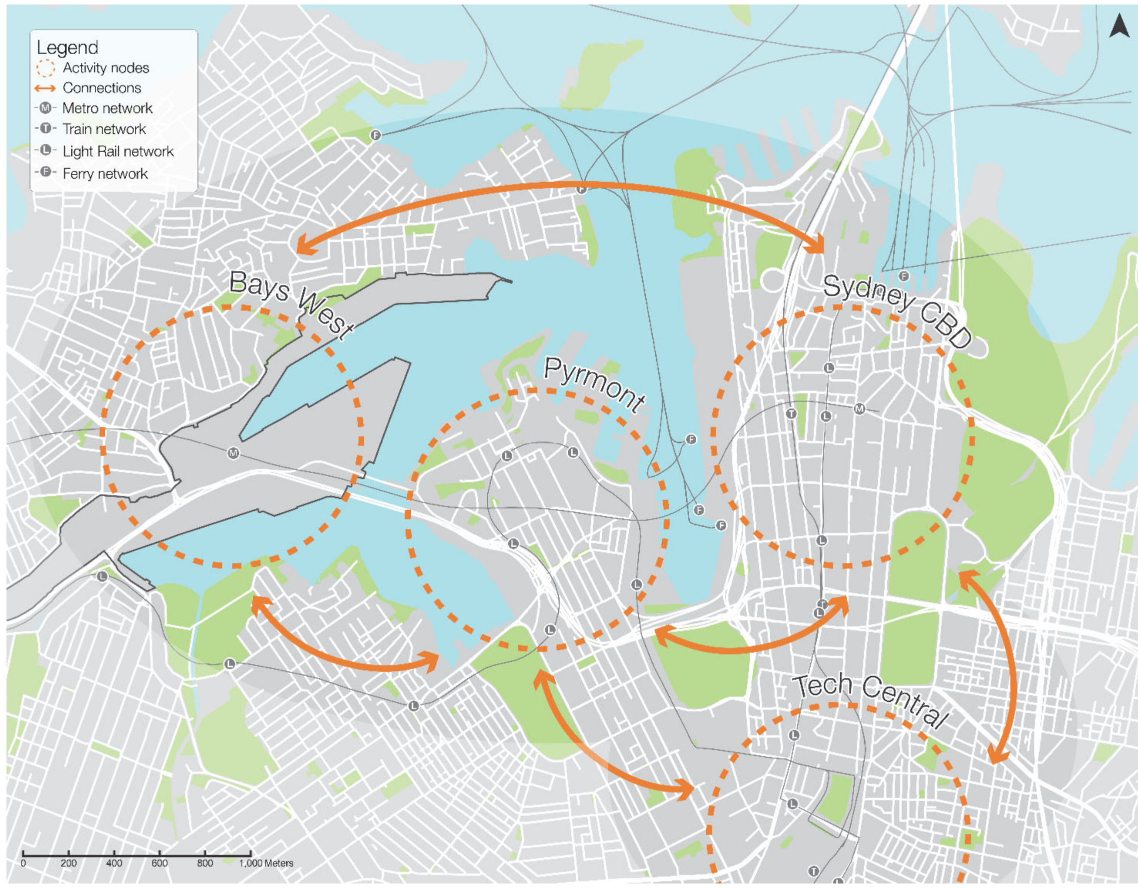


Figure 7: Bays West as an extension of the Sydney CBD and Tech Central

2.2 Precinct and local context

Despite its central location, Bays West is waterlocked on three boundaries and severed by major arterial roads including the City West Link, Victoria Road and the Anzac Bridge. Bays West holds significant historical value as the main power source for Sydney, and today as a working harbour providing key services to the Greater Sydney Metropolitan Area whilst supporting cruise ship berthing at the White Bay Cruise Terminal (WBCT).

Bays West is zoned as Sydney Regional Environmental Plan No. 26 – City West' which is subject to bespoke planning controls defined in the *State Environmental Planning Policy (Precincts – Eastern Harbour City) 2021*. Around Bays West, land is predominantly zoned R1 – General Residential, IN2 – Light Industrial and RE1 – Public Recreation. The land zoning surrounding Bays West I presented on Figure 8.

Currently, Bays West is occupied by a range of operational uses and several heritage items, as shown in Figure 9. The following uses currently operate within Bays West:

- **Lilyfield Depot**: a maintenance facility for the L1 Dulwich Hill to Central Light Rail network;
- **WestConnex Ancillary Facility**: a staging facility to support the upgrades to City West Link and the Victoria Road/Anzac Bridge approach. The facility includes site offices, storage sheds and ventilation buildings;
- **Working Harbour**: foreshore and bay that are heavily occupied by recreational boating, private recreational craft, superyachts, commercial craft (including maintenance vessels, barges and tug boats) and NSW Government patrol vessels as well as maritime-related preconstruction and maintenance yards;
- **White Bay Power Station**: a heritage site decommissioned in 1984, the power station is protected from demolition and will form the focal point of Bays West;
- **Glebe Island Silos**: another heritage site, the silos are currently being used as a bulk cement terminal by Cement Australia, sugar processing area by Sugar Australia and storage shed for gypsum by Gypsum Resources Australia;
- **Glebe Island Ports**: Sydney Harbour's only remaining deep water port used for importing cement, sugar, gypsum, salt and other construction materials and equipment to service the wider Sydney construction supply;
- **White Bay Cruise Terminal**: Sydney's second cruise terminal serving smaller cruise ships that can fit under the Sydney Harbour Bridge. Under planning consents, on cruise days all passenger traffic is required to use the James Craig Road access point; and
- **Glebe Island Bridge**: the heritage-listed bridge connects Glebe Island with Pyrmont and swings to allow tall ships to enter Blackwattle Bay. It is currently disused however plans are being discussed to potentially reinstate the bridge in the future.

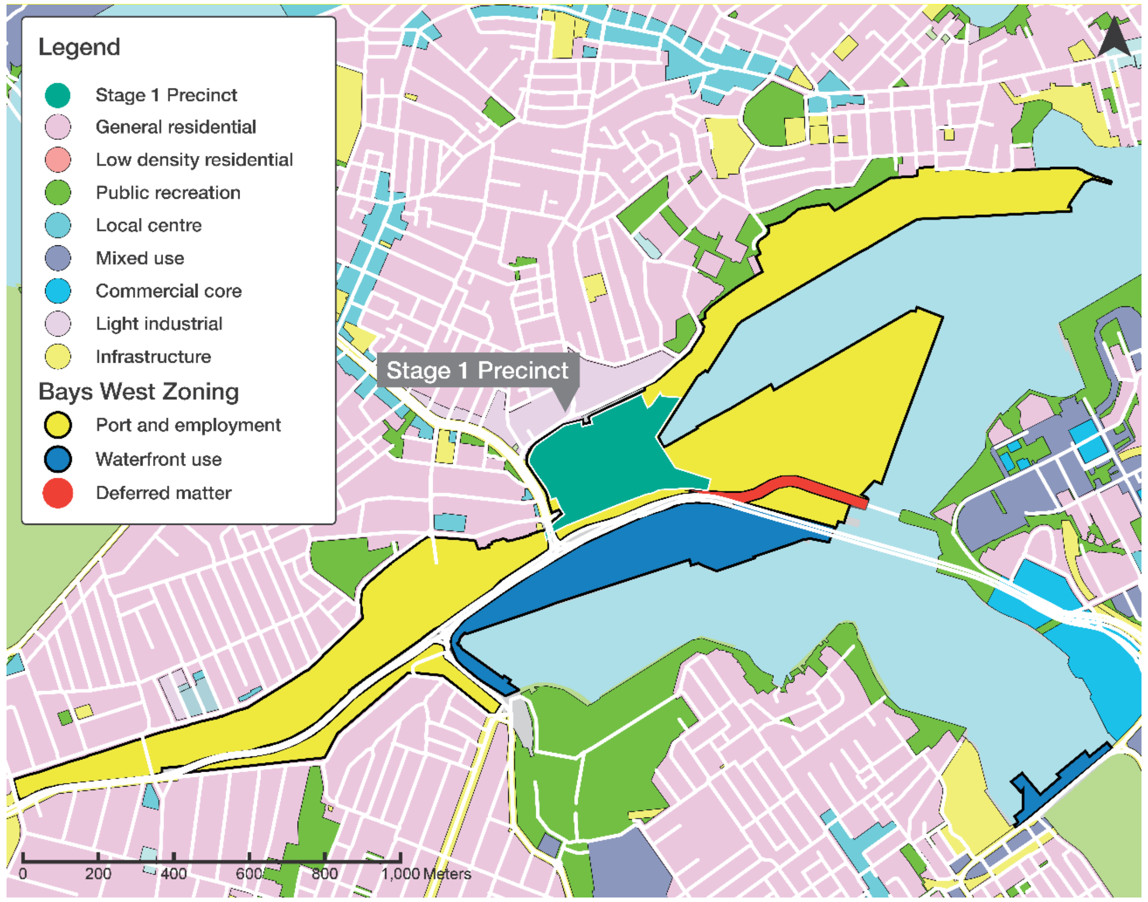


Figure 8: Existing land zoning surrounding Bays West

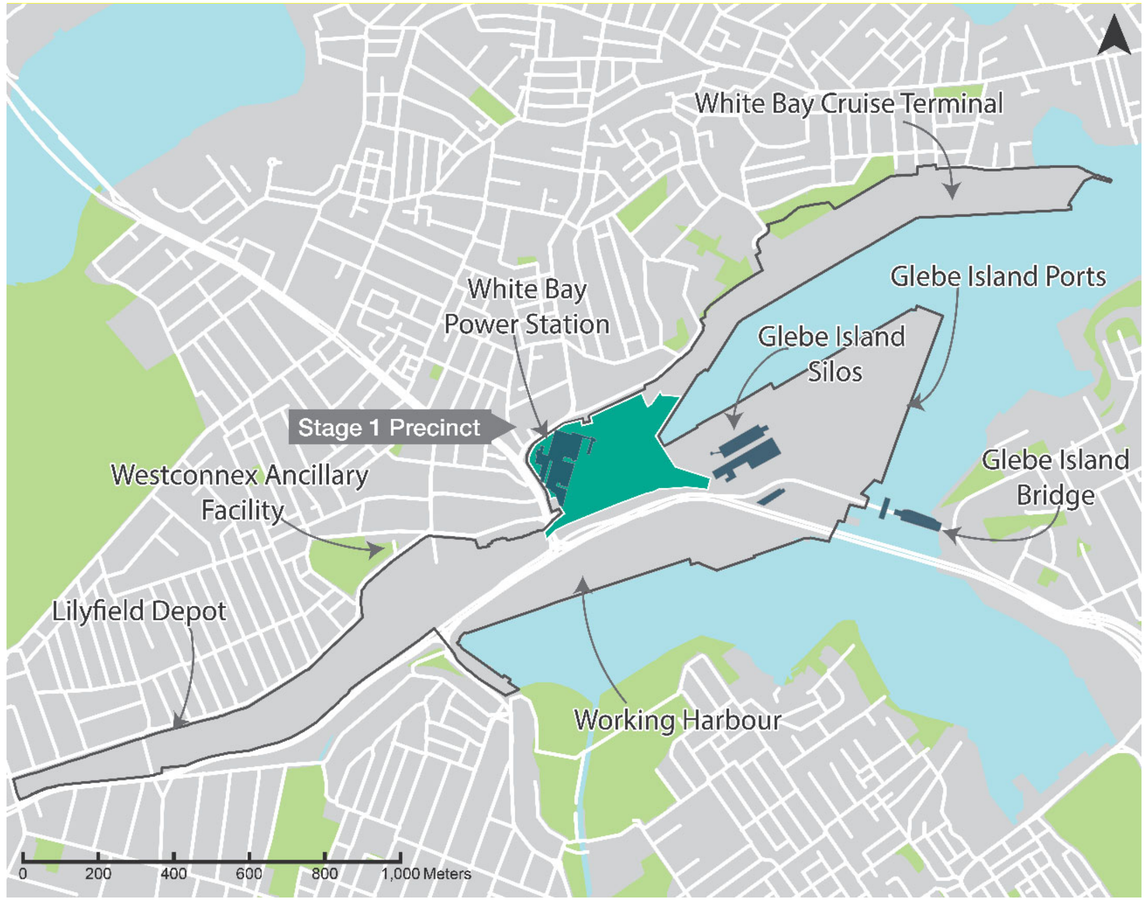


Figure 9: Key uses within Bays West

2.3 Planning and zoning context

2.3.1 Bays West Place Strategy

In 2021, DPE prepared the Bays West Place Strategy (November 2021). This document for Bays West sets out *"a vision for a connected, vibrant and activated precinct – a new kind of Sydney urbanism that respects and celebrates Country, drawing on natural, cultural, maritime and industrial stories to shape an innovative and sustainable new place for living, recreation and working."*

This vision is supported by 14 directions under five enabling themes that address the connectivity, productivity, liveability and sustainability which will guide the transformation of the precinct over time. These themes are outlined in Figure 10.

Land use and function that address further land uses of Bays West and the role it will play in Sydney's future

Design of places and spaces that provide guidance on how Bays West will feel to people and what is important in the design of buildings and public domain

Transport and movement that recognise the constrained nature of Bays West and establish how the precinct will safely move people and goods within, to, from and through Bays West

Heritage and culture that recognise the importance of the past and how understanding history and culture is critical to creating a place with meaning

Infrastructure delivery and governance that recognise that the precinct will evolve over time and that multiple stakeholders are required to ensure that Bays West is successfully delivered

Figure 10: Themes (Source: *Bays West Place Strategy*, November 2021)

The Bays West Place Strategy has identified the constrained nature of the environment, with limited opportunities to move people and goods to, from, and through Bays West. This constrained environment is clearly outlined in the Transport and Movement theme which aims to enhance connectivity, integration, permeability and sustainable transport options in the precinct. The three directions that support this theme are:

- **Direction 8** – Improve the precinct's connectivity and integration into its locality and surrounding areas;
- **Direction 9** – Provide for new connections to existing places by removing existing barriers to allow connections through the site and convenient access to the new Metro station; and
- **Direction 10** – Prioritise walking, cycling and public transport by capitalising on the new Metro station, creating more convenient and direct active transport connections and investigate the reinstatement of a crossing from Bays West to Pyrmont.

Furthermore, the Bays West Place Strategy vision, themes and directions are supported by six Big Moves, which are key interventions to realise the full potential of the precinct. Big Moves 2, 5 and 6 directly relate to transport and movement. The area:

- **Big Move 2** – A crossing from Bays West to Pyrmont to create more convenient and direct active transport connections;
- **Big Move 5** – Make the most of the opportunity that a new Metro Station presents to renew the precinct and surrounds through development that has a strong dependence on public and active transport; and
- **Big Move 6** – Enable a world-class harbour foreshore walk.

2.3.2 Bays West Place Based Transport Strategy

To support the Bays West Place Strategy, the Bays West Place Based Transport Strategy (February 2022) outlines four key transport themes that align with the broader aspirations presented in the Bays West Place Strategy.

Each of the four themes in the PBTS are supported by a set of key principles, as outlined in Figure 11. These principles have guided the development of Stage 1 to achieve positive transport outcomes for the precinct and its future users.

Access and Connectivity

- Implement a visionary low car precinct
- Connect and integrate Bays West with the Eastern Harbour 30-minute City, the Innovation Corridor and the Inner West
- Harness opportunities provided by wider transport investment such as Sydney Metro and Rozelle Interchange and potential government investment such as the Glebe Island Bridge active transport connection between Rozelle and Pyrmont
- Integrate a core multimodal network that is equitable, people-focused and planned around seamless interchange at transport nodes
- Leverage opportunities to support Bays West using emerging technology and smart cities thinking

Environment and Topography

- Implement a low (or zero) carbon precinct
- Exceptional connections that activate the heritage, landmarks, harbour and open space of Bays West

Implementation and Operation

- Preserve and enhance operations, servicing requirements and freight
- Recognise the evolving transport demands of Bays West and plan and respond flexibly
- Provide safe and equitable access to a range of modes

Managing Growth and Place

- Deliver outcomes for the community and stakeholders through application of the Movement and Place Framework
- Establish a precinct wide Travel Demand Management philosophy from opening
- Implement flexible uses and spaces that can adapt to changing functions and temporal travel patterns

Figure 11: Precinct principles (Source: *Bays West Place Based Transport Strategy*, February 2022)

2.4 Exhibited draft Stage 1 master plan (May 2022)

In May 2022, the Bays West Draft Stage 1 Master Plan and Urban Design Framework (Cox Architecture and Turf Design Studio, 2022), referred to throughout as the Exhibited Draft Master Plan, was exhibited to inform future planning stages of the precinct.

The indicative yields anticipated within the master plan included a total of approximately 130,000m^2 gross floor area (GFA) consisting of:

- 105,000-110,000m^2 GFA of commercial, community and retail uses. 15,000m^2 of this GFA to be located within the existing WBPS; and
- 20,000-25,000m^2 GFA of residential uses.

The Exhibited Draft Master Plan is shown in Figure 12.

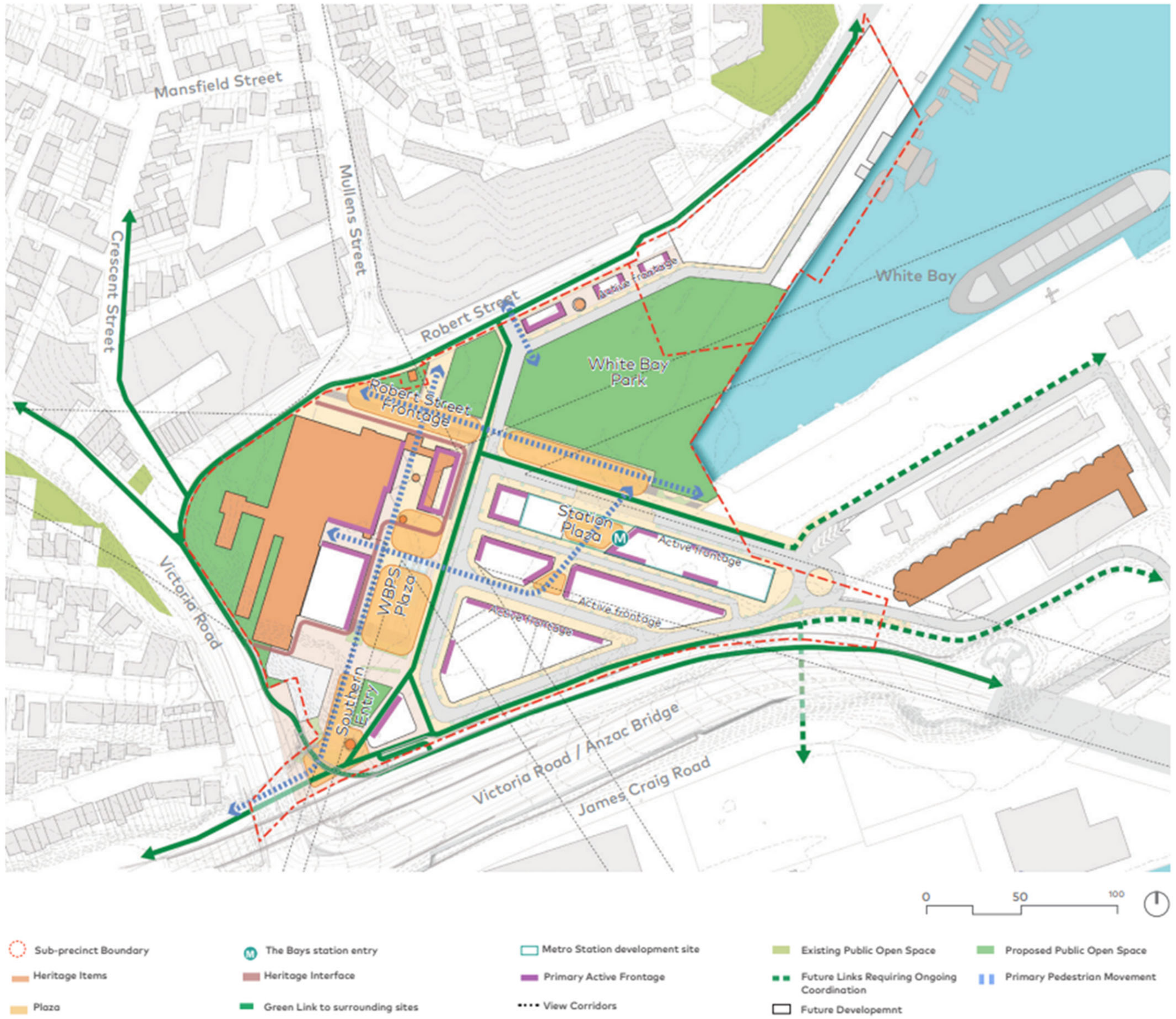


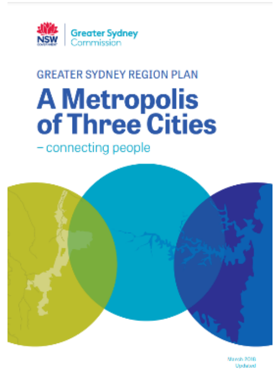
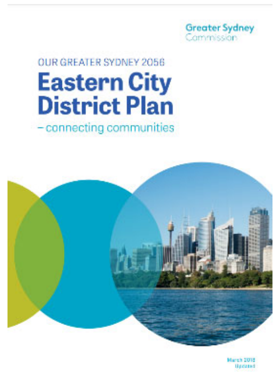
Figure 12: Exhibited Draft Master Plan

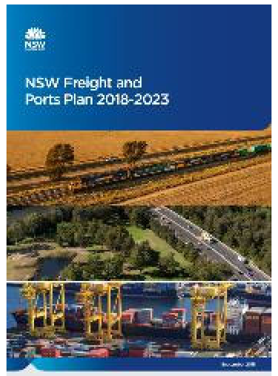
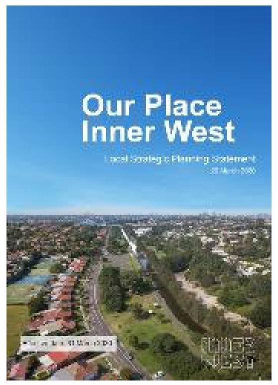
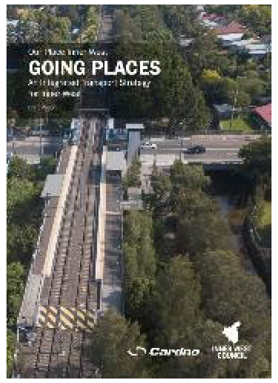
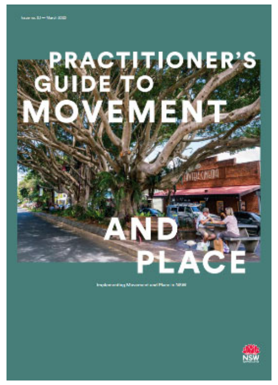
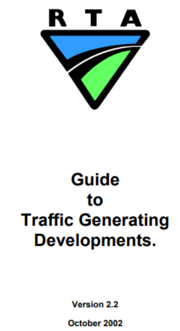
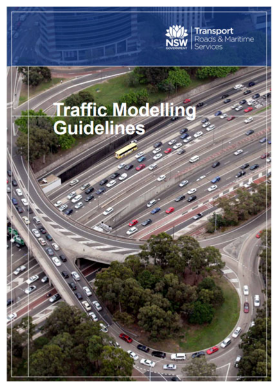
It should be noted that the Robert Street sub-precinct was removed from the Stage 1 master plan post-exhibition. Therefore, the Robert Street sub-precinct is not included in the proposed rezoning controls or this TMAP.

2.5 Other relevant policies

A summary of the relevant state and local government plans, policies and their relation to Stage 1 are shown in Table 4.

Table 4: Planning and policy context

Document	Overview	Relation to Bays West and TMAP
	The Greater Cities Commission's *Greater Sydney Region Plan – A Metropolis of Three Cities* describes a vision of three cities where most residents live within 30 minutes of their jobs, education and health facilities, services and great places. To meet the needs of a growing and changing population, the vision seeks to transform Greater Sydney into a Metropolis of three cities including the Western Parkland City, Central River City and Eastern Harbour City.	Bays West is located in the Eastern Harbour City and is well-placed to provide 30-minute access to the Harbour CBD, emerging Innovation Corridor and other strategic centres via public and active transport.
	The Greater Cities Commission's District Plans are 20-year plans to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision for Greater Sydney. These plans are a guide to implementing *Greater Sydney Region Plan – A Metropolis of Three Cities* at a district level and acts as a bridge between regional and local planning.	The Eastern City District Plan outlines three key initiatives to enable the success at Bays West. These include: 1. Diversification and expansion of the Innovation Corridor 2. A strategy to manage port and related landside activities on Glebe Island 3. A light rail connection to the precinct to alleviate long-term capacity constraints on the Inner West Light Rail (since ruled out by TfNSW) Several Planning Priorities are strongly aligned with The Bays precincts, including: • E4 Fostering healthy, creative, culturally rich and socially connected communities • E5 Providing housing supply, choice and affordability, with access to jobs, services and public transport • E6 Creating and renewing great places and local centres, and respecting the District's heritage • E10 Delivering integrated land use and transport planning and a 30-minute city • E12 Retaining and managing industrial and urban services land • E16 Protecting and enhancing scenic and cultural landscapes
	TfNSW's *Future Transport Strategy 2056* (March 2018) is an overarching strategy, supported by a suite of plans to achieve a 40-year vision for the transport system. It presents a customer-focused vision built around six key principles and establishes a framework to guide investment in future transport. The strategy defines the vision of a 30-minute city supported by defined corridor types (such as city-shaping) for moving people and goods. The vision for the transport system Is built on six customer outcomes to guide investment, policy and reform and service provision.	The Bays West precinct is aligned with the Strategy's six customer outcomes. The Strategy underwent a refresh in 2020 and now includes several new bus routes and Metro lines or potential corridors that will serve Bays West, directly or indirectly. These include a Sydney Metro West Station within the precinct and a rapid bus line operating between Parramatta and the Sydney CBD via the precinct. The Strategy also details an on-demand ferry trial undertaken in precinct, which connected Glebe, Pyrmont and Barangaroo.

Document	Overview	Relation to Bays West and TMAP
	The *State Infrastructure Strategy* (Infrastructure NSW, 2018) sets out the NSW government's priorities for the next 20 years and brings together infrastructure investment and land use planning with reference to the Future Transport Strategy 2056 and Greater Sydney Region Plan.	Key recommendations relating to Bays West include: • 1a. Deliver Rapid bus networks that service key centres and corridors across Sydney, with a priority focus on Parramatta Road and Victoria Road. • 11. Fund and deliver a prioritised active transport infrastructure program to support liveability and 15-minute neighbourhoods including a connected metropolitan cycling network for Greater Sydney and major regional centres.
	The *NSW Freights and Ports Plan 2018-23* (TfNSW, 2018) provides industry with the continuity and certainty it needs to make the long-term investments that benefit not only their businesses but the State's future growth and prosperity. The Plan includes over 70 initiatives to be delivered by 2023.	The Plan highlights the importance of Glebe Island and White Bay in servicing the needs of Greater Sydney's construction boom. The area is uniquely placed to enable shipping of sand and aggregate to Sydney and reduces the need for trucks to travel into central Sydney with materials sourced from outside the area.
	The *NSW Electric and Hybrid Vehicle Plan (*TfNSW, 2019) aims to embrace the growing availability of alternative transport such as electric and hybrid vehicles. Its vision is to prepare for and accelerate the adoption of EV technologies, in recognition of the economic, social and environmental benefits. NSW supports the transformation of transport through technology and recognises the need for a clear direction forward to guide government and industry actions on eVs.	The Plan includes three key ideas which can be incorporated into the design and operation of Bays West: • Vehicle availability • Charging points • Customer information
	*Our Place Inner West – Local Strategic Planning Statement* (Inner West Council, 2020) sets out the vision for the area in 2036 and the actions that will be taken to achieve this vision. It provides the land-use planning framework for the Inner West, providing a link between the Greater Sydney Commission's Eastern City District Plan and the priorities of Our Inner West 2036 – A Community Strategic Plan for the Inner West Community.	Actions 13.10 and 13.11 aim to work with State Government to deliver public and active transport links to The Bays, including reopening Glebe Island Bridge, providing ferry links to the wider ferry network and providing active transport linkages to the Balmain Foreshore, Glebe Island and City of Sydney LGA. Inner West Council has proposed several transport concepts to improve public and active transport connectivity to and from The Bays, including a Bays West to Green Square rapid transit link.
	*Going Places – An Integrated Transport Strategy for Inner West* (Inner West Council, 2019) aims to address transport challenges and provide strategies and actions that move towards a future that focuses on active and sustainable modes of transport, and land-use planning approaches that support these modes of transport. The Strategy identifies the Inner West trends of comparatively lower vehicle use- 66% higher train patronage and 33% higher bus patronage.	The Strategy highlights walking and cycling connections to the future Sydney Metro West Station at the Bays precinct, which integrate with surrounding suburbs and existing public transport infrastructure. It also sets out a plan to develop the Inner West bus network to enhance its legibility, with an increase of direct connections and frequencies. Maintaining the separation of heavy vehicle movements associated with the multi-user facility on Glebe Island is also a key priority.
	The *Practitioner's Guide to Movement and Place* (Government Architect, 2020) is one component of the NSW Government's Movement and Place Framework. The guide outlines a collaborative method for practitioners, stakeholders and the community to implement the Movement and Place Approach in existing contexts and comparing future options.	This TMAP has adopted the Movement and Place approach to ensure that the key principles are embedded into the assessment process.
	The *Guide to Traffic Generating Developments* (RTA, 2002) outlines all aspects of traffic generation considerations relating to developments. The guide provides background into the likely impacts of traffic from various types of developments. In 2013, technical direction *TDT 2013/04a* (RMS, 2013) was prepared to supplement the guide with updated trip and parking generation surveys.	The assessment and traffic generation of Stage 1 was developed with consideration to the *Guide to Traffic Generating Developments* and *TDT 2013/04a*.
	The *Traffic Modelling Guidelines* (Roads and Maritime Services, 2013) were developed to provide consistency in traffic modelling practice and promote high quality model outputs.	The approach to traffic modelling for this assessment aligns with the *Traffic Modelling Guidelines*.

3. Understanding Movement

This section provides an overview of the existing and planned transport conditions at Bays West.

3.1 Existing and future travel behaviour

To gain a better understanding of the existing travel behaviour and trends within the precinct, the latest 2016 Journey to Work (JTW) Census data has been analysed. Stage 1 lies within the Leichhardt Statistical Area 3 (SA3), which includes the Inner West suburbs of Leichhardt, Lilyfield, Annandale, Balmain, Birchgrove, Balmain East and the Bays (shown in Figure 13).

The Sydney Greater Capital City Statistical Area (GCCSA) data is presented as a comparison. As discussed in Section 2.1, given the aim is for Bays West to become extension of the Sydney CBD, data for the Sydney Inner City SA3 region (which includes Barangaroo) was also analysed.

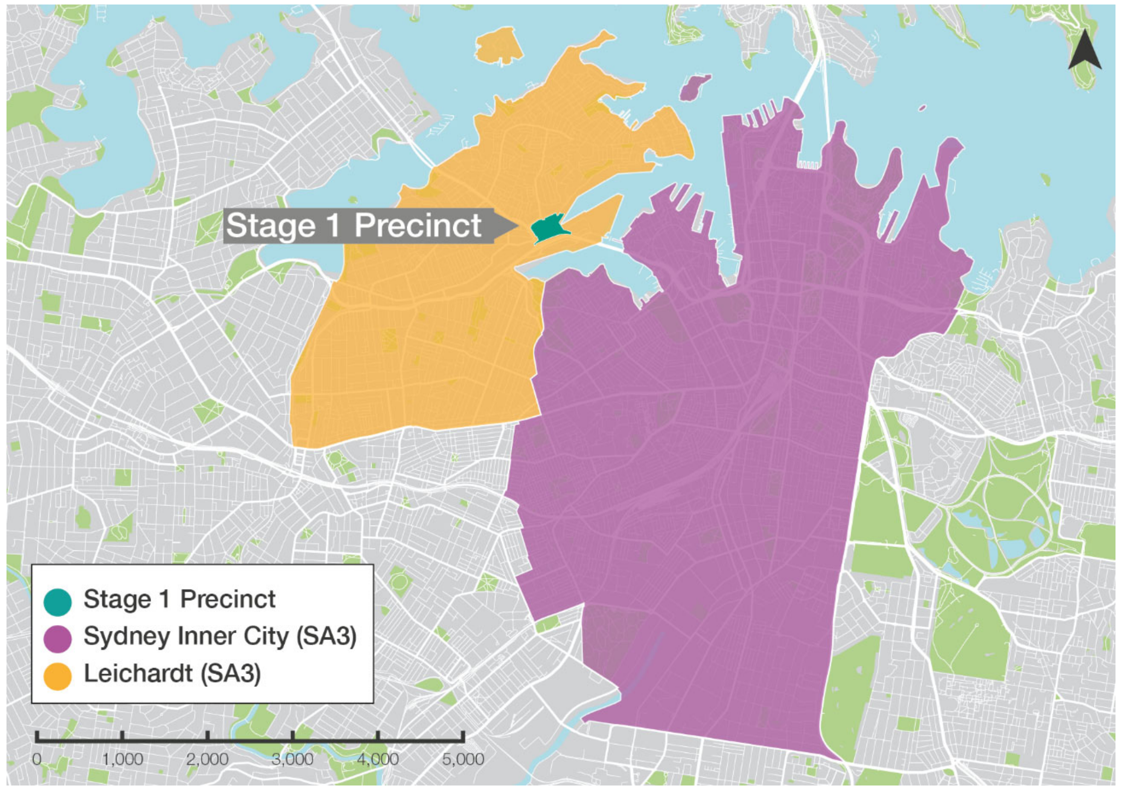


Figure 13: Leichhardt and Sydney Inner City SA3s

3.1.1 Existing mode share

The mode share for Leichhardt residents travelling to work and workers travelling to Leichhardt is shown in Figure 14 and Figure 15. The key trends include:

- **Living in Leichhardt** - Residents in Leichhardt take public transport nearly as frequently as residents in the Sydney Inner City. However, the share of walking and cycling trips is lower than the Sydney Inner City SA3 residents, with these trips being replaced by car trips in Leichhardt. This is reflective of a large portion of residents commuting to the Sydney CBD with others using private vehicle to access workplaces not located on key public transport routes.
- **Working in Leichhardt** – As presented in Section 3.4.5, PTAL varies across Leichhardt which is likely related to the share of public transport trips for workers in Leichhardt being lower than the Sydney Inner City share. These are replaced by car trips suggesting people are commuting from distances or locations that have limited walking and cycling options.

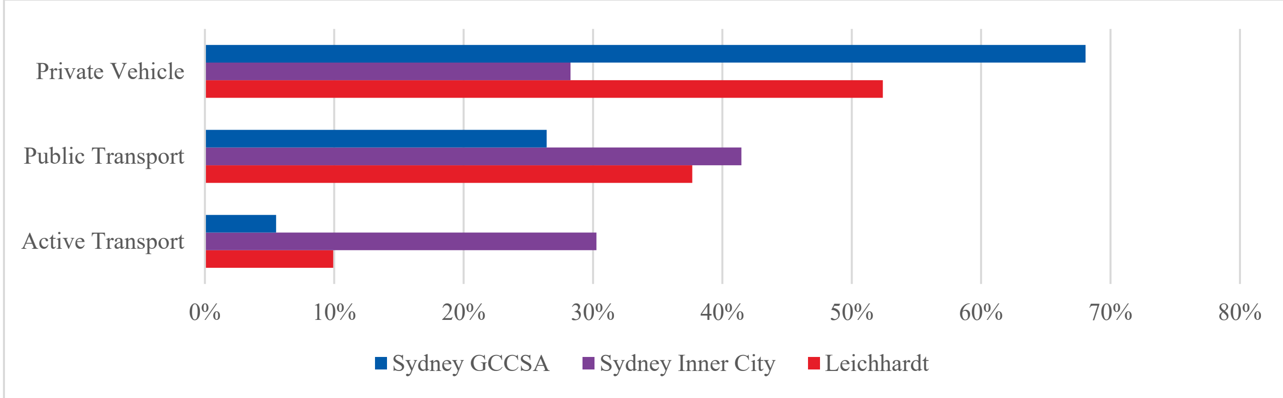


Figure 14: Mode share split for residents travelling out of Leichhardt SA3 (Source: JTW 2016)

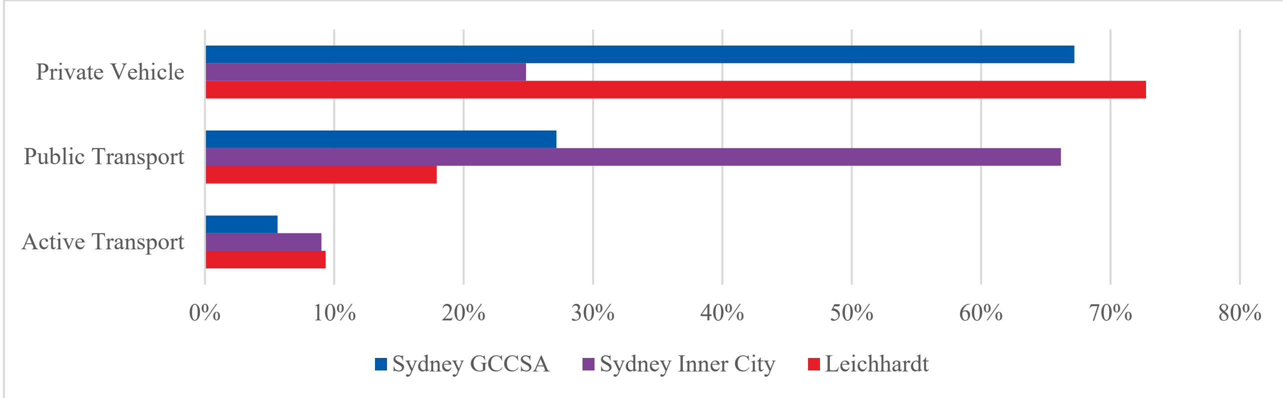


Figure 15: Mode share split for workers travelling into Leichhardt SA3 (Source: JTW 2016)

The use of different public transport modes for Leichhardt residents travelling to work and workers travelling to Leichhardt is shown in Figure 16 and Figure 17. The key trends include:

- **Living in Leichhardt** - The share of train trips for both residents and workers is lower than the Sydney Inner City and Sydney GCSSA average. This is not surprising as there no rail stations in Leichardt with the closest station being Lewisham to the south. Given the lack of rail services, bus, light rail and ferry are favoured with convenient connections to the Sydney CBD provided by all these modes.
- **Working in Leichardt** – Similar to residents, using train to access Leichardt is lower than the Sydney GCSSA average. Bus and light rail are the favoured modes with minimal ferry trips likely due to these services only connecting to areas of the Sydney CBD with an employment focus.

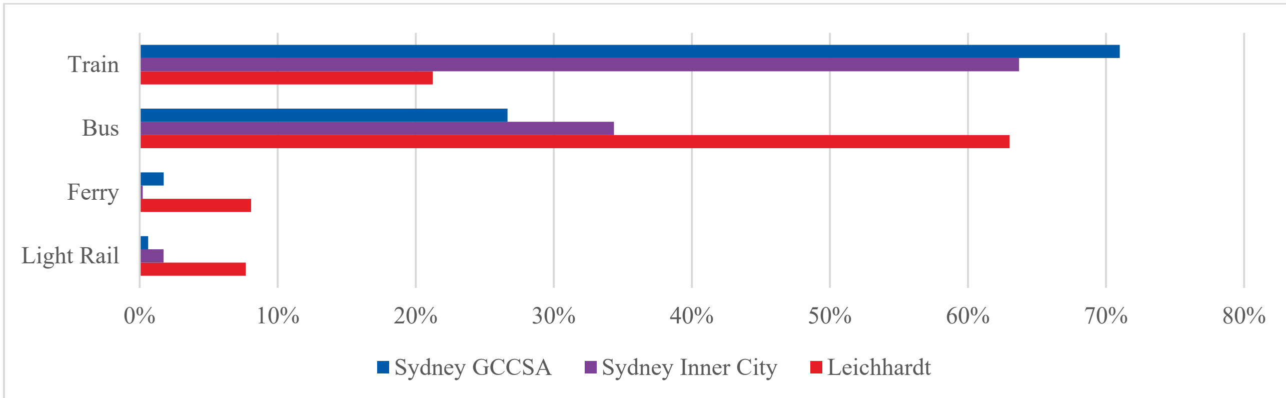


Figure 16: Public transport mode share split for residents travelling out of Leichhardt SA3 (Source: JTW 2016)

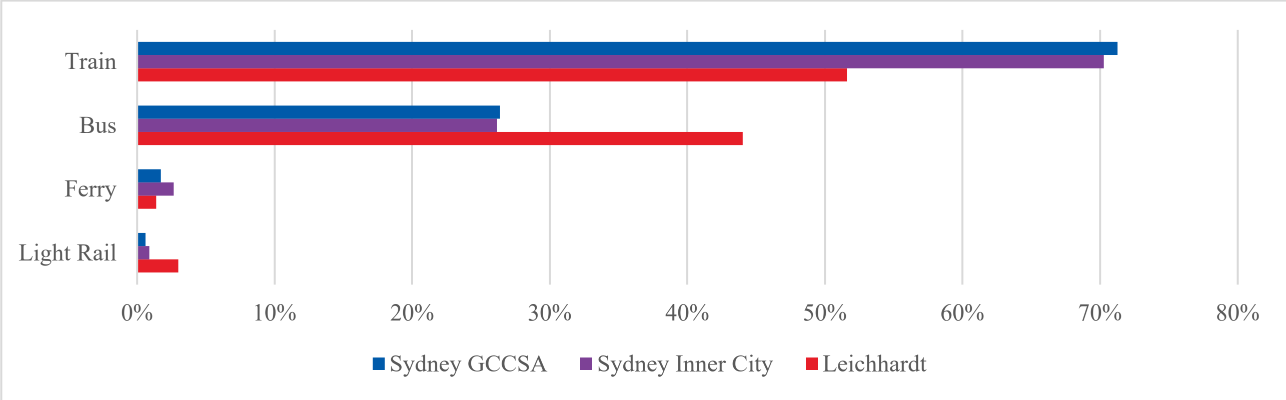


Figure 17: Public transport mode share split for workers travelling into Leichhardt SA3 (Source: JTW 2016)

3.1.2 Existing trip distribution

The most common origins and destinations for workers travelling to and from Leichhardt are shown in Figure 18. The key trends include:

- **Living in Leichhardt -** Sydney Inner City is the destination travelled to by the highest share of Leichhardt residents. This destination is followed by residents travelling within Leichhardt for employment purposes.
- **Working in Leichhardt -** Leichhardt provides significant employment opportunities, drawing a high proportion of its own residents for work purposes. Other workers in Leichhardt travel from Strathfield-Burwood-Ashfield, Sydney Inner City and Canada Bay.

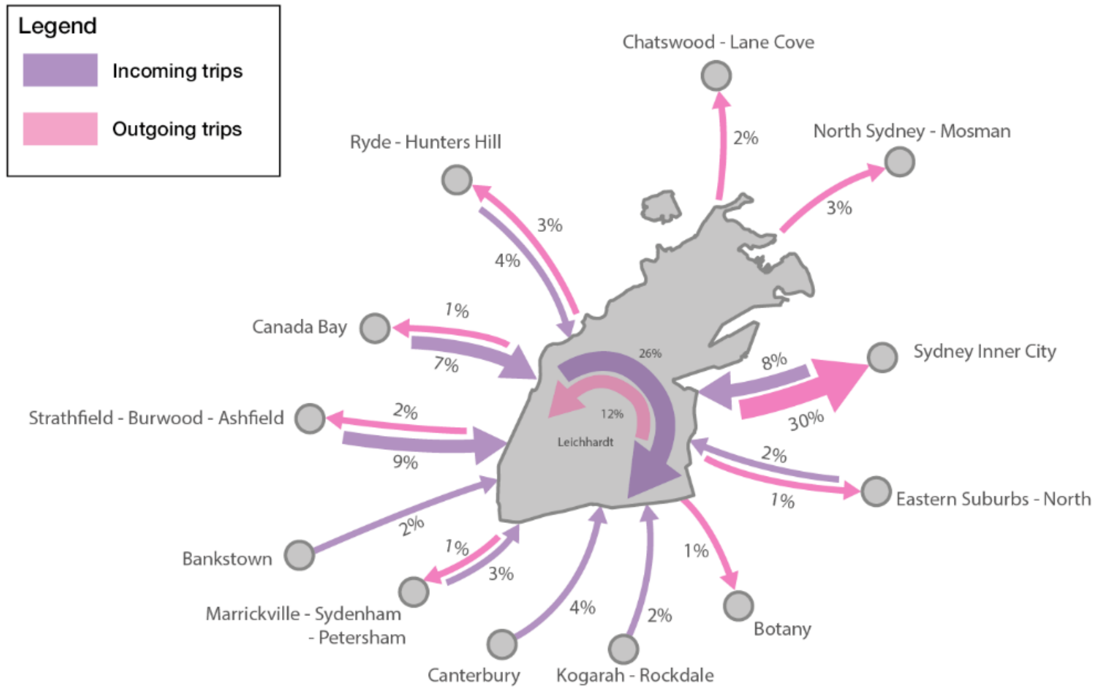


Figure 18: Top ten origins and destinations for travel to and from Leichhardt SA3

3.1.3 Future travel behaviour

The TfNSW strategic modelling suite has been used to estimate travel patterns to and from Bays West in the future. The strategic models were used as these are the most appropriate tool to use to capture the impact of new infrastructure schemes such as Sydney Metro West. The strategic modelling included origin and destination analysis, which has been used to identify travel by private vehicle and public transport to and from the precinct in 2036 and is shown in Figure 19.

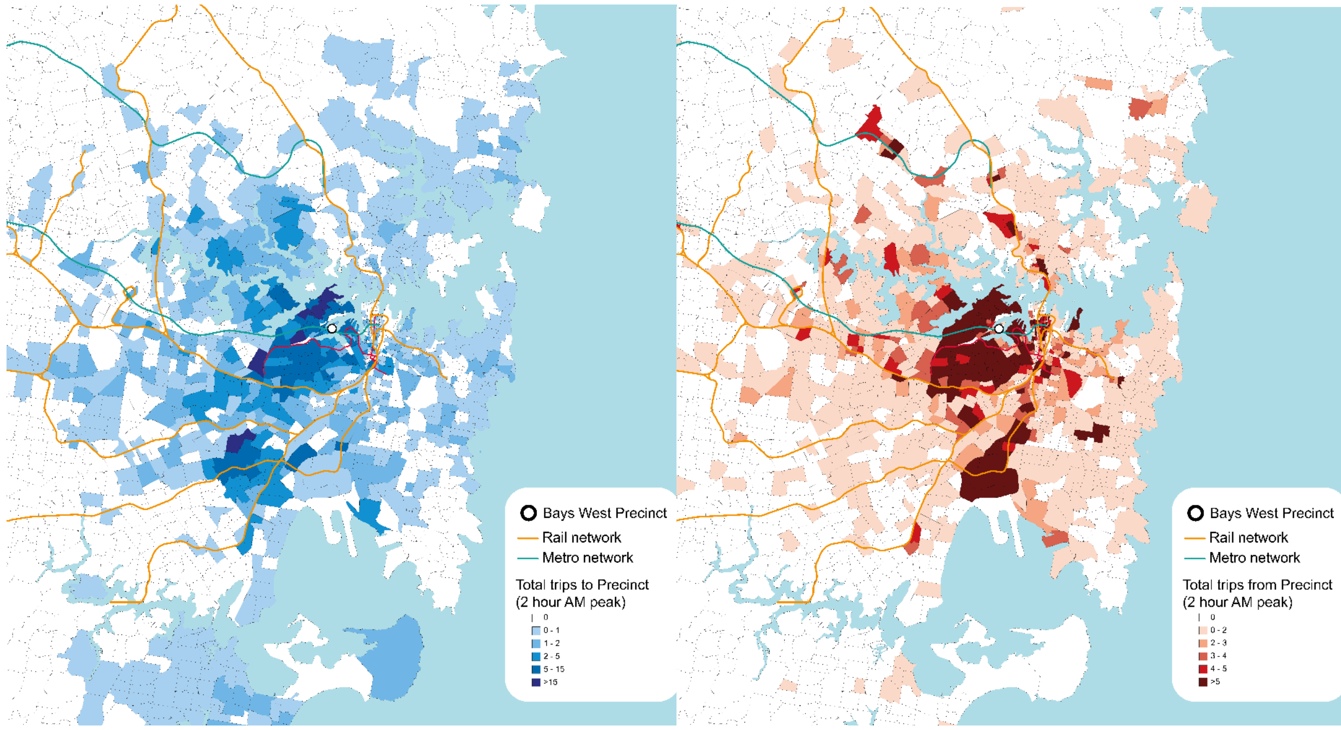


Figure 19: Origins of private vehicle and public transport trips to the precinct

Key trends identified from this analysis include:

- It is evident that the new transport infrastructure schemes considered in the future scenario are leading to people travelling to a wider range of locations throughout Sydney
- Trips to the precinct originate from similar locations to the patterns presented on Figure 18 with a large number of trips originating from the Inner West or South West Sydney. The future rail network is unlikely to cater for these trips and other public transport services or walking and cycling routes will need to be delivered to help shift these trips to modes other than private vehicle.
- Trips from the precinct show higher portions of trips travelling to the Inner West and other suburbs served by the Sydney Metro City and Southwest and T8 lines. This may be related to the new rail connection into the city created by Sydney Metro West allowing residents to travel to a wider range of centres within acceptable journey times. Trips to suburbs surrounding Bays West are trips that would ideally be shifted to walking and cycling provided appropriate routes and end of trip facilities are implemented.

3.2 Existing challenges

The key traffic and transport challenges currently facing Bays West are shown in Table 5. Specific challenges that were identified relating to Stage 1 are summarised on Figure 20.

Table 5: Bays West precinct-wide traffic and transport challenges

Access and Connectivity	• Safety risks and potential conflicts between existing shared walking and cycling infrastructure, including primary cycling access routes, and heavy vehicles • Fractured, indirect and sub-par quality connections with capacity constraints for walking or cycling • Surrounding public transport and road infrastructure already operating at or near capacity • Significant changes to local travel demand profiles on cruise days, an influence of private vehicle transport and coaches expected in the peak hours and throughout the day • Multiple landowners, arterial roads, waterlocked boundaries and lack of public access create severance issues that mean the Precinct is isolated from the local area • Vehicle access is indirect, congested, difficult from certain directions and conditioned under planning controls
Environment and Topography	• Heritage conservation areas and curtilages restrict development and infrastructure • Transport could be a key contributor to carbon emissions, climate change and associated sea level rises • Challenging topography between sub-precincts, raised arterial routes and to surrounding suburbs such as Balmain restricts active transport movement
Implementation and Operation	• Managing the ongoing use of different sub-precincts for working harbour and port operations and construction over several decades • The temporal issue creates uncertainty around land use and operations which may result in fractured and disjointed networks • Balancing security and safety with public access at the waterfront • Short to medium term conflicts with other major infrastructure projects and associated impacts • Governance and landownership could impact upon preferred connections and transport outcomes • Balancing competing interests of existing ports and maritime uses with additional future uses
Managing Growth and Place	• Balancing the demands of future growth with the constraints of the road network • Ensuring quality places are delivered early in the staging process • Providing fair, safe and equal access to the harbour and foreshore • Managing community expectations around improvement of congestion issues and future transport offerings

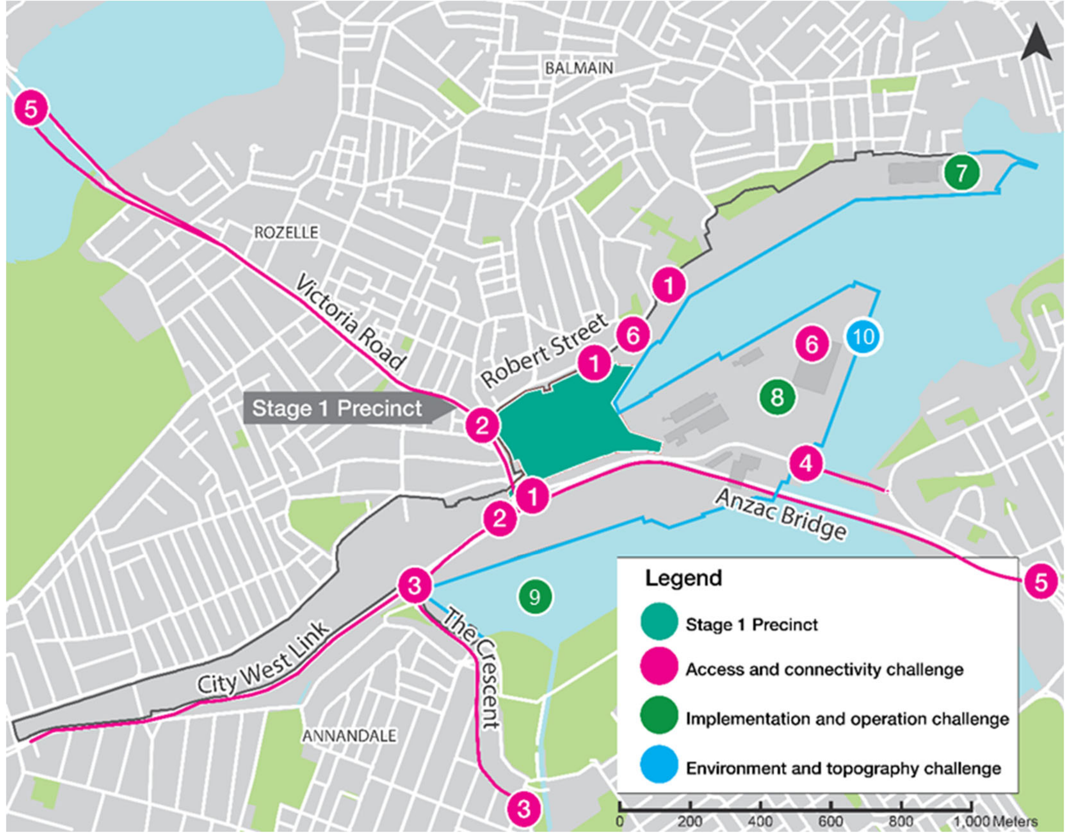


Figure 20: Bays West Stage 1 transport challenges

Access and Connectivity

1 Entry and exit to Stage 1 is limited to Robert Street on opening and James Craig Road (2040 onwards only). Access to the precinct is limited by man-made barriers such as major roads. Both access points are already congested

2 Intersections at Robert Street / Victoria Road and James Craig Road / The Crescent are already congested

3 The Crescent has convoluted walking and cycling routes and undesirable conditions

4 An active transport connection between Rozelle and Pyrmont via Glebe Island Bridge is under investigation, however, options, costs, funding mechanisms and timelines for delivery remain unconfirmed

5 Arterial roads such as Anzac Bridge, Victoria Road and City West Link sever the site and constrain pedestrian connectivity

6 Existing ports roads are not public roads and their status and maintenance responsibilities will need to change as other precinct traffic, including buses, uses these roads post-2030

Implementation and Operation

7 Operation of the White Bay Cruise Terminal generates traffic movements through Bays West on cruise days as all associated traffic is required to use the James Craig Road access point.

8 Glebe Island and White Bay will be home to a range of port-related businesses that will generate a large number of daily heavy vehicle movements

9 Operational demand from maritime users in Rozelle Bay

Environment and Topography

10 Flood prone land and proximity to the harbour could impact built form outcomes and impact on customer movement and access

3.3 Transport network

Access to Bays West is currently car dominated and constrained due to a lack of public access to most of the precinct. This is further complicated by the surrounding road network being congested at peak times with only two access points from which to distribute traffic generated by ongoing uses. Ports and maritime uses will be an integral part of the future precinct meaning ongoing traffic generation cannot be easily reduced. Accessibility is limited further through the lack of a frequent rail service within walking distance and circuitous routes to bus services due to grade changes. The key elements of the existing transport network surrounding Bays West are shown in Figure 21 and include:

- A major bus corridor on Victoria Road, which facilitates services to Parramatta, Inner West, Macquarie Park and the Sydney CBD;
- Key cycling routes on Victoria Road, The Crescent and Anzac Bridge which provide connections to the wider regional cycling network;
- Key walking connections via Victoria Road, Anzac Bridge, Robert Street and Mullens Street;
- Light rail services on the L1 Dulwich Hill Line with the closest stop at Rozelle Bay; and
- Arterial roads including Victoria Road, City West Link, The Crescent and Anzac Bridge.

The number and magnitude of transport challenges identified in Section 3.1, outline a clear need to encourage new travel behaviours that address capacity limitations and contribute to positive climate impacts. Bays West will need to deliver a low car precinct that leverages off the significant government investment in Sydney Metro West, complemented by ancillary bus services and a precinct street network that is centred around walking and cycling. Further controls will be needed to limit private vehicle use and urge a transition to other modes.

3.3.1 Future infrastructure schemes

There are a range of committed and potential infrastructure schemes within or adjacent to the precinct that will impact accessibility and the way people travel. These are presented on Figure 22.

Sydney Metro West is expected to be completed by 2030 and will offer a 'turn up and go' public transport connection between the Eastern Harbour and Greater Parramatta CBDs. A new station will be located within Stage 1 unlocking potential for future growth and providing high quality transport connectivity to a range of suburbs across Sydney.

As part of the WestConnex Rozelle Interchange and Iron Cove Link project, major changes to the road network are ongoing surrounding Bays West. These changes will include an underground tunnel system of roads connecting to the planned Rozelle Interchange and Iron Cove Link, which is expected to be completed by 2023. Above the Rozelle Interchange, multiple shared paths are planned to address the severance between residential areas on either side of the motorway, including a land bridge linking the Rozelle Rail Yards and The Crescent, offering a walking and cycling link to the Rozelle Bay light rail stop.

Reconnecting the Glebe Island Bridge is currently being discussed by government to provide a new active transport link to Pyrmont, connecting the Bays as a whole and extending the Innovation Corridor. Bays West and the Balmain Peninsula may also use this bridge to walk or cycle to the Eastern Harbour CBD.

A potential bridge from Rozelle Bay to Glebe Point Road Bridge has further potential to activate the Glebe Foreshore, broaden The Bays Metro Station catchment and unlock access for a greater catchment of the Inner West.

The Sydney Fish Market Redevelopment will revitalise Blackwattle Bay creating a new destination along the Glebe Foreshore and create additional public open space. As of August 2022, further plans to redevelop Blackwattle Bay are under consideration to deliver a mixed-use precinct along the foreshore and a waterfront promenade extending to Woolloomooloo. This will likely include a new ferry service that connects to the Eastern Harbour CBD.

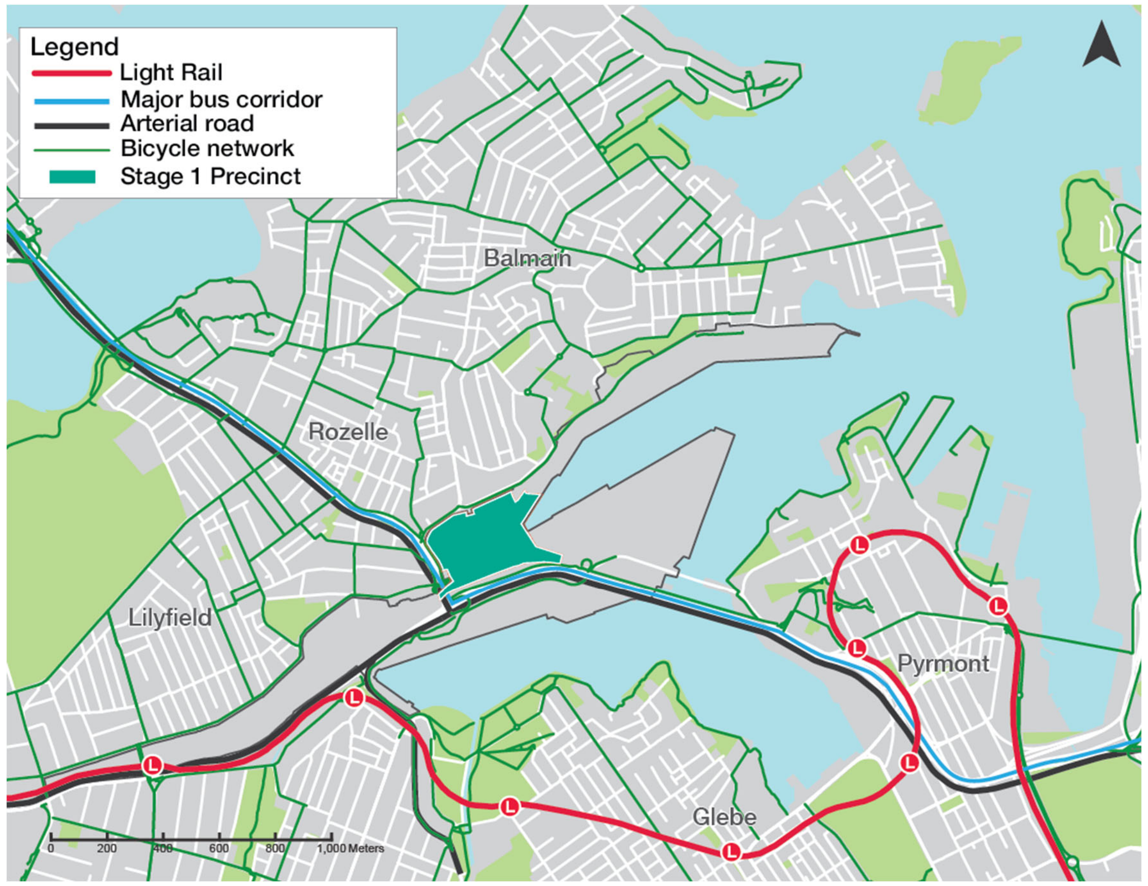


Figure 21: Transport network serving Stage 1

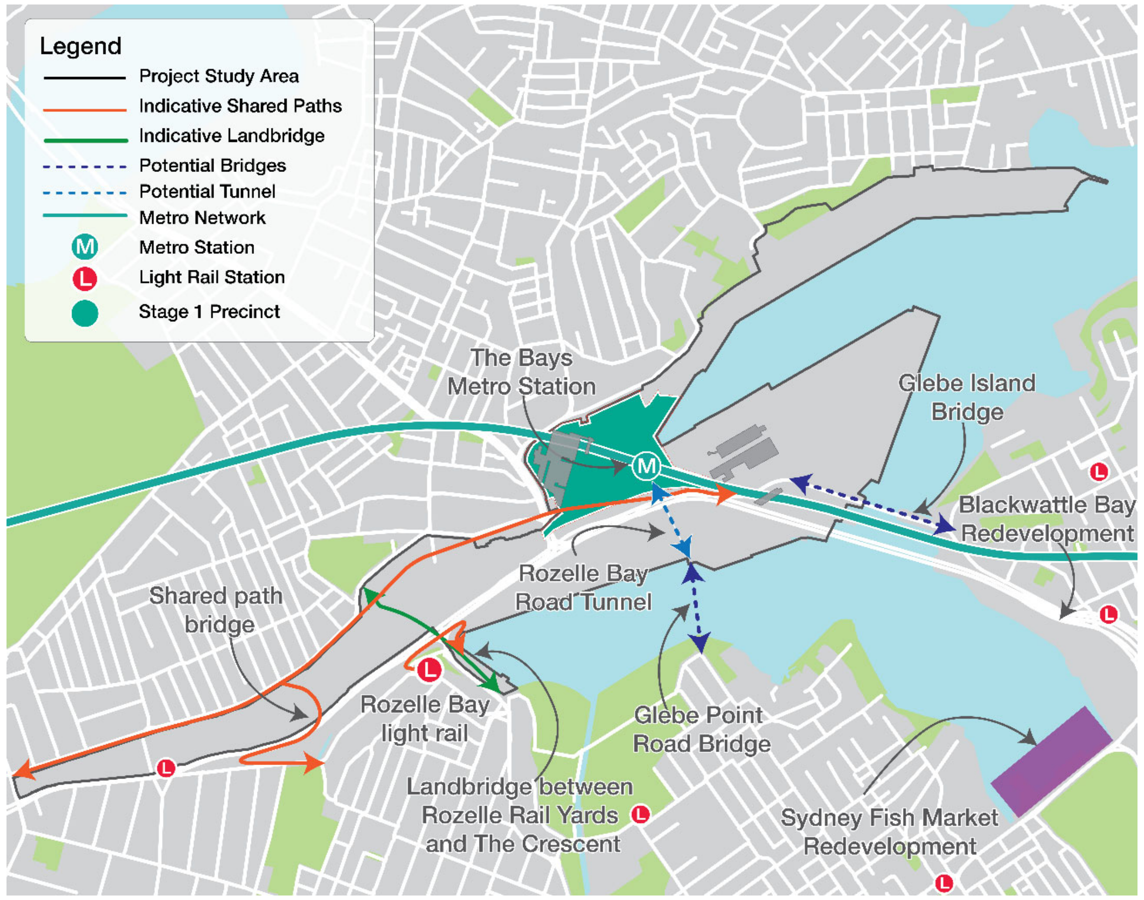


Figure 22: Future infrastructure schemes around Bays West

3.4 Public transport network

The existing public transport connections in the vicinity of Stage 1 are shown in Figure 23. A major bus corridor along Victoria Road passes through the site, noting the precinct sits at a separate level to this arterial route. Several bus services also use Robert Street and Mullens Street to service the Balmain Peninsula. Light rail services border portions of the precinct, however, due to City West Link accessing this service is circuitous and inconvenient. There are no public transport services within Stage 1 due to existing restricted public access.

Figure 23: Existing public transport network near Stage 1

3.4.1 Train and Sydney Metro

A connection to the Sydney Trains network is not currently provided within walking distance of Stage 1. The closest station is Town Hall, which is approximately 3.5 kilometres away. Given this distance, other public transport services or private vehicle would currently need to be used to access the rail network.

The Bays Metro Station is currently being constructed as part of Sydney Metro West and is expected to commence operation in 2030. This service will provide a high frequency, fast rail connection that is expected to move up to 40,000 passengers an hour in each direction. The proposed Sydney Metro West alignment is shown in Figure 24, outlining a 24-kilometre line connecting Parramatta and the Sydney CBD. The delivery of Sydney Metro West will boost the public transport accessibility significantly, enabling people to travel directly to a range of locations in the east-west direction. With an interchange in the Sydney CBD, major employment and retail hubs, including North Sydney and suburbs on the T3 Bankstown Line, will be accessible within 30 minutes.

The Bays Metro Station will be located in Stage 1 and be within walking distance of all other sub-precincts.

Figure 24: Sydney Metro West alignment (Source: Sydney Metro, 2022)

3.4.2 Light rail

The L1 Dulwich Hill Line is located adjacent to Bays West. This line extends for approximately 13 kilometres and services 23 stops in Dulwich Hill, Lewisham, Leichhardt, Lilyfield, Annandale, Glebe, Pyrmont, Haymarket and Sydney CBD. Services typically run at a frequency of 4 services per hour in each direction.

The closest stop to Stage 1 is located at Rozelle Bay, which despite being less than 600m from Stage 1, is an approximate 3 kilometre walk from Stage 1 due to the lack of direct pedestrian links. Walking and cycling connections created by the Rozelle Interchange will improve this connection.

3.4.3 Ferry

There are currently no ferry services connecting to Bays West. An on-demand ferry service connecting Barangaroo, Blackwattle Bay, Pirrama Park and Sydney Fish Markets was trialled in 2019 with a ferry stop provided in Blackwattle Bay. As of August 2022, this service has been discontinued but will be relaunched by TfNSW as part of future on demand ferry services.

3.4.4 Bus

The nearest bus stops are located on Robert Street and Victoria Road, with Victoria Road being a major bus corridor that services buses connecting to the Balmain Peninsula, Parramatta, Inner West, Macquarie Park and the Sydney CBD. On Victoria Road, buses are served by a bus lane in the eastbound direction on weekdays from 06:00-10:00. Safe and direct access to bus stops from Stage 1 is impeded by convoluted pedestrian routes, a lack of pedestrian crossings at signalised intersections and frequent vertical transitions. The key bus routes on Victoria Road and Robert Street are shown in Table 6.

In the future, Stage 1 will include a bus interchange that will service feeder buses to and from The Bays Metro Station. TfNSW estimates that the interchange may be served by 30 buses per hour during peak periods from 2030. The route plans for these buses are still under development and will be confirmed as development of Stage 1 progresses.

Furthermore, in the medium-term, the Greater Sydney Services and Infrastructure Plan (Transport for NSW, 2018) identifies potential public transport improvements to Victoria Road to support growth in the precinct. We are aware TfNSW are in the process of developing a bus network plan for the stage 1 precinct, that would also integrate with the delivery of the Sydney Metro Station..

Table 6: Existing bus routes near Stage 1

Route	Nearest bus stops (both directions)	Peak hour frequency (either direction)
433 - Balmain Gladstone Park to Central Pitt Street	203914 - Victoria Road at Evans Street 203921 – Victoria Road before Maney Street	6
441 - City Art Gallery to Birchgrove via QVB	203932 – Robert Street before Victoria Road 203933 – Robert Street at Crescent Street	3
442 - City QVB to Balmain East Wharf	203932 – Robert Street before Victoria Road 203933 – Robert Street at Crescent Street	14
500X - West Ryde to City Hyde Park	203916 - Victoria Road at Loughlin Street 203920 – Victoria Road at Quirk Street	22
501 - Parramatta to Central Pitt Street via Victoria Road	203916 - Victoria Road at Loughlin Street 203921 – Victoria Road before Maney Street	10
502 - Cabarita Wharf to Drummoyne and City Town Hall	203916 - Victoria Road at Loughlin Street 203921 – Victoria Road before Maney Street	6
503 - City Town Hall to Drummoyne	203916 - Victoria Road at Loughlin Street 203921 – Victoria Road before Maney Street	6
504 - Chiswick to City Domain	203916 - Victoria Road at Loughlin Street 203921 – Victoria Road before Maney Street	8
505 - Woolwich to City Town Hall	203916 - Victoria Road at Loughlin Street 203921 – Victoria Road before Maney Street	2
506 - Macquarie University to City Domain via East Ryde	203916 - Victoria Road at Loughlin Street 203921 – Victoria Road before Maney Street	10
507 - Meadowbank to Gladesville & City Hyde Park	203916 - Victoria Road at Loughlin Street 203921 – Victoria Road before Maney Street	6

3.4.5 Public Transport Accessibility Level

Public Transport Accessibility Level (PTAL) is a metric to measure the level of interaction between land uses and transport services in terms of how well people are served by public transport. Walking times to public transport stops and waiting times for services are used to calculate a Public Transport Accessibility Index (PTAI) which corresponds to a PTAL level. The PTAL analysis generates an accessibility rating which ranges from low accessibility (PTAL of 1) to very high accessibility (PTAL of 6). The existing PTAL of Bays West and the surrounding suburbs is presented on Figure 25.

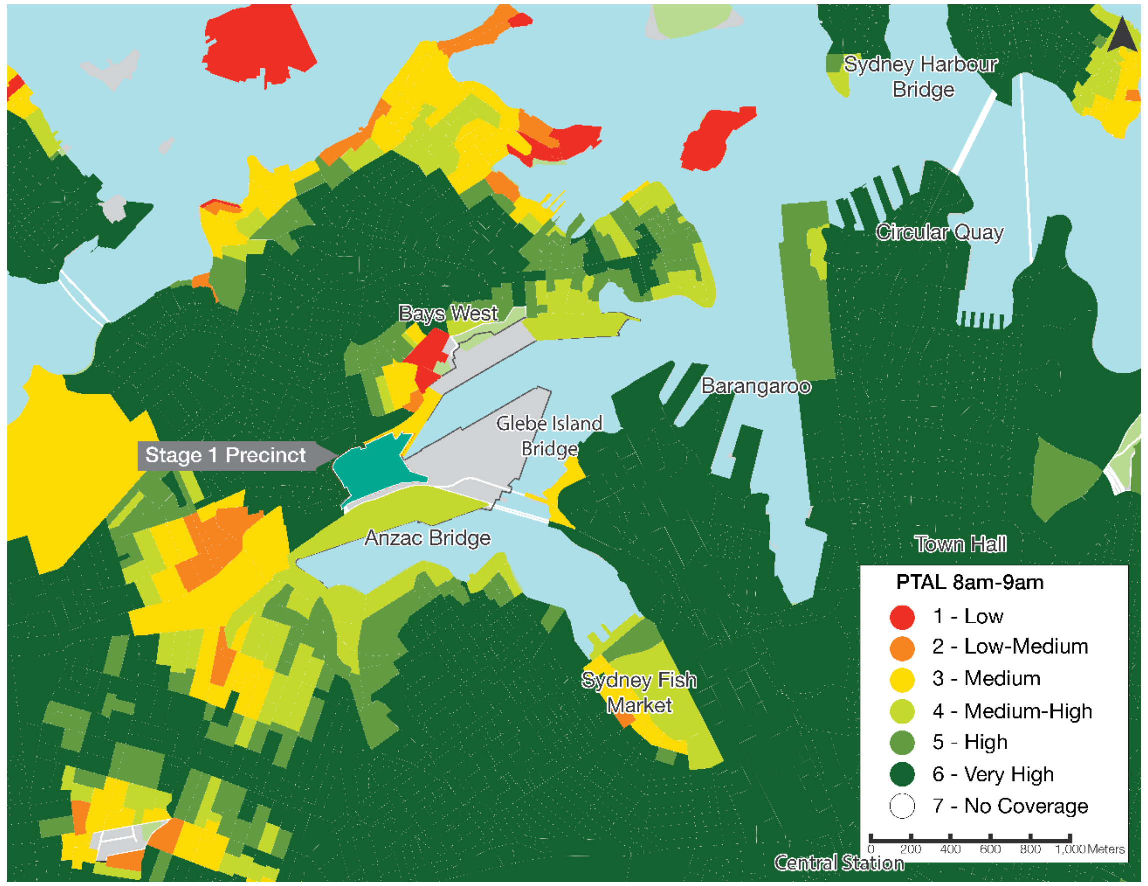


Figure 25: Existing PTAL[1]

Bays West currently has PTALs of 3-5 (Medium to High) in western parts of the precinct as a result of bus services on Robert Street and Victoria Road. These reduce to PTAL 1 (Low) in areas such as Glebe Island that are a longer walk from any existing public transport services. Given that Stage 1 aims to deliver a highly sustainable precinct that prioritises walking, cycling and public transport, Figure 25 provides a useful comparison of Barangaroo which similarly aims to minimise car usage in favour of sustainable modes. Barangaroo generally has a PTAL of 6 (Very High), with the exception of Central Barangaroo. However, this area will likely have a PTAL of 6 once the Barangaroo Metro Station commences operation in 2024. Bays West will need to aim for similar PTALs to achieve its low car vision.

[1] TfNSW Open Data Hub

The future weekday AM peak PTAL for Stage 1 has been calculated for various locations within Stage, which are presented in Figure 26. This analysis considers future planned metro services, which are expected to operate at a frequency of one service every four minutes in each direction, existing bus services on Victoria Road and Robert Street and 30 buses per hour serving the interchange within Stage 1. This analysis is presented in Table 7.

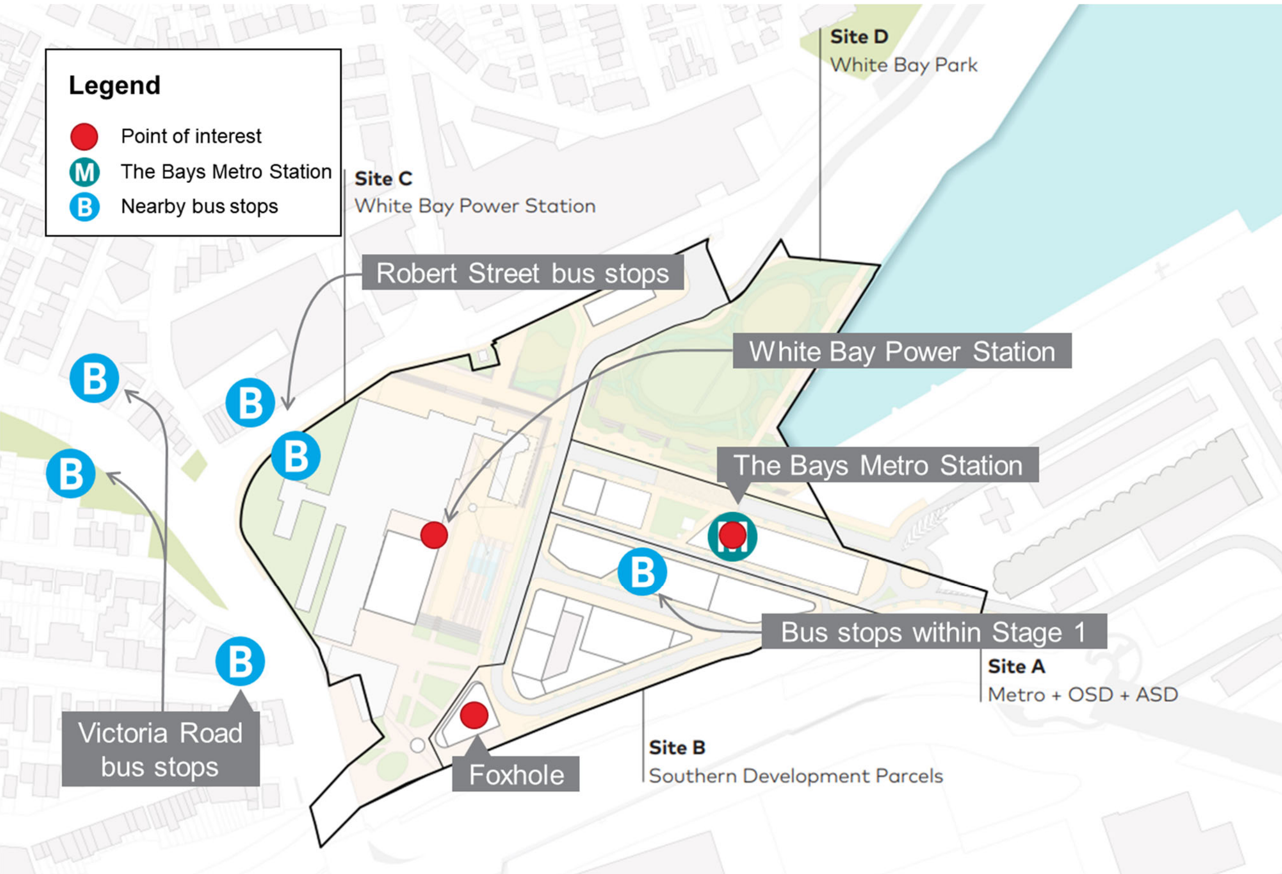


Figure 26: PTAL points of interest for Stage 1

Table 7: Future PTAL of Stage 1

PTAL measures	WBPS	Foxhole	The Bays Metro Station
The Bays Metro Station metro services accessibility index	7.63	6.92	14.75
Bus services accessibility index	32.95	31.02	25.92
PTAI with future services	40.58	37.94	40.68
PTAL with future services	**6 (very high)**	**6 (very high)**	**6 (very high)**

When considering the future planned public transport services for Stage 1, all assessed locations will have a PTAL of 6. Access to public transport services will be complemented by improved connections to Robert Street through the Stage 1 street network and to Victoria Road due to improvements associated with other infrastructure schemes that address the level change between Stage 1 and this arterial route.

