

Westmead Catholic Community Education Campus

Traffic Modelling Assessment Report

Department of Planning, Industry and Environment

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1. INTRODUCTION

1.1 Background

The Westmead Catholic Community (WCC) Education Precinct is seeking approval for expanded use of their precinct. A number of additional uses have been identified with the key peak hour traffic generating components include:

- Increased capacity of the Primary School of up to 1,680 students
- A Catholic Early Learning Centre (CELC) with capacity for up to 200 children
- An Out of School Hours (OOSH) facility.

The proposed development has been identified as a State Significant Development (SSD-10383). The proponent prepared a Transport & Accessibility Impact Assessment (TAIA) report which was submitted to the Department of Planning, Industry and Environment (DPIE). DPIE subsequently engaged Bitzios Consulting to undertake a peer review of the TAIA report and associated traffic models prepared by The Transport Planning Partnership.

Bitzios Consulting's review identified a number of issues with the traffic assessment report with key items including:

- Underlying assumptions made in the Development Traffic Generation and Distribution
- Calculation of background traffic growths
- SIDRA traffic modelling.

1.2 Purpose of this Report

Bitzios Consulting was subsequently engaged by DPIE to address these key issues. This report summarises the outcomes of the updated traffic analysis. It should be noted that this report only includes an assessment of the private vehicular traffic component. Other modes of transport including public transport and active transport were not part of the scope of this report.

1.3 Scope of Works

The scope of works included the following tasks as detailed in this report:

- Re-calibrate and re-validate the 2018 base SIDRA model to the *Transport for NSW (TfNSW) Traffic Modelling Guidelines (2013)* and other industry guidelines
- Update the development trip generation and distribution to address the issues identified in Bitzios Consulting's peer review
- Update the future year SIDRA models to reflect the revised trip generation and distribution
- Undertake a sensitivity analysis to understand the level of development traffic that is likely to be serviced by the surrounding road network.

1.4 Study Area

The study area is bounded by Darcy Road in the north, Hawkesbury Road in the east, Alexandra Avenue in the south and Bridge Road in the west. There are 11 key intersections within the study area, seven of which are signal controlled as shown in Figure 1.1.

There are a number of educational institutions located within the study area, including the Western Sydney University Westmead Campus. The other institutions include Mother Teresa Primary School, Catherine McAuley Westmead, which is a Catholic girls' secondary school, and Parramatta Marish High School. In the northern boundary of the study area are Westmead Hospital and Westmead Private Hospital. Both have accesses on Darcy Road.

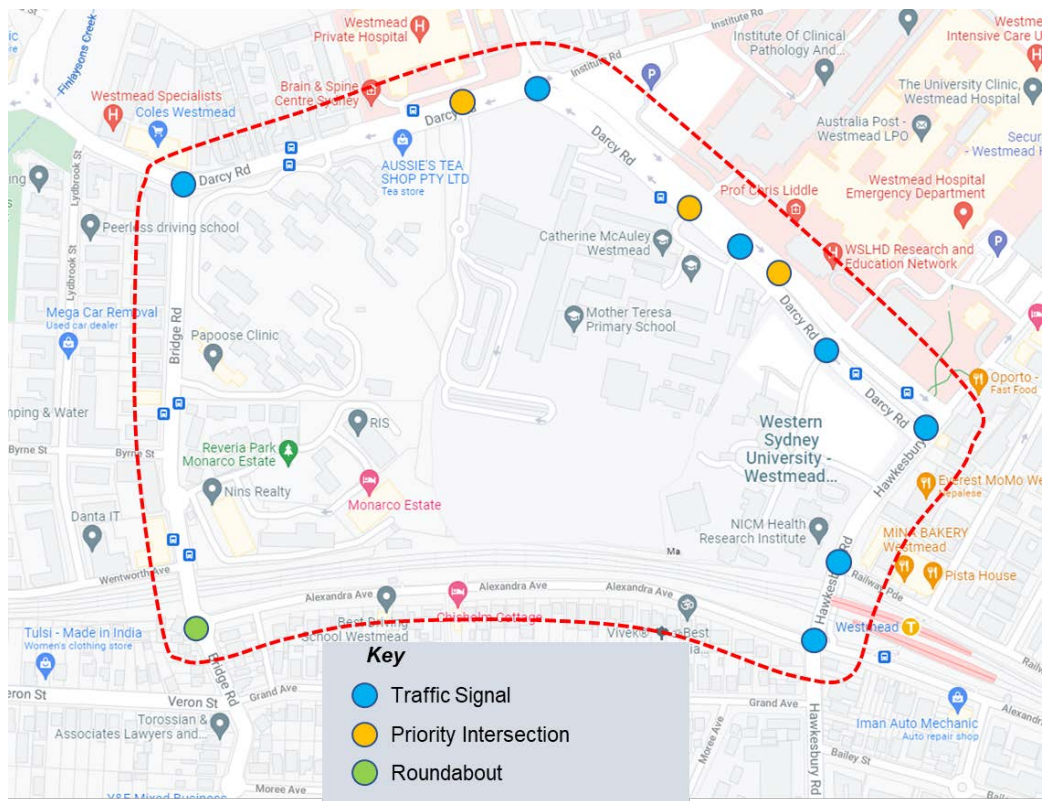


Figure 1.1: Study Area

The TfNSW's Parramatta Light Rail (PLR) Stage 1 is currently being constructed. The Parramatta / Westmead terminus is located east of Hawkesbury Road close to its intersection with Darcy Road. The section of Hawkesbury Road located within the study area is currently undergoing significant transformation, with the Darcy Road / Hawkesbury Road intersection being upgraded to cater for the PLR vehicles.

1.5 Report Structure

The structure of this report is as follows:

- Chapter One: This chapter which discusses the study background, scope of the study and the study area
- Chapter Two: Summarises the SIDRA 2018 Base Model Re-Calibration and Re-Validation
- Chapter Three: Includes underlying assumptions in estimating the future traffic growths
- Chapter Four: Summarises the Do Minimum SIDRA modelling results
- Chapter Five: Includes a summary of modelling assessment with the Development Traffic
- Chapter Six: Summarises the modelling assessment with the Development Traffic and with intersection upgrade works
- Chapter Seven: Includes a sensitivity analysis
- Chapter Eight: Summarises the key modelling outcomes and recommendations from this study

2. SIDRA BASE MODEL RE-CALIBRATION AND RE-VALIDATION

2.1 Overview

The development proponent developed a 2018 Base SIDRA Network model. The base model was used to assess the impact of the development traffic on the study area road network. The model was developed for the AM (7:45-8:45am) and PM (3-4pm) school peak traffic conditions.

Bitzios Consulting's review of the base SIDRA model identified a number of issues with the key items including:

- Calibration parameters
- Traffic signal operation
- Network traffic flows
- Lack of acceptable model validation at key intersections.

The 2018 Base SIDRA network model was updated to address these issues. This section summarises the SIDRA model re-calibration and re-validation. All SIDRA models were recreated using SIDRA Intersection version 9.0 software.

2.2 Data Collation

The proponent of the development commissioned extensive traffic surveys. It was understood that the traffic surveys had been undertaken prior to the commencement of the PLR construction work and intersection upgrade works at Darcy Road/Mons Road/Institute Road. The following traffic data were collated from the proponent of the development:

- **Intersection Turning Count Surveys** at 11 intersections. The data was used to re-calibrate the SIDRA model
- **Queue Length Surveys** at all 11 intersections. The data was used to re-validate SIDRA model
- **SCATS History Data**, controller settings and intersection graphics for all seven signalised intersections. The data was used to re-validate the SIDRA model.

2.2.1 Intersection Turning Count Surveys

The intersection turning count surveys were undertaken at 11 intersections on Wednesday 17 October 2018 as listed in Table 2.1 and also shown in Figure 2.1. The counts were recorded in 15-minute increments and classified into the following vehicle classes:

- Light vehicles
- Heavy vehicles using the general traffic lanes
- Buses using bus lanes and the North-west T-way at relevant intersections.

Table 2.1: Surveyed Intersections

| No. | Intersection | Control Type |
|-----|--|-------------------|
| 1 | Hawkesbury Road / Alexandra Avenue | Signals |
| 2 | Hawkesbury Road / Railway Parade | Signals |
| 3 | Hawkesbury Road / Darcy Road | Signals |
| 4 | Darcy Road / Farm House Road | Signals |
| 5 | Darcy Road / Parramatta Marist HS Access | Priority/driveway |
| 6 | Darcy Road / Westmead Dental Hospital Access | Signals |
| 7 | Darcy Road / Catherine McAuley Access | Priority/driveway |
| 8 | Darcy Road / Mons Road / Institute Road | Signals |
| 9 | Darcy Road / Mother Teresa PS Access | Priority/driveway |
| 10 | Darcy Road / Bridge Road / Coles Westmead Access | Signals |
| 11 | Bridge Road / Alexandra Avenue | Roundabout |

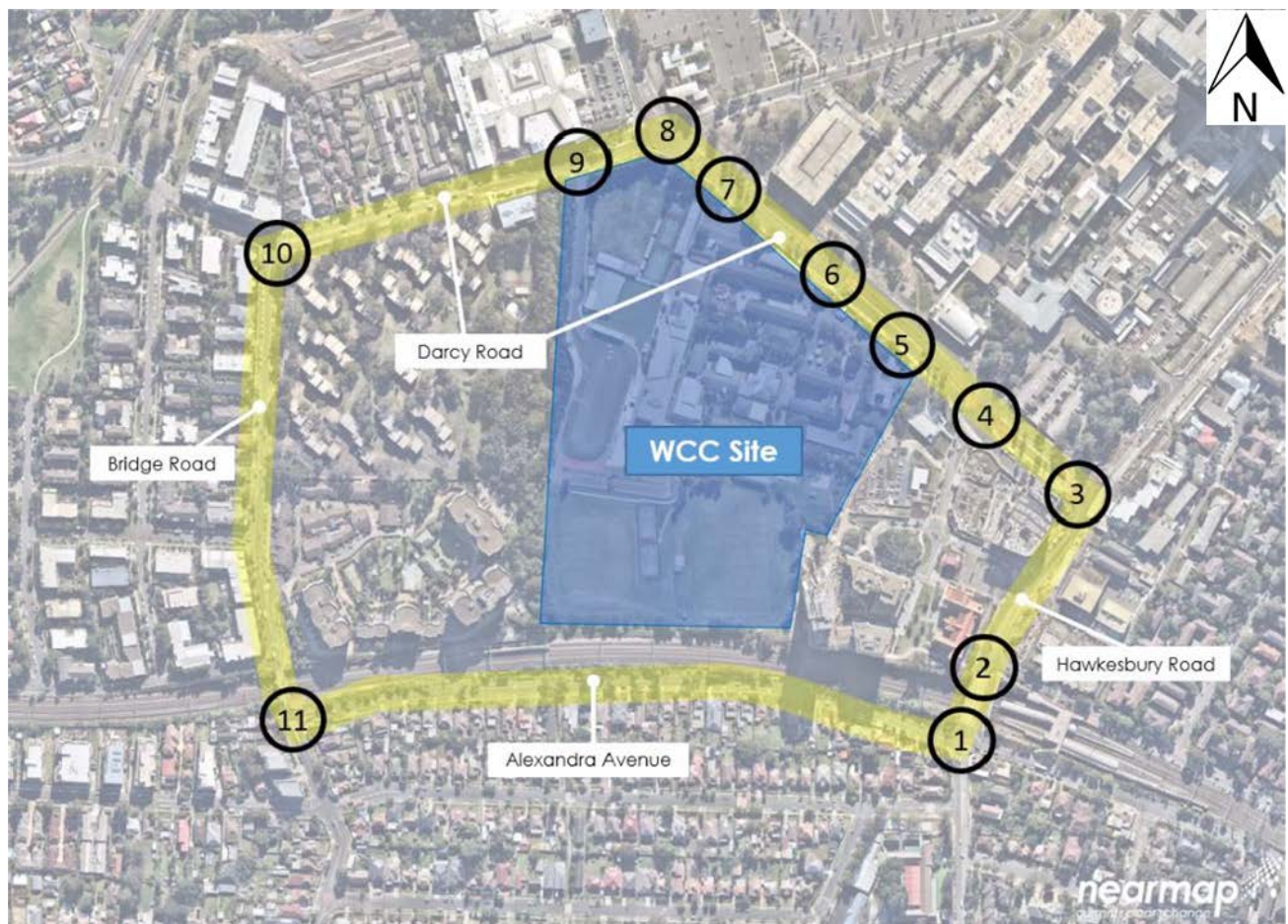


Figure 2.1: Surveyed Intersection Locations

The traffic survey data was analysed by the proponent and presented in their calibration and validation report. Bitzios Consulting review identified the following issues:

- The volume diagram did not consider bus volumes along the T-way
- There were flow mismatches between adjacent intersections.

These issues have been addressed and the resulting AM and PM peak stick diagrams are presented in Figure 2.2 and Figure 2.3. These are also provided in **Appendix A**.

P4803 2 Darcy Road Westmead EIS Peer Review
07-45-08:45 AM Peak
2018 Base - Total Vehicles

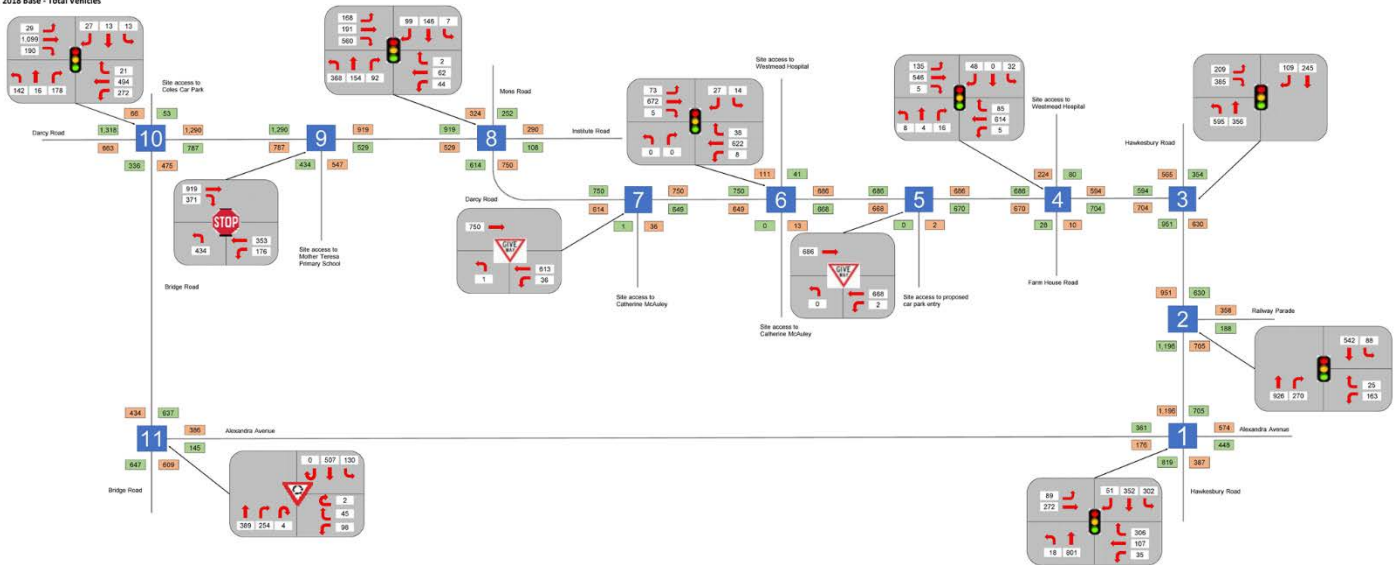


Figure 2.2: Stick Diagram – 2018 AM Peak

P4803 2 Darcy Road Westmead EIS Peer Review
15:00-16:00 PM Peak
2018 Base - Total Vehicles

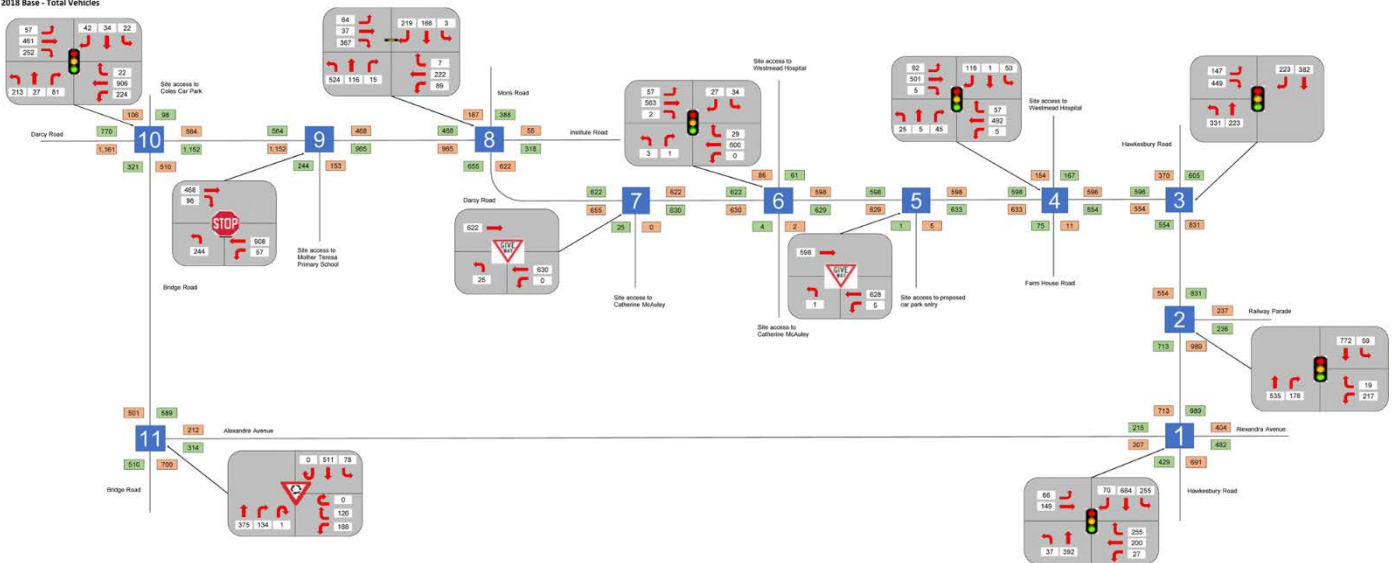


Figure 2.3: Stick Diagram – 2018 PM Peak

2.2.2 Queue Survey Data

Queue length spot checks at the 11 intersections were undertaken by the proponent at the same times as the intersection counts. The queue data was used to validate the SIDRA models.

2.2.3 SCATS Traffic Signal Data

SCATS Intersection Diagnostic Monitor (IDM) data for Wednesday, 17 October 2018 for all seven signalised intersections within the study area were collated from TfNSW for all 24 hours in 15-minute increments.

SCATS data for the seven signalised intersections on were utilised by the proponent for their SIDRA modelling.

The “.LX” file for the region was also obtained. The “.LX” file contains information on SCATS settings including interphase times, phase sequence, pedestrian green time and clearance time, SCATS zone, offsets, high and low cycle time. A list of the signalised intersections is provided in Table 2.2.

Table 2.2: TCS Intersection Within the Study Area

| TCS Site | Intersection | Comments |
|----------|---|---|
| TCS 1571 | Alexandra Avenue / Hawkesbury Road | Two intersections part of a single controller |
| | Hawkesbury Road / Railway Parade | |
| TCS 1631 | Hawkesbury Road / Darcy Road | - |
| TCS 3281 | Darcy Road / Farm House Road | - |
| TCS 3282 | Darcy Road / Westmead Hospital Access | - |
| TCS 2393 | Darcy Road / Mons Road / Institute Road | - |
| TCS 1630 | Darcy Road / Bridge Road /Coles Access | - |

2.3 SIDRA Model Development

2.3.1 SIDRA Network

The SIDRA Network model network was redeveloped using SIDRA Intersection version 9.0 software. Generally, the proponent’s SIDRA model network, developed using SIDRA Intersection version 8.0 software (the latest version at the time of their assessment), was with adequate and detailed. No major issues were identified. Some minor insignificant issues were identified and subsequently fixed (i.e. approach distances and controls). The SIRA network is shown in Figure 2.4.



Figure 2.4: SIDRA Network Model

2.3.2 SCATS Zones

The signalised intersections within the study area are under four separate SCATS controllers:

- **Sub System 44:** Hawkesbury Road intersections with Alexandra Avenue and Railway Parade
- **Sub System 41:** Darcy Road intersections with Hawkesbury Road, Farm House Road and Westmead Dental Hospital Access
- **Sub System 25:** Darcy Road / Institute Road / Mons Road intersection
- **Sub System 25:** Darcy Road / Bridge Road intersection.

A review of the “.LX” file shows that the Hawkesbury Road / Alexandra Avenue / Railway Parade is the reference intersection in the network model and signal offsets of the remaining intersections are determined based on the offset from this key intersection as shown with trailing arrows in Figure 2.5.

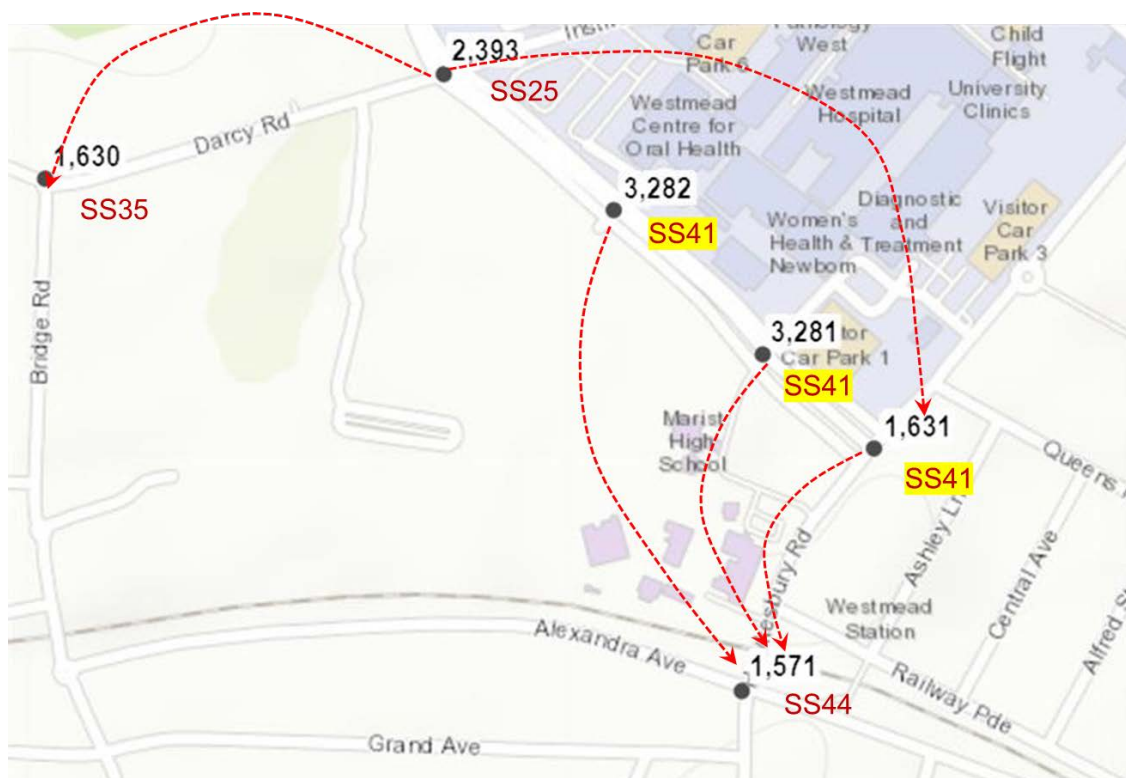


Figure 2.5: SCATS Sub System

2.4 SIDRA Model Re-Calibration

Table 2.3 details the input parameters which were adjusted in the base SIDRA models for calibration purposes based on local traffic operations, including Critical Gap, Area Type Factor and Extra Bunching.

Table 2.3: Base Model Calibration Parameters

| Intersection | Parameter (default value) | AM Peak | PM Peak |
|--|---|--|--|
| Hawkesbury Road / Alexandra Avenue | Extra Bunching (Network Analysis) (Program) | ▪ N Approach: 50% | - |
| | Area Type Factor (1) | ▪ E Approach: 1.1 ▪ W Approach: 1.55 | - |
| | Critical Gap (4.5 sec) | - | ▪ N Approach Right: 4 sec |
| | Follow-up Headway (2.6 sec) | - | ▪ N Approach Right: 2 sec |
| | Arrival Type (Program) | ▪ E Approach All: 5 ▪ S Approach All: 6 | - |
| Hawkesbury Road / Railway Parade | Extra Bunching (Network Analysis) (Program) | ▪ S Approach: 50% | ▪ N Approach: 50% |
| | Area Type Factor (1) | ▪ N Approach: 2.0 ▪ S Approach: 1.2 | ▪ N Approach: 2.0 |
| Hawkesbury Road / Darcy Road | Extra Bunching (Network Analysis) (Program) | ▪ S Approach: 50% | - |
| | Area Type Factor (1) | ▪ S Approach: 1.2 | ▪ NE Approach: 1.5 ▪ SW Approach: 1.5 ▪ NW Approach: 0.8 |
| | Arrival Type (Program) | - | ▪ NE Approach All: 5 |
| Darcy Road / Westmead Dental Hospital Access | Area Type Factor (1) | - | ▪ NW Approach: 1.5 |
| Darcy Road / Mons Road / Institute Road | Extra Bunching (Network Analysis) (Program) | - | ▪ SE Approach: 50% |
| | Area Type Factor (1) | - | ▪ N Approach All: 5 ▪ E Approach Left/Right: 4 ▪ E Approach Through: 6 |
| Darcy Road / Mother Teresa PS Access | Critical Gap (7 sec) | ▪ W Approach Right: 4 sec | ▪ W Approach Right: 4 sec |
| | Follow-up Headway (4 sec) | ▪ W Approach Right: 2 sec | ▪ W Approach Right: 2 sec |
| Darcy Road / Bridge Road | Extra Bunching (Network Analysis) (Program) | ▪ S Approach: 50% | - |
| | Area Type Factor (1) | - | ▪ E Approach: 2 ▪ W Approach: 1.2 |
| | Lane Utilisation Ratio (Program) | ▪ E Approach L2: 100% | ▪ E Approach: 2 ▪ W Approach: 1.2 |
| | Critical Gap (4.5 sec) | ▪ S Approach Right: 3.5 sec | ▪ S Approach Right: 3.5 sec |
| | Follow-up Headway (2.6 sec) | ▪ S Approach Right: 2 sec | ▪ S Approach Right: 2 sec |
| | Arrival Type (Program) | ▪ W Approach Through/Right: 4 | - |

2.5 SIDRA Model Re-Validation

The queue lengths calculated by SIDRA were validated against the survey queue length. The acceptable validation error was adopted from VicRoads Transport Modelling Guidelines and reproduced in Table 2.4.

Table 2.4: Acceptable Queue Validation Error

| Observed Queue Range (m) | Acceptable Validation Error (m) |
|--------------------------|---------------------------------|
| 1-20 | ±10 |
| 21-50 | ±15 |
| 51-100 | ±20 |
| 101-150 | ±25 |
| 151-200 | ±30 |
| 201-250 | ±35 |
| 251-500 | ±100 |
| 501-1000 | ±150 |
| 1000+ | ±200 |

Source: VicRoads Transport Modelling Guidelines Volume 5: Intersection Modelling (DRAFT, June 2020) – Table 28

The observed and modelled 95th percentile queue lengths during the AM and PM peaks are compared in Table 2.5 and Table 2.6.

The AM peak queues validate very well with the observed queues. The key observations include:

- Generally, the modelled queues were deemed to be comparable if found to be very close of the observed queues
- The Darcy Road / Mons Road / Institute Road intersection west approach modelled queues are shorter than the observed queues. However, SIDRA is only reporting queues between Mons Road and the previous Mother Teresa Primary School Access intersection, meaning that the actual queues of “slow moving” vehicles on this approach was not adequately reflected in SIDRA.

Table 2.5: Base Model Queue Validation – AM Peak

| Intersection | Approach | Observed (m) | Acceptable Queue Range (m) | Modelled (m) | Within Acceptable Range? | Difference if Outside Acceptable Range (m) |
|--|------------|--------------|----------------------------|--------------|--------------------------|--|
| AM Peak | | | | | | |
| Hawkesbury Road / Alexandra Avenue | North | 49 | 34-64 | 56 | Yes | - |
| | East | 56 | 36-76 | 123 | No | 47 |
| | South | 98 | 78-118 | 168 | No | 50 |
| | West | 98 | 78-118 | 131 | No | 13 |
| Hawkesbury Road / Railway Parade | North | 49 | 34-64 | 99 | No | 35 |
| | East | 49 | 34-64 | 35 | Yes | - |
| | South | 56 | 36-76 | 53 | Yes | - |
| Hawkesbury Road / Darcy Road | North-east | 70 | 50-90 | 85 | Yes | - |
| | South-west | 70 | 50-90 | 150 | No | 60 |
| | North-west | 84 | 64-104 | 103 | Yes | - |
| Darcy Road / Farm House Road | North-east | 14 | 4-24 | 25 | No | 1 |
| | South-east | 70 | 50-90 | 69 | Yes | - |
| | North-west | 56 | 36-76 | 40 | Yes | - |
| Darcy Road / Westmead Dental Hospital Access | North-east | 7 | 0-17 | 11 | Yes | - |
| | South-east | 56 | 36-76 | 19 | No | 17 |
| | South-west | 0 | 0-10 | 1 | Yes | - |
| | North-west | 84 | 64-104 | 67 | Yes | - |
| Darcy Road / Mons Road / Institute Road | North | 56 | 36-76 | 70 | Yes | - |
| | East | 28 | 13-43 | 32 | Yes | - |
| | South-east | 70 | 50-90 | 90 | Yes | - |
| | West | 343 | 243-443 | 91 | No | 152 |
| Darcy Road / Mother Teresa PS Access | South | 56 | 36-76 | 27 | No | 9 |
| | West | 70 | 50-90 | 27 | No | 23 |
| Darcy Road / Bridge Road | North | 21 | 6-36 | 16 | Yes | - |
| | East | 56 | 36-76 | 151 | No | 75 |
| | South | 35 | 20-50 | 77 | No | 27 |
| | West | 105 | 80-130 | 96 | Yes | - |

The PM peak queues validate very well with the observed queues. The key observations include:

- Generally, the modelled queues were deemed to be comparable if found to be very close of the observed queues
- The Mother Teresa Primary Access intersection west approach modelled queues are shorter than the observed queues. The long 95th percentile observed queue was resulting from a significant number of right turning vehicles into the school, mainly to pick up children just before the school finishes.

Table 2.6: Base Model Queue Validation - PM Peak

| Intersection | Approach | Observed (m) | Acceptable Queue Range (m) | Modelled (m) | Within Acceptable Range? | Difference if Outside Acceptable Range (m) |
|--|------------|--------------|----------------------------|--------------|--------------------------|--|
| PM Peak | | | | | | |
| Hawkesbury Road / Alexandra Avenue | East | 140 | 115-165 | 135 | Yes | - |
| | South | 105 | 80-130 | 90 | Yes | - |
| | West | 56 | 36-76 | 70 | Yes | - |
| Hawkesbury Road / Railway Parade | North | 98 | 78-118 | 173 | No | 55 |
| | East | 49 | 34-64 | 50 | Yes | - |
| | South | 56 | 36-76 | 45 | Yes | - |
| Hawkesbury Road / Darcy Road | North-east | 112 | 87-137 | 133 | Yes | - |
| | South-west | 70 | 50-90 | 105 | No | 15 |
| | North-west | 113 | 88-138 | 103 | Yes | - |
| Darcy Road / Farm House Road | North-east | 28 | 13-43 | 47 | No | 4 |
| | South-east | 28 | 13-43 | 81 | No | 38 |
| | North-west | 56 | 36-76 | 74 | Yes | - |
| Darcy Road / Westmead Dental Hospital Access | North-east | 7 | 0-17 | 11 | Yes | - |
| | South-east | 42 | 27-57 | 15 | No | 12 |
| | South-west | 0 | 0-10 | 2 | Yes | - |
| | North-west | 28 | 13-43 | 32 | Yes | - |
| Darcy Road / Mons Road / Institute Road | North | 84 | 64-104 | 54 | No | 10 |
| | East | 28 | 13-43 | 79 | No | 36 |
| | South-east | 42 | 27-57 | 90 | No | 33 |
| | West | 56 | 36-76 | 91 | No | 15 |
| Darcy Road / Mother Teresa PS Access | South | 56 | 36-76 | 15 | No | 21 |
| | West | 70 | 50-90 | 4 | No | 46 |
| Darcy Road / Bridge Road | North | 28 | 13-43 | 37 | Yes | - |
| | East | 56 | 36-76 | 134 | No | 58 |
| | South | 90 | 70-110 | 95 | Yes | - |
| | West | 36 | 21-51 | 58 | No | 7 |

2.5.1 Signal Validation

2.5.1.1 Data Comparison

The SCATS data obtained for 2018 has been compared with the model signal times. As per the TfNSW Modelling Guidelines, the following signal attributes were used in the comparison:

- **Cycle Time:** Average modelled cycle time in the one-hour period
- **Green Time:** Total of green time over each one-hour period for each phase
- **Call Frequency:** Call frequency if demand-dependent phases (including pedestrian phase calls) to be compared with observed data to ensure phase activation occurs to a similar level over each hour period.

A detailed comparison of modelled and observed Cycle Time, Phase Time and Offset for the intersection across the AM, PM and Weekend peak periods is presented in **Appendix B**. The modelled and observed values are generally similar. Any variations outside the validation tolerance are noted in the following sections.

2.5.1.2 Cycle Time

Signal cycle times similar to SCATS' average cycle time were adopted for the signalised intersections. The AM peak cycle times are within the acceptable tolerance limit (i.e. $\pm 10\%$ of the observed average).

2.5.1.3 Phase Times

Generally, the phase times are within the tolerance limit (i.e. $\pm 10\%$ of the observed average). A few phase times are longer than the SCATS average. In most of the cases, this is the coordinated phase in the actuated signal controller. Therefore, the effective green time is likely to be longer than the model time as any unused green time from Phase B is given to the coordinated phase.

2.5.1.4 Call Frequency

The SCATS data was interrogated to find out which phases are called in most of the cycles. Phases which are infrequent, are modelled as "variable phase" and/or given a Phase Frequency percentage.

2.5.1.5 Pedestrian Phases

Pedestrian protection time were included where the pedestrian phase was called frequently and could impact intersection performance.

2.6 Conclusion

Bitzios Consulting has re-calibrated and re-validated the 2018 (base year) AM and PM peak SIDRA models to undertake assessment of the proposed development.

In developing the base year model, it can be concluded that:

- The network coding reflects the traffic network conditions in typical 2018 AM and PM peak periods
- The traffic demand estimates for the AM and PM peak periods when assigned to the network sufficiently reflect the observed traffic counts undertaken at 11 locations
- The model sufficiently replicates queuing patterns at key intersections.

The SIDRA model adequately replicates the observed queue especially during the critical AM peak period. As such, the results demonstrate that the base SIDRA models are considered to be fit for the purpose of assessing the impact of the proposed development.

2.7 2018 Intersection Performance

The 2019 AM and PM peak intersection performance are summarised in Table 2.7 and Table 2.8. The intersections operate at satisfactory LoS between LoS A and LoS C. All the intersections operate well within capacity in both the peak periods.

Table 2.7: 2018 Base Model Outputs – AM Peak

| Intersection | Traffic Volume (veh/h) | DoS (v/c) | Average Delay (s) | LoS | 95th Percentile Queue (m) |
|--|------------------------|-----------|-------------------|-----|---------------------------|
| Hawkesbury Road / Alexandra Avenue | 2,333 | 0.82 | 35.3 | C | 168 |
| Hawkesbury Road / Railway Parade | 2,014 | 0.44 | 13.3 | A | 99 |
| Hawkesbury Road / Darcy Road | 1,899 | 0.61 | 32.8 | C | 150 |
| Darcy Road / Farm House Road | 1,499 | 0.54 | 20.4 | B | 69 |
| Darcy Road / Parramatta Marist HS Access | 1,357 | 0.17 | 11.4 | A | 0 |
| Darcy Road / Westmead Dental Hospital Access | 1,461 | 0.31 | 11.3 | A | 67 |
| Darcy Road / Catherine McAuley Access | 1,400 | 0.19 | 3.9 | A | 15 |
| Darcy Road / Mons Road / Institute Road | 1,892 | 0.67 | 41.7 | C | 91 |
| Darcy Road / Mother Teresa PS Access | 2,253 | 0.72 | 13.5 | A | 92 |
| Darcy Road / Bridge Road | 2,490 | 0.57 | 23.5 | B | 151 |
| Bridge Road / Alexandra Avenue | 1,430 | 0.77 | 15.5 | B | 67 |

Table 2.8: 2018 Base Model Outputs – PM Peak

| Intersection | Traffic Volume (veh/h) | DoS (v/c) | Average Delay (s) | LoS | 95th Percentile Queue (m) |
|--|------------------------|-----------|-------------------|-----|---------------------------|
| Hawkesbury Road / Alexandra Avenue | 2,115 | 0.73 | 36.0 | C | 125 |
| Hawkesbury Road / Railway Parade | 1,780 | 0.72 | 22.4 | B | 157 |
| Hawkesbury Road / Darcy Road | 1,755 | 0.74 | 32.5 | C | 123 |
| Darcy Road / Farm House Road | 1,395 | 0.48 | 27.7 | B | 81 |
| Darcy Road / Parramatta Marist HS Access | 1,232 | 0.19 | 18.8 | B | 1 |
| Darcy Road / Westmead Dental Hospital Access | 1,317 | 0.36 | 10.6 | A | 57 |
| Darcy Road / Catherine McAuley Access | 1,278 | 0.16 | 3.7 | A | 1 |
| Darcy Road / Mons Road / Institute Road | 1,828 | 0.58 | 39.4 | C | 91 |
| Darcy Road / Mother Teresa PS Access | 1,773 | 0.46 | 12.3 | A | 15 |
| Darcy Road / Bridge Road | 2,341 | 0.61 | 23.1 | B | 134 |
| Bridge Road / Alexandra Avenue | 1,415 | 0.61 | 14.3 | A | 38 |

3. FUTURE TRAFFIC VOLUMES

3.1 Overview

The future traffic estimates are based on the growths in the following two components:

- Background traffic growth
- Development Traffic.

Background traffic growth within the study area was extracted from the 2026 and 2036 Sydney Strategic Traffic Forecasting Model (STFM). The **development traffic growths** within the study area were calculated based on the size and scope of the proposed development.

3.2 Background Traffic Growth

The future year background traffic volumes were calculated based on yearly link traffic volume growths provided by TfNSW. A typical growth plot is shown in Figure 3.1. The STFM link plots (Model Version 3.3) were provided for the 2016 and future year 2026 and 2036. Among the future key transport projects include the PLR Stages 1 and 2. These projects will have direct impact on the future traffic flows within the study area.

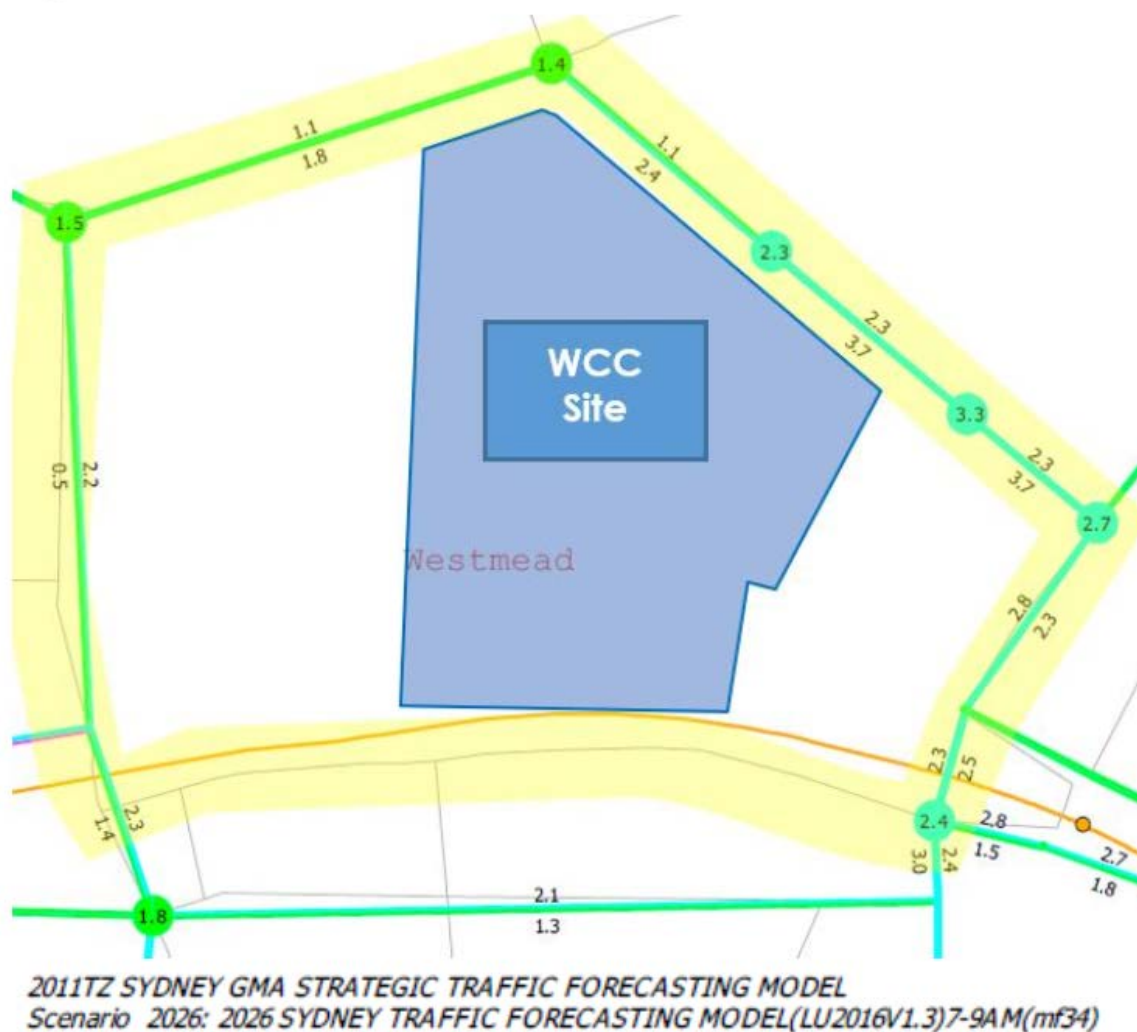


Figure 3.1:STFM Growth Rates (in % per year)

The yearly link traffic growths were applied to each link to estimate the projected growths in background traffic. The STFM projected link growths were applied to all entry movements contributing to the link with the distributions were based on the observed turning flows. The only exception was the school access points. To avoid “double counting”, the school access points were left out of the background flow calculations. Slight ‘imbalance’ resulting from this calculation was subsequently manually adjusted. The resulting AM and PM peak traffic growths are shown in Figure 3.2 to Figure 3.5. The key observations include that between 2016 and 2033:

- Traffic volumes on Darcy Road between Hawkesbury Road and Mons Road is predicted to grow between 1% and 3.7% per year
- Traffic volumes on the section of Darcy Road between Mons Road and Bridge Road would grow between 1% and 1.8% per year
- The Hawkesbury Road would experience 1.3% and 4.7% per year
- The Alexandra Avenue (East) would experience substantial growth of between 1.5% and 3.7% per year

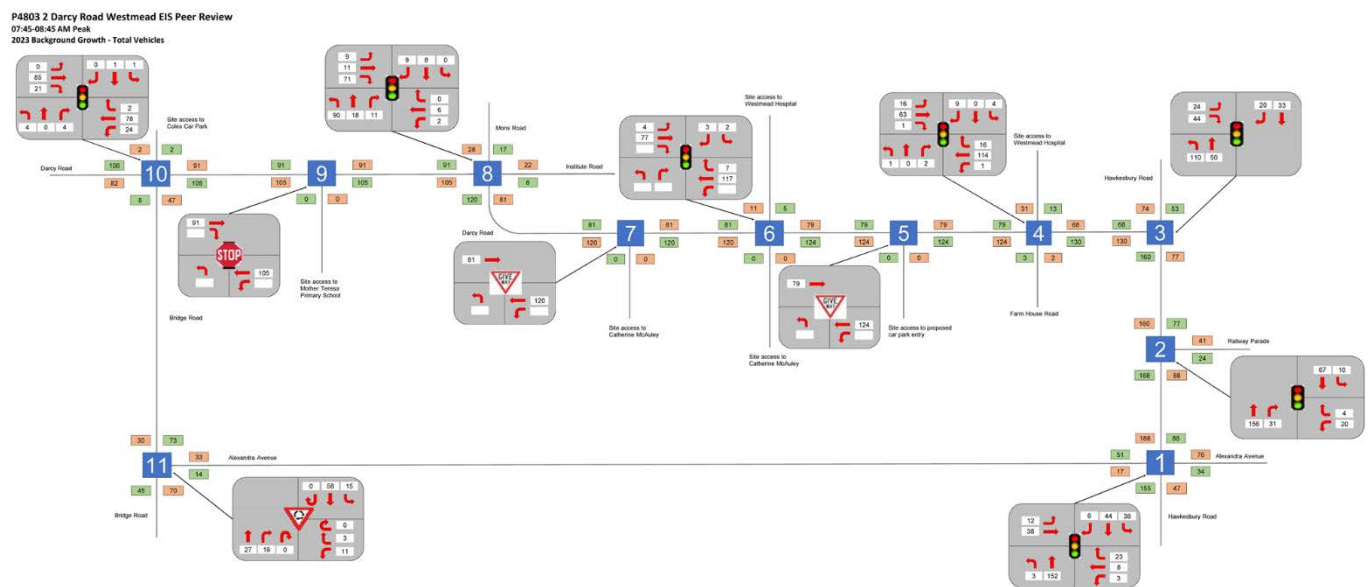


Figure 3.2: AM Peak Background Traffic Growths (2023)

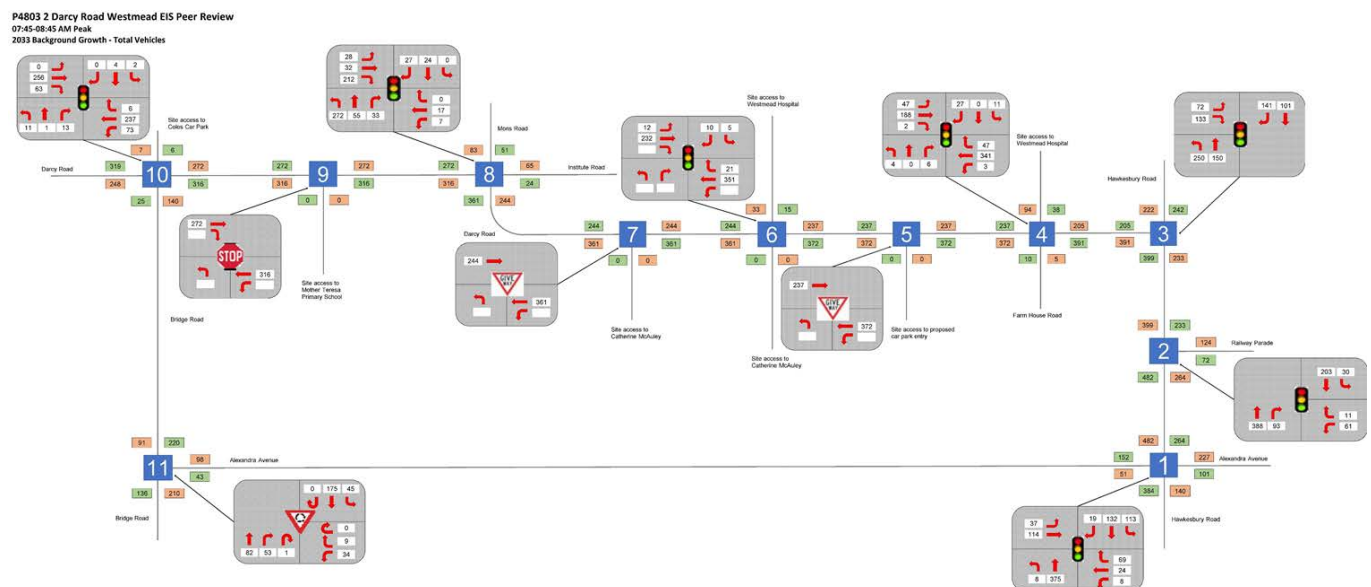


Figure 3.3: AM Peak Background Traffic Growths (2033)

P4803 2 Darcy Road Westmead EIS Peer Review
15:00-16:00 PM Peak
2023 Background Growth - Total Vehicles