Therefore, Stage 1 is expected to be well-served by future public transport services. Given the similarities to PTAL at Barangaroo, a highly sustainable mode share for the precinct is considered achievable. Further details on additional measures to achieve a highly sustainable mode share for the precinct are presented in Section 6.

3.5 Walking and cycling network

The precinct's current walking and cycling network is shaped by the industrial land uses that restrict public access. Around the perimeter of Stage 1, there is a shared path on Victoria Road and Anzac Bridge that connects to the regional cycling network. Footpaths are provided on almost all public streets surrounding the precinct, however, paths adjacent to arterial routes do not favour walking and cycling due to high volumes of traffic, lack of shade and amenity. Within Stage 1, the network has fundamental barriers to safe and convenient travel. Heavy vehicle movements associated with the ports and maritime uses create unpleasant walking and cycling conditions. Footpaths are provided in some locations but these generally provide minimal amenity. Due to the industrial nature of the existing land use, there is currently no public access or connectivity into Stage 1.

As part of the WestConnex Rozelle Interchange and Iron Cove Link project, multiple shared path connections are currently under construction to enhance cycling and walking. The Crescent overpass modification includes a walking and cycling green link between the Rozelle Rail Yards and the western side of The Crescent, offering a direct link to the Rozelle Bay light rail stop. Furthermore, the project also includes a shared use path bridge between the Rozelle Rail Yards and the eastern side of The Crescent. A shared path between the Rozelle Rail Yards and Anzac Bridge will also be provided, including an underpass under Victoria Road.

In the future, potential plans for walking and cycling include the Opera House to Parramatta Pathway and the reopening of the Glebe Island Bridge, both of which are currently being investigated by the NSW Government. The Opera House to Parramatta Pathway would provide a 91-kilometre continuous active transport pathway connecting the Sydney CBD, Bays West and Greater Parramatta. The reopening of the Glebe Island Bridge would provide an opportunity for a direct and safe active transport connection to Pyrmont and the Sydney CBD. The Glebe Island Bridge would provide an at-grade and amenable alternative to the Anzac Bridge.

The existing and proposed cycling and walking connections in and around Stage 1 are shown in Figure 27 and Figure 28.

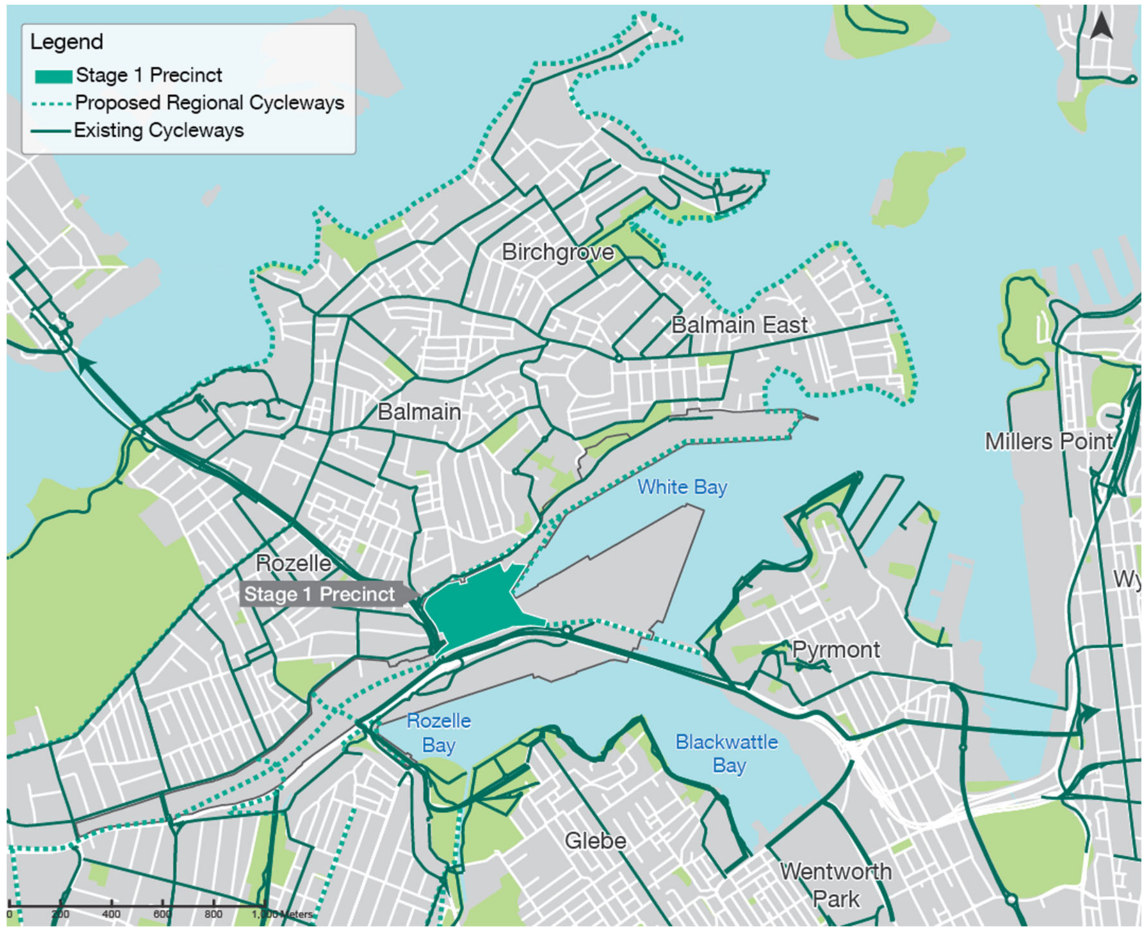


Figure 27: Existing and proposed cycling connections

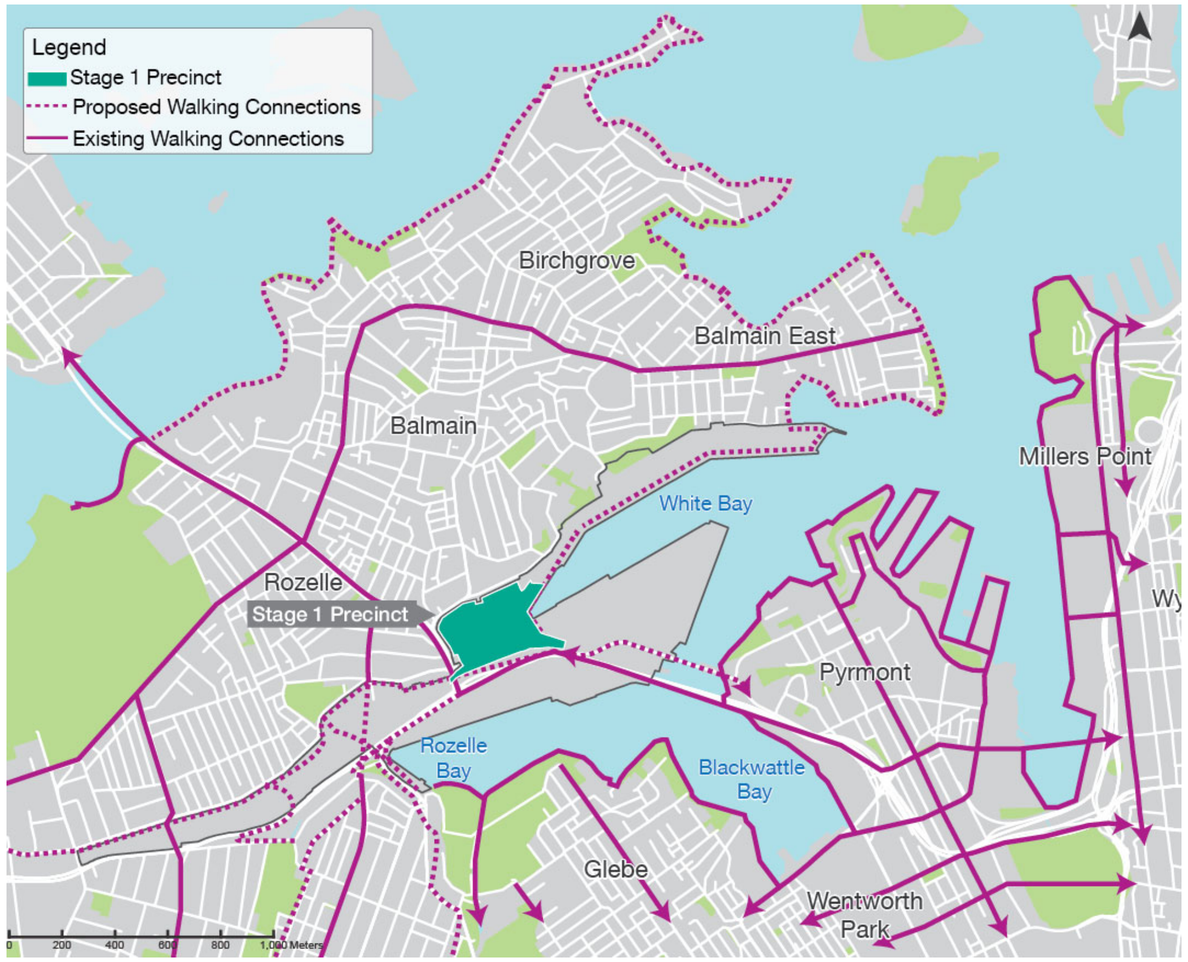


Figure 28: Existing and proposed walking connections

3.6 Traffic network

As shown in Figure 29, Stage 1 is located near major arterial roads including Victoria Road, The Crescent, City West Link and Anzac Bridge. These roads provide direct connections to the Sydney CBD, Inner West, Eastern Suburbs and Northern Sydney and are also part of the tertiary freight network.

Internal roads within the precinct include James Craig Road, Solomons Way, Sommerville Road and Port Access Road. James Craig Road is the only public road within the precinct acting as the main access road for the Working Harbour before adjoining Sommerville Road and Solomons Way in Glebe Island. The roads within Glebe Island provide access to industrial buildings and the Glebe Island Silos. Port Access Road connects to Glebe Island and is the link used by all passenger traffic accessing the WBCT when a cruise ship is berthed. A secondary access to the WBCT is also provided via Robert Street and controlled via boom gate, which is limited for authorised PANSW vehicle use, tenants, servicing and providore trucks for the WBCT and shorter ad-hoc or licenced uses at White Bay.

Light and heavy vehicles accessing the precinct today are generated by the existing industrial, maritime and port functions. In addition, traffic is also generated by the WBCT on cruise days and when special events are held at the terminal. As part of the conditions of approval for the WBCT, public traffic accessing the WBCT is not permitted to enter via Robert Street and is required to access the site via James Craig Road. This requirement is expected to continue generating traffic through Stage 1 on cruise and special event days.

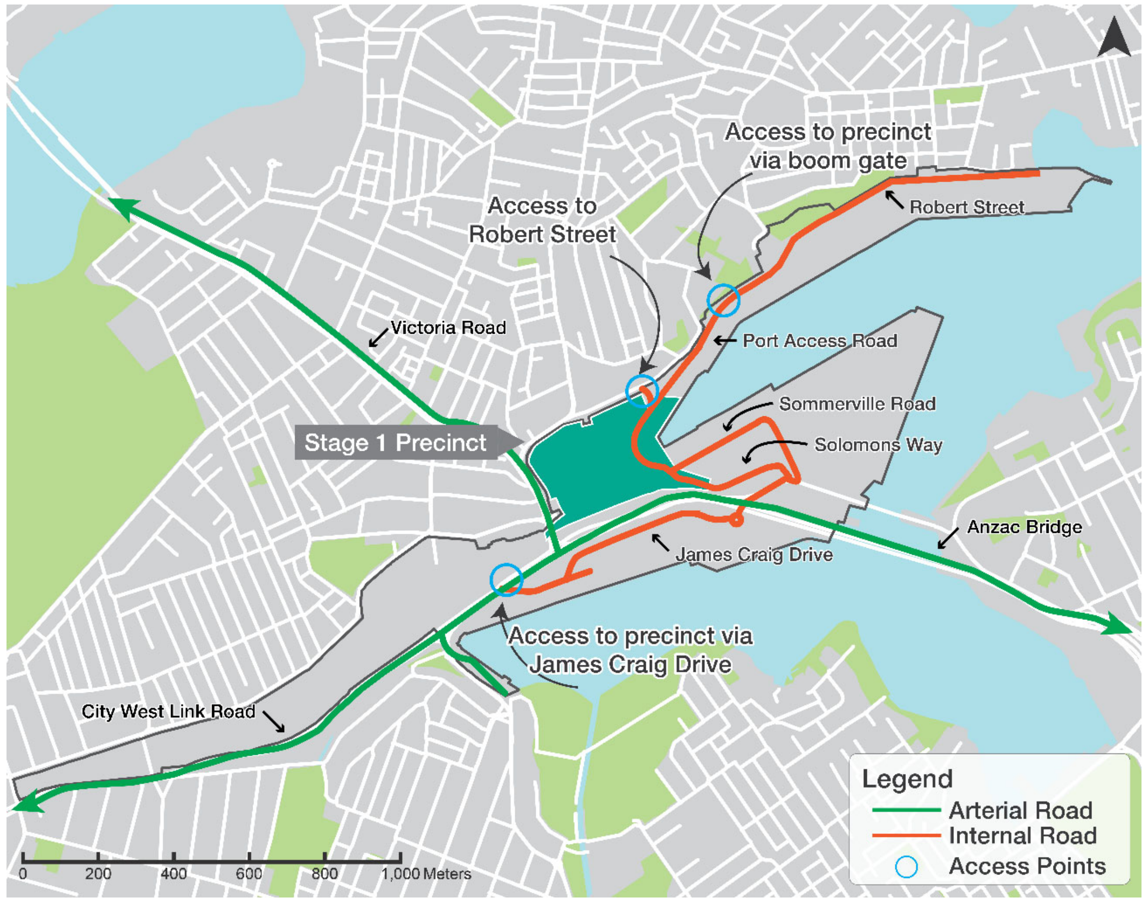


Figure 29: Existing Traffic network around and within Bays West

As discussed in Section 3.3.1, Stage 1 is located near several road infrastructure projects. These include a new connection to the wider Sydney motorway network via the WestConnex Rozelle Interchange and Iron Cove Link, which is currently under construction and is expected to commence operation in 2023. The Rozelle Interchange will link to the arterial road network at City West Link, west of The Crescent. The Furthermore, the Western Harbour Tunnel is currently under construction and would connect to the Warringah Freeway in North Sydney providing a new crossing under Sydney Harbour. The Western Harbour Tunnel is expected to commence operation in 2030 and will connect to City West Link. The broader perspective of these infrastructure schemes in relation to Bays West are presented on Figure 30. The Robert Street / Mullens Street intersection will also be upgraded to a signalised intersection to manage traffic flows and enable improved pedestrian accessibility to Stage 1.

These future infrastructure projects are expected to redistribute traffic patterns in the area and influence travel patterns across the wider Sydney motorway network via the Rozelle Interchange portals on City West Link and Victoria Road near the Iron Cove Bridge. At a broader scale, these projects are expected to reduce traffic on other Sydney Harbour crossings including the Sydney Harbour Bridge, Sydney Harbour Tunnel, Anzac Bridge and Western Distributor. The impact of these schemes on the road network within the study area has been considered in Section 5.

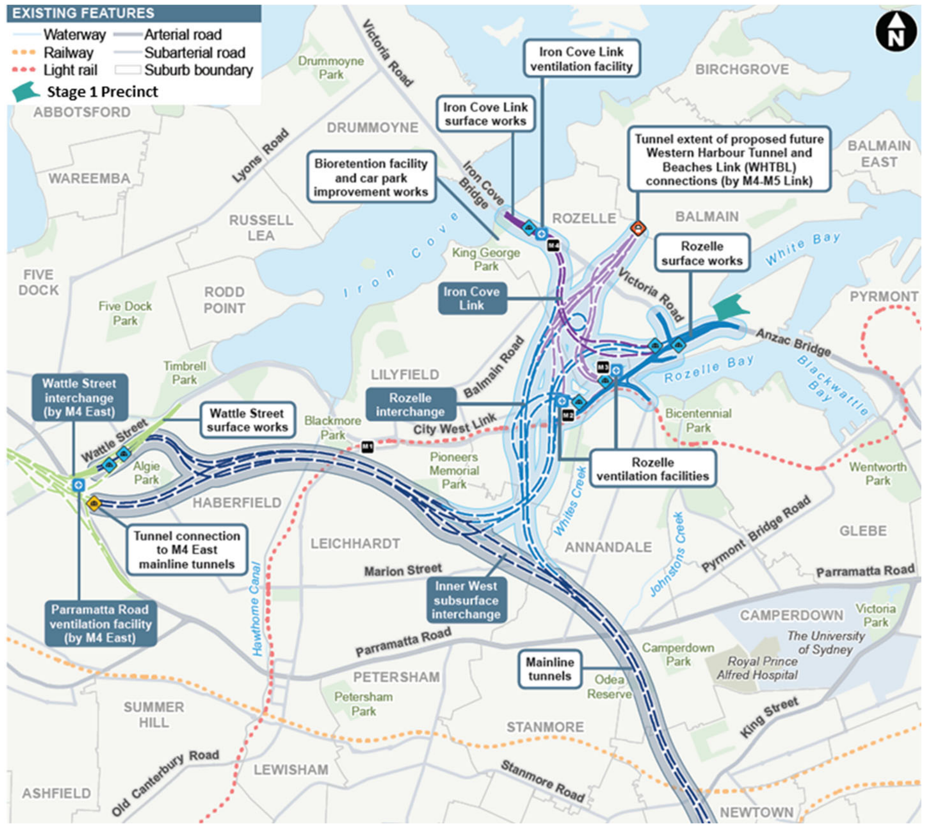


Figure 30: Major road infrastructure schemes surrounding Bays West (Source: WestConnex M4-M5 Link Environmental Impact Statement)

3.7 Ports and Maritime uses

Bays West is currently home to a range of different ports and maritime uses managed by PANSW. Many of these uses are integral to the Greater Sydney Metropolitan area and their operations are planned to continue far into the future. The purpose of these uses varies depending on the location within the precinct. The Working Harbour is located in Rozelle Bay (land owned by TfNSW), which is mainly used for recreational boating activities along with NSW Government patrol vessels. Glebe Island houses silos that are considered heritage items. These are currently being used as a bulk cement terminal. Sydney Harbour's only remaining deep water port is also located on Glebe Island and is currently used to import concrete and gypsum to support infrastructure and construction projects across Sydney.

White Bay contains a range of uses including recreational boating, fuelling of Sydney Ferries, importation, storage and processing of resources, short-term vessel support, a number of berths and Bailey's marine refuelling depot and dry storage. However, the key use is the WBCT which is mainly focused on regional cruises using ships that can pass under the Sydney Harbour Bridge. As discussed in Section 3.6, due the volume of passenger traffic generated by this terminal when a cruise ship is berthed, planning conditions have been placed on its operation to manage impacts on the surrounding road network. These conditions state that all passenger and visitor traffic generated by the WBCT must use the James Craig Road access point. All this traffic will therefore continue to be required to pass through Rozelle Bay, Glebe Island and Stage 1 to access the WBCT before returning along the same route.

PANSW has undertaken a study to develop forecasts for the expected traffic generation of land uses within Bays West. As part of this study, surveys of existing traffic volumes within the precinct were undertaken and are summarised in Table 8 and Table 9. It should be noted that these surveys were undertaken in 2019, prior to the impacts of COVID-19.

[2] Concrete Batching Plant and Aggregate Holding Facility, IPC Presentation, Hanson, May 2021

Table 8: Bays West bidirectional traffic counts 2019 – Non-cruise day (Source: PANSW, 2019)

Count location	Light Vehicle %	Heavy Vehicle %	Daily average		Daily peak		Peak hour	
			Light	Heavy	Light	Heavy	Light	Heavy
James Craig Road	80%	20%	2160	540	3520	880	400	100
Sommerville Road	60%	40%	588	392	1200	800	180	120
Port Access Road North	85%	15%	153	27	825	145	136	24
Robert Street North	85%	15%	425	75	740	130	102	18
Percentage of heavy vehicles travelling through Stage 1*			**5%**		**17%**		**24%**	

Table 9: Bays West bidirectional traffic counts 2019 – Cruise day (Source: PANSW, 2019)

Count location	Light Vehicle %	Heavy Vehicle %	Daily average		Daily peak		Peak hour	
			Light	Heavy	Light	Heavy	Light	Heavy
James Craig Road	75%	25%	3300	1100	4725	1575	675	225
Sommerville Road	70%	30%	1820	780	3010	1290	560	240
Port Access Road North	90%	10%	1710	190	3150	350	684	76
Robert Street North	90%	10%	774	86	1170	130	126	14
Percentage of heavy vehicles travelling through Stage 1*			**17%**		**22%**		**34%**	

* Based on the portion of heavy vehicles travelling through Port Access Road North from James Craig Road

3.7.1 Future ports and maritime uses

Along with existing uses, there are a number of new uses on Glebe Island which have received planning consents in recent years:

- **Hanson's Concrete Batching Plant** – This new plant will form a critical part of Hanson's concrete supply network. Due to aggregate being delivered to the plant by ship, this plant will remove 65,000 trucks per year from Sydney's road network[2]. By 2030, PANSW forecasts indicated that the plant would generate 400 daily truck movements with 30 of these occurring during the road network peak hours.
- **Multi-User Facility –** This facility is approved but construction is yet to commence. It is designed to serve Sydney's growing demand for construction materials. Located adjacent to Berths 1 and 2 the facility is designed to transfer material off ships and into the storage building via conveyors before loading onto trucks. The processing of each ship is estimated to take approximately 1,500 trucks off Sydney's roads.[3] By 2030, PANSW forecasts indicated that the facility would generate 1,200 daily truck movements with 50 of these occurring during the road network peak hours.

In addition to these uses, PANSW is undertaking a Ports Integration and Innovation Plan for all land they currently own within Bays West which seeks to understand how ongoing uses can be integrated with future development plans. This study is ongoing; however, its outcomes may influence the planning for future stages of Bays West.

[3] https://www.portauthoritynsw.com.au/projects-planning/projects/multi-user-facility-glebe-island/

4. The Draft Stage 1 Master Plan and Rezoning Proposal

As part of developing the Bays West Stage 1 Rezoning Proposal, the land uses and street hierarchy proposed as part of the Exhibited Draft Stage 1 Master Plan (discussed in Section 2.4) were refined in consultation with key stakeholders into the Revised Draft Stage 1 Master Plan and Proof of Concept, referred to throughout as the Revised Master Plan.

This section summarises the finalised master plan for the rezoning package including land use, activities, and the transport network. It outlines how the NSW Movement and Place Framework has been used to set a transport vision and develop a sustainable, efficient, and connected transport network.

4.1 Revised Draft Stage 1 Master Plan

The Revised Master Plan will provide for a healthy, active and vibrant precinct, opening access to the foreshore and connection with Sydney Harbour, with a foreshore park, complimented by a rich mix of land use including culture, creative, housing, commercial and retail. The precinct will be activated with different uses and travel happening throughout the day, and public domain and dedicated walking and cycling links will connect the community.

The Revised Master Plan has been developed in four parts, presented on Figure 31:

- E2 - Commercial core delivered around the Sydney Metro Station
- MU1 - Mixed use development in the Southern Block
- SP1 - Special Activities associated with the restoration of the White Bay Power Station
- RE1 - Public Recreation with a Foreshore Park.

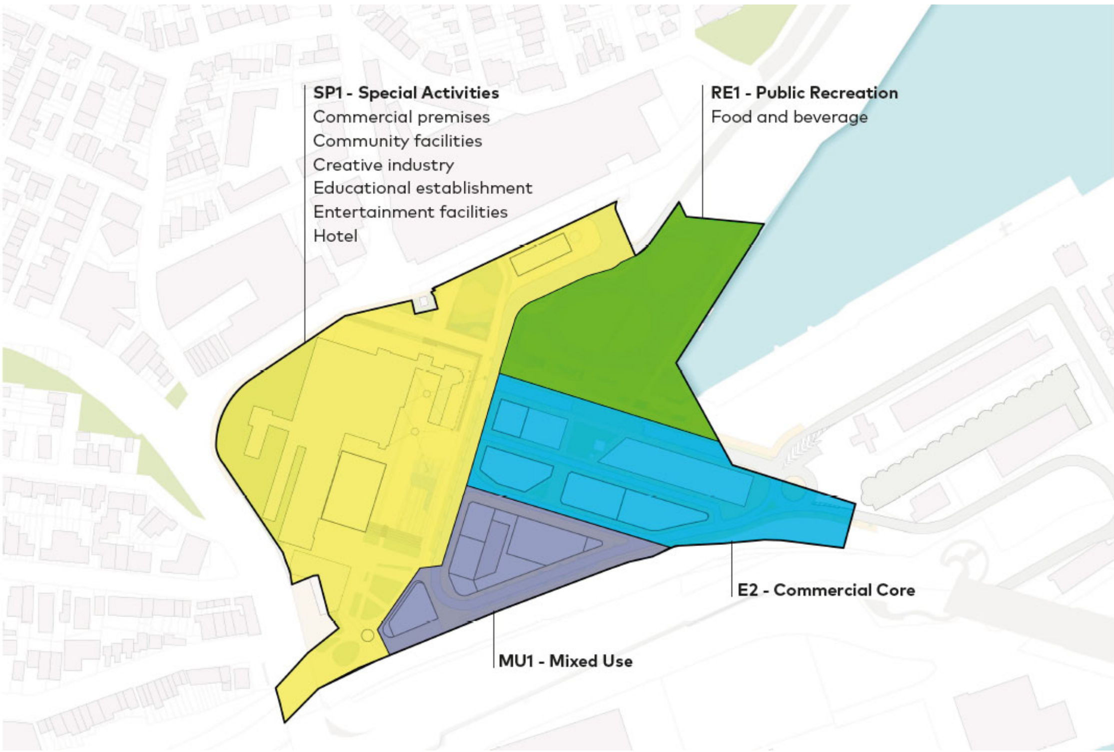


Figure 31: Revised Master Plan

4.1.1 Proposed yields

The Revised Master Plan is broadly consistent with the Exhibited Draft Master Plan containing a mix of residential, commercial office, retail and community space, although the Revised Master Plan includes a slight reduction in commercial gross floor area. The retail typology will provide a local function including uses such as a neighbourhood supermarket, food and drink, café and restaurant, gym and medical centre. The yields planned to be delivered within the Revised Master Plan are presented in Table 10.

Table 10: Revised Master Plan land uses and yields

Land use	Gross Floor Area (m^2)
Residential	23,923
Commercial	70,998
Retail	4,718
Community	3,000
Total	**102,639**

Furthermore, if the ISS location changes, the alternative development is expected to be food and drink premises. If this additional land use occurs, further assessment would be undertaken in later stages of the project.

4.1.2 Future stages

This TMAP focuses on Stage 1 of the precinct. However, it is important to understand the potential transport impact and need for the whole of Bays West. For this assessment to be holistic the future phases of Bays West are also considered.

Though not complete, initial concepts have been developed for Stages 2 and 3 of the precinct which will likely be delivered towards 2040 and beyond. Figure 32 outlines Stage 2 (Rozelle Bay) and Stage 3 (Glebe Island). Development timing for the Robert Street sub-precinct will be determined at a later date.

Future stages may include Educational Institutes such as a primary school or Hotel, these have uses will require further transport and traffic investigation when further information is available.

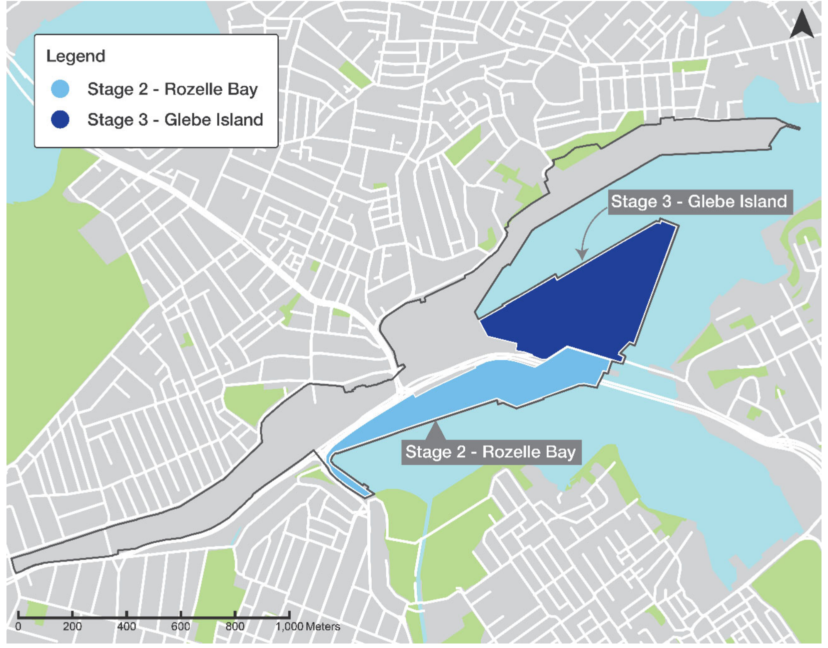


Figure 32: Bays West Stages 2 and 3

Table 11 presents the potential yields for Stages 2 and 3 which were derived from work undertaken by Terroir and Urban Growth Development Corporation to support previous planning for Bays West. It should be noted that once Terroir's land use estimates for Stage 1 were refined to produce the Revised Master Plan there was significant reduction in use and this could also be expected for future stages.

Table 11: Potential Stage 2 and 3 land uses and yields (Source: *Terroir Bays West Strategic Masterplan Reference Scheme Options – Yield Studies*, September 2021)

Land use	Stage 2 GFA (m²)	Stage 3 GFA (m²)
Residential	87,120	209,757
Commercial	101,361	233,647
Retail	2,073	760
Community	4,800	3,800
Working harbour	28,725	0
Ports	0	60,000
Total	**224,079**	**507,964**

Land uses and yields presented in this section are preliminary only and subject to change. These will be finalised in subsequent rezoning packages and state significant development applications for each stage.

4.2 Embedding the NSW Movement and Place Framework

Movement and Place is a cross-disciplinary, 'place-based' approach to the planning, design, delivery, and operation of transport networks. It recognises the network of public spaces formed by roads and streets and the spaces they adjoin and impact. Movement and Place establishes a collaborative, iterative process that can guide consultation, analysis, decision making, and evaluation throughout the life cycle of a plan or project.

Adopted as part of Future Transport 2056 in 2018, a Movement and Place approach to planning aims to create successful and well-connected places that people want to spend time in. Well-designed places create activity and make our urban environments healthy, attractive, resilient, and equitable.

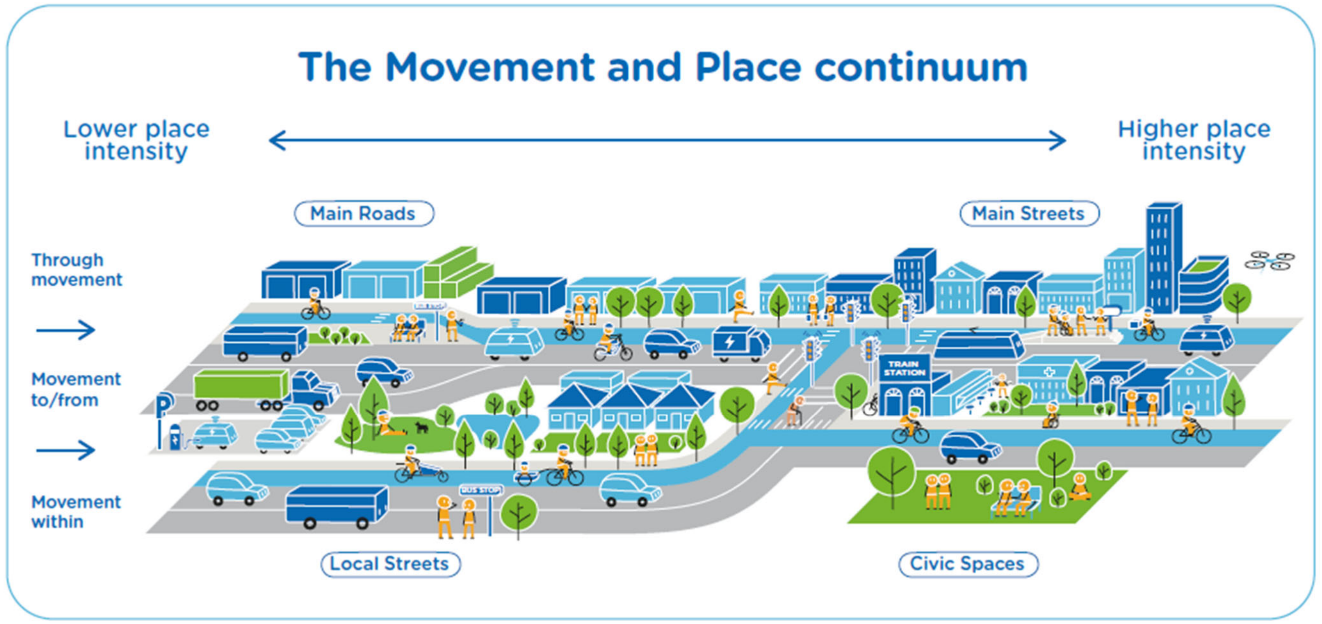


Figure 33: Movement and Place continuum (Source: Future Transport 2056)

A 'place-based' approach has been embedded into the planning and design of Bays West from its inception by DPE through the development of the Bays West Place Strategy, PBTS and Exhibited Draft Master Plan. This approach has continued with the development of the Bays West Stage 1 Rezoning Proposal and Revised Master Plan.

To better embed the approach, the six steps outlined in the Movement and Place Practitioners Guide have been used to guide the development of the proposed transport network. This approach is presented in Figure 34.

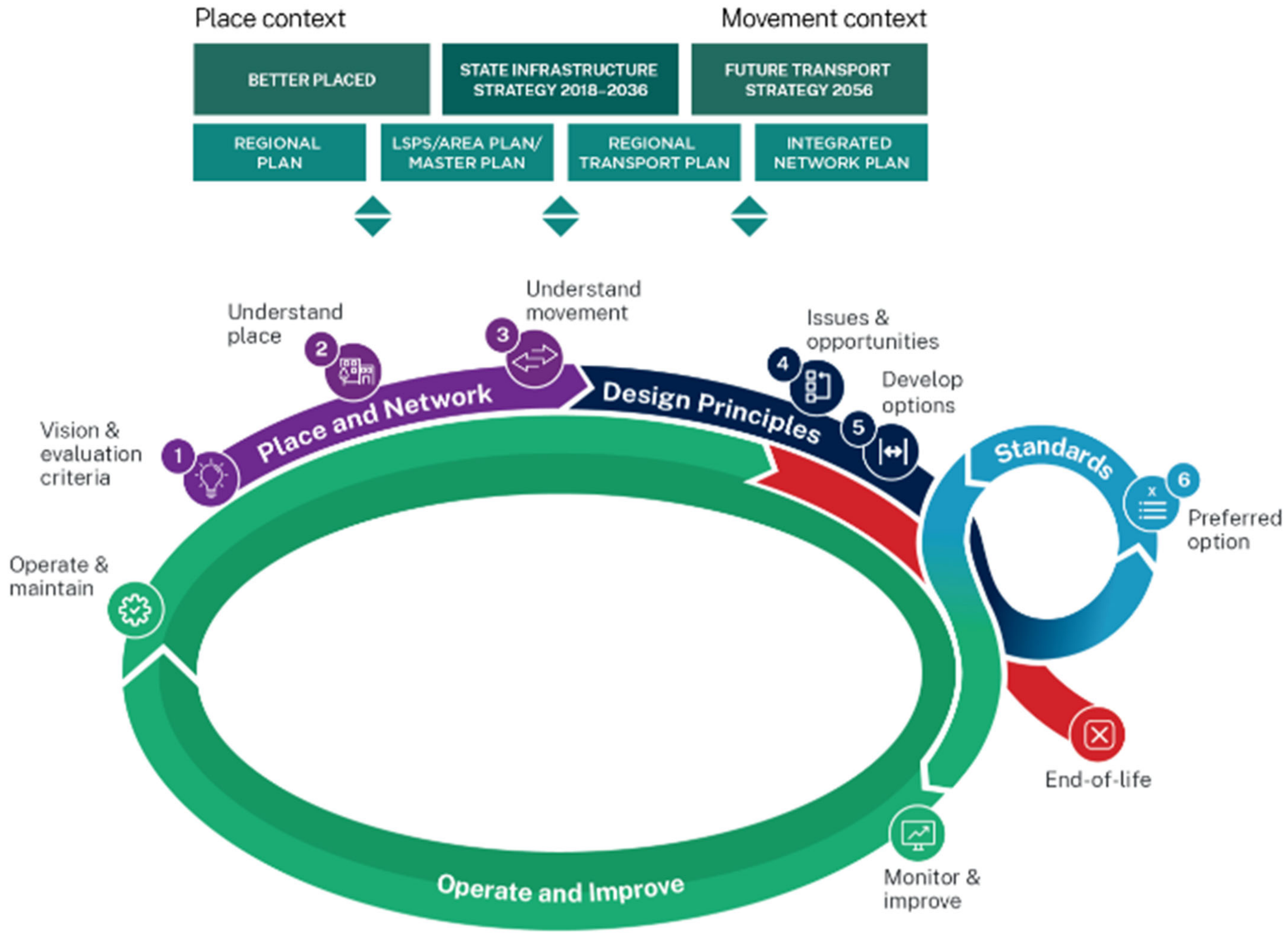


Figure 34: TfNSW Movement and Place process

4.3 An aspirational transport outcome

The successful integration of Bays West into the Sydney transport network is fundamental to achieving the vision set out in the Bays West Place Strategy.

Bays West sets an ambitious goal of 95% travel by sustainable modes, including public transport, walking, cycling or other emerging modes such as micro-mobility (excluding cruise terminal, port and working harbour traffic). This goal is necessary due to the existing transport and access constraints associated with the peninsula, traffic congestion on the surrounding road network and the vision to deliver a zero-emission zone that unlocks future development to 2040 and beyond. The precinct presents a unique opportunity, due to the government commitment to deliver a new Sydney Metro Station and its location on the edge of the Sydney CBD, to deliver a truly aspirational approach to transport and access.

Using learnings from similar urban regeneration projects within Sydney such as Barangaroo, a precinct achieving around 85% sustainable mode share, as well as global examples such as Canary Wharf and Battersea Power Station that have had success in delivering highly sustainable precincts, will help bridge the gap between aspirations and reality including:

- People can and will adjust their travel behaviours to the transport infrastructure or service that is available or not in the case of private vehicle.
- Large urban precincts can be delivered and operated without private vehicle being the dominant mode of travel.
- Appropriate density and land use are key to delivering new public transport services and infrastructure investment.
- Embedding walking and cycling networks and infrastructure into precincts is critical for people to embrace active travel.
- Reducing the supply of car parking, or the capacity of the road network, has a significant impact on private vehicle mode share in precincts.

Planning and design for the transport network in the Stage 1 seeks to achieve its sustainable mode share by implementing the following:

- An integrated, connected, and high frequency public transport network including metro and bus services within the precinct.
- A dedicated and segregated walking and cycling network, connected to the wider regional routes within the Eastern Harbour City.
- Reduced private vehicle usage, through maximum parking rates, design of infrastructure and the typology of land uses.
- Consolidated freight and servicing to support the efficient movement of goods, with a reduction in associated traffic.
- Climate positive design, delivering green and amenable public domain including roads, streets and civic spaces.
- Working with PANSW and the cruise industry to deliver travel demand management options to help reduce traffic associated with cruise ships.

This vision and sustainable mode share target have been tested and validated through this TMAP to consider the overall feasibility of the proposed development and supporting transport network. This includes transport modelling that considers all ports, cruise, maritime and Sydney Metro movements and a cap on private vehicle trips generated by Bays West using 5% and 15% private vehicle mode share. This target is discussed further in Section 5.

4.4 The integrated transport network

The design of the transport network responds to the vision for the precinct and the objectives outlined in the Bays West Place Strategy and PBTS. The proposed network looks to achieve a connected network of different streets (Main and Local) and Civic Spaces that are vibrant, fine grain, permeable and connected. The network responds to the proposed land use and spatial aspects of the present whilst shaping the precinct to be a transit-oriented and pedestrian friendly environment.

The network aims to shape a precinct that will:

- Deliver a low car, low speed transit oriented and pedestrian friendly environment:
- Respond to the Movement and Place hierarchy, with variety of different street types and functions.
- Deliver dedicated bus infrastructure and optimal opportunities for bus services and access.
- Deliver a transport network, which promotes walking, cycling and public transport use incorporating traffic routes that are for local access rather than regional traffic.
- Balance the proposed development with the ongoing uses of the WBCT and Glebe Island operated by PANSW.
- Connect streets with proposed land uses to create attractive and vibrant public domain.
- Deliver appropriate walking and cycling facilities on each road, street and civic space to cater for its function as a primary, secondary and local link.
- Reduce parking within the precinct, both off-street and on-street.
- Be supported by appropriate travel demand management measures.

The internal road network has resulted in a 'grid-like' structure. A central Main Street with dedicated walking and cycling facilities will provide key connections to gateways at Robert Street and James Craig Road and provide the primary access for metro services and cruise traffic within the precinct. The Main Street gives way to a network of Local Streets and Civic Spaces which embed walking and cycling infrastructure. These lower order roads will act as the doorstep for public transport stops, bicycle parking, access for private vehicles, servicing and resilience in the event of a planned or unplanned incident on the precinct's Main Street.

In developing the emerging street layout, the Movement and Place Practitioners Guide was used to provide a high-level indication of the typology, function, and purpose of each of the proposed streets. This layout is outlined in Figure 35.

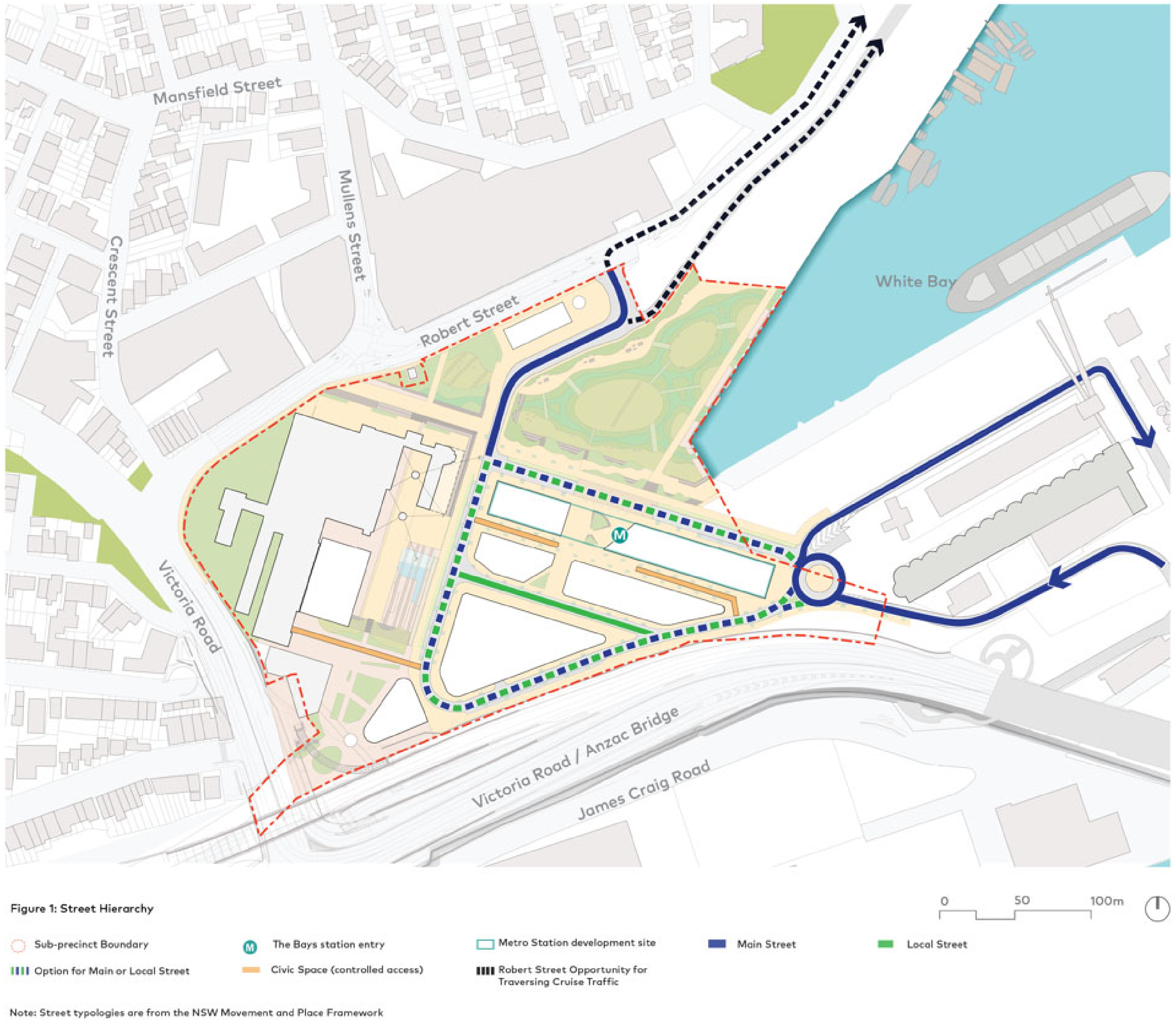


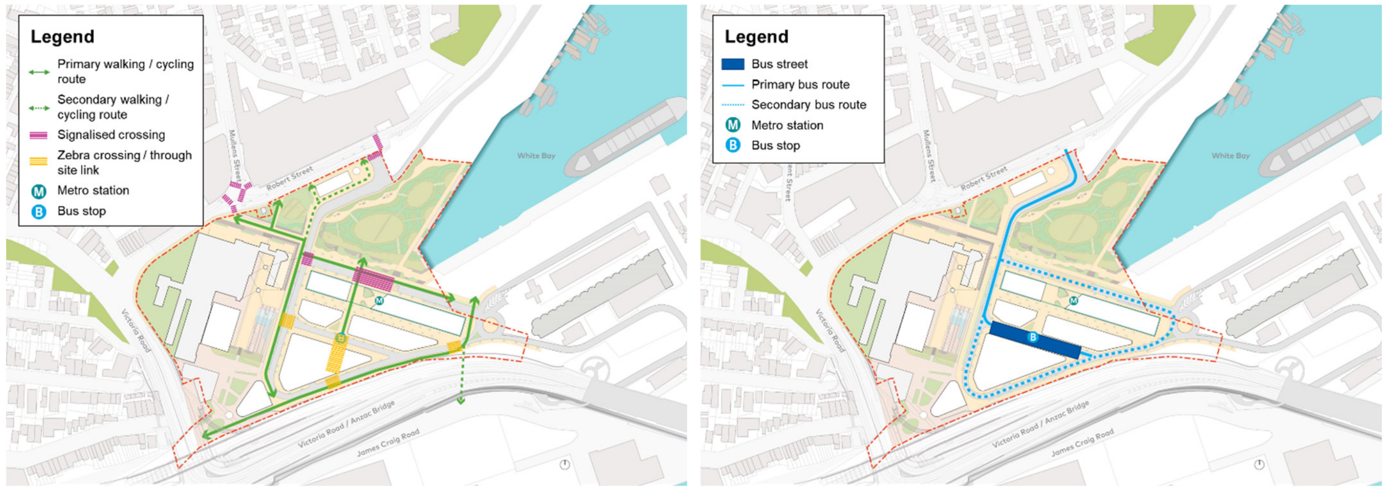
Figure 35: Proposed Stage 1 road network

The network currently shows two dashed links passing through the Robert Street East precinct. The preferred solution for this link will be confirmed in subsequent planning phases when this sub-precinct is rezoned and will require further discussion with key stakeholders.

Sustainable transport choice and access is critical to the success of this network, and walking, cycling and public transport networks have been developed to support the wider transport network, see Figure 36.

Dedicated walking and cycling links will be provided throughout the precinct, connecting to destinations such as the WBPS and The Bays Metro Station, and link with key regional links such as Robert Street, the Rozelle Parklands, and Glebe Island Bridge. Public transport will be linked via a wide, vibrant, and activated north-south Civic Space connecting Sydney Metro and Bus. Priority links will be supported by local footpaths and connections provided on every road and street.

The Bays Metro Station will provide the central focus point for public transport, and support by a central bus interchange that has dedicated space for operations and customers and the flexibility to operate as the precinct is delivered over several stages.



Proposed primary walking and cycling links **Proposed Bus Interchange location and operations**

Figure 36: Proposed walking, cycling and Public Transport Network

4.5 Movement and Place street typologies

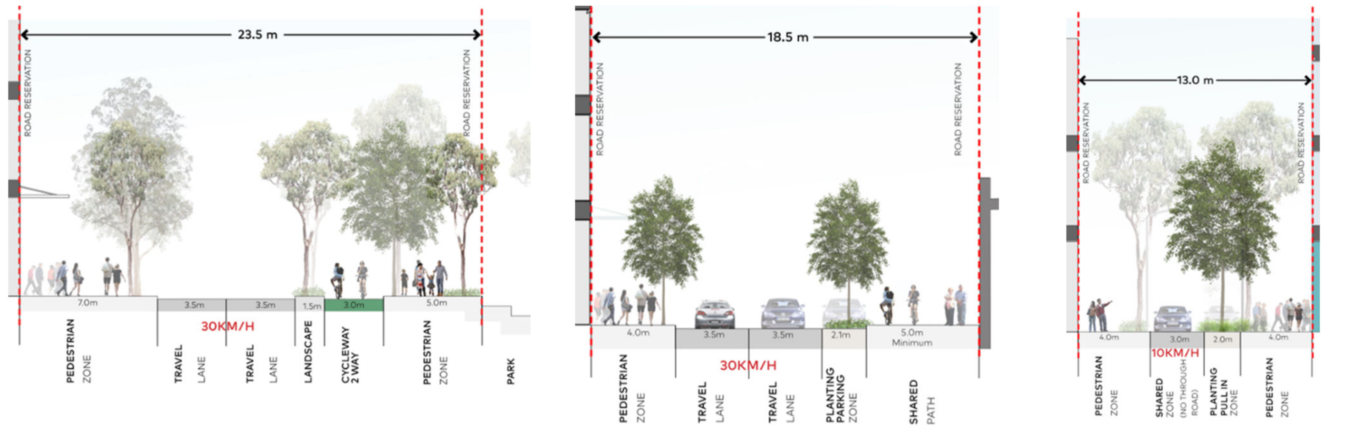
The proposed transport network is comprised of separated but interconnected streets and civic spaces, each with its own character, function, purpose and interfaces. These elements have been integrated with a firm view to achieve the transport aspiration and balance movement and place outcomes. These street typologies, which align with the Movement and Place Framework are outlined in Table 12.

Table 12: Movement and Place Street Typologies

Street	Typology	Function	Purpose
Port Access Road	Main Street	To and from	Access to Cruise Terminal
Robert Street Access	Main Street	To and from	Access to Robert Street
South Metro Street	Civic Space	Within	Servicing lane with priority for walking
Bus Street	Local Street	Within	Public transport interchange with east-west priority

In responding to the network characteristics, typology and purpose, indicative cross-sections have been developed (see Figure 37, refer to Master Plan for cross-sections for specific streets). These aim to create:

- A low car, low speed transit oriented and pedestrian friendly environment
- A variety of different road and street types and functions that respond to the Movement and Place hierarchy
- Carriageway widths scaled appropriately to the function of the network
- Green carriageways and public domain, with tree canopy and sensitive landscaping on all streets and civic spaces
- Dedicated bus infrastructure and optimal opportunities for bus services and access
- Appropriate walking and cycling facilities on each road, street and civic space to cater to its function as a primary, secondary or local link. These facilities are guided by the NSW Walking Guidelines and Cycling Toolkit.



Main Street (indicative) **Local Street (indicative)** **Civic Space (indicative)**

Figure 37: Indicative street cross-sections for street types (refer to Master Plan for cross-sections for specific streets)

It is noted that these figures are indicative only and will be subject to refinement during future planning and delivery phases for the precinct.

5. Transport Modelling

Transport modelling has been used to assess the impact on the future transport network by various modes. This section outlines the development of the person and vehicle trip generation, mode share and trip distribution of Stage 1. This process has also been applied the potential yields in Stages 2 and 3. The traffic modelling approach and baseline traffic modelling results without Stage 1 are also presented. This assessment has assumed all trips generated would travel to and from the precinct as a robust case, we note given the mixed-use nature of Bays West a proportion of trips are likely to be internalised.

5.1 Transport Modelling framework

The transport modelling framework included a multi-tiered approach using strategic and network intersection modelling. Strategic modelling was used for future demand forecasting, trip distribution and mode choice whereas network intersection modelling was used to assess road network performance of several intersections. The tools used for the transport modelling are shown in Figure 38 and include:

- Sydney Motorway Planning Model (SMPM): used to estimate future road network demands with consideration of committed future major motorway projects including WestConnex, Western Harbour Tunnel, Sydney Gateway and the M6 Motorway.
- Public Transport Project Model (PTPM): used to estimate future public transport passenger demands, trip distribution and mode choice based on population and employment forecasts.
- SIDRA Intersection 9.0: used to assess road network performance and impacts with and without the precinct demands.

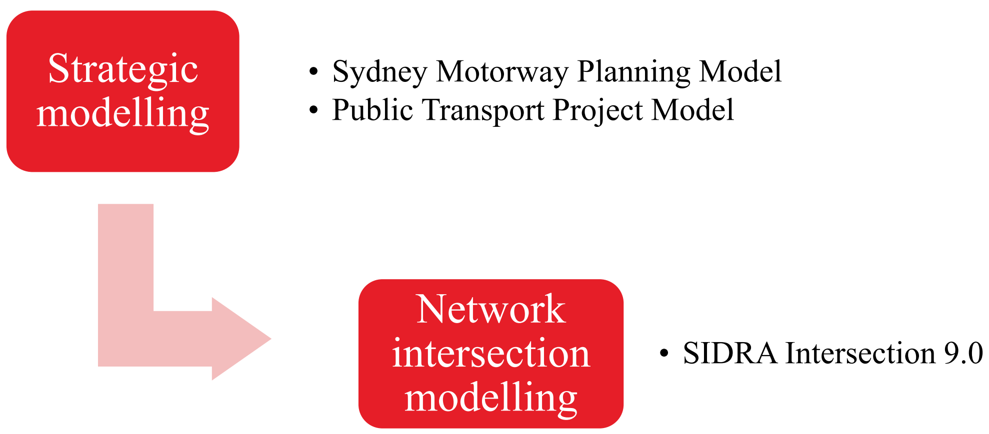


Figure 38: Transport modelling framework

5.2 Person trip generation

The development of person trip generation rates for the land uses in Stage 1 was based on TfNSW guidance including the Guide to Traffic Generating Developments (TfNSW, 2002) and updated surveys in the Technical Direction TDT 2013/04a (TfNSW, 2013). Where rates were not directly applicable using TfNSW guidance, alternative sources have also been considered and discussed with TfNSW.

The assumed person trip generation rates for Stage 1 are shown in Table 13. The resulting person trips for Stage 1 using the Revised Master Plan yields are shown in Table 14.

Table 13: Person trip generation rates for Stage 1

Land use	AM peak hour person trip generation rate	PM peak hour person trip generation rate	AM directional split		Source
			In	Out	
Residential[4]	0.66 per unit	0.56 per unit	20%	80%	*RMS TDT 2013/04a*, average of Sydney high-density residential surveys
Commercial	2.1 per 100m^2 GFA	1.6 per 100m^2 GFA	90%	10%	*RMS TDT 2013/04a*, average of Sydney office blocks surveys factored down using information from the *NSW Remote Working Insights* report. This report identified that the proportion of work done remotely in NSW has increased so a reduction factor of 15% was applied.
Retail	4.3 per 100m^2 GFA		50%	50%	*Trip Generation Surveys Small Suburban Shopping Centres Analysis Report* Per the *Guide to Traffic Generating Developments*, a 25% reduction to the trip rate was applied to convert GFLA to GFA and a further 25% reduction was applied to account for linked and multi-purpose trips.
Community	0.67 per 100m^2 GFA		90%	10%	TRICS Database (Cambourne Community Centre, Mere Community Centre, Wolverhampton Community Centre, Swansea Community Centre)

Table 14: Person trip generation for Stage 1

Land use	AM peak hour person trip generation rate	PM peak hour person trip generation rate	AM peak hour person trips			PM peak hour person trips*		
			In	Out	Total	In	Out	Total
Residential	0.66 per unit	0.56 per unit	33	132	**165**	112	28	**140**
Commercial	2.1 per 100m^2 GFA	1.6 per 100m^2 GFA	1358	151	**1509**	112	1009	**1121**
Retail	4.3 per 100m^2 GFA		102	101	**203**	101	102	**203**
Community	0.67 per 100m^2 GFA		18	2	**20**	2	18	**20**
		Total	**1511**	**386**	**1897**	**327**	**1157**	**1484**

*PM directional split assumed to be the inverse of AM directional split

The volume of people likely to be travelling to and from the precinct highlights a clear need to deliver an accessible, equitable and sustainable transport network to support future uses. Travelling to and from the precinct will need to be spread across a range of modes to manage peak hour movements of ~2,000 people in 2030.

5.2.1 Stages 2 and 3

The person trip generation of Stages 2 and 3 was also be estimated using the yields in Section 4. The resulting person trip generation for the whole precinct is presented in Table 15.

[4] Assuming 1 dwelling per 95m^2 residential

Table 15: Person trip generation for Stages 1, 2 and 3

Land use	Stage 1				Stage 2				Stage 3			
	AM		PM		AM		PM		AM		PM	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Residential	33	132	112	28	121	484	411	103	291	1166	989	247
Commercial	1358	151	112	1009	1940	216	160	1441	4469	497	369	3321
Retail	102	101	101	102	45	45	45	45	17	17	17	17
Community	18	2	2	18	29	3	3	29	23	3	3	23
Total	**1511**	**386**	**327**	**1157**	**2135**	**748**	**619**	**1618**	**4800**	**1683**	**1378**	**3608**

As the proposed yields for Stages 2 and 3 are greater than Stage 1, the corresponding person trip generation is also significantly higher. Therefore, subsequent planning for Stages 2 and 3 will need to include a well-connected transport network to link these stages to metro and bus services in Stage 1.

It is assumed that the future working harbour and ports land uses will be similar to the existing uses at Bays West and no additional trips have been forecast for these uses in Stages 2 and 3 at this stage. Traffic and transport impacts relating to land uses would be further refined once the Ports Integration and Innovation Plan is released.

5.3 Parking rates

Vehicle trip generation relating to Stage 1 is expected to be heavily influenced by the volume of parking provided to support new uses. Therefore, ultra-low parking rates are being proposed through the Design Guideline to disincentivise travel by private vehicle. The proposed parking rates for Stage 1 are shown in Table 16.

Table 16: Proposed parking rates for Stage 1

Land use	Parking rate
Residential	0 per studio 0.25 per 1-bedroom unit 0.5 per 2 or 3-bedroom unit No visitor parking
Commercial	1 space per ~1,100m^2 GFA
Retail	Accessible parking only
Community	Accessible parking only

These parking rates were developed in collaboration with DPE and TfNSW. The key drivers for the rates presented are summarised below:

- TfNSW provided residential rates for similar Sydney Metro precincts
- Commercial rates are based on parking being provided for 1% of the building's employee occupancy[5].
- Parking for retail and community uses are not proposed, other than for accessible parking, as these uses aim to provide a local function to people working or living in Bays West

These parking rates have influenced the vehicle trip generation rates assumed for each use. Further details on parking controls within the precinct can be found in Section 6.

5.4 Vehicle trip generation

Vehicle trip generation rates were developed in consultation with TfNSW. The rates for each use are driven by one of the following:

- Applying the ultra low 5% private vehicle mode share to the person trip generation rate presented in Section 5.2
- Vehicle trip rates used from similar assessments of other low car precincts in Sydney
- Reviewing journey to work travel behaviour from 2016 census data

Commercial vehicle trips were split into employee parking trips and commercial trips undertaken using rideshare or taxi services. The vehicle trip generation rate of employees parking within Stage 1 is expected to be correlated to the number of commercial parking spaces. Therefore, a trip generation rate per parking space has been adopted for employee.

Commercial trips undertaken using rideshare and taxi were estimated using 2016 JTW data for the Sydney – Haymarket – The Rocks SA2 region which indicated ~1% of all trips to work were undertaken using rideshare or taxi. As a comparison, 2016 JTW data for the Lilyfield – Rozelle SA2 region also indicated ~1% of all trips to work were undertaken using rideshare or taxi. Therefore, this proportion was applied to the commercial person trip rate to determine an equivalent vehicle trip generation rate.

The proposed vehicle trip generation rates for Stage 1 are shown in Table 17. The resulting vehicle trips for Stage 1 are shown in Table 18. An agreed validation approach that assesses both a 5% and 15% private vehicle mode share target, has been adopted for this TMAP (see section 6.5). This process was developed in consultation with TfNSW.

[5] Employee density was assumed to be 1 per 10m^2 GFA

Table 17: Vehicle trip generation rates for Stage 1

Land use	AM peak hour vehicle trip generation rate	PM peak hour vehicle trip generation rate	AM directional split		Source
			In	Out	
Residential (5% private vehicle mode share)	0.033 per unit	0.028 per unit	20%	80%	*RMS TDT 2013/04a*, average of Sydney high-density residential surveys
Residential (15% private vehicle mode share)	0.099 per unit	0.084 per unit			
Commercial (employee parking)	0.26 per parking space		90%	10%	*Barangaroo – Modified Concept Plan Transport Report (surveys of office in King Street Wharf)*
Commercial (rideshare/taxi)	1 trip per ~5,400m^2 GFA*	1 trip per ~7,300m^2 GFA*			*Journey to Work 2016 (SA2 Sydney – Haymarket – The Rocks – taxi mode share)*
Retail	0.4 per parking space		50%	50%	*Barangaroo – Modified Concept Plan Transport Report*
Community (5% private vehicle mode share)	0.0335 per 100m^2 GFA		90%	10%	TRICS Database (Cambourne Community Centre, Mere Community Centre, Wolverhampton Community Centre, Swansea Community Centre)
Community (15% private vehicle mode share)	0.10 per 100m^2 GFA				

*Assumes 1% of person trips

Table 18: Vehicle trip generation for Stage 1

Land use	AM peak hour vehicle trip generation rate	PM peak hour vehicle trip generation rate	AM peak hour vehicle trips			PM peak hour vehicle trips*		
			In	Out	Total	In	Out	Total
Residential (5% private vehicle mode share)	0.033 per unit	0.028 per unit	2	6	**8**	6	1	**7**
Residential (15% private vehicle mode share)	0.099 per unit	0.084 per unit	6	18	**24**	18	3	**21**
Commercial (employee parking)	0.26 per parking space		15	2	**17**	2	15	**17**
Commercial (rideshare/taxi)	1 trip per ~5,400m^2 GFA**	1 trip per ~7,300m^2 GFA**	12	1	**13**	1	9	**10**
Retail	0.4 per parking space		0	0	**0**	0	0	**0**
Community (5% private vehicle mode share)	0.0335 per 100m^2 GFA		1	0	**1**	0	1	**1**
Community (15% private vehicle mode share)	0.10 per 100m^2 GFA		3	0	**3**	0	3	**3**
Total (5% private vehicle mode share)			**30**	**9**	**39**	**9**	**26**	**35**
Total (15% private vehicle mode share)			**36**	**21**	**57**	**21**	**30**	**51**

*PM directional split assumed to be the inverse of AM directional split

**Assumes 1% of building occupancy

5.4.1 Stages 2 and 3

The cumulative vehicle trip generation of Stages 2 and 3 can also be estimated using the yields in Section 4. The resulting vehicle trip generation for the whole precinct is presented in Table 19.

Table 19: Vehicle trip generation for Stages 1, 2 and 3

Land use	Stage 1				Stage 2				Stage 3			
	AM		PM		AM		PM		AM		PM	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Residential (5% private vehicle mode share)	2	6	6	1	6	24	21	5	15	58	50	12
Residential (15% private vehicle mode share)	6	18	18	3	18	72	63	15	45	174	150	36
Commercial (employee parking)	15	2	2	15	22	2	2	22	50	6	6	50
Commercial (rideshare/taxi)	12	1	1	9	17	2	1	13	39	4	3	29
Retail	0	0	0	0	0	0	0	0	0	0	0	0
Community (5% private vehicle mode share)	1	0	0	1	2	0	0	2	1	0	0	1
Community (15% private vehicle mode share)	3	0	0	3	6	0	0	6	3	0	0	3
Total (5% private vehicle mode share)	**30**	**9**	**9**	**26**	**47**	**28**	**24**	**42**	**105**	**68**	**59**	**92**
Total (15% private vehicle mode share)	**36**	**21**	**21**	**30**	**63**	**76**	**66**	**56**	**137**	**184**	**159**	**118**

5.4.2 Freight and servicing vehicle trip generation

In addition to vehicle trip generation by people movements, freight and servicing vehicle trip generation was estimated using TfNSW's Urban Freight Forecasting Model. The estimated peak hour freight and servicing vehicle trip generation of Stages 1, 2 and 3 is shown in Table 20. These outputs were considered robust for the assessment noting a Delivery and Servicing Plan will be developed for the precinct in the future that may encourage consolidation or retiming of deliveries outside of peak hours.

Table 20: Freight and servicing trip generation

Stage	AM peak hour				PM peak hour			
	Van / ute	Small rigid vehicle	Medium / large rigid vehicle	Total	Van / ute	Small rigid vehicle	Medium / large rigid vehicle	Total
Stage 1	24	5	2	31	4	1	0	5
Stage 2	29	6	2	37	5	1	0	6
Stage 3	58	11	3	72	10	1	0	11
Total	**111**	**22**	**7**	**140**	**19**	**3**	**0**	**22**

5.4.3 Additional vehicle trip generation

In addition to the new uses proposed within the precinct, there are range of other ongoing operations or committed projects that were considered. These are summarised in Table 21.

Table 21: Nearby committed projects

Project	Description	Traffic generation assumptions
WBCT cruise day traffic	Passenger traffic accessing the WBCT on cruise days is required to travel via James Craig Road, Solomons Way, Sommerville Road and Port Access Road.	2030 PANSW traffic forecasts estimate an increase of up to 600 movements during the AM peak hour (300 in, 300 out). This traffic is not expected to coincide with the PM peak hour.
Glebe Island projects	As described in Section 3.7.1, the Hanson's Concrete Batching Plant and Multi-User Facility will be new uses on Glebe Island.	2030 PANSW traffic forecasts estimate an increase of up to 80 heavy vehicle movements (40 in, 40 out) in the AM and PM peak hours on James Craig Road.
The Bays Metro Station	Sydney Metro have indicated The Bays Metro Station is expected to generate kiss and ride trips.	180 kiss and ride movements in both peak hours (90 in, 90 out).
Future Bus Services	New services will access the bus interchange within Stage 1 via Robert Street from 2030. TfNSW are developing a new bus network plan for the precinct and provided an indicative bus frequency.	60 bus movements in both peak hours (30 in, 30 out).
Bunnings Rozelle (2-8A Parsons Street Rozelle)	The development of a 'small format' Bunnings at 2-8A Parsons Street Rozelle was approved in November 2019 and is currently under construction. The development would comprise of 3,945m^2 of retail space and 74 parking spaces with access on Parsons Street.	The Traffic and Parking Impact Assessment for the Development Application assumes traffic generation of 88 vehicles during the AM peak hour and 100 vehicles during the PM peak hour.

5.5 Mode share

A potential future mode share for all new people trips to and from the precinct has been estimated using a combination of the latest 2016 JTW Census data, TfNSW strategic model forecasts and the ultra-low private vehicle mode share target of 5%.

Given that Stage 1 aims to deliver a highly sustainable precinct that prioritises walking, cycling and public transport, 2016 JTW data for the Sydney Inner City SA3 region was considered a sensible starting point for the precinct mode share. To understand potential changes to future mode shares, work-related mode shares were extracted from the strategic model forecasts. Finally, the ultra-low private vehicle mode share target was applied and the remaining mode share differences were distributed to other modes to develop a refined future mode share.

The refined future mode share is shown in Table 22.

Table 22: Refined future mode share

Mode share	2016 JTW data (Sydney Inner City)		Strategic model forecasts		Refined future mode share	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
Private vehicle, taxi and rideshare	25%	28%	46%	54%	**5%**	**5%**
Bus	17%	14%	11%	11%	**19%**	**21%**
Rail / metro	46%	26%	43%	35%	**55%**	**45%**
Ferry	2%	0%	-*	-*	**3%**	**3%**
Light rail	1%	1%	-*	-*	**3%**	**3%**
Walking	7%	27%	-*	-*	**10%**	**18%**
Cycling	2%	4%	-*	-*	**5%**	**5%**

*Ferry, light rail, walking and cycling mode shares were not considered in the TfNSW strategic model forecasts available

Strategic model outputs suggest in the future that high public transport mode shares can be achieved within Bays West. There is already precedent for this in Sydney as shown in the JtW data for Inner Sydney. For Bay West to be successful in addition to high public transport mode shares, travel by private vehicle will need to be disincentivised and replaced by public transport, walking and cycling trips. Travel patterns of this nature can be seen at Barangaroo today, however, given the location of Bays West further from the Sydney CBD it is likely further controls will be required.

The resulting trips by mode, calculated by multiplying person trips by the refined mode share and adjusting for the vehicle trip generation calculated in Section 5.4, are shown in Table 23.

Table 23: Trips by mode for Stages 1, 2 and 3

Mode	Stage 1				Stage 2				Stage 3			
	AM		PM		AM		PM		AM		PM	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Private vehicle, taxi and rideshare (5% private vehicle mode share)	30	9	9	26	47	28	24	42	105	68	59	92
Bus	296	83	63	250	418	159	119	349	939	357	264	777
Rail / metro	859	179	185	535	1208	343	344	746	2719	765	764	1666
Ferry	46	12	10	36	66	22	19	50	148	51	41	111
Light rail	46	12	10	36	66	22	19	50	148	51	41	111
Walking	156	71	34	214	220	137	63	298	494	306	139	666
Cycling	78	20	16	60	110	37	31	83	247	85	70	185
Total	**1511**	**386**	**327**	**1157**	**2135**	**748**	**619**	**1618**	**4800**	**1683**	**1378**	**3608**

5.6 Trip distribution

The assumed two-way trip distribution for vehicle trips related to Stages 1, 2 and 3 between the two access points to the precinct are shown in Figure 39. In 2030, vehicle trips travelling to and from Stage 1 are assumed to only travel via the Robert Street access as the James Craig Road access would only be used for Glebe Island port operations and WBCT cruise traffic. By 2040, car trips travelling to and from Stages 1, 2 and 3 are assumed to be able to use both the Robert Street and James Craig Road access points.

Figure 39: Two-way trip distribution to and from the Robert Street and James Craig Road accesses

To assist with the modelling of other intersections within the TMAP study area, the two-way trip distribution to and from both access points was broadened. These distributions are presented in Figure 40 and Figure 41. Trip distribution for both accesses were estimated based on the future origin and destination analysis discussed in Section 3.1.3 and adjusted to factor in the proximity of each origin and destination to each access point. Internal vehicle trips within the precinct would be discouraged using travel demand management measures.

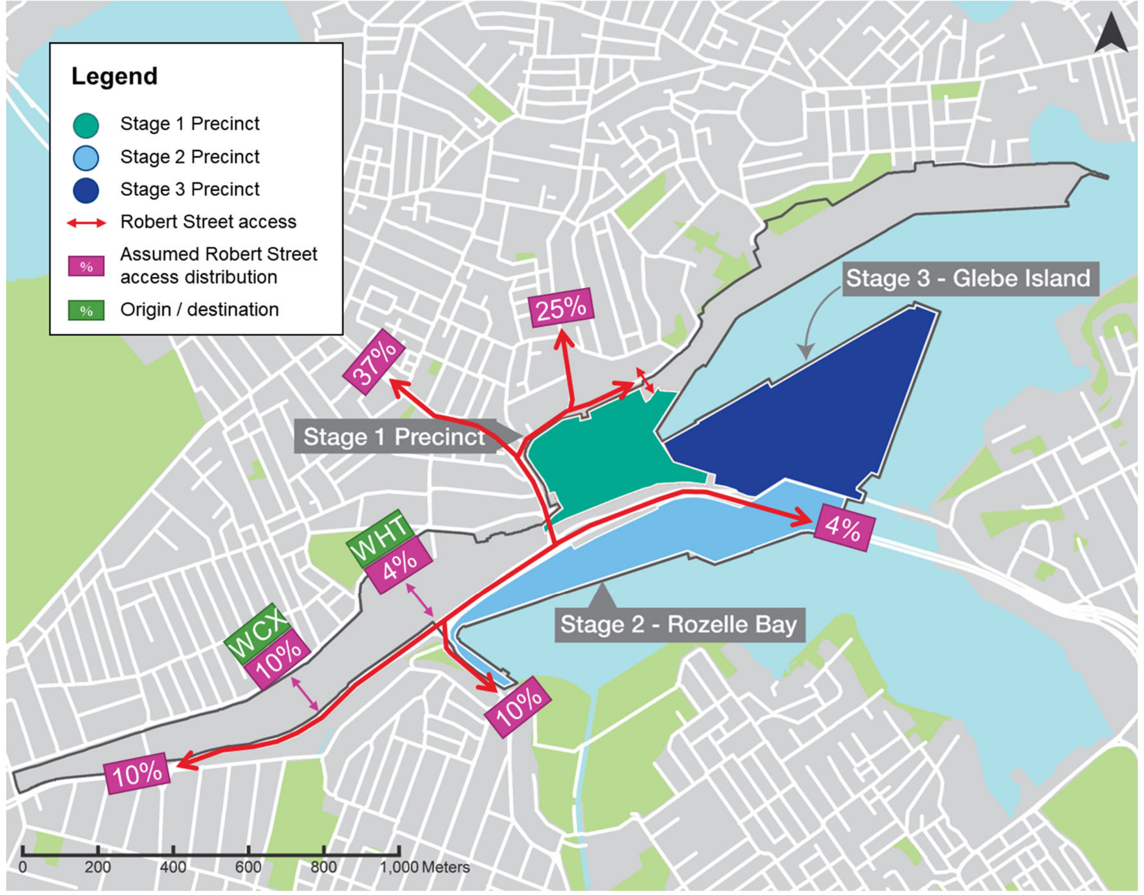


Figure 40: Two-way trip distribution to and from the Robert Street access

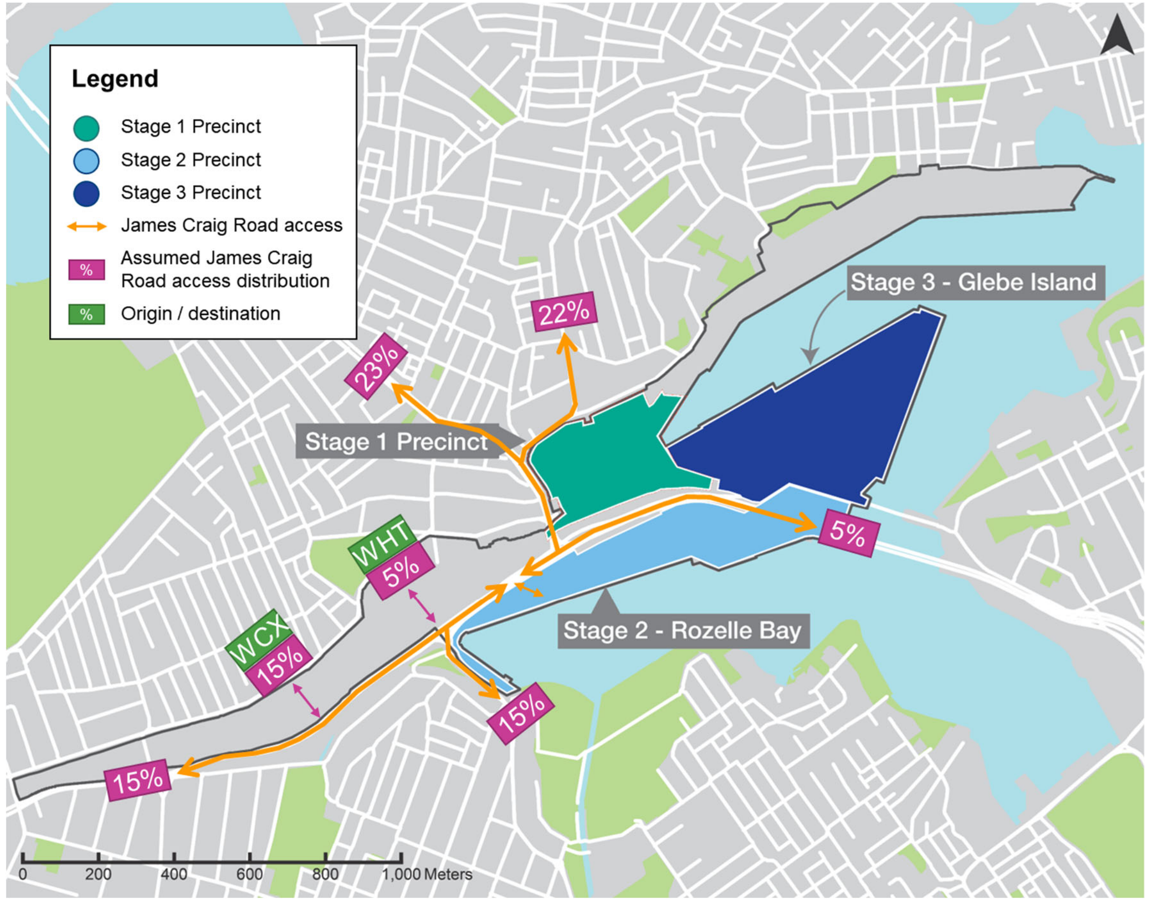


Figure 41: Two-way trip distribution to and from the James Craig Road access

5.7 Traffic modelling approach

To assess the impact of Stage 1 on the surrounding road network, network traffic modelling was undertaken using the SIDRA Intersection 9.0 traffic modelling software package. SIDRA is a microanalytical tool used for evaluation of intersection performance mainly in terms of capacity, level of service and a wide range of other performance measures such as delay, queue length and stops for vehicles and pedestrians.

Intersection performance has been measured using degree of saturation, average delay, level of s^{er}vice and 95th percentile queue lengths as defined in the *Guide to Traffic Generating Developments* as shown in Table 24.