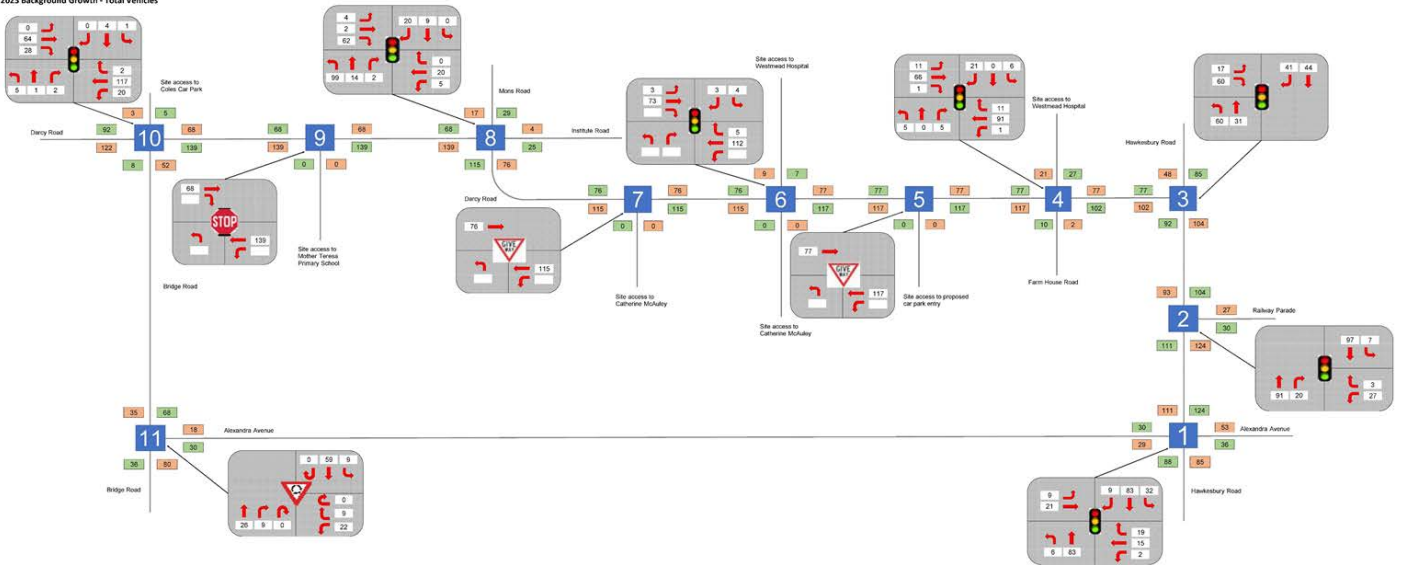


Figure 3.4: PM Peak Background Traffic Growths (2023)

P4803 2 Darcy Road Westmead EIS Peer Review
15:00-16:00 PM Peak
2033 Background Growth - Total Vehicles

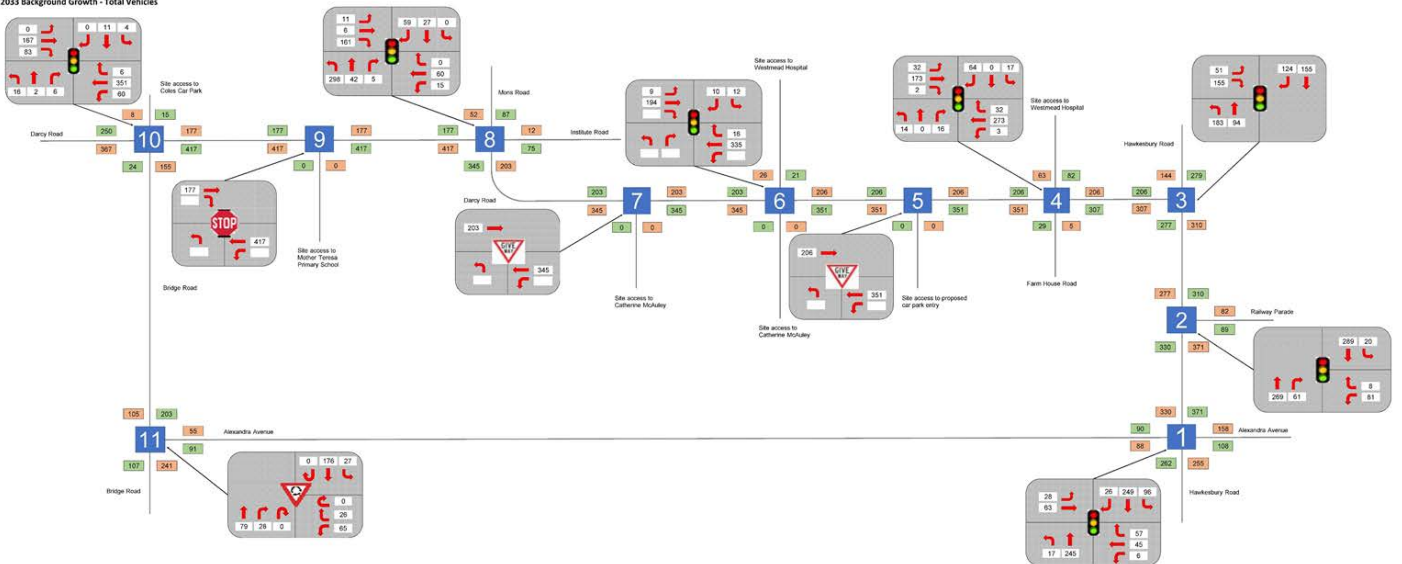


Figure 3.5: PM Peak Background Traffic Growths (2033)

3.3 Development Traffic

3.3.1 Proposed Development

The proposed development is for the following uses at the WCC site:

- A primary school with capacity for up to 1,680 students, to provide expanded facilities for the existing Mother Teresa Primary School on the site and to replace the existing Sacred Heart Primary School at Ralph Street
- An Out of School Hours (OOSH) facility with capacity for 22% of the primary student population
- A Catholic Early Learning Centre (CELC) with capacity for up to 200 children (fit-out within an existing building)
- A new Parish Church.

3.3.2 Key Assumptions

3.3.2.1 High School Car Park

The development excludes a proposed car park at the high school access that has been approved via a separate application. However, the layout of the car park and accesses were adopted in the proponent's future year SIDRA models and was adopted in the Bitzios' future year models.

3.3.2.2 OOSH Facility

The proponent applied for 30% OOSH facilities in their development proposal. However, the evidence provided in the traffic impact report does not demonstrate that a 30% OOSH facility can be achieved. The average OOSH facility within various relevant data sources presented in proponent's report is summarised in Table 3.1.

Table 3.1: OOSH Facility

| Sources | OOSH % |
|--|--------|
| The average of CEDP schools | 22% |
| The average of Parramatta LGA | 20.8% |
| The average of big schools in Parramatta LGA | 17.8% |

Therefore, for the purpose of this analysis a **22%** OOSH enrolment rate was adopted in this study which is consistent with the CEDP school average.

3.3.2.3 Student and Staff Population

The existing and future number of students and staffs are presented in Table 3.2.

Table 3.2: Student and Staff population

| Land Use | Student Population | | | Staff Population | | |
|----------------|--------------------|--------------|--------------|------------------|------------|------------|
| | Base | 2023 | 2033 | Base | 2023 | 2033 |
| CELC | 0 | 100 | 200 | 0 | 15 | 25 |
| Primary School | 420 | 660 | 1,680 | 24 | 40 | 100 |
| High School | 2,186 | 2,237 | 2,237 | 166 | 166 | 166 |
| Total | 2,606 | 2,997 | 4,117 | 190 | 221 | 291 |

3.3.3 Trip Generation

3.3.3.1 Existing Trip Generation Rate

The 2018 Intersection Turning Count surveys and Travel Mode Survey were used to calculate the existing trip generation rate. The existing trip generation rates were applied to calculate the future trips from the proposed extension.

The proponent carried out a questionnaire survey among the students and staffs of the schools to understand the travel mode. This key findings from the survey are:

- The car usage percentage of different types of student population is as follows
 - Primary School students 90%
 - High School Students 19.6%
 - Primary School Teachers 95%
 - High School Teachers 87%.

- Of students travelling to/from the subject site by car
 - 75% would arrive during the morning peak
 - 85% would depart during the afternoon peak.
- Of staff travelling to/from the subject site by car
 - 75% would arrive during the morning peak
 - 10% would depart during the afternoon peak.
- Car occupancy rate
 - For primary school students 2.12
 - For high school students 1.85.

The results from the travel mode survey was validated by using intersection turning count survey. The key findings include:

- The intersection turning count data shows that 84% of students arrive by car during the morning peak as compared with 75% from the questioner survey. Therefore, the intersection count data is 9% **higher**
- The intersection turning count data shows that 52% students leave during the site by car in the afternoon peak as compared with 85% from the questioner survey. This is 33% **lower** than the questioner survey
- The staff car usage (Catherine McAuley entrance) was also **underestimated** by 5% in the AM peak and massive 59% in the PM peak.

Based on the above, the AM peak student trip generation was underestimated by the Travel Mode Survey while the PM Peak was overestimated. The staff trip generation was underestimated in both the peak periods. Therefore, the travel mode survey is not reliable to use for the directional splits or to calculate the car occupancy. However, the car usage percentages were taken from this survey.

In this analysis, car occupancy rate is calculated from the intersection count survey and found to be different for AM and PM peak. For AM peak the occupancy rate is calculated as 1.37 students per car and for PM peak is calculated as 2.38 students per car. The staff occupancy rate is assumed as 1 staff per car.

3.3.4 Directional Splits

As mentioned in the previous sub-section, the direction splits were calculated using intersection turning count data. The resulting private vehicle directional splits for Primary, High School and Staff are summarised in Table 3.3.

These proportions were applied to calculate the directional splits of the proposed expansion.

Table 3.3: Private Vehicle Trip Directional Split

| Component | AM Peak | | PM Peak | |
|----------------|---------|-----|---------|-----|
| | In | Out | In | Out |
| Primary School | 81% | 75% | 44% | 52% |
| High School | 81% | 75% | 44% | 52% |
| Staff | 80% | - | - | 69% |

3.3.5 Future Trip Generation

The future trip generation for the development is provided in Table 3.4. The assumptions changed for the future trip generation is as follows.

- 22% OOSH enrolment rate was assumed
- Trip generation rates adopted for the CELC and OOSH facilities are based on TfNSW Trip Generation Study for Child Care Centres (dated September 2015). The rate for AM peak traffic is 0.3 per licenced place and for PM peak the rate is 0.04 per licenced place.
- Primary school students (non OOSH) will have 10% modal shift. Therefore, car usage percentage for primary school students is assumed to be 80% as compared with 90% as per the questioner survey
- Staff parking will be provided for 50% of the staffs. Therefore, car usage percentage for staffs is assumed to be 50%.

Table 3.4: Future Trip Generation

| Land Use | 2023 | | | | 2033 | | | |
|---------------------------|------------|------------|------------|------------|--------------|------------|------------|------------|
| | AM In | AM Out | PM In | PM Out | AM In | AM Out | PM In | PM Out |
| CELC | 9 | 8 | 0 | 0 | 18 | 16 | 1 | 1 |
| Primary School (OOSH) | 13 | 12 | 1 | 1 | 33 | 30 | 1 | 2 |
| Primary School (non OOSH) | 244 | 225 | 76 | 89 | 621 | 573 | 193 | 227 |
| High School | 260 | 240 | 81 | 95 | 260 | 240 | 81 | 95 |
| Staff | 88 | 0 | 0 | 77 | 116 | 0 | 0 | 101 |
| Total | 614 | 485 | 158 | 262 | 1,048 | 860 | 277 | 426 |

3.3.6 The Access Locations and Trip Distribution

It is understood that a new car park would be constructed western side of Darcy Road between the Farm House Road and Dental Hospital Access signalised intersections. For the purpose of this assessment, it was assumed that:

- The CELC and primary school students will use the Mother Teresa access
- The High School students and Staffs will use the new car park access.

The distributions of the future year 2023 and 2033 AM and PM peak school traffic at these two access locations are shown in Figure 3.6.

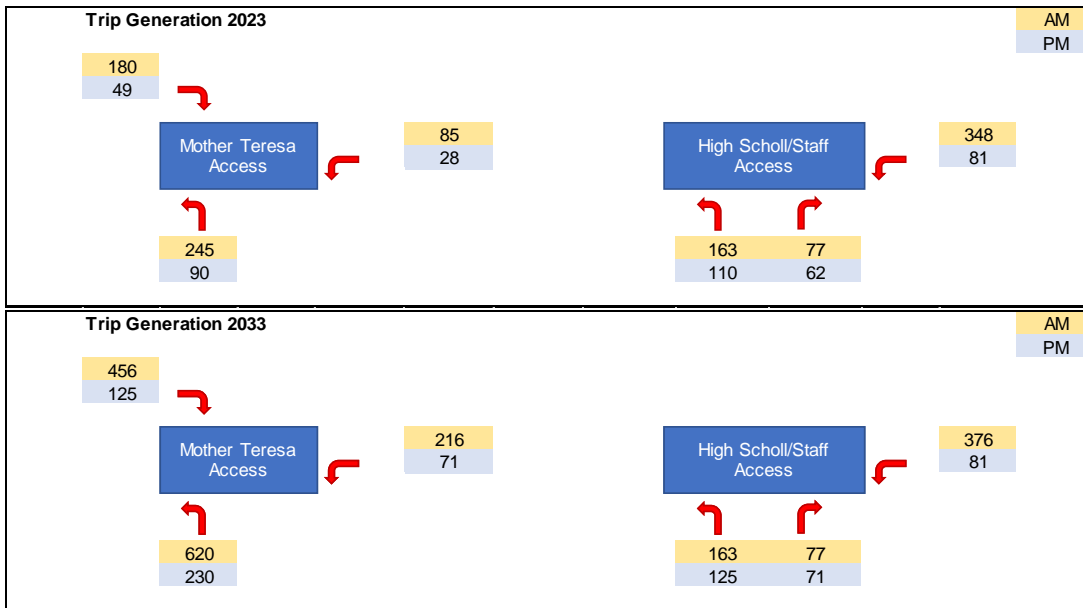


Figure 3.6: Trip Distribution at Access Locations

3.3.7 Trip Distribution

The key assumptions made while distributing the school trips include:

- In general, the trip distribution was based on the turning count survey data at the Mother Teresa Access / Darcy Road intersection
- The turning count data analysis shows that at the Mother Teresa Access / Darcy Road intersection, about 65% trips access from the west of Darcy Road and the remaining 35% access from the east
- Of the 65% access from the west, 40% arrive from Darcy Road (west) and the remaining 25% from Bridge Road
- Of the 35% access from the east, 10% arrive from Hawkesbury Road (north), 10% from Alexandra Avenue (east) and 15% from Hawkesbury Road (south) as shown in Figure 3.7.

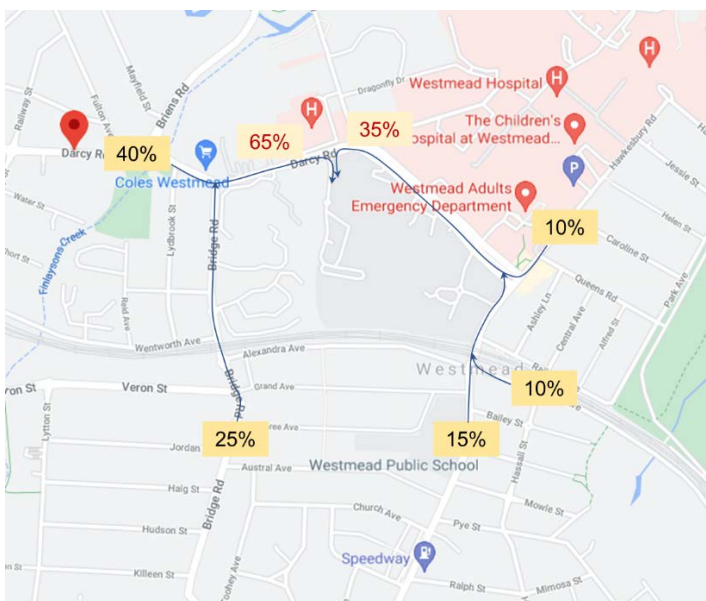


Figure 3.7: General Trip Distribution

The above distributions were adopted for both the Primary and High School trips and shown separately in Figure 3.8.



Figure 3.8: Primary School and High School Trip Distribution

The future year 2023 and 2033 development trips are included in Appendix C.

3.4 Future Year Do Minimum Traffic Volumes

The projected growths in background traffic were added to the 2018 base traffic to develop the 2023 and 2033 AM and PM peak Do Minimum traffic volumes. The resulting traffic volumes are included in Appendix D.

3.5 Future Year with Development Traffic Volumes

The projected growths in background traffic and the traffic from the development were added to the 2018 base traffic to develop the 2023 and 2033 AM and PM peak "With Development" traffic volumes. The resulting traffic volumes are included in Appendix E.

4. FUTURE YEAR DO MINIMUM MODELLING

4.1 Overview

The future year 2023 and 2033 Do Minimum models were developed by adding the background traffic to the Base 2018 demands. Some minor adjustments were made to the year 2018 signal settings to reflect changes in the traffic patterns. The 2023 and 2033 Do Minimum model traffic demands and road network assumptions are summarised in Table 4.1.

Table 4.1: Do Minimum Models

| Scenario | Demand Traffic | Road Network |
|-----------------|--|--|
| 2023 Do Minimum | 2018 Base Demand <i>plus</i> Background traffic Growths to 2023 | The following upgrades were incorporated at the: <ul style="list-style-type: none">▪ Darcy Road / Mons Road Intersection▪ Darcy Road / Hawkesbury Road Intersection |
| 2033 Do Minimum | 2018 Base Demand <i>plus</i> Background traffic Growths to 2033 | |

The Do Minimum Model results are included in **Appendix F** and are summarised below.

4.2 Intersection Upgrades Included in the Do Minimum Model

4.2.1 Darcy Road / Mons Road

The upgrades at the Darcy Road / Mons Road intersection were carried out in the first quarter of 2019. Among the key upgrades included a high-angle left slip lane for traffic from Darcy Road (west) to Mons Road as shown in Figure 4.1.

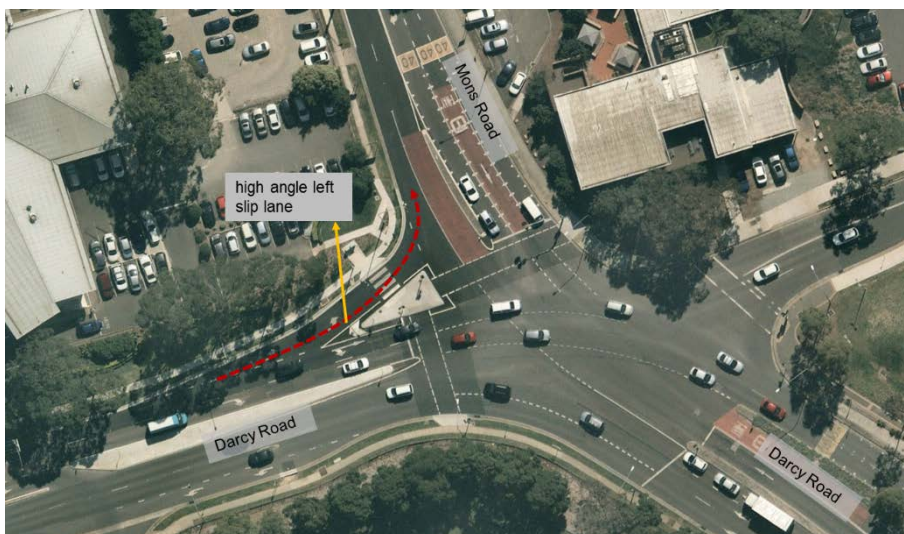


Figure 4.1: Upgraded Darcy Road / Mons Road Intersection Layout

4.2.2 Darcy Road / Hawkesbury Road

The Darcy Road / Hawkesbury Road intersection is currently being upgraded to accommodate PLR vehicles as shown in Figure 4.2. It is understood that PLR vehicles will have absolute priority at this intersection. However, currently it is not possible to simulate such sophisticated signal strategy in SIDRA. Therefore, for the purpose of this assessment, a simplified assumption of the traffic signal operation of was made. Two additional phases were included in the signal cycle with both servicing the PLR vehicles. The demand for the PLR traffic is considered to be low. Therefore, these phases were assumed to be “variable” in the signal cycle (i.e. not activated in every cycle). It was assumed that in every hour, eight PLR vehicles would travel through the intersection in each direction.



Figure 4.2: Darcy Road / Hawkesbury Road PLR Construction Work

4.3 Assessment Criteria

The results of each model scenario and each option have been compared using a range of typical criteria and metrics. The criteria that have been used included:

- Intersection Level of Service (LoS)
- Degree of Saturation
- 95th Percentile Queue.

4.3.1 Intersection Level of Service

Intersection Level of Service (LoS) based on average delay has been used as the primary metric for impact assessment in accordance with the TfNSW Guide to Traffic Generating Developments (GTTGD). LoS thresholds are summarised in Table 4.2.

Table 4.2: Intersection Level of Service Criteria

| LOS Level | Delay Range | Typical Intersection Operations |
|------------------|--------------------|--|
| 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 and above | Unsatisfactory |

The TfNSW GTTGD recommend that for roundabouts and sign-controlled intersections, the LoS value is determined by the critical movement with the highest delay whereas for signalised intersections, the LoS is based on the average delay measured in seconds per vehicle.

4.3.2 Degree of Saturation

The Degree of Saturation (DOS) in SIDRA is defined as the ratio of demand flow to capacity. DOS above 1.0 represent oversaturated conditions and DOS below 1.0 represent undersaturated conditions.

4.3.3 95th Percentile Queue

Generally, intersection approach 95th percentile queues have been compared between scenarios for selected key approaches.

4.4 2023 Do Minimum Assessment – Key Outputs

Table 4.3 and Table 4.4 compare the 2018 Base intersection performance with 2023 AM and PM peak Do Minimum Scenario. The letters inside the brackets represent the LoS. The key observations include:

- Generally, when compared with the 2018 Base Case, the intersections within the study area provide similar performance in 2023 Do Minimum Scenario
- The only exception is the three intersections on Hawkesbury Road. In the AM peak, the Alexandra Avenue intersection will provide LoS F, while in the PM peak, the Darcy Road intersection will provide LoS F
- The substantial increase in intersection delay is attributed to:
 - Capacity reduction at the Darcy Road intersection due to the introduction of PLR phase
 - Increase in the background traffic volumes of 13% to 16% between 2018 and 2023
- The PM peak reduction of delays at Mons Road intersection is due to increase capacity as a result of intersection upgrade in the first quarter of 2019.

Table 4.3: Intersection Performance – Do Minimum 2023 – AM Peak

| Intersection | Control Type | 2018 Base | | | 2023 Do Minimum | | |
|--|--------------|----------------------|--------------------|------|----------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue | | 2,333 | 35.3 (C) | 0.82 | 2,660 | 85.5 (F) | 1.09 |
| Hawkesbury Road / Railway Parade | | 2,014 | 13.3 (A) | 0.44 | 2,302 | 14.3 (A) | 0.56 |
| Hawkesbury Road / Darcy Road | | 1,899 | 32.8 (C) | 0.61 | 2,196 | 36.8 (C) | 0.57 |
| Darcy Road / Farm House Road | | 1,499 | 20.4 (B) | 0.54 | 1,726 | 24.8 (B) | 0.62 |
| Darcy Road / Parramatta Marist HS Access | | 1,357 | 11.4 (A) | 0.17 | 1,560 | 13.0 (A) | 0.26 |
| Darcy Road / Westmead Dental Hospital Access | | 1,461 | 11.3 (A) | 0.31 | 1,671 | 8.7 (A) | 0.34 |
| Darcy Road / Catherine McAuley Access | | 1,400 | 3.9 (A) | 0.19 | 1,601 | 3.9 (A) | 0.21 |
| Darcy Road / Mons Road / Institute Road | | 1,892 | 41.7 (C) | 0.67 | 2,128 | 54.8 (D) | 1.02 |
| Darcy Road / Mother Teresa PS Access | | 2,253 | 14.2 (A) | 0.69 | 2,449 | 16.2 (B) | 0.74 |
| Darcy Road / Bridge Road | | 2,490 | 23.5 (B) | 0.57 | 2,714 | 23.8 (B) | 0.64 |
| Bridge Road / Alexandra Avenue | | 1,430 | 15.5 (B) | 0.77 | 1,562 | 20.8 (B) | 0.87 |

Table 4.4: Intersection Performance – Do Minimum 2023 – PM Peak

| Intersection | Control Type | 2018 Base | | | 2023 Do Minimum | | |
|--|--------------|----------------------|--------------------|------|----------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue | | 2,115 | 38.4 (C) | 0.82 | 2,394 | 41.0 (C) | 0.87 |
| Hawkesbury Road / Railway Parade | | 1,780 | 26.5 (B) | 0.81 | 2,025 | 31.0 (C) | 0.89 |
| Hawkesbury Road / Darcy Road | | 1,755 | 34.1 (C) | 0.83 | 2,024 | 92.3 (F) | 1.11 |
| Darcy Road / Farm House Road | | 1,395 | 28.0 (B) | 0.48 | 1,612 | 29.3 (C) | 0.59 |
| Darcy Road / Parramatta Marist HS Access | | 1,232 | 18.8 (B) | 0.19 | 1,426 | 21.9 (B) | 0.30 |
| Darcy Road / Westmead Dental Hospital Access | | 1,317 | 10.7 (A) | 0.36 | 1,517 | 12.3 (A) | 0.43 |
| Darcy Road / Catherine McAuley Access | | 1,278 | 3.7 (A) | 0.16 | 1,469 | 3.7 (A) | 0.18 |
| Darcy Road / Mons Road / Institute Road | | 1,828 | 45.2 (D) | 0.80 | 2,066 | 38.4 (C) | 0.94 |
| Darcy Road / Mother Teresa PS Access | | 1,773 | 11.6 (A) | 0.46 | 1,980 | 13.2 (A) | 0.50 |
| Darcy Road / Bridge Road | | 2,341 | 23.1 (B) | 0.61 | 2,585 | 21.4 (B) | 0.70 |
| Bridge Road / Alexandra Avenue | | 1,415 | 14.3 (A) | 0.61 | 1,549 | 16.8 (B) | 0.68 |

4.5 2033 Do Minimum Assessment – Key Outputs

Table 4.5 and Table 4.6 compare the 2018 Base intersection performance with 2033 AM and PM peak Do Minimum Scenario. The key observations include:

- Generally, when compared with the 2018 Base Case, the intersections within the study area provide similar performance in 2033 Do Minimum Scenario
- Like in the 2023 scenario, the only exception is the three interactions on Hawkesbury Road. All three intersections will provide poor LoS E/F in the AM peak while in the PM peak the Darcy Road intersection will provide LoS F
- The substantial increase in intersection delay is attributed to:
 - Capacity reduction at the Darcy Road intersection due to introduction of PLR vehicles
 - Increase in the background traffic volumes 31% to 36% between 2018 and 2033
- Darcy Road / Mons Road / Institute Road intersection would operate overcapacity. This is due to substantial delays to traffic on the Mons Road approach. This can be reduced by further optimisation of the intersection signal settings.

Table 4.5: Intersection Performance – Do Minimum 2033 – AM Peak

| Intersection | Control Type | 2018 Base | | | 2033 Do Minimum | | |
|--|--------------|----------------------|--------------------|------|----------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue | | 2,333 | 35.3 (C) | 0.82 | 3,232 | 169.6 (F) | 1.24 |
| Hawkesbury Road / Railway Parade | | 2,014 | 13.3 (A) | 0.44 | 2,800 | 95.9 (F) | 1.11 |
| Hawkesbury Road / Darcy Road | | 1,899 | 32.8 (C) | 0.61 | 2,762 | 69.5 (E) | 1.01 |
| Darcy Road / Farm House Road | | 1,499 | 20.4 (B) | 0.54 | 2,175 | 29.8 (C) | 0.88 |
| Darcy Road / Parramatta Marist HS Access | | 1,357 | 11.4 (A) | 0.17 | 1,966 | 15.7 (B) | 0.31 |
| Darcy Road / Westmead Dental Hospital Access | | 1,461 | 11.3 (A) | 0.31 | 2,092 | 9.0 (A) | 0.44 |
| Darcy Road / Catherine McAuley Access | | 1,400 | 3.9 (A) | 0.19 | 2,005 | 3.9 (A) | 0.25 |
| Darcy Road / Mons Road / Institute Road | | 1,892 | 41.7 (C) | 0.67 | 2,600 | 65.4 (E) | 1.01 |
| Darcy Road / Mother Teresa PS Access | | 2,253 | 14.2 (A) | 0.69 | 2,841 | 41.9 (C) | 0.95 |
| Darcy Road / Bridge Road | | 2,490 | 23.5 (B) | 0.57 | 3,160 | 59.9 (E) | 1.04 |
| Bridge Road / Alexandra Avenue | | 1,430 | 15.5 (B) | 0.77 | 1,828 | 105.3 (F) | 1.09 |

Table 4.6: Intersection Performance – Do Minimum 2033 – PM Peak

| Intersection | Control Type | 2018 Base | | | 2033 Do Minimum | | |
|--|--------------|----------------------|--------------------|------|----------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue | | 2,115 | 38.4 (C) | 0.82 | 2,947 | 48.7 (D) | 0.89 |
| Hawkesbury Road / Railway Parade | | 1,780 | 26.5 (B) | 0.81 | 2,508 | 28.0 (B) | 0.88 |
| Hawkesbury Road / Darcy Road | | 1,755 | 34.1 (C) | 0.83 | 2,533 | 173.5 (F) | 1.28 |
| Darcy Road / Farm House Road | | 1,395 | 28.0 (B) | 0.48 | 2,020 | 29.4 (C) | 0.72 |
| Darcy Road / Parramatta Marist HS Access | | 1,232 | 18.8 (B) | 0.19 | 1,789 | 27.8 (B) | 0.25 |
| Darcy Road / Westmead Dental Hospital Access | | 1,317 | 10.7 (A) | 0.36 | 1,893 | 13.5 (A) | 0.53 |
| Darcy Road / Catherine McAuley Access | | 1,278 | 3.7 (A) | 0.16 | 1,826 | 3.7 (A) | 0.20 |
| Darcy Road / Mons Road / Institute Road | | 1,828 | 45.2 (D) | 0.80 | 2,513 | 104.7 (F) | 1.49 |
| Darcy Road / Mother Teresa PS Access | | 1,773 | 11.6 (A) | 0.46 | 2,367 | 15.3 (B) | 0.55 |
| Darcy Road / Bridge Road | | 2,341 | 23.1 (B) | 0.61 | 3,047 | 22.4 (B) | 0.83 |
| Bridge Road / Alexandra Avenue | | 1,415 | 14.3 (A) | 0.61 | 1,816 | 25.8 (B) | 0.82 |

5. DEVELOPMENT TRAFFIC ASSESSMENT

5.1 Overview

The future year 2023 and 2033 models with the development traffic were developed by adding the background traffic and development traffic to the Base 2018 demands. Some minor adjustments were made to the year 2018 signal settings to reflect changes in the traffic patterns. The 2023 and 2033 With Development model traffic demands and road network assumptions are summarised in Table 4.1.

Table 5.1: With Development Models

| Scenario | Demand Traffic | Road Network |
|-----------------------|---|---|
| 2023 With Development | 2018 Base Demand <i>plus</i> Background traffic Growths to 2023 plus Development Traffic | The following upgrades were incorporated at the: <ul style="list-style-type: none"> ▪ Darcy Road / Mons Road Intersection ▪ Darcy Road / Hawkesbury Road Intersection |
| 2033 With Development | 2018 Base Demand <i>plus</i> Background traffic Growths to 2033 plus Development Traffic | |

The Do Minimum Model results are included in **Appendix G** and summarised below.

5.2 2023 With Development Assessment – Key Outputs

Table 5.2 and Table 5.3 compare the 2023 Do Minimum intersection performance with 2023 AM and PM peak With Development scenario. The key observations include:

- Generally, when compared with the 2023 Do Minimum scenario, in the AM peak, the intersections within the study area provide similar performance in the 2023 With Development scenario
- The only exception is the Hawkesbury Road / Alexandra Avenue intersection. In the AM peak, delays at this intersection will increase substantially. This is due to a 9% increase in traffic volumes
- Some intersections, including the Darcy Road / Bridge Road signalised intersection, show some reduced delay in the AM peak. This is due to less traffic arriving at this intersection as a result of congestion at other upstream intersections. In the 2023 With Development scenario, this intersection will service 2% less traffic when compared with the Do Minimum scenario
- The intersections provide similar performance with the PM peak traffic.

Table 5.2: Intersection Performance – With Development 2023 – AM Peak























| Intersection | Control Type | 2023 Do Minimum | | | 2023 With Development | | |
|--|---|----------------------|--------------------|------|-----------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue |  | 2,660 | 85.5 (F) | 1.09 | 2,897 | 237.8 (F) | 1.43 |
| Hawkesbury Road / Railway Parade |  | 2,302 | 14.3 (A) | 0.56 | 2,570 | 15.6 (B) | 0.52 |
| Hawkesbury Road / Darcy Road |  | 2,196 | 36.8 (C) | 0.57 | 2,488 | 35.6 (C) | 0.58 |
| Darcy Road / Farm House Road |  | 1,726 | 24.8 (B) | 0.62 | 2,026 | 25.1 (B) | 0.61 |
| Darcy Road / Parramatta Marist HS Access |  | 1,560 | 13.0 (A) | 0.26 | 1,861 | 10.3 (A) | 0.48 |
| Darcy Road / Westmead Dental Hospital Access |  | 1,671 | 8.7 (A) | 0.34 | 1,776 | 12.7 (A) | 0.69 |
| Darcy Road / Catherine McAuley Access |  | 1,601 | 3.9 (A) | 0.21 | 1,626 | 3.9 (A) | 0.21 |
| Darcy Road / Mons Road / Institute Road |  | 2,128 | 54.8 (D) | 1.02 | 2,187 | 51.9 (D) | 0.98 |
| Darcy Road / Mother Teresa PS Access |  | 2,449 | 16.2 (B) | 0.74 | 2,146 | 10.6 (A) | 0.39 |
| Darcy Road / Bridge Road |  | 2,714 | 23.8 (B) | 0.64 | 2,648 | 16.1 (B) | 0.76 |
| Bridge Road / Alexandra Avenue |  | 1,562 | 20.8 (B) | 0.87 | 1,626 | 65.3 (E) | 1.02 |

Table 5.3: Intersection Performance – With Development 2023 – PM Peak

| Intersection | Control Type | 2023 Do Minimum | | | 2023 With Development | | |
|--|---|----------------------|--------------------|------|-----------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue |  | 2,394 | 41.0 (C) | 0.87 | 2,464 | 40.6 (C) | 0.85 |
| Hawkesbury Road / Railway Parade |  | 2,025 | 31.0 (C) | 0.89 | 2,117 | 29.4 (C) | 0.86 |
| Hawkesbury Road / Darcy Road |  | 2,024 | 92.3 (F) | 1.11 | 2,135 | 101.3 (F) | 1.15 |
| Darcy Road / Farm House Road |  | 1,612 | 29.3 (C) | 0.59 | 1,729 | 30.4 (C) | 0.65 |
| Darcy Road / Parramatta Marist HS Access |  | 1,426 | 21.9 (B) | 0.30 | 1,544 | 14.4 (A) | 0.27 |
| Darcy Road / Westmead Dental Hospital Access |  | 1,517 | 12.3 (A) | 0.43 | 1,663 | 16.3 (B) | 0.56 |
| Darcy Road / Catherine McAuley Access |  | 1,469 | 3.7 (A) | 0.18 | 1,532 | 3.7 (A) | 0.18 |
| Darcy Road / Mons Road / Institute Road |  | 2,066 | 38.4 (C) | 0.94 | 2,128 | 38.1 (C) | 0.94 |
| Darcy Road / Mother Teresa PS Access |  | 1,980 | 13.2 (A) | 0.50 | 1,853 | 12.6 (A) | 0.29 |
| Darcy Road / Bridge Road |  | 2,585 | 21.4 (B) | 0.70 | 2,514 | 20.7 (B) | 0.63 |
| Bridge Road / Alexandra Avenue |  | 1,549 | 16.8 (B) | 0.68 | 1,522 | 16.0 (B) | 0.67 |

5.3 2033 With Development Assessment – Key Outputs

Table 5.4 and Table 5.5 compare the 2033 Do Minimum Scenario with the 2033 AM and PM peak With Development scenario. The key observations include:

- Generally, when compared with the 2033 Do Minimum Scenario, in the AM peak, most of the key intersections within the study area provide substantial delays with the With Development scenario
- In the AM peak, all three intersections on Hawkesbury Road would operate at LoS F with the With Development scenario
- Most notably, the Darcy Road / Bridge Road signalised intersection would operate at LoS F with substantial delays. Traffic on all three key approaches would experience substantial delays
- The right turning traffic from Darcy Road (west) to Mother Teresa Primary School access (south) will experience long delays. The capacity of this right turn movement is significantly lower than the future right turn demand
- In general, the road network would not service the future AM peak traffic demands
- In the PM peak, most of the key intersections would provide traffic performance similar to the Do Minimum scenario.

Table 5.4: Intersection Performance – With Development 2033 – AM Peak























| Intersection | Control Type | 2033 Do Minimum | | | 2033 With Development | | |
|--|---|----------------------|--------------------|------|-----------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue |  | 3,232 | 169.6 (F) | 1.24 | 3,670 | 255.7 (F) | 1.36 |
| Hawkesbury Road / Railway Parade |  | 2,800 | 95.9 (F) | 1.11 | 3,254 | 72.1 (F) | 1.04 |
| Hawkesbury Road / Darcy Road |  | 2,762 | 69.5 (E) | 1.01 | 3,241 | 183.7 (F) | 1.24 |
| Darcy Road / Farm House Road |  | 2,175 | 29.8 (C) | 0.88 | 2,645 | 30.0 (C) | 0.91 |
| Darcy Road / Parramatta Marist HS Access |  | 1,966 | 15.7 (B) | 0.31 | 2,436 | 11.5 (A) | 0.56 |
| Darcy Road / Westmead Dental Hospital Access |  | 2,092 | 9.0 (A) | 0.44 | 2,341 | 14.6 (B) | 0.91 |
| Darcy Road / Catherine McAuley Access |  | 2,005 | 3.9 (A) | 0.25 | 2,172 | 3.9 (A) | 0.24 |
| Darcy Road / Mons Road / Institute Road |  | 2,600 | 65.4 (E) | 1.01 | 2,802 | 55.1 (D) | 0.96 |
| Darcy Road / Mother Teresa PS Access |  | 2,841 | 41.9 (C) | 0.95 | 3,319 | 389.5 (F) | 1.41 |
| Darcy Road / Bridge Road |  | 3,160 | 59.9 (E) | 1.04 | 3,743 | 251.7 (F) | 1.46 |
| Bridge Road / Alexandra Avenue |  | 1,828 | 105.3 (F) | 1.09 | 2,234 | 201.0 (F) | 1.20 |

Table 5.5: Intersection Performance – With Development 2033 – PM Peak

| Intersection | Control Type | 2033 Do Minimum | | | 2033 With Development | | |
|--|---|----------------------|--------------------|------|-----------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue |  | 2,947 | 48.7 (D) | 0.89 | 3,080 | 92.9 (F) | 1.07 |
| Hawkesbury Road / Railway Parade |  | 2,508 | 28.0 (B) | 0.88 | 2,659 | 23.9 (B) | 0.82 |
| Hawkesbury Road / Darcy Road |  | 2,533 | 173.5 (F) | 1.28 | 2,699 | 197.0 (F) | 1.33 |
| Darcy Road / Farm House Road |  | 2,020 | 29.4 (C) | 0.72 | 2,188 | 30.9 (C) | 0.72 |
| Darcy Road / Parramatta Marist HS Access |  | 1,789 | 27.8 (B) | 0.25 | 1,958 | 19.2 (B) | 0.32 |
| Darcy Road / Westmead Dental Hospital Access |  | 1,893 | 13.5 (A) | 0.53 | 2,107 | 17.2 (B) | 0.75 |
| Darcy Road / Catherine McAuley Access |  | 1,826 | 3.7 (A) | 0.20 | 1,946 | 3.7 (A) | 0.20 |
| Darcy Road / Mons Road / Institute Road |  | 2,513 | 104.7 (F) | 1.49 | 2,632 | 101.4 (F) | 1.49 |
| Darcy Road / Mother Teresa PS Access |  | 2,367 | 15.3 (B) | 0.55 | 2,517 | 18.8 (B) | 0.58 |
| Darcy Road / Bridge Road |  | 3,047 | 22.4 (B) | 0.83 | 3,211 | 61.2 (E) | 1.89 |
| Bridge Road / Alexandra Avenue |  | 1,816 | 25.8 (B) | 0.82 | 1,908 | 34.1 (C) | 0.89 |

6. ASSESSMENT OF UPGRADE MEASURES

6.1 Overview

As shown in the 2033 assessment, the road network would not service the future AM peak traffic demands with substation delays at the key intersections. The following intersections have been identified as the pinch points:

- Darcy Road / Mother Teresa Primary School Access
- Darcy Road / Bridge Road / Coles Access.

The proponent of this development has identified the need to upgrade the Darcy Road / Mother Teresa Primary School Access intersection. It was suggested that a left turn slip road was introduced for the left turning traffic from Darcy Road (E) to Mother Teresa Primary School Access.

The 2023 and 2033 With Development and With Upgrade model traffic demands and road network assumptions are summarised in Table 6.1.

Table 6.1: With Development and With Upgrade Models

| Scenario | Demand Traffic | Road Network |
|---------------------------------|---|---|
| 2023 With Development + Upgrade | 2018 Base Demand <i>plus</i> Background traffic Growths to 2023 plus Development Traffic | The following upgrades were incorporated: <ul style="list-style-type: none"> ▪ At the Darcy Road / Mons Road Intersection |
| 2033 With Development + Upgrade | 2018 Base Demand <i>plus</i> Background traffic Growths to 2033 plus Development Traffic | <ul style="list-style-type: none"> ▪ At the Darcy Road / Hawkesbury Road Intersection ▪ Plus, the upgrades discussed below in Section 6.2. |

The Do Minimum Model results are included in **Appendix H** and are summarised below.

6.2 Proposed Upgrade Measures

The following upgrades have been introduced in the With Development and With Upgrade Model:

- **Traffic Signals at Mother Teresa Primary School Access:** A preliminary assessment of the proposed left turn slip lane at the Mother Teresa Primary School Access suggests that the proposed upgrade will improve the intersection performance. However, in order to service the future traffic demands more improvements are required. For the purpose of this assessment, traffic signals were assumed at this intersection
- **An Additional Traffic Lane:** This is for the left turning traffic from the High School approach to Darcy Road at the Westmead Dental Hospital signalised intersection as identified by the proponent.

In addition to the above, the route taken by high school students/staff travel from Darcy Road (west) to the High School was updated to a more realistic route.

6.2.1 Mother Teresa Primary School Access

A layout of the proposed signalised intersection is shown in

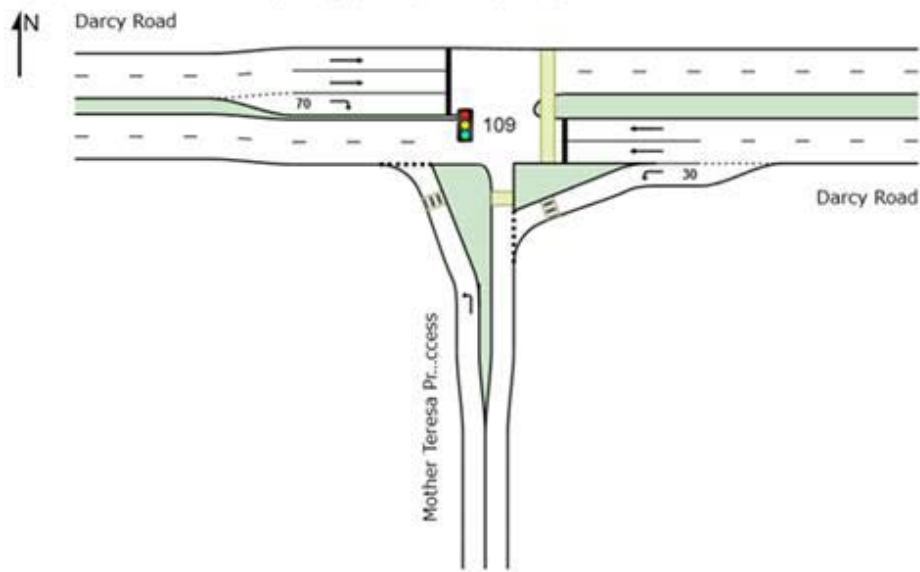


Figure 6.1. It is proposed that traffic from the school access exit the site via the left turn movement to Darcy Road. A right turn movement out of the school access was not considered.

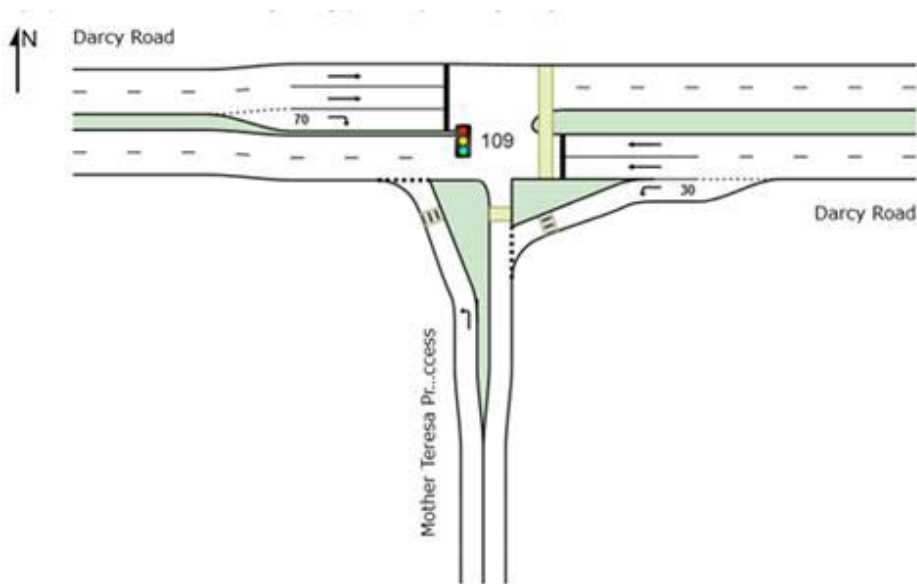


Figure 6.1: Darcy Road / Mother Teresa Primary School Access Intersection Signals

6.2.2 Westmead Dental Hospital

A layout of the proposed additional traffic lane is shown in Figure 6.2. The proposed measure will improve the capacity of this approach.

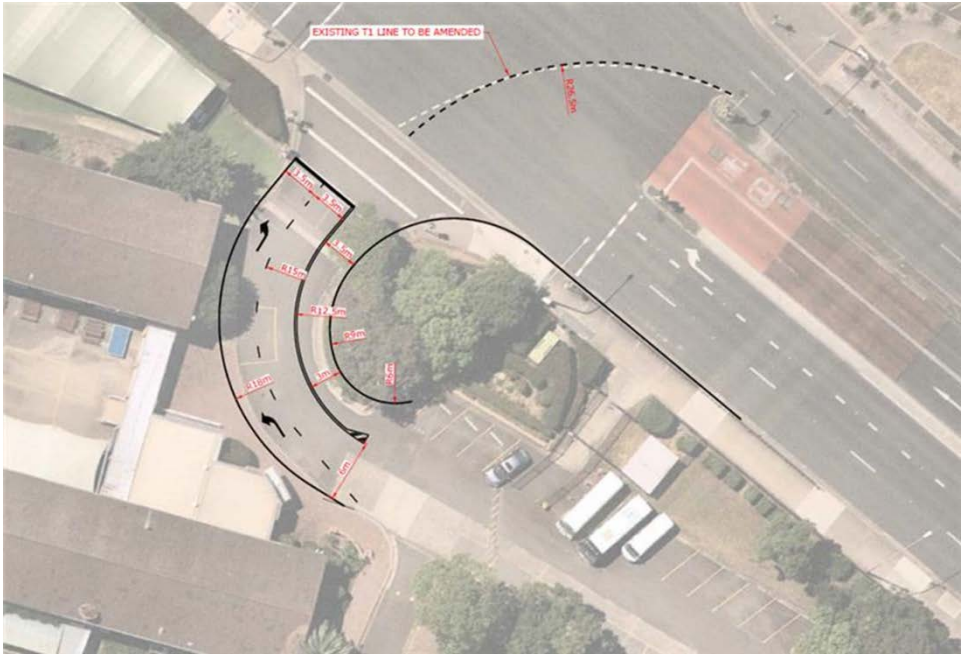


Figure 6.2: Upgraded Darcy Road / Westmead Dental Hospital Access Intersection

6.2.3 Alternative Route to High School

In the development traffic assessment, it was assumed that High School student and staff accessing the school access from west do so by travelling along Bridge Road, Alexandra Avenue (west), Hawkesbury Road and finally turn left into the school via Darcy Road as shown in Figure 6.3 by a red dotted line. However, the shortest route is via Darcy Road. The shortest route was not considered in the traffic distribution as vehicles from Darcy Road are not allowed to turn right into the High School Access. The preliminary assessment suggests that the right turn traffic from Darcy Road to Bridge Road would experience substantial delays of over eight minutes. Therefore, it was assumed that to avoid this delay traffic would travel through Darcy Road, turn right into Farm House Road, make a “U” turn inside the University, turn left to Darcy Road and eventually turn left into High School as shown with a green dotted line in Figure 6.3.