Table 24: Level of Service

Level of Service	Average delay per vehicle (seconds)	Operation
A	< 14	Good operation
B	15 to 28	Good with acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Operating near capacity
E	57 to 70	At capacity
F	> 70	Over capacity

The modelling approach was developed in consultation with TfNSW and involves the development of ‘baseline’ and ‘With Project’ scenarios for the 2030 and 2040 assessment years. Baseline scenarios were developed for the scenario without the Revised Master Plan uses and included traffic forecasts from the TfNSW strategic model, 2021 traffic count data and nearby committed projects shown in Table 21.

Traffic forecasts from the TfNSW strategic model were provided as 2031, 2036 and 2041 link volumes. These volumes were interpolated to estimate 2030 and 2040 scenario year link volumes. To estimate intersection turning volumes, turning proportions from traffic surveys undertaken in 2021 were assumed as a starting point and for new intersections (discussed further in Section 5.7.1) the strategic models were used as a guide. These turning proportions were then manually adjusted to balance inflow and outflow volumes.

The scenarios and included nearby committed projects are outlined in Figure 42.

2030 and 2040 Baseline

- 2021 traffic counts at exisitng intersections
- Arterial and motorway traffic forecasts from TfNSW strategic model
- Bays West Station kiss and ride trips
- Future bus services
- Hanson's and Multi-User Facility
- Bunnings Rozelle
- WBCT Cruise day traffic (for cruise day scenario only)

2030 With Project

- Addition of vehicle trips generated by Stage 1

2040 With Project

- Addition of vehicle trips generated by Stages 1, 2 and 3

Figure 42: Traffic modelling scenarios

5.7.1 Future road layout assumptions

The arterial road network in the vicinity of Stage 1 is undergoing significant change due to the construction of multiple transport infrastructure projects. The relevant infrastructure projects and their expected impacts are summarised in Table 25, which have been adopted in the future road layout assumptions for modelling.

Table 25: Nearby transport infrastructure projects

Project	Project description	Road layout impacts
WestConnex Rozelle Interchange and Iron Cove Link	The WestConnex Rozelle Interchange and Iron Cove Link project is a new multi-lane road link between the M4 East Motorway at Haberfield and the M8 Motorway at St Peters. The project also includes an interchange at Lilyfield and Rozelle (the Rozelle Interchange) to the west of Stage 1. The project is currently under construction with an expected opening year of 2023.	• New intersection on City West Link (between The Crescent and Catherine Street) connecting to the M8 Motorway via the M4-M5 Link. • Widening of the City West Link west of the City West Link / The Crescent intersection to include an additional eastbound lane • Construction of a grade separated overpass for the eastbound right-turn from The Crescent eastbound. The future road network layouts as part of the WestConnex Rozelle Interchange and Iron Cove Link project were agreed in consultation with TfNSW. The future layout of the City West Link / The Crescent intersection is assumed from the *Rozelle Interchange – Modification: The Crescent overpass and active transport links modification report* (NSW Government, 2019).
Western Harbour Tunnel	The Western Harbour Tunnel (WHT) forms a core component of the broader WHT and Beaches Link program of works. The WHT includes a new crossing of Sydney Harbour involving twin tolled motorway tunnels connecting the M4-M5 Link and City West Link at Rozelle and the Warringah Freeway at North Sydney. The project is currently under construction with an expected opening year of 2027.	• New northern leg of the City West Link / The Crescent intersection connecting to WHT. The future layout of the City West Link / The Crescent / WHT Access Road intersection is assumed from the *Western Harbour Tunnel and Warringah Freeway Upgrade Environment Impact Statement* (NSW Government, 2020).
Robert Street / Mullens Street Upgrade	The Robert Street / Mullens Street intersection is currently unsignalised and will be upgraded to a signalised intersection to improve traffic flow, particularly for traffic and buses accessing The Bays Metro Station.	• Upgrade of the Robert Street / Mullens Street intersection to a signalised intersection.
Robert Street Stage 1 access point	A new access point to Stage 1 will be created from Robert Street enabling access for buses and vehicles. The access point would initially be unsignalised for the Baseline scenario and ban right turn movements out of the precinct. It is assumed that this intersection would be signalised for opening of Stage 1. Discussions are ongoing between DPE and Sydney Metro to confirm a preferred layout for this intersection.	• Create a priority intersection that links Stage 1 to Robert Street for the Baseline scenario. Right turn movements out of the precinct would be banned. • Create a signalised intersection for the With Project scenario.

5.7.2 Modelled intersections

Traffic modelling was undertaken for the following intersections surrounding the Bays West as shown in Figure 43. These were modelled as a linked SIDRA network so the impact of up and downstream intersections on traffic flow were considered.

1. City West Link / M8 Motorway Access Road (expected to open in 2023);
2. City West Link / The Crescent / Western Harbour Tunnel Access Road (expected to open in 2027);
3. The Crescent / James Craig Road;
4. The Crescent / Victoria Road;
5. Victoria Road / Robert Street;
6. Robert Street / Mullens Street (expected to be signalised by 2030); and
7. Robert Street / Port Access Road (expected to be upgraded by 2030).

The assumed road network is shown graphically in Appendix A.

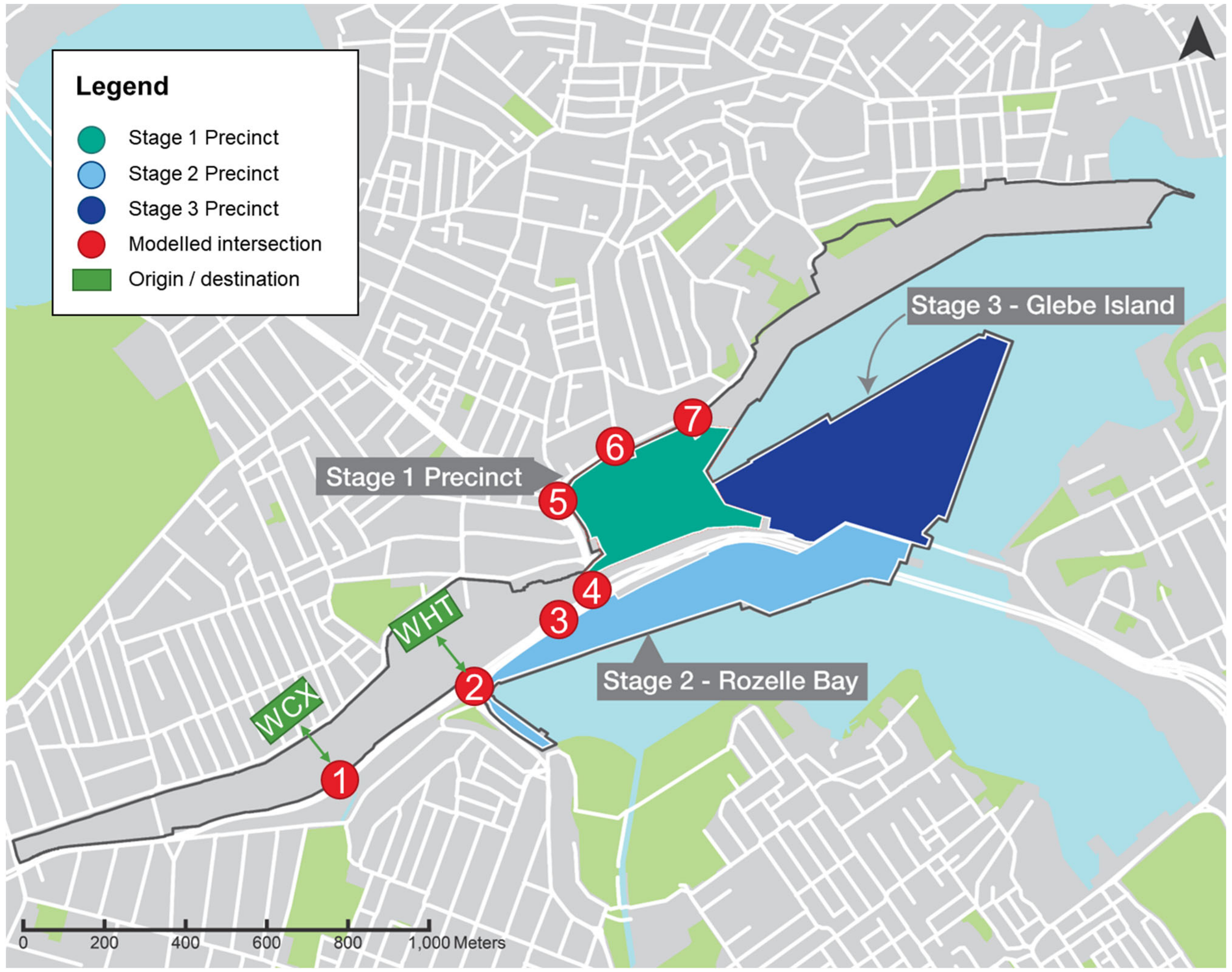


Figure 43: Modelled intersections

5.7.3 Modelling scenarios

Traffic modelling was undertaken for the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00) for the 12 scenarios shown in Table 26. The scenarios were agreed with TfNSW and include consideration of a 5% and 15% private vehicle mode share target and cruise day traffic generated by the WBCT.

Table 26: Modelled scenarios

No.	Year and assumed land use				Mode share		WBCT operation	
	2030 Baseline	2040 Baseline	2030 With Project	2040 With Project	5% private vehicle mode share	15% private vehicle mode share	Non-cruise day	Cruise day
1	✓						✓	
2	✓							✓
3		✓					✓	
4		✓						✓
5			✓		✓		✓	
6			✓		✓			✓
7			✓			✓	✓	
8			✓			✓		✓
9				✓	✓		✓	
10				✓	✓			✓
11				✓		✓	✓	
12				✓		✓		✓

5.8 Baseline traffic modelling

Intersection performance for the baseline non-cruise day and cruise day scenarios is shown in Table 27 and Table 28, and presented graphically on Figure 44 and Figure 45.

During the 2030 non-cruise day AM peak hour, the SIDRA modelling indicates that the intersections along City West Link, The Crescent and Victoria Road will operate above capacity. This is primarily due to a pinch point at The Crescent / Victoria Road intersection, with long queues reported on the northern Victoria Road. Furthermore, long queues are also reported along the western approach on City West Link and The Crescent. The Robert Street / Mullens Street and Robert Street / Port Access Road intersections are expected to operate satisfactorily.

On a cruise day, additional traffic travelling to The Crescent / James Craig Road further exacerbates poor intersection performance on the surrounding road network.

During the 2030 PM peak hour, the SIDRA modelling indicates that the City West Link / M8 Motorway ramp and City West Link / The Crescent / WHT ramp intersections improve when compared to the AM peak hour. However, intersection performance at The Crescent / Victoria Road intersection is significantly poorer and indicates that traffic demands may be constrained at this intersection reducing downstream demands at these two intersections. Higher demands at the Robert Street / Mullens Street intersection also result in poorer performance in the PM peak hour.

It is noted that the above intersection performance modelled using SIDRA Intersection 9.0 is generally worse than the road network performance presented in the Western Harbour Tunnel and Warringah Freeway Upgrade Environment Impact Statement and the Major Civil Construction Work between The Bays and Sydney CBD Environment Impact Statement (NSW Government, 2021). These two studies modelled similar intersections using Vissim microsimulation modelling and identified that the future network would generally operate satisfactorily in future years up to 2037.

Vissim is a microsimulation traffic modelling software packages that uses dynamic, stochastic, discrete time modelling techniques to simulate the movement of individual vehicles based on car-following, lane-changing and gap acceptance algorithms that are updated several times every second. This type of modelling can provide a better representation of queuing, congestion and delays in at-capacity urban networks compared to static traffic modelling software packages.

In comparison, SIDRA is limited in its ability to reflect adjacent constraints in congested networks and is therefore not likely to accurately reflect absolute future performance for this congested study area. However, SIDRA can be used to provide an indication of the relative impact of the With Project scenario when compared to the baseline scenario.

Given the 2030 results, results for the remaining 2040 modelling scenarios have not been presented. We will work with TfNSW to develop an appropriate methodology to assess road performance in the study area. This will likely involve a microsimulation approach that utilises a validated base model of the area owned by TfNSW. Once this assessment has been completed this TMAP will be updated to include the modelling results from the exercise.

Table 27: 2030 AM baseline SIDRA modelling results

Intersection	Non-cruise day				Cruise day			
	DoS	Average delay (s)	LoS	Max queue & approach (m)	DoS	Average delay (s)	LoS	Max queue & approach (m)
1. City West Link / M8 Motorway ramp	1.05	77	F	675m (south west approach)	1.06	83	F	700m (south west approach)
2. City West Link / The Crescent / WHT ramp	1.11	74	F	400m (south west approach)	1.18	97	F	400m (south west approach)
3. The Crescent / James Craig Road	1.02	60	E	375m (south west approach)	1.10	86	F	400m (south west approach)
4. The Crescent / Victoria Road	1.20	143	F	500m (east approach)	1.26	167	F	575m (east approach)
5. Victoria Road / Robert Street	1.12	141	F	1025m (north approach)	1.15	152	F	1100m (north approach)
6. Robert Street / Mullens Street	0.93	32	C	150m (north approach)	0.91	29	C	125m (north approach)
7. Robert Street / Port Access Road	0.29	< 5	A	10m (south approach)	0.29	< 5	A	10m (south approach)

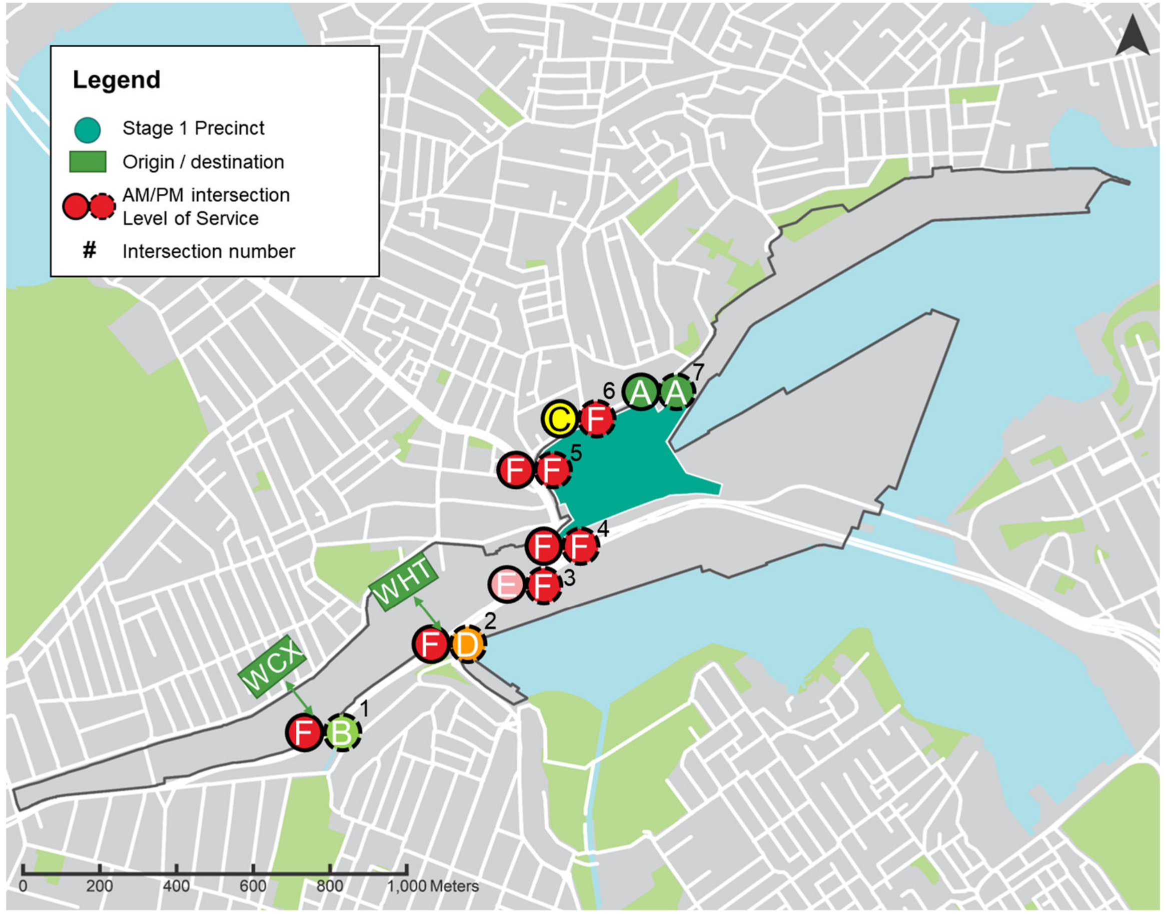


Figure 44: 2030 baseline SIDRA modelling results (non-cruise day)

Table 28: 2030 PM baseline SIDRA modelling results

Intersection	Non-cruise day / cruise day[6]			
	DoS	Average delay (s)	LoS	Max queue & approach (m)
1. City West Link / M8 Motorway ramp	0.72	21	B	150m (south west approach)
2. City West Link / The Crescent / WHT ramp	1.02	46	D	275m (north east approach)
3. The Crescent / James Craig Road	1.09	78	F	575m (south east approach)
4. The Crescent / Victoria Road	1.47	283	F	1575m (east approach)
5. Victoria Road / Robert Street	1.18	103	F	450m (north approach)
6. Robert Street / Mullens Street	1.15	98	F	525m (north approach)
7. Robert Street / Port Access Road	0.26	< 5	A	10m (south approach)

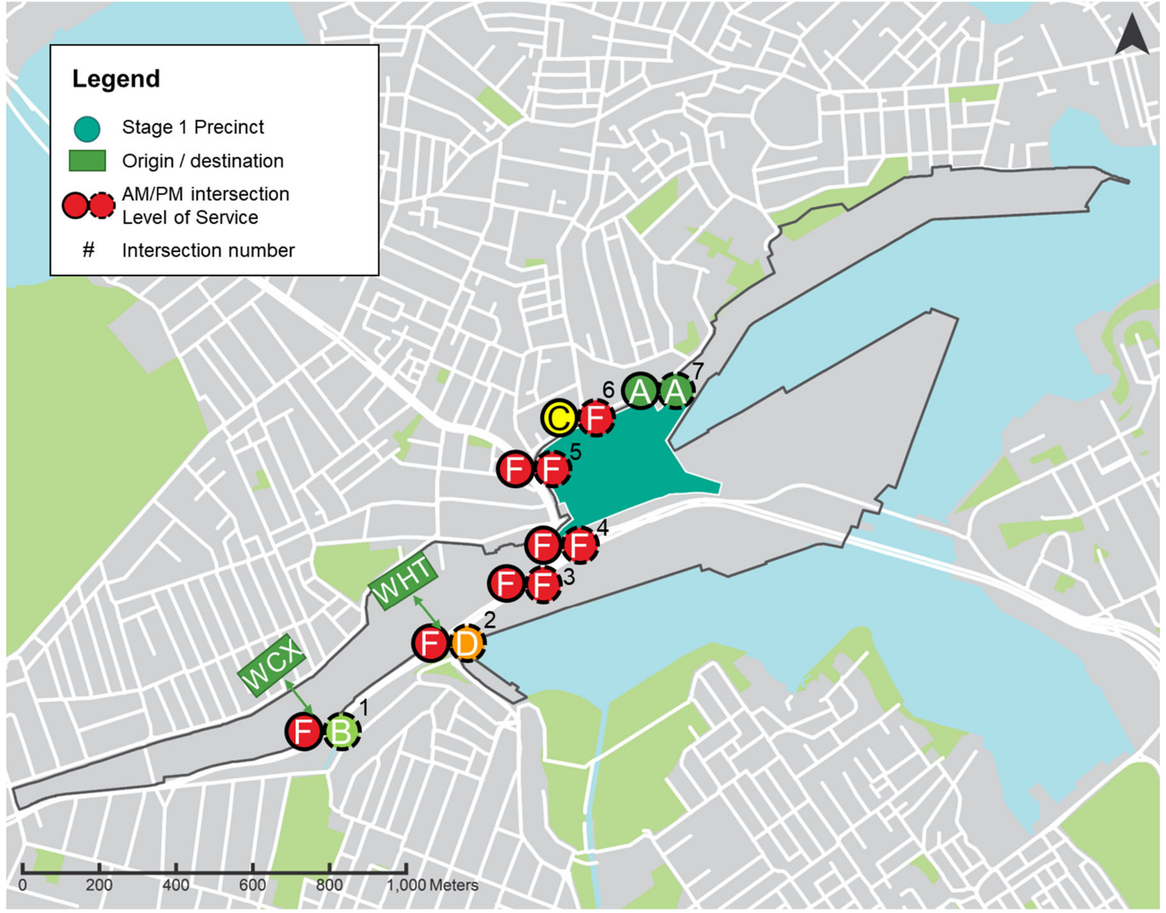


Figure 45: 2030 baseline SIDRA modelling results (cruise day)

[6] Non-cruise and cruise-day scenarios were assumed to be identical as cruise traffic is not assumed to overlap with the network PM peak hour.

6. Transport Network Validation

A 'Vision' and 'validate' approach has been used in the planning for Stage 1. A detailed vision was first presented in the Bays West Place Strategy, and was supported by further themes, principles and outcomes outlined in subsequent documents such as the PBTS and Exhibited Draft Master Plan.

The vision sets the tone, and intent of the precinct to ensure the best possible outcome is achieved through the planning, design and delivery of Bays West. Validating the proposed network to ensure it meets the vision, complements the proposed land uses and also how it will achieve desire network performance is critical to understand the feasibility of the Bays West Stage 1 Rezoning Proposal.

It is important to understand that as part of the vision and validate approach, validation is more than just an assessment of performance.

6.1 Approach to validation

A fundamental component of the holistic vision for Bays West, is to deliver a connected and efficient transport network. In responding to this vision and the desired outcome for the redevelopment of Bays West four transport themes and fourteen principles have been adopted for guiding the development and validation of the TMAP, these are presented in Table 2.

The themes and TMAP principles have been used to guide the validation of the proposed transport network using following approach:

- Validation is underpinned by the need to provide an integrated solution that manages travel demand, including changing behaviour, creating capacity and managing existing and future performance
- As part of validating the network measures to both improve the network and / or change the behaviour of travel have been proposed, these aim to ensure successful delivery and operation of the network and form a key output of this TMAP.
- Consideration of all major modes of travel to, from and within the precinct, including walk, cycle, public transport, and private vehicle
- Transport modelling and data analysis to test demand, capacity, and accessibility.
- If data was not available provide an appropriate qualitative approach using first principles.
- Sustainability and a climate positive approach is a key part of the planning for Bays West. In addition to model analysis, the validation will also include a high-level assessment of managing climate impacts.

There is the opportunity, following feedback on this draft document, to undertake more detailed transport modelling to further enhance the validation of the transport network.

As part of the validation process for the assessment of each mode, measures have been developed that align with the key principles for Bay West. These measures are a key output from this TMAP and will need to be delivered for this assessment to remain valid and the vision for the precinct to be achieved. All proposed measures will be discussed with key stakeholders as the project progresses to help plan, design, procure, implement, and operate the various strategies.

6.2 An Integrated Approach to Delivering and Managing Transport

To ensure the success of the proposed network, an integrated and sustainable focused network is needed. To deliver this vision and aspiration the transport network will be underpinned by a travel demand management (TDM) strategy.

The TDM strategy is an interconnected web of strategies, policies and interventions that will span the entirety of Bays West. It focuses on three key pillars:

- Behaviour of customers and the community
- Delivery of infrastructure and services to provide transport choice and capacity
- Management of the transport network.

The TDM strategy should be implemented on day one of operations and evolve alongside the precinct, responding to changes in residents, visitors and travel patterns. To be most effective, the TDM strategy should be integrated into overall policy and planning decisions and be governed by the Delivery Authority for the precinct. Examples of various TDM strategies that can be used in the context of Bays West to drive behaviour change, create capacity and manage transport networks are presented on Figure 46.

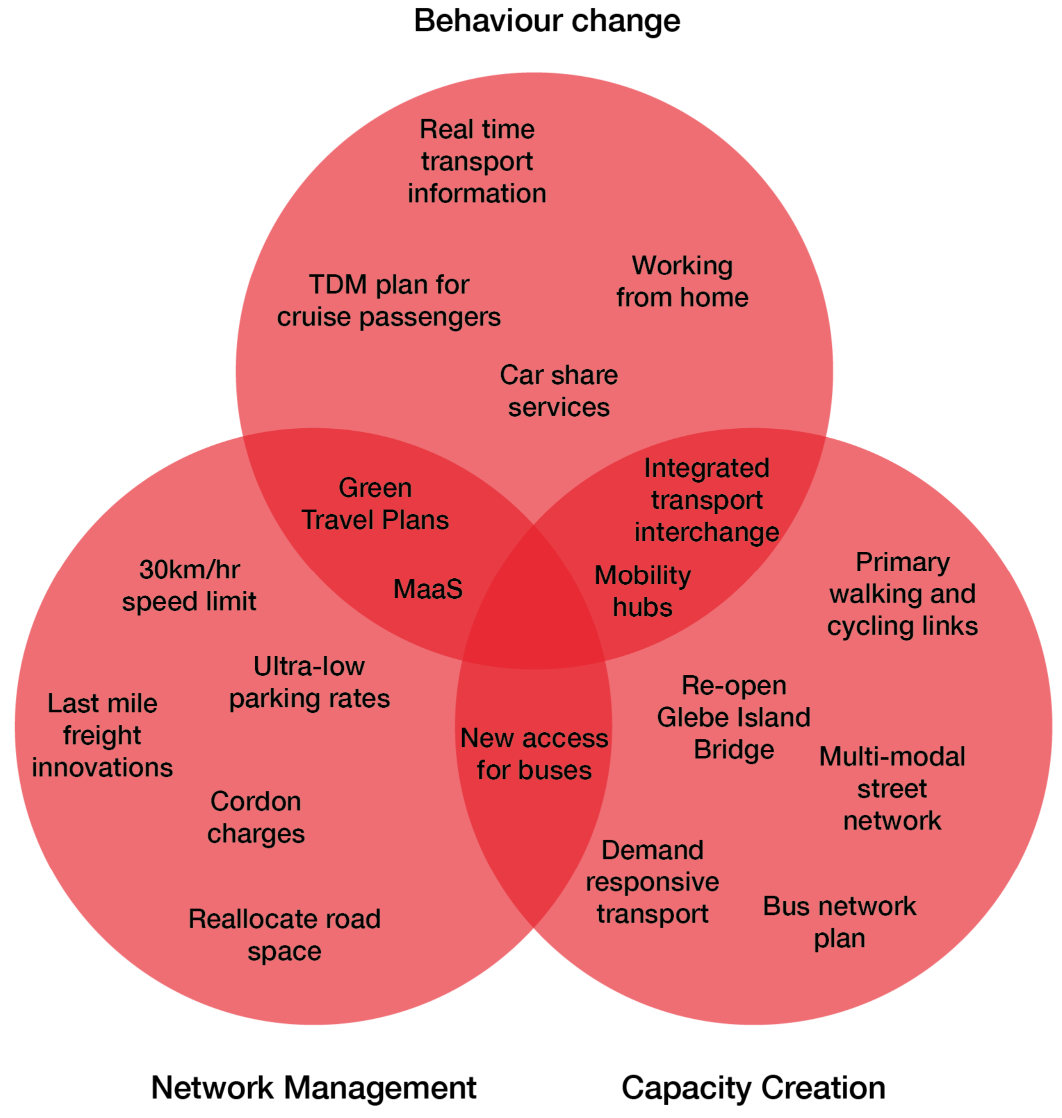


Figure 46: Example Bays West TDM strategy

For Bays West, the TDM strategy and any interventions should focus on achieving the following:

- Increasing trips by walking and cycling
- Increasing trips by public transport
- Reducing trips by personal vehicle
- Improving cruise day traffic efficiency
- Consolidating and reducing freight and servicing trips
- Establishing a local catchment reducing the need to travel to and from the precinct
- Being climate positive.

6.3 Walking and cycling

Bays West aims to be a place for people, the precinct is being planned and designed to put walking and cycling first. It can be a truly active precinct, given its access to public transport, its scale, structure, proximity the Sydney CBD and connection to the broader regional network. Supporting travel by these modes will be integral to achieving a high sustainable mode share for all trip types. This is highlighted in the following TMAP principles:

- C03 - Harness opportunities provided by wider transport investment such as Sydney Metro and Rozelle Interchange and potential government investment such as the Glebe Island Bridge active transport connection between Rozelle and Pyrmont
- C04 - Integrate a core multimodal network that is equitable, people-focused and planned around seamless interchange at transport nodes
- E01 - Implement a low (or zero) carbon precinct
- I03 - Provide safe and equitable access to a range of modes
- P01 - Deliver outcomes for the community and stakeholders through application of the Movement and Place Framework

The Bays West street network will deliver a permeable network providing access to all sub-precincts along with connections to the Balmain Peninsula, harbour foreshore, Pyrmont via the Glebe Island Bridge and Glebe via the Rozelle Interchange land bridge.

Catchment analysis has been undertaken for the 10-minute walking catchment and the 20-minute cycling catchment to understand the locations which can be comfortably accessed (see Figure 47 and Figure 48). It is noted that the catchment analysis is indicative only and does not consider locations where walking and cycling may be difficult, such as areas with steep grades. The impacts of the Glebe Island Bridge and a bridge to Glebe Point Road have been considered.

The key findings include:

- **10-minute walking catchment** – most of the precinct is accessible within 10-minutes. Furthermore, The Bays Metro Station, the bus interchange and bus stops on Robert Street and Victoria Road are also readily accessible. The Glebe Island Bridge extends the catchment to the edge of Pyrmont and the Glebe Point Road Bridge enables access to a small portion of the Glebe foreshore .
- **20-minute cycling catchment** – the 20-minute cycling catchment is extensive and covers the Inner West and the Sydney CBD, providing access to key destinations and jobs in the Eastern Harbour City. The Glebe Island Bridge extends the catchment into the Inner City Eastern Suburbs including Darlinghurst, Surry Hills and Redfern whereas the Glebe Point Road Bridge has a minimal impact on the catchment.

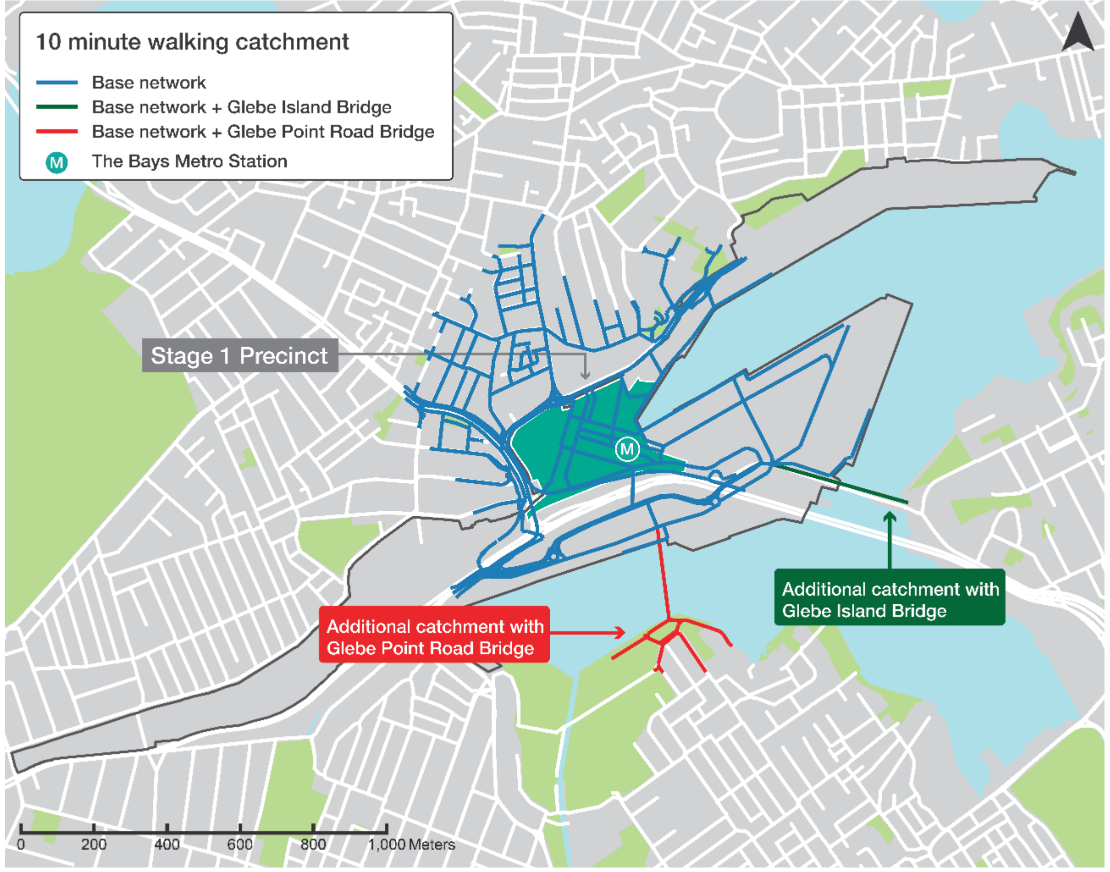


Figure 47: 10-minute walking catchment

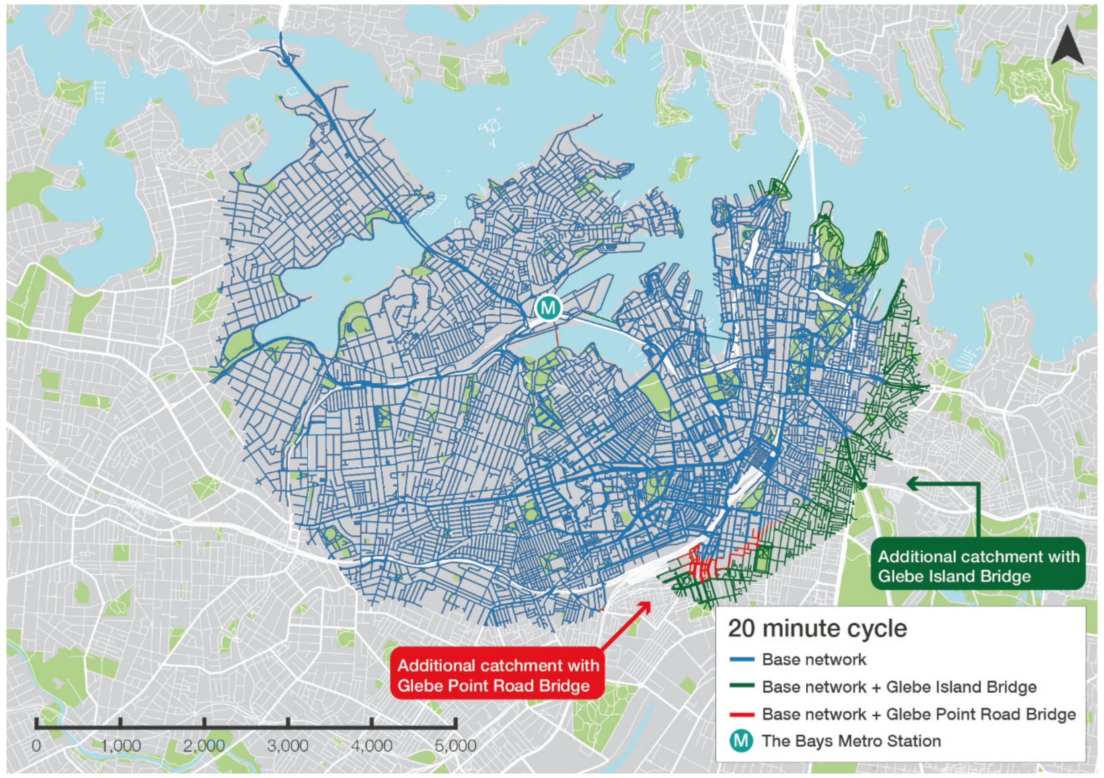


Figure 48: 20-minute cycling catchment

6.3.1 Walking and cycling network hierarchy

Walking and cycling will form part of every trip within Stage 1. The walking and cycling network in Stage 1 will have a range of different provisions depending on the strategic function of the route. The network hierarchy includes:

- **Primary** – high quality segregated routes that connect to the wider regional network. These links will provide connectivity to the transport interchange and key destinations within the precinct such as the WBPS and the Harbourside Park.
- **Secondary** – routes that provide connections to key uses and catchments surrounding Bays West. These links will provide connectivity between primary links and the built form.
- **Local routes** – finer grain provisions to access specific uses with a greater focus on placemaking. These links should be walkable but do not need to be segregated.

The primary and secondary walking and cycling links in Stage 1 are shown in Figure 49 and include the following provisions:

- Primary connections between Robert Street and Anzac Bridge, between Robert Street and Glebe Island and between Glebe Island and Rozelle Parklands
- Secondary connections under Anzac Bridge towards Rozelle Bay and adjacent to the WBPS connecting to Robert Street
- A Civic Space between the bus interchange and The Bays Metro Station to provide a seamless walking and cycling interchange between public transport modes (location to be determined in subsequent planning phases).

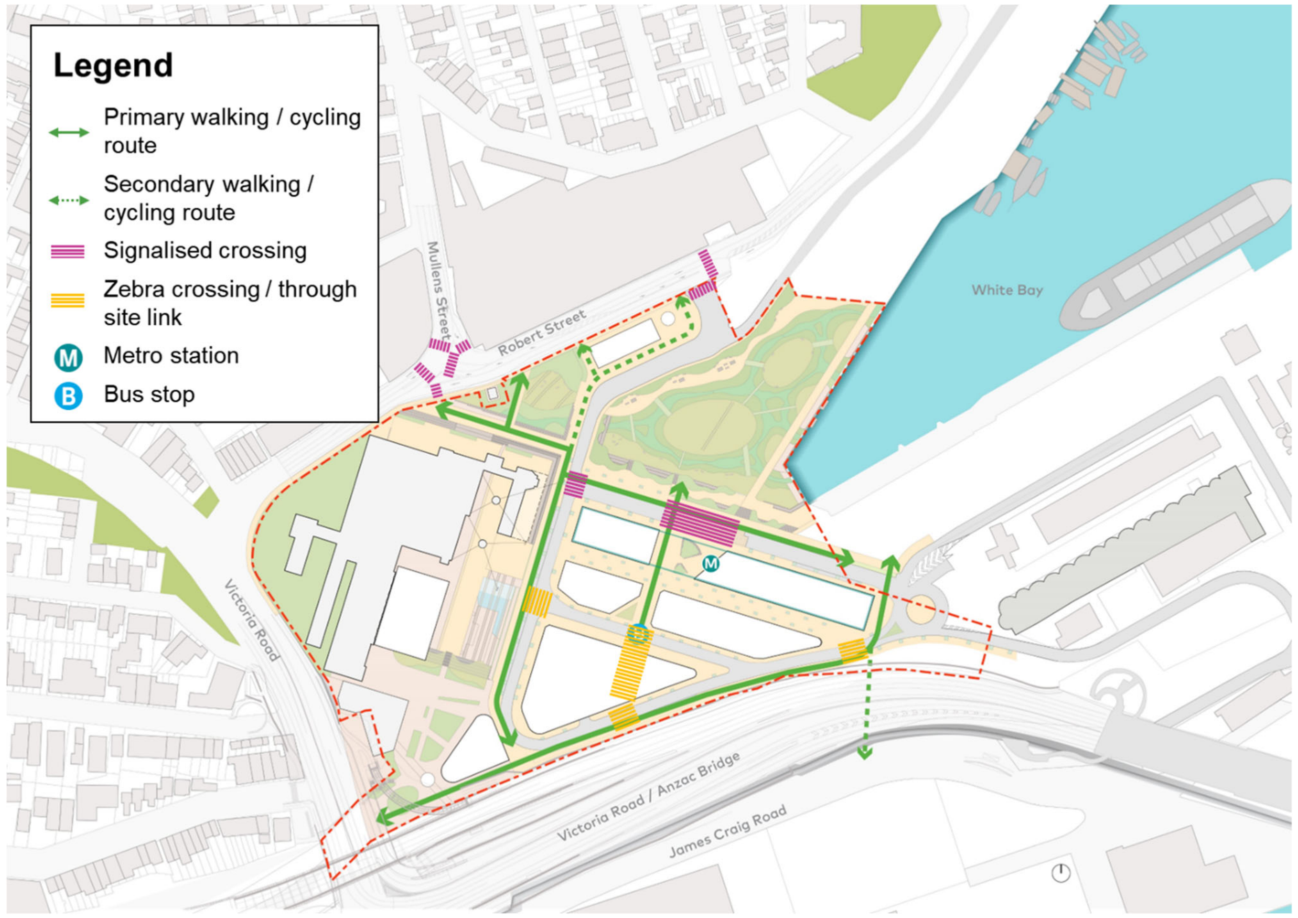


Figure 49: Stage 1 walking and cycling network hierarchy

6.3.2 Cycle parking and end of trip facilities

A key measure to support walking and cycling in the precinct is to deliver cycle parking and end of trip facilities in new buildings and the public domain, to support people visiting the precinct and weave this mode of travel into the urban landscape. Table 29 outlines the expected number of cycle parking spaces that will be mandated to support planned uses in 2030 and 2040.

Table 29: Cycle parking for new uses

Land use		GFA / Unit	Rate	Cycle parking spaces	
				2030	2040
Residential*	Occupants (studio/1-bed)	Stage 1 - 250 dwellings Stages 1, 2 and 3 – 3,375 dwellings	1 space per unit	75	1014
	Occupants (2-bed+)		2 spaces per unit	350	4722
	Visitor		0.1 spaces per unit	25	338
Commercial	Occupants	Stage 1 - 70,998m^2 Stages 1, 2 and 3 – 406,006m^2	1 space per 100m^2 GFA	710	4060
	Visitors		0.25 spaces per 100m^2 GFA	177	1015
Retail	Employees	Stage 1 - 4,718m^2 Stages 1, 2 and 3 – 7,551m^2	0.5 spaces per 100m^2 GFA	24	38
	Visitors		0.6 spaces per 100m^2 GFA	28	45
			Total	**1389**	**11232**

*Residential dwelling mix is assumed to be 30% studio / 1-bed and 70% 2 and 3-bedroomMicromobility

6.3.3 Micromobility

The market for moving people on a local scale is expanding with a wide variety of innovations occurring. Micromobility refers to 'smaller' vehicles tailored to user transport needs. Various solutions are being trialled by operators in cities globally such as dockless bike sharing, e-bikes and e-scooters. These innovations are likely to be superseded by more complex solutions in the future. Micromobility incorporates several aspects that make it appeal to a range of demographics and policy makers, indicating the potential for increased uptake in the future:

- **Heterogeneity** – diversity of design can provide all users with the opportunity to experience the freedom, convenience and affordability related to conventional active modes.
- **Equity** – shared mobility reduces the entry cost for users, improves safety for less confident customers. Policies can be developed that integrate equity targets for operators (see Figure 50).
- **Decarbonisation** – these modes are usually powered manually or by electricity meaning they are more energy efficient and usually have less climate impact than vehicles powered by fossil fuels.
- **Space efficiency** – the small road-space allocation required by these modes can ease congestion issues in cities without compromising user convenience.

Road space allocation for micromobility requires careful consideration due to the potential speed differential with walking. Future street cross-sections within Bays West may need to incorporate separate zones for micromobility. Most existing micromobility innovations are more suited to sharing cycle paths rather than traffic lanes.

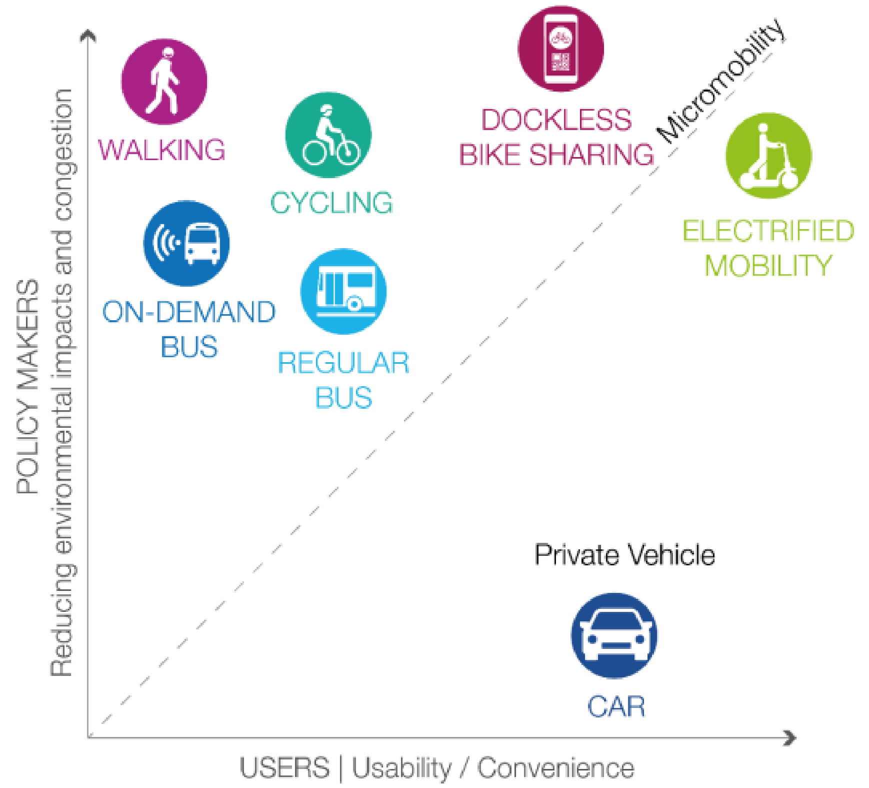


Figure 50: Comparing the policy makers and user benefits of various modes for local trips

The Bays West walking and cycling network will need to be designed with micromobility in mind with suitable areas provided in the public realm or buildings to store these vehicles in the future. Micromobility can be used to broaden the catchment for walking and cycling to and from the precinct

6.3.4 Measures to encourage walking and cycling

Bays West will need to demonstrate walking and cycling are the modes of choice in the design of all streets and new uses. A range of measures have been developed to encourage walking and cycling to, from and within the precinct, these are summarised in Table 30.

Table 30: Measures to encourage walking and cycling

Measure code	Measure	Theme	Responsibility
EWC01	Reconfigure Mullens / Robert Street intersection to provide safe pedestrian and cyclist access (subject to TfNSW TCS approval)		Delivery Authority, TfNSW, Council
EWC02	Provide public access and foreshore walking and cycling (Subject to ongoing Ports and Cruise operations)		Delivery Authority, PANSW
EWC03	Renewal or replacement of Glebe Island Bridge for walking and cycling (Subject to TfNSW Investigations)		TfNSW
EWC04	Mobility hubs to access micromobility and other modes at major destinations		Delivery Authority
EWC05	Deliver a walking and cycling network that meets the requirements in the Design Guidelines		Delivery Authority, Proponents
EWC06	Target a maximum speed limit of 30km/h within the precinct (subject to further investigation)		Delivery Authority
EWC07	Provide cycle parking and maintenance facilities in new buildings and the public realm in line with the Design Guidelines		Delivery Authority, Proponents
EWC08	Deliver a multi-modal street network, with a hierarchy of streets focused around walking, cycling and public transport		Delivery Authority
EWC09	Wayfinding to key destinations that is equitable and considers topography and Connection to Country. This may include dynamic or digital signage		Delivery Authority
EWC10	Connect the precinct walking and cycling network to the local and regional networks including Rozelle Parklands, Anzac Bridge, Victoria Road and the potential Glebe Island Bridge connection		Delivery Authority
EWC11	Gamification at key destinations to encourage walking and cycling and to embrace the heritage nature of the precinct		Delivery Authority

6.3.5 Measures to reduce the need to travel

Another key focus of the TDM strategy for the precinct will be reducing people's need to travel and internalising trips. This focus is about creating a 15-minute neighbourhood that provides walking and cycling accessibility that aligns with a person's daily needs.

Given the scale of the precinct, the convenience of walking and cycling is likely to be favoured for most trips. This approach also aligns with changed living patterns since the COVID-19 pandemic with a greater focus on the amenities within people's 15-minute neighbourhood. Measures that will be used to reduce people's needs to travel to and from the precinct are summarised in Table 36.

Table 31: Measures to Establishing a local catchment reducing the need to travel to and from the precinct

Measure code	Measure	Theme	Responsibility
RNT01	Delivering a diver mix of land uses within the precinct which provide all necessary amenities for residents		Delivery Authority, Proponents
RNT02	Planning retail and community uses that serve a local function		Delivery Authority, Proponents
RNT03	Delivering infrastructure and telecommunications that support working from home		Delivery Authority, Proponents
RNT04	Flexible working practices to be supported by all employers within the precinct. These practices would be clearly outlined in Workplace Green Travel Plans		Delivery Authority, Proponents

6.4 Public transport

The delivery of The Bays Metro Station, offers the opportunity to deliver a transit-oriented precinct, supported by a network of dedicated walking and cycling connections. Public transport including metro, bus and to a lesser extent light and ferry is critical to the success of the precinct, and encouraging the highest possible use is a key aim of the proposed network.

High quality services will be required to foster these travel patterns from inception and deliver on the sustainable mode share target of 95% for the precinct. The estimated success of the future transport network has been measured through a range of metrics including 30-minute access, public transport stop catchment, service capacity and interchange capacity. Validation has assumed The Bays Metro Station will be open from 2030 along with bus services accessing the new interchange within Stage 1.

The following TMAP principles support high quality public transport services in Stage 1:

- C03 – Harness opportunities provided by wider transport investment such as Sydney Metro and Rozelle Interchange and potential government investment such as the Glebe Island Bridge active transport connection between Rozelle and Pyrmont
- C04 – Integrate a core multimodal network that is equitable, people-focused and planned around seamless interchange at transport nodes
- I03 – Provide safe and equitable access to a range of modes

6.4.1 30-minute access by public transport

The planning and delivery of Sydney Metro West and the supporting bus network is the responsibility of Sydney Metro and TfNSW, respectively. The requirements from these agencies, have been applied to the Stage 1 public transport network and associated infrastructure. In summary this TMAP assumes the following:

- A Sydney Metro Station will be delivered, serviced by 15 trains per hour in each direction
- Approximately 30 buses an hour will service the precinct. A final network is still under development by TfNSW, it is expected that this would include local connections to the Inner West and a potential rapid connection to the Eastern Suburbs.
- A bus interchange will need to be delivered that can accommodate 6 bus bays, which will be used for a mix of pick-up, drop-off and short / medium term layover.

The future public transport accessibility to Bays West is presented in Figure 51, which shows the addition of metro services at The Bays Metro Station increases the 30-minute catchment enabling greater access throughout the Eastern Harbour City and Central River City. The greatest improvement is in the east-west direction around Sydney Metro West stations such as Five Dock, Burwood North, North Strathfield, Sydney Olympic Park, and Parramatta.

It is expected that when the proposed bus network is added to this accessibility analysis, that it would provide improved connections north-south into the Inner West and east to the Eastern Suburbs.

The substantial change to the public transport network accessibility, reflects the delivery of new infrastructure, improved service frequency and the speed of public transport network. This level of improved accessibility increases the viability of people commuting to Bays West from a range of locations whilst also linking a broader population to Bays West as a convenient place to work.

One of the Built Environment indicators used to determine the level of access is Public Transport Accessibility Level (PTAL), this precinct will now have a PTAL score of 6, this is consistent with some of the most accessible precincts in Sydney, such as Barangaroo.

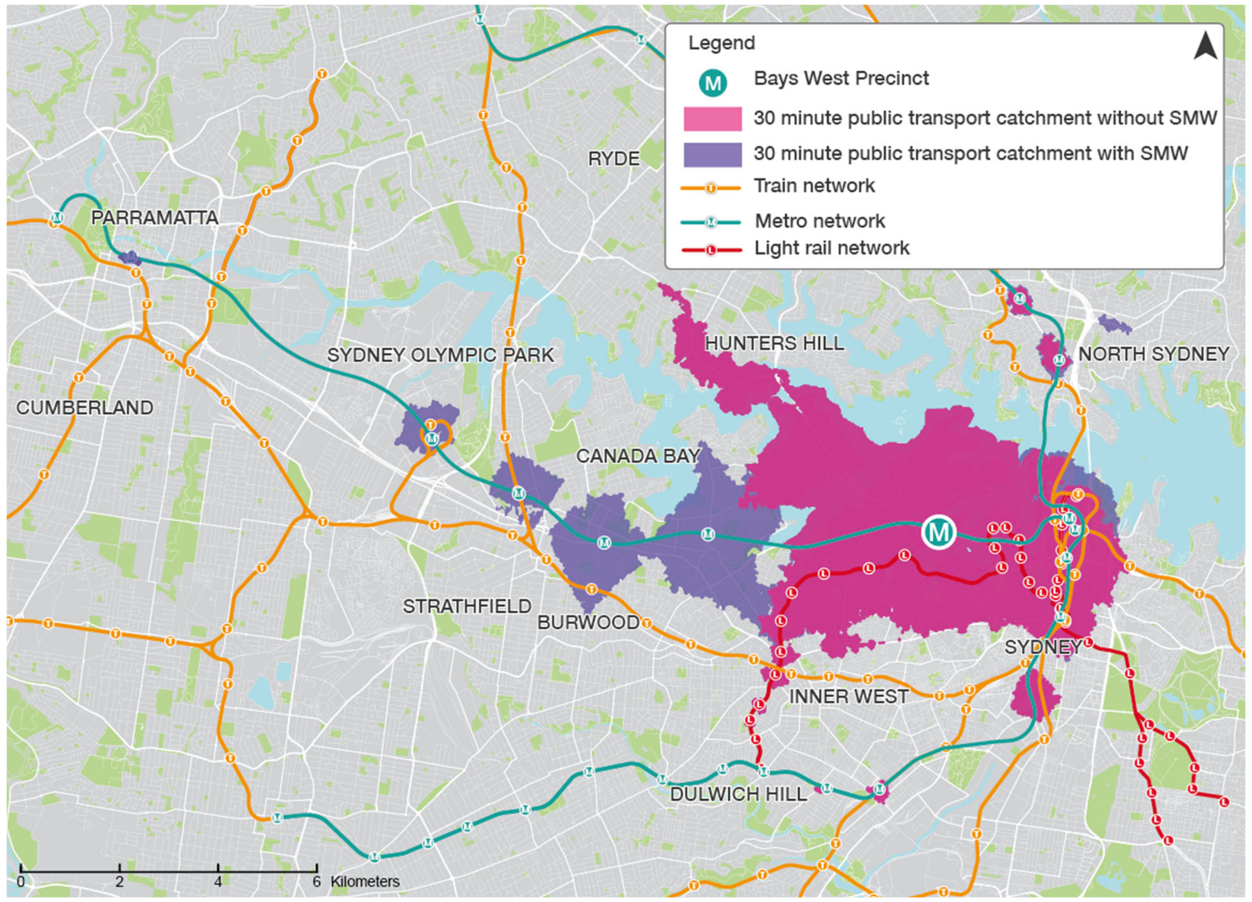


Figure 51: 30-minute public transport accessibility to and from Stage 1 (2030)[7]

Table 32 shows the future forecast population and employment within a 30-minute public transport catchment with and without Sydney Metro West. This forecast further outlines the impact this public transport service will have in unlocking access to Bays West for the rest of Sydney and provide ample opportunities for future residents. Once the future bus network for the precinct is planned it is likely to increase these population and employment numbers further.

Table 32: Population and employment within a 30-minute public transport catchment

Type	Forecast				
	2016	2036		2056	
	Base	Without SMW	With SMW	Without SMW	With SMW
Population	300,000	400,000	550,000	470,000	680,000
Employment	620,000	840,000	980,000	990,000	1,160,000

Figures are subject to rounding

6.4.2 Walking catchment to public transport

Ensuring convenient access to public transport is also a key factor in encouraging travel by sustainable modes. Figure 52 shows the 800m walking catchment to and from The Bays Metro Station and the 400m walking catchment from bus stops within Stage 1.

This catchment shows that all of Bays West will be within an 800m walk of the station providing access to a reliable and frequent service that connects a range of key centres within Sydney along with the wider Sydney Trains network.

[7] This map was produced using Conveyal with the 2019 GTFS bus feed and the Sydney Metro West alignment

The Sydney Metro catchment also indicates that portions of Balmain and Rozelle will benefit further encouraging as shift away from private vehicle for trips made in the east-west direction.

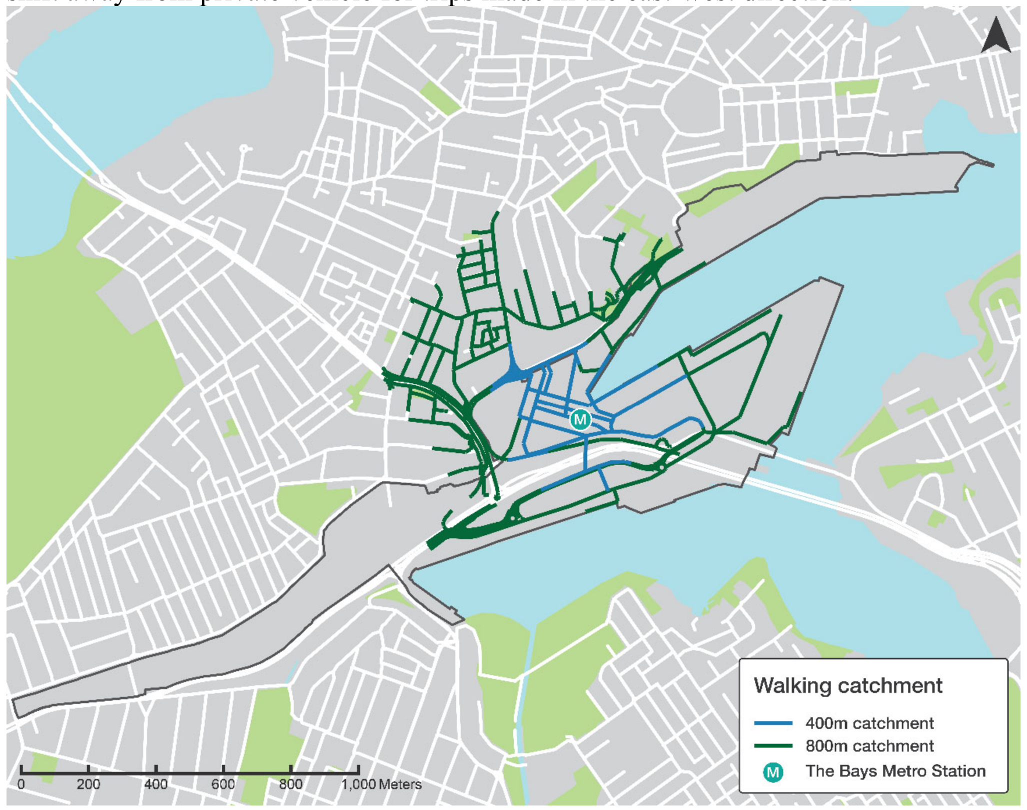


Figure 52: Walking catchment to public transport[8]

In addition to delivering the best possible walk catchment for public transport, it is critical that there is seamless interchange between different modes of public transport. A dedicated, wide, and vibrant civic link has been proposed that directly connects the Bays West Metro Station and bus interchange.

6.4.3 Sydney Metro capacity

The number of passengers using metro services to and from Bays West is estimated in Table 23. The capacity Sydney Metro West services was calculated using publicly available information on future frequencies at peak times.

The corresponding estimated service capacity and future metro passengers relating the Bays West are presented in Table 33.

Table 33: Sydney Metro capacity and Bays West passengers generated by Stages 1, 2 and 3

Direction	Trains per hour	Train capacity	Hourly capacity	2030 Bays West passengers		2040 Bays West passengers	
				AM peak hour	PM peak hour	AM peak hour	PM peak hour
Eastbound	15	1,100	16,500	470	510	2830	2900
Westbound	15	1,100	16,500	570	210	3250	1350

Figures are subject to rounding

In 2030, passengers generated by Stage 1 are expected to form between 1-4% of hourly capacity in the peak hours. By 2040, passengers generated by Bays West are expected to increase significantly up to 20% of hourly capacity.

As the precinct continues to be redeveloped over subsequent stages, significant additional residents, workers and visitors are expected. Further work will need to be undertaken as part of future stages of Bays West to consider the impact of additional trips on metro services including people movements around the Bays Metro Station and bus interchange.

6.4.4 Bus service capacity

A map of the bus routes within the TfNSW strategic modelling suite is presented on Figure 53. It is noted that a new bus network plan for Bays West is being developed and this will need to be validated once confirmed by TfNSW.

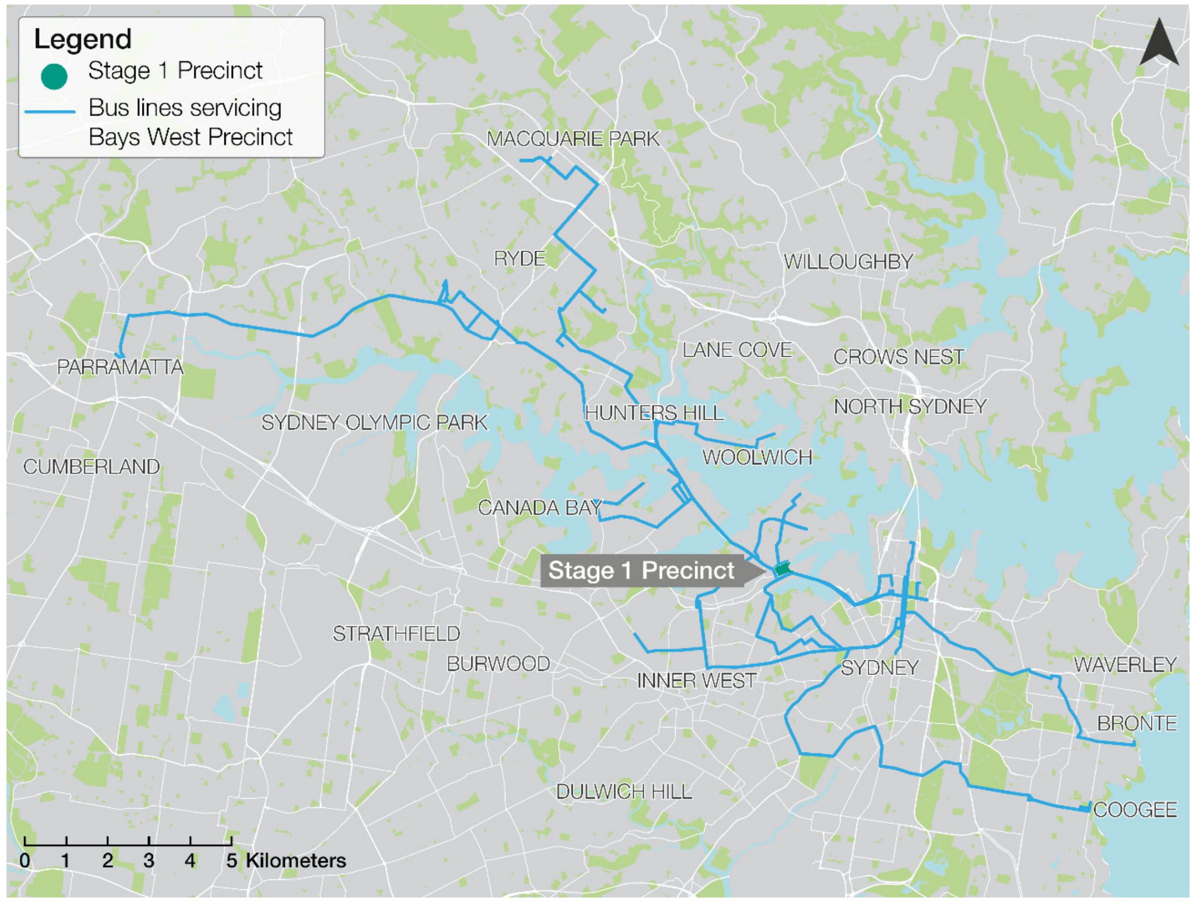


Figure 53: Bays West strategic model bus routes (PTPM)

To assess bus capacity, each route connecting to Stage 1 was reviewed to determine the forecast available capacity without Bays West during the AM peak hour. The forecast number of bus services, passenger demand and utilisation were extracted for the modelled 2036 year from the TfNSW strategic model for all routes on Robert Street, Victoria Road and the Stage 1 bus interchange. Additional bus trips generated to and from Bays West during the AM peak hour were then added to estimate the likely impacts on specific bus routes. Given the uncertainty around final bus services and stopping patterns in the future analysis has been aggregated by key stop. This analysis is presented in Table 34. Calculations included converting the 3.5-hour bus passenger outputs from the TfNSW strategic models to a one-hour peak using historical data from RMS Traffic Volume Viewer.

Table 34: Bus service capacity and Bays West passengers generated by Stages 1, 2 and 3 – AM peak hour

Bus stop location	Number of bus services (two way total)	Capacity	Strategic model utilisation (without Bays West)	2030 Stage 1 passengers	2030 average utilisation (with Stage 1)	2040 Stages 1, 2 and 3 passengers	2040 utilisation (with Stages 1, 2 and 3)
Robert Street	28	1680	44%	120	51%	690	85%
Victoria Road	82	4920	82%	80	83%	470	91%

[8] Catchment analysis has been undertaken as an indicator of accessibility and does not consider topography or waiting times at crossings

Bus stop location	Number of bus services (two way total)	Capacity	Strategic model utilisation (without Bays West)	2030 Stage 1 passengers	2030 average utilisation (with Stage 1)	2040 Stages 1, 2 and 3 passengers	2040 utilisation (with Stages 1, 2 and 3)
Bays West interchange*	60*	3600	11%	180	16%	1090	41%

*Number of services updated to align with the frequency suggested by TfNSW from inception (subject to further investigation). The number of bus services shown is for two-way services.

The strategic model indicated bus services on Robert Street, Victoria Road and the Stage 1 bus interchange are expected to operate with spare capacity. When adding Stage 1 passengers, bus services on Robert Street, Victoria Road and the Bays West interchange are expected to operate with increased utilisation but continue to operate with spare capacity.

In 2040, when trip demands for Stages 2 and 3 are also considered, bus services for the precinct have greater utilisation, with limited capacity on Robert Street and Victoria Road. The Bays West interchange is expected to operate with spare capacity.

The available capacity provides an opportunity to further encourage the use of public transport to access the site.

For all capacity calculations it should be noted that a confirmed bus network is not yet finalised by TfNSW, and this analysis does not consider different fleet or service patterns.

6.4.5 Bus interchange capacity

A key aspect of the Revised Master Plan is a new access point into the precinct from Robert Street which will enable public transport services into Bays West. Consultation with TfNSW has identified that the bus interchange within Stage 1 would need to provide for a minimum of four bus bays for pick-up and drop-off, with an additional two bus bays layover or rail replacement buses. The indicative bus interchange location within Stage 1 is shown in Figure 54 with four bus bays located on a bus only street. The primary bus access route is also shown, with an alternate access route provided as a redundancy route or to manage potential staged delivery of the network.

The bus-only street will separate bus stops from the primary traffic movements in Stage 1, cater to key desire lines, improve pedestrian safety, and have no driveway property access. A dedicated, wide, vibrant link is planned between the bus interchange and The Bays Metro Station to enable seamless interchange between modes.

A final bus network has not yet been finalised by TfNSW. However, a requirement of 30 buses an hour in 2040 has been provided as guide for designing infrastructure and validating feasibility. When metro services commence in 2030, it is unlikely that this volume of buses will be required and will be gradually increased as development comes online.

Bus interchange capacity is dependent on the frequency of bus arrivals and the dwell time at the stop. For a 2040 peak frequency of 30 buses per hour, the State Transit Bus Infrastructure Guide (NSW Government, 2011) provides a guide of two bus spaces assuming a dwell time of 20 to 30 seconds. The State Transit Bus Infrastructure Guide also specifies that scheduling and operational circumstances may require up to 50% more bus stop space.

As such the bus interchange has been planned to accommodate four bus stops, with an additional two layover spaces provided on an adjacent street. This interchange will provide operational flexibility; help manage events and enable growth if required beyond 2040.

Additional design investigation will be required once a finalised bus network is developed by TfNSW.

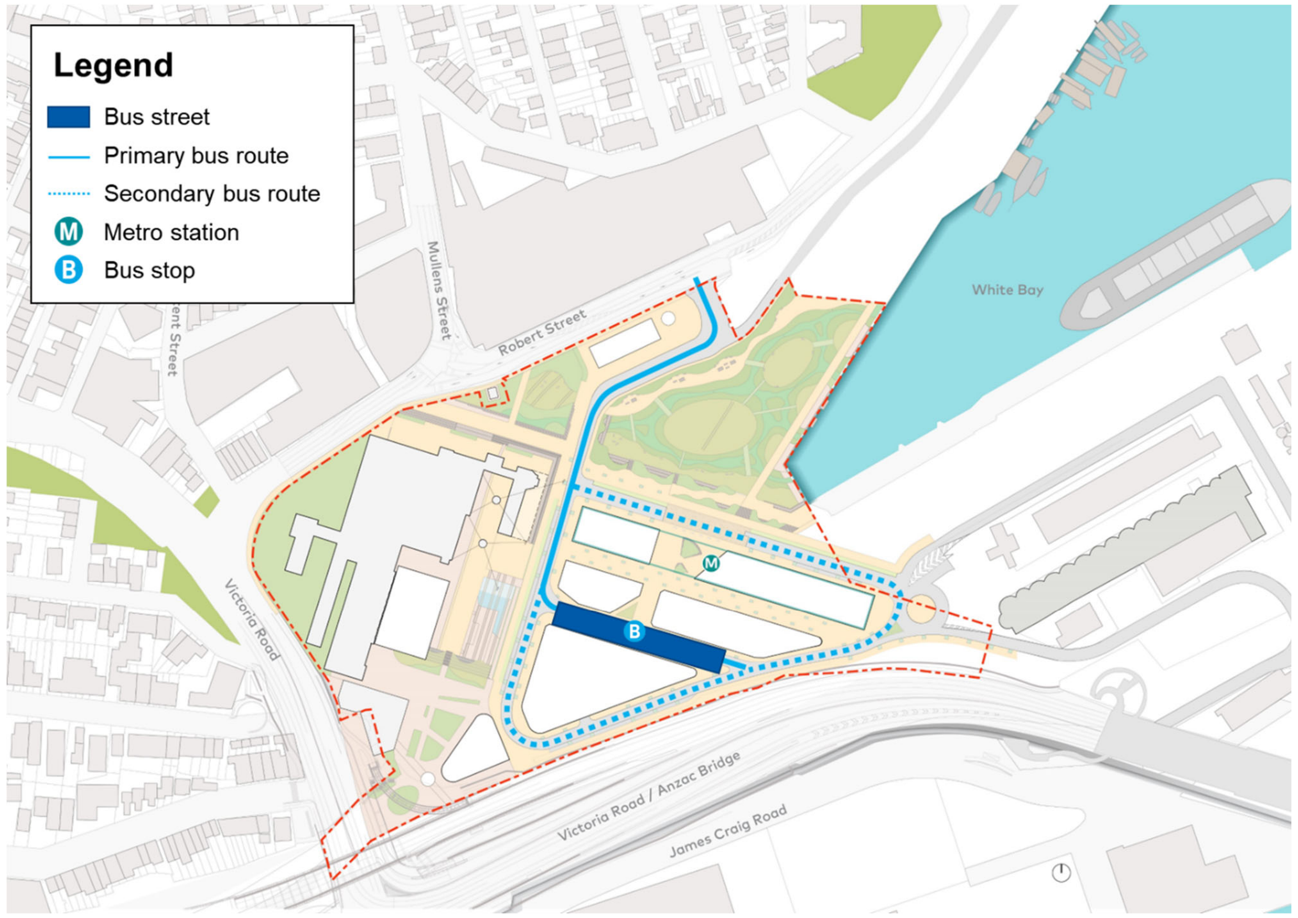


Figure 54: Bus interchange within Stage 1 (indicative)

6.4.6 Ferry services

As discussed in Section 3.4.3, no ferries currently serve the precinct directly other than a special service to support cruise passenger movements on certain occasions. The closest existing ferry services are located at Balmain East Wharf which is approximately a 30-minute walk from Stage 1.

As part of plans for Blackwattle Bay a ferry service is being considered that could connect to Bays West as an additional stop. Further engagement would be required with TfNSW and PANSW to confirm the feasibility of this service. Given the limited waterfront access within Stage 1 it is unlikely any ferry service would be operational from 2030 and this has been reflected in the mode share targets for the precinct. On-demand ferry services, which were trialled by TfNSW in Blackwattle Bay, may encourage increased trips by this mode in the future if this service is reintroduced.

Estimated trips by ferry in each stage of Bays West are presented in Table 35. Given these passengers volumes are relatively low it is expected these trips could be accommodated on existing ferry services. If a ferry services directly to Bays West is confirmed the mode share for the precinct would need to be revisited.

Table 35: Ferry trips generated by Stages 1, 2 and 3

Land use	Stage 1				Stage 2				Stage 3			
	AM		PM		AM		PM		AM		PM	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Ferry trips	46	12	10	36	66	22	19	50	148	51	41	111

6.4.7 Demand Responsive Transport

Demand Responsive Transport (DRT) is a form of flexible transport where vehicles do not have a fixed route or timetable but instead transport passengers based on their needs. DRT services are especially beneficial where a regular service is not viable and can provide several benefits, including allowing passengers to select their own journey times, route flexibility and reduced overall operating costs and complexity.

TfNSW is currently operating DRT services in the form of on-demand bus services in the Inner West, North West, Northern Beaches, South and South West. The main function of these on-demand buses is to provide feeder services to trunk services (such as train services) and to provide first and last mile access to and from residential locations. In the Inner West, on-demand buses currently service an area between Five Dock to the east and Newington and Lidcombe to the west. Public transport is unlikely to provide connections to all required destinations, particular those not served by rail or frequent buses. Therefore, locations predominantly local to the Inner West may be considered as potential catchments for an initial trial of on-demand bus services. This may involve an extension of the existing on-demand services in the Inner West or a new on-demand service connecting to growth areas. On-demand water taxis should also be considered given the proximity to Rozelle Bay. This would need to be coordinated with the reintroduction of on-demand ferry services to avoid a potential double-up of services.

6.4.8 Measures to encourage the use of public transport

Planned public transport improvements will contribute to a step change in services which will provide a broader range of options to travel to and from the precinct. Through validating the future public transport network for the precinct, a range of measures have been developed to complement committed schemes and to encourage an uptake in the uses of public transport, these are summarised in Table 36.

Table 36: Measures to increase the use of public transport

Measure code	Measure	Theme	Responsibility
EPT01	Deliver a Mobility-as-a-service to provide access to all modes available within Bays West		Delivery Authority
EPT02	Deliver a transport interchange that seamlessly integrates into the precinct and provides appropriate capacity for planned services		Delivery Authority
EPT03	Leverage emerging technology to trial demand responsive buses and water taxis		Delivery Authority
EPT04	Develop a bus network plan to serve the precinct		TfNSW
EPT05	Provide safe, direct, high quality and activated access to bus interchange within the precinct		Delivery Authority
EPT06	Provide new vehicle access into the precinct for buses at Robert Street		Sydney Metro
EPT07	Real time transport information for all modes including pricing / journey time comparisons		TfNSW

6.5 Vehicle travel

The road network in the Eastern Harbour City is constrained, and this is particularly true for the network adjacent to Bays West, as the meeting point of Victoria Road, Anzac Bridge and future projects such as WestConnex and the West Harbour Tunnel. The network performance is such, that it cannot cater for a business as usual traffic generation associated with the redevelopment of Bays West.

To be successful Bays West will need to implement interventions that restrict the use of private vehicles, shifting travel to sustainable options including public transport, walking and cycling. This response will require planning for Bays West to beyond what is considered business as usual in Sydney and push the boundaries of what can be achieved in a dense urban environment.

The following TMAP principles support aspirations to reduce vehicle travel relating to Stage 1:

- C01 - Implement a visionary low-car precinct
- E01 - Implement a low (or zero) carbon precinct

6.5.1 Road network performance – 2030 With Project

The redevelopment of Bays West Stage 1 will generate new demand for traffic which needs to be accommodated on the road network or shifted onto alternatives modes. A review of the baseline road network was undertaken in Section 5.8.

This section will review the impact on the traffic network when considering the additional trips generated by Stage 1. The impact of Stage 1 on the surrounding road network has been modelling using a linked SIDRA network, that considered both a 5% and 15% private vehicle mode share target.

Intersection performance for the With Project 2030 non-cruise day and cruise day scenarios is shown in Table 37 to Table 40 and shown graphically in Figure 55 to Figure 58.

During the 2030 AM peak hour with a 5% private vehicle mode share, the SIDRA modelling indicates that intersection performance generally remains poor. Intersection performance at The Crescent / James Craig Road intersection improves to LOS D in the With Project AM peak hour scenario. However, this is likely because The Crescent / Victoria Road intersection remains a pinch point and traffic demands may be constrained at this intersection, reducing downstream demands.

During the 2030 PM peak hour with a 5% private vehicle mode share, the SIDRA modelling indicates that intersection performance would be similar to the performance of the baseline 2030 PM peak hour. There is a minor decrease in delay at the Victoria Road / Robert Street intersection. However, this is likely to be due to the limited ability of SIDRA to reflect adjacent constraints in congested networks and actual delay is likely to be similar to the baseline performance.

During the 2030 AM and PM peak hours with a 15% private vehicle mode share, the SIDRA modelling indicates that intersection performance is similar to the scenario with a 5% private vehicle mode share and generally remains poor. Intersection performance worsens at various locations. However, this is again likely to be due to the limited ability of SIDRA to reflect adjacent constraints in congested networks.

As discussed previously in Section 5.8, the SIDRA modelling indicates that intersections will operate above capacity in the With Project scenarios. This is likely related to SIDRA's limited ability to reflect adjacent constraints in congested networks and is therefore not likely to accurately reflect absolute future performance for this congested study area. This is further supported by improved road network performance being reported in the Western Harbour Tunnel and Warringah Freeway Upgrade Environment Impact Statement and the Major Civil Construction Work between The Bays and Sydney CBD Environment Impact Statement. Both these studies undertook more detailed assessment using microsimulation modelling.

We will work with TfNSW to develop an appropriate methodology to assess road performance in the study area. This will likely involve a microsimulation approach that utilises a validated base model of the area owned by TfNSW. Once this assessment has been completed this TMAP will be updated to include the modelling results from the exercise.