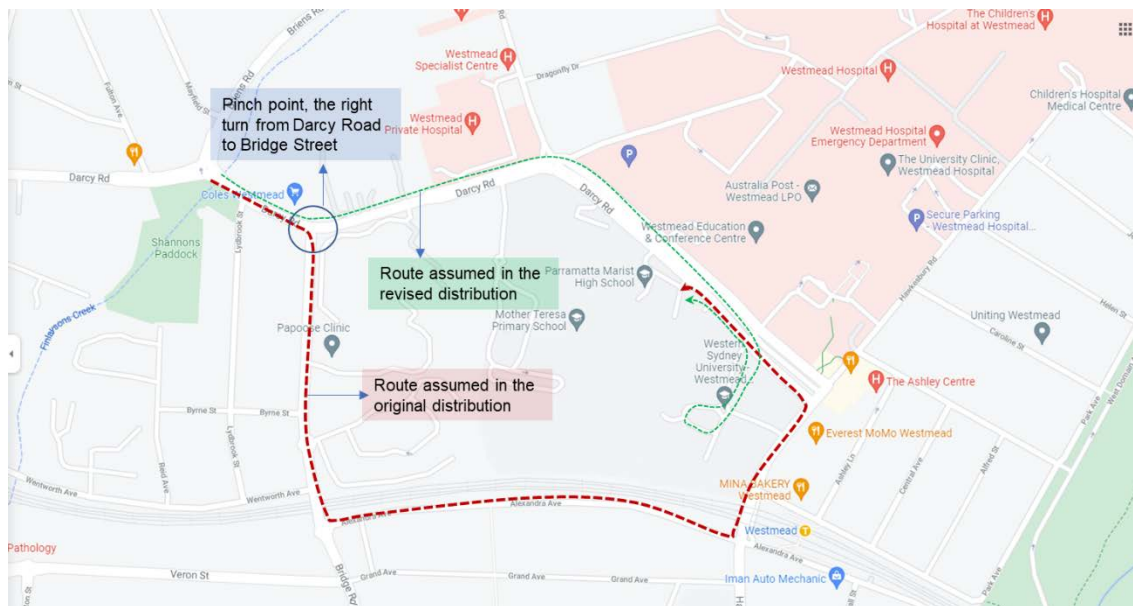


Figure 6.3: Assumed Route for Traffic Accessing the High School from West

6.3 2033 With Development and With Upgrades Assessment













As shown in the previous sections, the network would operate satisfactorily in the 2033 AM and PM peak conditions. The assessment also suggests that the proposed development would not have any substantial impacts on the 2033 PM peak network. This is because the school finishing hour does not coincide with the typical commuter peak hour. Therefore, the 2033 AM peak is considered to be critical for assessing the traffic impact from the development. For this reason, only results from the 2033 AM peak are discussed in this section.

Table 6.2 compares the 2033 Do Minimum Scenario with the 2033 AM peak With Development With Upgrade scenario. The key observations include:

- Generally, the proposed re-distribution will improve the traffic flows on Hawkesbury Road as it reduces the number of northbound traffic on this road
- Traffic performance of the Mother Teresa Primary School access intersection will improve substantially. However, a detailed analysis shows that the left turn traffic from the school would continue to experience long delays. In the schematic layout this approach was assumed to be one lane with the left turning vehicles give way to the westbound traffic on Darcy Road. The introduction of an additional short lane to provide two left turning lanes included in the signals is expected to improve the performance of this approach

- Although The Darcy Road / Bridge Road intersection would continue to provide LoS F with no substantial improvement is delays are predicted when compared with the **Without** Upgrade scenario
- The proposed additional lane will improve the performance of the High School approach at the Darcy Road / Westmead Dental Hospital intersection.

Table 6.2: Intersection Performance – With Development With Upgrade 2033 – AM Peak

| Intersection | Control Type | 2033 Do Minimum | | | 2033 With Development With Upgrade | | |
|--|---|----------------------|--------------------|------|------------------------------------|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue |  | 3,232 | 169.6 (F) | 1.24 | 3,520 | 228.0 (F) | 1.34 |
| Hawkesbury Road / Railway Parade |  | 2,800 | 95.9 (F) | 1.11 | 3,104 | 77.0 (F) | 1.06 |
| Hawkesbury Road / Darcy Road |  | 2,762 | 69.5 (E) | 1.01 | 3,091 | 146.3 (F) | 1.17 |
| Darcy Road / Farm House Road |  | 2,175 | 29.8 (C) | 0.88 | 2,795 | 45.2 (D) | 1.22 |
| Darcy Road / Parramatta Marist HS Access |  | 1,966 | 15.7 (B) | 0.31 | 2,586 | 10.5 (A) | 0.50 |
| Darcy Road / Westmead Dental Hospital Access |  | 2,092 | 9.0 (A) | 0.44 | 2,491 | 13.1 (A) | 0.47 |
| Darcy Road / Catherine McAuley Access |  | 2,005 | 3.9 (A) | 0.25 | 2,472 | 3.9 (A) | 0.30 |
| Darcy Road / Mons Road / Institute Road |  | 2,600 | 65.4 (E) | 1.01 | 2,952 | 81.4 (F) | 1.07 |
| Darcy Road / Mother Teresa PS Access |  /  | 2,841 | 41.9 (C) | 0.95 | 3,469 | 54 (D) | 1.10 |
| Darcy Road / Bridge Road |  | 3,160 | 59.9 (E) | 1.04 | 3,743 | 264.1 (F) | 1.40 |
| Bridge Road / Alexandra Avenue |  | 1,828 | 105.3 (F) | 1.09 | 2,084 | 187.6 (F) | 1.18 |

7. SENSITIVITY ANALYSIS

7.1 Overview

The traffic modelling analysis shows that the road network would not support the traffic from the proposed full development. The network upgrade measures proposed will improve the performance of the Mother Teresa and High School access intersections on Darcy Road. However, during the critical 2033 AM peak, the Darcy Road / Bridge Road intersection would continue to operate poorly with long delays and queues on all three key approaches. As part of this assessment a sensitivity analysis was undertaken to understand what level of development the road network would support.

A total of two scenarios have been assessed:













- **70% Development:** The proposed development is reduced by 30% with no changes to the background traffic growths
- **50% Development:** The proposed development is reduced by half with no changes to the background traffic growths.

The SIDRA modelling results are included in **Appendix I** and are summarised below.

7.2 70% Development

The With Development and With Upgrade SIDRA model was updated to model the development at 70% level. The SIDRA intersection performance is compared with the 2033 100% Development and With Upgrade Scenario. The results show that while intersection performance will improve slightly, in the critical 2033 AM Peak the Darcy Road / Bridge Road intersection would continue to provide poor performance as shown in Table 7.1. Traffic at this intersection would continue to experience long delays and queues on all three key approaches.












Table 7.1: Intersection Performance – With 70% Development With Upgrade 2033 – AM Peak

| Intersection | Control Type | 2033 With Development With Upgrade | | | 2033 With 70% Development and With Upgrade | | |
|--|---|------------------------------------|--------------------|------|--|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue |  | 3,520 | 228.0 (F) | 1.34 | 3,475 | 210.8 (F) | 1.30 |
| Hawkesbury Road / Railway Parade |  | 3,104 | 77.0 (F) | 1.06 | 3,059 | 44.5 (D) | 0.98 |
| Hawkesbury Road / Darcy Road |  | 3,091 | 146.3 (F) | 1.17 | 3,046 | 99.6 (F) | 1.11 |
| Darcy Road / Farm House Road |  | 2,795 | 45.2 (D) | 1.22 | 2,722 | 38.7 (C) | 1.10 |
| Darcy Road / Parramatta Marist HS Access |  | 2,586 | 10.5 (A) | 0.50 | 2,512 | 10.1 (A) | 0.46 |
| Darcy Road / Westmead Dental Hospital Access |  | 2,491 | 13.1 (A) | 0.47 | 2,457 | 12.2 (A) | 0.46 |
| Darcy Road / Catherine McAuley Access |  | 2,472 | 3.9 (A) | 0.30 | 2,288 | 3.9 (A) | 0.26 |
| Darcy Road / Mons Road / Institute Road |  | 2,952 | 81.4 (F) | 1.07 | 2,919 | 101.3 (F) | 1.12 |
| Darcy Road / Mother Teresa PS Access |  /  | 3,469 | 54 (D) | 1.10 | 3,357 | 66.3 (E) | 1.04 |
| Darcy Road / Bridge Road |  | 3,743 | 264.1 (F) | 1.40 | 3,648 | 212.1 (F) | 1.49 |
| Bridge Road / Alexandra Avenue |  | 2,084 | 187.6 (F) | 1.18 | 2,038 | 177.7 (F) | 1.17 |

7.3 50% Development

The With Development and With Upgrade SIDRA model was updated to model the development at half of its proposed size. The SIDRA intersection performance is compared in Table 7.2. When compared with the 70% development level, the performance of the critical Darcy Road / Bridge Road intersection would improve. However, traffic at this intersection would continue to experience long delays and queues on all three key approaches.

Table 7.2: Intersection Performance – With 50% Development With Upgrade 2033 – AM Peak

| Intersection | Control Type | 2033 With Development With Upgrade | | | 2033 With 70% Development and With Upgrade | | |
|--|---|------------------------------------|--------------------|------|--|--------------------|------|
| | | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS | Traffic Vol (veh/hr) | Delay in Sec (LoS) | DoS |
| Hawkesbury Road / Alexandra Avenue |  | 3,520 | 228.0 (F) | 1.34 | 3,415 | 193.0 (F) | 1.27 |
| Hawkesbury Road / Railway Parade |  | 3,104 | 77.0 (F) | 1.06 | 3,007 | 108.5 (F) | 1.12 |
| Hawkesbury Road / Darcy Road |  | 3,091 | 146.3 (F) | 1.17 | 2,992 | 94.9 (F) | 1.09 |
| Darcy Road / Farm House Road |  | 2,795 | 45.2 (D) | 1.22 | 2,664 | 37.7 (C) | 1.07 |
| Darcy Road / Parramatta Marist HS Access |  | 2,586 | 10.5 (A) | 0.50 | 2,455 | 10.1 (A) | 0.46 |
| Darcy Road / Westmead Dental Hospital Access |  | 2,491 | 13.1 (A) | 0.47 | 2,410 | 12.0 (A) | 0.42 |
| Darcy Road / Catherine McAuley Access |  | 2,472 | 3.9 (A) | 0.30 | 2,242 | 3.9 (A) | 0.26 |
| Darcy Road / Mons Road / Institute Road |  | 2,952 | 81.4 (F) | 1.07 | 2,871 | 100.3 (F) | 1.12 |
| Darcy Road / Mother Teresa PS Access |  | 3,469 | 54 (D) | 1.10 | 3,118 | 38.0 (C) | 0.97 |
| Darcy Road / Bridge Road |  | 3,743 | 264.1 (F) | 1.40 | 3,452 | 167.0 (F) | 1.34 |
| Bridge Road / Alexandra Avenue |  | 2,084 | 187.6 (F) | 1.18 | 2,038 | 186.2 (F) | 1.18 |

7.4 Discussions

The sensitivity analysis suggests that to minimise traffic impacts from the proposed development, additional capacity is required at the Darcy Road / Bridge Road intersection. The level of development that will be supported by the surrounding road network is dependent on two key factors:

- Darcy Road / Bridge Road Intersection Upgrade
- Background Traffic Growth.

The following section discusses the impact of these key factors on the possible level of development.

7.4.1 Darcy Road / Bridge Road Intersection Upgrade

This intersection is constrained by buildings adjacent to the western and northern sides. The south-eastern side of the intersection has some private space with no building lines close to it. Subject to further investigations, this space can be utilised to provide a high angle left slip lane for the westbound to southbound traffic. A schematic layout of the proposed upgrade is shown in Figure 7.1.

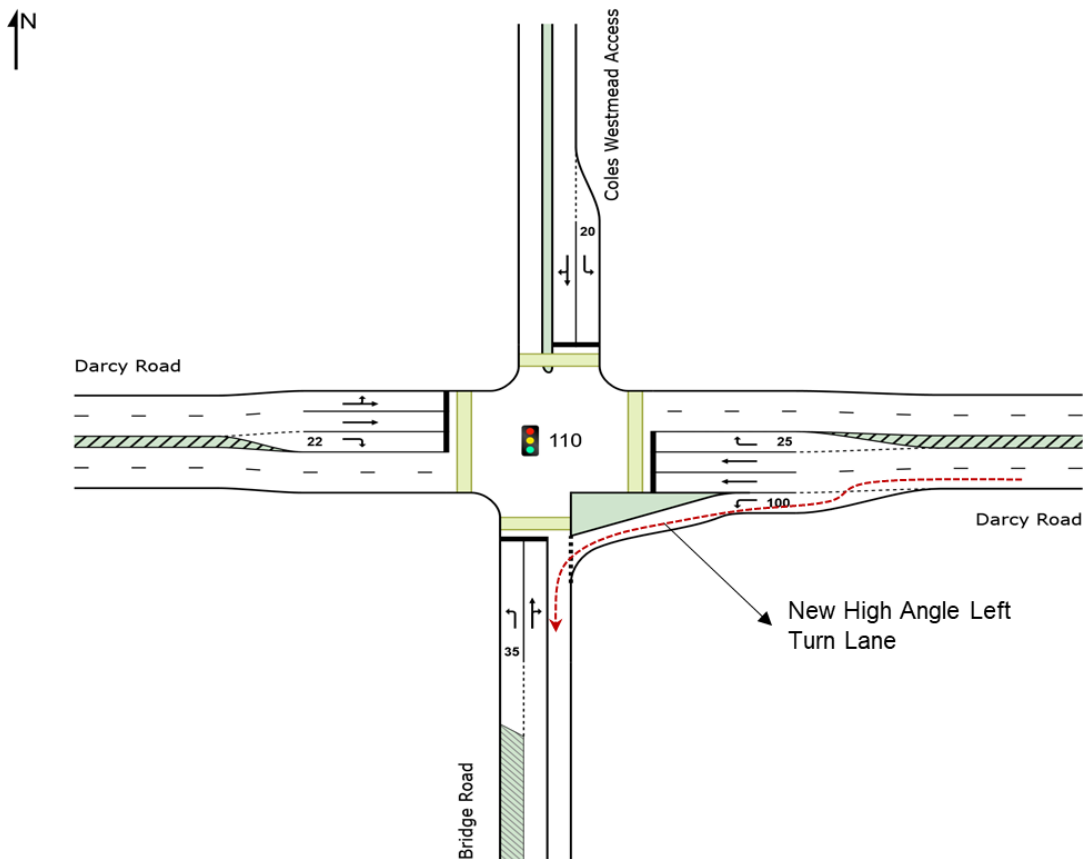


Figure 7.1: Proposed High Angle Left Turn Lane at the Darcy Road / Bridge Road Intersection

7.4.2 Background Traffic Growth

The background traffic growths estimated were based on the 2026 and 2036 STFM model outputs. The STFM is a strategic model that has been based on geographically broad forecasts of population and employment growth that may not be sensitive at the local scale. The STFM is not capacity constrained. That is, where traffic demand exceeds network supply, the model will assign all of its traffic demand to the available routes regardless of if all of the available routes have a volume to capacity ratio greater than 1.0. Peak spreading or demand suppression based on excessive congestion as is seen in real life scenario are not explicitly calculated in the STFM. Based on similar experiences in the greater Sydney network elsewhere, future year traffic demands can be shown to exceed network capacity by at least 20 percent. In practical terms, this traffic 'demand' would never be realised on the network as 'supply' volumes that then are input into more localised modelling and would be dampened by growth suppression, modal shift and/or peak spreading. In recognition of these limitations of the STFM, in recent projects, TfNSW has been running 'parking penalty' scenarios to mimic these suppression effects in the strategic model outputs that then inform more localised modelling inputs.

In light of the above two factors, we strongly suggest that in order to ascertain the actual development potential, further modelling assessments are undertaken by investigating intersection upgrade potentials at the Darcy Road / Bridge Road and applying adjustments to the background traffic growths so that a more realistic background growth is adopted.

8. CONCLUSIONS

The 2018 Base SIDRA model has been re-calibrated and re-validated to TfNSW Modelling Guidelines. The updated base model is deemed to be fit for purpose for undertaking traffic assessment of the proposed expansion of the Westmead Catholic Community Education Precinct.

The background traffic growths have been re-estimated for the 2023 and 2033 traffic assessment. The STFM link plots have been utilised for the estimation.

The development trip generation and distribution have been re-estimated by addressing issues identified during the peer review.

The background traffic growths and the traffic from the proposed development were added to the 2018 base SIDRA modes to develop the 2023 and 2033 AM and PM peak models. The key outcomes from the modelling assessment include:

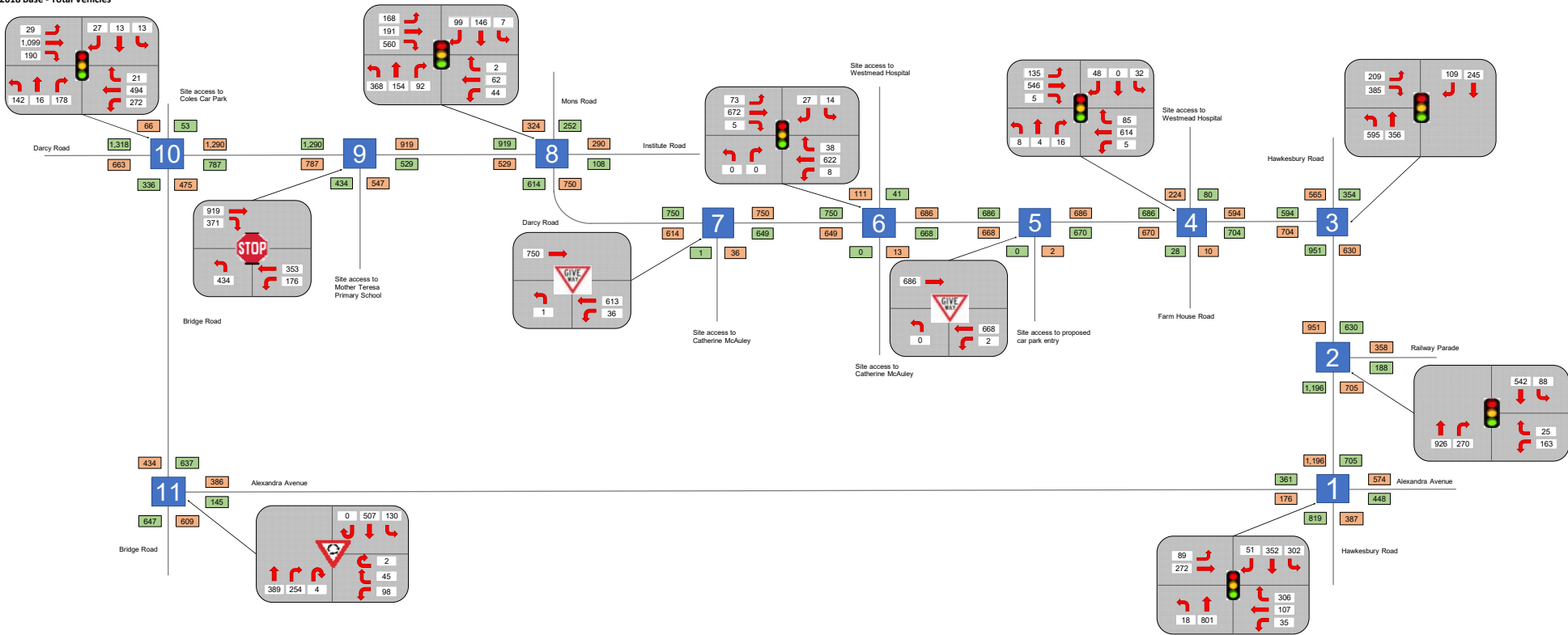
- When compared with the 2018 Base Case, all intersections within the study area would provide similar performance in 2023 and 2033 Do Minimum Scenario. The only exception is the three signalised intersections on Hawkesbury Road. In the critical 2033 AM peak these intersections would provide LoS E/F. This is attributed to the combined impacts of growths in background traffic volumes (31% to 36% between 2018 and 2033) and reduced capacity at the Darcy Road / Hawkesbury Road due to introduction of PLR vehicles
- When traffic from the proposed development were added to the Do Minimum SIDRA model, traffic performance at the Hawkesbury Road intersections would exacerbate. In addition, the Darcy Road / Mother Teresa Primary School and Darcy Road / Bridge Road intersections would provide poor LoS
- Network improvement measures identified by the proponent at the Mother Teresa Primary School access intersection would not satisfactorily improve the intersection performance. For the purpose of the modelling assessment, traffic signals were assumed at this intersection.
- SIDRA modelling assessment for the With Development and With Upgrade Scenario suggests that while traffic signals at the Mother Teresa Primary School access intersection would improve the intersection performance, the Darcy Road / Bridge Road intersection would continue to provide poor traffic performance in the critical 2033 AM peak scenario
- A sensitivity analysis was undertaken to understand what level of development the road network would support. The proposed development was reduced by 30% and subsequently by 50%. The modelling results show that the Darcy Road / Bridge Road intersection would operate at very high level of delay even with the 50% reduction of the development
- The Darcy Road / Bridge Road intersection is constrained by the presence of adjacent buildings. Significant upgrades to this intersection may not be possible. The only exception is the provision of a high angle left turn lane for the westbound and southbound traffic. The intersection upgrade along with acceptable adjustments to the background traffic growths is required to ascertain the acceptable level of development.

Landscape pages should be avoided if possible

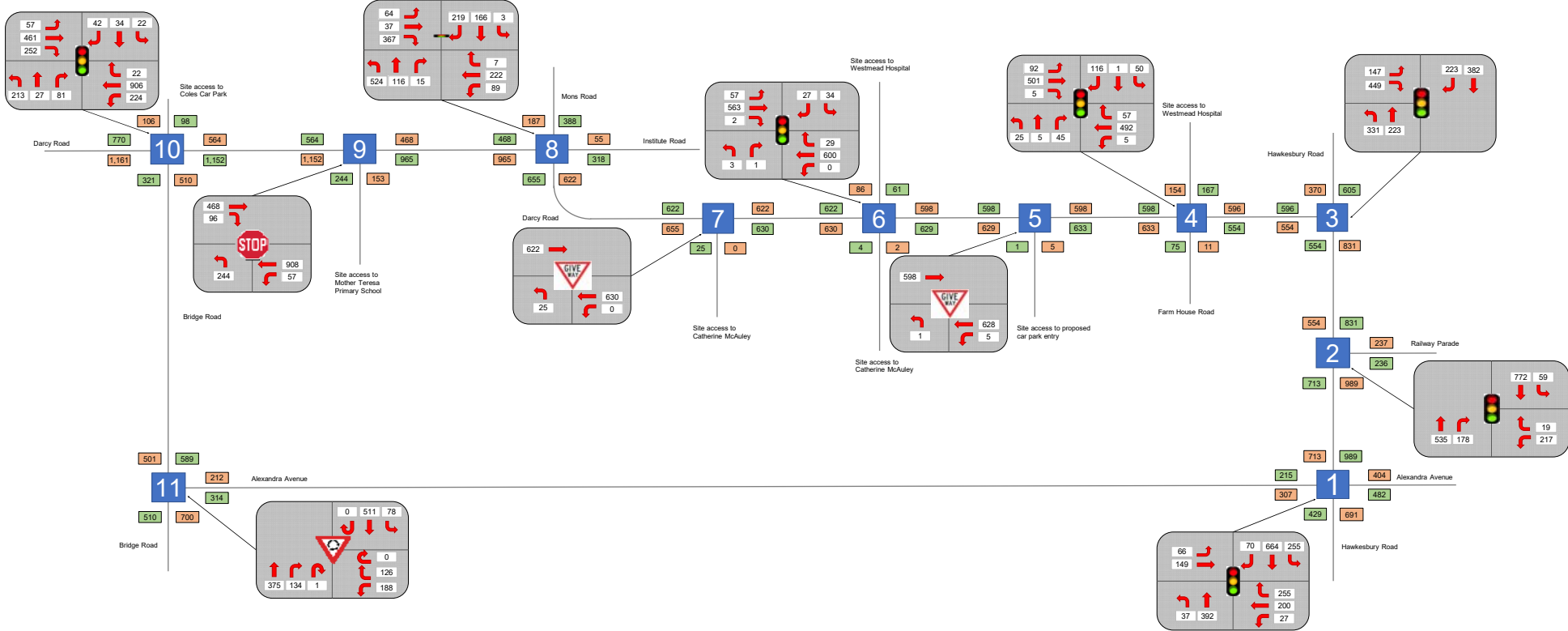
Appendix A: 2018 AM and PM Peak Stick Diagrams



P4803 2 Darcy Road Westmead EIS Peer Review
 07:45-08:45 AM Peak
 2018 Base - Total Vehicles



P4803 2 Darcy Road Westmead EIS Peer Review
15:00-16:00 PM Peak
2018 Base - Total Vehicles



Appendix B: Signal Time Validation



P4803 2 Darcy Road Westmead EIS Peer Review

Signal Time Comparison

AM Peak

| Intersection (TCS) | Cycle / Phase | AM Peak (7:45 - 8:45) | | | | |
|--|---------------|-----------------------|-----|------|-----------|-------------|
| | | IDM (s) | | | SIDRA (s) | Within 10%? |
| | | Avg. | 10% | -10% | | |
| Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571) | CT* | 148 | 163 | 133 | 140 | ✓ |
| | A | 54 | 59 | 49 | 49 | ✓ |
| | B | 15 | 17 | 14 | - | ✗ |
| | C | 19 | 21 | 17 | 38 | ✗ |
| | D | 29 | 32 | 26 | 23 | ✗ |
| | E | 31 | 34 | 28 | 30 | ✓ |
| Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) | CT* | 140 | 163 | 133 | 140 | ✓ |
| | A | 86 | 95 | 77 | 62 | ✗ |
| | D | 35 | 39 | 32 | 45 | ✗ |
| | E | 19 | 21 | 17 | 33 | ✗ |
| Hawkesbury Road / Darcy Road (TCS 1631) | CT* | 145 | 163 | 133 | 140 | ✓ |
| | A | 49 | 54 | 44 | 45 | ✓ |
| | B | 28 | 31 | 25 | 28 | ✓ |
| | C | 32 | 35 | 29 | 37 | ✗ |
| | D | 17 | 19 | 15 | 14 | ✗ |
| | E | 19 | 21 | 17 | 16 | ✗ |
| Darcy Road / Institute Road / Mons Road (TCS 2393) | CT* | 154 | 163 | 133 | 140 | ✓ |
| | A | 48 | 53 | 43 | 59 | ✗ |
| | B | 21 | 23 | 19 | 36 | ✗ |
| | C | 14 | 15 | 13 | - | ✗ |
| | D | 16 | 18 | 14 | 12 | ✗ |
| | E | 37 | 41 | 33 | 21 | ✗ |
| | F | 18 | 20 | 16 | 12 | ✗ |
| Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) | CT* | 145 | 163 | 133 | 140 | ✓ |
| | A | 82 | 90 | 74 | 80 | ✓ |
| | D | 17 | 19 | 15 | 18 | ✓ |
| | E | 24 | 26 | 22 | 22 | ✓ |
| | G | 22 | 24 | 20 | 20 | ✓ |
| Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) | CT* | 139 | 163 | 133 | 140 | ✓ |
| | A | 94 | 103 | 85 | 92 | ✓ |
| | D | 31 | 34 | 28 | 32 | ✓ |
| | E | 14 | 15 | 13 | 16 | ✗ |

P4803 2 Darcy Road Westmead EIS Peer Review

Signal Time Comparison

PM Peak

| Intersection (TCS) | Cycle / Phase | PM Peak (3:00 - 4:00) | | | | |
|--|---------------|-----------------------|-----|------|-----------|-------------|
| | | IDM (s) | | | SIDRA (s) | Within 10%? |
| | | Avg. | 10% | -10% | | |
| Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571) | CT* | 157 | 173 | 141 | 140 | ✗ |
| | A | 50 | 55 | 45 | 43 | ✗ |
| | B | 29 | 32 | 26 | - | ✗ |
| | C | 19 | 21 | 17 | 41 | ✗ |
| | D | 26 | 29 | 23 | 23 | ✓ |
| | E | 33 | 36 | 30 | 33 | ✓ |
| Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) | CT* | 132 | 173 | 141 | 140 | ✗ |
| | A | 77 | 85 | 69 | 82 | ✓ |
| | D | 31 | 34 | 28 | 32 | ✓ |
| | E | 24 | 26 | 22 | 26 | ✓ |
| Hawkesbury Road / Darcy Road (TCS 1631) | CT* | 142 | 173 | 141 | 140 | ✗ |
| | A | 34 | 37 | 31 | 27 | ✗ |
| | B | 26 | 29 | 23 | 34 | ✗ |
| | C | 43 | 47 | 39 | 45 | ✓ |
| | D | 17 | 19 | 15 | 15 | ✓ |
| | E | 22 | 24 | 20 | 19 | ✗ |
| Darcy Road / Institute Road / Mons Road (TCS 2393) | CT* | 164 | 173 | 141 | 140 | ✗ |
| | A | 45 | 50 | 41 | 30 | ✗ |
| | B | 17 | 19 | 15 | 19 | ✓ |
| | C | 15 | 17 | 14 | - | ✗ |
| | D | 19 | 21 | 17 | 20 | ✓ |
| | E | 33 | 36 | 30 | 59 | ✗ |
| | F | 20 | 22 | 18 | 12 | ✗ |
| | G | 15 | 17 | 14 | - | ✗ |
| Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) | CT* | 136 | 173 | 141 | 140 | ✗ |
| | A | 76 | 84 | 68 | 82 | ✓ |
| | D | 18 | 20 | 16 | 19 | ✓ |
| | E | 24 | 26 | 22 | 22 | ✓ |
| | G | 18 | 20 | 16 | 17 | ✓ |
| Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) | CT* | 144 | 173 | 141 | 140 | ✗ |
| | A | 108 | 119 | 97 | 98 | ✓ |
| | D | 23 | 25 | 21 | 30 | ✗ |
| | E | 13 | 14 | 12 | 12 | ✓ |

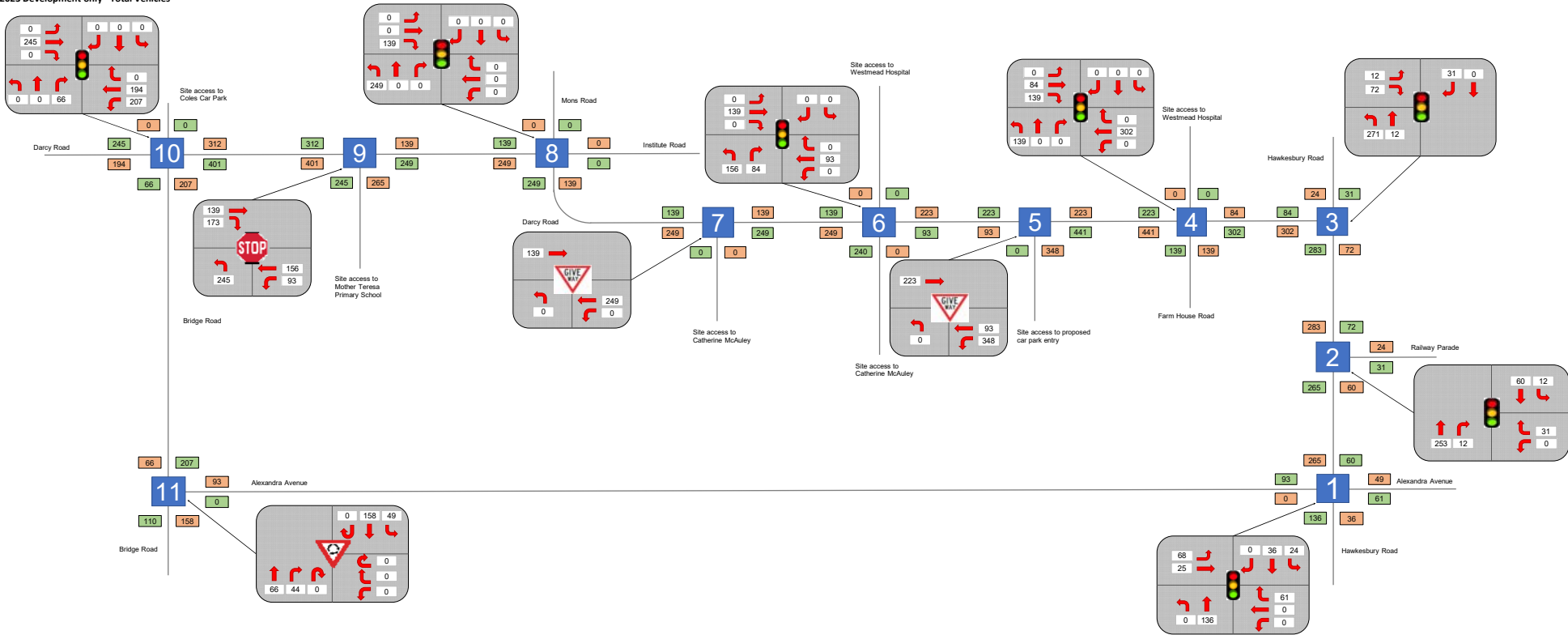
Appendix C: Future Year 2023 and 2033 Development Traffic Volumes



P4803 2 Darcy Road Westmead EIS Peer Review

07:45-08:45 AM Peak

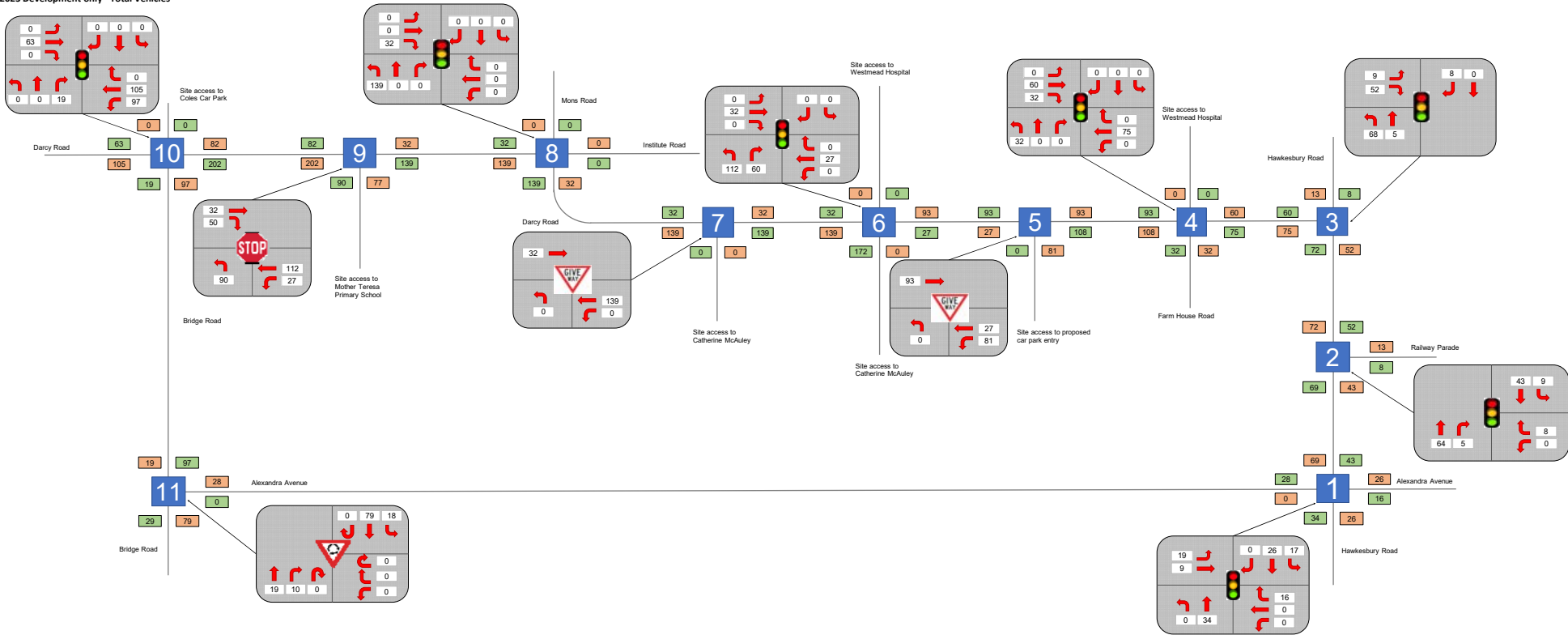
2023 Development only - Total Vehicles



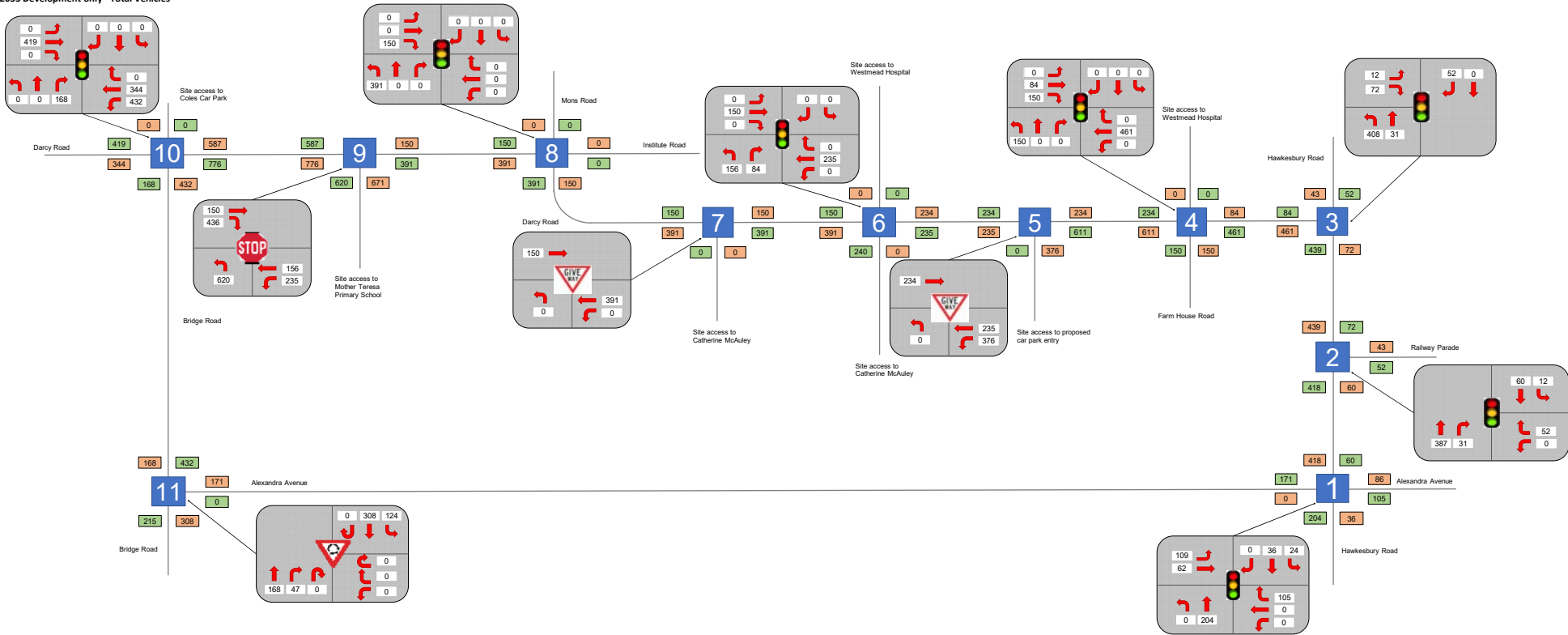
P4803 2 Darcy Road Westmead EIS Peer Review

15:00-16:00 PM Peak

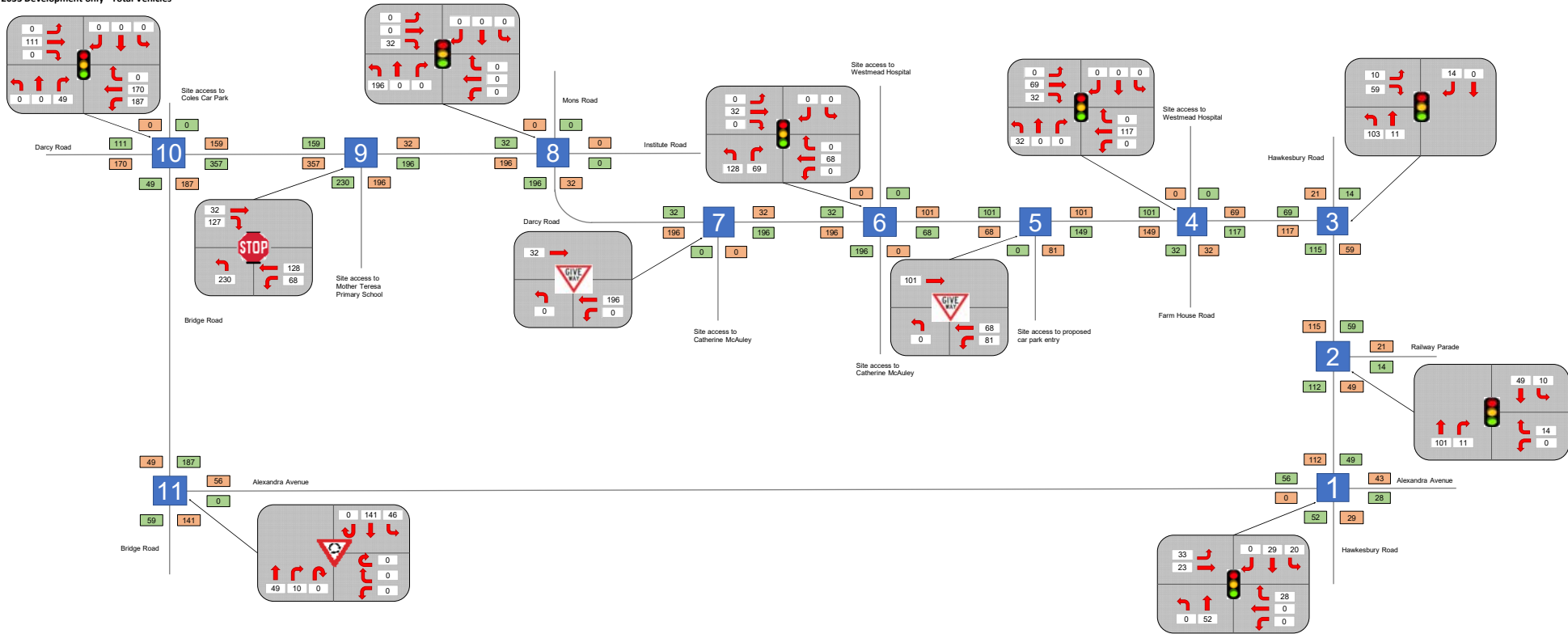
2023 Development only - Total Vehicles



P4803 2 Darcy Road Westmead EIS Peer Review
 07:45-08:45 AM Peak
 2033 Development only - Total Vehicles



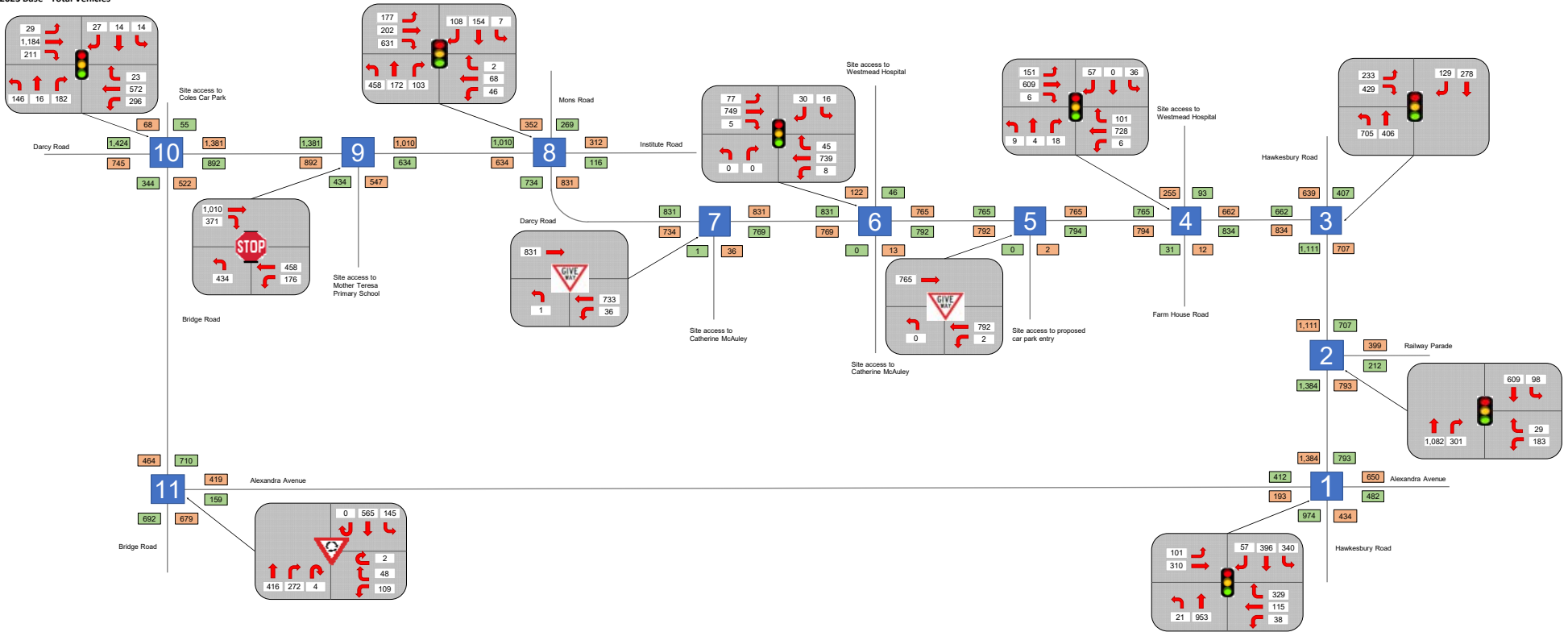
P4803 2 Darcy Road Westmead EIS Peer Review
 15:00-16:00 PM Peak
 2033 Development only - Total Vehicles



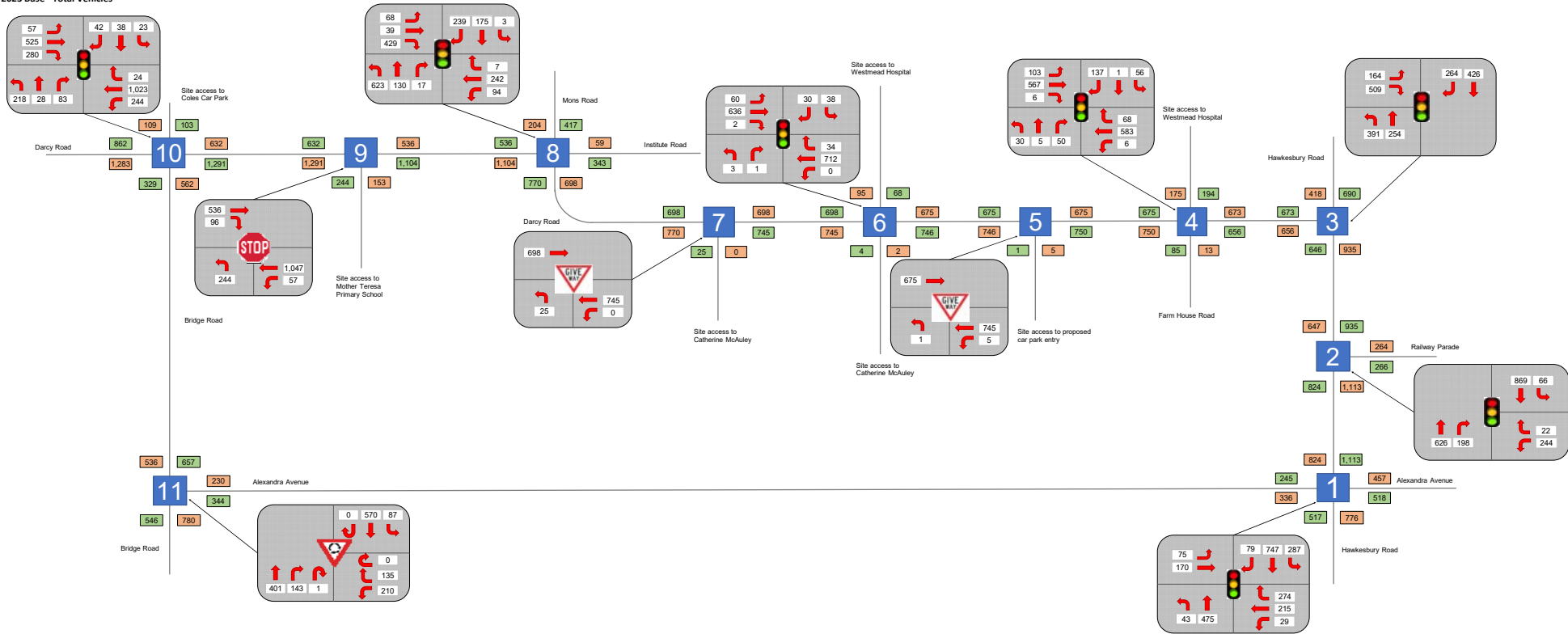
Appendix D: Future Year 2023 and 2033 Do Minimum Traffic Volumes



P4803 2 Darcy Road Westmead EIS Peer Review
07:45-08:45 AM Peak
2023 Base - Total Vehicles