Table 37: 2030 AM With Project SIDRA modelling results (5% private vehicle mode share)

Intersection	Non-cruise day				Cruise day			
	DoS	Average delay (s)	LoS	Max queue & approach (m)	DoS	Average delay (s)	LoS	Max queue & approach (m)
1. City West Link / M8 Motorway ramp	1.08	84	F	650m (south west approach)	1.07	85	F	725m (south west approach)
2. City West Link / The Crescent / WHT ramp	1.07	63	E	400m (south west approach)	1.19	99	F	400m (south west approach)
3. The Crescent / James Craig Road	1.04	55	D	325m (south west approach)	1.09	84	F	400m (south west approach)
4. The Crescent / Victoria Road	1.22	144	F	475m (east approach)	1.26	165	F	575m (east approach)
5. Victoria Road / Robert Street	1.19	170	F	1075m (north approach)	1.16	163	F	1150m (north approach)
6. Robert Street / Mullens Street	1.00	47	D	200m (north approach)	0.99	47	D	200m (north approach)
7. Robert Street / Port Access Road	0.40	20	B	75m (south approach)	0.41	22	B	75m (south approach)

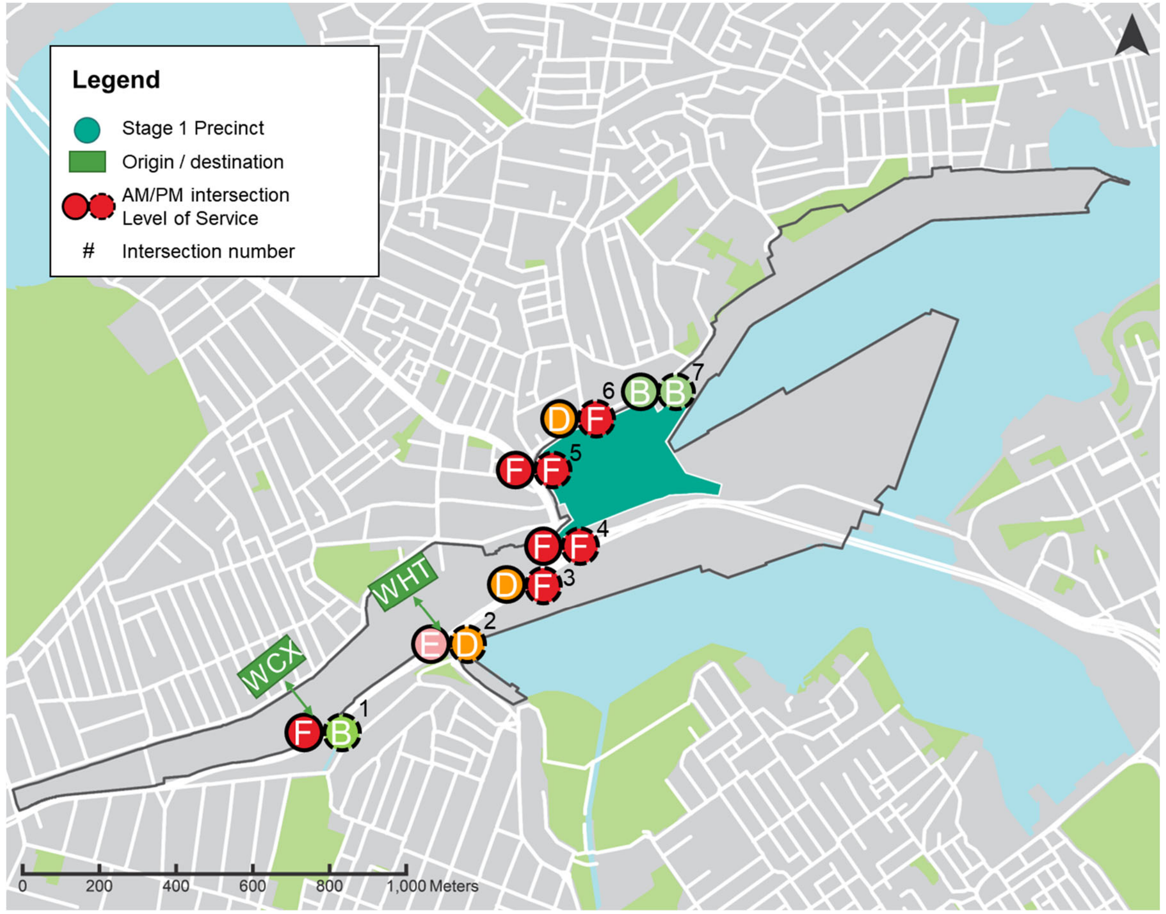


Figure 55: 2030 With Project SIDRA modelling results (non-cruise day, 5% private vehicle mode share)

Table 38: 2030 PM With Project SIDRA modelling results (5% private vehicle mode share)

Intersection	Non-cruise day / cruise day[9]			
	DoS	Average delay (s)	LoS	Max queue & approach (m)
1. City West Link / M8 Motorway ramp	0.73	21	B	150m (south west approach)
2. City West Link / The Crescent / WHT ramp	1.02	46	D	275m (north east approach)
3. The Crescent / James Craig Road	1.10	84	F	575m (south east approach)
4. The Crescent / Victoria Road	1.47	288	F	1600m (east approach)
5. Victoria Road / Robert Street	1.19	99	F	350m (north approach)
6. Robert Street / Mullens Street	1.14	98	F	500m (north approach)
7. Robert Street / Port Access Road	0.34	19	B	50m (south approach)

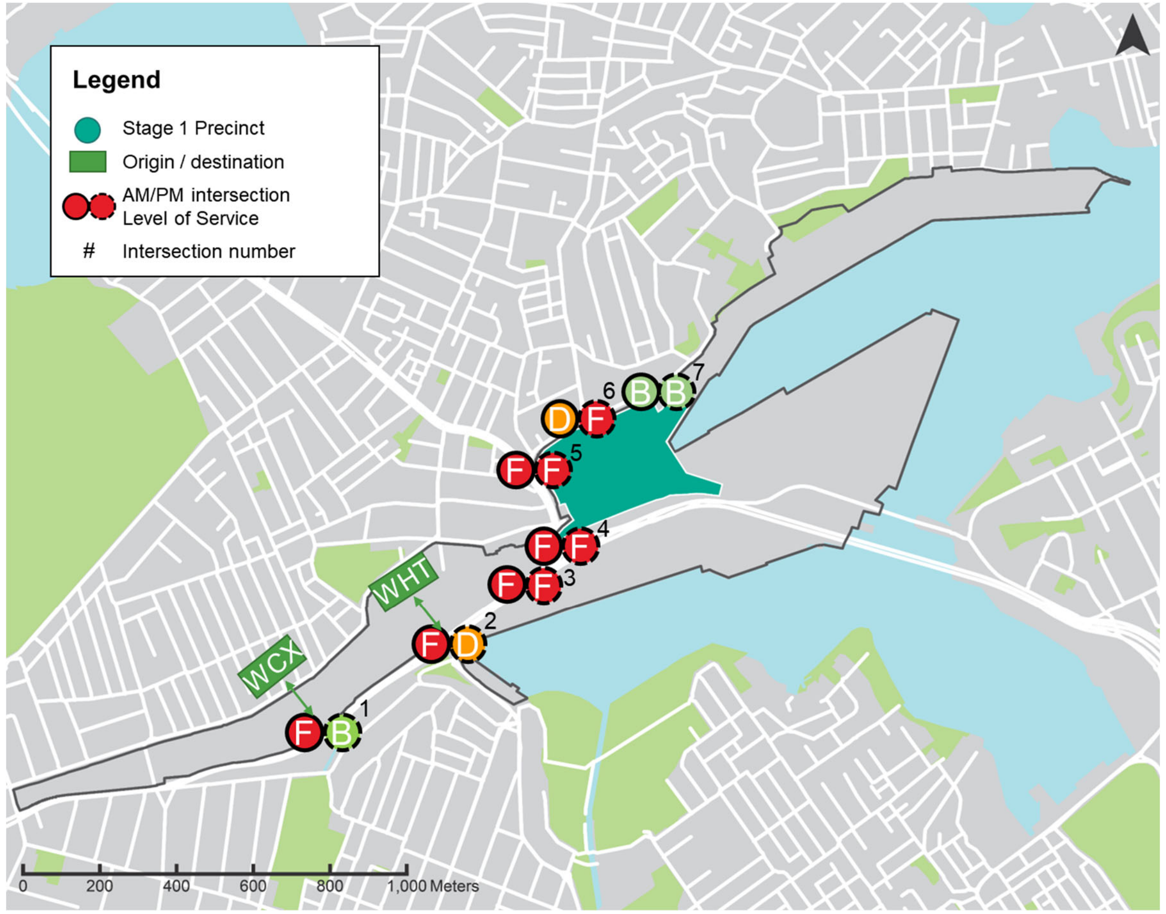


Figure 56: 2030 With Project SIDRA modelling results (cruise day, 5% private vehicle mode share)

[9] Non-cruise and cruise-day scenarios were assumed to be identical as cruise traffic is not assumed to overlap with the network PM peak hour.

Table 39: 2030 AM With Project SIDRA modelling results (15% private vehicle mode share)

Intersection	Non-cruise day				Cruise day			
	DoS	Average delay (s)	LoS	Max queue & approach (m)	DoS	Average delay (s)	LoS	Max queue & approach (m)
1. City West Link / M8 Motorway ramp	1.04	76	F	700m (south west approach)	1.07	86	F	725m (south west approach)
2. City West Link / The Crescent / WHT ramp	1.15	88	F	400m (south west approach)	1.19	100	F	400m (south west approach)
3. The Crescent / James Craig Road	1.02	60	E	400m (south west approach)	1.08	84	F	400m (south west approach)
4. The Crescent / Victoria Road	1.20	140	F	500m (east approach)	1.25	164	F	550m (east approach)
5. Victoria Road / Robert Street	1.16	158	F	1125m (north approach)	1.18	170	F	1175m (north approach)
6. Robert Street / Mullens Street	1.06	58	E	200m (east approach)	1.05	56	D	200m (north approach)
7. Robert Street / Port Access Road	0.49	23	B	100m (south approach)	0.45	22	B	75m (south approach)

Table 40: 2030 PM With Project SIDRA modelling results (15% private vehicle mode share)

Intersection	Non-cruise day / cruise day[10]			
	DoS	Average delay (s)	LoS	Max queue & approach (m)
1. City West Link / M8 Motorway ramp	0.73	21	B	150m (south west approach)
2. City West Link / The Crescent / WHT ramp	1.02	46	D	275m (north east approach)
3. The Crescent / James Craig Road	1.09	78	F	575m (south east approach)
4. The Crescent / Victoria Road	1.46	280	F	1575m (east approach)
5. Victoria Road / Robert Street	1.20	114	F	425m (north approach)
6. Robert Street / Mullens Street	1.15	104	F	525m (north approach)
7. Robert Street / Port Access Road	0.38	18	B	50m (south approach)

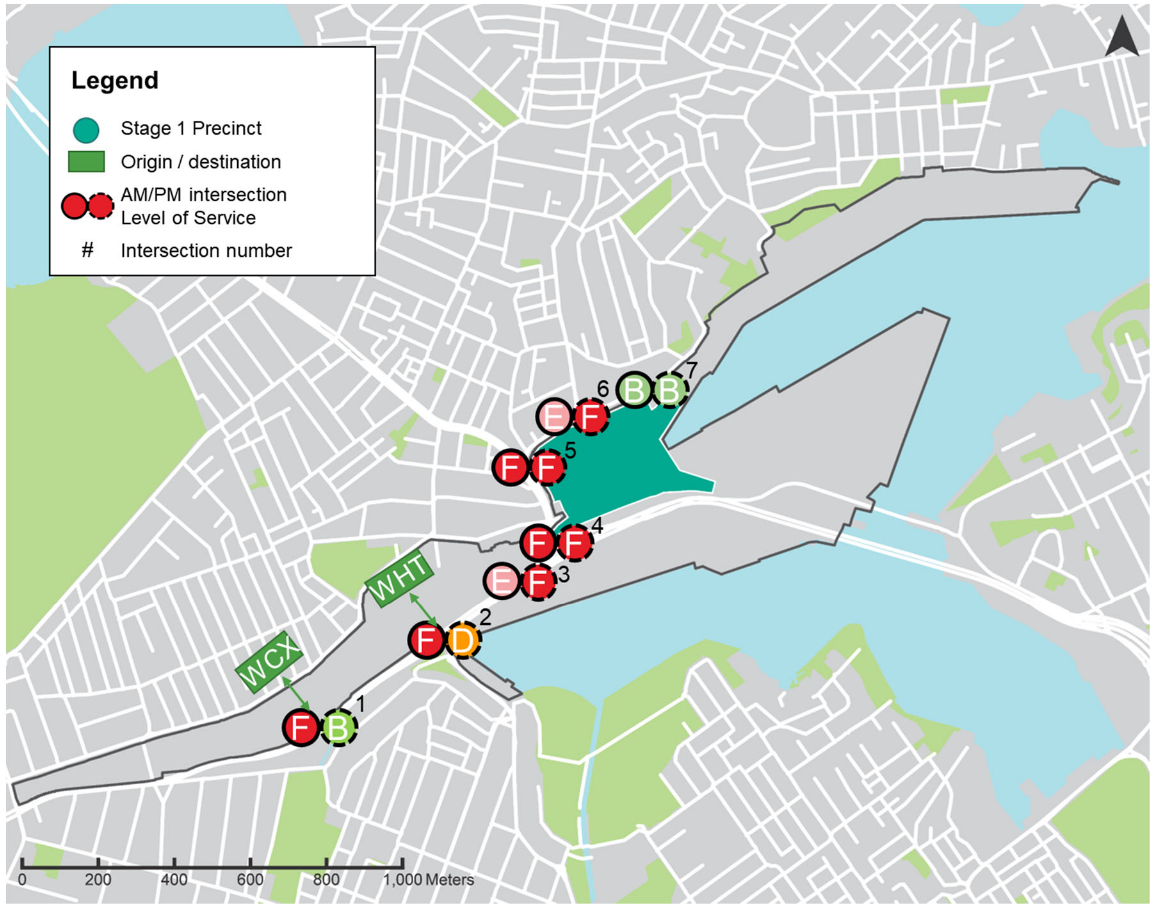


Figure 57: 2030 With Project SIDRA modelling results (non-cruise day, 15% private vehicle mode share)

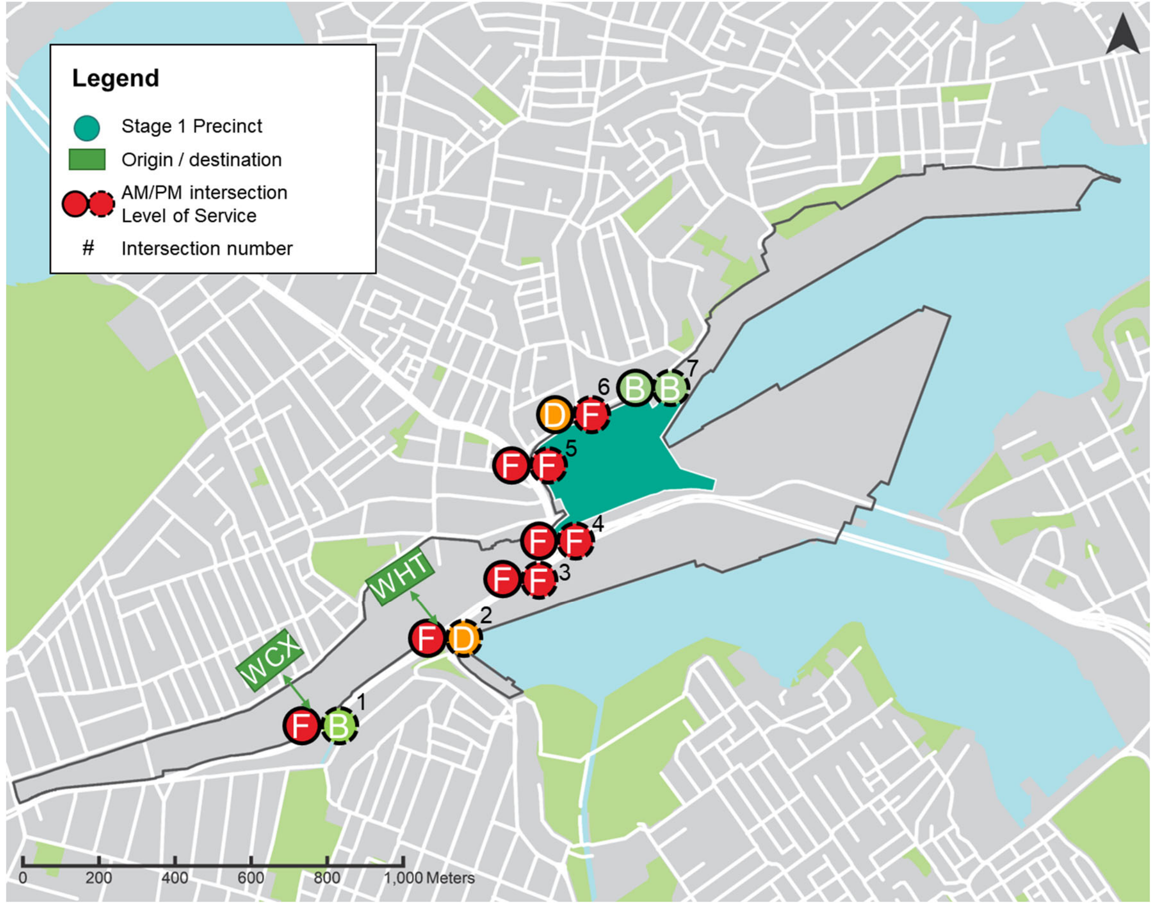


Figure 58: 2030 With Project SIDRA modelling results (cruise day, 15% private vehicle mode share)

[10] Non-cruise and cruise-day scenarios were assumed to be identical as cruise traffic is not assumed to overlap with the network PM peak hour.

6.5.2 Signalisation of Robert Street / Mullens Street intersection – traffic warrants

As discussed in Section 5.7.1, the Robert Street / Mullens Street intersection is currently unsignalised and will be upgraded to a signalised intersection to improve traffic flow, particularly for traffic and buses accessing The Bays Metro Station. A high-level review of the traffic signal warrants from *Traffic Signal Design Section 2 – Warrants* (RTA, 2010) has been undertaken to assess the suitability of traffic signals at the Robert Street / Mullens Street intersection.

Warrant (a) of Section 2.3 of *Traffic Signal Design Section 2 – Warrants* outlines the following requirement for signalised intersections:

For each of four one-hour periods of an average day:

- *(i) The major road flow exceeds 600 vehicles/hour in each direction; and*
- *(ii) The minor road flow exceeds 200 vehicles/hour in one direction.*

The 2030 baseline AM and PM peak hour traffic volumes (developed per Figure 42) on Roberts Street and Mullens Street exceed the above warrants on the major roads (Robert Street west and Mullens Street) and minor roads (Robert Street east).

Traffic demand estimation was not undertaken for other peak periods as part of this TMAP. However, existing traffic surveys of the Robert Street / Mullens Street intersection show that traffic volumes across the four-hour PM peak period (3pm to 7pm) are generally consistent. Therefore, it is expected that the warrants are satisfied for at least four one-hour periods of an average day.

The suitability of traffic signals at the Robert Street / Mullens Street intersection would be re-assessed using refined traffic and pedestrian volumes in subsequent stages of planning including consulting TfNSW on the final design.

6.5.3 Reducing vehicle travel

Assessment of the performance of the future road network, has clearly demonstrated that the network is constrained today, and in the future with or without Bays West. Though not a significant contributor in Stage 1, once Stages 2 and 3 are built out, Bays West may contribute significantly to the demand for vehicle trips. Though unlikely to solve the wider traffic constraints and impact on baseline traffic volumes, this TMAP has investigated potential measures to reduce vehicle trips to, from, through and within Stage 1.

Bays West will continue to operate a port, cruise terminal and working harbour, this coupled with traffic generated by new uses means applying TDM to vehicle use is inherently more complex. This TMAP has looked at reducing vehicle use in three categories, so that targeted measures can be developed to address relevant issues. The three types of vehicle travel appraised are:

Personal Vehicle

Freight and Servicing

Cruise traffic

See below for discussion on these three categories.

6.5.4 Reducing personal vehicle travel

Personal vehicle trips can consist of privately owned vehicles trips or point-to-point services using rideshare services or taxis. Demand for these trips is generated by land use, attractors such as the White Bay Power Station, WBCT and the Bays Metro Station.

The strategy for minimising personal vehicle travel has focused on both components to develop a holistic set of measures that manage demand, avoid relocating the problem to the periphery of the precinct and maintain convenience for users.

6.5.4.1 Car ownership and Parking

A range of centres in Sydney with high public transport accessibility have been reviewed to understand current car ownership trends in comparison to Rozelle. Table 41 demonstrates that car ownership in the other centres is much lower than Rozelle. This analysis indicates that the introduction of improved public transport services to Bays West provide an opportunity to reduce provisions for private vehicles.

Table 41: Number of registered cars per household in 2021 (Source: ABS census)

Year	Rozelle	Sydney CBD	Chatswood	North Sydney	Parramatta	St Leonards	Redfern	Erskineville
No cars	11%	60%	22%	30%	27%	31%	40%	25%
1 car	57%	34%	53%	55%	57%	57%	46%	60%
2 cars	27%	5%	20%	13%	14%	11%	12%	13%
3 cars or more	5%	1%	6%	2%	3%	1%	3%	2%

Most cars in Australia are only active for 6 hours a week, meaning they are parked for up to 162 hours. Costs and impacts associated with parking can have a notable effect on the quality and availability of public space, activation of land uses, reductions in the costs of property and increases in the viability of development. Sydney is also experiencing a reduction in car kilometres per capita with younger generations reducing their dependence on private vehicle due to taxation, road congestion, technological factors, and environmental concerns.

Therefore, the strategy for parking within Bays West is key to fostering the desired travel patterns to, from and within the precinct. Parking provision will need to be reduced to discourage people driving to and from the precinct supported by measures that avoid these impacts being shifted to surrounding streets, particularly on the Balmain Peninsula. The high public transport accessibility of Stage 1 in the future is a key driver for lowering parking rates and has been implemented successfully in other precincts globally.

A range of precincts across Sydney were researched to develop bespoke parking rates for the precinct that seek to minimise private vehicle parking within new uses and in turn manage vehicle demand. The key drivers for the parking rates relating to all new uses are discussed in Section 5.3. The number of parking spaces that will be provided in Stage 1 when applying these rates are summarised in Table 42.

Table 42: Parking provision for Stage 1

Land use	Unit	Assumed Stage 1 yield	Parking rate	Parking provision		
				Stage 1	Stage 2	Stage 3
Residential	Dwelling	25 studios 50 1-bedroom units 150 2-bedroom units 25 3-bedroom units	0 per studio 0.25 per 1-bedroom unit 0.5 per 2 or 3-bedroom unit No visitor parking	111	412	991
Commercial	GFA (m^2)	67,368	1 space per ~1,100m^2 GFA	64	91	210
Retail	GFA (m^2)	4,691	Accessible parking only	-	-	-
Community	GFA (m^2)	4,784	Accessible parking only	-	-	-

6.5.4.2 Network layout and management

In addition to restricting parking, which has been used with success to manage vehicle trip within NSW, Australia and globally. Vehicle trips to and from the precinct can also be influenced through street layouts and network management.

The proposed network is designed to a be a low car and low speed environment. Reduced carriageway widths for vehicles on local streets and increased walking and cycling facilities, aim to deter easy, rapid private vehicle trips. The precinct will prioritise people movement not vehicle movement, with abundant crossing locations, reduced on street parking and consolidated access to any parking or loading facilities. Making it more challenging and slower to drive, can often lead to people choosing alternative means of travel.

The active management of the precinct through pricing or charging for a particular cordon can be an effective way of managing taxi and rideshare trips. This measure is already implemented at many airports globally including Sydney Airport which has entry charges that apply to taxi, rideshare and short term parking. Due to the enclosed network within Bays West with only two vehicle access points, a cordon charge would be feasible and could consider other metrics such as vehicle occupancy. A further consideration is linking vehicle emissions to charging which would help link outcomes to the climate vision for the precinct.

Discussions, on charging can often be polarising and would need to be further considered as part of whole of NSW Government approach to managing the precinct.

6.5.4.3 Changing parking service models

Technology empowered services have blurred the lines between private vehicle ownership and personal identity, with the use of ridesharing services and mobile food delivery influencing travel patterns. Problematically, evidence suggests 39% of trips by rideshare could have used walking, cycling and public transport and a lack of parking is a key driver for people using these services. A range of car-based mobility services have emerged with the decline in vehicle ownership that can replace conventional parking demands for private vehicles.

Car Pool – A traditional means of sharing similar journeys. These are generally free or have share costs that reduce the need for individuals to own cars and the volume of parking needed whilst increasing vehicle occupancy.

Car Share – Provide users who subscribe to a service access to a fleet of cars. These cars are generally situated in on-street parking and in some cases utilise electric vehicles. Studies suggest one car share space could replace up to 10 private vehicle spaces.

Ride Share – Mobile applications are used to match passengers and drivers, with passengers paying a fee per trip derived from a number of factors. Mobile applications can contribute to reduced car ownership but also lead to localised congestion impacts due to uncontrolled drop off / pick up.

Park Share – Services match drivers who need parking spaces with those who own unused spots. Weekly or monthly agreements can be made via app which helps to increase parking utilisation, help subsidise housing costs and reduce demand for on street parking.

6.5.4.4 Measures to reduce personal vehicle travel

Personal vehicle travel must be a key focus of the TDM strategy as it is a demand that does not yet exist on the network and so is easier to influence. The measures proposed to reduce travel by personal vehicle are summarised in Table 43.

Table 43: Measures to reduce private vehicle travel

Measure code	Measure	Theme	Responsibility
RPV01	Decoupled parking solutions to remove traffic from the core of the precinct		Delivery Authority, Proponents
RPV02	Provision of car share services to reduce the need for car ownership of residents		Delivery Authority
RPV03	Ultra-low parking rates for all uses as outlined in the Design Guidelines		Delivery Authority, Proponent
RPV04	TDM Strategy for the precinct including private vehicle mode share targets and a governance structure		Delivery Authority
RPV05	Green travel plans for all workplaces, residential developments and schools / universities with clear mode share targets and monitoring strategies		Delivery Authority, Proponent
RPV06	Cordon charge for all taxi, rideshare and PUDO trips to and from the precinct. Discounts could be considered for vehicles powered by alternative fuels		Delivery Authority
RPV07	Parking controls on the Balmain Peninsula to minimise parking by non-residents		Delivery Authority, Inner West Council

6.5.5 Reducing freight and servicing

An increase in freight and servicing to and from the precinct is a consequential demand that is directly related to developing additional uses in Stage 1 and any further stages of Bays West. This demand will be overlaid on freight and servicing movements that already exist to serve the WBCT and ongoing uses on Glebe Island. Managing freight and servicing is further complicated by changing consumer trends and the limited scope to construct basements within Stage 1 which are usually home to freight and servicing activities.

Regarding the latter, a key consideration that may have significant impact on new uses within the precinct is proposing one consolidated loading dock for all uses rather than the traditional approach of a dock in each building. Consolidating docks generally leads to loading bays being used more efficiently, thereby reducing the overall bay requirement and in turn, space take. The TfNSW Urban Freight Forecaster has been used to initially understand the varying loading bay requirements between the two options for the Stage 1 uses, this is presented in Table 44.

Table 44: Comparing loading dock options

Loading bay type	Separate docks	Consolidated dock
Small (B99, Vans, Utes)	21	10
Medium (SRV, Small Truck)	9	4
Large (MRV, HRV, Large Truck)	7	2
Total	**37**	**16**

It is evident that a significant reduction in the loading bay requirements could be achieved if a consolidated dock was implemented for Stage 1. However, this solution presents further challenges in how goods would be distributed to different buildings from the centralised loading dock. Options for servicing Stage 1 will be further developed as part of a Delivery and Servicing Plan that will govern operations for all uses within Bays West.

6.5.5.1 Growth in e-commerce

The COVID-19 pandemic and its associated lockdowns rapidly accelerated the pre-existing trend towards online shopping. The number of e-commerce transactions in 2024 is expected to be five times higher than in 2014, accounting for 22% of all retail transactions globally[11]. Besides the established e-commerce giants, more product lines and retailers are now offering home delivery, from cars to corner. While e-commerce gives consumers an extraordinary level of convenience, this approach has a significant impact on surrounding road networks and parking requirements at source and destination.

Bays West will need to manage these demands to and from the precinct and look to consolidate vehicle movements through implementing measures further up the supply chain. Deliveries could also be encouraged using more space efficient vehicles that place less strain on the limited road network capacity whilst reducing emissions and climate impacts.

6.5.5.2 Last mile solutions

The 'last-mile' is generally defined as the final leg of a package's trip from distribution centre, logistics hub or local producer to the consumer. This is an area of the logistics industry that has been a key focus for innovation in recent years with robots and autonomous vehicles that have previously been used in warehouses now being trialled for delivering goods directly to the customer. In addition to this, sensors are being used in urban areas to inform delivery drivers on the availability of loading bays, cycle freight hubs are supporting the distribution of goods for local businesses and pedestrian porters are collecting goods directly from vehicles before delivering them to their final location.

Bays West will comprise of a range of different buildings and uses that have varying logistics needs. Efficient last mile systems to meet these needs may help to reduce unnecessary vehicle movements within the precinct and make use of the high-quality walking and cycling routes that cannot be utilised by higher order vehicles.

6.5.5.3 Measures to reduce freight and servicing

A range of measures have been developed to help reduce freight and servicing demand to, from and within the precinct that are driven by the 4Rs defined in TfNSW's Freight and Servicing Last Mile Toolkit (Figure 59). These are presented in Table 45.

Table 45: Measures to consolidate and reduce freight and servicing

Measure code	Measure	Theme	Responsibility
RFS01	Delivery and Servicing Plan that covers all uses within the precinct including ports and maritime uses		Delivery Authority, PANSW
RFS02	Innovative last-mile freight solutions for distributing goods within the precinct		Delivery Authority
RFS03	All businesses and operators to consider virtual and physical consolidation solutions to manage supply chains		Delivery Authority, Proponents, Operators
RFS04	Restricting and retiming access for freight and servicing vehicles		Delivery Authority

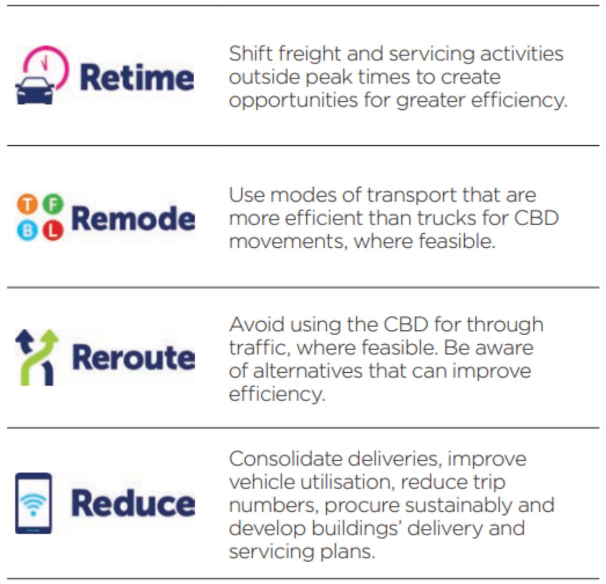


Figure 59: The 4Rs approach to last mile freight management[12]

6.5.6 Reducing cruise traffic

Traffic related to cruise passengers accessing the WBCT is one of the largest vehicle trip generators in the precinct. Although it is noted that these passengers prefer vehicle-based services to aid with luggage, there are examples in Sydney where higher mode shares of sustainable travel have been achieved at cruise terminals.

Mode shares and travel patterns associated with passengers using the WBCT and the Overseas Passenger Terminal (OPT) at Circular Quay are presented in Table 46 and Table 47.

Table 46: OPT and WBCT passenger mode shares (Source: PANSW)

Mode	Mode share	
	WBCT	OPT
Private vehicle, taxi or car sharing	61%	47%
Public transport	9%	19%
Private shuttle buses	29%	26%
Walk	1%	8%

[11] Last mile logistics worldwide, 2020, Statista

[12] TfNSW Freight and Servicing Last Mile Toolkit

Table 47: OPT and WBCT travel patterns (Source: PANSW)

Origin / Destination	Embarking passengers		Disembarking passengers	
	WBCT	OPT	WBCT	OPT
Domestic Airport	20%	18%	25%	27%
Eastern Suburbs	2%	2%	3%	3%
Northern and North-west Suburbs	9%	12%	12%	12%
Regional NSW	14%	9%	9%	9%
Southern and South-west Suburbs	10%	9%	12%	12%
Sydney CBD	34%	33%	15%	15%
Western Suburbs	11%	15%	18%	18%
Other	0%	2%	4%	4%

Data in Table 46 indicates that at the OPT where a wider range of public transport modes are available a higher passenger mode share by this mode can be achieved. Noting the distance between Stage 1 and WBCT complementary services will need to be provided such as baggage transfers, walking routes or shuttles to provide convenient access for passengers. When comparing the travel patterns in Table 47, similar travel patterns are observed for both cruise terminals. Passengers travelling to and from the Sydney CBD are likely to be a key cohort that could shift to using public transport once Sydney Metro West opens. For locations across broader Sydney not covered by direct public transport links, measures to deliver services that increase vehicle occupancy would also help manage vehicle demand.

6.5.6.1 Improving cruise day efficiency

Measures have been developed for managing cruise traffic through reviewing global best practice in the context of Bays West. These are presented in Table 48 and will need to be discussed with PANSW in more detail before any measures are further considered.

Table 48: Measures to reduce cruise traffic

Measure code	Measure	Theme	Responsibility
ICD01	Dedicated travel demand management plan for cruise day operations that aims to utilise public transport services and increase vehicle occupancy		Delivery Authority, PANSW
ICD02	Shuttle services from the transport interchange to the White Bay Cruise Terminal		Delivery Authority, PANSW
ICD03	Baggage transfer services from key origin locations and major transport hubs for cruise passengers		Delivery Authority, PANSW
ICD04	Entry charge for low occupancy private vehicle or taxi trips to the White Bay Cruise Terminal		Delivery Authority, PANSW
ICD05	Consider a separate holding area for passenger traffic to reduce the volume of cruise traffic passing through Stage 1		Delivery Authority, PANSW
ICD06	Integrate ticketing and subsidised public transport for cruise passengers		Delivery Authority, PANSW

6.6 Climate impact

In many countries globally the transport sector is responsible for the largest portion of emissions. This outcome is heavily related to private vehicle use but also increasingly vehicles distributing goods and services. The NSW Government in late 2022, announced formation of zero-emission zones, these precincts would be designed as a net-zero with no fossil fuels to be used in operation, adjacent Blackwattle Bay is the first such precinct, Bays West would be a likely future such precinct.

The below TMAP principle outlines a clear aspiration to deliver a precinct that minimises climate impacts at a local and global scale:

- E01 - Implement a low (or zero) carbon precinct

Achieving this will require a shift away from fossil-fuel powered vehicles and measures may be needed to encourage this transition. Although some of this will be governed by broader policies the precinct must be future proofed to accommodate these vehicles and technologies.

6.6.1 Electric Vehicles

To deliver a zero-emission precinct, Bays West will need to provide infrastructure for modes that help to decarbonise travel. A key part of this is providing charging infrastructure to support electric vehicles. Parking bays for EVs are usually defined by the following categories:

- **EV-Capable** - the electrical capacity to support future charging spots is installed. There is no requirement for any charging equipment to be installed, however the spatial allowance for the future installation of equipment is provided.
- **EV-Ready** - the electrical capacity to support charging spots is installed.
- **EV-Installed** - the infrastructure, including a minimum number of Level 2 EV charging stations are installed. A parking space that is EV-Installed allows an EV user to charge their vehicle at multiple levels from day one.

Research shows EV users have varying preferences for where charging their vehicle is most convenient, which in turn impacts how and when to charge. These preferences are known as charging behaviours, and they depend on key influencing factors such as available infrastructure, charging times, location and cost. Charging behaviour provides factors such as charging times and infrastructure types and quantities, assisting in dictating the requirements for different building types. Figure 60 below shows the levels of charging typically associated with specific locations.

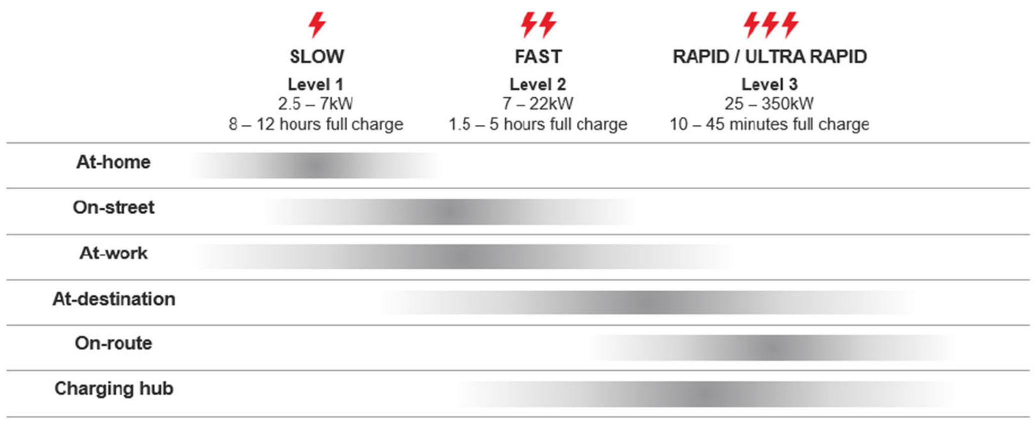


Figure 60: EV charging requirements by use

This research has been used to develop EV charging requirements for all parking being provided in Bays West which has been included in the Design Guidelines. A summary of requirements for each use in terms of different charging capability are presented in Table 49.

Table 49: EV charging requirements for parking

Land use	EV-Capable	EV-Ready
Residential	100%	20%
Commercial	100%	20%
Retail*	-	100%
Community*	-	100%

*Only accessible parking will be provided for these uses

Consideration will also be given to providing charging infrastructure in the public domain either for private vehicles or through car share services that use EVs.

6.6.2 Circularity

Most businesses currently employ a 'take-make-waste' approach to production and consumption which inherently produces large volumes of waste that has to be transferred to landfill or waste processing facilities in other locations. Reverse logistics is a principle that is currently used to return goods from customers back to distributors or suppliers. It is therefore imaginable that this principle could be used to facilitate recycling and reuse. Reuse can apply to waste but also services such as the car share schemes presented in Section 6.5.4 where an asset is used more efficiently by multiple users. Applying circular economy principles throughout the processes and systems used to help Bays West function will address environmental impacts and potentially uncover ways to further reduce the transfer of goods and waste to and from the precinct.

6.6.3 Measures to reduce climate impacts

Measures have been developed that will help the reduce the climate impacts of Bays West, which are presented in Table 50. We note that these are complementary to the wider sustainability strategy being developed for the precinct and will need to be integrated with wider emissions and carbon targets as planning and delivery progresses.

Table 50: Measures to reduce climate impacts

Measure code	Measure	Theme	Responsibility
RCI01	Provide infrastructure to support low-emissions vehicle on street		Delivery Authority
RCI02	Deliver a cool and green street network, with appropriate landscape and tree canopy		Delivery Authority
RCI03	Digital twin developed to support precinct operations and environmental monitoring		Delivery Authority
RCI04	All development to include EV enabled parking spaces in line with the Design Guidelines		Delivery Authority, Proponents
RCI05	Reduce cordon charging fees for non-fossil fuel powered vehicles		Delivery Authority
RCI06	Consider the procurement of logistics providers using vehicles powered by alternative fuels		Delivery Authority, Operators
RCI07	Implement a waste strategy that considers circularity and reuse to minimise waste collection needs		Delivery Authority

7. Implementation Plan

We have developed an integrated package of measures and strategies as part of this TMAP which aim to deliver the vision for the precinct through a TDM approach. All measures developed are targeted at Stage 1 with further measures likely needed to support future stages of the precinct.

Table 51 provides a summary of all transport infrastructure and service measures required to support the Bays West Stage 1 rezoning package. This summary includes the key purpose of each measure and which stakeholder is responsible.

Table 51: Bays West Stage 1 TMAP measures

Measure code	Measure	Theme	Responsibility
Increase public transport usage			
EPT01	Deliver a Mobility-as-a-service to provide access to all modes available within Bays West		Delivery Authority
EPT02	Deliver a transport interchange that seamlessly integrates into the precinct and provides appropriate capacity for planned services		Delivery Authority
EPT03	Leverage emerging technology to trial demand responsive buses and water taxis		Delivery Authority
EPT04	Develop a bus network plan to serve the precinct		TfNSW
EPT05	Provide safe, direct, high quality and activated access to bus interchange within the precinct		Delivery Authority
EPT06	Provide new vehicle access into the precinct for buses at Robert Street		Sydney Metro
EPT07	Real time transport information for all modes including pricing / journey time comparisons		TfNSW
Increase walking and cycling			
EWC01	Reconfigure Mullens / Robert Street intersection to provide safe pedestrian and cyclist access (subject to TfNSW TCS approval)		Delivery Authority, TfNSW, Council
EWC02	Provide public access and foreshore walking and cycling (Subject to ongoing Ports and Cruise operations)		Delivery Authority, PANSW
EWC03	Renewal or replacement of Glebe Island Bridge for walking and cycling		TfNSW
EWC04	Mobility hubs to access micromobility and other modes at major destinations		Delivery Authority
EWC05	Deliver a walking and cycling network that meets the requirements in the Design Guidelines		Delivery Authority, Proponents
EWC06	Target a maximum speed limit of 30km/h within the precinct (subject to further investigation)		Delivery Authority
EWC07	Provide cycle parking and maintenance facilities in new buildings and the public realm in line with the Design Guidelines		Delivery Authority, Proponents
EWC08	Deliver a multi-modal street network, with a hierarchy of streets focused around walking, cycling and public transport		Delivery Authority
EWC09	Wayfinding to key destinations that is equitable and considers topography and Connection to Country. This may include dynamic or digital signage.		Delivery Authority
EWC10	Connect the precinct walking and cycling network to the local and regional networks including Rozelle Parklands, Anzac Bridge, Victoria Road and the potential Glebe Island Bridge connection		Delivery Authority
EWC11	Gamification at key destinations to encourage walking and cycling and to embrace the heritage nature of the precinct		Delivery Authority
Establishing a local catchment reducing the need to travel to and from the precinct			
RNT01	Delivering uses within the precinct which provide all necessary amenities for residents		Delivery Authority, Proponents
RNT02	Planning retail and community uses that serve a local function		Delivery Authority, Proponents
RNT03	Delivering infrastructure and telecommunications that support working from home		Delivery Authority, Proponents
RNT04	Flexible working practices to be supported by all employers within the precinct. These practices would be clearly outlined in Workplace Green Travel Plans		Delivery Authority, Proponents
Reduce personal vehicle travel			
RPV01	Decoupled parking solutions to remove traffic from the core of the precinct		Delivery Authority, Proponents
RPV02	Provision of car share services to reduce the need for car ownership of residents		Delivery Authority
RPV03	Ultra-low parking rates for all uses as outlined in the Design Guidelines		Delivery Authority, Proponent
RPV04	TDM Strategy for the precinct including private vehicle mode share targets and a governance structure		Delivery Authority
RPV05	Green travel plans for all workplaces, residential developments and schools / universities with clear mode share targets and monitoring strategies		Delivery Authority, Proponent
RPV06	Cordon charge for all taxi, rideshare and PUDO trips to and from the precinct. Discounts could be considered for vehicles powered by alternative fuels		Delivery Authority
RPV07	Parking controls on the Balmain Peninsula to minimise parking by non-residents		Delivery Authority, Inner West Council
Consolidate and reduce freight and servicing traffic			
RFS01	Delivery and Servicing Plan that covers all uses within the precinct including ports and maritime uses		Delivery Authority, PANSW

Measure code	Measure	Theme	Responsibility
RFS02	Innovative last-mile freight solutions for distributing goods within the precinct		Delivery Authority
RFS03	All businesses and operators to consider virtual and physical consolidation solutions to manage supply chains		Delivery Authority, Proponents, Operators
RFS04	Restricting and retiming access for freight and servicing vehicles		Delivery Authority
Reduce cruise traffic			
ICD01	Dedicated travel demand management plan for cruise day operations that aims to utilise public transport services and		Delivery Authority, PANSW
ICD02	Shuttle services from the transport interchange to the White Bay Cruise Terminal		Delivery Authority, PANSW
ICD03	Baggage transfer services from key origin locations and major transport hubs for cruise passengers		Delivery Authority, PANSW
ICD04	Entry charge for low occupancy private vehicle or taxi trips to the White Bay Cruise Terminal		Delivery Authority, PANSW
ICD05	Consider a separate holding area for passenger traffic to reduce the volume of cruise traffic passing through Stage 1		Delivery Authority, PANSW
ICD06	Integrate ticketing and subsidised public transport for cruise passengers		Delivery Authority, PANSW
Reduce climate impacts			
RCI01	Provide infrastructure to support low-emissions vehicle on street		Delivery Authority
RCI02	Deliver a cool and green street network, with appropriate landscape and tree canopy		Delivery Authority
RCI03	Digital twin developed to support precinct operations and environmental monitoring		Delivery Authority
RCI04	All development to include EV enabled parking spaces in line with the Design Guidelines		Delivery Authority, Proponents
RCI05	Reduce cordon charging fees for non-fossil fuel powered vehicles		Delivery Authority
RCI06	Consider the procurement of logistics providers using vehicles powered by alternative fuels		Delivery Authority, Operators
RCI07	Implement a waste strategy that considers circularity and reuse to minimise waste collection needs		Delivery Authority

7.1 Staging

The redevelopment of Bays West is a multi-decade development that will be delivered in stages to 2040 and beyond. The first part of Stage 1 of the precinct will be open by 2030 with the Metro Station and some early activation.

Appendix A

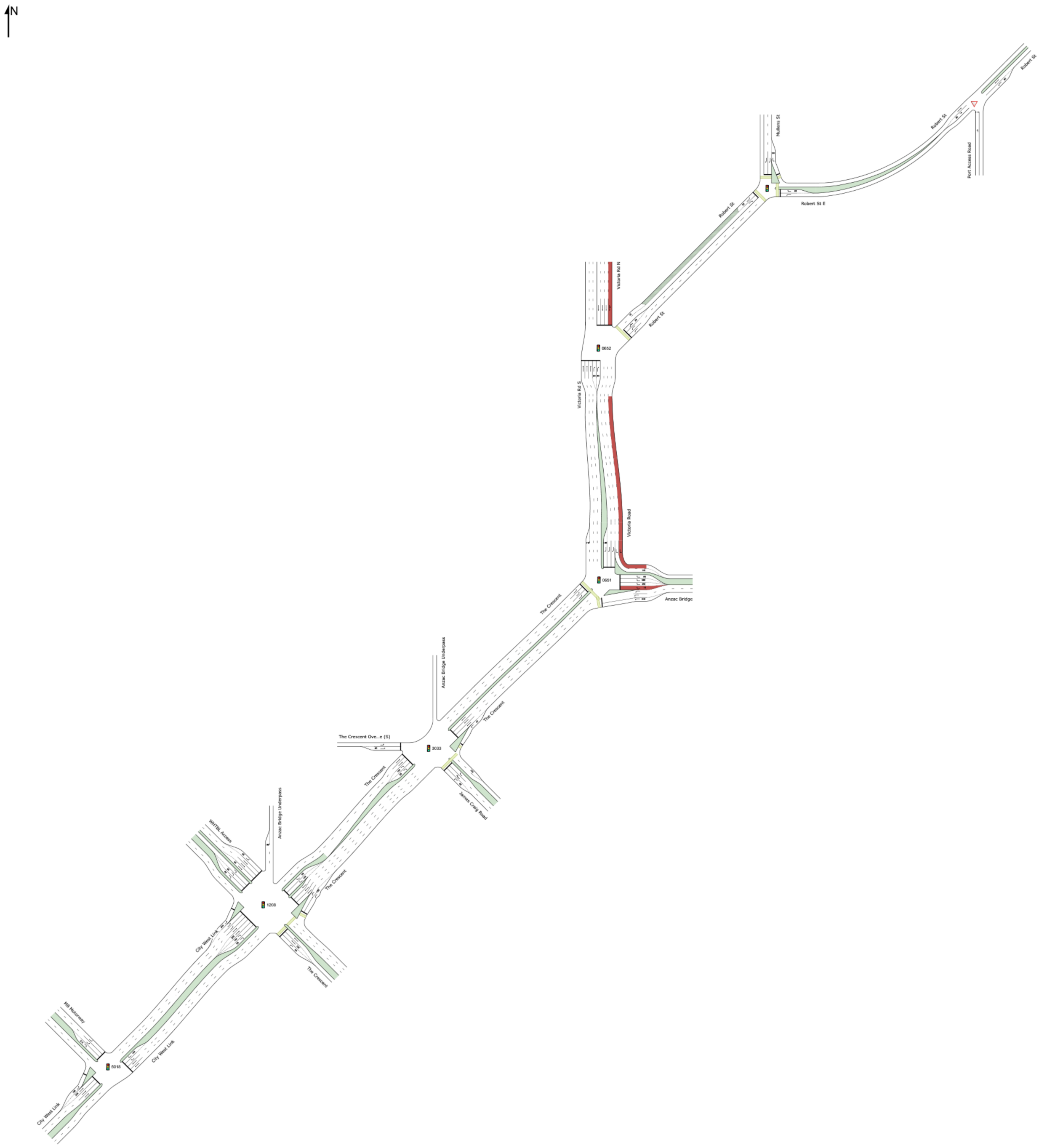
SIDRA modelling results

NETWORK LAYOUT

Network: N101 [[AM] (Network Folder: 2030)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
5018	NA	[AM] [5% car 2030 base] [Non-cruise] City West Link / M8 Motorway
1208	NA	[AM] [5% car 2030 base] [Non-cruise] City West Link / The Crescent / WHTBL Access
3033	NA	[AM] [5% car 2030 base] [Non-cruise] The Crescent / James Craig Road
0651	NA	[AM] [5% car 2030 base] [Non-cruise] The Crescent / Victoria Road
0652	NA	[AM] [5% car 2030 base] [Non-cruise] Victoria Road / Robert Street

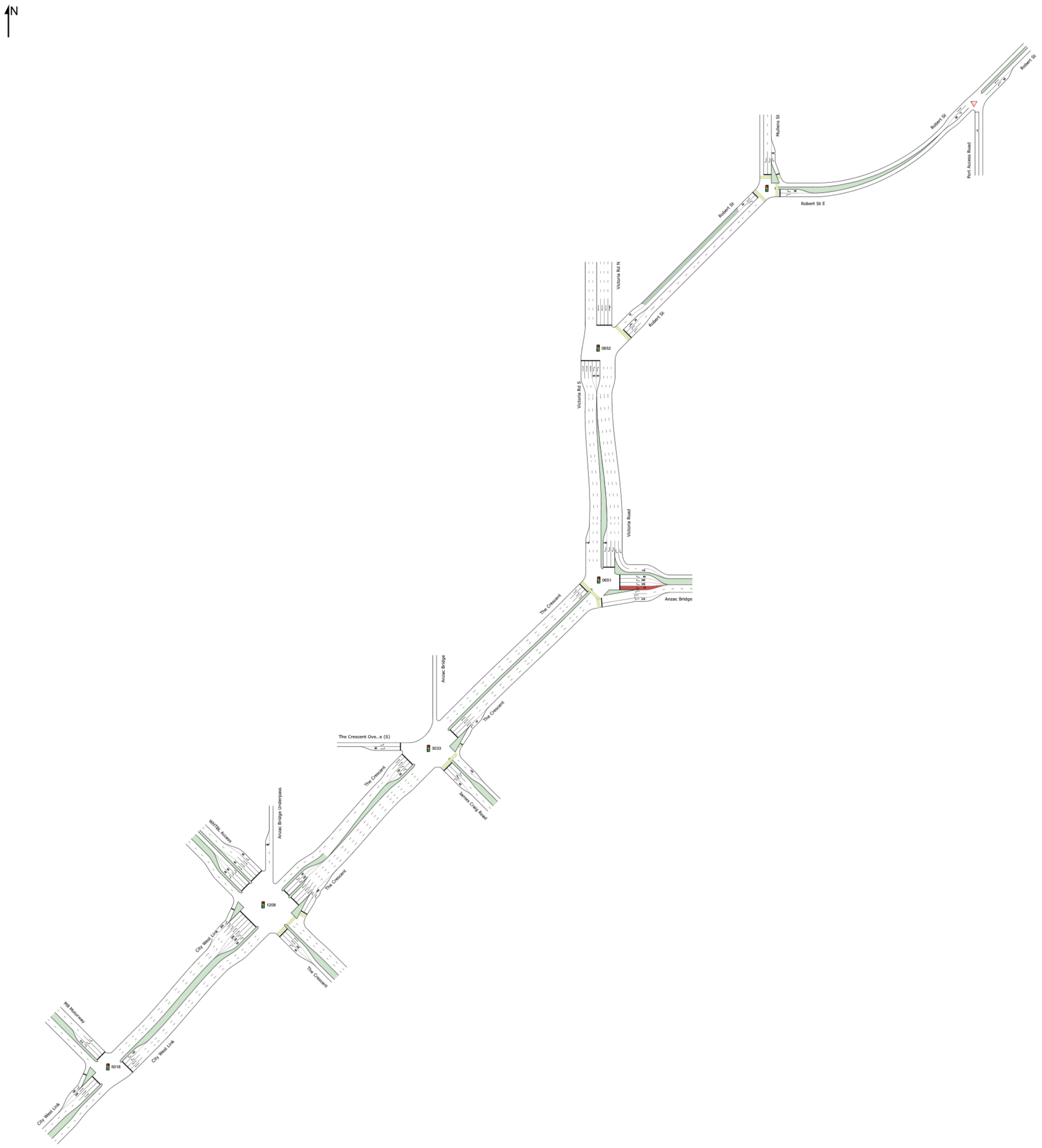
	NA	[AM] [5% car 2030 base] [Non-cruise] Robert Street / Mullens Street
	NA	[AM] [5% car 2030 base] [Non-cruise] Robert Street / Port Access Road

NETWORK LAYOUT

Network: N101 [[PM] (Network Folder: 2030)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
5018	NA	[PM] [5% car 2030 base] [Non-cruise] City West Link / M8 Motorway
1208	NA	[PM] [5% car 2030 base] [Non-cruise] City West Link / The Crescent / WHTBL Access
3033	NA	[PM] [5% car 2030 base] [Non-cruise] The Crescent / James Craig Road
0651	NA	[PM] [5% car 2030 base] [Non-cruise] The Crescent / Victoria Road
0652	NA	[PM] [5% car 2030 base] [Non-cruise] Victoria Road / Robert Street

	NA	[PM] [5% car 2030 base] [Non-cruise] Robert Street / Mullens Street
▽	NA	[PM] [5% car 2030 base] [Non-cruise] Robert Street / Port Access Road

MOVEMENT SUMMARY

Site: 5018 [[AM] [5% car 2030 base] [Non-cruise] City West Link / M8 Motorway (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1503	6.0	1298	6.1	0.471	3.3	LOS A	8.8	64.8	0.22	0.20	0.22	56.0
26	R2	938	9.2	811	9.4	* 1.029	114.8	LOS F	36.5	276.3	1.00	1.17	1.67	16.9
Approach		2441	7.2	2109 N1	7.3	1.029	46.1	LOS D	36.5	276.3	0.52	0.57	0.78	29.7
NorthWest: M8 Motorway														
27	L2	725	10.2	725	10.2	0.500	32.0	LOS C	15.3	116.2	0.77	0.81	0.77	29.6
29	R2	275	6.1	275	6.1	* 1.051	136.6	LOS F	26.7	196.5	1.00	1.26	1.92	18.2
Approach		1000	9.1	1000	9.1	1.051	60.7	LOS E	26.7	196.5	0.84	0.93	1.09	23.3
SouthWest: City West Link														
30	L2	199	5.8	199	5.8	0.171	13.6	LOS A	4.3	31.5	0.40	0.67	0.40	48.4
31	T1	2200	6.0	2200	6.0	* 1.049	120.3	LOS F	91.1	670.5	1.00	1.49	1.74	12.2
Approach		2399	6.0	2399	6.0	1.049	111.4	LOS F	91.1	670.5	0.95	1.42	1.63	13.8
All Vehicles		5840	7.0	5508 N1	7.4	1.051	77.2	LOS F	91.1	670.5	0.76	1.01	1.20	20.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise | Processed: Thursday, 28 July 2022 8:42:27 PM
Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Non Cruise.sip9

MOVEMENT SUMMARY

Site: 1208 [[AM] [5% car 2030 base] [Non-cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	281	6.0	281	6.0	* 0.509	27.0	LOS B	9.7	71.2	0.86	0.80	0.86	21.8
22	T1	291	6.2	291	6.2	0.791	62.8	LOS E	9.1	66.7	1.00	0.91	1.21	25.6
Approach		572	6.1	572	6.1	0.791	45.2	LOS D	9.7	71.2	0.93	0.86	1.04	24.5
NorthEast: The Crescent														
24	L2	1071	5.8	848	6.1	0.663	27.3	LOS B	16.5	121.4	0.71	0.78	0.71	30.7
25	T1	1573	7.8	1247	8.2	0.660	16.9	LOS B	15.3	114.3	0.61	0.54	0.61	29.7
26	R2	500	8.0	396	8.4	* 1.074	147.7	LOS F	19.2	143.9	1.00	1.26	1.87	14.0
Approach		3143	7.2	2491 [N1]	7.5	1.074	41.3	LOS C	19.2	143.9	0.71	0.74	0.85	22.7
NorthWest: WHTBL Access														
27	L2	152	12.5	152	12.5	0.218	29.0	LOS C	5.6	43.1	0.67	0.75	0.67	31.1
28	T1	103	6.1	103	6.1	0.070	35.1	LOS C	1.5	11.0	0.78	0.58	0.78	34.2
29	R2	587	5.9	587	5.9	1.008	112.0	LOS F	17.5	128.5	1.00	1.22	1.80	13.3
Approach		842	7.1	842	7.1	1.008	87.7	LOS F	17.5	128.5	0.91	1.06	1.47	16.6
SouthWest: City West Link														
30	L2	465	6.1	449	6.1	* 0.436	15.1	LOS B	9.4	69.0	0.74	0.79	0.74	44.5
30a	L1	465	6.1	449	6.1	0.268	28.7	LOS C	9.9	73.0	0.80	0.76	0.80	29.3
31	T1	1487	7.9	1437	8.0	* 1.117	174.5	LOS F	54.6	408.0	1.00	1.72	2.03	5.3
32	R2	507	6.0	490	6.0	0.648	52.5	LOS D	12.7	93.6	0.93	0.82	0.93	21.6
Approach		2925	7.0	2825 [N1]	7.1	1.117	104.8	LOS F	54.6	408.0	0.91	1.26	1.44	11.6
All Vehicles		7482	7.0	6730 [N1]	7.8	1.117	74.1	LOS F	54.6	408.0	0.84	1.01	1.19	15.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	28.4	LOS C	0.1	0.1	0.90	0.90	204.1	210.9	1.03
P52	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	210.9	0.92
NorthEast: The Crescent											

P6B Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.3	207.6	0.91
All Pedestrians	158	45.6	LOS E	0.2	0.2	0.94	0.94	220.5	209.8	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[AM] [5% car 2030 base] [Non-cruise] The Crescent / James Craig Road (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	142	34.1	142	34.1	0.224	26.3	LOS B	4.9	44.5	0.63	0.74	0.63	16.6
23a	R1	51	6.3	51	6.3	* 0.573	69.1	LOS E	3.2	23.5	1.00	0.76	1.06	22.3
23	R2	51	6.3	51	6.3	0.573	70.8	LOS F	3.2	23.5	1.00	0.77	1.06	7.6
Approach		243	22.5	243	22.5	0.573	44.5	LOS D	4.9	44.5	0.78	0.75	0.81	16.3
NorthEast: The Crescent														
24	L2	68	6.2	54	6.2	0.058	21.5	LOS B	1.5	10.9	0.50	0.66	0.50	26.3
8	T1	3001	5.9	2374	5.9	* 1.011	93.3	LOS F	22.2	163.2	1.00	1.34	1.54	4.3
Approach		3069	5.9	2429 [N1]	5.9	1.011	91.7	LOS F	22.2	163.2	0.99	1.33	1.51	4.5
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	1053	6.0	1053	6.0	0.807	9.2	LOS A	22.8	168.0	0.41	0.73	0.41	47.1
10a	L1	292	5.4	292	5.4	0.190	6.1	LOS A	3.0	21.7	0.19	0.56	0.19	38.3
Approach		1344	5.9	1344	5.9	0.807	8.5	LOS A	22.8	168.0	0.37	0.69	0.37	46.3
SouthWest: The Crescent														
2	T1	517	5.9	453	6.0	0.154	2.3	LOS A	3.7	27.0	0.28	0.24	0.28	52.3
32	R2	1122	9.6	984	9.7	* 1.019	82.6	LOS F	49.1	372.4	0.98	1.06	1.38	13.7
Approach		1639	8.4	1437 [N1]	8.5	1.019	57.3	LOS E	49.1	372.4	0.76	0.80	1.03	16.5
All Vehicles		6296	7.2	5453 [N1]	8.3	1.019	60.0	LOS E	49.1	372.4	0.77	1.01	1.07	13.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	238.0	220.5	0.93
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	224.5	204.3	0.91
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	231.3	212.4	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[AM] [5% car 2030 base] [Non-cruise] The Crescent / Victoria Road (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	1337	6.0	1337	6.0	* 1.202	257.5	LOS F	67.0	492.7	1.00	1.69	2.60	6.3
6	R2	311	10.8	311	10.8	0.162	29.1	LOS C	4.3	31.4	0.66	0.72	0.66	31.2
Approach		1647	6.9	1647	6.9	1.202	214.5	LOS F	67.0	492.7	0.94	1.50	2.23	7.4
North: Victoria Road														
7	L2	1521	7.0	1379	7.1	0.782	6.0	LOS A	0.0	0.0	0.00	0.52	0.00	51.7
9a	R1	1733	5.9	1570	5.9	* 1.203	245.9	LOS F	37.7	277.4	1.00	1.65	2.51	2.5
Approach		3254	6.4	2950 N1	6.4	1.203	133.7	LOS F	37.7	277.4	0.53	1.12	1.34	9.4
SouthWest: The Crescent														
30a	L1	859	5.8	795	5.8	0.365	29.5	LOS C	14.8	108.9	0.79	0.78	0.79	11.8
Approach		859	5.8	795 N1	5.8	0.365	29.5	LOS C	14.8	108.9	0.79	0.78	0.79	11.8
All Vehicles		5760	6.5	5392 N1	6.9	1.203	143.0	LOS F	67.0	492.7	0.69	1.19	1.53	8.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	210.9	0.92
SouthWest: The Crescent											
P8	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	240.8	223.8	0.93
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	235.4	217.4	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 0652 [[AM] [5% car 2030 base] [Non-cruise] Victoria Road / Robert Street (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	391	5.9	369	6.0	0.085	1.7	LOS A	0.8	5.6	0.12	0.10	0.12	57.6
3a	R1	674	7.8	637	8.0	1.097	119.0	LOS F	37.1	277.4	1.00	1.24	1.66	5.3
Approach		1064	7.1	1006 N1	7.2	1.097	76.0	LOS F	37.1	277.4	0.68	0.82	1.09	13.5
NorthEast: Robert St														
24a	L1	981	7.3	981	7.3	* 1.056	135.8	LOS F	38.4	285.6	1.00	1.55	1.88	4.5
26b	R3	54	31.4	54	31.4	1.056	150.6	LOS F	1.5	11.8	1.00	1.48	2.18	12.5
Approach		1035	8.5	1035	8.5	1.056	136.6	LOS F	38.4	285.6	1.00	1.55	1.89	5.1
North: Victoria Rd N														
7b	L3	87	20.5	87	20.5	0.090	12.1	LOS A	1.5	12.5	0.32	0.68	0.32	43.5
8	T1	2273	6.0	2273	6.0	* 1.123	177.4	LOS F	139.8	1029.2	1.00	1.81	2.13	8.7
Approach		2360	6.6	2360	6.6	1.123	171.3	LOS F	139.8	1029.2	0.97	1.77	2.06	9.0
All Vehicles		4459	7.2	4401 N1	7.2	1.123	141.3	LOS F	139.8	1029.2	0.91	1.50	1.80	8.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	236.4	218.5	0.92
All Pedestrians		53	54.3	LOS E	0.2	0.2	0.95	0.95	236.4	218.5	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[AM] [5% car 2030 base] [Non-cruise] Robert Street / Mullens Street (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	292	14.8	292	14.8	0.756	22.9	LOS B	13.7	107.9	0.88	0.95	1.09	16.9
6	R2	159	14.6	159	14.6	* 0.849	39.8	LOS C	5.5	43.6	1.00	1.08	1.54	18.2
Approach		451	14.7	451	14.7	0.849	28.8	LOS C	13.7	107.9	0.92	1.00	1.25	17.5
North: Mullens St														
7	L2	59	28.6	59	28.6	0.075	10.9	LOS A	0.8	7.1	0.49	0.61	0.49	26.4
9a	R1	743	5.9	743	5.9	* 0.934	47.2	LOS D	21.0	154.3	1.00	1.30	1.71	10.0
Approach		802	7.6	802	7.6	0.934	44.5	LOS D	21.0	154.3	0.96	1.25	1.62	10.5
SouthWest: Robert St														
30a	L1	464	5.9	422	5.9	0.360	7.8	LOS A	5.7	41.6	0.49	0.64	0.49	32.0
32a	R1	297	14.5	272	15.2	* 0.895	39.6	LOS C	9.9	78.1	0.95	1.18	1.58	11.9
Approach		761	9.3	693 [N1]	9.5	0.895	20.3	LOS B	9.9	78.1	0.67	0.85	0.92	22.4
All Vehicles		2014	9.8	1946 [N1]	10.2	0.934	32.2	LOS C	21.0	154.3	0.85	1.05	1.28	15.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[AM] [5% car 2030 base] [Non-cruise] Robert Street / Port Access Road (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: -
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	296	19.2	296	19.2	0.286	4.6	LOS A	1.3	10.3	0.33	0.54	0.33	20.9
Approach		296	19.2	296	19.2	0.286	4.6	LOS A	1.3	10.3	0.33	0.54	0.33	20.9
NorthEast: Robert St														
24a	L1	32	6.7	32	6.7	0.018	3.5	LOS A	0.0	0.0	0.00	0.48	0.00	36.4
5	T1	155	6.1	155	6.1	0.084	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach		186	6.2	186	6.2	0.084	0.6	NA	0.0	0.0	0.00	0.08	0.00	39.3
SouthWest: Robert St														
11	T1	107	5.9	99	5.8	0.054	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
32b	R3	248	21.6	232	22.6	0.220	5.4	LOS A	0.9	7.1	0.26	0.58	0.26	29.7
Approach		356	16.9	331 [N1]	17.6	0.220	3.8	NA	0.9	7.1	0.18	0.41	0.18	34.8
All Vehicles		838	15.3	813 [N1]	15.8	0.286	3.4	NA	1.3	10.3	0.19	0.38	0.19	34.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

PHASING SUMMARY

Site: 5018 [[AM] [5% car 2030 base] [Non-cruise] City West Link / M8 Motorway (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

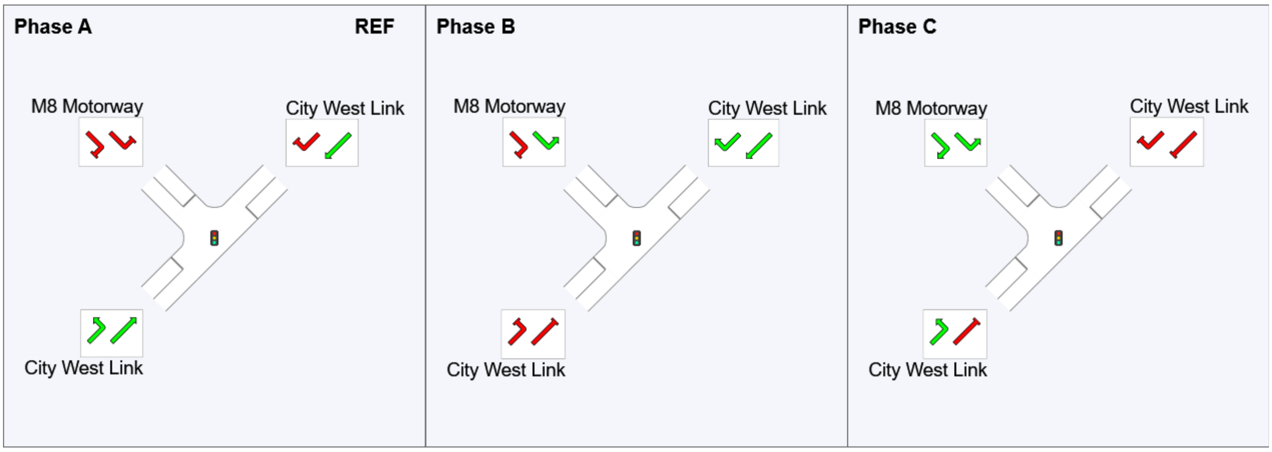
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	58	120	34
Green Time (sec)	56	28	18
Phase Time (sec)	62	34	24
Phase Split	52%	28%	20%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 1208 [[AM] [5% car 2030 base] [Non-cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

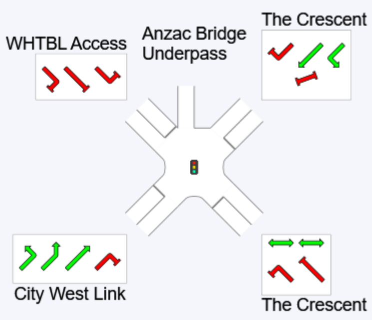
Phase Timing Summary

Phase	A	D	E	G	G2
Phase Change Time (sec)	39	89	107	7	26
Green Time (sec)	44	12	14	13	7
Phase Time (sec)	50	18	20	19	13
Phase Split	42%	15%	17%	16%	11%

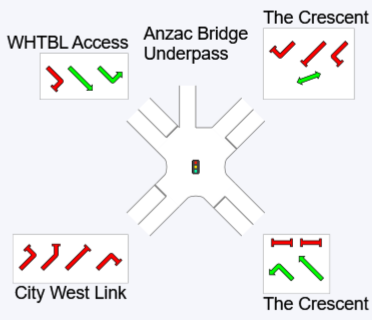
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

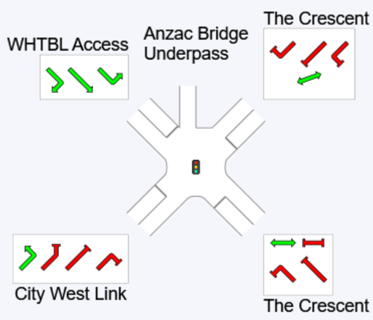
Phase A



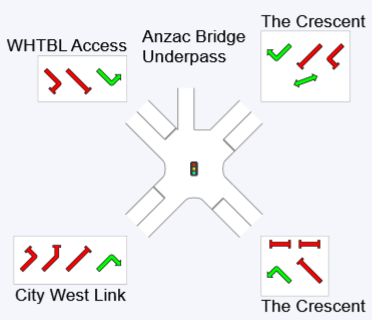
Phase D



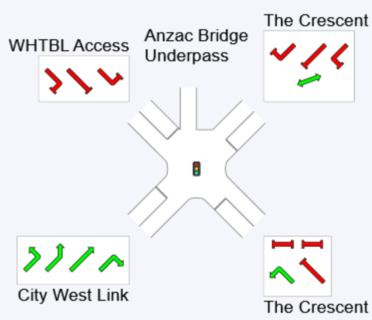
Phase E



Phase G **REF**



Phase G2 **VAR**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[AM] [5% car 2030 base] [Non-cruise] The Crescent / James Craig Road (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

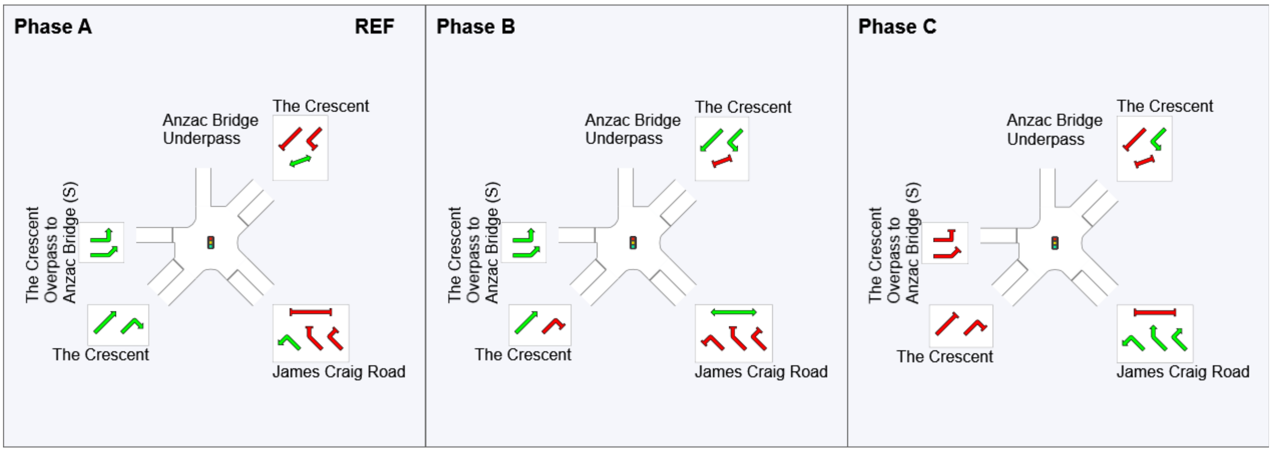
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	92	22	80
Green Time (sec)	44	52	6
Phase Time (sec)	50	58	12
Phase Split	42%	48%	10%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[AM] [5% car 2030 base] [Non-cruise] The Crescent / Victoria Road (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

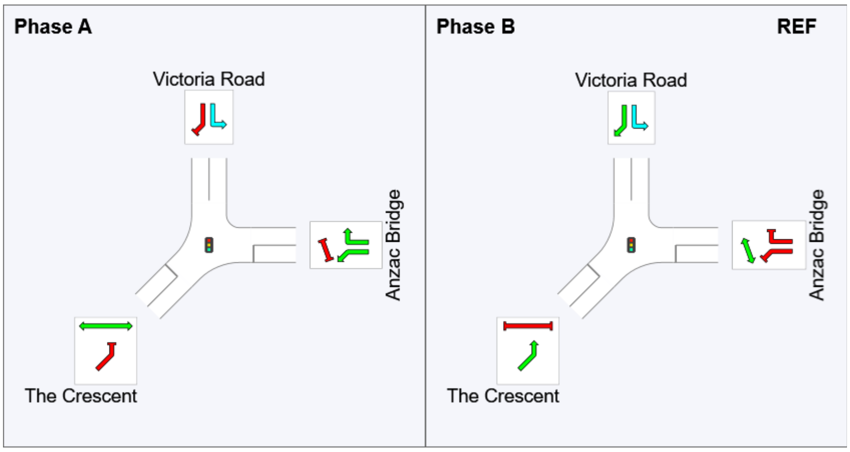
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

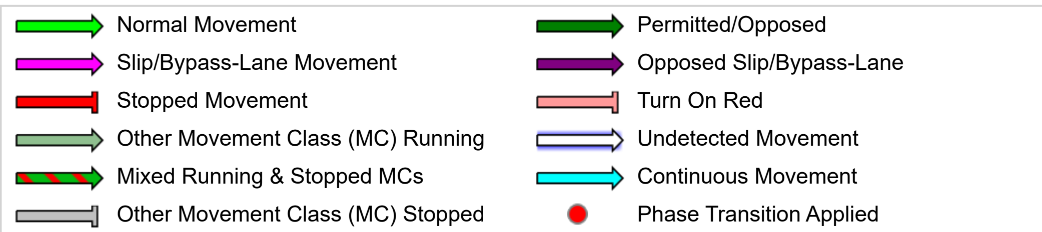
Phase	A	B
Phase Change Time (sec)	77	13
Green Time (sec)	50	58
Phase Time (sec)	56	64
Phase Split	47%	53%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 0652 [[AM] [5% car 2030 base] [Non-cruise] Victoria Road / Robert Street (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

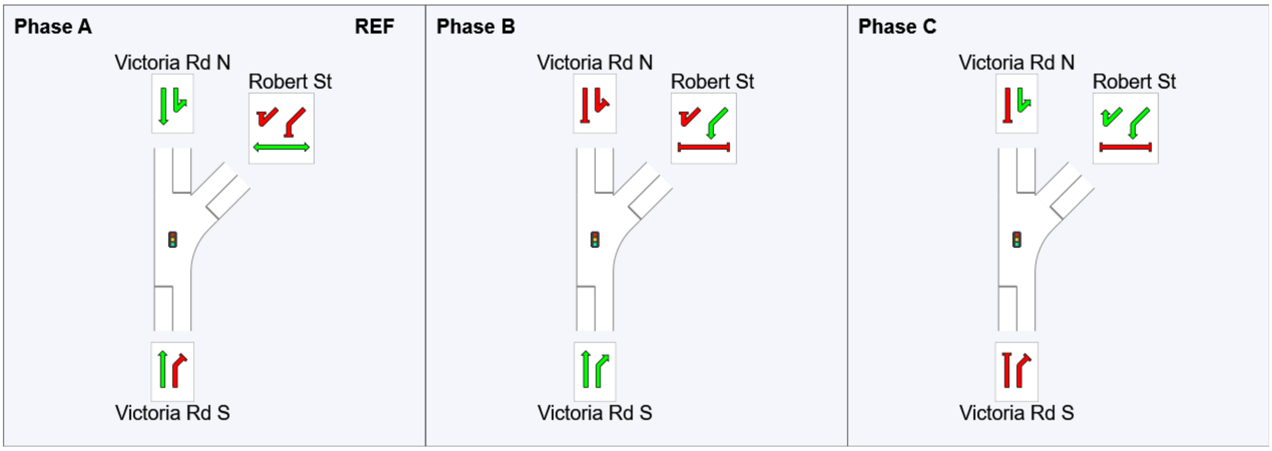
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

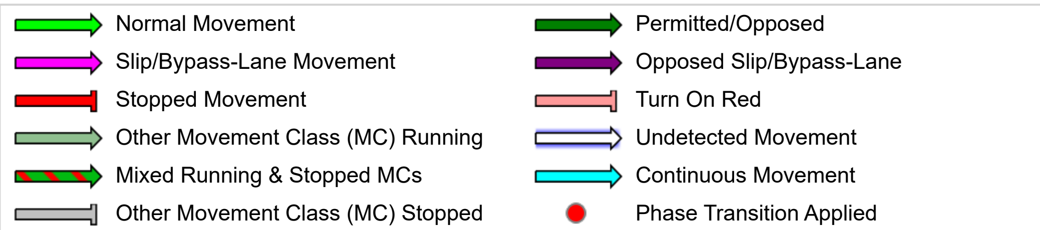
Phase	A	B	C
Phase Change Time (sec)	0	72	100
Green Time (sec)	66	22	14
Phase Time (sec)	72	28	20
Phase Split	60%	23%	17%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



\Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Non Cruise.sip9

PHASING SUMMARY

Site: [[AM] [5% car 2030 base] [Non-cruise] Robert Street / Mullens Street (Site Folder: [AM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[AM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

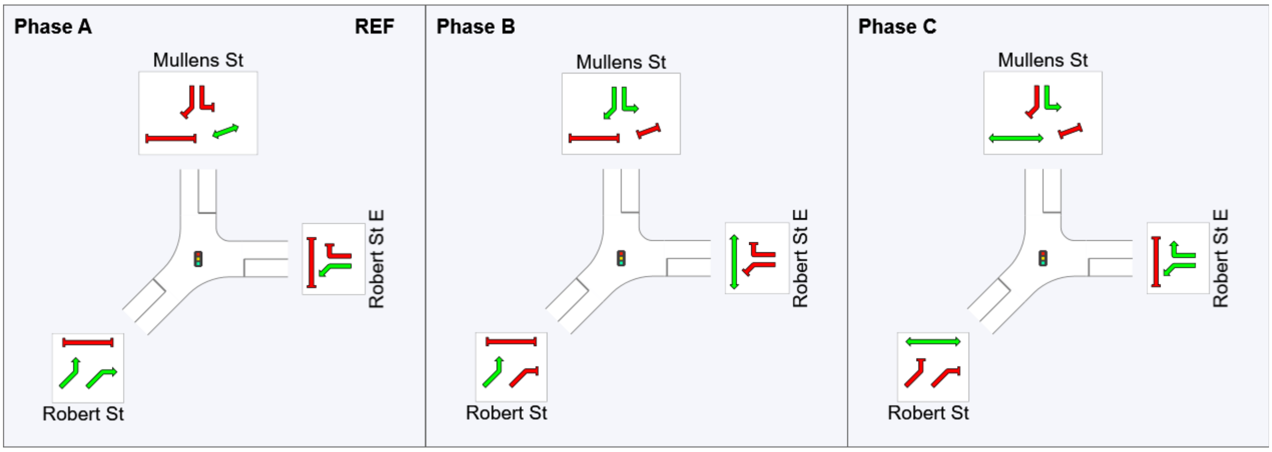
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

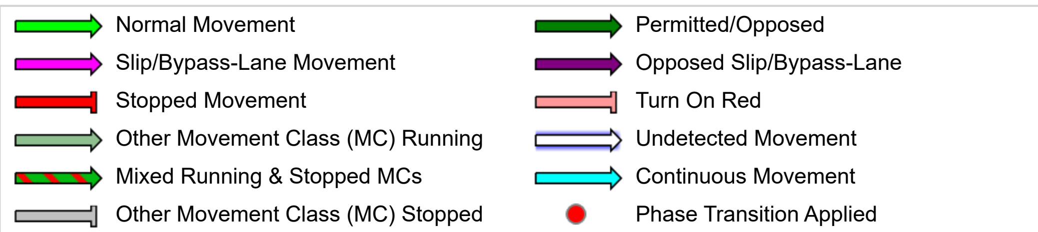
Phase	A	B	C
Phase Change Time (sec)	0	21	45
Green Time (sec)	15	18	9
Phase Time (sec)	21	24	15
Phase Split	35%	40%	25%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 5018 [[PM] [5% car 2030 base] [Non-cruise] City West Link / M8 Motorway (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	DEMAND FLOWS HV] %	ARRIVAL FLOWS [Total veh/h	ARRIVAL FLOWS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	95% BACK OF QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1792	3.0	1479	3.1	0.517	4.7	LOS A	14.8	106.4	0.43	0.39	0.43	54.4
26	R2	913	6.3	754	6.5	* 0.724	37.3	LOS C	15.7	116.1	0.98	0.87	1.01	32.6
Approach		2704	4.1	2233 N1	4.2	0.724	15.7	LOS B	15.7	116.1	0.61	0.55	0.62	44.4
NorthWest: M8 Motorway														
27	L2	751	7.0	751	7.0	0.455	22.5	LOS B	11.0	81.5	0.71	0.79	0.71	34.8
29	R2	134	3.1	134	3.1	* 0.670	50.2	LOS D	6.1	43.6	1.00	0.84	1.10	32.6
Approach		884	6.4	884	6.4	0.670	26.7	LOS B	11.0	81.5	0.76	0.80	0.77	34.2
SouthWest: City West Link														
30	L2	456	3.0	456	3.0	0.447	17.7	LOS B	11.5	82.8	0.62	0.76	0.62	46.0
31	T1	1596	3.0	1596	3.0	* 0.722	25.4	LOS B	20.0	143.8	0.91	0.81	0.92	33.0
Approach		2052	3.0	2052	3.0	0.722	23.7	LOS B	20.0	143.8	0.85	0.80	0.85	36.8
All Vehicles		5640	4.1	5169 N1	4.4	0.724	20.8	LOS B	20.0	143.8	0.73	0.69	0.74	39.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1208 [[PM] [5% car 2030 base] [Non-cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	566	3.0	566	3.0	* 0.977	70.6	LOS F	30.4	218.0	1.00	1.23	1.60	10.7
22	T1	224	2.8	224	2.8	0.665	46.3	LOS D	5.2	37.0	1.00	0.83	1.11	30.1
Approach		791	2.9	791	2.9	0.977	63.7	LOS E	30.4	218.0	1.00	1.12	1.46	16.5
NorthEast: The Crescent														
24	L2	1608	2.9	1171	3.2	* 0.979	75.8	LOS F	38.8	279.2	1.00	1.17	1.60	16.9
25	T1	1708	4.8	1246	5.2	0.672	9.9	LOS A	10.2	74.3	0.52	0.45	0.52	37.6
26	R2	163	9.0	119	9.7	0.152	44.0	LOS D	2.6	19.8	1.00	0.77	1.00	30.6
Approach		3480	4.1	2537 N1	4.5	0.979	42.0	LOS C	38.8	279.2	0.76	0.80	1.04	21.8
NorthWest: WHTBL Access														
27	L2	261	6.9	261	6.9	0.283	18.0	LOS B	6.3	46.4	0.59	0.74	0.59	38.0
28	T1	120	2.6	120	2.6	0.090	29.2	LOS C	1.4	9.9	0.82	0.61	0.82	36.9
29	R2	429	2.9	429	2.9	* 1.022	100.7	LOS F	10.1	72.2	1.00	1.25	2.15	14.3
Approach		811	4.2	811	4.2	1.022	63.5	LOS E	10.1	72.2	0.84	0.99	1.45	20.7
SouthWest: City West Link														
30	L2	297	2.8	297	2.8	0.401	17.7	LOS B	6.5	46.5	0.84	0.80	0.84	42.8
30a	L1	918	3.0	918	3.0	0.755	39.0	LOS C	20.2	145.3	1.00	0.89	1.03	24.9
31	T1	967	6.1	967	6.1	0.789	41.8	LOS C	21.7	159.7	1.00	0.91	1.05	17.5
32	R2	164	3.2	164	3.2	0.196	36.9	LOS C	3.2	23.1	0.92	0.77	0.92	26.6
Approach		2346	4.3	2346	4.3	0.789	37.3	LOS C	21.7	159.7	0.97	0.88	1.00	24.5
All Vehicles		7427	4.1	6484 N1	4.6	1.022	45.6	LOS D	38.8	279.2	0.88	0.89	1.13	21.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	20.5	LOS C	0.1	0.1	0.87	0.87	196.3	210.9	1.07
P52	Stage 2	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
NorthEast: The Crescent											
P6B	Slip/	53	39.3	LOS D	0.1	0.1	0.94	0.94	212.3	207.6	0.98

Bypass										
All Pedestrians	158	33.0	LOS D	0.1	0.1	0.91	0.91	207.9	209.8	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[PM] [5% car 2030 base] [Non-cruise] The Crescent / James Craig Road (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	774	8.3	774	8.3	* 1.086	143.9	LOS F	76.7	575.4	1.00	1.42	2.23	3.8
23a	R1	28	3.7	28	3.7	0.242	49.9	LOS D	1.3	9.4	0.98	0.71	0.98	27.1
23	R2	29	3.6	29	3.6	0.242	51.6	LOS D	1.3	9.4	0.98	0.71	0.98	10.0
Approach		832	8.0	832	8.0	1.086	137.4	LOS F	76.7	575.4	1.00	1.37	2.14	4.4
NorthEast: The Crescent														
24	L2	26	4.0	19	4.0	0.023	18.3	LOS B	0.4	2.6	0.45	0.63	0.45	27.7
8	T1	2706	3.0	1980	3.0	* 1.084	130.0	LOS F	22.7	163.2	1.00	1.73	2.14	3.1
Approach		2733	3.0	1999 N1	3.0	1.084	128.9	LOS F	22.7	163.2	0.99	1.72	2.12	3.1
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	569	3.0	569	3.0	0.395	8.4	LOS A	7.2	51.7	0.32	0.68	0.32	47.9
10a	L1	373	2.8	373	2.8	0.435	7.3	LOS A	5.0	36.0	0.33	0.62	0.33	35.6
Approach		942	2.9	942	2.9	0.435	8.0	LOS A	7.2	51.7	0.32	0.66	0.32	45.6
SouthWest: The Crescent														
2	T1	949	3.0	949	3.0	0.413	5.5	LOS A	15.6	112.0	0.58	0.53	0.58	44.4
32	R2	279	17.7	279	17.7	0.256	25.0	LOS B	4.0	32.0	0.61	0.71	0.61	28.8
Approach		1228	6.3	1228	6.3	0.413	9.9	LOS A	15.6	112.0	0.59	0.57	0.59	37.9
All Vehicles		5735	4.4	5001 N1	5.1	1.086	78.3	LOS F	76.7	575.4	0.77	1.18	1.41	9.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	223.0	220.5	0.99
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	209.5	204.3	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	216.3	212.4	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[PM] [5% car 2030 base] [Non-cruise] The Crescent / Victoria Road (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	884	3.0	884	3.0	0.691	26.7	LOS B	18.3	131.4	0.84	0.84	0.88	32.2
6	R2	2605	3.6	2605	3.6	* 1.441	444.5	LOS F	218.0	1565.4	1.00	2.45	4.24	4.1
Approach		3489	3.4	3489	3.4	1.441	338.7	LOS F	218.0	1565.4	0.96	2.04	3.39	5.0
North: Victoria Road														
7	L2	658	5.3	585	5.6	0.181	6.0	LOS A	0.0	0.0	0.00	0.53	0.00	52.7
9a	R1	1848	2.9	1639	2.9	* 1.473	469.5	LOS F	38.7	277.4	1.00	2.56	4.40	1.4
Approach		2506	3.5	2224 N1	3.6	1.473	347.6	LOS F	38.7	277.4	0.74	2.02	3.24	3.1
SouthWest: The Crescent														
30a	L1	1352	2.9	1352	2.9	0.729	33.2	LOS C	22.3	160.2	0.97	0.88	0.99	10.8
Approach		1352	2.9	1352	2.9	0.729	33.2	LOS C	22.3	160.2	0.97	0.88	0.99	10.8
All Vehicles		7347	3.4	7065 N1	3.5	1.473	283.0	LOS F	218.0	1565.4	0.89	1.81	2.89	4.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
SouthWest: The Crescent											
P8	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	225.8	223.8	0.99
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	220.4	217.4	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

\Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Non Cruise.sip9

MOVEMENT SUMMARY

Site: 0652 [[PM] [5% car 2030 base] [Non-cruise] Victoria Road / Robert Street (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	2102	3.0	1680	3.0	0.422	5.9	LOS A	10.3	73.7	0.43	0.39	0.43	52.4
3a	R1	1549	3.9	1241	4.1	* 1.184	225.7	LOS F	38.3	277.4	1.00	2.02	2.91	2.9
Approach		3652	3.4	2921 N1	3.5	1.184	99.3	LOS F	38.3	277.4	0.67	1.08	1.48	13.3
NorthEast: Robert St														
24a	L1	1377	4.0	1235	4.1	0.752	15.1	LOS B	38.9	282.0	0.73	0.76	0.76	21.5
26b	R3	181	11.0	164	11.9	1.060	132.6	LOS F	14.1	109.0	1.00	1.62	2.41	13.7
Approach		1558	4.8	1399 N1	5.0	1.060	28.9	LOS C	38.9	282.0	0.76	0.86	0.95	18.2
North: Victoria Rd N														
7b	L3	187	10.7	187	10.7	* 1.145	197.3	LOS F	33.8	251.9	1.00	1.80	2.78	8.1
8	T1	1129	3.0	1129	3.0	1.145	189.5	LOS F	62.6	449.6	1.00	1.84	2.75	8.2
Approach		1317	4.1	1317	4.1	1.145	190.7	LOS F	62.6	449.6	1.00	1.83	2.76	8.2
All Vehicles		6526	3.9	5637 N1	4.5	1.184	103.2	LOS F	62.6	449.6	0.77	1.20	1.65	11.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99
All Pedestrians		53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[PM] [5% car 2030 base] [Non-cruise] Robert Street / Mullens Street (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	327	11.9	327	11.9	0.707	24.5	LOS B	9.3	71.4	0.94	0.89	1.03	16.2
6	R2	87	19.3	87	19.3	* 0.682	37.2	LOS C	2.9	23.3	1.00	0.87	1.24	19.2
Approach		415	13.5	415	13.5	0.707	27.2	LOS B	9.3	71.4	0.95	0.89	1.08	17.1
North: Mullens St														
7	L2	105	16.0	105	16.0	0.100	7.5	LOS A	1.1	8.7	0.38	0.57	0.38	29.2
9a	R1	1231	3.0	1231	3.0	* 1.145	177.9	LOS F	71.4	512.8	1.00	2.40	3.43	3.2
Approach		1336	4.0	1336	4.0	1.145	164.5	LOS F	71.4	512.8	0.95	2.26	3.19	3.5
SouthWest: Robert St														
30a	L1	1389	3.0	981	3.0	0.934	34.3	LOS C	35.7	256.4	0.73	1.05	1.18	19.2
32a	R1	329	11.8	238	13.7	* 1.068	113.0	LOS F	16.2	126.4	1.00	1.92	2.88	5.1
Approach		1719	4.7	1219 N1	5.1	1.068	49.6	LOS D	35.7	256.4	0.78	1.22	1.51	14.6
All Vehicles		3469	5.5	2969 N1	6.4	1.145	98.2	LOS F	71.4	512.8	0.88	1.64	2.21	7.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[PM] [5% car 2030 base] [Non-cruise] Robert Street / Port Access Road (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: -
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	273	18.9	273	18.9	0.259	4.5	LOS A	1.1	9.1	0.30	0.53	0.30	21.1
Approach		273	18.9	273	18.9	0.259	4.5	LOS A	1.1	9.1	0.30	0.53	0.30	21.1
NorthEast: Robert St														
24a	L1	32	3.3	32	3.3	0.017	3.4	LOS A	0.0	0.0	0.00	0.48	0.00	36.4
5	T1	142	3.0	142	3.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach		174	3.0	174	3.0	0.075	0.6	NA	0.0	0.0	0.00	0.09	0.00	39.3
SouthWest: Robert St														
11	T1	152	2.8	112	2.6	0.059	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
32b	R3	283	18.2	216	20.6	0.199	5.3	LOS A	0.8	6.2	0.25	0.57	0.25	29.8
Approach		435	12.8	328 [N1]	14.4	0.199	3.5	NA	0.8	6.2	0.17	0.38	0.17	35.4
All Vehicles		881	12.8	774 [N1]	14.5	0.259	3.2	NA	1.1	9.1	0.18	0.37	0.18	35.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Non Cruise.sip9

PHASING SUMMARY

Site: 5018 [[PM] [5% car 2030 base] [Non-cruise] City West Link / M8 Motorway (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

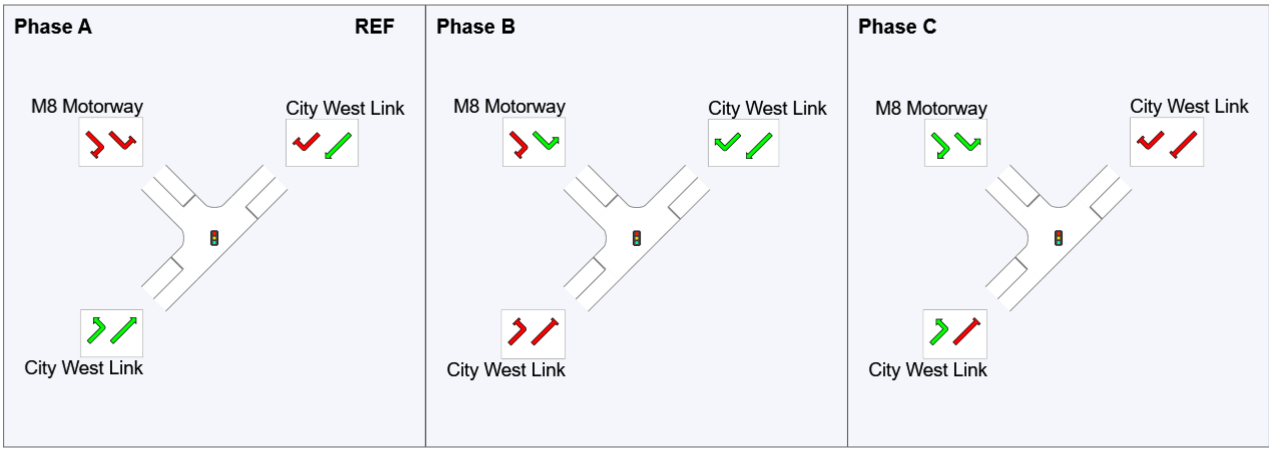
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

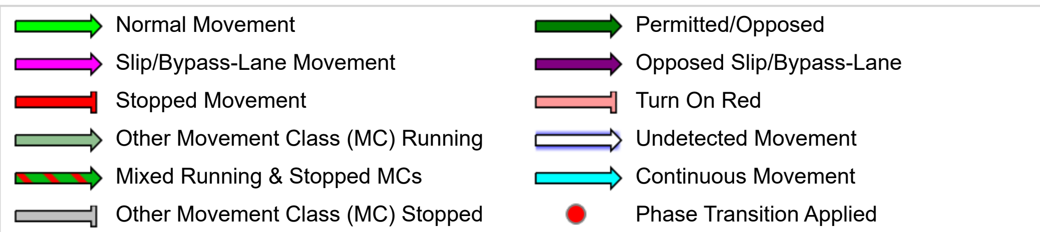
Phase	A	B	C
Phase Change Time (sec)	0	41	74
Green Time (sec)	35	27	10
Phase Time (sec)	41	33	16
Phase Split	46%	37%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 1208 [[PM] [5% car 2030 base] [Non-cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

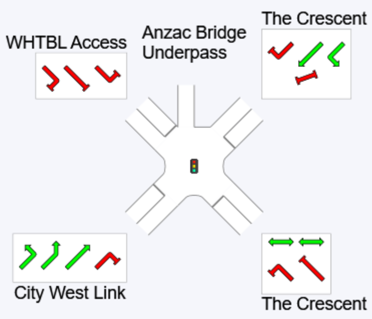
Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	71	17	31	44
Green Time (sec)	30	8	7	21
Phase Time (sec)	36	14	13	27
Phase Split	40%	16%	14%	30%

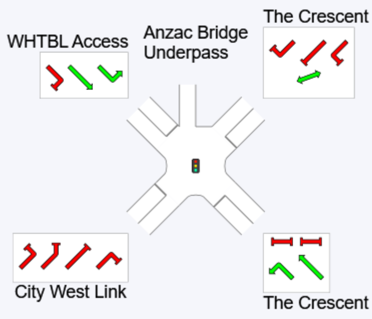
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

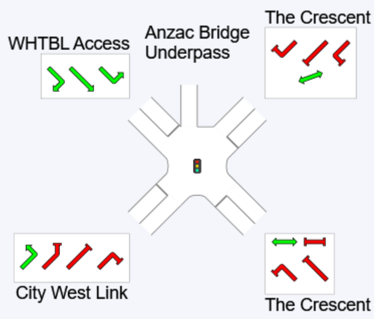
Phase A



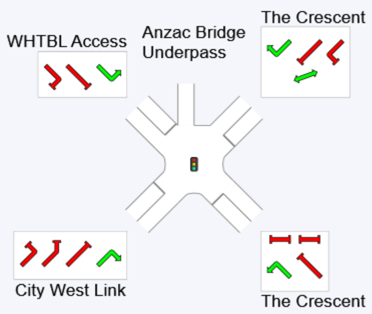
Phase D



Phase E



Phase G **REF**



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[PM] [5% car 2030 base] [Non-cruise] The Crescent / James Craig Road (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

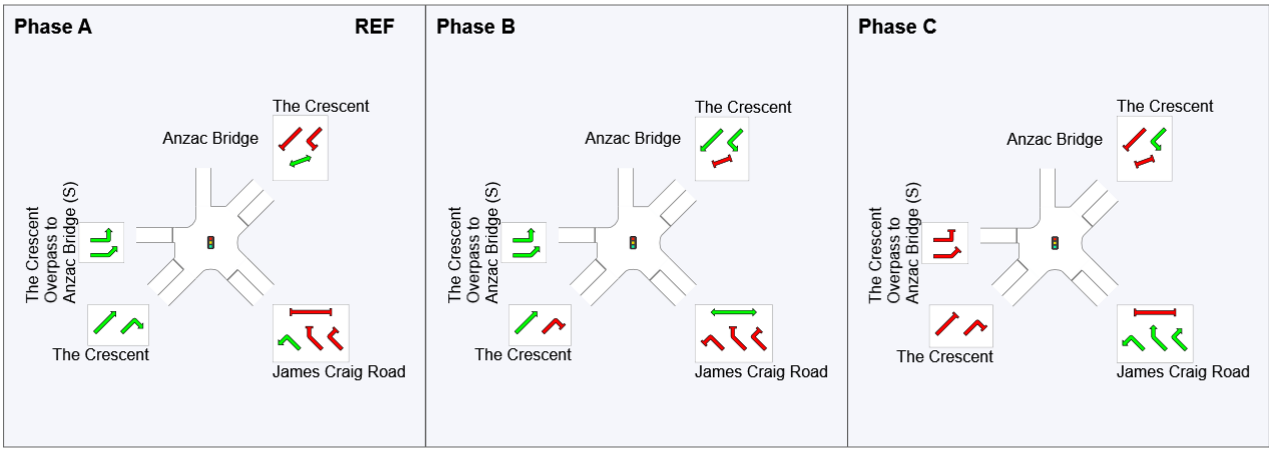
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	13	54	1
Green Time (sec)	35	31	6
Phase Time (sec)	41	37	12
Phase Split	46%	41%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[PM] [5% car 2030 base] [Non-cruise] The Crescent / Victoria Road (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

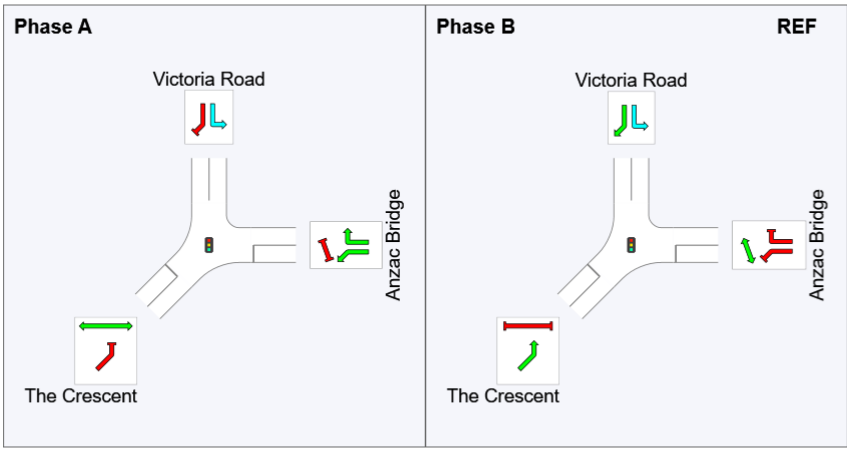
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

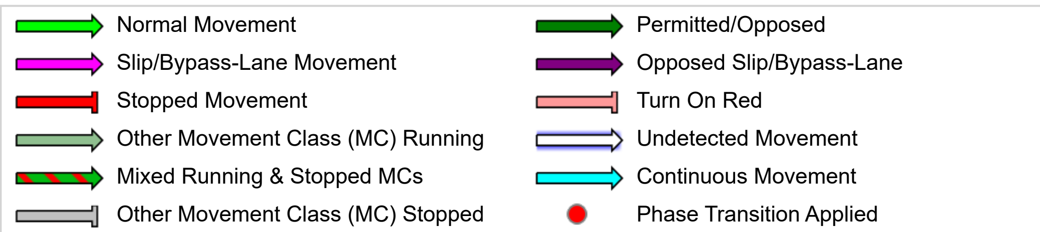
Phase	A	B
Phase Change Time (sec)	87	45
Green Time (sec)	42	36
Phase Time (sec)	48	42
Phase Split	53%	47%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 0652 [[PM] [5% car 2030 base] [Non-cruise] Victoria Road / Robert Street (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

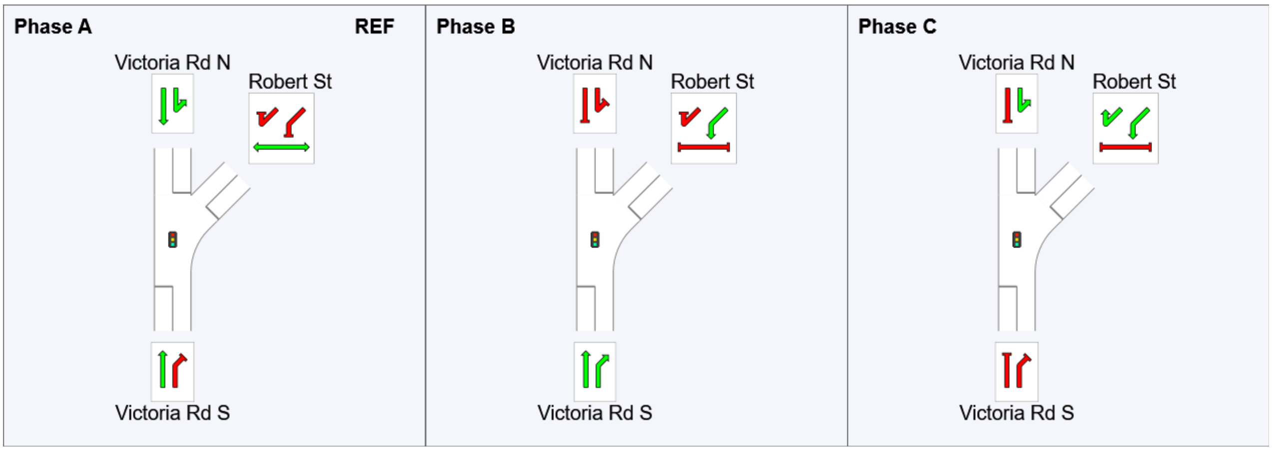
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

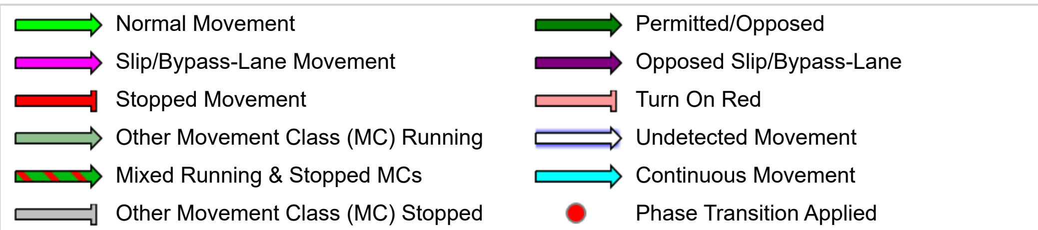
Phase	A	B	C
Phase Change Time (sec)	32	59	11
Green Time (sec)	21	36	15
Phase Time (sec)	27	42	21
Phase Split	30%	47%	23%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



\Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Non Cruise.sip9

PHASING SUMMARY

Site: [[PM] [5% car 2030 base] [Non-cruise] Robert Street / Mullens Street (Site Folder: [PM] [5% car 2030 base] [Non-cruise])]

Network: N101 [[PM] (Network Folder: 2030)]

Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

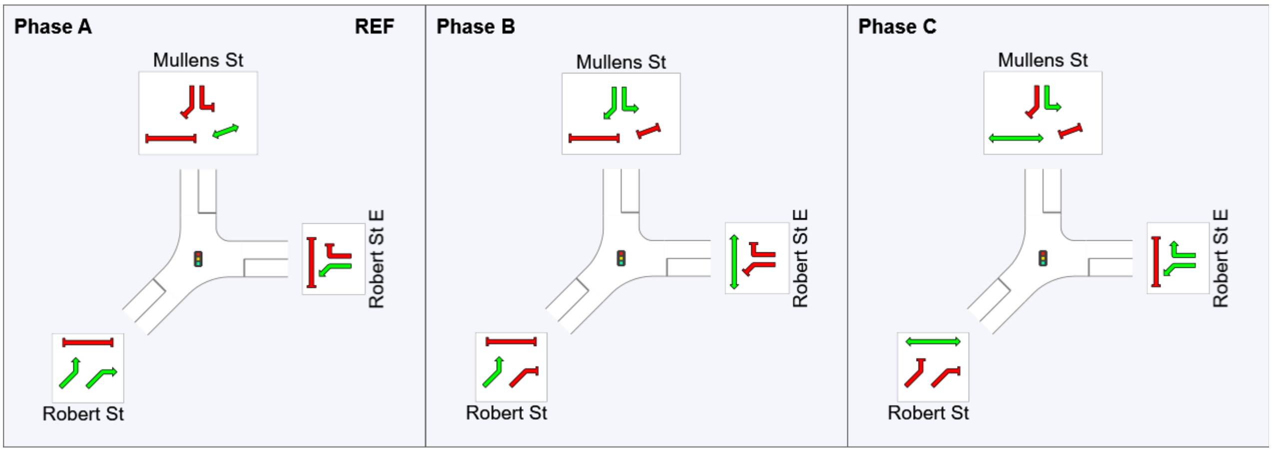
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

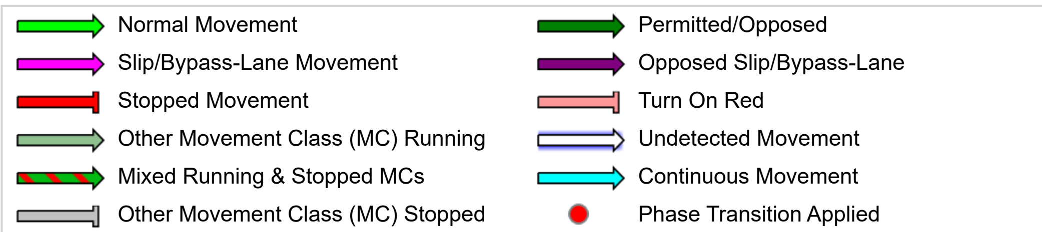
Phase	A	B	C
Phase Change Time (sec)	0	14	47
Green Time (sec)	8	27	7
Phase Time (sec)	14	33	13
Phase Split	23%	55%	22%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 5018 [[AM] [5% car 2030 base] [Cruise] City West Link / M8 Motorway (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
NorthEast: City West Link														
25	T1	1536	5.8	1226	6.0	0.444	3.3	LOS A	8.1	59.4	0.21	0.19	0.21	56.0
26	R2	1036	8.3	827	8.5	* 1.042	122.7	LOS F	38.7	290.4	1.00	1.20	1.73	16.1
Approach		2572	6.8	2054 N1	7.0	1.042	51.4	LOS D	38.7	290.4	0.53	0.60	0.82	28.0
NorthWest: M8 Motorway														
27	L2	821	9.0	821	9.0	0.559	32.9	LOS C	17.9	134.8	0.80	0.82	0.80	29.1
29	R2	275	6.1	275	6.1	* 1.051	136.6	LOS F	26.7	196.5	1.00	1.26	1.92	18.2
Approach		1096	8.3	1096	8.3	1.051	58.9	LOS E	26.7	196.5	0.85	0.93	1.08	23.5
SouthWest: City West Link														
30	L2	199	5.8	199	5.8	0.171	13.6	LOS A	4.3	31.5	0.40	0.67	0.40	48.4
31	T1	2235	5.9	2235	5.9	* 1.064	131.2	LOS F	96.5	709.5	1.00	1.55	1.82	11.4
Approach		2434	5.9	2434	5.9	1.064	121.6	LOS F	96.5	709.5	0.95	1.48	1.70	12.8
All Vehicles		6101	6.7	5583 N1	7.3	1.064	83.5	LOS F	96.5	709.5	0.78	1.05	1.26	18.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Cruise.sip9

MOVEMENT SUMMARY

Site: 1208 [[AM] [5% car 2030 base] [Cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	281	6.0	281	6.0	* 0.522	28.3	LOS B	10.1	74.0	0.87	0.81	0.87	21.1
22	T1	291	6.2	291	6.2	0.863	67.8	LOS E	9.5	70.0	1.00	0.97	1.35	24.5
Approach		572	6.1	572	6.1	0.863	48.4	LOS D	10.1	74.0	0.94	0.89	1.12	23.6
NorthEast: The Crescent														
24	L2	1071	5.8	779	6.1	0.583	33.6	LOS C	15.6	114.7	0.73	0.79	0.73	27.7
25	T1	1703	7.2	1240	7.6	0.634	13.6	LOS A	14.7	109.4	0.52	0.46	0.52	33.0
26	R2	543	7.4	396	7.7	* 1.153	210.4	LOS F	23.8	177.7	1.00	1.44	2.25	10.4
Approach		3317	6.8	2415 N1	7.1	1.153	52.3	LOS D	23.8	177.7	0.67	0.72	0.87	19.4
NorthWest: WHTBL Access														
27	L2	195	9.7	195	9.7	0.290	31.7	LOS C	7.7	58.2	0.72	0.77	0.72	29.7
28	T1	103	6.1	103	6.1	0.075	36.8	LOS C	1.5	11.3	0.80	0.60	0.80	33.6
29	R2	587	5.9	587	5.9	1.103	174.7	LOS F	23.0	169.2	1.00	1.43	2.22	9.0
Approach		885	6.8	885	6.8	1.103	127.2	LOS F	23.0	169.2	0.91	1.19	1.72	12.2
SouthWest: City West Link														
30	L2	465	6.1	445	6.1	* 0.420	14.1	LOS A	8.8	64.7	0.70	0.77	0.70	45.2
30a	L1	465	6.1	445	6.1	0.252	25.6	LOS B	9.1	67.1	0.75	0.73	0.75	31.0
31	T1	1618	7.3	1547	7.3	* 1.182	225.7	LOS F	54.8	408.0	1.00	1.97	2.35	4.1
32	R2	507	6.0	485	6.1	0.642	52.4	LOS D	12.6	92.7	0.93	0.82	0.93	21.6
Approach		3056	6.7	2922 N1	6.8	1.182	134.2	LOS F	54.8	408.0	0.90	1.41	1.62	9.3
All Vehicles		7829	6.7	6794 N1	7.7	1.182	97.0	LOS F	54.8	408.0	0.82	1.09	1.33	12.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	29.2	LOS C	0.1	0.1	0.90	0.90	204.9	210.9	1.03
P52	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	210.9	0.92
NorthEast: The Crescent											

P6B Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.3	207.6	0.91
All Pedestrians	158	45.9	LOS E	0.2	0.2	0.94	0.94	220.7	209.8	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[AM] [5% car 2030 base] [Cruise] The Crescent / James Craig Road (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	316	15.3	316	15.3	0.396	25.7	LOS B	11.4	90.4	0.67	0.77	0.67	16.8
23a	R1	145	2.2	145	2.2	* 1.036	124.2	LOS F	13.1	93.1	1.00	1.22	1.96	14.7
23	R2	98	3.2	98	3.2	0.727	69.3	LOS E	6.1	43.7	1.00	0.85	1.16	7.8
Approach		559	9.8	559	9.8	1.036	58.9	LOS E	13.1	93.1	0.81	0.90	1.09	14.0
NorthEast: The Crescent														
24	L2	211	2.0	159	2.0	0.167	23.6	LOS B	4.7	33.7	0.55	0.71	0.55	25.5
8	T1	3001	5.9	2269	5.9	* 1.081	143.7	LOS F	22.2	163.2	1.00	1.62	1.90	2.8
Approach		3212	5.7	2428 N1	5.7	1.081	135.8	LOS F	22.2	163.2	0.97	1.56	1.81	3.2
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	1053	6.0	1053	6.0	0.849	11.4	LOS A	27.5	202.4	0.48	0.75	0.49	45.2
10a	L1	292	5.4	292	5.4	0.195	6.7	LOS A	3.5	25.4	0.22	0.57	0.22	37.0
Approach		1344	5.9	1344	5.9	0.849	10.3	LOS A	27.5	202.4	0.43	0.71	0.43	44.5
SouthWest: The Crescent														
2	T1	517	5.9	429	6.0	0.156	2.9	LOS A	3.8	28.3	0.30	0.25	0.30	50.7
32	R2	1296	8.3	1076	8.4	* 1.097	114.5	LOS F	52.2	391.7	0.98	1.18	1.61	10.5
Approach		1813	7.6	1505 N1	7.7	1.097	82.7	LOS F	52.2	391.7	0.79	0.91	1.24	12.5
All Vehicles		6927	6.5	5837 N1	7.8	1.097	85.8	LOS F	52.2	391.7	0.78	1.14	1.28	10.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	238.0	220.5	0.93
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	224.5	204.3	0.91
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	231.3	212.4	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[AM] [5% car 2030 base] [Cruise] The Crescent / Victoria Road (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	1432	5.6	1432	5.6	* 1.256	302.7	LOS F	78.0	572.0	1.00	1.80	2.83	5.4
6	R2	311	10.8	311	10.8	0.159	28.4	LOS B	4.2	30.9	0.65	0.72	0.65	31.6
Approach		1742	6.5	1742	6.5	1.256	253.8	LOS F	78.0	572.0	0.94	1.61	2.44	6.4
North: Victoria Road														
7	L2	1521	7.0	1363	7.0	0.773	6.0	LOS A	0.0	0.0	0.00	0.52	0.00	51.8
9a	R1	1780	5.7	1595	5.7	* 1.242	278.7	LOS F	37.8	277.4	1.00	1.74	2.69	2.2
Approach		3301	6.3	2958 [N1]	6.3	1.242	153.0	LOS F	37.8	277.4	0.54	1.17	1.45	8.3
SouthWest: The Crescent														
30a	L1	906	5.5	819	5.5	0.381	32.1	LOS C	15.9	116.4	0.82	0.79	0.82	11.1
Approach		906	5.5	819 [N1]	5.5	0.381	32.1	LOS C	15.9	116.4	0.82	0.79	0.82	11.1
All Vehicles		5949	6.2	5519 [N1]	6.7	1.256	166.9	LOS F	78.0	572.0	0.71	1.25	1.67	7.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	210.9	0.92
SouthWest: The Crescent											
P8	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	240.8	223.8	0.93
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	235.4	217.4	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 0652 [[AM] [5% car 2030 base] [Cruise] Victoria Road / Robert Street (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	438	5.3	406	5.3	0.094	1.4	LOS A	0.7	5.1	0.10	0.08	0.10	58.0
3a	R1	674	7.8	626	8.0	* 1.127	133.5	LOS F	37.1	277.4	1.00	1.30	1.77	4.7
Approach		1112	6.8	1032 N1	6.9	1.127	81.5	LOS F	37.1	277.4	0.64	0.82	1.11	13.1
NorthEast: Robert St														
24a	L1	981	7.3	981	7.3	1.057	136.3	LOS F	38.4	285.6	1.00	1.56	1.88	4.5
26b	R3	54	31.4	54	31.4	* 1.057	151.3	LOS F	2.2	17.7	1.00	1.49	2.18	12.4
Approach		1035	8.5	1035	8.5	1.057	137.1	LOS F	38.4	285.6	1.00	1.55	1.90	5.0
North: Victoria Rd N														
7b	L3	87	20.5	87	20.5	0.089	11.8	LOS A	1.5	12.1	0.31	0.67	0.31	43.8
8	T1	2320	5.9	2320	5.9	* 1.145	195.3	LOS F	149.9	1102.1	1.00	1.90	2.23	8.0
Approach		2407	6.4	2407	6.4	1.145	188.7	LOS F	149.9	1102.1	0.97	1.85	2.16	8.3
All Vehicles		4554	7.0	4474 N1	7.1	1.145	152.0	LOS F	149.9	1102.1	0.90	1.54	1.86	8.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	236.4	218.5	0.92
All Pedestrians		53	54.3	LOS E	0.2	0.2	0.95	0.95	236.4	218.5	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[AM] [5% car 2030 base] [Cruise] Robert Street / Mullens Street (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	292	14.8	292	14.8	0.784	25.6	LOS B	15.8	124.3	0.91	1.00	1.18	15.8
6	R2	159	14.6	159	14.6	* 0.849	39.8	LOS C	5.5	43.6	1.00	1.08	1.54	18.2
Approach		451	14.7	451	14.7	0.849	30.6	LOS C	15.8	124.3	0.94	1.03	1.31	17.0
North: Mullens St														
7	L2	59	28.6	59	28.6	0.073	10.4	LOS A	0.8	6.8	0.47	0.61	0.47	26.9
9a	R1	743	5.9	743	5.9	* 0.884	36.8	LOS C	18.2	133.9	1.00	1.16	1.47	12.0
Approach		802	7.6	802	7.6	0.884	34.9	LOS C	18.2	133.9	0.96	1.12	1.40	12.6
SouthWest: Robert St														
30a	L1	464	5.9	409	5.9	0.350	7.8	LOS A	5.4	40.0	0.48	0.64	0.48	32.1
32a	R1	297	14.5	265	15.4	* 0.906	41.8	LOS C	9.9	78.4	0.97	1.22	1.65	11.4
Approach		761	9.3	674 N1	9.6	0.906	21.1	LOS B	9.9	78.4	0.67	0.86	0.94	22.0
All Vehicles		2014	9.8	1927 N1	10.3	0.906	29.1	LOS C	18.2	133.9	0.85	1.01	1.22	16.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[AM] [5% car 2030 base] [Cruise] Robert Street / Port Access Road (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

Robert Street / Port Access Road
Site Category: -
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	296	19.2	296	19.2	0.286	4.6	LOS A	1.3	10.3	0.33	0.54	0.33	20.9
Approach		296	19.2	296	19.2	0.286	4.6	LOS A	1.3	10.3	0.33	0.54	0.33	20.9
NorthEast: Robert St														
24a	L1	32	6.7	32	6.7	0.018	3.5	LOS A	0.0	0.0	0.00	0.48	0.00	36.4
5	T1	155	6.1	155	6.1	0.084	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach		186	6.2	186	6.2	0.084	0.6	NA	0.0	0.0	0.00	0.08	0.00	39.3
SouthWest: Robert St														
11	T1	107	5.9	96	5.8	0.053	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
32b	R3	248	21.6	227	22.9	0.216	5.4	LOS A	0.8	7.0	0.26	0.58	0.26	29.7
Approach		356	16.9	323 N1	17.8	0.216	3.8	NA	0.8	7.0	0.18	0.41	0.18	34.8
All Vehicles		838	15.3	806 N1	15.9	0.286	3.4	NA	1.3	10.3	0.19	0.38	0.19	34.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

PHASING SUMMARY

Site: 5018 [[AM] [5% car 2030 base] [Cruise] City West Link / M8 Motorway (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

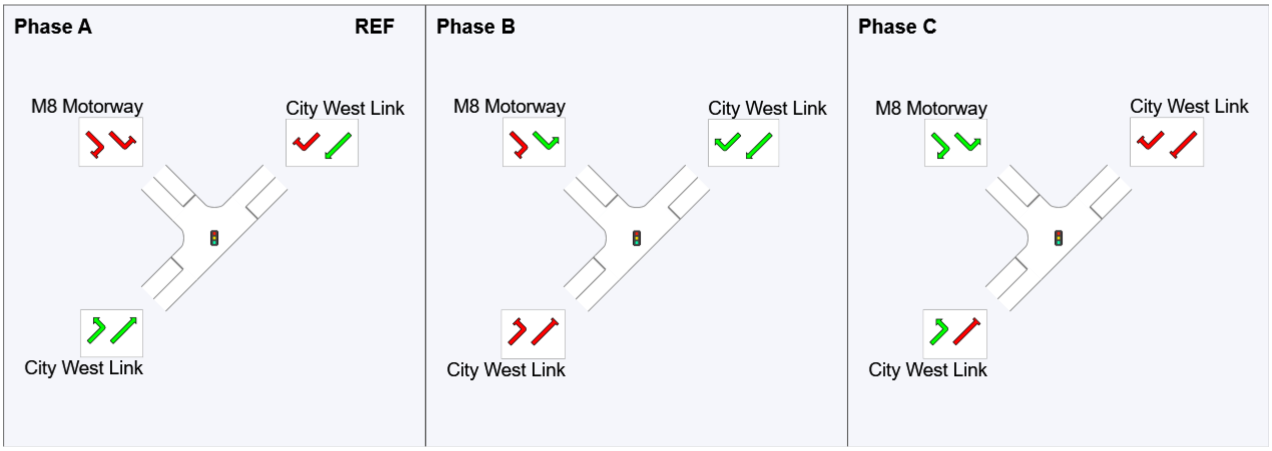
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	58	120	34
Green Time (sec)	56	28	18
Phase Time (sec)	62	34	24
Phase Split	52%	28%	20%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 1208 [[AM] [5% car 2030 base] [Cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

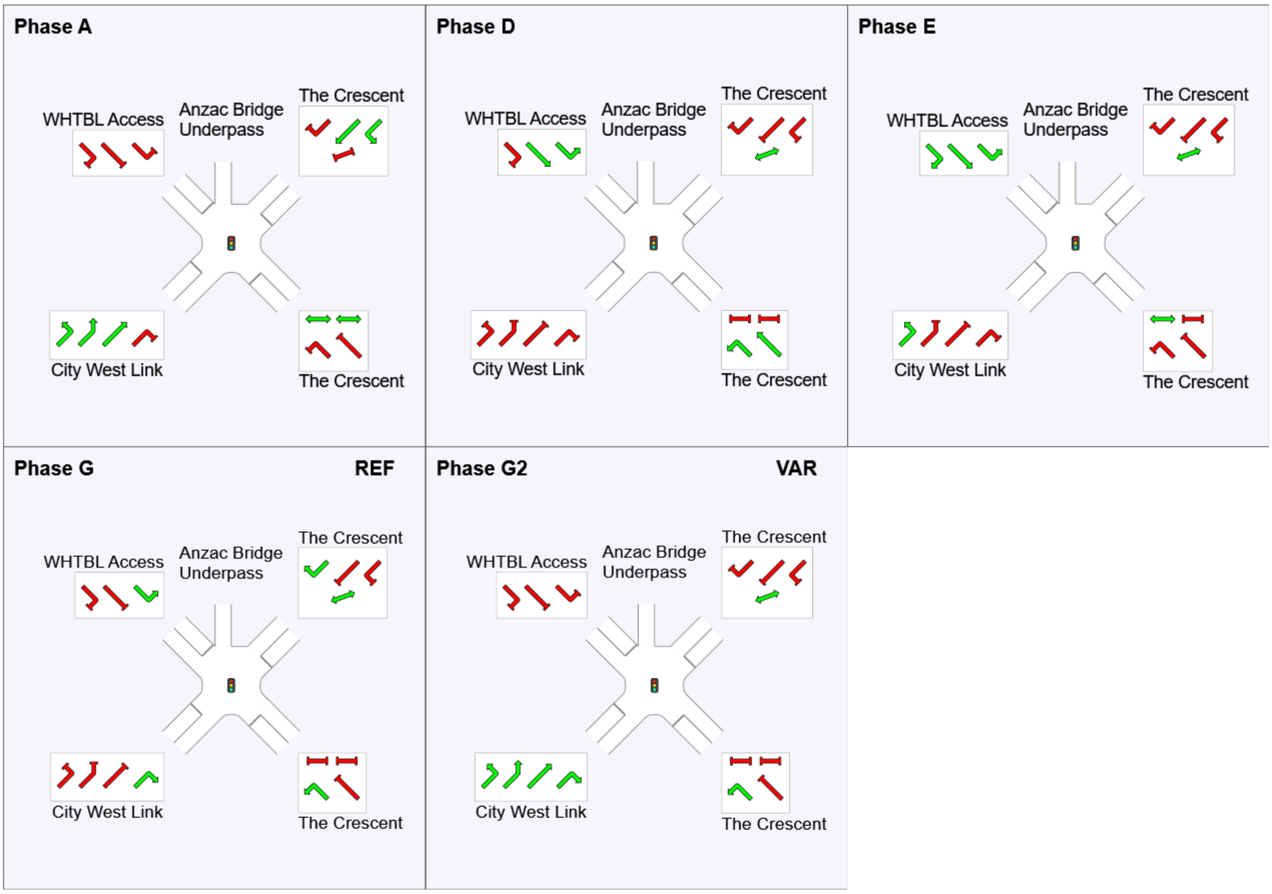
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

Phase Timing Summary

Phase	A	D	E	G	G2
Phase Change Time (sec)	39	91	108	7	25
Green Time (sec)	46	11	13	12	8
Phase Time (sec)	52	17	19	18	14
Phase Split	43%	14%	16%	15%	12%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[AM] [5% car 2030 base] [Cruise] The Crescent / James Craig Road (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

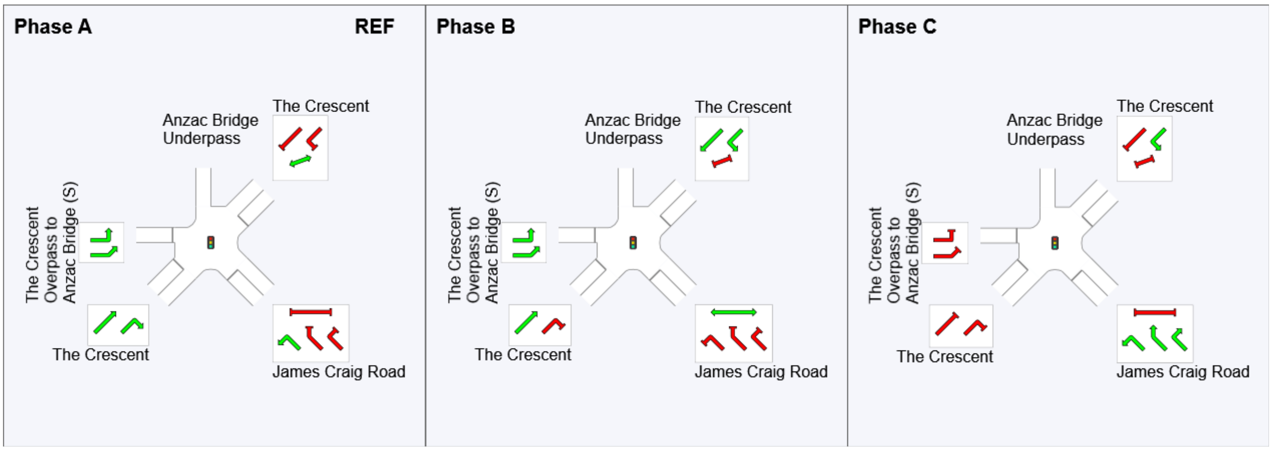
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	91	22	76
Green Time (sec)	45	48	9
Phase Time (sec)	51	54	15
Phase Split	43%	45%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[AM] [5% car 2030 base] [Cruise] The Crescent / Victoria Road (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

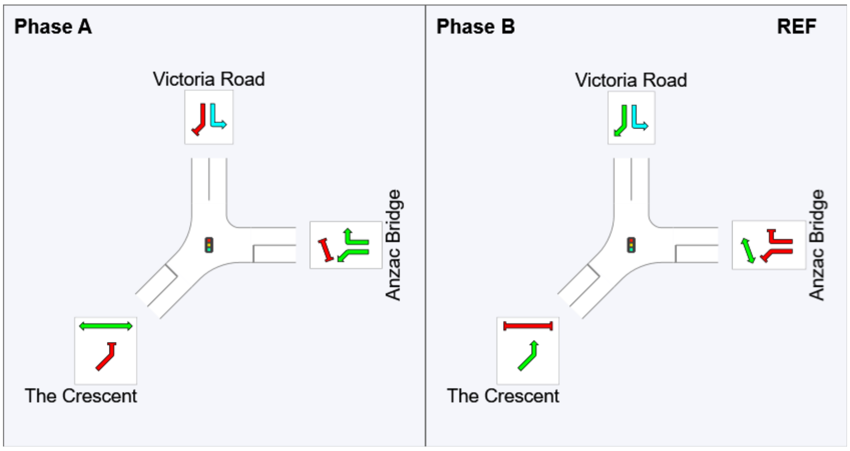
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	76	13
Green Time (sec)	51	57
Phase Time (sec)	57	63
Phase Split	48%	53%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0652 [[AM] [5% car 2030 base] [Cruise] Victoria Road / Robert Street (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

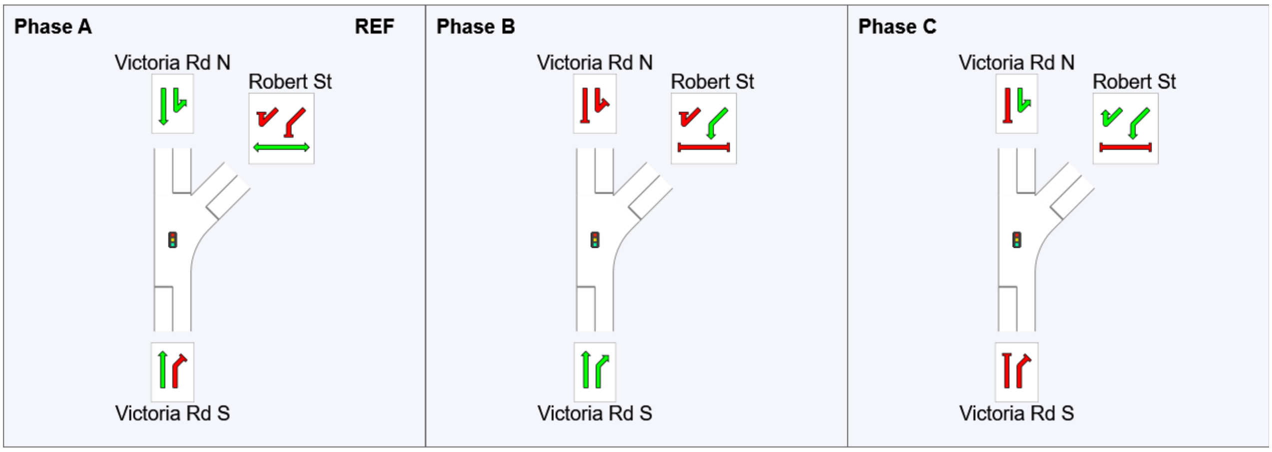
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	72	99
Green Time (sec)	66	21	15
Phase Time (sec)	72	27	21
Phase Split	60%	23%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

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\Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Cruise.sip9

PHASING SUMMARY

Site: [[AM] [5% car 2030 base] [Cruise] Robert Street / Mullens Street (Site Folder: [AM] [5% car 2030 base] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - Baseline Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

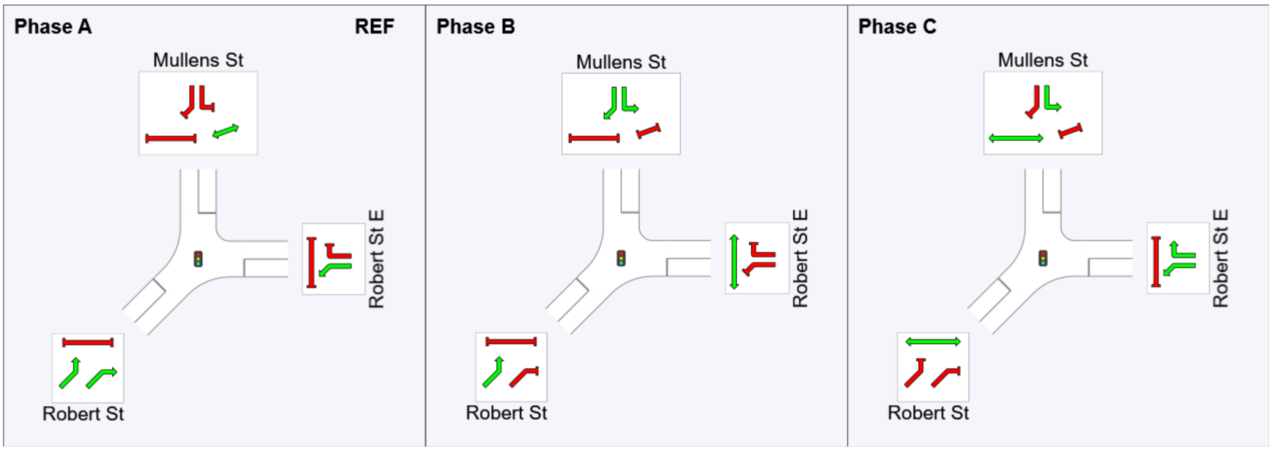
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	20	45
Green Time (sec)	14	19	9
Phase Time (sec)	20	25	15
Phase Split	33%	42%	25%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

MOVEMENT SUMMARY

Site: 5018 [[PM] [5% car 2030 base] [Cruise] City West Link / M8 Motorway (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1792	3.0	1479	3.1	0.517	4.7	LOS A	14.8	106.4	0.43	0.39	0.43	54.4
26	R2	913	6.3	754	6.5	* 0.724	37.3	LOS C	15.7	116.1	0.98	0.87	1.01	32.6
Approach		2704	4.1	2233 N1	4.2	0.724	15.7	LOS B	15.7	116.1	0.61	0.55	0.62	44.4
NorthWest: M8 Motorway														
27	L2	751	7.0	751	7.0	0.455	22.5	LOS B	11.0	81.5	0.71	0.79	0.71	34.8
29	R2	134	3.1	134	3.1	* 0.670	50.2	LOS D	6.1	43.6	1.00	0.84	1.10	32.6
Approach		884	6.4	884	6.4	0.670	26.7	LOS B	11.0	81.5	0.76	0.80	0.77	34.2
SouthWest: City West Link														
30	L2	456	3.0	456	3.0	0.447	17.7	LOS B	11.5	82.8	0.62	0.76	0.62	46.0
31	T1	1596	3.0	1596	3.0	* 0.722	25.4	LOS B	20.0	143.8	0.91	0.81	0.92	33.0
Approach		2052	3.0	2052	3.0	0.722	23.7	LOS B	20.0	143.8	0.85	0.80	0.85	36.8
All Vehicles		5640	4.1	5169 N1	4.4	0.724	20.8	LOS B	20.0	143.8	0.73	0.69	0.74	39.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1208 [[PM] [5% car 2030 base] [Cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	566	3.0	566	3.0	* 0.977	70.6	LOS F	30.4	218.0	1.00	1.23	1.60	10.7
22	T1	224	2.8	224	2.8	0.665	46.3	LOS D	5.2	37.0	1.00	0.83	1.11	30.1
Approach		791	2.9	791	2.9	0.977	63.7	LOS E	30.4	218.0	1.00	1.12	1.46	16.5
NorthEast: The Crescent														
24	L2	1608	2.9	1171	3.2	* 0.979	75.8	LOS F	38.8	279.2	1.00	1.17	1.60	16.9
25	T1	1708	4.8	1246	5.2	0.672	9.9	LOS A	10.2	74.3	0.52	0.45	0.52	37.6
26	R2	163	9.0	119	9.7	0.152	44.0	LOS D	2.6	19.8	1.00	0.77	1.00	30.6
Approach		3480	4.1	2537 N1	4.5	0.979	42.0	LOS C	38.8	279.2	0.76	0.80	1.04	21.8
NorthWest: WHTBL Access														
27	L2	261	6.9	261	6.9	0.283	18.0	LOS B	6.3	46.4	0.59	0.74	0.59	38.0
28	T1	120	2.6	120	2.6	0.090	29.2	LOS C	1.4	9.9	0.82	0.61	0.82	36.9
29	R2	429	2.9	429	2.9	* 1.022	100.7	LOS F	10.1	72.2	1.00	1.25	2.15	14.3
Approach		811	4.2	811	4.2	1.022	63.5	LOS E	10.1	72.2	0.84	0.99	1.45	20.7
SouthWest: City West Link														
30	L2	297	2.8	297	2.8	0.401	17.7	LOS B	6.5	46.5	0.84	0.80	0.84	42.8
30a	L1	918	3.0	918	3.0	0.755	39.0	LOS C	20.2	145.3	1.00	0.89	1.03	24.9
31	T1	967	6.1	967	6.1	0.789	41.8	LOS C	21.7	159.7	1.00	0.91	1.05	17.5
32	R2	164	3.2	164	3.2	0.196	36.9	LOS C	3.2	23.1	0.92	0.77	0.92	26.6
Approach		2346	4.3	2346	4.3	0.789	37.3	LOS C	21.7	159.7	0.97	0.88	1.00	24.5
All Vehicles		7427	4.1	6484 N1	4.6	1.022	45.6	LOS D	38.8	279.2	0.88	0.89	1.13	21.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	20.5	LOS C	0.1	0.1	0.87	0.87	196.3	210.9	1.07
P52	Stage 2	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
NorthEast: The Crescent											
P6B	Slip/	53	39.3	LOS D	0.1	0.1	0.94	0.94	212.3	207.6	0.98

Bypass										
All Pedestrians	158	33.0	LOS D	0.1	0.1	0.91	0.91	207.9	209.8	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[PM] [5% car 2030 base] [Cruise] The Crescent / James Craig Road (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	774	8.3	774	8.3	* 1.086	143.9	LOS F	76.7	575.4	1.00	1.42	2.23	3.8
23a	R1	28	3.7	28	3.7	0.242	49.9	LOS D	1.3	9.4	0.98	0.71	0.98	27.1
23	R2	29	3.6	29	3.6	0.242	51.6	LOS D	1.3	9.4	0.98	0.71	0.98	10.0
Approach		832	8.0	832	8.0	1.086	137.4	LOS F	76.7	575.4	1.00	1.37	2.14	4.4
NorthEast: The Crescent														
24	L2	26	4.0	19	4.0	0.023	18.3	LOS B	0.4	2.6	0.45	0.63	0.45	27.7
8	T1	2706	3.0	1980	3.0	* 1.084	130.0	LOS F	22.7	163.2	1.00	1.73	2.14	3.1
Approach		2733	3.0	1999 N1	3.0	1.084	128.9	LOS F	22.7	163.2	0.99	1.72	2.12	3.1
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	569	3.0	569	3.0	0.395	8.4	LOS A	7.2	51.7	0.32	0.68	0.32	47.9
10a	L1	373	2.8	373	2.8	0.435	7.3	LOS A	5.0	36.0	0.33	0.62	0.33	35.6
Approach		942	2.9	942	2.9	0.435	8.0	LOS A	7.2	51.7	0.32	0.66	0.32	45.6
SouthWest: The Crescent														
2	T1	949	3.0	949	3.0	0.413	5.5	LOS A	15.6	112.0	0.58	0.53	0.58	44.4
32	R2	279	17.7	279	17.7	0.256	25.0	LOS B	4.0	32.0	0.61	0.71	0.61	28.8
Approach		1228	6.3	1228	6.3	0.413	9.9	LOS A	15.6	112.0	0.59	0.57	0.59	37.9
All Vehicles		5735	4.4	5001 N1	5.1	1.086	78.3	LOS F	76.7	575.4	0.77	1.18	1.41	9.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	223.0	220.5	0.99
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	209.5	204.3	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	216.3	212.4	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[PM] [5% car 2030 base] [Cruise] The Crescent / Victoria Road (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	884	3.0	884	3.0	0.691	26.7	LOS B	18.3	131.4	0.84	0.84	0.88	32.2
6	R2	2605	3.6	2605	3.6	* 1.441	444.5	LOS F	218.0	1565.4	1.00	2.45	4.24	4.1
Approach		3489	3.4	3489	3.4	1.441	338.7	LOS F	218.0	1565.4	0.96	2.04	3.39	5.0
North: Victoria Road														
7	L2	658	5.3	585	5.6	0.181	6.0	LOS A	0.0	0.0	0.00	0.53	0.00	52.7
9a	R1	1848	2.9	1639	2.9	* 1.473	469.5	LOS F	38.7	277.4	1.00	2.56	4.40	1.4
Approach		2506	3.5	2224 N1	3.6	1.473	347.6	LOS F	38.7	277.4	0.74	2.02	3.24	3.1
SouthWest: The Crescent														
30a	L1	1352	2.9	1352	2.9	0.729	33.2	LOS C	22.3	160.2	0.97	0.88	0.99	10.8
Approach		1352	2.9	1352	2.9	0.729	33.2	LOS C	22.3	160.2	0.97	0.88	0.99	10.8
All Vehicles		7347	3.4	7065 N1	3.5	1.473	283.0	LOS F	218.0	1565.4	0.89	1.81	2.89	4.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
SouthWest: The Crescent											
P8	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	225.8	223.8	0.99
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	220.4	217.4	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

\Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Cruise.sip9

MOVEMENT SUMMARY

Site: 0652 [[PM] [5% car 2030 base] [Cruise] Victoria Road / Robert Street (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	2102	3.0	1680	3.0	0.422	5.9	LOS A	10.3	73.7	0.43	0.39	0.43	52.4
3a	R1	1549	3.9	1241	4.1	* 1.184	225.7	LOS F	38.3	277.4	1.00	2.02	2.91	2.9
Approach		3652	3.4	2921 N1	3.5	1.184	99.3	LOS F	38.3	277.4	0.67	1.08	1.48	13.3
NorthEast: Robert St														
24a	L1	1377	4.0	1235	4.1	0.752	15.1	LOS B	38.9	282.0	0.73	0.76	0.76	21.5
26b	R3	181	11.0	164	11.9	1.060	132.6	LOS F	14.1	109.0	1.00	1.62	2.41	13.7
Approach		1558	4.8	1399 N1	5.0	1.060	28.9	LOS C	38.9	282.0	0.76	0.86	0.95	18.2
North: Victoria Rd N														
7b	L3	187	10.7	187	10.7	* 1.145	197.3	LOS F	33.8	251.9	1.00	1.80	2.78	8.1
8	T1	1129	3.0	1129	3.0	1.145	189.5	LOS F	62.6	449.6	1.00	1.84	2.75	8.2
Approach		1317	4.1	1317	4.1	1.145	190.7	LOS F	62.6	449.6	1.00	1.83	2.76	8.2
All Vehicles		6526	3.9	5637 N1	4.5	1.184	103.2	LOS F	62.6	449.6	0.77	1.20	1.65	11.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99
All Pedestrians		53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[PM] [5% car 2030 base] [Cruise] Robert Street / Mullens Street (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	327	11.9	327	11.9	0.707	24.5	LOS B	9.3	71.4	0.94	0.89	1.03	16.2
6	R2	87	19.3	87	19.3	* 0.682	37.2	LOS C	2.9	23.3	1.00	0.87	1.24	19.2
Approach		415	13.5	415	13.5	0.707	27.2	LOS B	9.3	71.4	0.95	0.89	1.08	17.1
North: Mullens St														
7	L2	105	16.0	105	16.0	0.100	7.5	LOS A	1.1	8.7	0.38	0.57	0.38	29.2
9a	R1	1231	3.0	1231	3.0	* 1.145	177.9	LOS F	71.4	512.8	1.00	2.40	3.43	3.2
Approach		1336	4.0	1336	4.0	1.145	164.5	LOS F	71.4	512.8	0.95	2.26	3.19	3.5
SouthWest: Robert St														
30a	L1	1389	3.0	981	3.0	0.934	34.3	LOS C	35.7	256.4	0.73	1.05	1.18	19.2
32a	R1	329	11.8	238	13.7	* 1.068	113.0	LOS F	16.2	126.4	1.00	1.92	2.88	5.1
Approach		1719	4.7	1219 N1	5.1	1.068	49.6	LOS D	35.7	256.4	0.78	1.22	1.51	14.6
All Vehicles		3469	5.5	2969 N1	6.4	1.145	98.2	LOS F	71.4	512.8	0.88	1.64	2.21	7.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[PM] [5% car 2030 base] [Cruise] Robert Street / Port Access Road (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

Robert Street / Port Access Road
Site Category: -
Give-Way (Two-Way)

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	273	18.9	273	18.9	0.259	4.5	LOS A	1.1	9.1	0.30	0.53	0.30	21.1
Approach		273	18.9	273	18.9	0.259	4.5	LOS A	1.1	9.1	0.30	0.53	0.30	21.1
NorthEast: Robert St														
24a	L1	32	3.3	32	3.3	0.017	3.4	LOS A	0.0	0.0	0.00	0.48	0.00	36.4
5	T1	142	3.0	142	3.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach		174	3.0	174	3.0	0.075	0.6	NA	0.0	0.0	0.00	0.09	0.00	39.3
SouthWest: Robert St														
11	T1	152	2.8	112	2.6	0.059	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
32b	R3	283	18.2	216	20.6	0.199	5.3	LOS A	0.8	6.2	0.25	0.57	0.25	29.8
Approach		435	12.8	328 N1	14.4	0.199	3.5	NA	0.8	6.2	0.17	0.38	0.17	35.4
All Vehicles		881	12.8	774 N1	14.5	0.259	3.2	NA	1.1	9.1	0.18	0.37	0.18	35.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

PHASING SUMMARY

Site: 5018 [[PM] [5% car 2030 base] [Cruise] City West Link / M8 Motorway (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

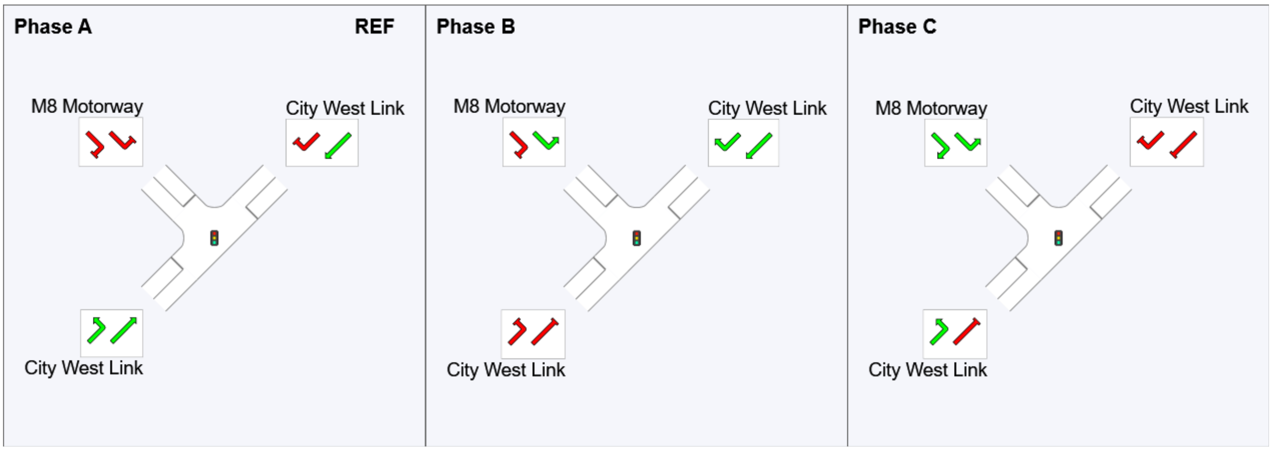
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

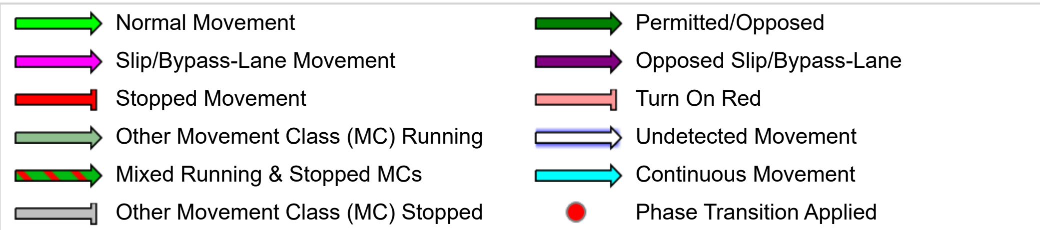
Phase	A	B	C
Phase Change Time (sec)	0	41	74
Green Time (sec)	35	27	10
Phase Time (sec)	41	33	16
Phase Split	46%	37%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 1208 [[PM] [5% car 2030 base] [Cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

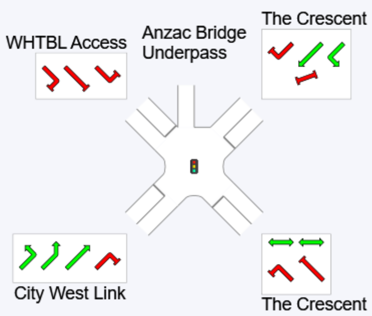
Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	71	17	31	44
Green Time (sec)	30	8	7	21
Phase Time (sec)	36	14	13	27
Phase Split	40%	16%	14%	30%

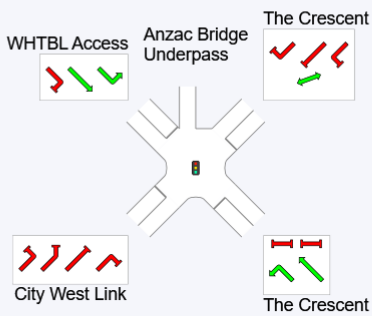
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

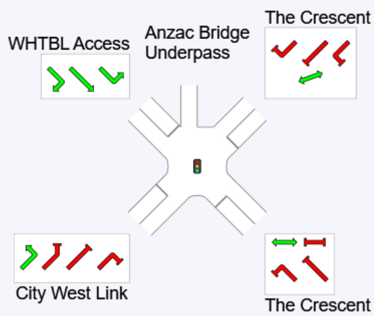
Phase A



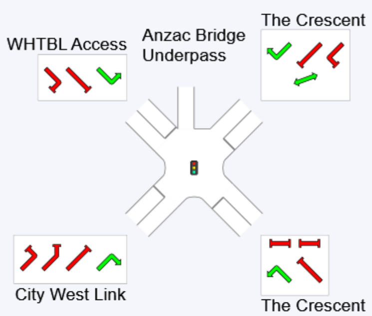
Phase D



Phase E



Phase G **REF**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[PM] [5% car 2030 base] [Cruise] The Crescent / James Craig Road (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

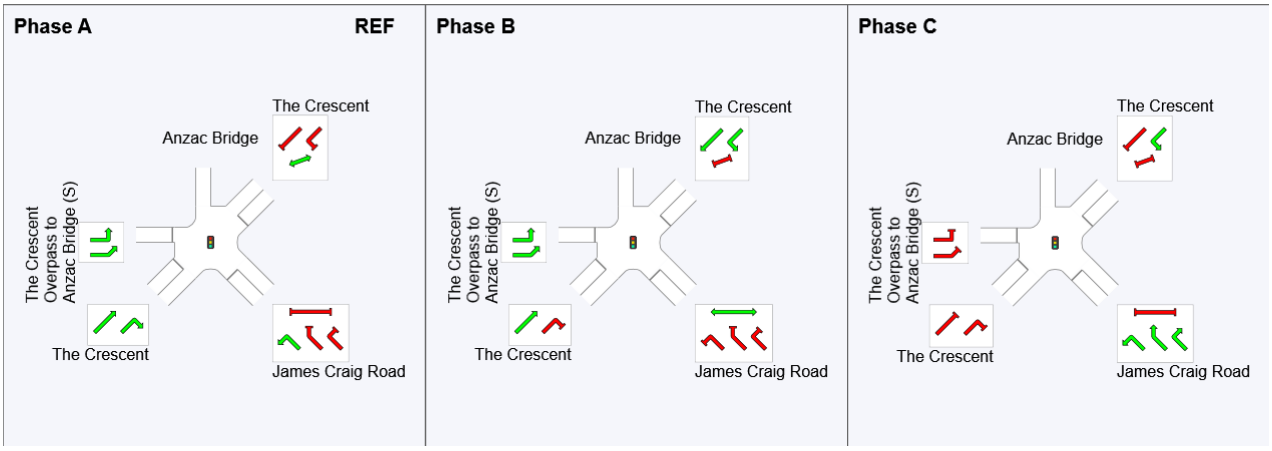
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	13	54	1
Green Time (sec)	35	31	6
Phase Time (sec)	41	37	12
Phase Split	46%	41%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[PM] [5% car 2030 base] [Cruise] The Crescent / Victoria Road (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

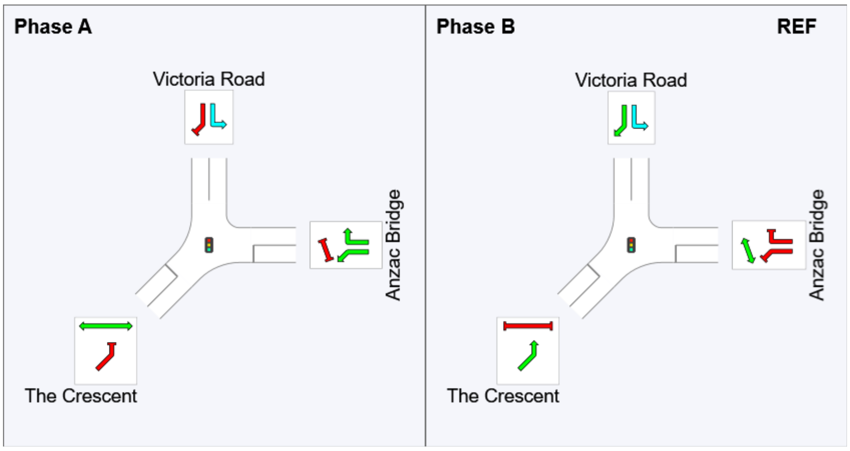
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	87	45
Green Time (sec)	42	36
Phase Time (sec)	48	42
Phase Split	53%	47%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0652 [[PM] [5% car 2030 base] [Cruise] Victoria Road / Robert Street (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

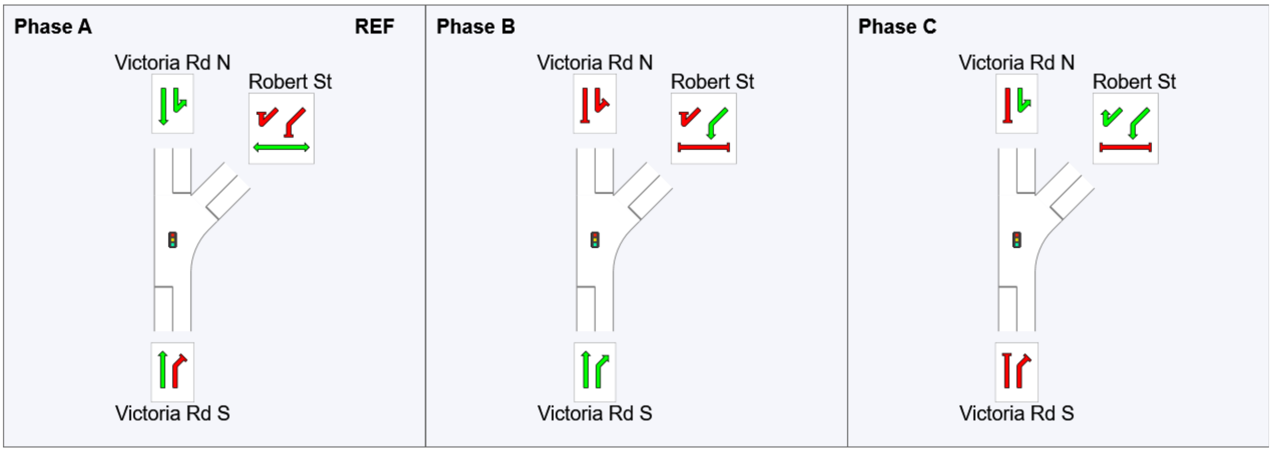
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	32	59	11
Green Time (sec)	21	36	15
Phase Time (sec)	27	42	21
Phase Split	30%	47%	23%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20220728_2030_TMAP Modelling_v2.4 - 2030 Base - Cruise.sip9