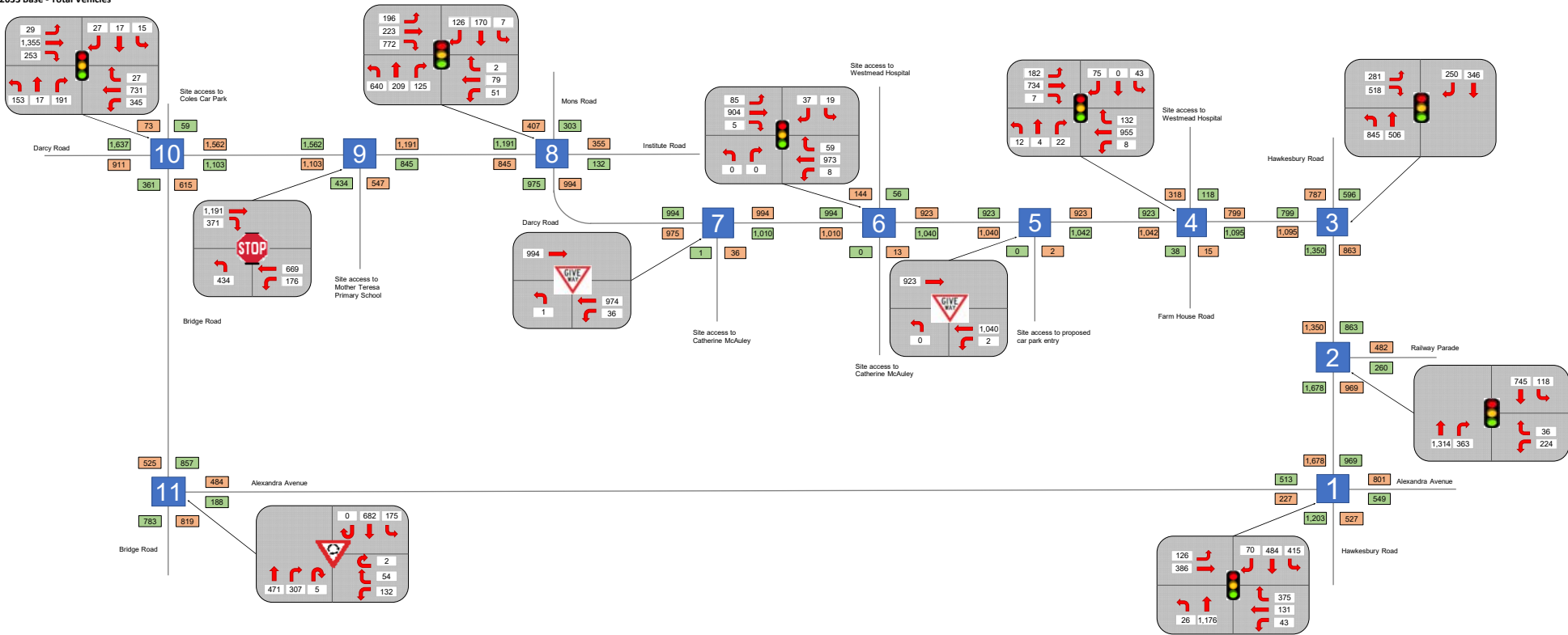
P4803 2 Darcy Road Westmead EIS Peer Review
 15:00-16:00 PM Peak
 2023 Base - Total Vehicles



P4803 2 Darcy Road Westmead EIS Peer Review

07:45-08:45 AM Peak

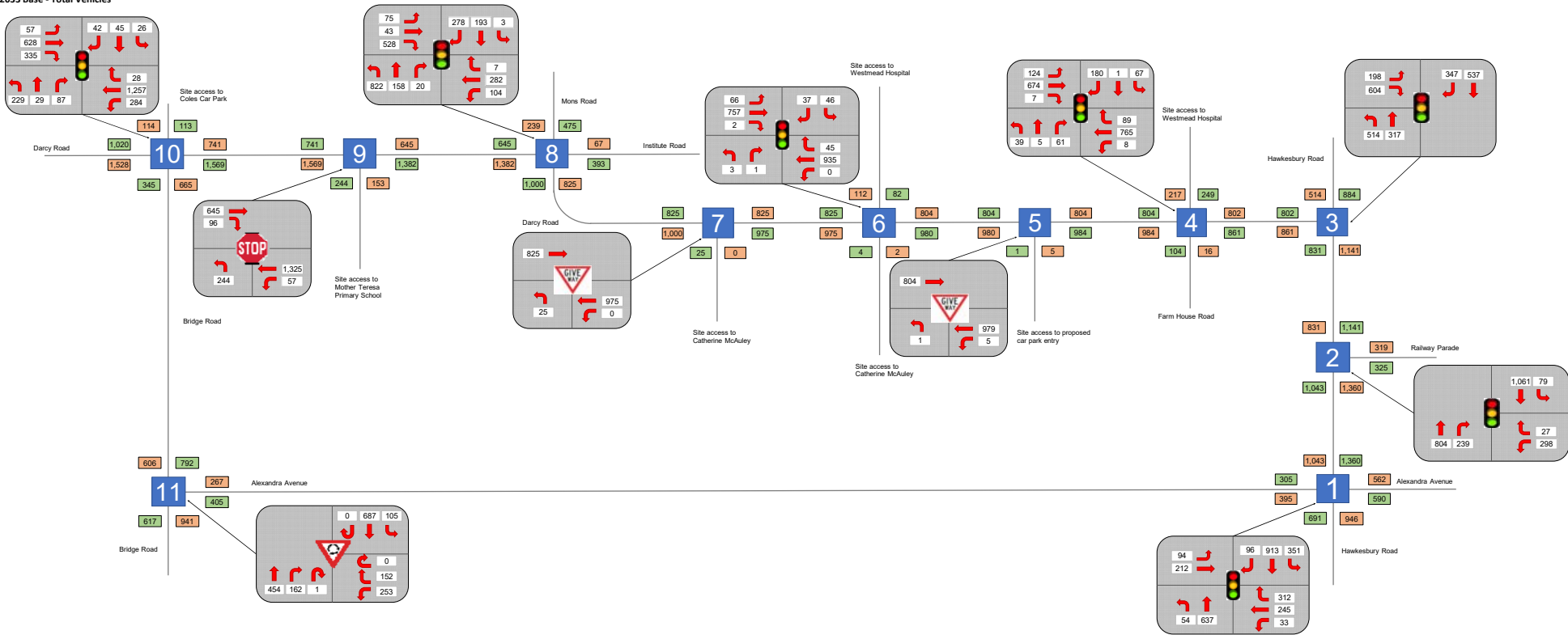
2033 Base - Total Vehicles



P4803 2 Darcy Road Westmead EIS Peer Review

15:00-16:00 PM Peak

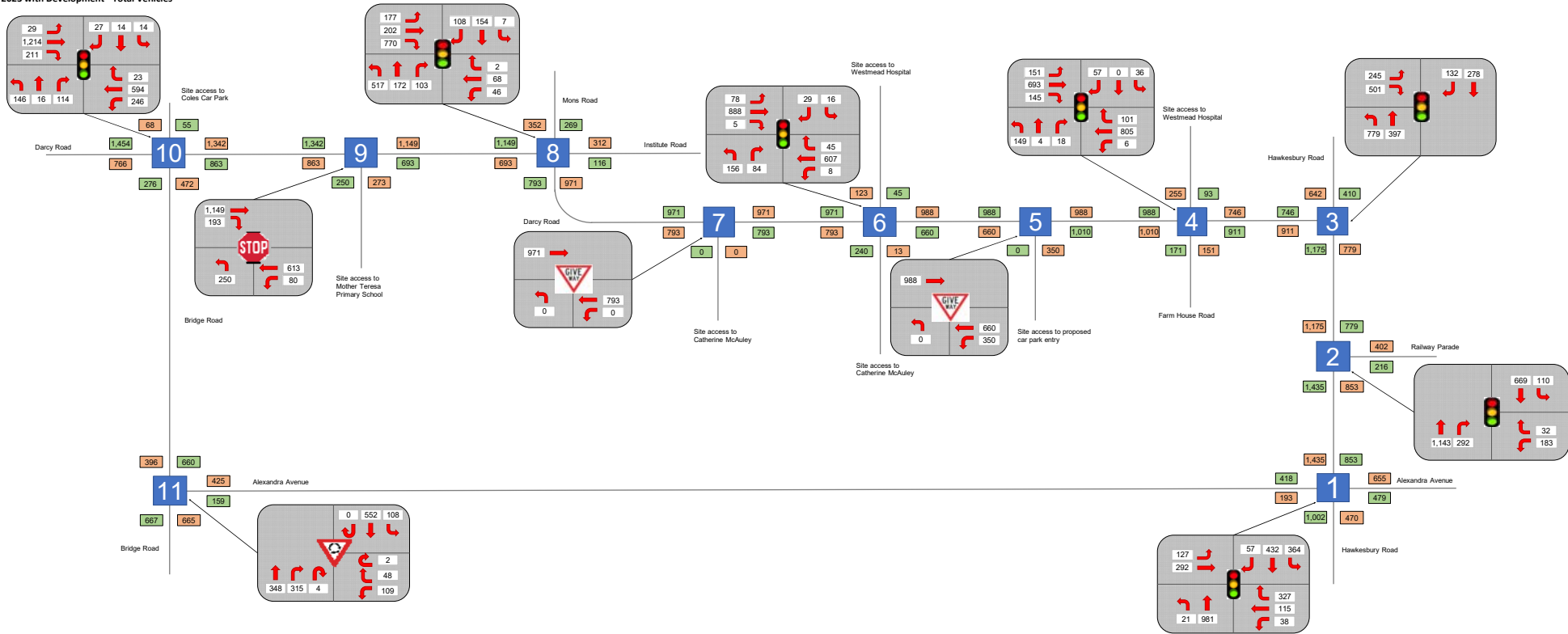
2033 Base - Total Vehicles



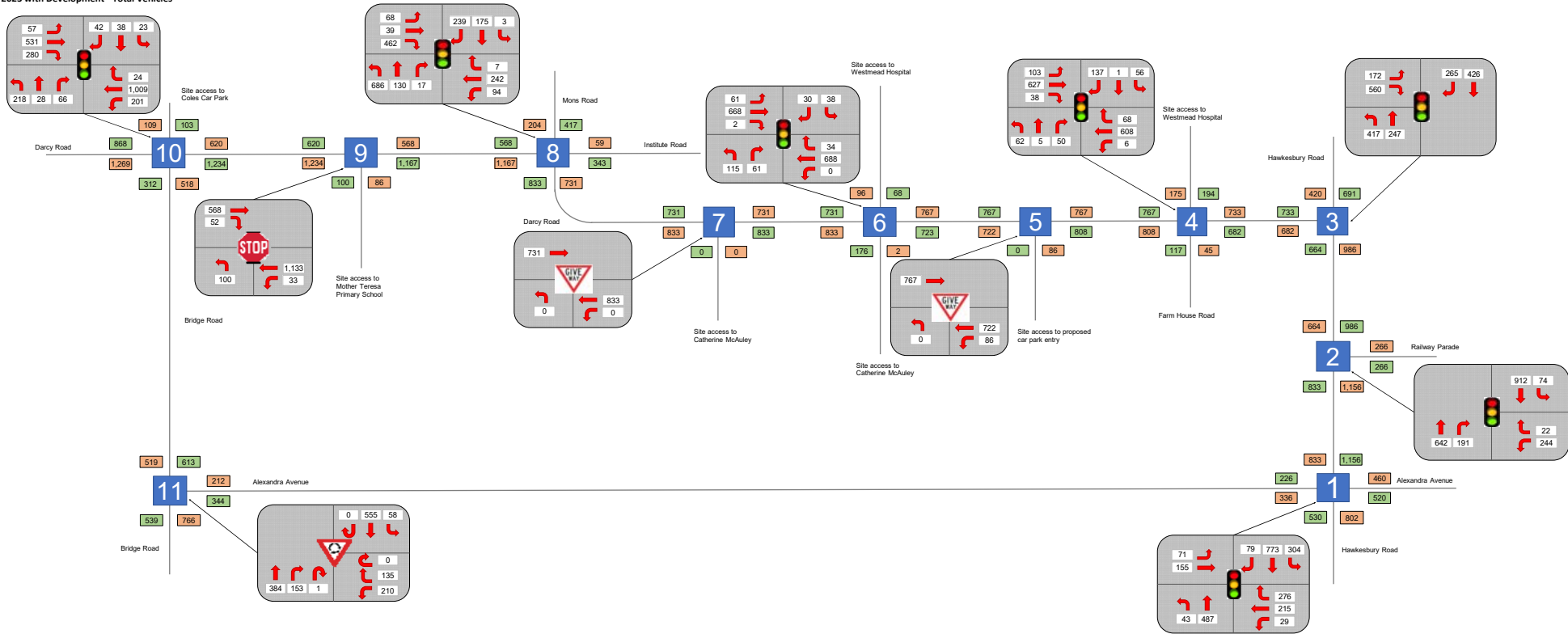
Appendix E: Future Year 2023 and 2033 'With Development' Traffic Volumes



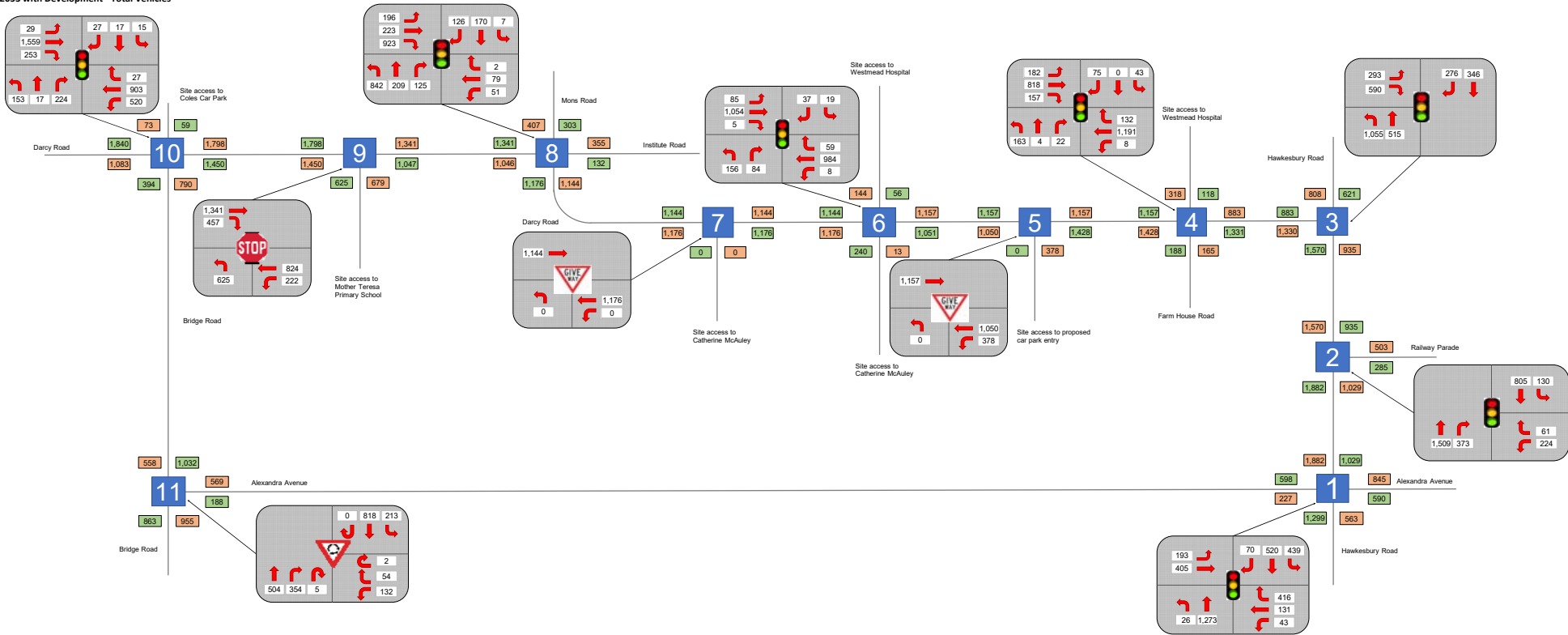
P4803 2 Darcy Road Westmead EIS Peer Review
 07:45-08:45 AM Peak
 2023 with Development - Total Vehicles



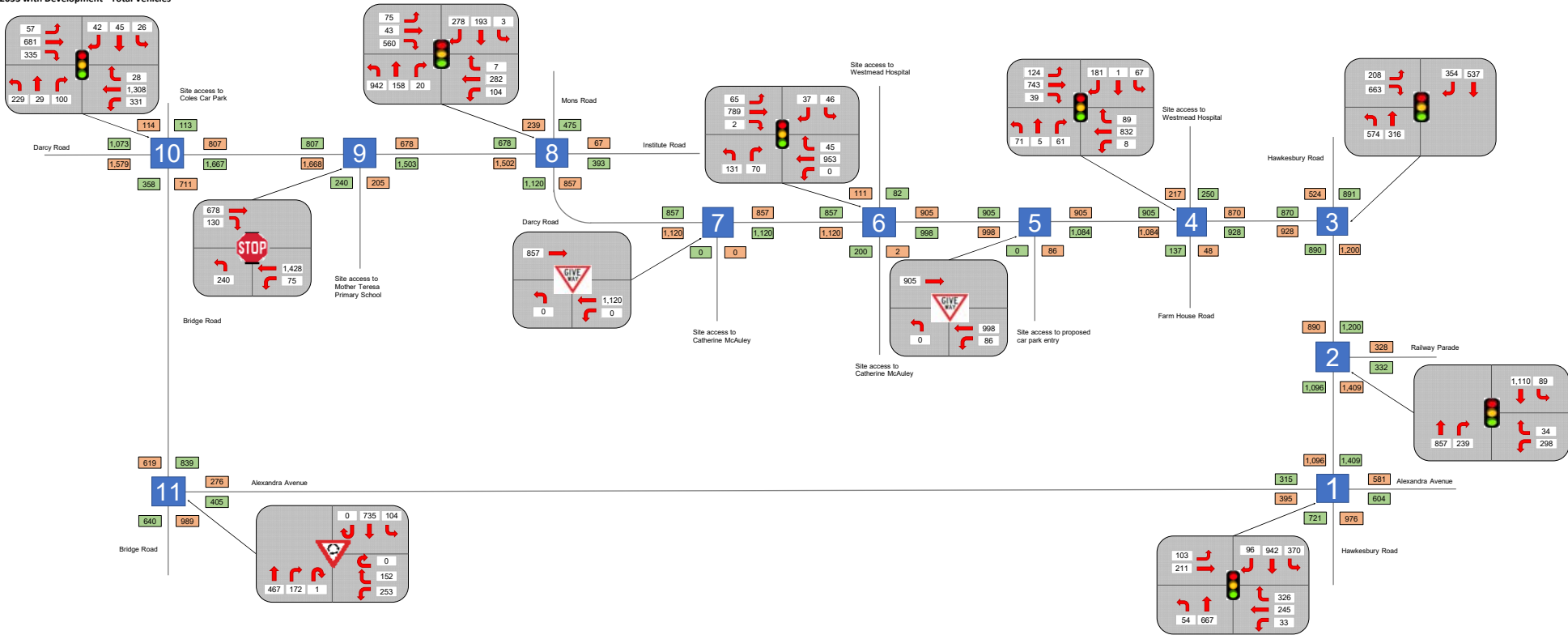
P4803 2 Darcy Road Westmead EIS Peer Review
 15:00-16:00 PM Peak
 2023 with Development - Total Vehicles



P4803 2 Darcy Road Westmead EIS Peer Review
 07:45-08:45 AM Peak
 2033 with Development - Total Vehicles



P4803 2 Darcy Road Westmead EIS Peer Review
15:00-16:00 PM Peak
2033 with Development - Total Vehicles



Appendix F: Future Year 2023 and 2033 Do Minimum SIDRA Modelling Results



CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|-----------------|----------|--------------------------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | v/c | sec | | [Veh. veh] | [Dist m] | | | | km/h |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 21 | 4.8 | 21 | 4.8 | 1.073 | 113.0 | LOS F | 35.7 | 252.3 | 1.00 | 1.35 | 1.61 | 5.7 |
| 2 | T1 | 953 | 0.7 | 953 | 0.7 | *1.073 | 104.7 | LOS F | 65.9 | 464.0 | 1.00 | 1.34 | 1.57 | 5.9 |
| Approach | | 974 | 0.8 | 974 | 0.8 | 1.073 | 104.9 | LOS F | 65.9 | 464.0 | 1.00 | 1.34 | 1.57 | 5.9 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 38 | 0.0 | 38 | 0.0 | 1.088 | 155.1 | LOS F | 12.7 | 93.1 | 1.00 | 1.36 | 1.81 | 6.9 |
| 5 | T1 | 115 | 0.0 | 115 | 0.0 | *1.088 | 150.6 | LOS F | 12.7 | 93.1 | 1.00 | 1.36 | 1.81 | 3.6 |
| 6 | R2 | 329 | 17.6 | 329 | 17.6 | 1.088 | 153.9 | LOS F | 29.2 | 234.9 | 1.00 | 1.26 | 1.79 | 3.6 |
| Approach | | 482 | 12.0 | 482 | 12.0 | 1.088 | 153.2 | LOS F | 29.2 | 234.9 | 1.00 | 1.29 | 1.80 | 3.9 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 340 | 17.9 | 340 | 17.9 | *0.503 | 11.3 | LOS A | 9.3 | 68.8 | 0.30 | 0.51 | 0.30 | 29.2 |
| 8 | T1 | 396 | 2.3 | 396 | 2.3 | 0.503 | 29.5 | LOS C | 12.4 | 88.1 | 0.70 | 0.72 | 0.70 | 18.4 |
| 9 | R2 | 57 | 0.0 | 57 | 0.0 | 0.503 | 51.2 | LOS D | 12.4 | 88.1 | 1.00 | 0.89 | 1.00 | 4.8 |
| Approach | | 793 | 8.8 | 793 | 8.8 | 0.503 | 23.2 | LOS B | 12.4 | 88.1 | 0.55 | 0.64 | 0.55 | 20.2 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 101 | 0.0 | 101 | 0.0 | 0.140 | 34.7 | LOS C | 4.4 | 31.1 | 0.69 | 0.72 | 0.69 | 28.6 |
| 11 | T1 | 310 | 0.3 | 310 | 0.3 | *0.980 | 94.7 | LOS F | 26.2 | 183.9 | 1.00 | 1.20 | 1.49 | 18.9 |
| Approach | | 411 | 0.2 | 411 | 0.2 | 0.980 | 80.0 | LOS F | 26.2 | 183.9 | 0.92 | 1.08 | 1.29 | 20.4 |
| All Vehicles | | 2660 | 5.2 | 2660 | 5.2 | 1.088 | 85.5 | LOS F | 65.9 | 464.0 | 0.85 | 1.08 | 1.26 | 9.7 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 1082 | 5.8 | 1037 | 5.9 | 0.559 | 4.9 | LOS A | 12.0 | 88.1 | 0.32 | 0.33 | 0.32 | 23.7 |
| 3 | R2 | 301 | 0.3 | 288 | 0.3 | 0.559 | 8.9 | LOS A | 7.5 | 53.7 | 0.38 | 0.52 | 0.38 | 42.1 |
| Approach | | 1383 | 4.6 | 1325 ^N ₁ | 4.7 | 0.559 | 5.8 | LOS A | 12.0 | 88.1 | 0.33 | 0.37 | 0.33 | 34.2 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 183 | 1.1 | 183 | 1.1 | 0.335 | 22.2 | LOS B | 6.7 | 47.3 | 0.64 | 0.73 | 0.64 | 31.3 |
| 6 | R2 | 29 | 0.0 | 29 | 0.0 | 0.192 | 67.9 | LOS E | 1.9 | 13.1 | 0.95 | 0.73 | 0.95 | 17.7 |
| Approach | | 212 | 0.9 | 212 | 0.9 | 0.335 | 28.4 | LOS B | 6.7 | 47.3 | 0.68 | 0.73 | 0.68 | 28.3 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 98 | 0.0 | 98 | 0.0 | 0.148 | 40.9 | LOS C | 5.8 | 50.8 | 0.66 | 0.66 | 0.66 | 26.7 |
| 8 | T1 | 609 | 14.1 | 609 | 14.1 | 0.397 | 23.7 | LOS B | 12.3 | 92.1 | 0.56 | 0.48 | 0.56 | 15.1 |
| Approach | | 707 | 12.2 | 707 | 12.2 | 0.397 | 26.1 | LOS B | 12.3 | 92.1 | 0.57 | 0.50 | 0.57 | 18.3 |
| All Vehicles | | 2302 | 6.6 | 2244 ^N ₁ | 6.8 | 0.559 | 14.3 | LOS A | 12.3 | 92.1 | 0.44 | 0.45 | 0.44 | 26.2 |

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 (CCG) | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| | | ped/h | sec | | | | | | sec | m | m/sec |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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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Organisation: TRANSPORT FOR NSW | Licence: NETWORK / Enterprise | Processed: Friday, 3 September 2021 4:54:53 PM

Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C

Output Phase Sequence: A, E, D, C

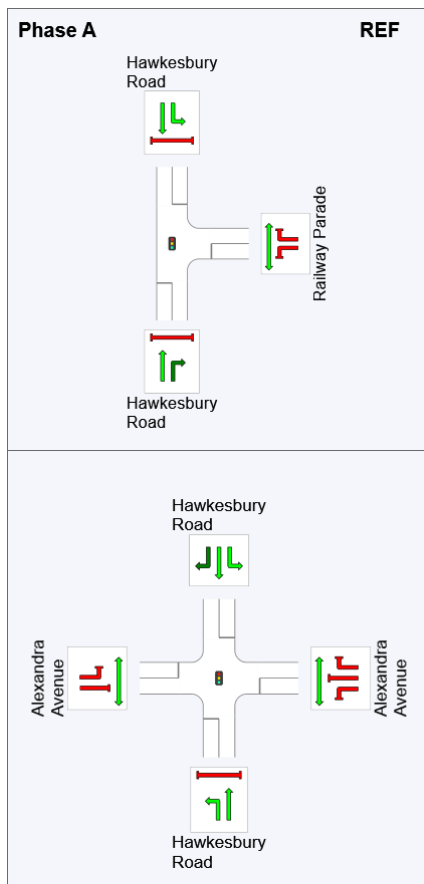
(* Variable Phase)

Phase Timing Summary (CCG)

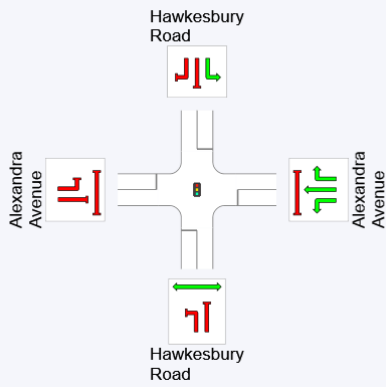
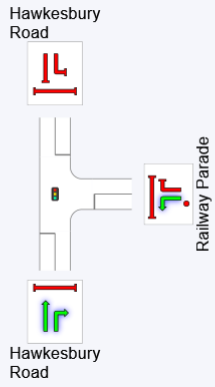
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 50 | 78 | 104 |
| Green Time (sec) | 44 | 19 | 17 | 30 |
| Phase Time (sec) | 53 | 28 | 23 | 36 |
| Phase Split | 38% | 20% | 16% | 26% |

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%.