PHASING SUMMARY

Site: [[PM] [5% car 2030 base] [Cruise] Robert Street / Mullens Street (Site Folder: [PM] [5% car 2030 base] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - Baseline Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

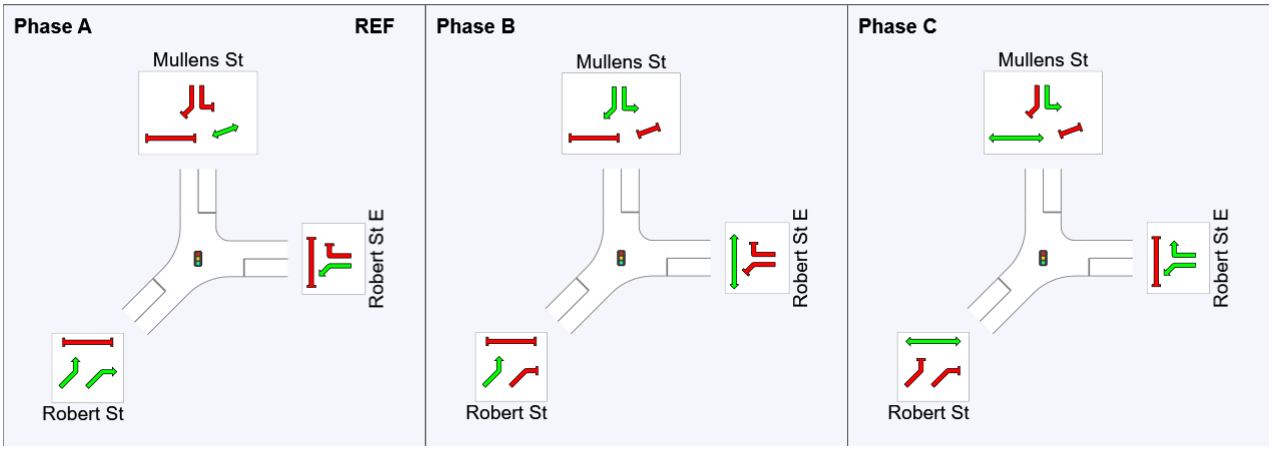
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	14	47
Green Time (sec)	8	27	7
Phase Time (sec)	14	33	13
Phase Split	23%	55%	22%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

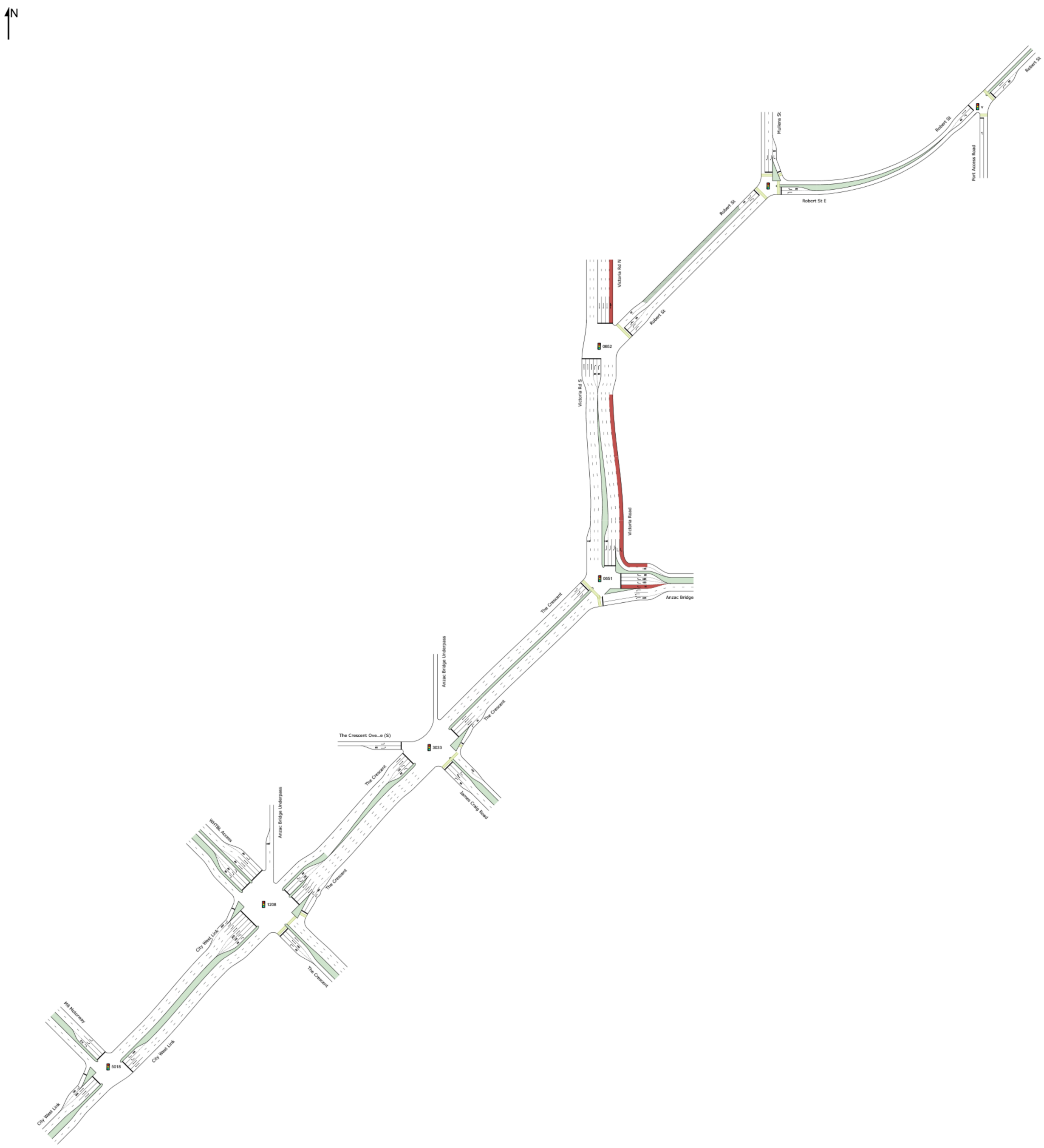
Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

NETWORK LAYOUT

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
5018	NA	[AM] [5% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway
1208	NA	[AM] [5% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access
3033	NA	[AM] [5% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road
0651	NA	[AM] [5% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road

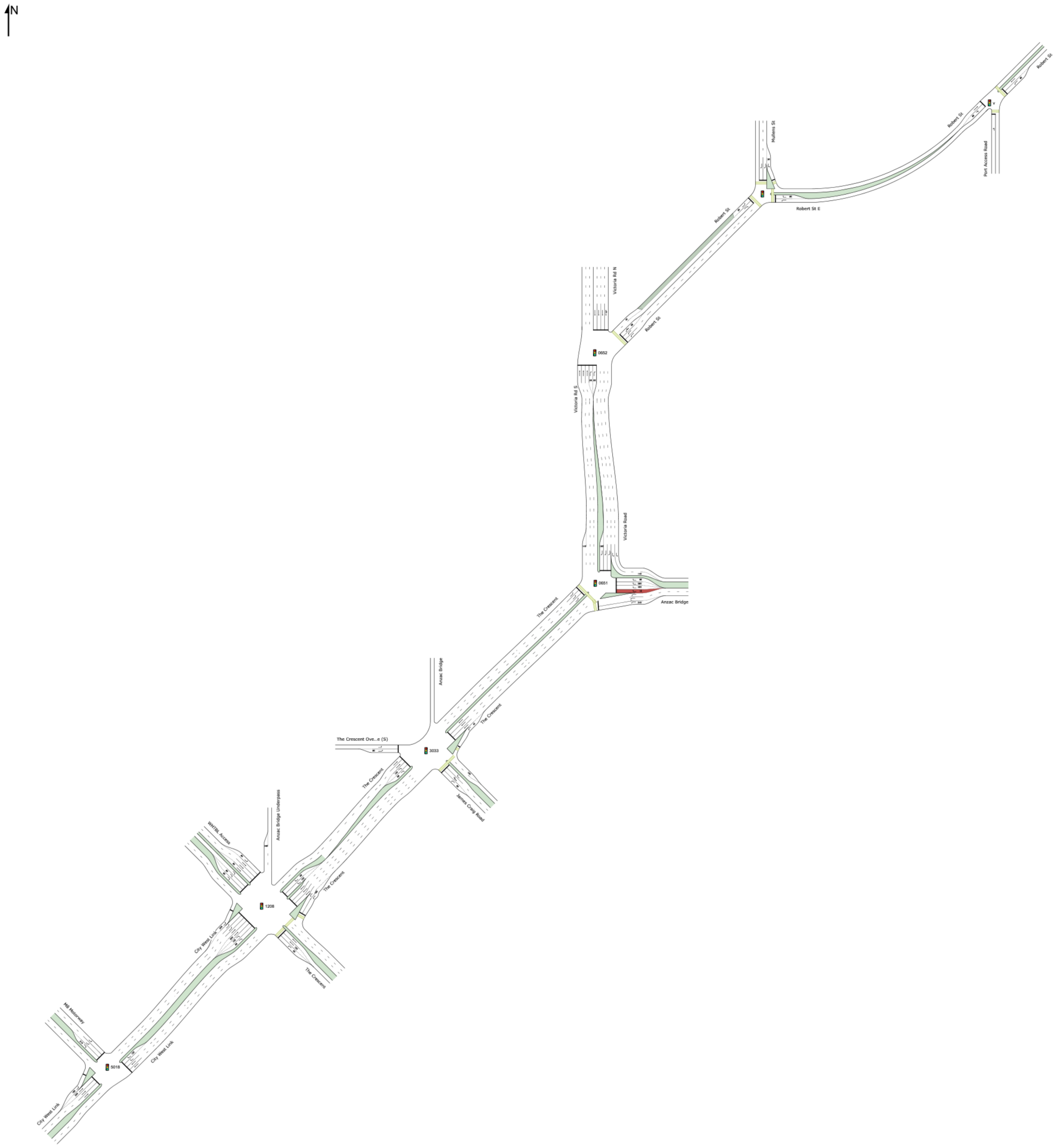
0652	NA	[AM] [5% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street
	NA	[AM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street
v	NA	[AM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion

NETWORK LAYOUT

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
5018	NA	[PM] [5% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway
1208	NA	[PM] [5% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access
3033	NA	[PM] [5% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road
0651	NA	[PM] [5% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road
0652	NA	[PM] [5% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street

	NA	[PM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street
V	NA	[PM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion

MOVEMENT SUMMARY

Site: 5018 [[AM] [5% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1507	6.1	1259	6.3	0.470	4.6	LOS A	11.1	82.2	0.34	0.31	0.34	54.6
26	R2	942	9.5	787	9.7	* 1.064	128.6	LOS F	34.8	264.0	1.00	1.31	1.99	15.5
Approach		2449	7.4	2046 N1	7.6	1.064	52.3	LOS D	34.8	264.0	0.60	0.69	0.98	27.7
NorthWest: M8 Motorway														
27	L2	731	10.5	731	10.5	0.509	28.1	LOS B	13.0	99.3	0.78	0.81	0.78	31.5
29	R2	275	6.1	275	6.1	* 1.051	126.1	LOS F	23.7	174.5	1.00	1.33	2.08	19.2
Approach		1005	9.3	1005	9.3	1.051	54.9	LOS D	23.7	174.5	0.84	0.95	1.14	24.8
SouthWest: City West Link														
30	L2	199	5.8	199	5.8	0.172	12.6	LOS A	3.7	26.9	0.41	0.67	0.41	49.1
31	T1	2205	6.1	2205	6.1	* 1.076	133.7	LOS F	87.5	644.3	1.00	1.71	2.05	11.2
Approach		2404	6.1	2404	6.1	1.076	123.7	LOS F	87.5	644.3	0.95	1.63	1.91	12.7
All Vehicles		5859	7.2	5456 N1	7.7	1.076	84.2	LOS F	87.5	644.3	0.80	1.15	1.42	18.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1208 [[AM] [5% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	281	6.0	281	6.0	* 0.767	38.2	LOS C	10.2	74.9	1.00	0.94	1.11	17.2
22	T1	291	6.2	291	6.2	0.989	83.8	LOS F	9.9	72.9	1.00	1.17	1.88	21.5
Approach		572	6.1	572	6.1	0.989	61.4	LOS E	10.2	74.9	1.00	1.06	1.50	20.2
NorthEast: The Crescent														
24	L2	1075	6.1	821	6.4	0.537	16.0	LOS B	8.7	64.2	0.47	0.70	0.47	37.8
25	T1	1582	8.2	1210	8.6	0.528	6.0	LOS A	6.6	49.3	0.30	0.26	0.30	44.1
26	R2	501	8.2	383	8.6	0.867	64.2	LOS E	10.3	77.7	1.00	0.92	1.21	25.1
Approach		3158	7.5	2414 N1	7.8	0.867	18.6	LOS B	10.3	77.7	0.47	0.52	0.50	34.4
NorthWest: WHTBL Access														
27	L2	154	13.0	154	13.0	0.214	24.2	LOS B	4.6	35.9	0.65	0.74	0.65	33.7
28	T1	103	6.1	103	6.1	0.075	30.8	LOS C	1.3	9.4	0.80	0.59	0.80	36.1
29	R2	587	5.9	587	5.9	* 1.054	128.3	LOS F	17.4	127.6	1.00	1.37	2.16	11.8
Approach		844	7.2	844	7.2	1.054	97.4	LOS F	17.4	127.6	0.91	1.16	1.72	15.2
SouthWest: City West Link														
30	L2	465	6.1	441	6.2	0.460	15.1	LOS B	8.8	64.6	0.78	0.80	0.78	44.5
30a	L1	465	6.1	441	6.2	0.284	27.4	LOS B	8.6	63.6	0.84	0.77	0.84	30.0
31	T1	1499	8.3	1420	8.4	* 1.066	126.6	LOS F	54.4	408.0	1.00	1.62	1.92	7.1
32	R2	507	6.0	481	6.1	* 1.060	121.2	LOS F	19.8	145.8	1.00	1.24	1.92	11.7
Approach		2937	7.2	2782 N1	7.3	1.066	92.3	LOS F	54.4	408.0	0.94	1.29	1.57	12.8
All Vehicles		7511	7.2	6612 N1	8.2	1.066	63.4	LOS E	54.4	408.0	0.77	0.97	1.19	17.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	23.0	LOS C	0.1	0.1	0.88	0.88	198.8	210.9	1.06
P52	Stage 2	53	44.3	LOS E	0.1	0.1	0.94	0.94	220.0	210.9	0.96
NorthEast: The Crescent											

P6B Slip/ Bypass	53	44.3	LOS E	0.1	0.1	0.94	0.94	217.3	207.6	0.96
All Pedestrians	158	37.2	LOS D	0.1	0.1	0.92	0.92	212.0	209.8	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[AM] [5% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	142	34.1	142	34.1	0.227	23.5	LOS B	4.2	37.8	0.64	0.74	0.64	18.1
23a	R1	51	6.3	51	6.3	* 0.477	56.9	LOS E	2.6	19.3	1.00	0.74	1.00	25.1
23	R2	51	6.2	51	6.2	0.477	58.6	LOS E	2.6	19.3	1.00	0.74	1.00	9.0
Approach		243	22.5	243	22.5	0.477	37.7	LOS C	4.2	37.8	0.79	0.74	0.79	18.3
NorthEast: The Crescent														
24	L2	68	6.2	52	6.2	0.056	19.0	LOS B	1.2	8.7	0.49	0.66	0.49	28.3
8	T1	3017	6.2	2310	6.2	* 1.016	90.5	LOS F	22.1	163.2	1.00	1.45	1.68	4.4
Approach		3085	6.2	2362 N1	6.2	1.016	88.9	LOS F	22.1	163.2	0.99	1.43	1.65	4.6
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	1053	6.0	1053	6.0	0.841	12.6	LOS A	25.5	187.5	0.50	0.77	0.52	44.2
10a	L1	297	6.4	297	6.4	0.202	6.5	LOS A	3.1	22.6	0.23	0.57	0.23	37.5
Approach		1349	6.1	1349	6.1	0.841	11.2	LOS A	25.5	187.5	0.44	0.72	0.46	43.6
SouthWest: The Crescent														
2	T1	531	7.1	478	7.2	0.167	3.0	LOS A	4.1	30.2	0.35	0.30	0.35	50.4
32	R2	1122	9.6	1010	9.7	* 1.039	65.5	LOS E	41.4	313.9	0.96	1.06	1.36	16.3
Approach		1653	8.8	1488 N1	8.9	1.039	45.5	LOS D	41.4	313.9	0.76	0.82	1.04	19.3
All Vehicles		6331	7.5	5443 N1	8.7	1.039	55.5	LOS D	41.4	313.9	0.78	1.06	1.15	14.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	228.0	220.5	0.97
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	44.3	LOS E	0.1	0.1	0.94	0.94	214.5	204.3	0.95
All Pedestrians		105	44.3	LOS E	0.1	0.1	0.94	0.94	221.3	212.4	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[AM] [5% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	1337	6.0	1337	6.0	* 1.221	265.5	LOS F	63.8	469.8	1.00	1.88	3.00	6.1
6	R2	313	11.1	313	11.1	0.167	25.8	LOS B	3.6	26.9	0.67	0.72	0.67	33.0
Approach		1649	7.0	1649	7.0	1.221	220.1	LOS F	63.8	469.8	0.94	1.66	2.56	7.3
North: Victoria Road														
7	L2	1523	7.0	1330	7.1	0.754	5.9	LOS A	0.0	0.0	0.00	0.52	0.00	51.9
9a	R1	1748	6.4	1525	6.5	* 1.209	243.6	LOS F	37.6	277.4	1.00	1.80	2.84	2.5
Approach		3272	6.7	2855 [N1]	6.8	1.209	132.9	LOS F	37.6	277.4	0.53	1.20	1.52	9.5
SouthWest: The Crescent														
30a	L1	878	6.8	825	6.9	0.394	29.0	LOS C	14.0	103.8	0.85	0.80	0.85	12.0
Approach		878	6.8	825 [N1]	6.9	0.394	29.0	LOS C	14.0	103.8	0.85	0.80	0.85	12.0
All Vehicles		5799	6.8	5330 [N1]	7.4	1.221	143.8	LOS F	63.8	469.8	0.71	1.28	1.73	8.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	44.3	LOS E	0.1	0.1	0.94	0.94	220.0	210.9	0.96
SouthWest: The Crescent											
P8	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	230.8	223.8	0.97
All Pedestrians		105	44.3	LOS E	0.1	0.1	0.94	0.94	225.4	217.4	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 0652 [[AM] [5% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	391	5.9	373	5.9	0.089	2.8	LOS A	1.3	9.8	0.24	0.20	0.24	56.1
3a	R1	696	9.4	665	9.5	* 1.182	156.8	LOS F	36.6	277.4	1.00	1.46	2.04	4.1
Approach		1086	8.1	1038 N1	8.2	1.182	101.5	LOS F	36.6	277.4	0.73	1.01	1.39	10.6
NorthEast: Robert St														
24a	L1	999	8.4	999	8.4	1.066	134.2	LOS F	38.0	285.6	1.00	1.71	2.09	4.6
26b	R3	72	41.2	72	41.2	* 1.066	144.9	LOS F	0.8	6.6	1.00	1.60	2.40	12.8
Approach		1071	10.6	1071	10.6	1.066	134.9	LOS F	38.0	285.6	1.00	1.70	2.11	5.3
North: Victoria Rd N														
7b	L3	109	27.9	109	27.9	0.123	12.0	LOS A	1.7	15.0	0.35	0.68	0.35	43.7
8	T1	2273	6.0	2273	6.0	* 1.188	225.3	LOS F	147.4	1085.1	1.00	2.21	2.72	7.1
Approach		2382	7.0	2382	7.0	1.188	215.5	LOS F	147.4	1085.1	0.97	2.14	2.61	7.4
All Vehicles		4539	8.1	4491 N1	8.2	1.188	169.9	LOS F	147.4	1085.1	0.92	1.77	2.21	7.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	226.4	218.5	0.97
All Pedestrians		53	44.3	LOS E	0.1	0.1	0.94	0.94	226.4	218.5	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[AM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	327	20.6	327	20.6	0.863	34.4	LOS C	14.8	121.6	0.95	1.15	1.43	13.1
6	R2	172	18.4	172	18.4	* 0.949	52.5	LOS D	7.1	57.8	1.00	1.34	2.02	15.4
Approach		499	19.8	499	19.8	0.949	40.6	LOS C	14.8	121.6	0.97	1.22	1.63	14.2
North: Mullens St														
7	L2	74	34.3	74	34.3	0.102	11.5	LOS A	1.1	9.7	0.52	0.62	0.52	25.5
9a	R1	743	5.9	743	5.9	* 0.993	69.6	LOS E	26.3	193.5	1.00	1.54	2.11	7.4
Approach		817	8.5	817	8.5	0.993	64.3	LOS E	26.3	193.5	0.96	1.46	1.97	7.9
SouthWest: Robert St														
30a	L1	464	5.9	412	6.0	0.353	7.8	LOS A	5.5	40.4	0.49	0.64	0.49	32.1
32a	R1	340	19.8	304	20.6	* 0.981	64.6	LOS E	14.9	122.3	0.97	1.48	2.09	8.2
Approach		804	11.8	717 N1	12.2	0.981	31.9	LOS C	14.9	122.3	0.69	1.00	1.17	17.7
All Vehicles		2120	12.4	2032 N1	12.9	0.993	47.1	LOS D	26.3	193.5	0.86	1.24	1.60	12.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: v [[AM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	343	26.1	343	26.1	* 0.397	11.6	LOS A	7.5	64.2	0.48	0.68	0.48	12.5
Approach		343	26.1	343	26.1	0.397	11.6	LOS A	7.5	64.2	0.48	0.68	0.48	12.5
NorthEast: Robert St														
24a	L1	32	6.7	32	6.7	0.084	37.9	LOS C	1.2	9.2	0.84	0.70	0.84	22.2
5	T1	155	6.1	155	6.1	* 0.401	37.3	LOS C	6.6	48.8	0.91	0.74	0.91	22.1
Approach		186	6.2	186	6.2	0.401	37.4	LOS C	6.6	48.8	0.90	0.73	0.90	22.1
SouthWest: Robert St														
11	T1	107	5.9	97	6.0	0.251	35.9	LOS C	4.0	29.5	0.88	0.69	0.88	25.3
32b	R3	306	28.2	281	29.2	0.333	11.8	LOS A	5.8	50.7	0.46	0.70	0.46	23.9
Approach		414	22.4	378 N1	23.2	0.333	18.0	LOS B	5.8	50.7	0.56	0.70	0.56	24.6
All Vehicles		943	20.5	907 N1	21.3	0.401	19.6	LOS B	7.5	64.2	0.60	0.70	0.60	21.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Port Access Road											
P1	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	218.1	208.6	0.96
NorthEast: Robert St											
P2	Full	53	44.3	LOS E	0.1	0.1	0.94	0.94	222.5	213.9	0.96
All Pedestrians		105	44.3	LOS E	0.1	0.1	0.94	0.94	220.3	211.3	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 5018 [[AM] [5% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

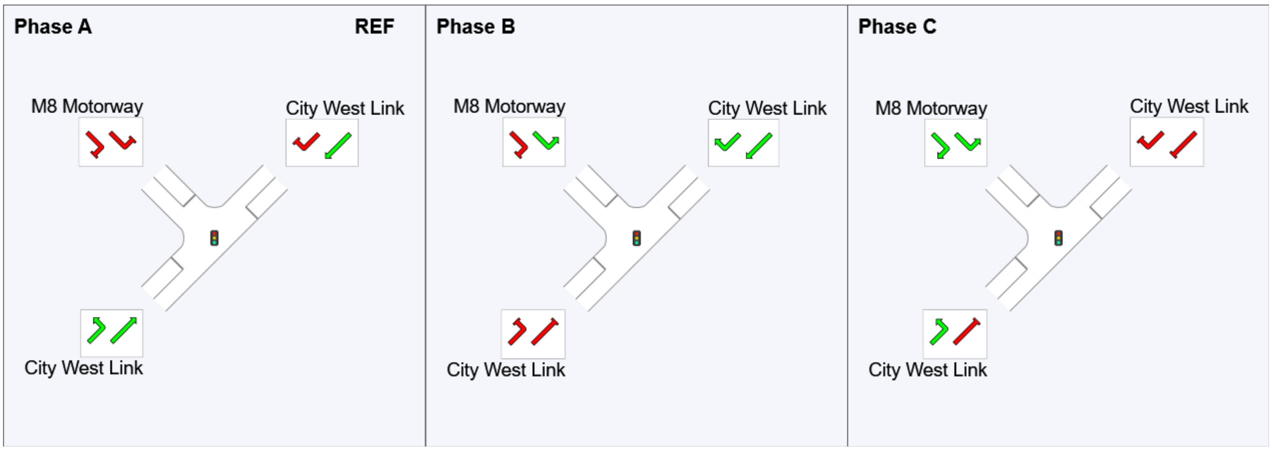
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

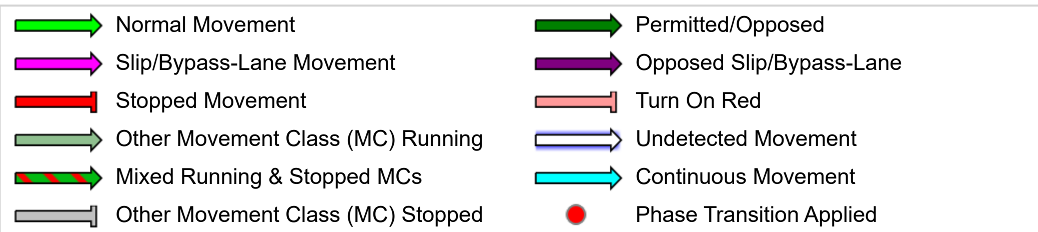
Phase	A	B	C
Phase Change Time (sec)	58	9	37
Green Time (sec)	45	22	15
Phase Time (sec)	51	28	21
Phase Split	51%	28%	21%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 1208 [[AM] [5% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

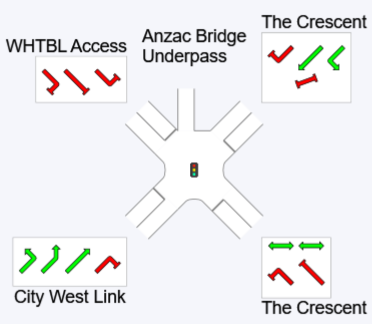
Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	39	89	3	20
Green Time (sec)	44	8	11	13
Phase Time (sec)	50	14	17	19
Phase Split	50%	14%	17%	19%

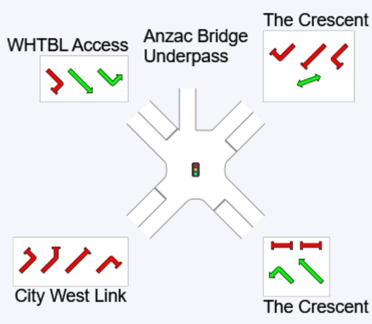
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

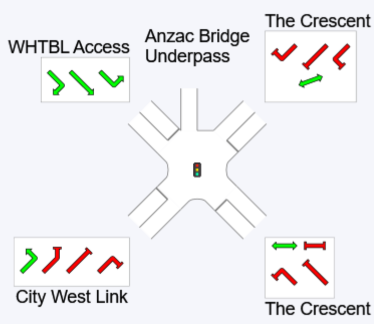
Phase A



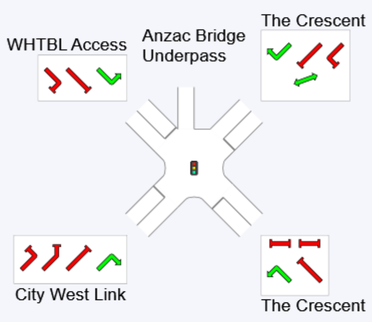
Phase D



Phase E



Phase G **REF**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[AM] [5% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

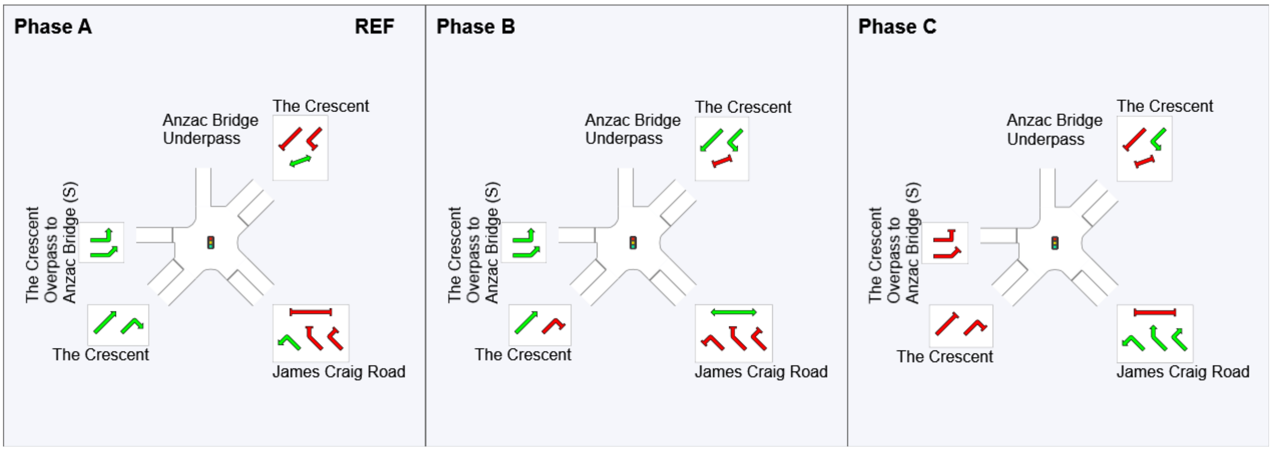
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

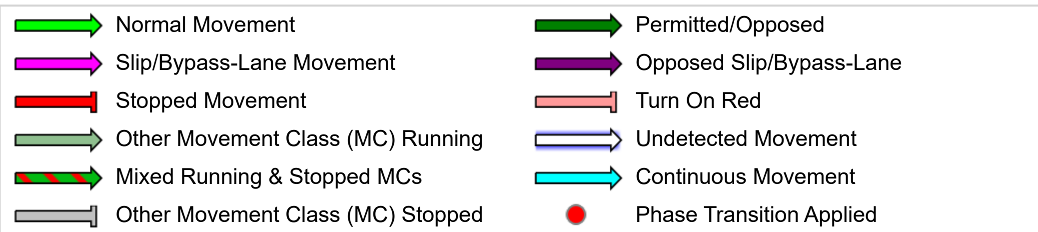
Phase	A	B	C
Phase Change Time (sec)	82	22	70
Green Time (sec)	34	42	6
Phase Time (sec)	40	48	12
Phase Split	40%	48%	12%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 0651 [[AM] [5% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

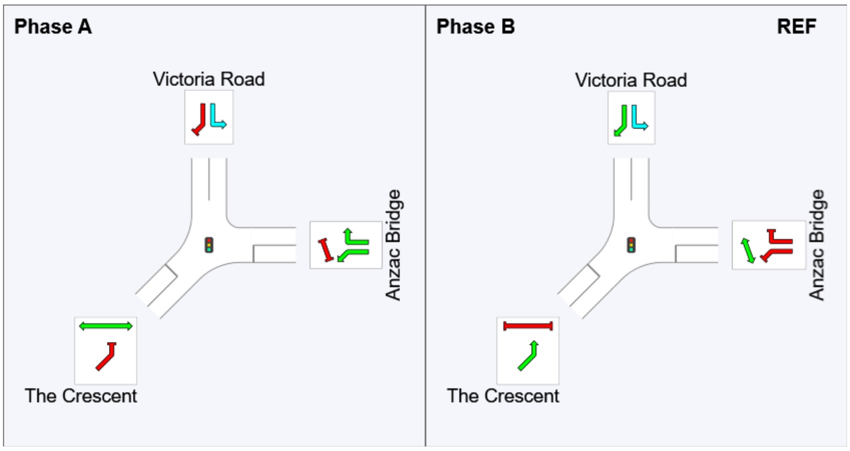
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

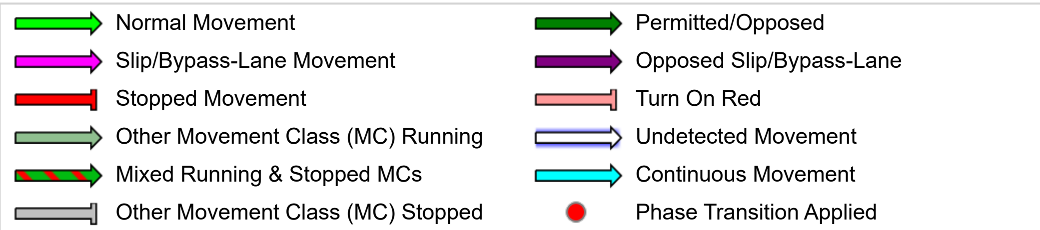
Phase	A	B
Phase Change Time (sec)	66	13
Green Time (sec)	41	47
Phase Time (sec)	47	53
Phase Split	47%	53%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 0652 [[AM] [5% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

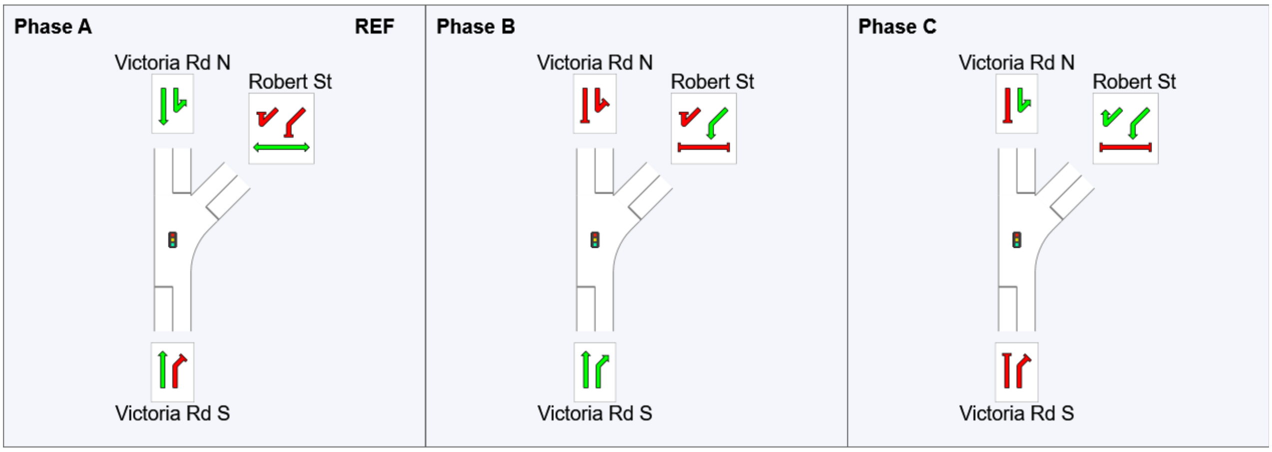
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	58	82
Green Time (sec)	52	18	12
Phase Time (sec)	58	24	18
Phase Split	58%	24%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

PHASING SUMMARY

Site: [[AM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

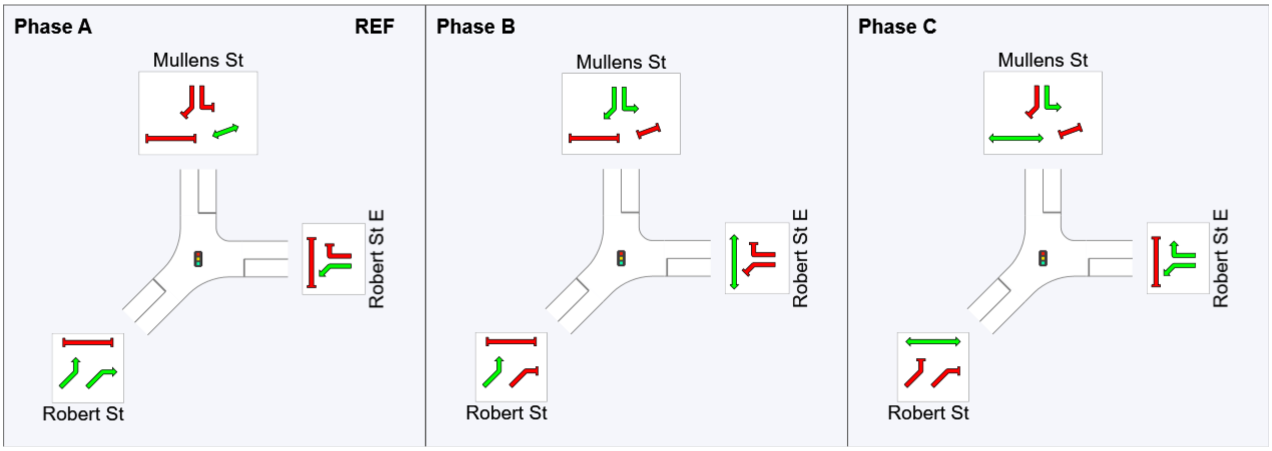
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

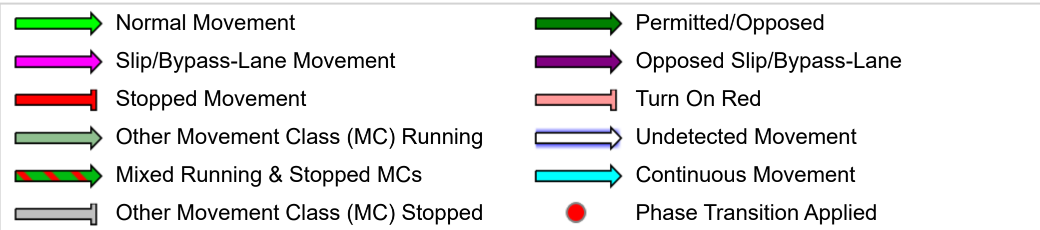
Phase	A	B	C
Phase Change Time (sec)	0	22	45
Green Time (sec)	16	17	9
Phase Time (sec)	22	23	15
Phase Split	37%	38%	25%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: v [[AM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [AM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Non-Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 100 seconds (Network User-Given Cycle Time)

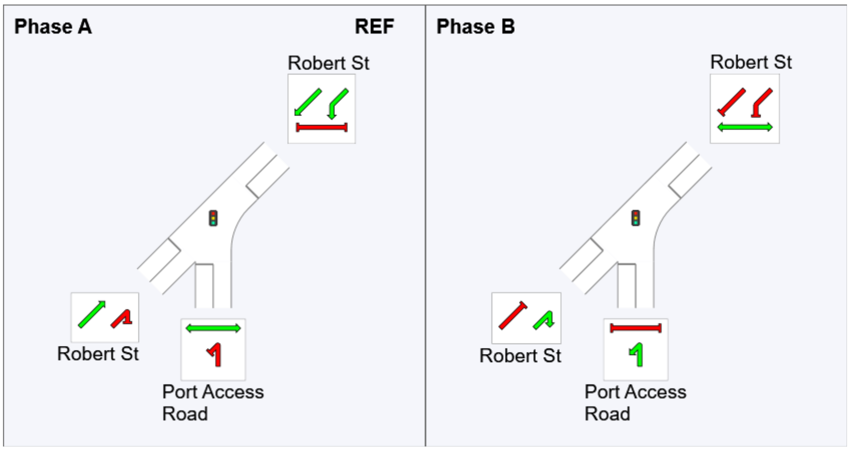
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

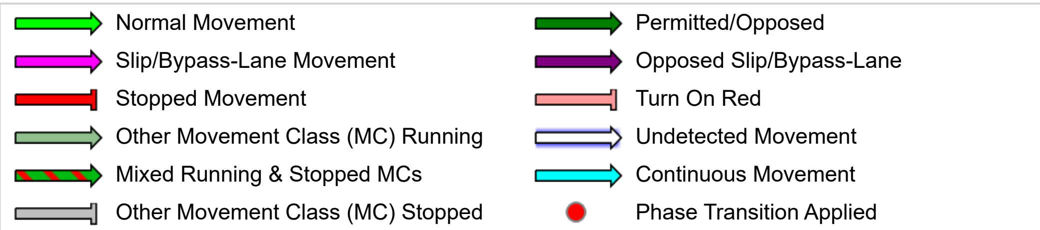
Phase	A	B
Phase Change Time (sec)	0	27
Green Time (sec)	21	67
Phase Time (sec)	27	73
Phase Split	27%	73%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 5018 [[PM] [5% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1795	3.0	1479	3.1	0.518	4.7	LOS A	14.8	106.5	0.43	0.39	0.43	54.4
26	R2	916	6.4	755	6.5	* 0.725	37.4	LOS C	15.8	116.5	0.98	0.87	1.01	32.6
Approach		2711	4.2	2234 N1	4.3	0.725	15.8	LOS B	15.8	116.5	0.61	0.55	0.63	44.4
NorthWest: M8 Motorway														
27	L2	753	7.1	753	7.1	0.457	22.5	LOS B	11.0	81.9	0.71	0.79	0.71	34.8
29	R2	134	3.1	134	3.1	* 0.670	50.2	LOS D	6.1	43.6	1.00	0.84	1.10	32.6
Approach		886	6.5	886	6.5	0.670	26.7	LOS B	11.0	81.9	0.76	0.80	0.77	34.2
SouthWest: City West Link														
30	L2	456	3.0	456	3.0	0.447	17.7	LOS B	11.5	82.8	0.62	0.76	0.62	46.0
31	T1	1598	3.0	1598	3.0	* 0.724	25.5	LOS B	20.1	144.3	0.91	0.81	0.92	33.0
Approach		2054	3.0	2054	3.0	0.724	23.8	LOS B	20.1	144.3	0.85	0.80	0.85	36.7
All Vehicles		5651	4.1	5174 N1	4.5	0.725	20.8	LOS B	20.1	144.3	0.73	0.69	0.74	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1208 [[PM] [5% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
SouthEast: The Crescent														
21	L2	566	3.0	566	3.0	* 0.977	70.6	LOS F	30.4	218.0	1.00	1.23	1.60	10.7
22	T1	224	2.8	224	2.8	0.665	46.3	LOS D	5.2	37.0	1.00	0.83	1.11	30.1
Approach		791	2.9	791	2.9	0.977	63.7	LOS E	30.4	218.0	1.00	1.12	1.46	16.5
NorthEast: The Crescent														
24	L2	1612	3.0	1171	3.2	* 0.979	75.8	LOS F	38.8	279.2	1.00	1.17	1.60	16.9
25	T1	1714	4.9	1247	5.2	0.673	10.0	LOS A	10.2	74.7	0.52	0.45	0.52	37.5
26	R2	164	9.0	120	9.6	0.153	44.0	LOS D	2.6	19.9	1.00	0.77	1.00	30.6
Approach		3489	4.2	2537 N1	4.5	0.979	42.0	LOS C	38.8	279.2	0.76	0.80	1.04	21.8
NorthWest: WHTBL Access														
27	L2	261	6.9	261	6.9	0.283	18.0	LOS B	6.3	46.4	0.59	0.74	0.59	38.0
28	T1	120	2.6	120	2.6	0.090	29.2	LOS C	1.4	9.9	0.82	0.61	0.82	36.9
29	R2	429	2.9	429	2.9	* 1.022	100.7	LOS F	10.1	72.2	1.00	1.25	2.15	14.3
Approach		811	4.2	811	4.2	1.022	63.5	LOS E	10.1	72.2	0.84	0.99	1.45	20.7
SouthWest: City West Link														
30	L2	297	2.8	297	2.8	0.401	17.7	LOS B	6.5	46.5	0.84	0.80	0.84	42.8
30a	L1	918	3.0	918	3.0	0.755	39.0	LOS C	20.2	145.3	1.00	0.89	1.03	24.9
31	T1	971	6.2	971	6.2	0.793	41.9	LOS C	21.8	160.6	1.00	0.91	1.05	17.5
32	R2	164	3.2	164	3.2	0.196	36.9	LOS C	3.2	23.1	0.92	0.77	0.92	26.6
Approach		2349	4.3	2349	4.3	0.793	37.3	LOS C	21.8	160.6	0.97	0.88	1.01	24.5
All Vehicles		7440	4.1	6488 N1	4.7	1.022	45.6	LOS D	38.8	279.2	0.88	0.89	1.13	21.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped	Dist]	Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		ped	m			sec	m	m/sec
SouthEast: The Crescent											
P51	Stage 1	53	20.5	LOS C	0.1	0.1	0.87	0.87	196.3	210.9	1.07
P52	Stage 2	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
NorthEast: The Crescent											
P6B	Slip/	53	39.3	LOS D	0.1	0.1	0.94	0.94	212.3	207.6	0.98

Bypass									
All Pedestrians	158	33.0	LOS D	0.1	0.1	0.91	0.91	207.9	209.8	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[PM] [5% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	774	8.3	774	8.3	* 1.086	143.9	LOS F	76.8	575.5	1.00	1.42	2.23	3.8
23a	R1	28	3.7	28	3.7	0.242	49.9	LOS D	1.3	9.4	0.98	0.71	0.98	27.1
23	R2	29	3.6	29	3.6	0.242	51.6	LOS D	1.3	9.4	0.98	0.71	0.98	10.0
Approach		832	8.0	832	8.0	1.086	137.4	LOS F	76.8	575.5	1.00	1.37	2.14	4.4
NorthEast: The Crescent														
24	L2	26	4.0	19	4.0	0.023	18.6	LOS B	0.4	2.7	0.46	0.63	0.46	27.5
8	T1	2716	3.0	2008	3.0	* 1.100	142.6	LOS F	22.7	163.2	1.00	1.81	2.25	2.8
Approach		2742	3.0	2027 N1	3.0	1.100	141.4	LOS F	22.7	163.2	0.99	1.80	2.23	2.9
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	569	3.0	569	3.0	0.395	8.4	LOS A	7.2	51.7	0.32	0.68	0.32	47.9
10a	L1	375	3.1	375	3.1	0.430	7.3	LOS A	5.0	36.1	0.33	0.62	0.33	35.6
Approach		944	3.0	944	3.0	0.430	8.0	LOS A	7.2	51.7	0.32	0.66	0.32	45.6
SouthWest: The Crescent														
2	T1	954	3.1	954	3.1	0.414	5.5	LOS A	15.6	112.4	0.59	0.53	0.59	44.4
32	R2	279	17.7	279	17.7	0.256	25.0	LOS B	4.0	32.0	0.61	0.71	0.61	28.8
Approach		1233	6.4	1233	6.4	0.414	9.9	LOS A	15.6	112.4	0.59	0.57	0.59	37.9
All Vehicles		5751	4.5	5036 N1	5.1	1.100	83.5	LOS F	76.8	575.5	0.77	1.21	1.46	8.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	223.0	220.5	0.99
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	209.5	204.3	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	216.3	212.4	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[PM] [5% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	884	3.0	884	3.0	0.708	28.3	LOS B	19.8	142.4	0.85	0.86	0.92	31.3
6	R2	2605	3.6	2605	3.6	* 1.469	469.5	LOS F	223.2	1602.3	1.00	2.51	4.37	3.9
Approach		3489	3.4	3489	3.4	1.469	357.7	LOS F	223.2	1602.3	0.96	2.09	3.49	4.8
North: Victoria Road														
7	L2	659	5.3	589	5.6	0.183	6.0	LOS A	0.0	0.0	0.00	0.53	0.00	52.7
9a	R1	1858	3.0	1656	3.0	* 1.450	449.0	LOS F	38.6	277.4	1.00	2.51	4.30	1.4
Approach		2517	3.6	2245 N1	3.7	1.450	332.8	LOS F	38.6	277.4	0.74	1.99	3.17	3.2
SouthWest: The Crescent														
30a	L1	1358	3.0	1358	3.0	0.713	32.3	LOS C	22.2	159.4	0.97	0.88	0.98	11.0
Approach		1358	3.0	1358	3.0	0.713	32.3	LOS C	22.2	159.4	0.97	0.88	0.98	11.0
All Vehicles		7364	3.4	7093 N1	3.5	1.469	287.5	LOS F	223.2	1602.3	0.89	1.83	2.91	4.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
SouthWest: The Crescent											
P8	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	225.8	223.8	0.99
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	220.4	217.4	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

\Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

MOVEMENT SUMMARY

Site: 0652 [[PM] [5% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	2102	3.0	1662	3.0	0.432	6.6	LOS A	10.3	74.1	0.43	0.39	0.43	51.7
3a	R1	1556	4.0	1233	4.3	* 1.185	226.3	LOS F	38.2	277.4	1.00	2.02	2.91	2.9
Approach		3658	3.4	2895 N1	3.5	1.185	100.2	LOS F	38.2	277.4	0.68	1.08	1.49	13.2
NorthEast: Robert St														
24a	L1	1387	4.1	1239	4.2	0.758	15.3	LOS B	38.2	277.3	0.73	0.76	0.76	21.4
26b	R3	192	11.5	173	12.4	1.062	134.9	LOS F	15.1	117.2	1.00	1.62	2.41	13.5
Approach		1579	5.0	1412 N1	5.2	1.062	29.9	LOS C	38.2	277.3	0.76	0.87	0.96	17.9
North: Victoria Rd N														
7b	L3	194	11.4	194	11.4	* 1.120	176.5	LOS F	34.4	257.3	1.00	1.75	2.61	9.0
8	T1	1129	3.0	1129	3.0	1.120	169.8	LOS F	50.2	360.7	1.00	1.75	2.60	9.0
Approach		1323	4.2	1323	4.2	1.120	170.8	LOS F	50.2	360.7	1.00	1.75	2.60	9.0
All Vehicles		6560	4.0	5630 N1	4.6	1.185	99.2	LOS F	50.2	360.7	0.77	1.19	1.62	12.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99
All Pedestrians		53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[PM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	349	12.3	349	12.3	0.769	27.0	LOS B	10.6	82.4	0.96	0.96	1.15	15.3
6	R2	95	18.9	95	18.9	* 0.737	38.0	LOS C	3.1	25.6	1.00	0.92	1.33	18.9
Approach		444	13.7	444	13.7	0.769	29.4	LOS C	10.6	82.4	0.97	0.95	1.19	16.3
North: Mullens St														
7	L2	109	16.3	109	16.3	0.104	7.5	LOS A	1.1	9.1	0.38	0.58	0.38	29.2
9a	R1	1231	3.0	1231	3.0	* 1.143	176.2	LOS F	69.6	499.6	1.00	2.39	3.41	3.2
Approach		1340	4.1	1340	4.1	1.143	162.4	LOS F	69.6	499.6	0.95	2.24	3.16	3.5
SouthWest: Robert St														
30a	L1	1389	3.0	959	3.1	0.921	30.5	LOS C	32.6	233.9	0.71	1.01	1.10	20.3
32a	R1	343	12.6	243	14.6	* 1.099	136.7	LOS F	18.7	147.0	1.00	2.08	3.16	4.3
Approach		1733	4.9	1202 N1	5.4	1.099	51.9	LOS D	32.6	233.9	0.77	1.22	1.52	14.1
All Vehicles		3517	5.7	2986 N1	6.7	1.143	98.2	LOS F	69.6	499.6	0.88	1.64	2.21	7.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: v [[PM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	301	18.9	301	18.9	* 0.342	11.5	LOS A	6.0	48.9	0.49	0.68	0.49	12.6
Approach		301	18.9	301	18.9	0.342	11.5	LOS A	6.0	48.9	0.49	0.68	0.49	12.6
NorthEast: Robert St														
24a	L1	32	3.3	32	3.3	0.077	33.4	LOS C	1.1	8.0	0.82	0.69	0.82	23.4
5	T1	142	3.0	142	3.0	* 0.338	32.2	LOS C	5.3	38.3	0.89	0.71	0.89	23.5
Approach		174	3.0	174	3.0	0.338	32.4	LOS C	5.3	38.3	0.87	0.71	0.87	23.5
SouthWest: Robert St														
11	T1	152	2.8	108	2.7	0.257	31.5	LOS C	4.0	28.5	0.87	0.69	0.87	26.5
32b	R3	301	18.9	222	21.3	0.257	11.6	LOS A	4.1	34.2	0.45	0.69	0.45	24.1
Approach		453	13.5	330 N1	15.2	0.257	18.1	LOS B	4.1	34.2	0.59	0.69	0.59	25.5
All Vehicles		927	13.3	805 N1	15.3	0.342	18.7	LOS B	6.0	48.9	0.61	0.69	0.61	22.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Port Access Road											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	213.1	208.6	0.98
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	217.5	213.9	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	215.3	211.3	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 5018 [[PM] [5% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

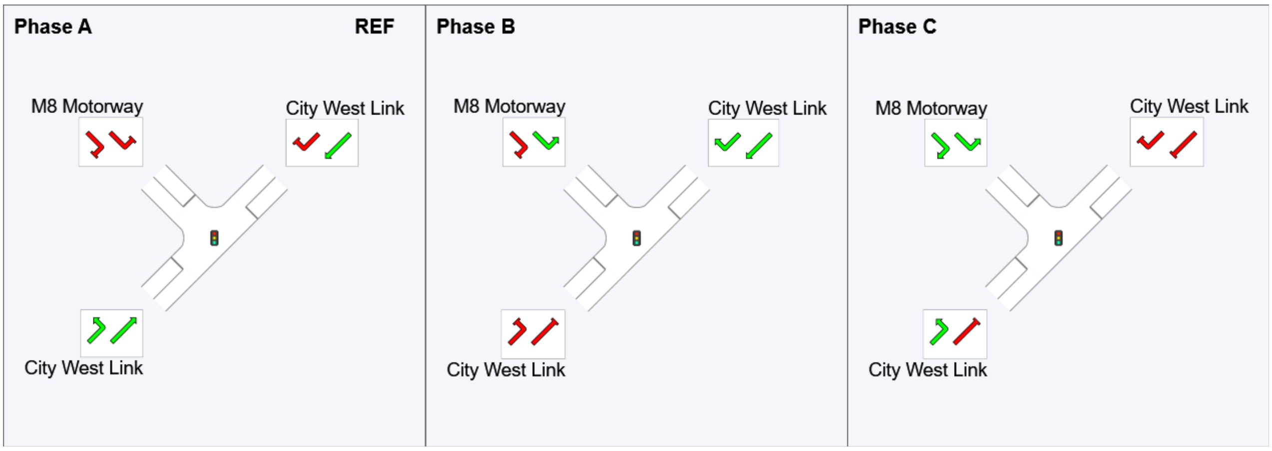
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

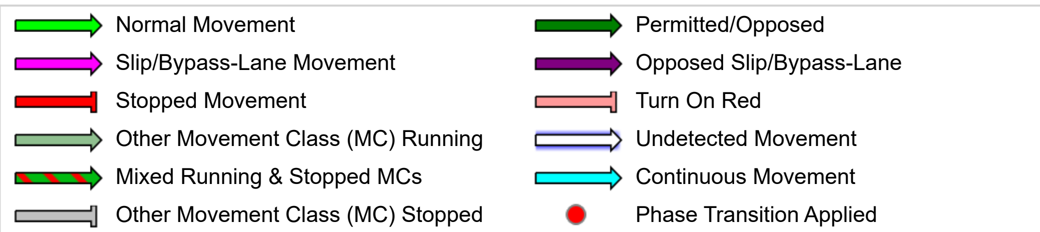
Phase	A	B	C
Phase Change Time (sec)	0	41	74
Green Time (sec)	35	27	10
Phase Time (sec)	41	33	16
Phase Split	46%	37%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 1208 [[PM] [5% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

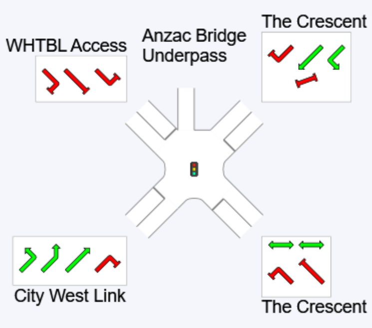
Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	71	17	31	44
Green Time (sec)	30	8	7	21
Phase Time (sec)	36	14	13	27
Phase Split	40%	16%	14%	30%

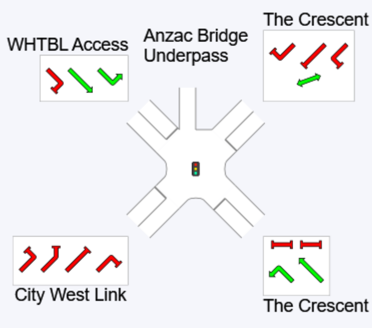
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

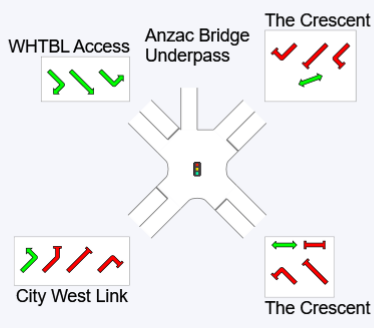
Phase A



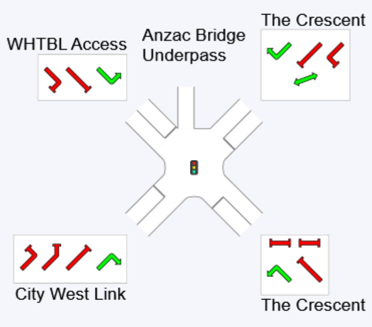
Phase D



Phase E



Phase G **REF**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[PM] [5% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

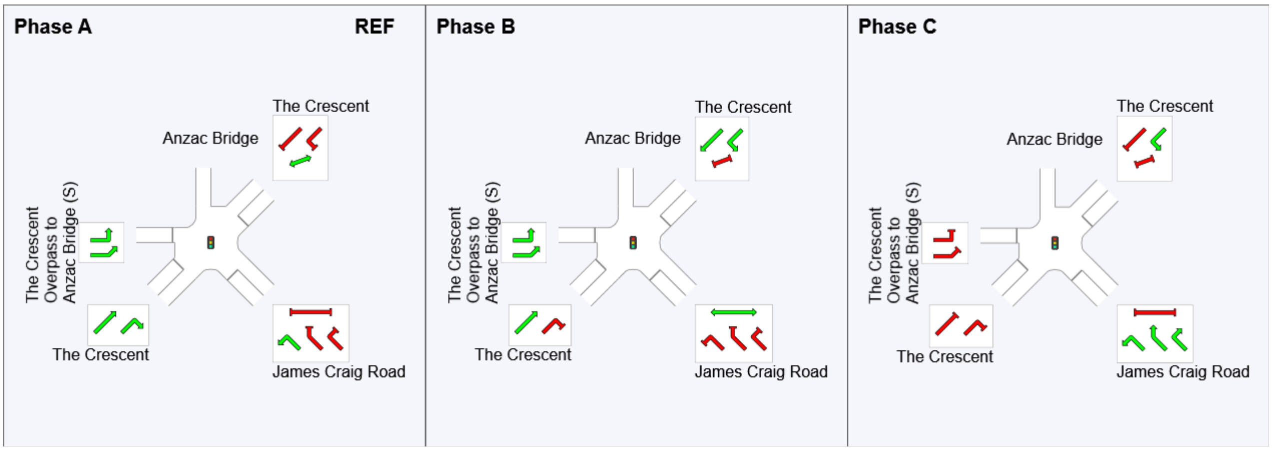
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	13	54	1
Green Time (sec)	35	31	6
Phase Time (sec)	41	37	12
Phase Split	46%	41%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[PM] [5% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

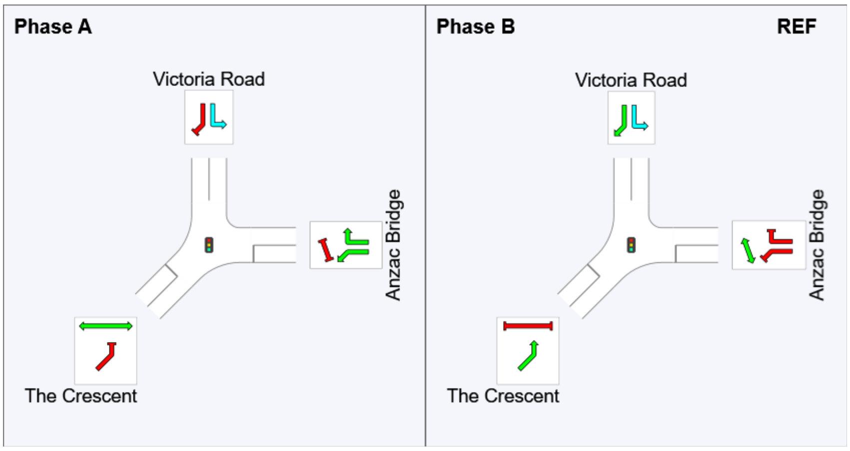
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	88	45
Green Time (sec)	41	37
Phase Time (sec)	47	43
Phase Split	52%	48%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0652 [[PM] [5% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

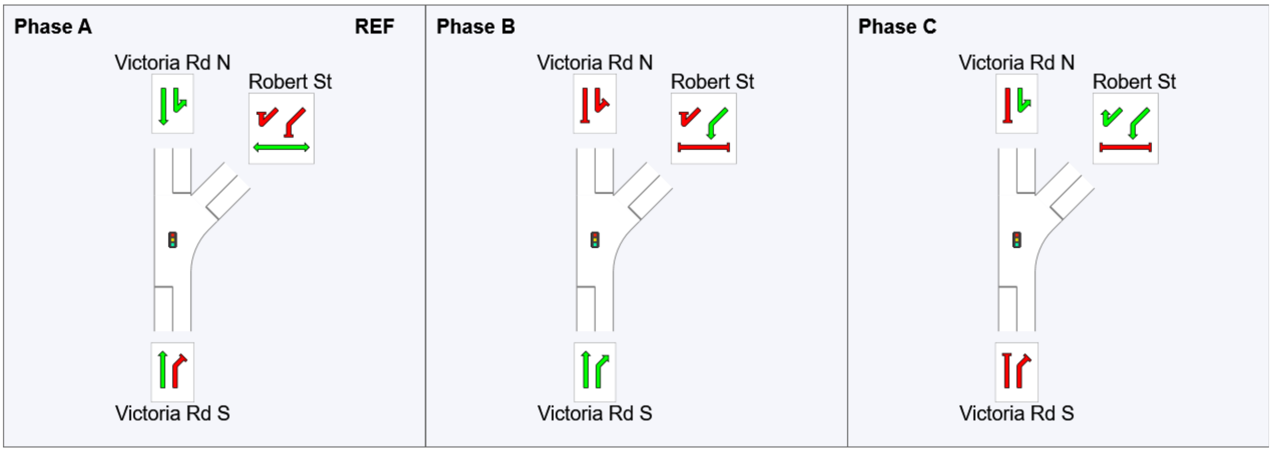
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

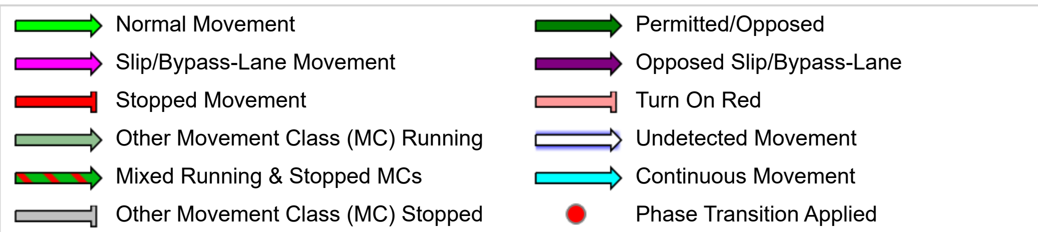
Phase	A	B	C
Phase Change Time (sec)	32	59	9
Green Time (sec)	21	34	17
Phase Time (sec)	27	40	23
Phase Split	30%	44%	26%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



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PHASING SUMMARY

Site: [[PM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

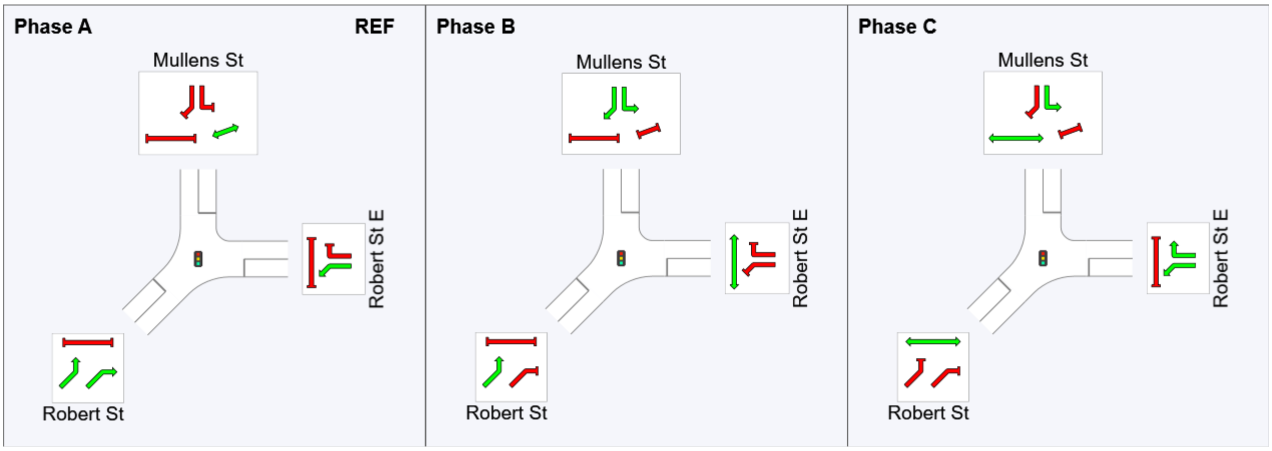
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	14	47
Green Time (sec)	8	27	7
Phase Time (sec)	14	33	13
Phase Split	23%	55%	22%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

PHASING SUMMARY

Site: v [[PM] [5% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [PM] [5% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Non-Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

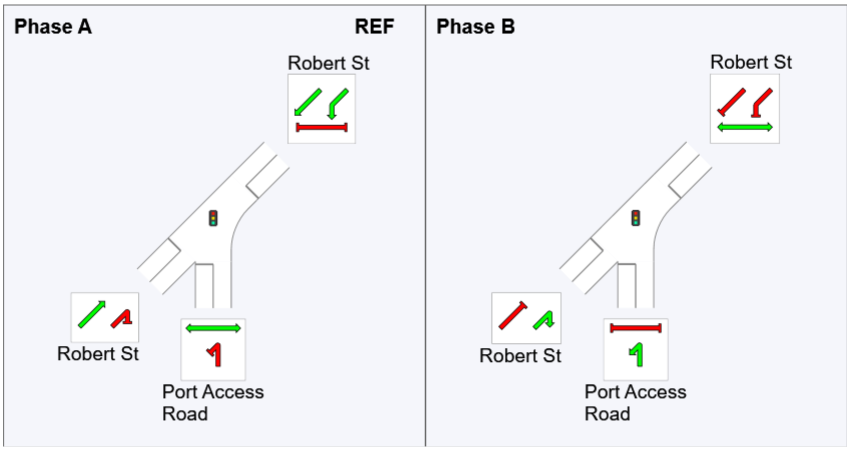
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

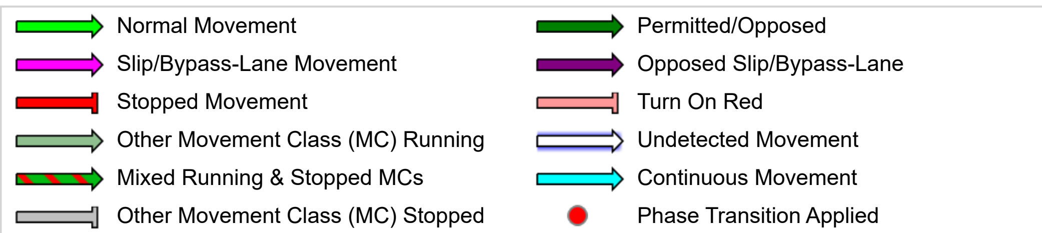
Phase	A	B
Phase Change Time (sec)	0	26
Green Time (sec)	20	58
Phase Time (sec)	26	64
Phase Split	29%	71%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 5018 [[AM] [5% car 2030 with bays] [Cruise] City West Link / M8 Motorway (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1540	6.0	1224	6.1	0.444	3.3	LOS A	8.1	59.3	0.21	0.19	0.21	56.0
26	R2	1040	8.6	827	8.7	* 1.044	123.7	LOS F	38.8	291.9	1.00	1.20	1.74	16.0
Approach		2580	7.1	2050 N1	7.2	1.044	51.8	LOS D	38.8	291.9	0.53	0.60	0.83	27.9
NorthWest: M8 Motorway														
27	L2	826	9.3	826	9.3	0.565	33.0	LOS C	18.0	136.4	0.80	0.82	0.80	29.1
29	R2	275	6.1	275	6.1	* 1.051	136.6	LOS F	26.7	196.5	1.00	1.26	1.92	18.2
Approach		1101	8.5	1101	8.5	1.051	58.8	LOS E	26.7	196.5	0.85	0.93	1.08	23.5
SouthWest: City West Link														
30	L2	199	5.8	199	5.8	0.171	13.6	LOS A	4.3	31.5	0.40	0.67	0.40	48.4
31	T1	2240	6.0	2240	6.0	* 1.068	133.9	LOS F	97.7	719.0	1.00	1.57	1.83	11.2
Approach		2439	6.0	2439	6.0	1.068	124.1	LOS F	97.7	719.0	0.95	1.49	1.72	12.6
All Vehicles		6120	6.9	5590 N1	7.6	1.068	84.8	LOS F	97.7	719.0	0.78	1.05	1.27	18.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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MOVEMENT SUMMARY

Site: 1208 [[AM] [5% car 2030 with bays] [Cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	281	6.0	281	6.0	* 0.522	28.3	LOS B	10.1	74.0	0.87	0.81	0.87	21.1
22	T1	291	6.2	291	6.2	0.863	67.8	LOS E	9.5	70.0	1.00	0.97	1.35	24.5
Approach		572	6.1	572	6.1	0.863	48.4	LOS D	10.1	74.0	0.94	0.89	1.12	23.6
NorthEast: The Crescent														
24	L2	1075	6.1	777	6.3	0.583	33.7	LOS C	15.5	114.7	0.73	0.79	0.73	27.6
25	T1	1713	7.6	1238	7.9	0.636	13.6	LOS A	14.7	110.0	0.52	0.46	0.52	33.0
26	R2	544	7.5	394	7.9	* 1.149	207.1	LOS F	23.4	175.2	1.00	1.43	2.23	10.6
Approach		3332	7.1	2409 N1	7.4	1.149	51.7	LOS D	23.4	175.2	0.67	0.72	0.87	19.5
NorthWest: WHTBL Access														
27	L2	197	10.2	197	10.2	0.294	31.8	LOS C	7.8	59.2	0.72	0.77	0.72	29.6
28	T1	103	6.1	103	6.1	0.075	36.8	LOS C	1.5	11.3	0.80	0.60	0.80	33.6
29	R2	587	5.9	587	5.9	1.105	176.2	LOS F	23.2	170.4	1.00	1.43	2.23	8.9
Approach		887	6.9	887	6.9	1.105	128.0	LOS F	23.2	170.4	0.91	1.19	1.73	12.1
SouthWest: City West Link														
30	L2	465	6.1	444	6.1	* 0.419	14.0	LOS A	8.7	64.2	0.69	0.77	0.69	45.3
30a	L1	465	6.1	444	6.1	0.251	25.5	LOS B	9.0	66.5	0.74	0.73	0.74	31.1
31	T1	1629	7.6	1554	7.7	* 1.190	232.6	LOS F	54.7	408.0	1.00	2.00	2.39	4.0
32	R2	507	6.0	484	6.1	0.640	52.4	LOS D	12.6	92.5	0.93	0.82	0.93	21.6
Approach		3067	6.9	2925 N1	6.9	1.190	138.2	LOS F	54.7	408.0	0.90	1.43	1.64	9.1
All Vehicles		7858	6.9	6793 N1	8.0	1.190	98.6	LOS F	54.7	408.0	0.82	1.10	1.34	12.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	29.2	LOS C	0.1	0.1	0.90	0.90	204.9	210.9	1.03
P52	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	210.9	0.92
NorthEast: The Crescent											

P6B Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.3	207.6	0.91
All Pedestrians	158	45.9	LOS E	0.2	0.2	0.94	0.94	220.7	209.8	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[AM] [5% car 2030 with bays] [Cruise] The Crescent / James Craig Road (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	316	15.3	316	15.3	0.396	25.7	LOS B	11.4	90.4	0.67	0.77	0.67	16.8
23a	R1	145	2.2	145	2.2	* 1.036	124.2	LOS F	13.1	93.1	1.00	1.22	1.96	14.7
23	R2	98	3.2	98	3.2	0.727	69.3	LOS E	6.1	43.7	1.00	0.85	1.16	7.8
Approach		559	9.8	559	9.8	1.036	58.9	LOS E	13.1	93.1	0.81	0.90	1.09	14.0
NorthEast: The Crescent														
24	L2	211	2.0	158	2.0	0.165	23.7	LOS B	4.7	33.5	0.55	0.71	0.55	25.5
8	T1	3017	6.2	2259	6.2	* 1.079	142.3	LOS F	22.1	163.2	1.00	1.62	1.89	2.8
Approach		3227	6.0	2417 N1	6.0	1.079	134.6	LOS F	22.1	163.2	0.97	1.56	1.80	3.2
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	1053	6.0	1053	6.0	0.853	12.0	LOS A	28.1	207.0	0.48	0.76	0.49	44.6
10a	L1	297	6.4	297	6.4	0.201	6.7	LOS A	3.5	26.2	0.22	0.57	0.22	36.9
Approach		1349	6.1	1349	6.1	0.853	10.8	LOS A	28.1	207.0	0.43	0.72	0.44	44.0
SouthWest: The Crescent														
2	T1	531	7.1	437	7.2	0.163	2.9	LOS A	4.0	29.7	0.30	0.26	0.30	50.6
32	R2	1296	8.3	1066	8.4	* 1.088	110.1	LOS F	52.2	391.7	0.98	1.16	1.58	10.9
Approach		1826	8.0	1503 N1	8.1	1.088	78.9	LOS F	52.2	391.7	0.78	0.90	1.21	13.0
All Vehicles		6962	6.8	5829 N1	8.1	1.088	84.3	LOS F	52.2	391.7	0.78	1.13	1.27	10.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	238.0	220.5	0.93
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	224.5	204.3	0.91
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	231.3	212.4	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[AM] [5% car 2030 with bays] [Cruise] The Crescent / Victoria Road (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	1432	5.6	1432	5.6	* 1.256	302.7	LOS F	78.0	572.0	1.00	1.80	2.83	5.4
6	R2	313	11.1	313	11.1	0.161	28.4	LOS B	4.2	31.2	0.65	0.72	0.65	31.6
Approach		1744	6.6	1744	6.6	1.256	253.6	LOS F	78.0	572.0	0.94	1.61	2.44	6.4
North: Victoria Road														
7	L2	1523	7.0	1339	7.1	0.760	5.9	LOS A	0.0	0.0	0.00	0.52	0.00	51.8
9a	R1	1796	6.3	1578	6.3	* 1.236	273.4	LOS F	37.6	277.4	1.00	1.72	2.66	2.3
Approach		3319	6.6	2918 N1	6.7	1.236	150.6	LOS F	37.6	277.4	0.54	1.17	1.44	8.5
SouthWest: The Crescent														
30a	L1	925	6.5	831	6.5	0.391	32.2	LOS C	16.2	119.5	0.82	0.79	0.82	11.0
Approach		925	6.5	831 N1	6.5	0.391	32.2	LOS C	16.2	119.5	0.82	0.79	0.82	11.0
All Vehicles		5988	6.6	5493 N1	7.2	1.256	165.4	LOS F	78.0	572.0	0.71	1.25	1.66	7.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	210.9	0.92
SouthWest: The Crescent											
P8	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	240.8	223.8	0.93
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	235.4	217.4	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 0652 [[AM] [5% car 2030 with bays] [Cruise] Victoria Road / Robert Street (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	438	5.3	404	5.3	0.094	1.7	LOS A	0.8	6.1	0.12	0.10	0.12	57.6
3a	R1	696	9.4	643	9.5	1.124	132.0	LOS F	36.6	277.4	1.00	1.30	1.75	4.8
Approach		1134	7.8	1048 N1	7.9	1.124	81.7	LOS F	36.6	277.4	0.66	0.83	1.12	13.0
NorthEast: Robert St														
24a	L1	999	8.4	999	8.4	* 1.083	154.2	LOS F	38.0	285.6	1.00	1.65	1.99	4.0
26b	R3	72	41.2	72	41.2	1.083	168.0	LOS F	1.2	10.4	1.00	1.55	2.30	11.3
Approach		1071	10.6	1071	10.6	1.083	155.1	LOS F	38.0	285.6	1.00	1.65	2.01	4.6
North: Victoria Rd N														
7b	L3	109	27.9	109	27.9	0.120	12.3	LOS A	2.0	16.9	0.33	0.68	0.33	43.4
8	T1	2320	5.9	2320	5.9	* 1.163	210.2	LOS F	155.4	1142.5	1.00	1.96	2.32	7.5
Approach		2429	6.9	2429	6.9	1.163	201.2	LOS F	155.4	1142.5	0.97	1.90	2.23	7.8
All Vehicles		4634	8.0	4548 N1	8.1	1.163	162.9	LOS F	155.4	1142.5	0.91	1.60	1.92	7.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	236.4	218.5	0.92
All Pedestrians		53	54.3	LOS E	0.2	0.2	0.95	0.95	236.4	218.5	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[AM] [5% car 2030 with bays] [Cruise] Robert Street / Mullens Street (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	327	20.6	327	20.6	0.863	34.4	LOS C	21.4	176.3	0.95	1.15	1.43	13.1
6	R2	172	18.4	172	18.4	* 0.949	52.5	LOS D	7.1	57.8	1.00	1.34	2.02	15.4
Approach		499	19.8	499	19.8	0.949	40.6	LOS C	21.4	176.3	0.97	1.22	1.63	14.2
North: Mullens St														
7	L2	74	34.3	74	34.3	0.102	11.5	LOS A	1.1	9.7	0.52	0.62	0.52	25.5
9a	R1	743	5.9	743	5.9	* 0.993	69.6	LOS E	26.3	193.5	1.00	1.54	2.11	7.4
Approach		817	8.5	817	8.5	0.993	64.3	LOS E	26.3	193.5	0.96	1.46	1.97	7.9
SouthWest: Robert St														
30a	L1	464	5.9	410	6.0	0.350	7.8	LOS A	5.4	40.1	0.48	0.64	0.48	32.1
32a	R1	340	19.8	303	20.7	* 0.977	62.6	LOS E	14.5	119.7	0.96	1.47	2.05	8.4
Approach		804	11.8	712 N1	12.2	0.977	31.1	LOS C	14.5	119.7	0.69	0.99	1.15	17.9
All Vehicles		2120	12.4	2028 N1	13.0	0.993	46.8	LOS D	26.3	193.5	0.86	1.23	1.60	12.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: v [[AM] [5% car 2030 with bays] [Cruise] Robert Street / Port Access Road - Conversion (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	343	26.1	343	26.1	* 0.412	12.6	LOS A	8.8	75.2	0.47	0.68	0.47	11.8
Approach		343	26.1	343	26.1	0.412	12.6	LOS A	8.8	75.2	0.47	0.68	0.47	11.8
NorthEast: Robert St														
24a	L1	32	6.7	32	6.7	0.082	43.7	LOS D	1.5	10.9	0.83	0.70	0.83	20.8
5	T1	155	6.1	155	6.1	* 0.411	44.0	LOS D	7.9	58.1	0.91	0.74	0.91	20.4
Approach		186	6.2	186	6.2	0.411	44.0	LOS D	7.9	58.1	0.89	0.74	0.89	20.5
SouthWest: Robert St														
11	T1	107	5.9	97	6.0	0.242	42.0	LOS C	4.7	34.6	0.87	0.69	0.87	23.8
32b	R3	306	28.2	280	29.3	0.326	12.6	LOS A	6.6	57.9	0.44	0.69	0.44	23.4
Approach		414	22.4	377 N1	23.3	0.326	20.1	LOS B	6.6	57.9	0.55	0.69	0.55	23.6
All Vehicles		943	20.5	906 N1	21.4	0.412	22.2	LOS B	8.8	75.2	0.59	0.70	0.59	20.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Port Access Road											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	228.1	208.6	0.91
NorthEast: Robert St											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	232.5	213.9	0.92
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	230.3	211.3	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 5018 [[AM] [5% car 2030 with bays] [Cruise] City West Link / M8 Motorway (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

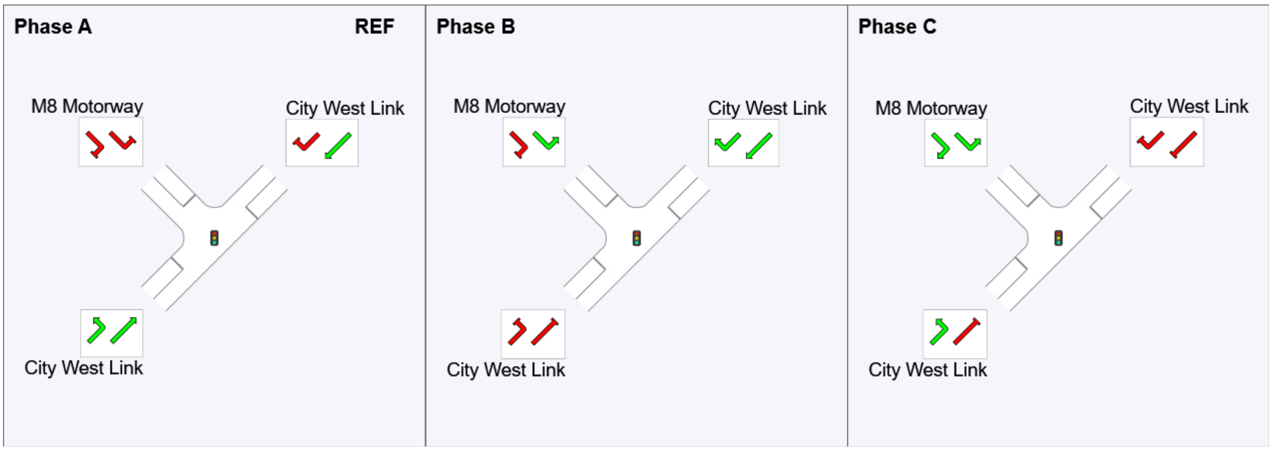
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	58	120	34
Green Time (sec)	56	28	18
Phase Time (sec)	62	34	24
Phase Split	52%	28%	20%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

PHASING SUMMARY

Site: 1208 [[AM] [5% car 2030 with bays] [Cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

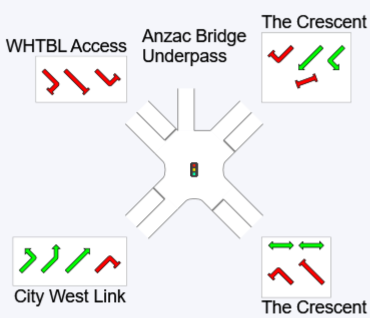
Phase Timing Summary

Phase	A	D	E	G	G2
Phase Change Time (sec)	39	91	108	7	25
Green Time (sec)	46	11	13	12	8
Phase Time (sec)	52	17	19	18	14
Phase Split	43%	14%	16%	15%	12%

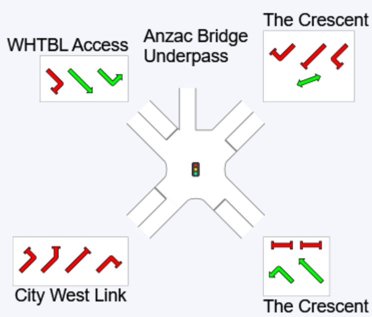
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

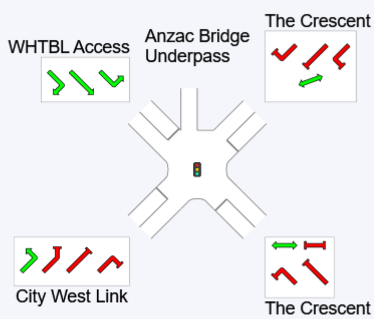
Phase A



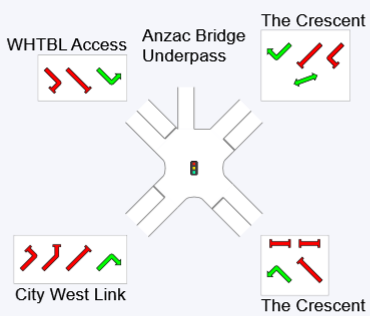
Phase D



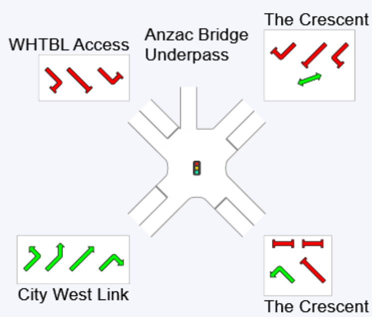
Phase E



Phase G **REF**



Phase G2 **VAR**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[AM] [5% car 2030 with bays] [Cruise] The Crescent / James Craig Road (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

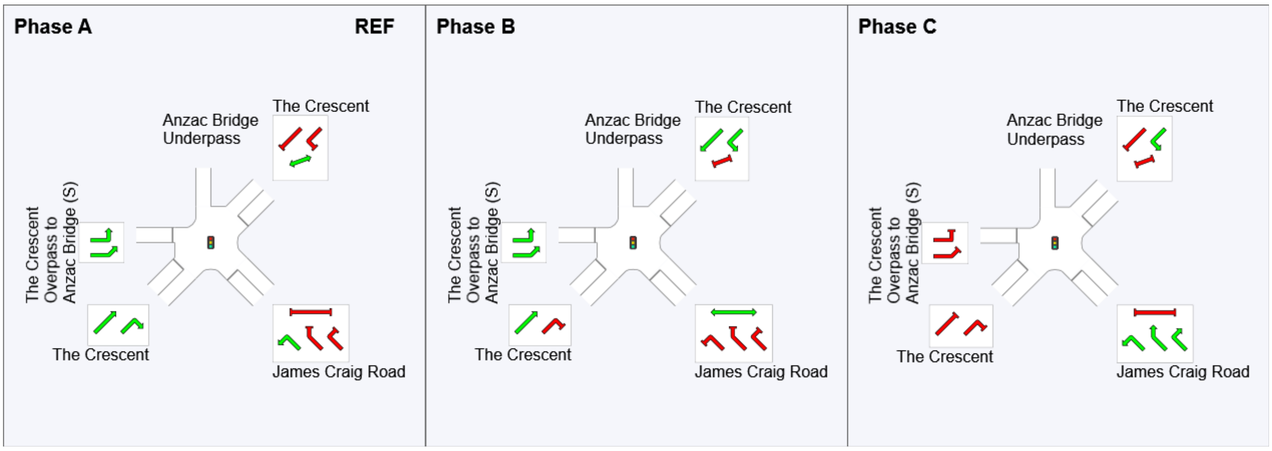
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	91	22	76
Green Time (sec)	45	48	9
Phase Time (sec)	51	54	15
Phase Split	43%	45%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[AM] [5% car 2030 with bays] [Cruise] The Crescent / Victoria Road (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

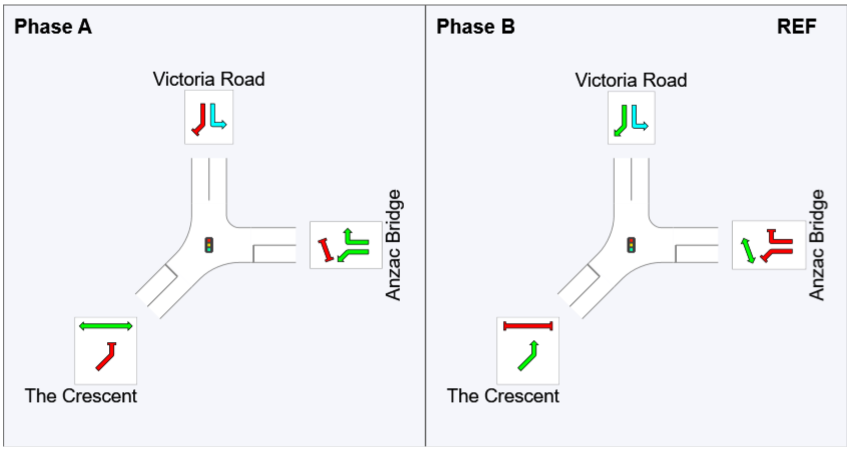
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	76	13
Green Time (sec)	51	57
Phase Time (sec)	57	63
Phase Split	48%	53%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0652 [[AM] [5% car 2030 with bays] [Cruise] Victoria Road / Robert Street (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

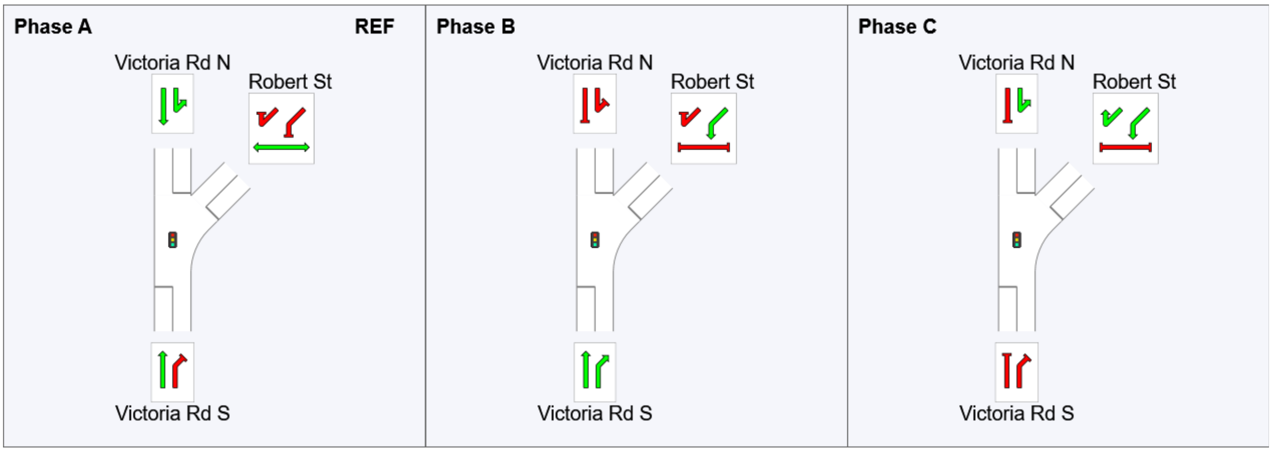
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	71	99
Green Time (sec)	65	22	15
Phase Time (sec)	71	28	21
Phase Split	59%	23%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

PHASING SUMMARY

Site: [[AM] [5% car 2030 with bays] [Cruise] Robert Street / Mullens Street (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

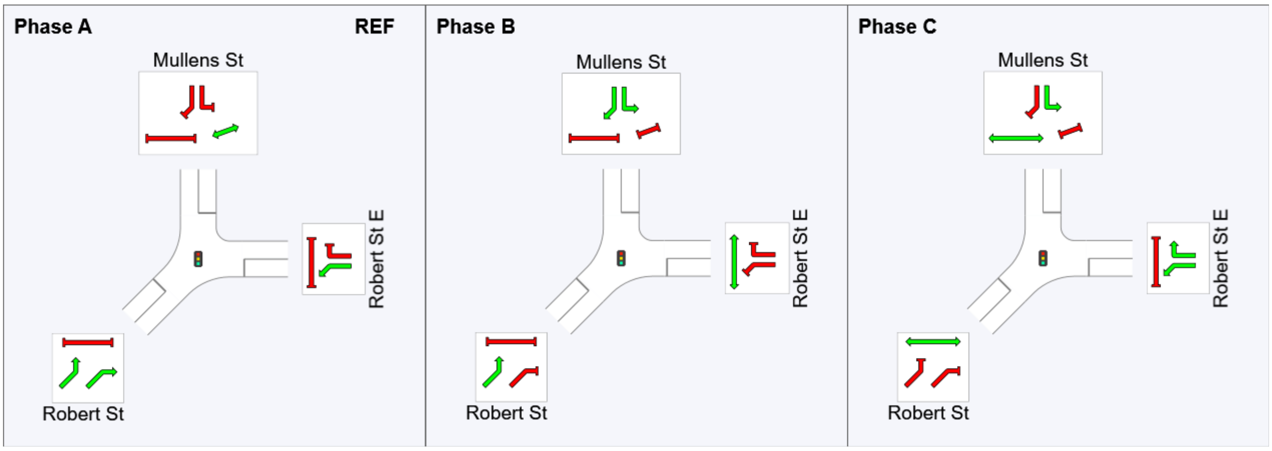
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	22	45
Green Time (sec)	16	17	9
Phase Time (sec)	22	23	15
Phase Split	37%	38%	25%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: v [[AM] [5% car 2030 with bays] [Cruise] Robert Street / Port Access Road - Conversion (Site Folder: [AM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 5% Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

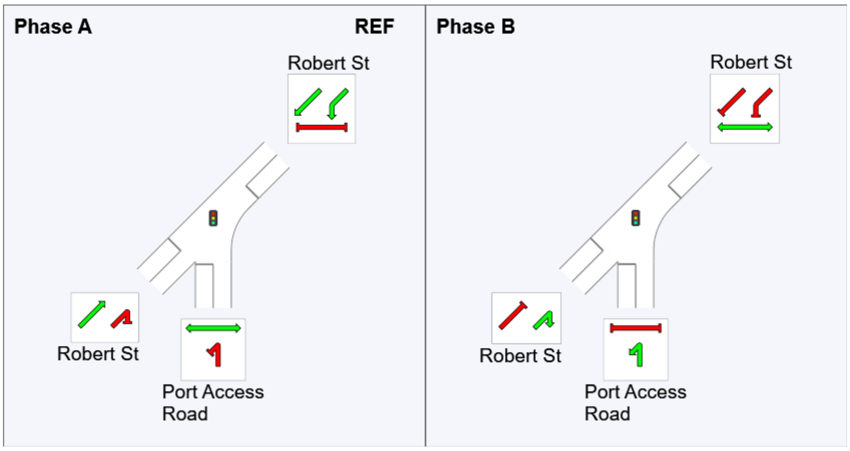
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

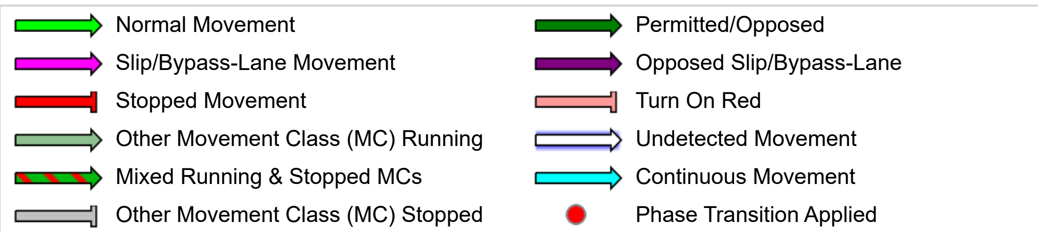
Phase	A	B
Phase Change Time (sec)	0	32
Green Time (sec)	26	82
Phase Time (sec)	32	88
Phase Split	27%	73%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 5018 [[PM] [5% car 2030 with bays] [Cruise] City West Link / M8 Motorway (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1795	3.0	1479	3.1	0.518	4.7	LOS A	14.8	106.5	0.43	0.39	0.43	54.4
26	R2	916	6.4	755	6.5	* 0.725	37.4	LOS C	15.8	116.5	0.98	0.87	1.01	32.6
Approach		2711	4.2	2234 N1	4.3	0.725	15.8	LOS B	15.8	116.5	0.61	0.55	0.63	44.4
NorthWest: M8 Motorway														
27	L2	753	7.1	753	7.1	0.457	22.5	LOS B	11.0	81.9	0.71	0.79	0.71	34.8
29	R2	134	3.1	134	3.1	* 0.670	50.2	LOS D	6.1	43.6	1.00	0.84	1.10	32.6
Approach		886	6.5	886	6.5	0.670	26.7	LOS B	11.0	81.9	0.76	0.80	0.77	34.2
SouthWest: City West Link														
30	L2	456	3.0	456	3.0	0.447	17.7	LOS B	11.5	82.8	0.62	0.76	0.62	46.0
31	T1	1598	3.0	1598	3.0	* 0.724	25.5	LOS B	20.1	144.3	0.91	0.81	0.92	33.0
Approach		2054	3.0	2054	3.0	0.724	23.8	LOS B	20.1	144.3	0.85	0.80	0.85	36.7
All Vehicles		5651	4.1	5174 N1	4.5	0.725	20.8	LOS B	20.1	144.3	0.73	0.69	0.74	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

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Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

MOVEMENT SUMMARY

Site: 1208 [[PM] [5% car 2030 with bays] [Cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	566	3.0	566	3.0	* 0.977	70.6	LOS F	30.4	218.0	1.00	1.23	1.60	10.7
22	T1	224	2.8	224	2.8	0.665	46.3	LOS D	5.2	37.0	1.00	0.83	1.11	30.1
Approach		791	2.9	791	2.9	0.977	63.7	LOS E	30.4	218.0	1.00	1.12	1.46	16.5
NorthEast: The Crescent														
24	L2	1612	3.0	1171	3.2	* 0.979	75.8	LOS F	38.8	279.2	1.00	1.17	1.60	16.9
25	T1	1714	4.9	1247	5.2	0.673	10.0	LOS A	10.2	74.7	0.52	0.45	0.52	37.5
26	R2	164	9.0	120	9.6	0.153	44.0	LOS D	2.6	19.9	1.00	0.77	1.00	30.6
Approach		3489	4.2	2537 [N1]	4.5	0.979	42.0	LOS C	38.8	279.2	0.76	0.80	1.04	21.8
NorthWest: WHTBL Access														
27	L2	261	6.9	261	6.9	0.283	18.0	LOS B	6.3	46.4	0.59	0.74	0.59	38.0
28	T1	120	2.6	120	2.6	0.090	29.2	LOS C	1.4	9.9	0.82	0.61	0.82	36.9
29	R2	429	2.9	429	2.9	* 1.022	100.7	LOS F	10.1	72.2	1.00	1.25	2.15	14.3
Approach		811	4.2	811	4.2	1.022	63.5	LOS E	10.1	72.2	0.84	0.99	1.45	20.7
SouthWest: City West Link														
30	L2	297	2.8	297	2.8	0.401	17.7	LOS B	6.5	46.5	0.84	0.80	0.84	42.8
30a	L1	918	3.0	918	3.0	0.755	39.0	LOS C	20.2	145.3	1.00	0.89	1.03	24.9
31	T1	971	6.2	971	6.2	0.793	41.9	LOS C	21.8	160.6	1.00	0.91	1.05	17.5
32	R2	164	3.2	164	3.2	0.196	36.9	LOS C	3.2	23.1	0.92	0.77	0.92	26.6
Approach		2349	4.3	2349	4.3	0.793	37.3	LOS C	21.8	160.6	0.97	0.88	1.01	24.5
All Vehicles		7440	4.1	6488 [N1]	4.7	1.022	45.6	LOS D	38.8	279.2	0.88	0.89	1.13	21.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	20.5	LOS C	0.1	0.1	0.87	0.87	196.3	210.9	1.07
P52	Stage 2	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
NorthEast: The Crescent											
P6B	Slip/	53	39.3	LOS D	0.1	0.1	0.94	0.94	212.3	207.6	0.98

Bypass										
All Pedestrians	158	33.0	LOS D	0.1	0.1	0.91	0.91	207.9	209.8	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[PM] [5% car 2030 with bays] [Cruise] The Crescent / James Craig Road (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	774	8.3	774	8.3	* 1.086	143.9	LOS F	76.8	575.5	1.00	1.42	2.23	3.8
23a	R1	28	3.7	28	3.7	0.242	49.9	LOS D	1.3	9.4	0.98	0.71	0.98	27.1
23	R2	29	3.6	29	3.6	0.242	51.6	LOS D	1.3	9.4	0.98	0.71	0.98	10.0
Approach		832	8.0	832	8.0	1.086	137.4	LOS F	76.8	575.5	1.00	1.37	2.14	4.4
NorthEast: The Crescent														
24	L2	26	4.0	19	4.0	0.023	18.6	LOS B	0.4	2.7	0.46	0.63	0.46	27.5
8	T1	2716	3.0	2008	3.0	* 1.100	142.6	LOS F	22.7	163.2	1.00	1.81	2.25	2.8
Approach		2742	3.0	2027 N1	3.0	1.100	141.4	LOS F	22.7	163.2	0.99	1.80	2.23	2.9
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	569	3.0	569	3.0	0.395	8.4	LOS A	7.2	51.7	0.32	0.68	0.32	47.9
10a	L1	375	3.1	375	3.1	0.430	7.3	LOS A	5.0	36.1	0.33	0.62	0.33	35.6
Approach		944	3.0	944	3.0	0.430	8.0	LOS A	7.2	51.7	0.32	0.66	0.32	45.6
SouthWest: The Crescent														
2	T1	954	3.1	954	3.1	0.414	5.5	LOS A	15.6	112.4	0.59	0.53	0.59	44.4
32	R2	279	17.7	279	17.7	0.256	25.0	LOS B	4.0	32.0	0.61	0.71	0.61	28.8
Approach		1233	6.4	1233	6.4	0.414	9.9	LOS A	15.6	112.4	0.59	0.57	0.59	37.9
All Vehicles		5751	4.5	5036 N1	5.1	1.100	83.5	LOS F	76.8	575.5	0.77	1.21	1.46	8.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	223.0	220.5	0.99
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	209.5	204.3	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	216.3	212.4	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[PM] [5% car 2030 with bays] [Cruise] The Crescent / Victoria Road (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	884	3.0	884	3.0	0.708	28.3	LOS B	19.8	142.4	0.85	0.86	0.92	31.3
6	R2	2605	3.6	2605	3.6	* 1.469	469.5	LOS F	223.2	1602.3	1.00	2.51	4.37	3.9
Approach		3489	3.4	3489	3.4	1.469	357.7	LOS F	223.2	1602.3	0.96	2.09	3.49	4.8
North: Victoria Road														
7	L2	659	5.3	589	5.6	0.183	6.0	LOS A	0.0	0.0	0.00	0.53	0.00	52.7
9a	R1	1858	3.0	1656	3.0	* 1.450	449.0	LOS F	38.6	277.4	1.00	2.51	4.30	1.4
Approach		2517	3.6	2245 N1	3.7	1.450	332.8	LOS F	38.6	277.4	0.74	1.99	3.17	3.2
SouthWest: The Crescent														
30a	L1	1358	3.0	1358	3.0	0.713	32.3	LOS C	22.2	159.4	0.97	0.88	0.98	11.0
Approach		1358	3.0	1358	3.0	0.713	32.3	LOS C	22.2	159.4	0.97	0.88	0.98	11.0
All Vehicles		7364	3.4	7093 N1	3.5	1.469	287.5	LOS F	223.2	1602.3	0.89	1.83	2.91	4.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
SouthWest: The Crescent											
P8	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	225.8	223.8	0.99
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	220.4	217.4	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

\Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

MOVEMENT SUMMARY

Site: 0652 [[PM] [5% car 2030 with bays] [Cruise] Victoria Road / Robert Street (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	2102	3.0	1662	3.0	0.432	6.6	LOS A	10.3	74.1	0.43	0.39	0.43	51.7
3a	R1	1556	4.0	1233	4.3	* 1.185	226.3	LOS F	38.2	277.4	1.00	2.02	2.91	2.9
Approach		3658	3.4	2895 N1	3.5	1.185	100.2	LOS F	38.2	277.4	0.68	1.08	1.49	13.2
NorthEast: Robert St														
24a	L1	1387	4.1	1239	4.2	0.758	15.3	LOS B	38.2	277.3	0.73	0.76	0.76	21.4
26b	R3	192	11.5	173	12.4	1.062	134.9	LOS F	15.1	117.2	1.00	1.62	2.41	13.5
Approach		1579	5.0	1412 N1	5.2	1.062	29.9	LOS C	38.2	277.3	0.76	0.87	0.96	17.9
North: Victoria Rd N														
7b	L3	194	11.4	194	11.4	* 1.120	176.5	LOS F	34.4	257.3	1.00	1.75	2.61	9.0
8	T1	1129	3.0	1129	3.0	1.120	169.8	LOS F	50.2	360.7	1.00	1.75	2.60	9.0
Approach		1323	4.2	1323	4.2	1.120	170.8	LOS F	50.2	360.7	1.00	1.75	2.60	9.0
All Vehicles		6560	4.0	5630 N1	4.6	1.185	99.2	LOS F	50.2	360.7	0.77	1.19	1.62	12.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99
All Pedestrians		53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[PM] [5% car 2030 with bays] [Cruise] Robert Street / Mullens Street (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	349	12.3	349	12.3	0.769	27.0	LOS B	10.6	82.4	0.96	0.96	1.15	15.3
6	R2	95	18.9	95	18.9	* 0.737	38.0	LOS C	3.1	25.6	1.00	0.92	1.33	18.9
Approach		444	13.7	444	13.7	0.769	29.4	LOS C	10.6	82.4	0.97	0.95	1.19	16.3
North: Mullens St														
7	L2	109	16.3	109	16.3	0.104	7.5	LOS A	1.1	9.1	0.38	0.58	0.38	29.2
9a	R1	1231	3.0	1231	3.0	* 1.143	176.2	LOS F	69.6	499.6	1.00	2.39	3.41	3.2
Approach		1340	4.1	1340	4.1	1.143	162.4	LOS F	69.6	499.6	0.95	2.24	3.16	3.5
SouthWest: Robert St														
30a	L1	1389	3.0	959	3.1	0.921	30.5	LOS C	32.6	233.9	0.71	1.01	1.10	20.3
32a	R1	343	12.6	243	14.6	* 1.099	136.7	LOS F	18.7	147.0	1.00	2.08	3.16	4.3
Approach		1733	4.9	1202 N1	5.4	1.099	51.9	LOS D	32.6	233.9	0.77	1.22	1.52	14.1
All Vehicles		3517	5.7	2986 N1	6.7	1.143	98.2	LOS F	69.6	499.6	0.88	1.64	2.21	7.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: v [[PM] [5% car 2030 with bays] [Cruise] Robert Street / Port Access Road - Conversion (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	301	18.9	301	18.9	* 0.342	11.5	LOS A	6.0	48.9	0.49	0.68	0.49	12.6
Approach		301	18.9	301	18.9	0.342	11.5	LOS A	6.0	48.9	0.49	0.68	0.49	12.6
NorthEast: Robert St														
24a	L1	32	3.3	32	3.3	0.077	33.4	LOS C	1.1	8.0	0.82	0.69	0.82	23.4
5	T1	142	3.0	142	3.0	* 0.338	32.2	LOS C	5.3	38.3	0.89	0.71	0.89	23.5
Approach		174	3.0	174	3.0	0.338	32.4	LOS C	5.3	38.3	0.87	0.71	0.87	23.5
SouthWest: Robert St														
11	T1	152	2.8	108	2.7	0.257	31.5	LOS C	4.0	28.5	0.87	0.69	0.87	26.5
32b	R3	301	18.9	222	21.3	0.257	11.6	LOS A	4.1	34.2	0.45	0.69	0.45	24.1
Approach		453	13.5	330 N1	15.2	0.257	18.1	LOS B	4.1	34.2	0.59	0.69	0.59	25.5
All Vehicles		927	13.3	805 N1	15.3	0.342	18.7	LOS B	6.0	48.9	0.61	0.69	0.61	22.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Port Access Road											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	213.1	208.6	0.98
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	217.5	213.9	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	215.3	211.3	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 5018 [[PM] [5% car 2030 with bays] [Cruise] City West Link / M8 Motorway (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

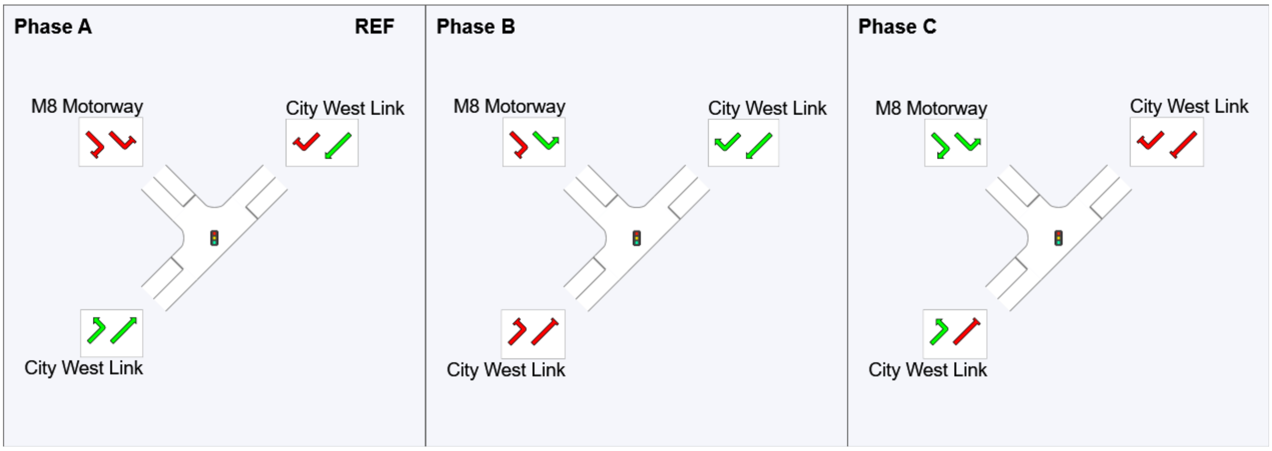
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	41	74
Green Time (sec)	35	27	10
Phase Time (sec)	41	33	16
Phase Split	46%	37%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 1208 [[PM] [5% car 2030 with bays] [Cruise] City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

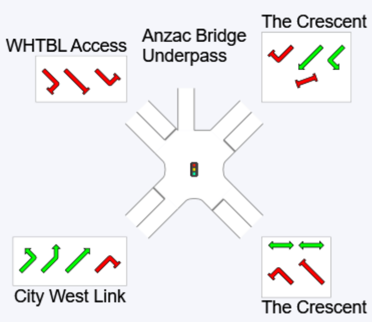
Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	71	17	31	44
Green Time (sec)	30	8	7	21
Phase Time (sec)	36	14	13	27
Phase Split	40%	16%	14%	30%

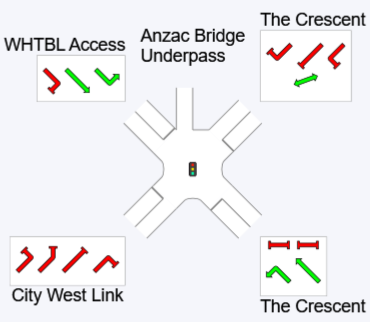
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

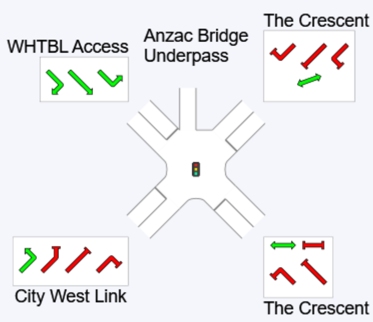
Phase A



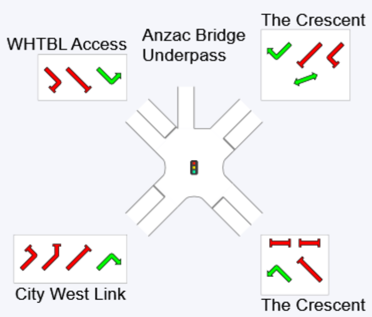
Phase D



Phase E



Phase G **REF**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[PM] [5% car 2030 with bays] [Cruise] The Crescent / James Craig Road (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

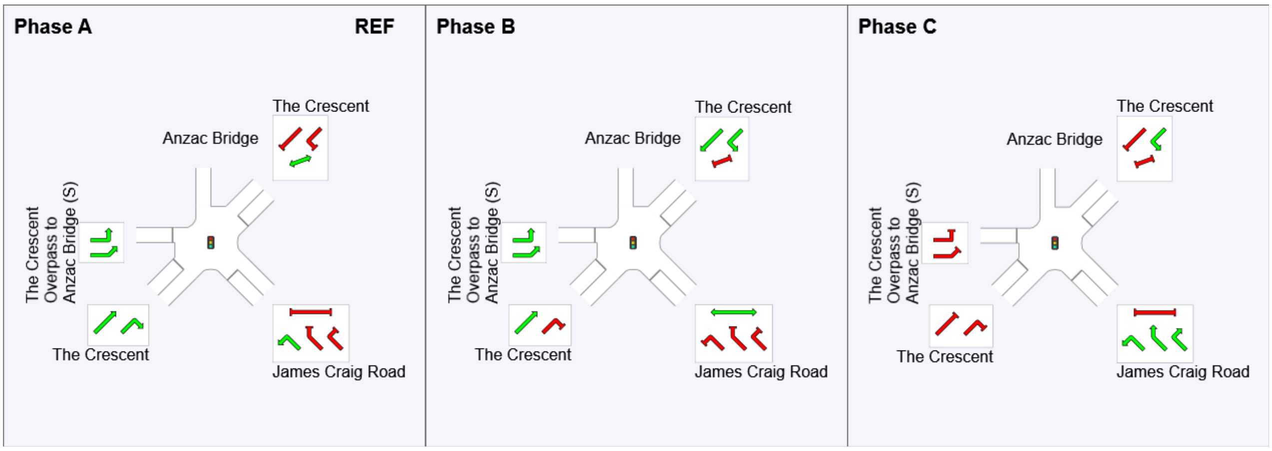
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	13	54	1
Green Time (sec)	35	31	6
Phase Time (sec)	41	37	12
Phase Split	46%	41%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[PM] [5% car 2030 with bays] [Cruise] The Crescent / Victoria Road (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

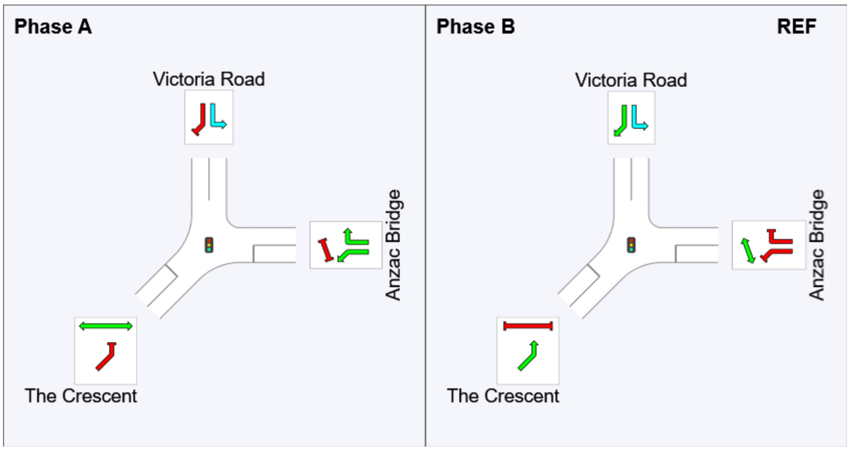
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	88	45
Green Time (sec)	41	37
Phase Time (sec)	47	43
Phase Split	52%	48%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

PHASING SUMMARY

Site: 0652 [[PM] [5% car 2030 with bays] [Cruise] Victoria Road / Robert Street (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

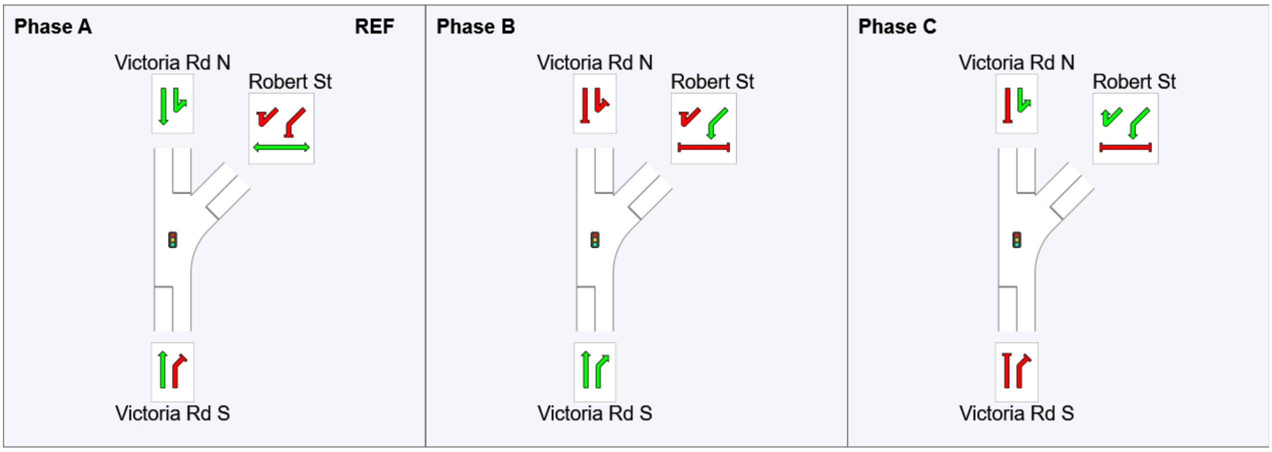
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	32	59	9
Green Time (sec)	21	34	17
Phase Time (sec)	27	40	23
Phase Split	30%	44%	26%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

PHASING SUMMARY

Site: [[PM] [5% car 2030 with bays] [Cruise] Robert Street / Mullens Street (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

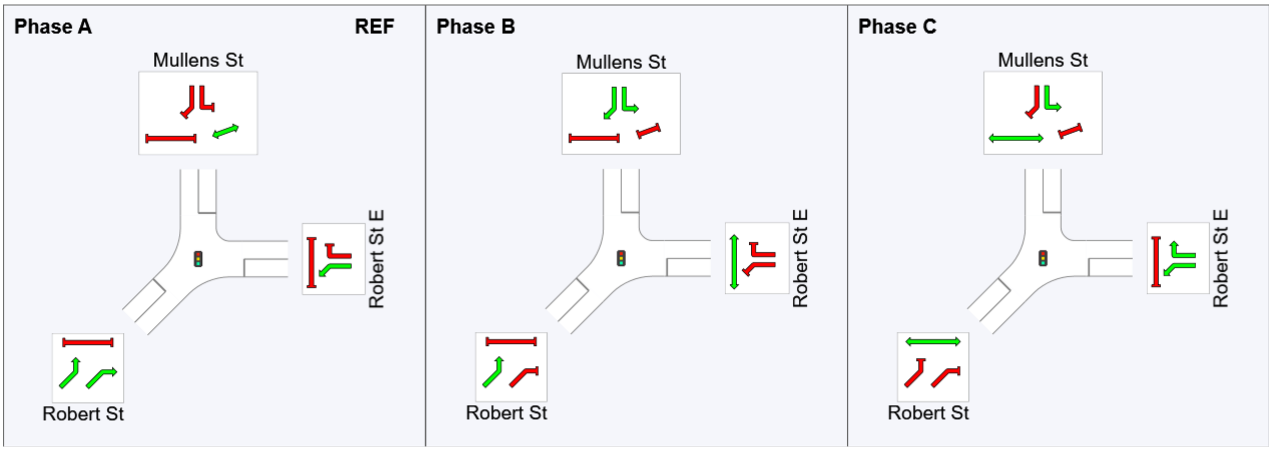
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	14	47
Green Time (sec)	8	27	7
Phase Time (sec)	14	33	13
Phase Split	23%	55%	22%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: v [[PM] [5% car 2030 with bays] [Cruise] Robert Street / Port Access Road - Conversion (Site Folder: [PM] [5% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 5% Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

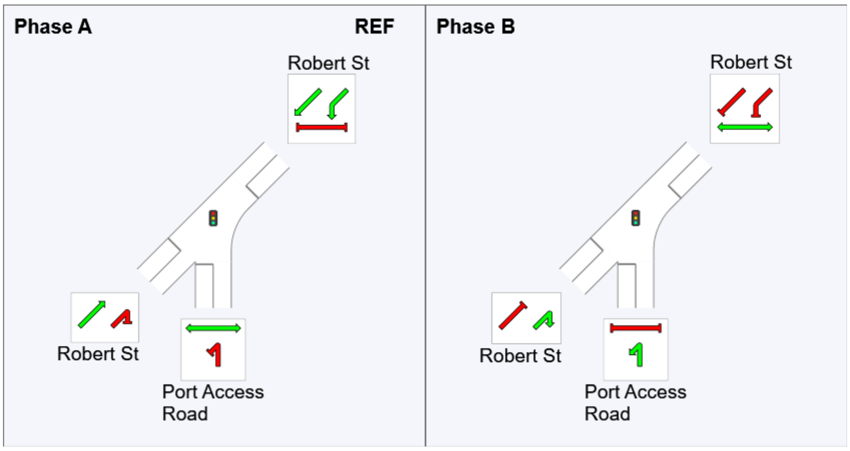
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	0	26
Green Time (sec)	20	58
Phase Time (sec)	26	64
Phase Split	29%	71%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

MOVEMENT SUMMARY

Site: 5018 [[AM] [15% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1511	6.1	1274	6.2	0.460	2.8	LOS A	7.4	54.4	0.18	0.16	0.18	56.6
26	R2	945	9.5	798	9.6	* 1.027	118.1	LOS F	37.8	286.4	1.00	1.15	1.62	16.6
Approach		2456	7.4	2071 N1	7.5	1.027	47.2	LOS D	37.8	286.4	0.49	0.54	0.73	29.3
NorthWest: M8 Motorway														
27	L2	736	10.4	736	10.4	0.512	34.5	LOS C	16.9	128.9	0.78	0.81	0.78	28.4
29	R2	275	6.1	275	6.1	* 1.025	125.3	LOS F	26.3	193.7	1.00	1.18	1.75	19.4
Approach		1011	9.3	1011	9.3	1.025	59.2	LOS E	26.3	193.7	0.84	0.91	1.05	23.7
SouthWest: City West Link														
30	L2	199	5.8	199	5.8	0.168	13.7	LOS A	4.5	33.0	0.39	0.67	0.39	48.4
31	T1	2211	6.1	2211	6.1	* 1.038	115.6	LOS F	94.0	692.2	1.00	1.42	1.63	12.6
Approach		2409	6.1	2409	6.1	1.038	107.2	LOS F	94.0	692.2	0.95	1.35	1.53	14.2
All Vehicles		5876	7.2	5491 N1	7.7	1.038	75.7	LOS F	94.0	692.2	0.76	0.97	1.14	20.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1208 [[AM] [15% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	281	6.0	281	6.0	* 0.499	29.0	LOS C	10.7	78.9	0.85	0.80	0.85	20.8
22	T1	291	6.2	291	6.2	0.857	72.2	LOS F	10.2	74.9	1.00	0.96	1.32	23.6
Approach		572	6.1	572	6.1	0.857	51.0	LOS D	10.7	78.9	0.93	0.88	1.09	22.8
NorthEast: The Crescent														
24	L2	1078	6.1	854	6.3	0.638	27.1	LOS B	16.9	124.6	0.67	0.77	0.67	30.7
25	T1	1588	8.2	1260	8.5	0.645	16.4	LOS B	15.7	117.9	0.57	0.50	0.57	30.2
26	R2	502	8.2	398	8.5	* 1.087	162.7	LOS F	21.1	158.1	1.00	1.26	1.87	12.9
Approach		3168	7.4	2512 N1	7.8	1.087	43.2	LOS D	21.1	158.1	0.67	0.71	0.81	22.0
NorthWest: WHTBL Access														
27	L2	155	12.9	155	12.9	0.237	33.2	LOS C	6.4	50.1	0.70	0.76	0.70	29.0
28	T1	103	6.1	103	6.1	0.076	40.1	LOS C	1.7	12.2	0.80	0.60	0.80	32.2
29	R2	587	5.9	587	5.9	1.105	181.0	LOS F	24.1	177.3	1.00	1.40	2.14	8.7
Approach		845	7.2	845	7.2	1.105	136.8	LOS F	24.1	177.3	0.92	1.18	1.72	11.5
SouthWest: City West Link														
30	L2	465	6.1	452	6.1	* 0.422	14.7	LOS B	9.7	71.2	0.70	0.78	0.70	44.8
30a	L1	465	6.1	452	6.1	0.252	27.4	LOS B	10.1	74.6	0.76	0.74	0.76	30.0
31	T1	1508	8.2	1467	8.3	* 1.149	203.3	LOS F	54.4	408.0	1.00	1.79	2.11	4.6
32	R2	507	6.0	493	6.0	0.613	54.3	LOS D	13.5	99.5	0.91	0.82	0.91	21.2
Approach		2946	7.2	2865 N1	7.2	1.149	120.1	LOS F	54.4	408.0	0.90	1.30	1.47	10.3
All Vehicles		7532	7.2	6794 N1	8.0	1.149	87.9	LOS F	54.4	408.0	0.82	1.03	1.22	13.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	32.5	LOS D	0.1	0.1	0.91	0.91	208.2	210.9	1.01
P52	Stage 2	53	59.3	LOS E	0.2	0.2	0.96	0.96	235.0	210.9	0.90
NorthEast: The Crescent											

P6B Slip/ Bypass	53	59.3	LOS E	0.2	0.2	0.96	0.96	232.3	207.6	0.89
All Pedestrians	158	50.3	LOS E	0.2	0.2	0.94	0.94	225.2	209.8	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[AM] [15% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	142	34.1	142	34.1	0.223	27.7	LOS B	5.3	47.9	0.63	0.74	0.63	16.0
23a	R1	51	6.3	51	6.3	* 0.621	75.3	LOS F	3.5	25.6	1.00	0.78	1.10	21.1
23	R2	51	6.3	51	6.3	0.621	77.1	LOS F	3.5	25.6	1.00	0.78	1.10	7.1
Approach		243	22.5	243	22.5	0.621	47.9	LOS D	5.3	47.9	0.78	0.76	0.82	15.4
NorthEast: The Crescent														
24	L2	68	6.2	54	6.1	0.058	22.8	LOS B	1.6	11.8	0.51	0.67	0.51	25.4
8	T1	3026	6.2	2377	6.2	* 1.003	92.1	LOS F	22.1	163.2	1.00	1.28	1.46	4.3
Approach		3095	6.2	2431 N1	6.2	1.003	90.6	LOS F	22.1	163.2	0.99	1.27	1.44	4.5
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	1053	6.0	1053	6.0	0.804	8.9	LOS A	22.8	167.6	0.38	0.72	0.38	47.3
10a	L1	302	6.3	302	6.3	0.198	6.0	LOS A	3.1	22.9	0.18	0.56	0.18	38.6
Approach		1355	6.1	1355	6.1	0.804	8.3	LOS A	22.8	167.6	0.34	0.68	0.34	46.6
SouthWest: The Crescent														
2	T1	542	7.0	466	7.1	0.165	2.0	LOS A	3.7	27.6	0.24	0.21	0.24	53.1
32	R2	1122	9.6	966	9.7	* 1.018	85.1	LOS F	51.5	390.2	0.97	1.05	1.34	13.4
Approach		1664	8.7	1432 N1	8.8	1.018	58.0	LOS E	51.5	390.2	0.74	0.77	0.98	16.2
All Vehicles		6357	7.5	5461 N1	8.7	1.018	59.7	LOS E	51.5	390.2	0.75	0.97	1.02	13.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	59.3	LOS E	0.2	0.2	0.96	0.96	243.0	220.5	0.91
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	59.3	LOS E	0.2	0.2	0.96	0.96	229.5	204.3	0.89
All Pedestrians		105	59.3	LOS E	0.2	0.2	0.96	0.96	236.3	212.4	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[AM] [15% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Anzac Bridge														
4a	L1	1337	6.0	1337	6.0	* 1.184	246.4	LOS F	67.5	496.9	1.00	1.59	2.41	6.5
6	R2	315	11.0	315	11.0	0.163	30.4	LOS C	4.6	34.1	0.65	0.72	0.65	30.6
Approach		1652	6.9	1652	6.9	1.184	205.3	LOS F	67.5	496.9	0.93	1.43	2.07	7.7
North: Victoria Road														
7	L2	1524	7.0	1356	7.1	0.770	6.0	LOS A	0.0	0.0	0.00	0.52	0.00	51.8
9a	R1	1758	6.4	1563	6.4	* 1.201	246.3	LOS F	37.6	277.4	1.00	1.60	2.39	2.5
Approach		3282	6.7	2919 [N1]	6.7	1.201	134.7	LOS F	37.6	277.4	0.54	1.10	1.28	9.3
SouthWest: The Crescent														
30a	L1	895	6.7	819	6.7	0.379	30.2	LOS C	15.9	117.8	0.77	0.78	0.77	11.6
Approach		895	6.7	819 [N1]	6.7	0.379	30.2	LOS C	15.9	117.8	0.77	0.78	0.77	11.6
All Vehicles		5828	6.8	5390 [N1]	7.3	1.201	140.4	LOS F	67.5	496.9	0.69	1.15	1.45	8.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped	Dist]	Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		ped	m			sec	m	m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	59.3	LOS E	0.2	0.2	0.96	0.96	235.0	210.9	0.90
SouthWest: The Crescent											
P8	Full	53	59.3	LOS E	0.2	0.2	0.96	0.96	245.8	223.8	0.91
All Pedestrians		105	59.3	LOS E	0.2	0.2	0.96	0.96	240.4	217.4	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

\Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

MOVEMENT SUMMARY

Site: 0652 [[AM] [15% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	391	5.9	366	5.9	0.080	2.4	LOS A	1.8	13.4	0.23	0.19	0.23	56.7
3a	R1	715	9.1	670	9.3	1.154	128.8	LOS F	36.7	277.4	1.00	1.23	1.69	4.2
Approach		1105	8.0	1036 N1	8.1	1.154	84.2	LOS F	36.7	277.4	0.73	0.86	1.17	10.8
NorthEast: Robert St														
24a	L1	1011	8.3	1011	8.3	* 1.083	157.6	LOS F	38.1	285.6	1.00	1.60	1.91	3.9
26b	R3	83	35.4	83	35.4	1.083	171.0	LOS F	0.1	0.7	1.00	1.48	2.23	11.1
Approach		1094	10.4	1094	10.4	1.083	158.6	LOS F	38.1	285.6	1.00	1.59	1.93	4.6
North: Victoria Rd N														
7b	L3	128	23.8	128	23.8	0.183	13.1	LOS A	2.2	18.9	0.46	0.71	0.46	42.6
8	T1	2273	6.0	2273	6.0	* 1.147	200.4	LOS F	153.2	1127.9	1.00	1.85	2.15	7.9
Approach		2401	7.0	2401	7.0	1.147	190.4	LOS F	153.2	1127.9	0.97	1.78	2.06	8.2
All Vehicles		4600	8.0	4531 N1	8.2	1.154	158.4	LOS F	153.2	1127.9	0.92	1.53	1.83	7.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	59.3	LOS E	0.2	0.2	0.96	0.96	241.4	218.5	0.91
All Pedestrians		53	59.3	LOS E	0.2	0.2	0.96	0.96	241.4	218.5	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[AM] [15% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	349	19.3	349	19.3	0.911	44.8	LOS D	24.6	200.8	0.99	1.29	1.67	10.9
6	R2	179	17.6	179	17.6	* 0.983	63.4	LOS E	8.3	67.3	1.00	1.46	2.24	13.6
Approach		528	18.7	528	18.7	0.983	51.1	LOS D	24.6	200.8	0.99	1.35	1.86	12.1
North: Mullens St														
7	L2	86	29.3	86	29.3	0.115	11.4	LOS A	1.3	11.1	0.52	0.62	0.52	25.3
9a	R1	743	5.9	743	5.9	* 0.995	70.7	LOS F	26.6	195.8	1.00	1.55	2.13	7.3
Approach		829	8.4	829	8.4	0.995	64.5	LOS E	26.6	195.8	0.95	1.45	1.96	7.9
SouthWest: Robert St														
30a	L1	464	5.9	413	6.0	0.353	7.8	LOS A	5.5	40.5	0.49	0.64	0.49	32.1
32a	R1	378	17.8	339	18.5	* 1.058	111.1	LOS F	23.6	191.6	1.00	1.87	2.74	5.2
Approach		842	11.3	751 N1	11.6	1.058	54.4	LOS D	23.6	191.6	0.72	1.19	1.50	12.4
All Vehicles		2200	12.0	2109 N1	12.5	1.058	57.5	LOS E	26.6	200.8	0.88	1.33	1.77	10.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: v [[AM] [15% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	374	23.9	374	23.9	* 0.493	13.2	LOS A	10.8	90.9	0.49	0.69	0.49	11.4
Approach		374	23.9	374	23.9	0.493	13.2	LOS A	10.8	90.9	0.49	0.69	0.49	11.4
NorthEast: Robert St														
24a	L1	32	6.7	32	6.7	0.085	48.0	LOS D	1.6	11.9	0.84	0.70	0.84	19.9
5	T1	155	6.1	155	6.1	* 0.490	49.7	LOS D	8.8	64.9	0.93	0.77	0.93	19.2
Approach		186	6.2	186	6.2	0.490	49.4	LOS D	8.8	64.9	0.92	0.76	0.92	19.3
SouthWest: Robert St														
11	T1	107	5.9	93	6.0	0.244	46.4	LOS D	4.9	36.4	0.88	0.69	0.88	22.8
32b	R3	356	24.3	312	25.3	0.344	12.5	LOS A	7.7	65.7	0.42	0.69	0.42	23.5
Approach		463	20.0	405 N1	20.9	0.344	20.3	LOS B	7.7	65.7	0.53	0.69	0.53	23.2
All Vehicles		1023	18.9	965 N1	20.1	0.493	23.2	LOS B	10.8	90.9	0.59	0.70	0.59	19.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Port Access Road											
P1	Full	53	59.3	LOS E	0.2	0.2	0.96	0.96	233.1	208.6	0.89
NorthEast: Robert St											
P2	Full	53	59.3	LOS E	0.2	0.2	0.96	0.96	237.5	213.9	0.90
All Pedestrians		105	59.3	LOS E	0.2	0.2	0.96	0.96	235.3	211.3	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 5018 [[AM] [15% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

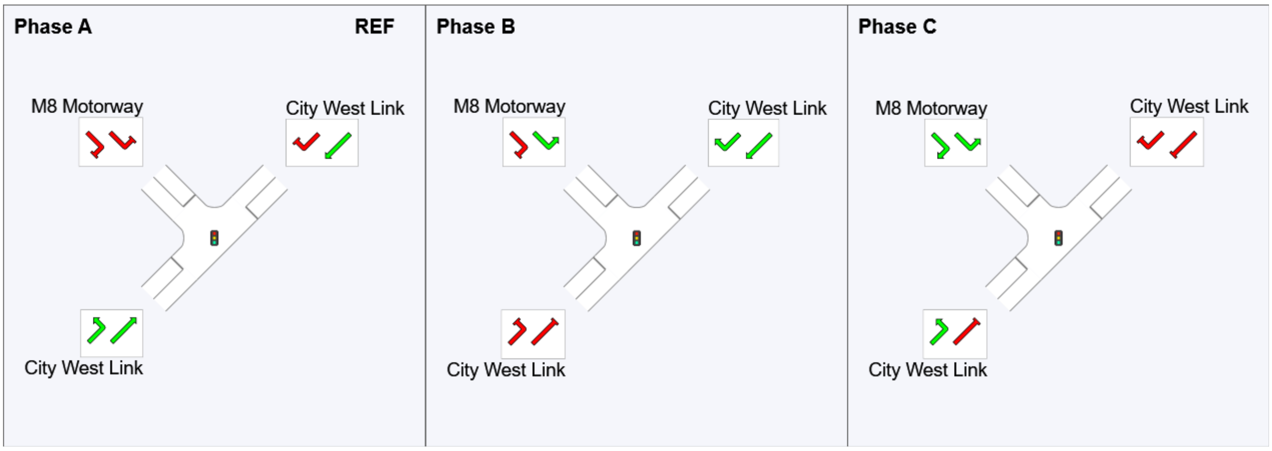
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

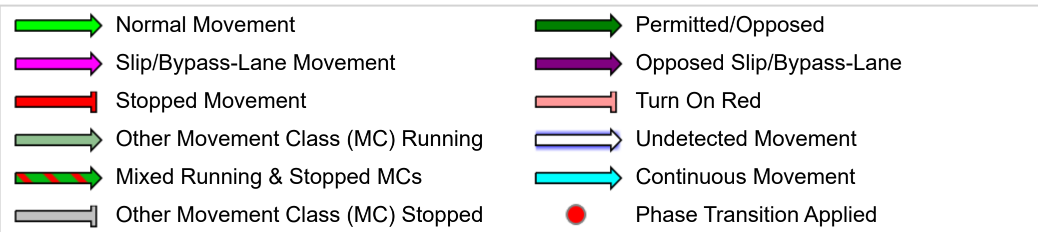
Phase	A	B	C
Phase Change Time (sec)	58	126	32
Green Time (sec)	62	30	20
Phase Time (sec)	68	36	26
Phase Split	52%	28%	20%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 1208 [[AM] [15% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

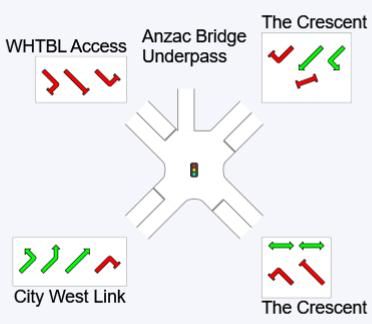
Phase Timing Summary

Phase	A	D	E	G	G2
Phase Change Time (sec)	39	95	113	3	23
Green Time (sec)	50	12	14	14	10
Phase Time (sec)	56	18	20	20	16
Phase Split	43%	14%	15%	15%	12%

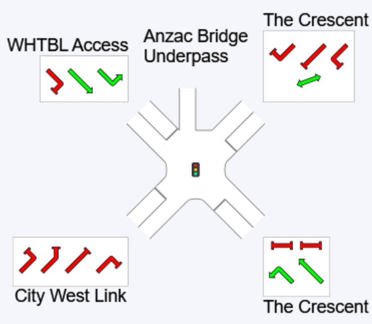
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

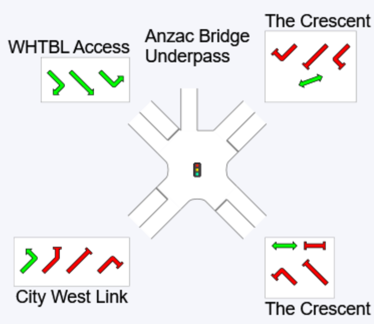
Phase A



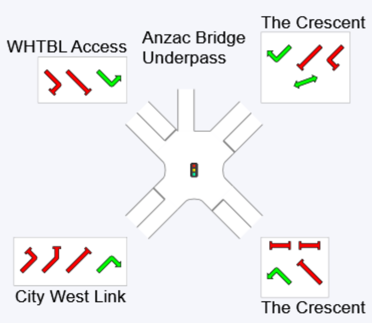
Phase D



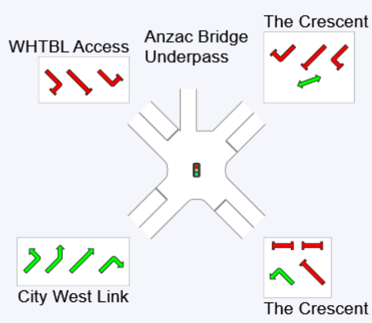
Phase E



Phase G **REF**



Phase G2 **VAR**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[AM] [15% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

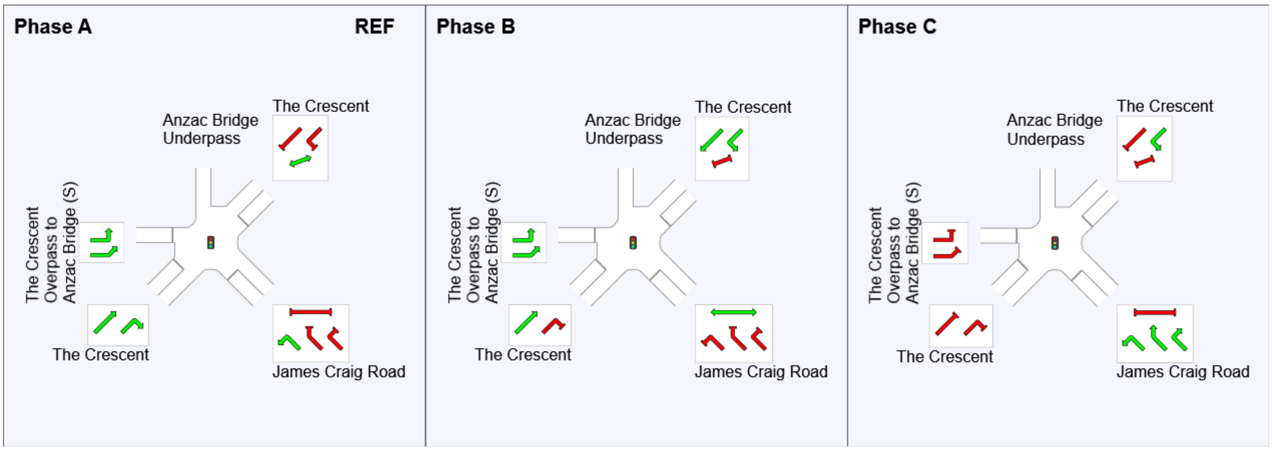
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	97	22	85
Green Time (sec)	49	57	6
Phase Time (sec)	55	63	12
Phase Split	42%	48%	9%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[AM] [15% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

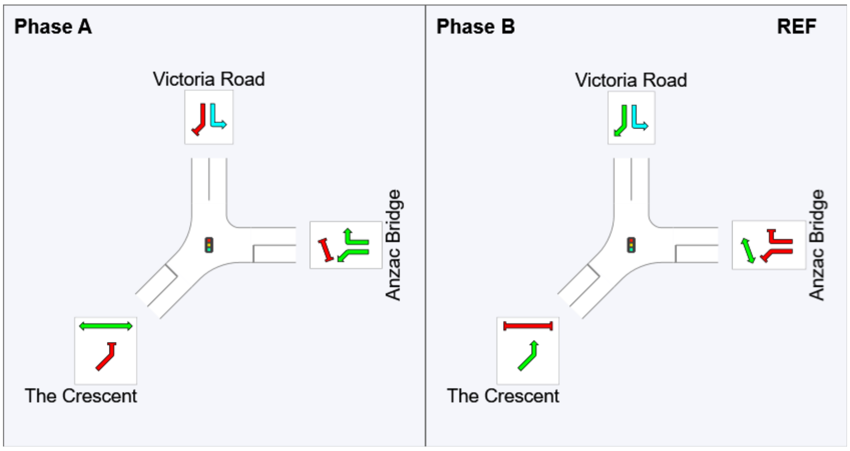
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

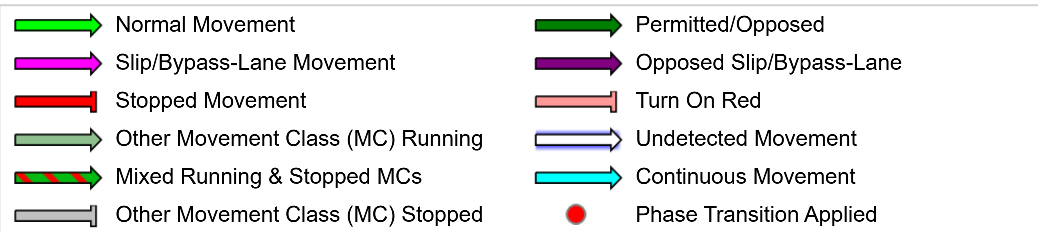
Phase	A	B
Phase Change Time (sec)	82	13
Green Time (sec)	55	63
Phase Time (sec)	61	69
Phase Split	47%	53%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 0652 [[AM] [15% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C, D*
(* Variable Phase)

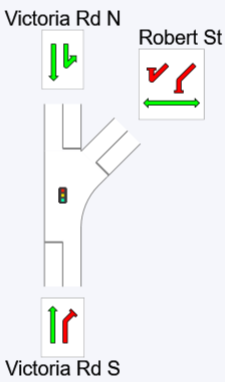
Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	76	88	104
Green Time (sec)	70	6	10	20
Phase Time (sec)	76	12	16	26
Phase Split	58%	9%	12%	20%

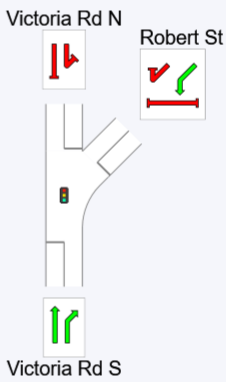
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

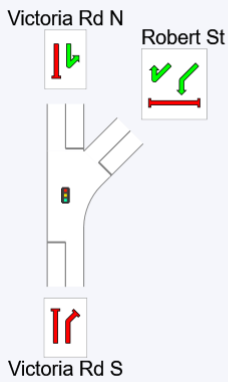
Phase A **REF**



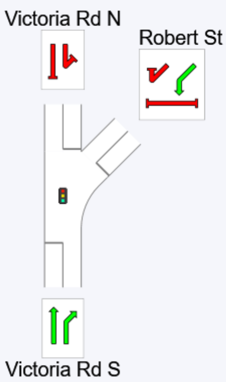
Phase B



Phase C



Phase D **VAR**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: [[AM] [15% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

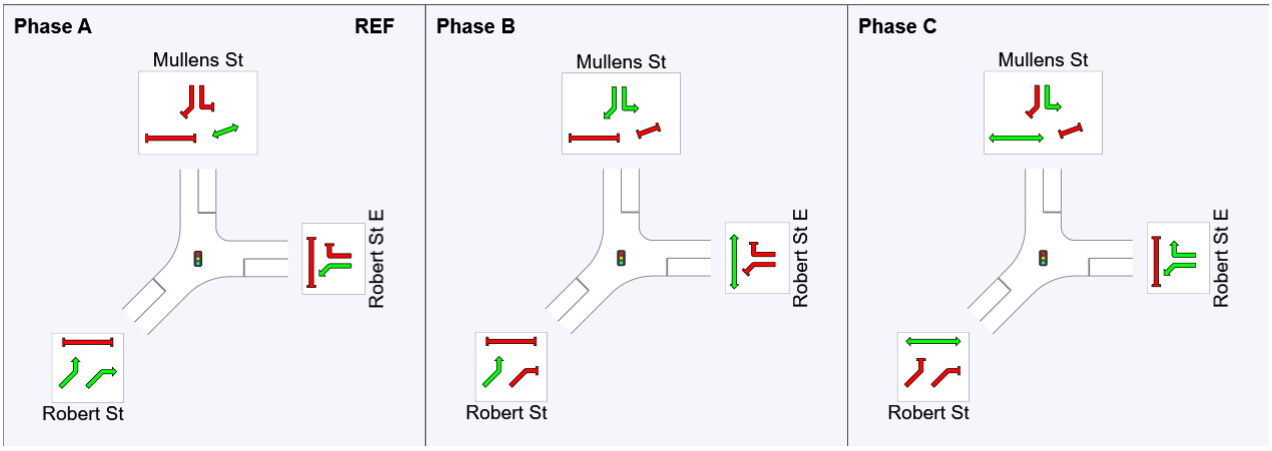
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

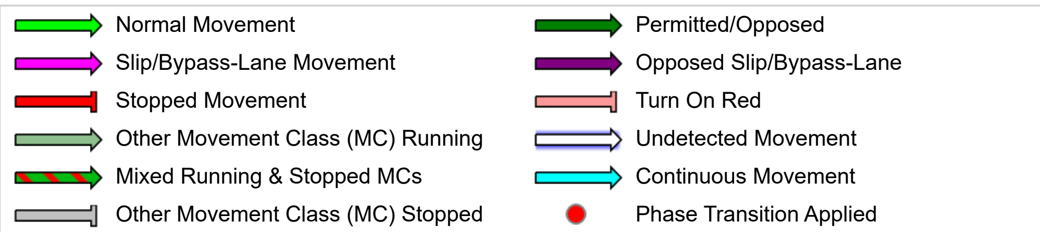
Phase	A	B	C
Phase Change Time (sec)	0	22	45
Green Time (sec)	16	17	9
Phase Time (sec)	22	23	15
Phase Split	37%	38%	25%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: v [[AM] [15% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [AM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Non-Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

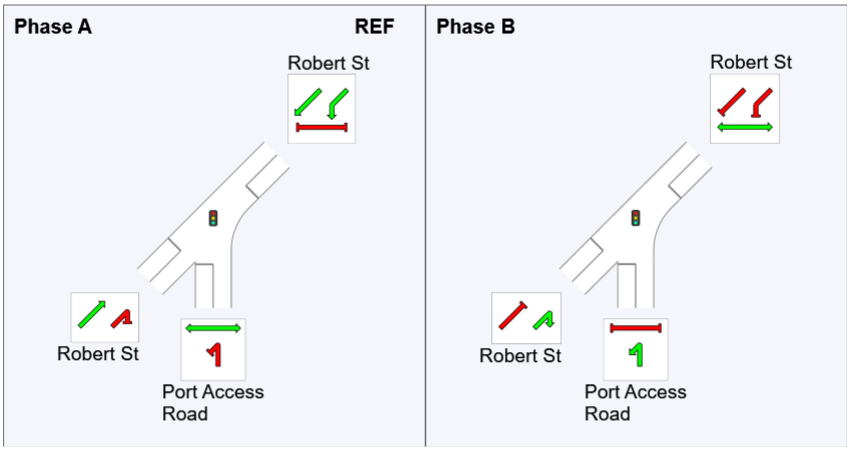
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	0	33
Green Time (sec)	27	91
Phase Time (sec)	33	97
Phase Split	25%	75%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

MOVEMENT SUMMARY

Site: 5018 [[PM] [15% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1800	3.0	1480	3.1	0.518	4.7	LOS A	14.8	106.6	0.43	0.39	0.43	54.4
26	R2	921	6.4	758	6.5	* 0.728	37.5	LOS C	15.8	117.1	0.98	0.87	1.01	32.6
Approach		2721	4.2	2237 N1	4.3	0.728	15.8	LOS B	15.8	117.1	0.61	0.55	0.63	44.4
NorthWest: M8 Motorway														
27	L2	756	7.1	756	7.1	0.458	22.5	LOS B	11.1	82.4	0.72	0.79	0.72	34.8
29	R2	134	3.1	134	3.1	* 0.670	50.2	LOS D	6.1	43.6	1.00	0.84	1.10	32.6
Approach		889	6.5	889	6.5	0.670	26.7	LOS B	11.1	82.4	0.76	0.80	0.77	34.2
SouthWest: City West Link														
30	L2	456	3.0	456	3.0	0.447	17.7	LOS B	11.5	82.8	0.62	0.76	0.62	46.0
31	T1	1601	3.0	1601	3.0	* 0.725	25.5	LOS B	20.2	144.8	0.91	0.81	0.92	33.0
Approach		2057	3.0	2057	3.0	0.725	23.8	LOS B	20.2	144.8	0.85	0.80	0.85	36.7
All Vehicles		5667	4.1	5184 N1	4.5	0.728	20.9	LOS B	20.2	144.8	0.73	0.69	0.74	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1208 [[PM] [15% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	566	3.0	566	3.0	* 0.977	70.6	LOS F	30.4	218.0	1.00	1.23	1.60	10.7
22	T1	224	2.8	224	2.8	0.665	46.3	LOS D	5.2	37.0	1.00	0.83	1.11	30.1
Approach		791	2.9	791	2.9	0.977	63.7	LOS E	30.4	218.0	1.00	1.12	1.46	16.5
NorthEast: The Crescent														
24	L2	1617	3.0	1170	3.2	* 0.978	75.6	LOS F	38.7	278.5	1.00	1.17	1.60	16.9
25	T1	1723	4.8	1249	5.2	0.674	10.0	LOS A	10.3	75.3	0.52	0.45	0.52	37.5
26	R2	165	8.9	120	9.6	0.153	44.0	LOS D	2.6	19.9	1.00	0.77	1.00	30.6
Approach		3505	4.2	2539 N1	4.5	0.978	41.8	LOS C	38.7	278.5	0.76	0.80	1.04	21.8
NorthWest: WHTBL Access														
27	L2	262	6.8	262	6.8	0.284	18.0	LOS B	6.3	46.6	0.59	0.74	0.59	38.0
28	T1	120	2.6	120	2.6	0.090	29.2	LOS C	1.4	9.9	0.82	0.61	0.82	36.9
29	R2	429	2.9	429	2.9	* 1.022	100.7	LOS F	10.1	72.2	1.00	1.25	2.15	14.3
Approach		812	4.2	812	4.2	1.022	63.4	LOS E	10.1	72.2	0.84	0.99	1.45	20.7
SouthWest: City West Link														
30	L2	297	2.8	297	2.8	0.401	17.7	LOS B	6.5	46.5	0.84	0.80	0.84	42.8
30a	L1	918	3.0	918	3.0	0.755	39.0	LOS C	20.2	145.2	1.00	0.89	1.03	24.9
31	T1	976	6.1	976	6.1	0.797	42.1	LOS C	22.0	161.8	1.00	0.91	1.05	17.4
32	R2	164	3.2	164	3.2	0.196	36.9	LOS C	3.2	23.1	0.92	0.77	0.92	26.6
Approach		2355	4.3	2355	4.3	0.797	37.4	LOS C	22.0	161.8	0.97	0.88	1.01	24.5
All Vehicles		7462	4.1	6496 N1	4.7	1.022	45.6	LOS D	38.7	278.5	0.88	0.89	1.13	21.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	20.5	LOS C	0.1	0.1	0.87	0.87	196.3	210.9	1.07
P52	Stage 2	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
NorthEast: The Crescent											
P6B	Slip/	53	39.3	LOS D	0.1	0.1	0.94	0.94	212.3	207.6	0.98

Bypass										
All Pedestrians	158	33.0	LOS D	0.1	0.1	0.91	0.91	207.9	209.8	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[PM] [15% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	774	8.3	774	8.3	* 1.086	143.6	LOS F	76.7	574.9	1.00	1.42	2.23	3.8
23a	R1	28	3.7	28	3.7	0.278	50.3	LOS D	1.4	10.2	0.98	0.72	0.98	26.9
23	R2	29	3.6	29	3.6	0.278	52.5	LOS D	1.4	10.2	0.98	0.72	0.98	9.9
Approach		832	8.0	832	8.0	1.086	137.2	LOS F	76.7	574.9	1.00	1.37	2.14	4.4
NorthEast: The Crescent														
24	L2	26	4.0	19	4.0	0.022	18.3	LOS B	0.4	2.6	0.45	0.63	0.45	27.6
8	T1	2732	3.0	1978	3.0	* 1.083	129.0	LOS F	22.7	163.2	1.00	1.72	2.13	3.1
Approach		2758	3.0	1997 [N1]	3.0	1.083	128.0	LOS F	22.7	163.2	0.99	1.71	2.12	3.2
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	569	3.0	569	3.0	0.395	8.4	LOS A	7.2	51.7	0.32	0.68	0.32	47.9
10a	L1	378	3.1	378	3.1	0.455	7.4	LOS A	5.2	37.6	0.34	0.63	0.34	35.4
Approach		947	3.0	947	3.0	0.455	8.0	LOS A	7.2	51.7	0.33	0.66	0.33	45.6
SouthWest: The Crescent														
2	T1	959	3.1	959	3.1	0.477	5.9	LOS A	15.3	110.2	0.61	0.56	0.61	43.4
32	R2	279	17.7	279	17.7	0.256	25.1	LOS B	4.0	32.1	0.61	0.71	0.61	28.7
Approach		1238	6.4	1238	6.4	0.477	10.2	LOS A	15.3	110.2	0.61	0.59	0.61	37.4
All Vehicles		5775	4.4	5014 [N1]	5.1	1.086	77.8	LOS F	76.7	574.9	0.77	1.18	1.41	9.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	223.0	220.5	0.99
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	209.5	204.3	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	216.3	212.4	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[PM] [15% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	884	3.0	884	3.0	0.691	26.7	LOS B	18.1	130.0	0.84	0.84	0.88	32.2
6	R2	2606	3.6	2606	3.6	* 1.441	444.9	LOS F	218.2	1566.6	1.00	2.45	4.24	4.1
Approach		3491	3.4	3491	3.4	1.441	339.0	LOS F	218.2	1566.6	0.96	2.04	3.39	5.0
North: Victoria Road														
7	L2	660	5.3	575	5.6	0.178	6.0	LOS A	0.0	0.0	0.00	0.53	0.00	52.7
9a	R1	1874	3.0	1626	3.0	* 1.462	460.1	LOS F	38.6	277.4	1.00	2.54	4.35	1.4
Approach		2534	3.6	2200 N1	3.7	1.462	341.5	LOS F	38.6	277.4	0.74	2.01	3.22	3.1
SouthWest: The Crescent														
30a	L1	1366	3.0	1366	3.0	0.737	31.6	LOS C	22.0	158.0	0.95	0.88	0.99	11.2
Approach		1366	3.0	1366	3.0	0.737	31.6	LOS C	22.0	158.0	0.95	0.88	0.99	11.2
All Vehicles		7391	3.4	7057 N1	3.6	1.462	280.3	LOS F	218.2	1566.6	0.89	1.81	2.87	4.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
SouthWest: The Crescent											
P8	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	225.8	223.8	0.99
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	220.4	217.4	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

\Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

MOVEMENT SUMMARY

Site: 0652 [[PM] [15% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	2102	3.0	1681	3.0	0.430	6.5	LOS A	12.4	88.8	0.48	0.43	0.48	51.8
3a	R1	1565	4.0	1255	4.2	1.192	216.9	LOS F	38.3	277.4	1.00	1.83	2.94	2.8
Approach		3667	3.4	2936 N1	3.5	1.192	96.4	LOS F	38.3	277.4	0.70	1.03	1.53	12.9
NorthEast: Robert St														
24a	L1	1405	4.0	1261	4.2	* 0.748	13.8	LOS A	39.3	284.7	0.70	0.74	0.72	22.4
26b	R3	209	10.6	189	11.3	1.169	215.5	LOS F	22.0	168.6	1.00	1.98	3.02	9.3
Approach		1615	4.9	1451 N1	5.1	1.169	40.2	LOS C	39.3	284.7	0.74	0.90	1.02	15.0
North: Victoria Rd N														
7b	L3	203	10.9	203	10.9	1.202	233.3	LOS F	42.9	318.8	1.00	1.83	3.09	6.7
8	T1	1129	3.0	1129	3.0	* 1.202	234.8	LOS F	59.2	424.7	1.00	1.96	3.10	6.7
Approach		1333	4.2	1333	4.2	1.202	234.6	LOS F	59.2	424.7	1.00	1.94	3.10	6.7
All Vehicles		6615	3.9	5719 N1	4.5	1.202	114.4	LOS F	59.2	424.7	0.78	1.21	1.77	10.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99
All Pedestrians		53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[PM] [15% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	384	11.2	384	11.2	0.818	29.7	LOS C	12.5	95.9	0.98	1.02	1.25	14.4
6	R2	106	16.8	106	16.8	* 0.811	39.8	LOS C	3.6	29.2	1.00	1.00	1.50	18.4
Approach		491	12.4	491	12.4	0.818	31.9	LOS C	12.5	95.9	0.99	1.01	1.30	15.6
North: Mullens St														
7	L2	116	15.5	116	15.5	0.109	7.5	LOS A	1.2	9.6	0.38	0.58	0.38	29.1
9a	R1	1231	3.0	1231	3.0	* 1.152	184.2	LOS F	73.3	526.5	1.00	2.45	3.51	3.1
Approach		1346	4.1	1346	4.1	1.152	169.0	LOS F	73.3	526.5	0.95	2.29	3.24	3.4
SouthWest: Robert St														
30a	L1	1389	3.0	957	3.1	0.925	31.7	LOS C	33.1	237.8	0.71	1.02	1.12	19.9
32a	R1	362	11.9	254	13.6	* 1.140	169.9	LOS F	22.6	176.2	1.00	2.30	3.53	3.5
Approach		1752	4.9	1211 N1	5.3	1.140	60.7	LOS E	33.1	237.8	0.77	1.29	1.63	12.6
All Vehicles		3588	5.6	3048 N1	6.6	1.152	103.9	LOS F	73.3	526.5	0.88	1.69	2.29	6.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: v [[PM] [15% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	347	16.4	347	16.4	* 0.373	10.8	LOS A	6.7	53.8	0.48	0.68	0.48	13.1
Approach		347	16.4	347	16.4	0.373	10.8	LOS A	6.7	53.8	0.48	0.68	0.48	13.1
NorthEast: Robert St														
24a	L1	32	3.3	32	3.3	0.086	35.3	LOS C	1.1	8.2	0.85	0.70	0.85	22.9
5	T1	142	3.0	142	3.0	* 0.375	34.3	LOS C	5.5	39.6	0.91	0.73	0.91	22.9
Approach		174	3.0	174	3.0	0.375	34.4	LOS C	5.5	39.6	0.90	0.73	0.90	22.9
SouthWest: Robert St														
11	T1	152	2.8	106	2.7	0.278	33.5	LOS C	4.0	28.7	0.89	0.70	0.89	25.9
32b	R3	326	17.4	233	19.4	0.257	10.7	LOS A	4.1	33.4	0.43	0.68	0.43	24.8
Approach		478	12.8	339 N1	14.2	0.278	17.8	LOS B	4.1	33.4	0.57	0.69	0.57	25.4
All Vehicles		999	12.3	860 N1	14.3	0.375	18.3	LOS B	6.7	53.8	0.60	0.69	0.60	22.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Port Access Road											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	213.1	208.6	0.98
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	217.5	213.9	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	215.3	211.3	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 5018 [[PM] [15% car 2030 with bays] [Non-Cruise]City West Link / M8 Motorway (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

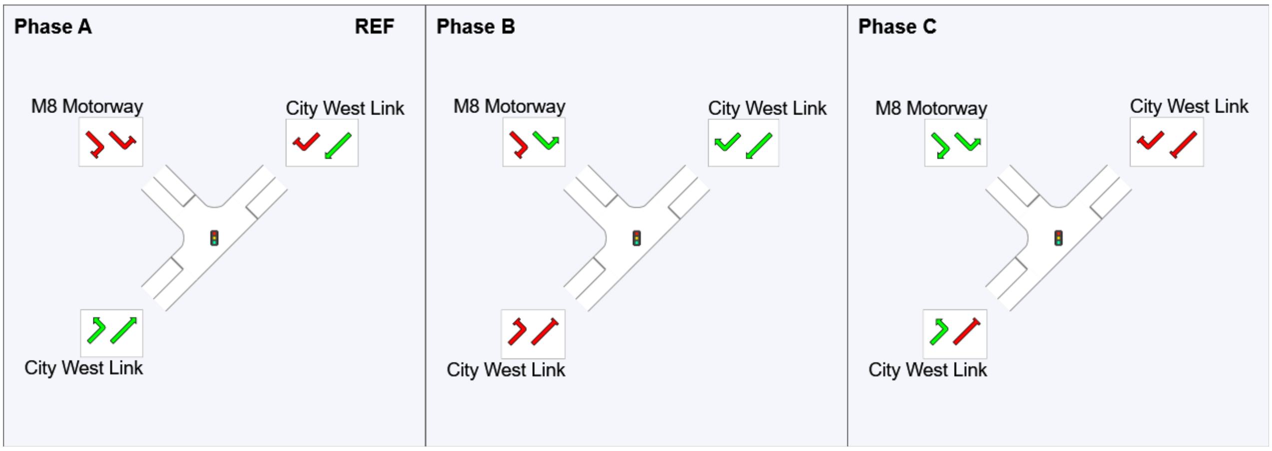
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	41	74
Green Time (sec)	35	27	10
Phase Time (sec)	41	33	16
Phase Split	46%	37%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 1208 [[PM] [15% car 2030 with bays] [Non-Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

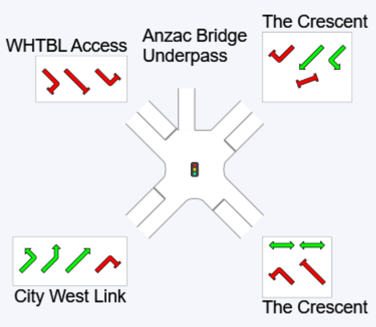
Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	71	17	31	44
Green Time (sec)	30	8	7	21
Phase Time (sec)	36	14	13	27
Phase Split	40%	16%	14%	30%

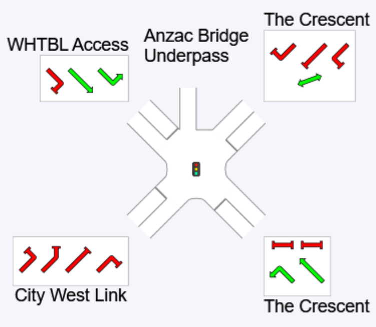
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

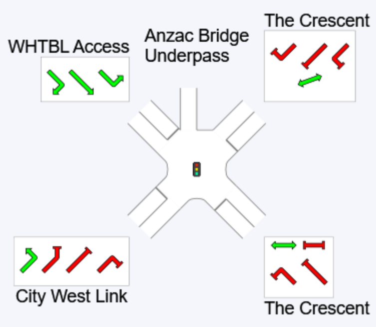
Phase A



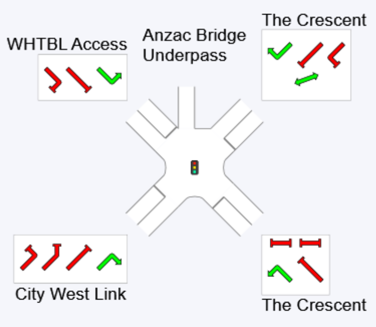
Phase D



Phase E



Phase G **REF**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[PM] [15% car 2030 with bays] [Non-Cruise]The Crescent / James Craig Road (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

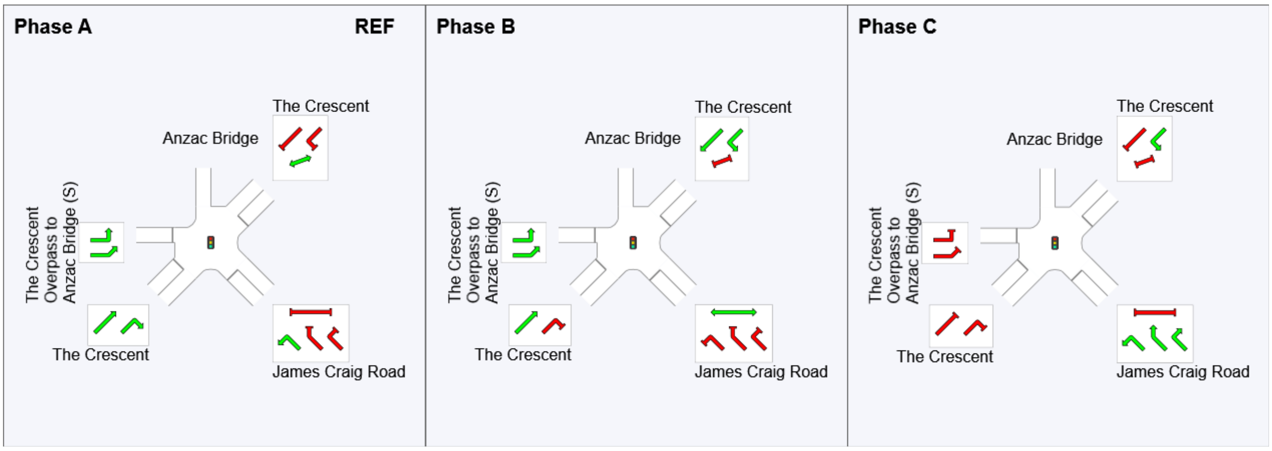
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

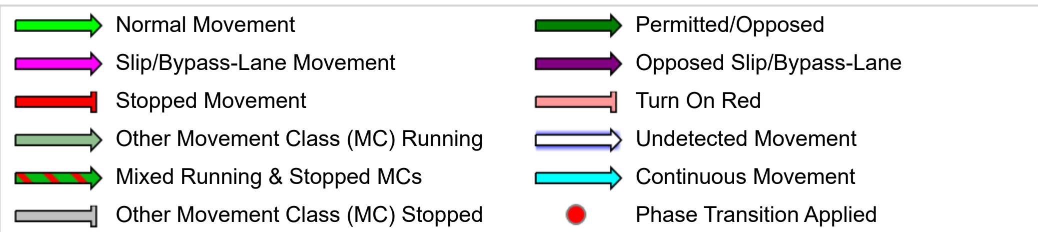
Phase	A	B	C
Phase Change Time (sec)	13	54	1
Green Time (sec)	35	31	6
Phase Time (sec)	41	37	12
Phase Split	46%	41%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise | Processed: Tuesday, 25 October 2022 9:31:58 AM
Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling\Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

PHASING SUMMARY

Site: 0651 [[PM] [15% car 2030 with bays] [Non-Cruise]The Crescent / Victoria Road (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

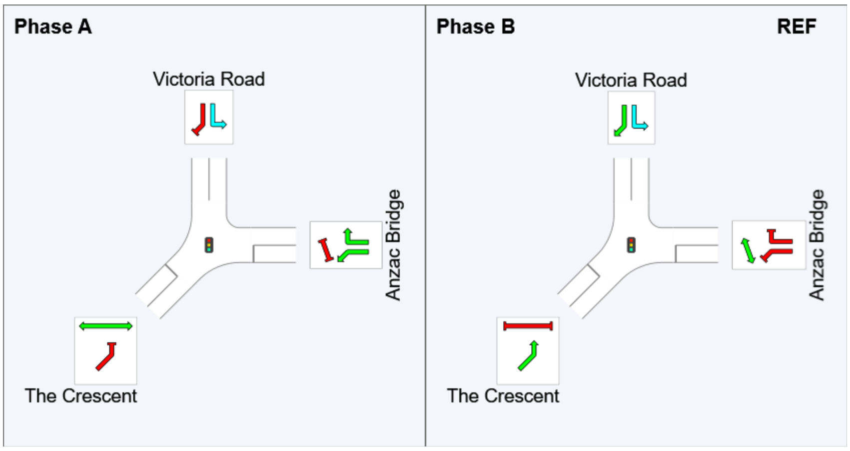
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	87	45
Green Time (sec)	42	36
Phase Time (sec)	48	42
Phase Split	53%	47%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0652 [[PM] [15% car 2030 with bays] [Non-Cruise]Victoria Road / Robert Street (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C, D*
(* Variable Phase)

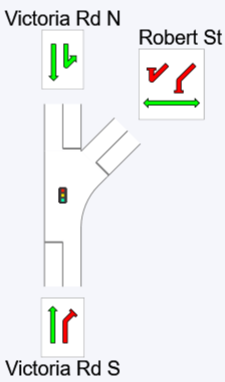
Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	32	57	69	1
Green Time (sec)	19	6	16	25
Phase Time (sec)	25	12	22	31
Phase Split	28%	13%	24%	34%

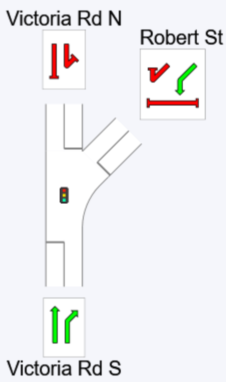
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

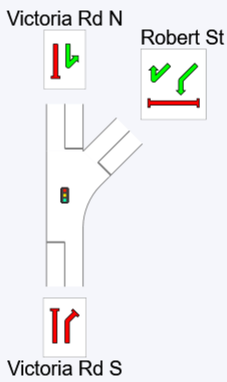
Phase A **REF**



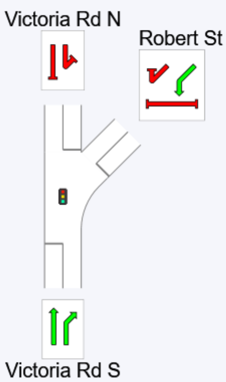
Phase B



Phase C



Phase D **VAR**



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: [[PM] [15% car 2030 with bays] [Non-Cruise]Robert Street / Mullens Street (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

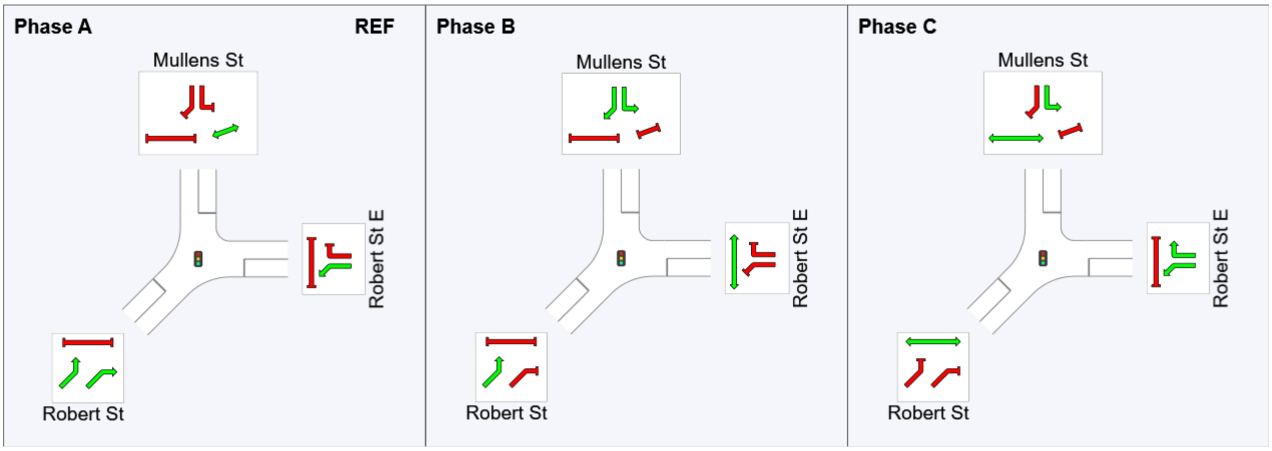
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	14	47
Green Time (sec)	8	27	7
Phase Time (sec)	14	33	13
Phase Split	23%	55%	22%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise | Processed: Tuesday, 25 October 2022 9:31:58 AM
Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

PHASING SUMMARY

Site: v [[PM] [15% car 2030 with bays] [Non-Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [PM] [15% car 2030 with bays] [Non-Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Non-Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

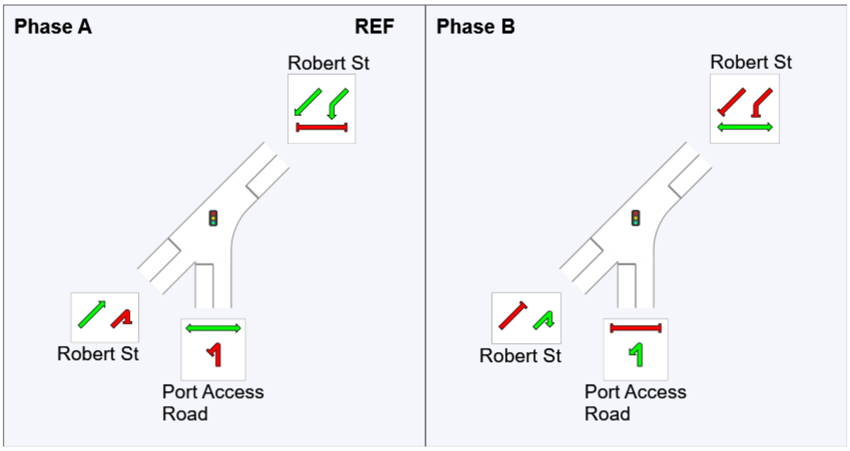
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

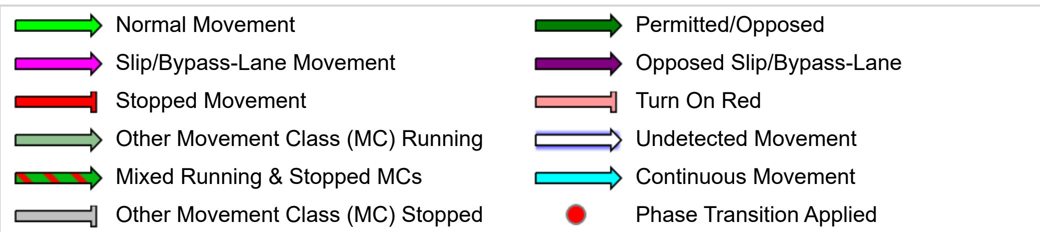
Phase	A	B
Phase Change Time (sec)	0	24
Green Time (sec)	18	60
Phase Time (sec)	24	66
Phase Split	27%	73%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 5018 [[AM] [15% car 2030 with bays] [Cruise]City West Link / M8 Motorway (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1543	6.0	1224	6.1	0.444	3.3	LOS A	8.0	59.3	0.21	0.19	0.21	56.0
26	R2	1043	8.6	828	8.7	* 1.044	124.3	LOS F	38.9	292.9	1.00	1.20	1.74	15.9
Approach		2586	7.0	2051 N1	7.2	1.044	52.1	LOS D	38.9	292.9	0.53	0.60	0.83	27.8
NorthWest: M8 Motorway														
27	L2	832	9.2	832	9.2	0.568	33.0	LOS C	18.2	137.5	0.81	0.82	0.81	29.1
29	R2	275	6.1	275	6.1	* 1.051	136.6	LOS F	26.7	196.5	1.00	1.26	1.92	18.2
Approach		1106	8.5	1106	8.5	1.051	58.7	LOS E	26.7	196.5	0.85	0.93	1.08	23.5
SouthWest: City West Link														
30	L2	199	5.8	199	5.8	0.171	13.6	LOS A	4.3	31.5	0.40	0.67	0.40	48.4
31	T1	2245	6.0	2245	6.0	* 1.070	135.7	LOS F	98.5	725.0	1.00	1.58	1.85	11.1
Approach		2444	6.0	2444	6.0	1.070	125.7	LOS F	98.5	725.0	0.95	1.50	1.73	12.5
All Vehicles		6137	6.9	5602 N1	7.5	1.070	85.5	LOS F	98.5	725.0	0.78	1.06	1.27	18.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1208 [[AM] [15% car 2030 with bays] [Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	281	6.0	281	6.0	* 0.522	28.3	LOS B	10.1	74.0	0.87	0.81	0.87	21.1
22	T1	291	6.2	291	6.2	0.863	67.8	LOS E	9.5	70.0	1.00	0.97	1.35	24.5
Approach		572	6.1	572	6.1	0.863	48.4	LOS D	10.1	74.0	0.94	0.89	1.12	23.6
NorthEast: The Crescent														
24	L2	1078	6.1	777	6.3	0.583	33.7	LOS C	15.5	114.8	0.73	0.79	0.73	27.6
25	T1	1719	7.5	1240	7.9	0.638	13.6	LOS A	14.8	110.4	0.52	0.46	0.52	33.0
26	R2	545	7.5	393	7.9	* 1.149	206.5	LOS F	23.4	174.8	1.00	1.43	2.23	10.6
Approach		3342	7.1	2410 N1	7.4	1.149	51.5	LOS D	23.4	174.8	0.67	0.72	0.87	19.5
NorthWest: WHTBL Access														
27	L2	198	10.1	198	10.1	0.295	31.8	LOS C	7.8	59.5	0.72	0.77	0.72	29.6
28	T1	103	6.1	103	6.1	0.075	36.8	LOS C	1.5	11.3	0.80	0.60	0.80	33.6
29	R2	587	5.9	587	5.9	1.106	177.1	LOS F	23.3	171.1	1.00	1.43	2.23	8.9
Approach		888	6.9	888	6.9	1.106	128.5	LOS F	23.3	171.1	0.91	1.19	1.73	12.1
SouthWest: City West Link														
30	L2	465	6.1	443	6.1	* 0.418	14.0	LOS A	8.7	64.0	0.69	0.77	0.69	45.3
30a	L1	465	6.1	443	6.1	0.251	25.5	LOS B	9.0	66.4	0.74	0.73	0.74	31.1
31	T1	1639	7.6	1561	7.6	* 1.194	236.2	LOS F	54.7	408.0	1.00	2.02	2.42	4.0
32	R2	507	6.0	483	6.1	0.639	52.3	LOS D	12.5	92.3	0.93	0.82	0.93	21.6
Approach		3077	6.9	2930 N1	6.9	1.194	140.4	LOS F	54.7	408.0	0.90	1.44	1.66	8.9
All Vehicles		7879	6.9	6800 N1	8.0	1.194	99.6	LOS F	54.7	408.0	0.82	1.11	1.34	12.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	29.2	LOS C	0.1	0.1	0.90	0.90	204.9	210.9	1.03
P52	Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	210.9	0.92
NorthEast: The Crescent											

P6B Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.3	207.6	0.91
All Pedestrians	158	45.9	LOS E	0.2	0.2	0.94	0.94	220.7	209.8	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[AM] [15% car 2030 with bays] [Cruise]The Crescent / James Craig Road (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	316	15.3	316	15.3	0.396	25.7	LOS B	11.4	90.4	0.67	0.77	0.67	16.8
23a	R1	145	2.2	145	2.2	* 1.036	124.2	LOS F	13.1	93.1	1.00	1.22	1.96	14.7
23	R2	98	3.2	98	3.2	0.727	69.3	LOS E	6.1	43.7	1.00	0.85	1.16	7.8
Approach		559	9.8	559	9.8	1.036	58.9	LOS E	13.1	93.1	0.81	0.90	1.09	14.0
NorthEast: The Crescent														
24	L2	211	2.0	157	2.0	0.165	23.7	LOS B	4.7	33.4	0.55	0.71	0.55	25.5
8	T1	3026	6.2	2261	6.2	* 1.079	142.5	LOS F	22.1	163.2	1.00	1.62	1.89	2.8
Approach		3237	6.0	2418[N1]	5.9	1.079	134.7	LOS F	22.1	163.2	0.97	1.56	1.81	3.2
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	1053	6.0	1053	6.0	0.856	12.5	LOS A	28.6	210.2	0.48	0.76	0.50	44.2
10a	L1	302	6.3	302	6.3	0.205	6.7	LOS A	3.6	26.7	0.23	0.57	0.23	36.9
Approach		1355	6.1	1355	6.1	0.856	11.2	LOS A	28.6	210.2	0.43	0.72	0.44	43.6
SouthWest: The Crescent														
2	T1	542	7.0	444	7.1	0.168	2.9	LOS A	4.1	30.7	0.30	0.26	0.30	50.6
32	R2	1296	8.3	1062	8.4	* 1.083	108.1	LOS F	52.2	391.7	0.98	1.15	1.57	11.0
Approach		1838	7.9	1506[N1]	8.0	1.083	77.1	LOS F	52.2	391.7	0.78	0.89	1.19	13.2
All Vehicles		6988	6.8	5837[N1]	8.1	1.083	83.9	LOS F	52.2	391.7	0.78	1.13	1.26	10.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	238.0	220.5	0.93
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	224.5	204.3	0.91
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	231.3	212.4	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[AM] [15% car 2030 with bays] [Cruise]The Crescent / Victoria Road (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	1432	5.6	1432	5.6	* 1.232	282.2	LOS F	75.3	552.5	1.00	1.75	2.72	5.8
6	R2	315	11.0	315	11.0	0.159	27.8	LOS B	4.2	31.0	0.64	0.72	0.64	31.9
Approach		1746	6.6	1746	6.6	1.232	236.4	LOS F	75.3	552.5	0.94	1.56	2.35	6.8
North: Victoria Road														
7	L2	1524	7.0	1329	7.1	0.754	5.9	LOS A	0.0	0.0	0.00	0.52	0.00	51.9
9a	R1	1805	6.2	1572	6.3	* 1.253	287.9	LOS F	37.6	277.4	1.00	1.76	2.74	2.2
Approach		3329	6.6	2901 N1	6.7	1.253	158.8	LOS F	37.6	277.4	0.54	1.19	1.48	8.1
SouthWest: The Crescent														
30a	L1	942	6.4	844	6.3	0.404	33.1	LOS C	16.6	122.7	0.83	0.80	0.83	10.8
Approach		942	6.4	844 N1	6.3	0.404	33.1	LOS C	16.6	122.7	0.83	0.80	0.83	10.8
All Vehicles		6018	6.6	5491 N1	7.2	1.253	164.2	LOS F	75.3	552.5	0.71	1.25	1.66	7.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	54.3	LOS E	0.2	0.2	0.95	0.95	230.0	210.9	0.92
SouthWest: The Crescent											
P8	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	240.8	223.8	0.93
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	235.4	217.4	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

\Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

MOVEMENT SUMMARY

Site: 0652 [[AM] [15% car 2030 with bays] [Cruise]Victoria Road / Robert Street (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	438	5.3	403	5.3	0.094	1.4	LOS A	0.6	4.7	0.09	0.07	0.09	58.1
3a	R1	715	9.1	660	9.3	* 1.147	141.1	LOS F	36.7	277.4	1.00	1.33	1.82	4.5
Approach		1153	7.7	1063 N1	7.8	1.147	88.1	LOS F	36.7	277.4	0.65	0.86	1.16	12.1
NorthEast: Robert St														
24a	L1	1011	8.3	1011	8.3	1.079	151.2	LOS F	38.1	285.6	1.00	1.64	1.97	4.1
26b	R3	83	35.4	83	35.4	* 1.079	165.1	LOS F	0.9	8.0	1.00	1.54	2.28	11.5
Approach		1094	10.4	1094	10.4	1.079	152.2	LOS F	38.1	285.6	1.00	1.63	1.99	4.8
North: Victoria Rd N														
7b	L3	128	23.8	128	23.8	0.150	12.8	LOS A	2.4	20.4	0.35	0.69	0.35	42.9
8	T1	2320	5.9	2320	5.9	* 1.181	225.6	LOS F	160.9	1183.4	1.00	2.03	2.41	7.1
Approach		2448	6.8	2448	6.8	1.181	214.4	LOS F	160.9	1183.4	0.97	1.96	2.30	7.4
All Vehicles		4695	7.9	4605 N1	8.0	1.181	170.5	LOS F	160.9	1183.4	0.90	1.63	1.97	7.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	236.4	218.5	0.92
All Pedestrians		53	54.3	LOS E	0.2	0.2	0.95	0.95	236.4	218.5	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[AM] [15% car 2030 with bays] [Cruise]Robert Street / Mullens Street (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E															
4a	L1	349	19.3	349	19.3	0.911	44.8	LOS D	22.4	183.0	0.99	1.29	1.67	10.9
6	R2	179	17.6	179	17.6	* 0.983	63.4	LOS E	8.3	67.3	1.00	1.46	2.24	13.6
Approach		528	18.7	528	18.7	0.983	51.1	LOS D	22.4	183.0	0.99	1.35	1.86	12.1
North: Mullens St															
7	L2	86	29.3	86	29.3	0.115	11.4	LOS A	1.3	11.1	0.52	0.62	0.52	25.3
9a	R1	743	5.9	743	5.9	* 0.995	70.7	LOS F	26.6	195.8	1.00	1.55	2.13	7.3
Approach		829	8.4	829	8.4	0.995	64.5	LOS E	26.6	195.8	0.95	1.45	1.96	7.9
SouthWest: Robert St															
30a	L1	464	5.9	407	6.0	0.348	7.8	LOS A	5.4	39.7	0.48	0.64	0.48	32.1
32a	R1	378	17.8	334	18.6	* 1.046	102.5	LOS F	22.2	180.2	1.00	1.80	2.63	5.5
Approach		842	11.3	741 N1	11.7	1.046	50.5	LOS D	22.2	180.2	0.72	1.16	1.45	13.1
All Vehicles		2200	12.0	2099 N1	12.5	1.046	56.2	LOS D	26.6	195.8	0.88	1.32	1.76	10.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: v [[AM] [15% car 2030 with bays] [Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	374	23.9	374	23.9	* 0.452	12.5	LOS A	9.7	82.1	0.48	0.68	0.48	11.9
Approach		374	23.9	374	23.9	0.452	12.5	LOS A	9.7	82.1	0.48	0.68	0.48	11.9
NorthEast: Robert St														
24a	L1	32	6.7	32	6.7	0.085	44.6	LOS D	1.5	11.0	0.84	0.70	0.84	20.6
5	T1	155	6.1	155	6.1	* 0.443	45.3	LOS D	8.0	59.1	0.92	0.75	0.92	20.1
Approach		186	6.2	186	6.2	0.443	45.2	LOS D	8.0	59.1	0.91	0.75	0.91	20.2
SouthWest: Robert St														
11	T1	107	5.9	93	6.0	0.242	42.9	LOS D	4.6	33.6	0.88	0.69	0.88	23.6
32b	R3	356	24.3	312	25.4	0.348	12.3	LOS A	7.3	62.5	0.44	0.69	0.44	23.6
Approach		463	20.0	405 N1	20.9	0.348	19.3	LOS B	7.3	62.5	0.54	0.69	0.54	23.6
All Vehicles		1023	18.9	965 N1	20.1	0.452	21.7	LOS B	9.7	82.1	0.59	0.70	0.59	20.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Port Access Road											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	228.1	208.6	0.91
NorthEast: Robert St											
P2	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	232.5	213.9	0.92
All Pedestrians		105	54.3	LOS E	0.2	0.2	0.95	0.95	230.3	211.3	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 5018 [[AM] [15% car 2030 with bays] [Cruise]City West Link / M8 Motorway (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

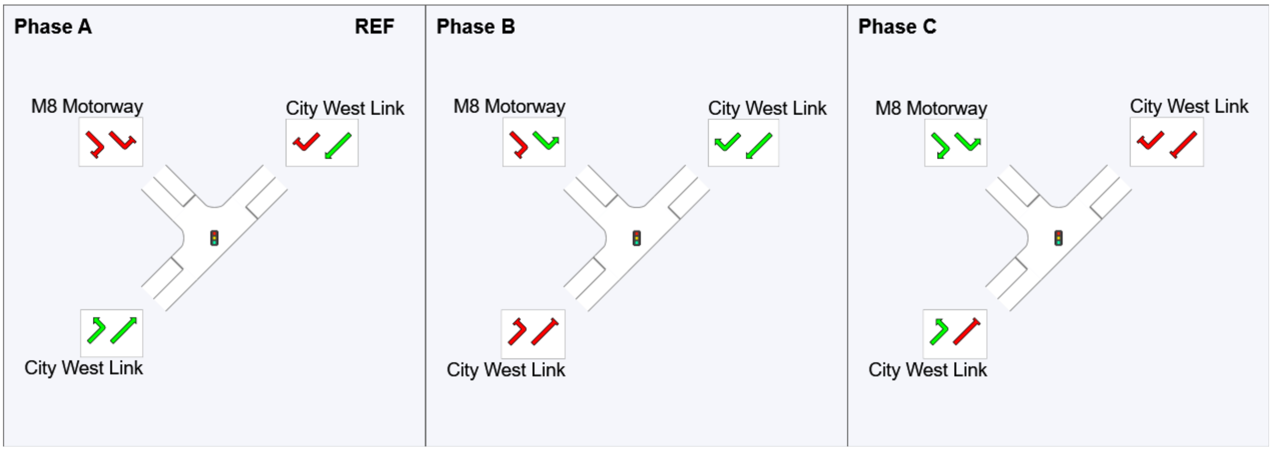
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

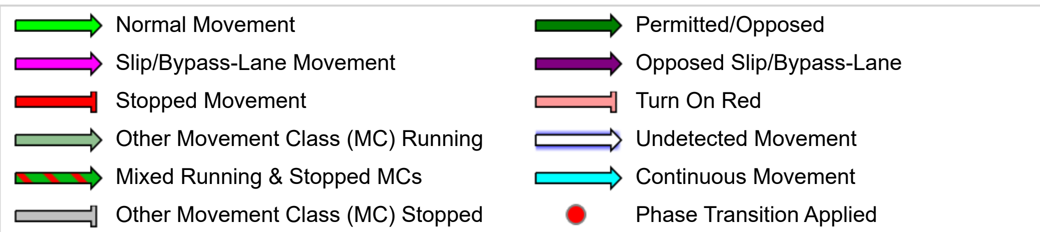
Phase	A	B	C
Phase Change Time (sec)	58	120	34
Green Time (sec)	56	28	18
Phase Time (sec)	62	34	24
Phase Split	52%	28%	20%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 1208 [[AM] [15% car 2030 with bays] [Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

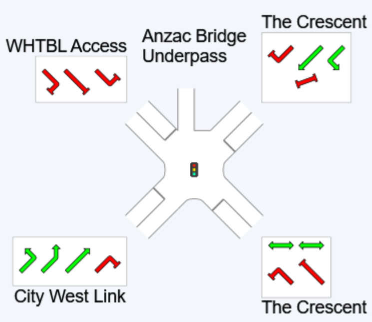
Phase Timing Summary

Phase	A	D	E	G	G2
Phase Change Time (sec)	39	91	108	7	25
Green Time (sec)	46	11	13	12	8
Phase Time (sec)	52	17	19	18	14
Phase Split	43%	14%	16%	15%	12%

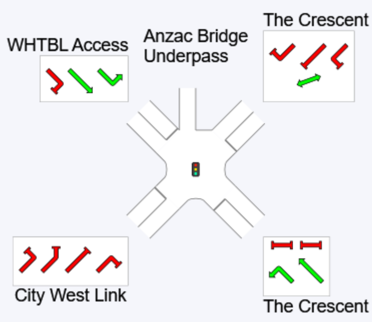
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

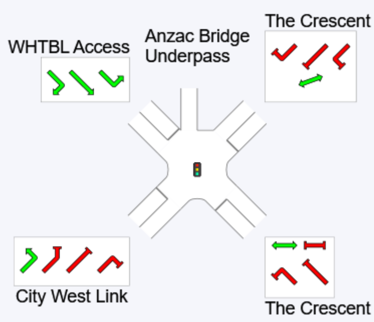
Phase A



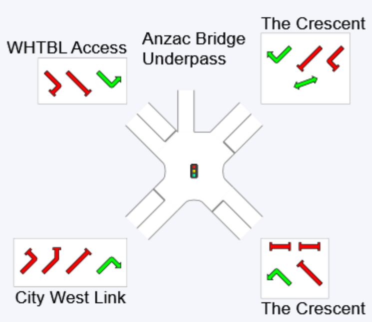
Phase D



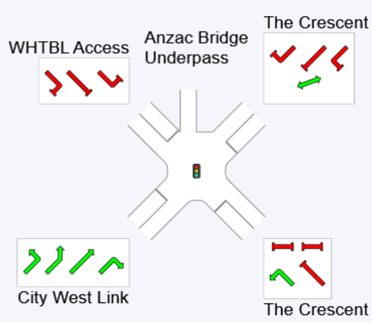
Phase E



Phase G REF



Phase G2 VAR



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[AM] [15% car 2030 with bays] [Cruise]The Crescent / James Craig Road (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

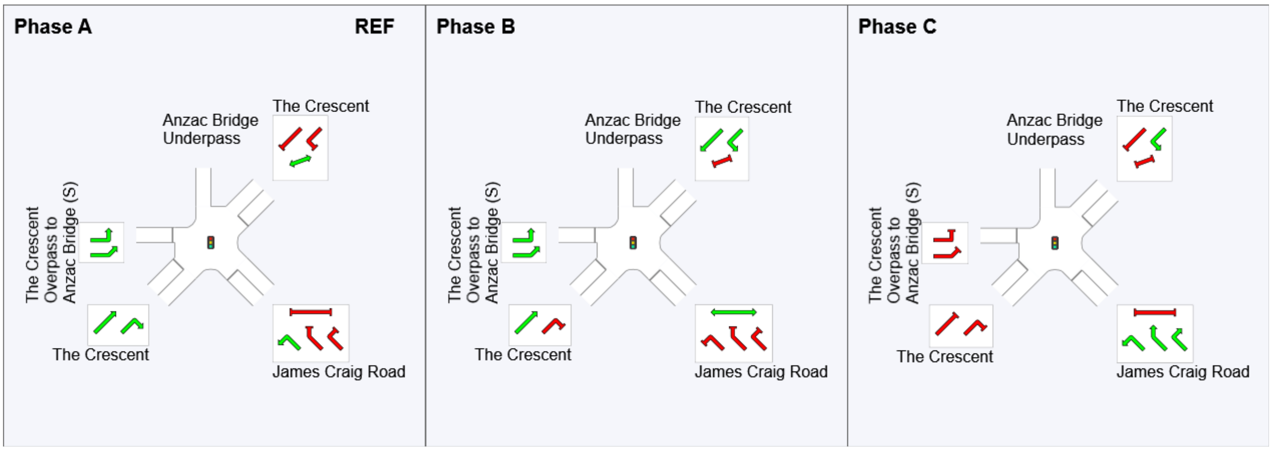
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	91	22	76
Green Time (sec)	45	48	9
Phase Time (sec)	51	54	15
Phase Split	43%	45%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[AM] [15% car 2030 with bays] [Cruise]The Crescent / Victoria Road (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

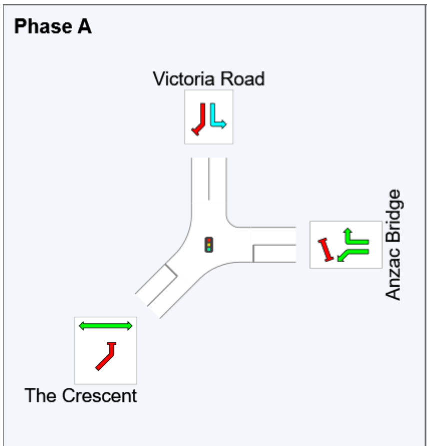
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

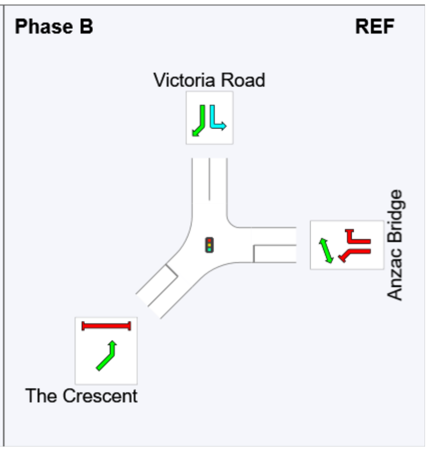
Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	75	13
Green Time (sec)	52	56
Phase Time (sec)	58	62
Phase Split	48%	52%

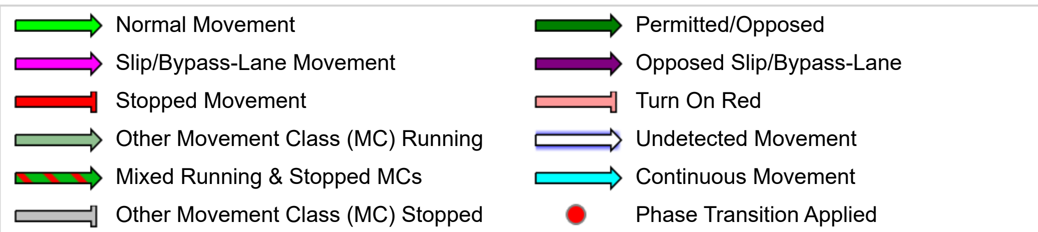
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence





REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 0652 [[AM] [15% car 2030 with bays] [Cruise]Victoria Road / Robert Street (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

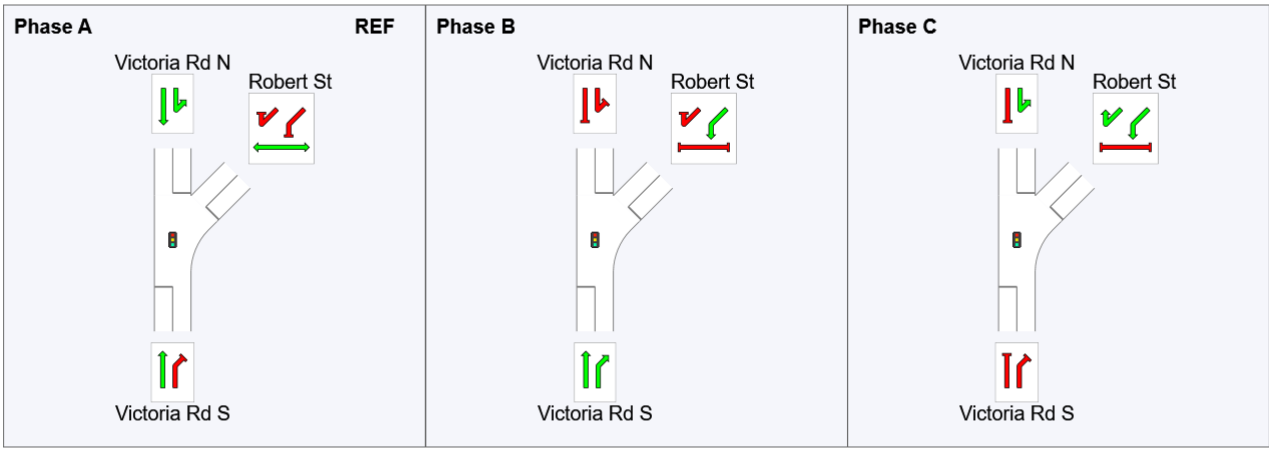
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
(* Variable Phase)

Phase Timing Summary

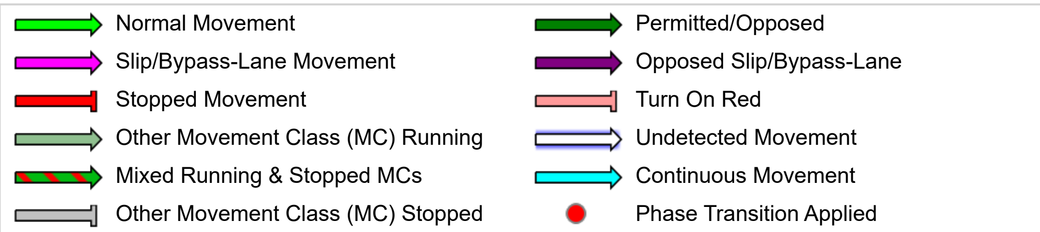
Phase	A	B	C
Phase Change Time (sec)	0	70	99
Green Time (sec)	64	23	15
Phase Time (sec)	70	29	21
Phase Split	58%	24%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



Project: \\global.arup.com\australasia\SYD\Projects\284000\284325-00 Bays West Precinct\Work\Internal\Transport\09 TMAP Traffic Modelling \Models\20221025_2030_TMAP Modelling_v2.5 - 2030 With Stage 1.sip9

PHASING SUMMARY

Site: [[AM] [15% car 2030 with bays] [Cruise]Robert Street / Mullens Street (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

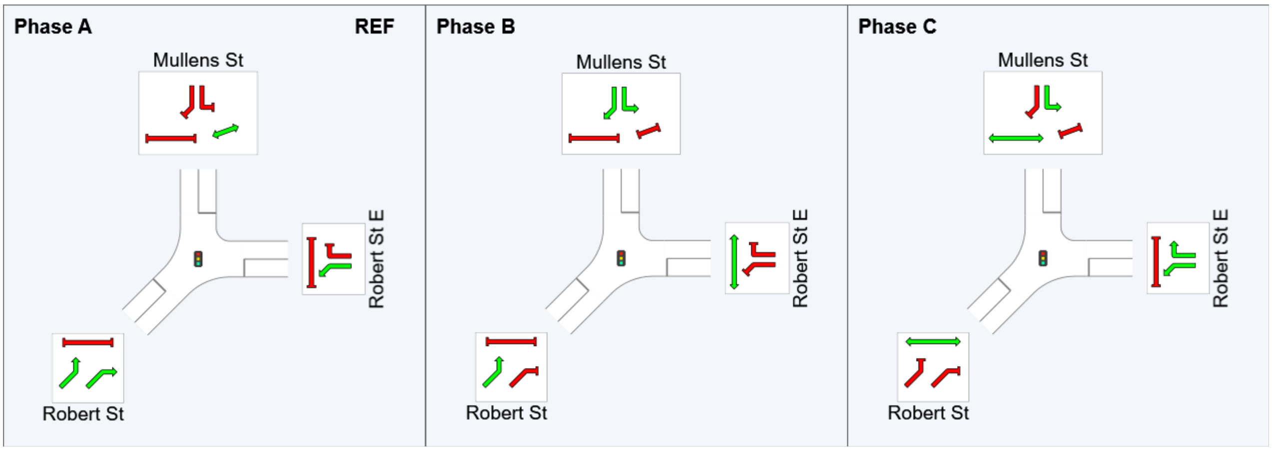
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

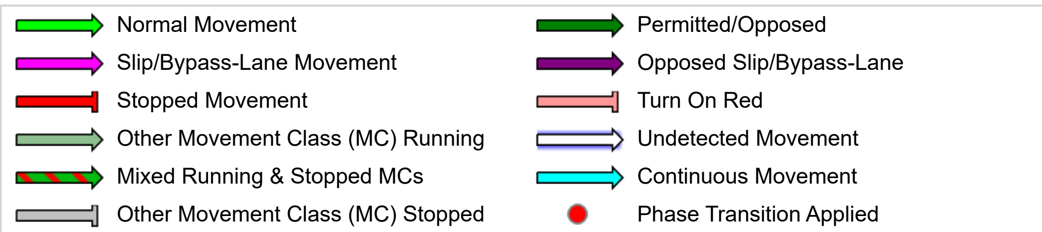
Phase	A	B	C
Phase Change Time (sec)	0	22	45
Green Time (sec)	16	17	9
Phase Time (sec)	22	23	15
Phase Split	37%	38%	25%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: v [[AM] [15% car 2030 with bays] [Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [AM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[AM] (Network Folder: 2030 - 15% Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 120 seconds (Network User-Given Cycle Time)

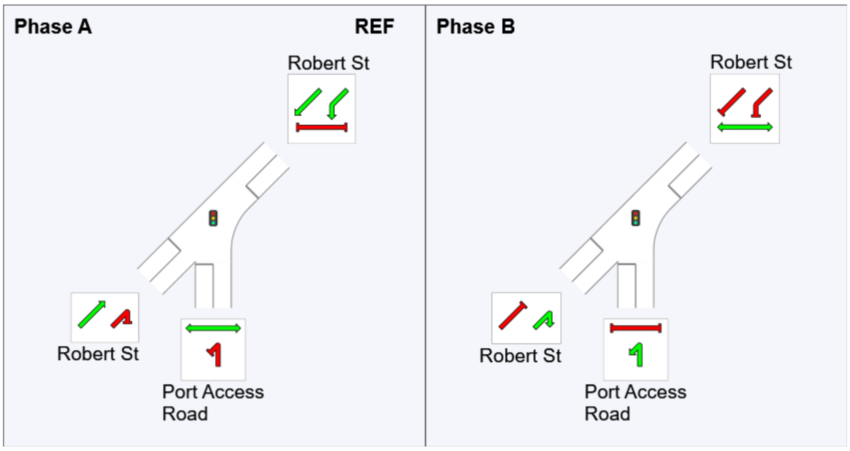
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

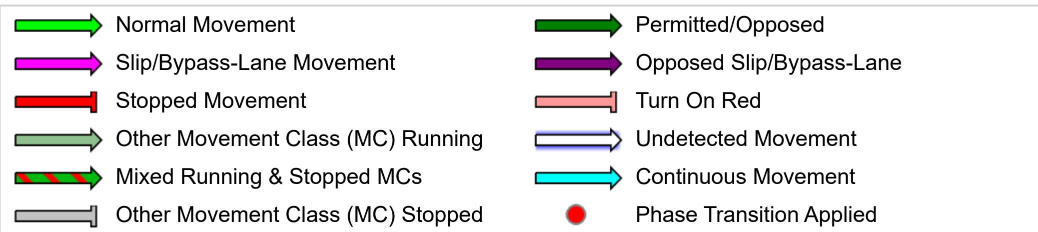
Phase	A	B
Phase Change Time (sec)	0	31
Green Time (sec)	25	83
Phase Time (sec)	31	89
Phase Split	26%	74%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 5018 [[PM] [15% car 2030 with bays] [Cruise]City West Link / M8 Motorway (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
NorthEast: City West Link														
25	T1	1800	3.0	1480	3.1	0.518	4.7	LOS A	14.8	106.6	0.43	0.39	0.43	54.4
26	R2	921	6.4	758	6.5	* 0.728	37.5	LOS C	15.8	117.1	0.98	0.87	1.01	32.6
Approach		2721	4.2	2237 N1	4.3	0.728	15.8	LOS B	15.8	117.1	0.61	0.55	0.63	44.4
NorthWest: M8 Motorway														
27	L2	756	7.1	756	7.1	0.458	22.5	LOS B	11.1	82.4	0.72	0.79	0.72	34.8
29	R2	134	3.1	134	3.1	* 0.670	50.2	LOS D	6.1	43.6	1.00	0.84	1.10	32.6
Approach		889	6.5	889	6.5	0.670	26.7	LOS B	11.1	82.4	0.76	0.80	0.77	34.2
SouthWest: City West Link														
30	L2	456	3.0	456	3.0	0.447	17.7	LOS B	11.5	82.8	0.62	0.76	0.62	46.0
31	T1	1601	3.0	1601	3.0	* 0.725	25.5	LOS B	20.2	144.8	0.91	0.81	0.92	33.0
Approach		2057	3.0	2057	3.0	0.725	23.8	LOS B	20.2	144.8	0.85	0.80	0.85	36.7
All Vehicles		5667	4.1	5184 N1	4.5	0.728	20.9	LOS B	20.2	144.8	0.73	0.69	0.74	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1208 [[PM] [15% car 2030 with bays] [Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: The Crescent														
21	L2	566	3.0	566	3.0	* 0.977	70.6	LOS F	30.4	218.0	1.00	1.23	1.60	10.7
22	T1	224	2.8	224	2.8	0.665	46.3	LOS D	5.2	37.0	1.00	0.83	1.11	30.1
Approach		791	2.9	791	2.9	0.977	63.7	LOS E	30.4	218.0	1.00	1.12	1.46	16.5
NorthEast: The Crescent														
24	L2	1617	3.0	1170	3.2	* 0.978	75.6	LOS F	38.7	278.5	1.00	1.17	1.60	16.9
25	T1	1723	4.8	1249	5.2	0.674	10.0	LOS A	10.3	75.3	0.52	0.45	0.52	37.5
26	R2	165	8.9	120	9.6	0.153	44.0	LOS D	2.6	19.9	1.00	0.77	1.00	30.6
Approach		3505	4.2	2539 N1	4.5	0.978	41.8	LOS C	38.7	278.5	0.76	0.80	1.04	21.8
NorthWest: WHTBL Access														
27	L2	262	6.8	262	6.8	0.284	18.0	LOS B	6.3	46.6	0.59	0.74	0.59	38.0
28	T1	120	2.6	120	2.6	0.090	29.2	LOS C	1.4	9.9	0.82	0.61	0.82	36.9
29	R2	429	2.9	429	2.9	* 1.022	100.7	LOS F	10.1	72.2	1.00	1.25	2.15	14.3
Approach		812	4.2	812	4.2	1.022	63.4	LOS E	10.1	72.2	0.84	0.99	1.45	20.7
SouthWest: City West Link														
30	L2	297	2.8	297	2.8	0.401	17.7	LOS B	6.5	46.5	0.84	0.80	0.84	42.8
30a	L1	918	3.0	918	3.0	0.755	39.0	LOS C	20.2	145.2	1.00	0.89	1.03	24.9
31	T1	976	6.1	976	6.1	0.797	42.1	LOS C	22.0	161.8	1.00	0.91	1.05	17.4
32	R2	164	3.2	164	3.2	0.196	36.9	LOS C	3.2	23.1	0.92	0.77	0.92	26.6
Approach		2355	4.3	2355	4.3	0.797	37.4	LOS C	22.0	161.8	0.97	0.88	1.01	24.5
All Vehicles		7462	4.1	6496 N1	4.7	1.022	45.6	LOS D	38.7	278.5	0.88	0.89	1.13	21.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: The Crescent											
P51	Stage 1	53	20.5	LOS C	0.1	0.1	0.87	0.87	196.3	210.9	1.07
P52	Stage 2	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
NorthEast: The Crescent											
P6B	Slip/	53	39.3	LOS D	0.1	0.1	0.94	0.94	212.3	207.6	0.98

Bypass										
All Pedestrians	158	33.0	LOS D	0.1	0.1	0.91	0.91	207.9	209.8	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3033 [[PM] [15% car 2030 with bays] [Cruise]The Crescent / James Craig Road (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: James Craig Road														
21	L2	774	8.3	774	8.3	* 1.086	143.6	LOS F	76.7	574.9	1.00	1.42	2.23	3.8
23a	R1	28	3.7	28	3.7	0.278	50.3	LOS D	1.4	10.2	0.98	0.72	0.98	26.9
23	R2	29	3.6	29	3.6	0.278	52.5	LOS D	1.4	10.2	0.98	0.72	0.98	9.9
Approach		832	8.0	832	8.0	1.086	137.2	LOS F	76.7	574.9	1.00	1.37	2.14	4.4
NorthEast: The Crescent														
24	L2	26	4.0	19	4.0	0.022	18.3	LOS B	0.4	2.6	0.45	0.63	0.45	27.6
8	T1	2732	3.0	1978	3.0	* 1.083	129.0	LOS F	22.7	163.2	1.00	1.72	2.13	3.1
Approach		2758	3.0	1997 N1	3.0	1.083	128.0	LOS F	22.7	163.2	0.99	1.71	2.12	3.2
West: The Crescent Overpass to Anzac Bridge (S)														
10	L2	569	3.0	569	3.0	0.395	8.4	LOS A	7.2	51.7	0.32	0.68	0.32	47.9
10a	L1	378	3.1	378	3.1	0.455	7.4	LOS A	5.2	37.6	0.34	0.63	0.34	35.4
Approach		947	3.0	947	3.0	0.455	8.0	LOS A	7.2	51.7	0.33	0.66	0.33	45.6
SouthWest: The Crescent														
2	T1	959	3.1	959	3.1	0.477	5.9	LOS A	15.3	110.2	0.61	0.56	0.61	43.4
32	R2	279	17.7	279	17.7	0.256	25.1	LOS B	4.0	32.1	0.61	0.71	0.61	28.7
Approach		1238	6.4	1238	6.4	0.477	10.2	LOS A	15.3	110.2	0.61	0.59	0.61	37.4
All Vehicles		5775	4.4	5014 N1	5.1	1.086	77.8	LOS F	76.7	574.9	0.77	1.18	1.41	9.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: James Craig Road											
P5	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	223.0	220.5	0.99
NorthEast: The Crescent											
P3B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	209.5	204.3	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	216.3	212.4	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 0651 [[PM] [15% car 2030 with bays] [Cruise]The Crescent / Victoria Road (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Anzac Bridge														
4a	L1	884	3.0	884	3.0	0.691	26.7	LOS B	18.1	130.0	0.84	0.84	0.88	32.2
6	R2	2606	3.6	2606	3.6	* 1.441	444.9	LOS F	218.2	1566.6	1.00	2.45	4.24	4.1
Approach		3491	3.4	3491	3.4	1.441	339.0	LOS F	218.2	1566.6	0.96	2.04	3.39	5.0
North: Victoria Road														
7	L2	660	5.3	575	5.6	0.178	6.0	LOS A	0.0	0.0	0.00	0.53	0.00	52.7
9a	R1	1874	3.0	1626	3.0	* 1.462	460.1	LOS F	38.6	277.4	1.00	2.54	4.35	1.4
Approach		2534	3.6	2200 N1	3.7	1.462	341.5	LOS F	38.6	277.4	0.74	2.01	3.22	3.1
SouthWest: The Crescent														
30a	L1	1366	3.0	1366	3.0	0.737	31.6	LOS C	22.0	158.0	0.95	0.88	0.99	11.2
Approach		1366	3.0	1366	3.0	0.737	31.6	LOS C	22.0	158.0	0.95	0.88	0.99	11.2
All Vehicles		7391	3.4	7057 N1	3.6	1.462	280.3	LOS F	218.2	1566.6	0.89	1.81	2.87	4.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Anzac Bridge											
P2B	Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	215.0	210.9	0.98
SouthWest: The Crescent											
P8	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	225.8	223.8	0.99
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	220.4	217.4	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 0652 [[PM] [15% car 2030 with bays] [Cruise]Victoria Road / Robert Street (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Victoria Rd S														
2	T1	2102	3.0	1681	3.0	0.430	6.5	LOS A	12.4	88.8	0.48	0.43	0.48	51.8
3a	R1	1565	4.0	1255	4.2	1.192	216.9	LOS F	38.3	277.4	1.00	1.83	2.94	2.8
Approach		3667	3.4	2936 N1	3.5	1.192	96.4	LOS F	38.3	277.4	0.70	1.03	1.53	12.9
NorthEast: Robert St														
24a	L1	1405	4.0	1261	4.2	* 0.748	13.8	LOS A	39.3	284.7	0.70	0.74	0.72	22.4
26b	R3	209	10.6	189	11.3	1.169	215.5	LOS F	22.0	168.6	1.00	1.98	3.02	9.3
Approach		1615	4.9	1451 N1	5.1	1.169	40.2	LOS C	39.3	284.7	0.74	0.90	1.02	15.0
North: Victoria Rd N														
7b	L3	203	10.9	203	10.9	1.202	233.3	LOS F	42.9	318.8	1.00	1.83	3.09	6.7
8	T1	1129	3.0	1129	3.0	* 1.202	234.8	LOS F	59.2	424.7	1.00	1.96	3.10	6.7
Approach		1333	4.2	1333	4.2	1.202	234.6	LOS F	59.2	424.7	1.00	1.94	3.10	6.7
All Vehicles		6615	3.9	5719 N1	4.5	1.202	114.4	LOS F	59.2	424.7	0.78	1.21	1.77	10.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99
All Pedestrians		53	39.3	LOS D	0.1	0.1	0.94	0.94	221.4	218.5	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: [[PM] [15% car 2030 with bays] [Cruise]Robert Street / Mullens Street (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Robert St E														
4a	L1	384	11.2	384	11.2	0.818	29.7	LOS C	12.5	95.9	0.98	1.02	1.25	14.4
6	R2	106	16.8	106	16.8	* 0.811	39.8	LOS C	3.6	29.2	1.00	1.00	1.50	18.4
Approach		491	12.4	491	12.4	0.818	31.9	LOS C	12.5	95.9	0.99	1.01	1.30	15.6
North: Mullens St														
7	L2	116	15.5	116	15.5	0.109	7.5	LOS A	1.2	9.6	0.38	0.58	0.38	29.1
9a	R1	1231	3.0	1231	3.0	* 1.152	184.2	LOS F	73.3	526.5	1.00	2.45	3.51	3.1
Approach		1346	4.1	1346	4.1	1.152	169.0	LOS F	73.3	526.5	0.95	2.29	3.24	3.4
SouthWest: Robert St														
30a	L1	1389	3.0	957	3.1	0.925	31.7	LOS C	33.1	237.8	0.71	1.02	1.12	19.9
32a	R1	362	11.9	254	13.6	* 1.140	169.9	LOS F	22.6	176.2	1.00	2.30	3.53	3.5
Approach		1752	4.9	1211 N1	5.3	1.140	60.7	LOS E	33.1	237.8	0.77	1.29	1.63	12.6
All Vehicles		3588	5.6	3048 N1	6.6	1.152	103.9	LOS F	73.3	526.5	0.88	1.69	2.29	6.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Robert St E											
P2	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	202.6	213.9	1.06
North: Mullens St											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	200.9	211.9	1.05
P3B	Slip/ Bypass	53	24.4	LOS C	0.1	0.1	0.90	0.90	194.6	204.3	1.05
SouthWest: Robert St											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	203.7	215.2	1.06
All Pedestrians		211	24.4	LOS C	0.1	0.1	0.90	0.90	200.5	211.3	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: v [[PM] [15% car 2030 with bays] [Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Port Access Road														
1b	L3	347	16.4	347	16.4	* 0.373	10.8	LOS A	6.7	53.8	0.48	0.68	0.48	13.1
Approach		347	16.4	347	16.4	0.373	10.8	LOS A	6.7	53.8	0.48	0.68	0.48	13.1
NorthEast: Robert St														
24a	L1	32	3.3	32	3.3	0.086	35.3	LOS C	1.1	8.2	0.85	0.70	0.85	22.9
5	T1	142	3.0	142	3.0	* 0.375	34.3	LOS C	5.5	39.6	0.91	0.73	0.91	22.9
Approach		174	3.0	174	3.0	0.375	34.4	LOS C	5.5	39.6	0.90	0.73	0.90	22.9
SouthWest: Robert St														
11	T1	152	2.8	106	2.7	0.278	33.5	LOS C	4.0	28.7	0.89	0.70	0.89	25.9
32b	R3	326	17.4	233	19.4	0.257	10.7	LOS A	4.1	33.4	0.43	0.68	0.43	24.8
Approach		478	12.8	339 N1	14.2	0.278	17.8	LOS B	4.1	33.4	0.57	0.69	0.57	25.4
All Vehicles		999	12.3	860 N1	14.3	0.375	18.3	LOS B	6.7	53.8	0.60	0.69	0.60	22.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Port Access Road											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	213.1	208.6	0.98
NorthEast: Robert St											
P2	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	217.5	213.9	0.98
All Pedestrians		105	39.3	LOS D	0.1	0.1	0.94	0.94	215.3	211.3	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 5018 [[PM] [15% car 2030 with bays] [Cruise]City West Link / M8 Motorway (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

City West Link / M8 Motorway
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

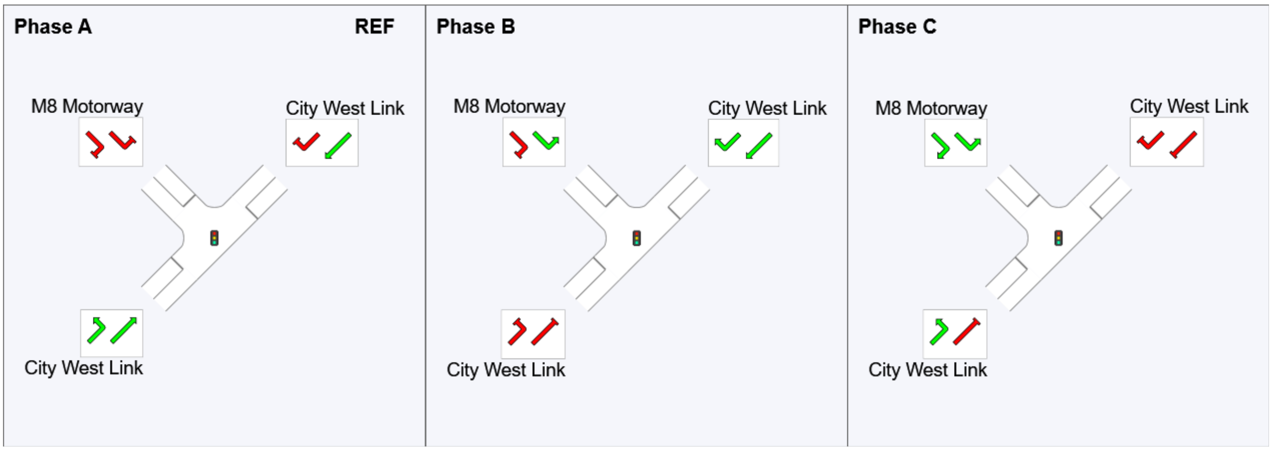
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	41	74
Green Time (sec)	35	27	10
Phase Time (sec)	41	33	16
Phase Split	46%	37%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 1208 [[PM] [15% car 2030 with bays] [Cruise]City West Link / The Crescent / WHTBL Access (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

City West Link / The Crescent / WHTBL Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase G
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

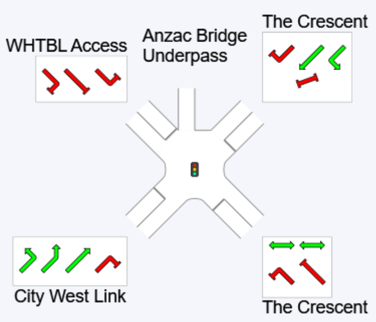
Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	71	17	31	44
Green Time (sec)	30	8	7	21
Phase Time (sec)	36	14	13	27
Phase Split	40%	16%	14%	30%

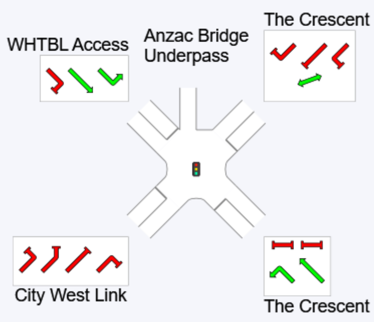
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

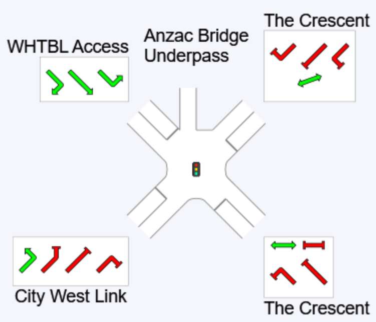
Phase A



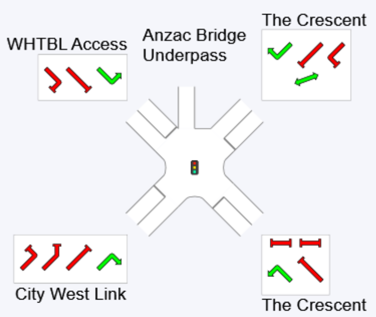
Phase D



Phase E



Phase G **REF**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 3033 [[PM] [15% car 2030 with bays] [Cruise]The Crescent / James Craig Road (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

The Crescent / James Craig Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

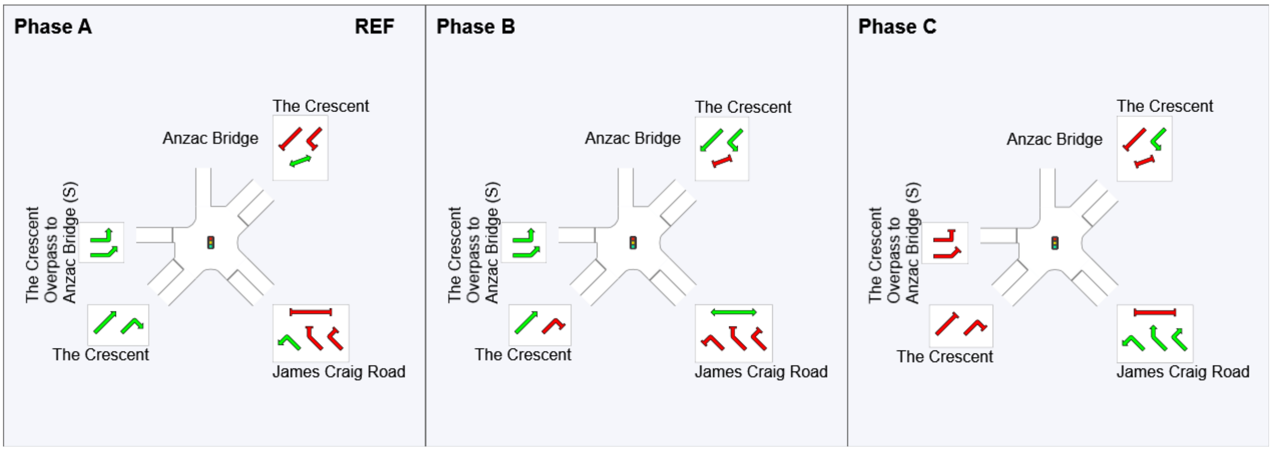
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading RT
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	13	54	1
Green Time (sec)	35	31	6
Phase Time (sec)	41	37	12
Phase Split	46%	41%	13%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 0651 [[PM] [15% car 2030 with bays] [Cruise]The Crescent / Victoria Road (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

The Crescent / Victoria Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

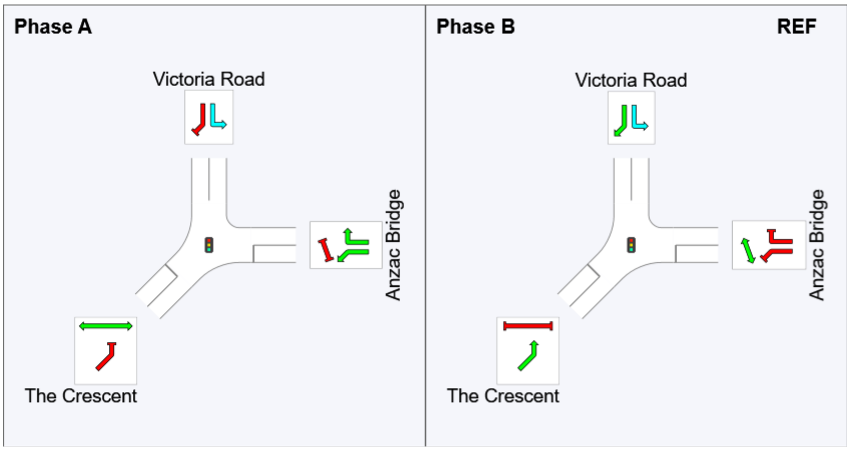
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

Phase	A	B
Phase Change Time (sec)	87	45
Green Time (sec)	42	36
Phase Time (sec)	48	42
Phase Split	53%	47%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: 0652 [[PM] [15% car 2030 with bays] [Cruise]Victoria Road / Robert Street (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

Victoria Road / Robert Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C, D*
(* Variable Phase)

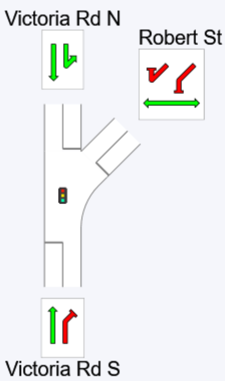
Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	32	57	69	1
Green Time (sec)	19	6	16	25
Phase Time (sec)	25	12	22	31
Phase Split	28%	13%	24%	34%

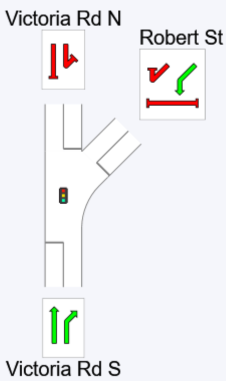
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence

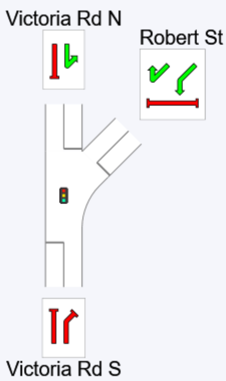
Phase A **REF**



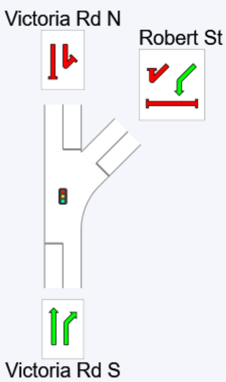
Phase B



Phase C



Phase D **VAR**



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: [[PM] [15% car 2030 with bays] [Cruise]Robert Street / Mullens Street (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

Robert Street / Mullens Street
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Isolated   Cycle Time = 60 seconds (Site User-Given Cycle Time)

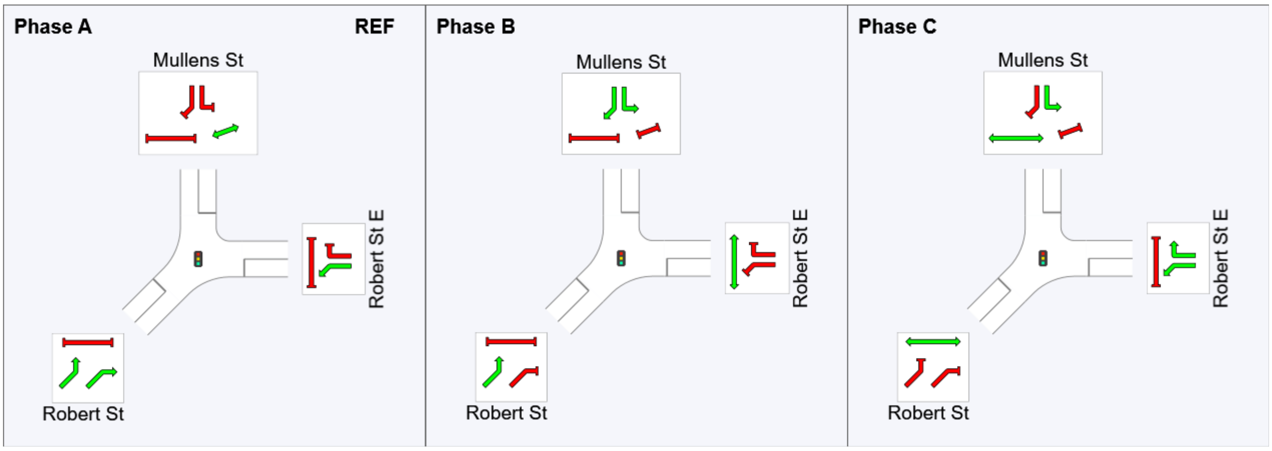
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	14	47
Green Time (sec)	8	27	7
Phase Time (sec)	14	33	13
Phase Split	23%	55%	22%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

PHASING SUMMARY

Site: v [[PM] [15% car 2030 with bays] [Cruise]Robert Street / Port Access Road - Conversion (Site Folder: [PM] [15% car 2030 with bays] [Cruise])]

Network: N101 [[PM] (Network Folder: 2030 - 15% Cruise)]

Robert Street / Port Access Road
Site Category: -
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated   Cycle Time = 90 seconds (Network User-Given Cycle Time)

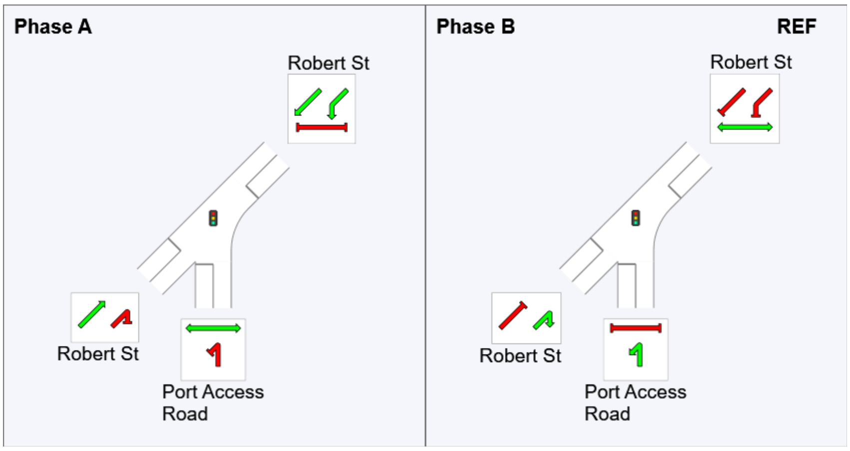
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Reference Phase: Phase B
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Summary

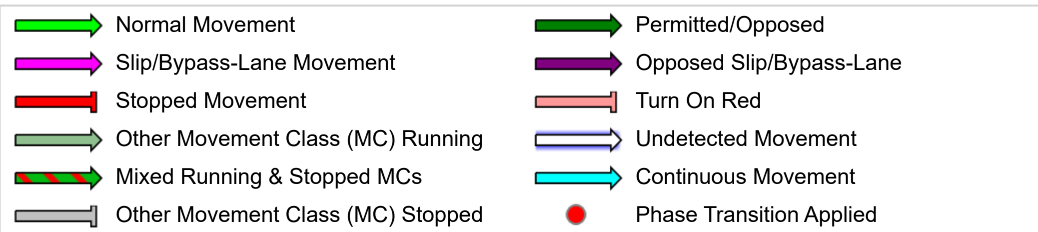
Phase	A	B
Phase Change Time (sec)	66	0
Green Time (sec)	18	60
Phase Time (sec)	24	66
Phase Split	27%	73%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



Appendix B

Preliminary Delivery and Service Plan (DPS)

Currently under preparation.