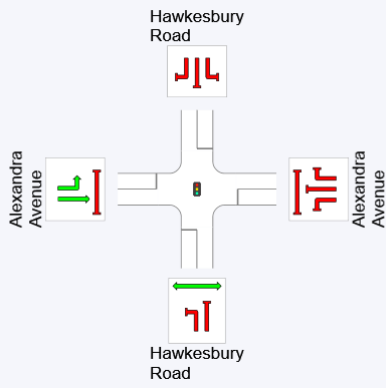
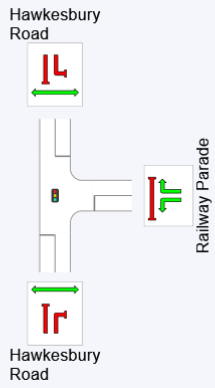
Output Phase Sequence (CCG)

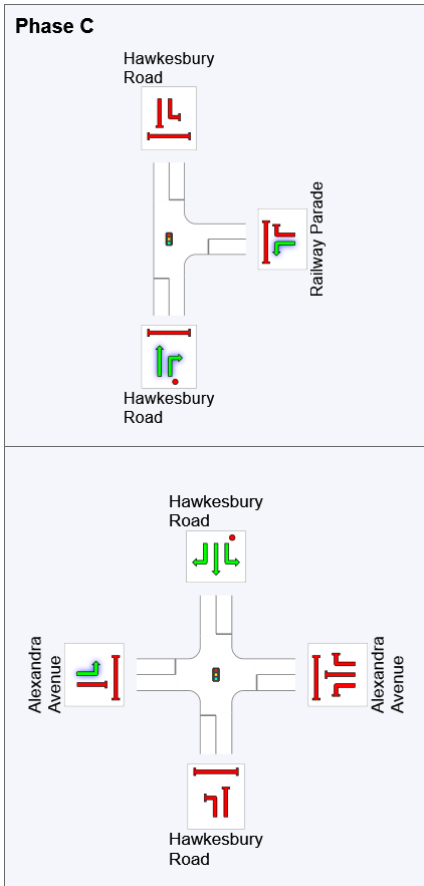


Phase E



Phase D





REF: Reference Phase
 VAR: Variable Phase



SITE LAYOUT

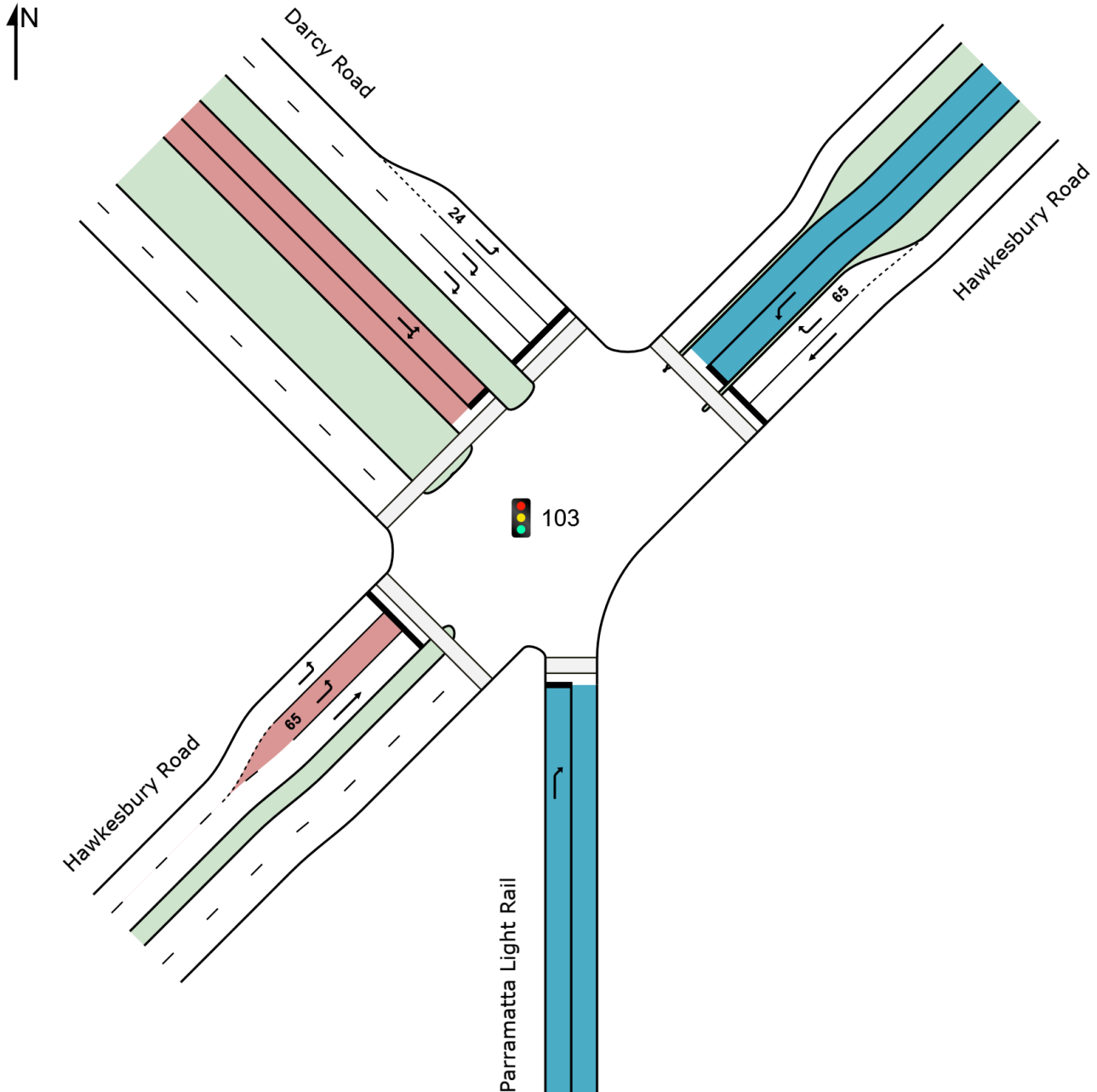
Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 Do Minimum AM Peak)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 76.6 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 11.0 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.168 | 76.6 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 11.0 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 77.8 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 10.7 |
| 25 | T1 | 278 | 4.3 | 278 | 4.3 | 0.489 | 43.0 | LOS D | 15.5 | 112.4 | 0.87 | 0.75 | 0.87 | 12.2 |
| 26 | R2 | 129 | 3.9 | 129 | 3.9 | *0.545 | 64.0 | LOS E | 8.4 | 60.4 | 0.97 | 0.80 | 0.97 | 9.0 |
| Approach | | 415 | 6.0 | 415 | 6.0 | 0.545 | 50.2 | LOS D | 15.5 | 112.4 | 0.91 | 0.76 | 0.91 | 11.0 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 233 | 4.7 | 233 | 4.7 | 0.545 | 24.1 | LOS B | 6.9 | 49.4 | 0.66 | 0.71 | 0.66 | 21.1 |
| 29 | R2 | 429 | 15.9 | 429 | 15.9 | *0.569 | 54.8 | LOS D | 14.4 | 108.3 | 0.90 | 0.79 | 0.91 | 6.2 |
| Approach | | 662 | 11.9 | 662 | 11.9 | 0.569 | 44.0 | LOS D | 14.4 | 108.3 | 0.82 | 0.76 | 0.82 | 10.5 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 705 | 8.2 | 682 | 8.3 | 0.500 | 14.2 | LOS A | 19.6 | 143.0 | 0.48 | 0.71 | 0.48 | 21.1 |
| 31 | T1 | 406 | 1.5 | 392 | 1.5 | *0.564 | 48.9 | LOS D | 24.1 | 170.7 | 0.97 | 0.85 | 0.97 | 15.9 |
| Approach | | 1111 | 5.8 | 1074 ^N | 5.8 | 0.564 | 26.9 | LOS B | 24.1 | 170.7 | 0.66 | 0.76 | 0.66 | 17.8 |
| All Vehicles | | 2196 | 8.0 | 2159 ^N | 8.2 | 0.569 | 36.8 | LOS C | 24.1 | 170.7 | 0.76 | 0.76 | 0.76 | 13.6 |

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 Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 238.5 | 208.6 | 0.87 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 191 | 64.6 | LOS F | 0.7 | 0.7 | 0.96 | 0.96 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 30.2 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 55.9 | 30.9 | 0.55 |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P72 Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | |
| P8 Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 98.9 | 41.1 | 0.42 |
| All Pedestrians | 727 | 61.8 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 134.9 | 87.7 | 0.65 |

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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PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

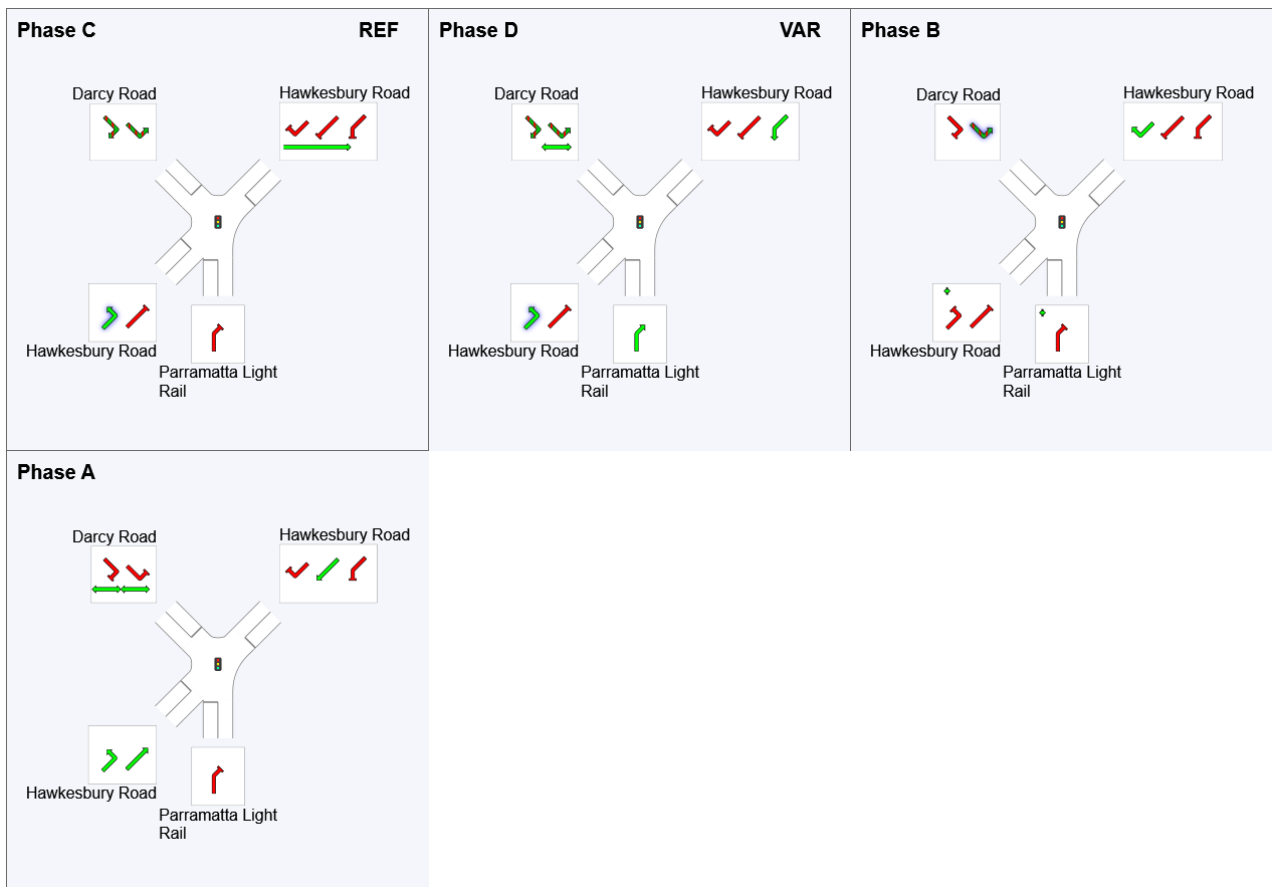
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 40 | 57 | 87 |
| Green Time (sec) | 34 | 9 | 21 | 42 |
| Phase Time (sec) | 42 | 18 | 30 | 50 |
| Phase Split | 30% | 13% | 21% | 36% |

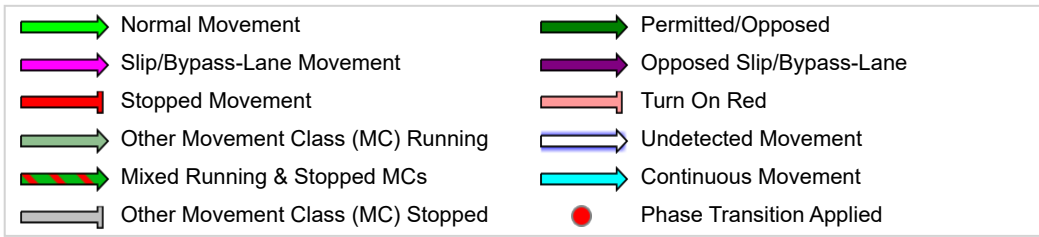
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 6 | 0.0 | 6 | 0.0 | 0.350 | 24.2 | LOS B | 13.4 | 98.0 | 0.63 | 0.55 | 0.63 | 22.1 |
| 22 | T1 | 728 | 8.7 | 711 | 8.7 | 0.350 | 20.6 | LOS B | 13.5 | 98.5 | 0.62 | 0.54 | 0.62 | 12.4 |
| 23 | R2 | 101 | 1.0 | 99 | 1.0 | *0.624 | 71.2 | LOS F | 6.7 | 47.0 | 0.99 | 0.79 | 1.01 | 8.8 |
| Approach | | 835 | 7.7 | 816 ^{N1} | 7.7 | 0.624 | 26.7 | LOS B | 13.5 | 98.5 | 0.67 | 0.57 | 0.67 | 11.1 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 36 | 0.0 | 36 | 0.0 | 0.123 | 46.6 | LOS D | 2.0 | 14.3 | 0.86 | 0.64 | 0.86 | 8.2 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.123 | 46.6 | LOS D | 2.0 | 14.3 | 0.86 | 0.64 | 0.86 | 12.6 |
| 26 | R2 | 57 | 8.8 | 57 | 8.8 | 0.601 | 70.9 | LOS F | 3.9 | 29.7 | 1.00 | 0.82 | 1.06 | 6.7 |
| Approach | | 94 | 5.3 | 94 | 5.3 | 0.601 | 61.4 | LOS E | 3.9 | 29.7 | 0.94 | 0.75 | 0.98 | 7.3 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 151 | 0.7 | 151 | 0.7 | *0.423 | 19.6 | LOS B | 11.3 | 82.4 | 0.48 | 0.56 | 0.48 | 13.9 |
| 28 | T1 | 609 | 13.8 | 609 | 13.8 | 0.423 | 15.5 | LOS B | 11.3 | 82.4 | 0.48 | 0.47 | 0.48 | 11.5 |
| 29 | R2 | 6 | 16.7 | 6 | 16.7 | 0.042 | 72.5 | LOS F | 0.4 | 3.3 | 1.00 | 0.66 | 1.00 | 9.7 |
| Approach | | 766 | 11.2 | 766 | 11.2 | 0.423 | 16.8 | LOS B | 11.3 | 82.4 | 0.48 | 0.49 | 0.48 | 12.5 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 9 | 11.1 | 9 | 11.1 | 0.052 | 53.7 | LOS D | 0.7 | 5.5 | 0.88 | 0.68 | 0.88 | 9.8 |
| 31 | T1 | 4 | 0.0 | 4 | 0.0 | 0.052 | 56.7 | LOS E | 0.7 | 5.5 | 0.88 | 0.68 | 0.88 | 12.0 |
| 32 | R2 | 18 | 0.0 | 18 | 0.0 | 0.136 | 71.0 | LOS F | 1.2 | 8.3 | 0.97 | 0.70 | 0.97 | 8.1 |
| Approach | | 31 | 3.2 | 31 | 3.2 | 0.136 | 64.1 | LOS E | 1.2 | 8.3 | 0.93 | 0.69 | 0.93 | 9.2 |
| All Vehicles | | 1726 | 9.0 | 1707 ^{N1} | 9.1 | 0.624 | 24.8 | LOS B | 13.5 | 98.5 | 0.60 | 0.55 | 0.61 | 11.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 233 | 64.8 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 90.5 | 30.9 | 0.34 |
| P52 | Stage 2 | 65 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 98 | 64.4 | LOS F | 0.4 | 0.4 | 0.96 | 0.96 | 91.0 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 258 | 64.8 | LOS F | 1.0 | 1.0 | 0.97 | 0.97 | 91.4 | 31.9 | 0.35 |
| All Pedestrians | 696 | 64.7 | LOS F | 1.0 | 1.0 | 0.96 | 0.96 | 91.6 | 32.3 | 0.35 |

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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PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

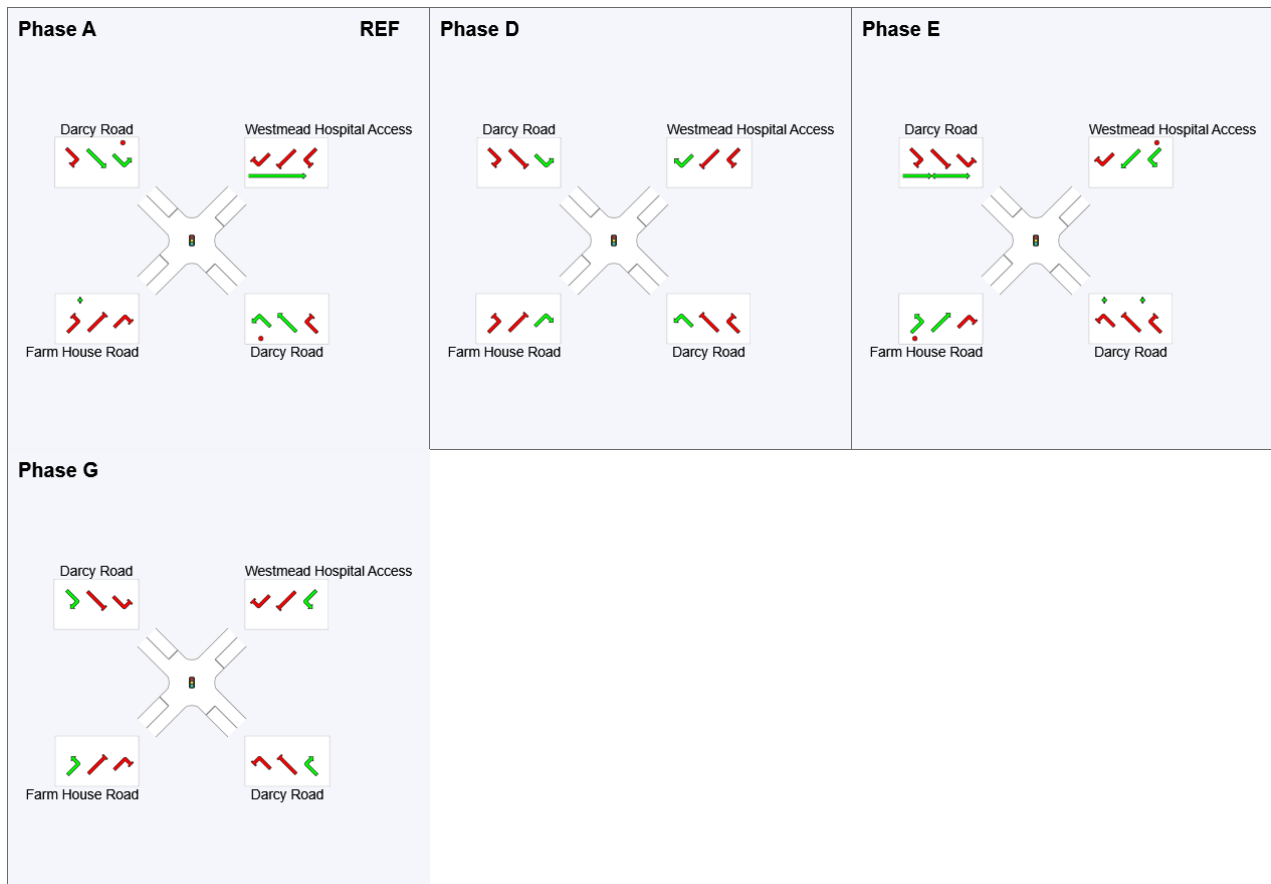
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 130 | 71 | 88 | 112 |
| Green Time (sec) | 73 | 10 | 16 | 12 |
| Phase Time (sec) | 80 | 18 | 22 | 20 |
| Phase Split | 57% | 13% | 16% | 14% |

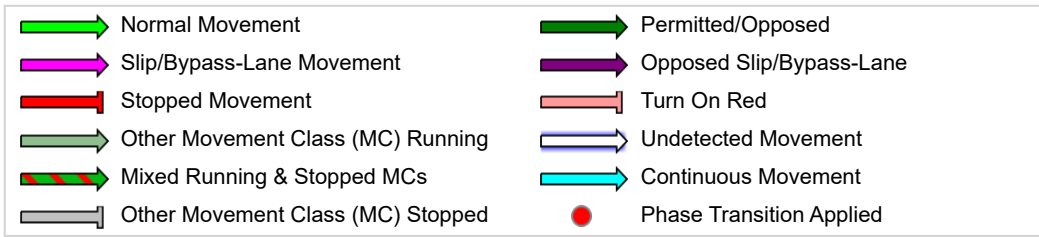
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 2 | 0.0 | 2 | 0.0 | 0.199 | 9.0 | LOS A | 0.0 | 0.3 | 0.01 | 0.00 | 0.01 | 31.1 |
| 22 | T1 | 792 | 8.5 | 775 | 8.5 | 0.199 | 0.0 | LOS A | 0.0 | 0.3 | 0.01 | 0.00 | 0.01 | 39.6 |
| Approach | | 794 | 8.4 | 777 ^{N1} | 8.5 | 0.199 | 0.1 | NA | 0.0 | 0.3 | 0.01 | 0.00 | 0.01 | 39.6 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 765 | 11.2 | 765 | 11.2 | 0.256 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 765 | 11.2 | 765 | 11.2 | 0.256 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.004 | 13.0 | LOS A | 0.0 | 0.1 | 0.80 | 0.65 | 0.80 | 7.3 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.004 | 13.0 | LOS A | 0.0 | 0.1 | 0.80 | 0.65 | 0.80 | 7.3 |
| All Vehicles | | 1560 | 9.8 | 1543 ^{N1} | 9.9 | 0.256 | 0.1 | NA | 0.0 | 0.3 | 0.00 | 0.00 | 0.00 | 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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 8 | 0.0 | 0.306 | 16.9 | LOS B | 11.2 | 82.0 | 0.51 | 0.45 | 0.51 | 18.1 |
| 22 | T1 | 739 | 9.1 | 733 | 9.1 | 0.306 | 7.0 | LOS A | 11.2 | 82.0 | 0.27 | 0.24 | 0.27 | 23.6 |
| 23 | R2 | 45 | 0.0 | 45 | 0.0 | *0.336 | 76.9 | LOS F | 3.1 | 21.9 | 1.00 | 0.74 | 1.00 | 8.0 |
| Approach | | 792 | 8.5 | 785 ^{N1} | 8.5 | 0.336 | 11.1 | LOS A | 11.2 | 82.0 | 0.31 | 0.27 | 0.31 | 19.0 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 16 | 0.0 | 16 | 0.0 | 0.018 | 0.5 | LOS A | 0.1 | 0.6 | 0.12 | 0.09 | 0.12 | 19.6 |
| 26 | R2 | 30 | 0.0 | 30 | 0.0 | *0.111 | 52.2 | LOS D | 1.7 | 12.1 | 0.87 | 0.65 | 0.87 | 6.8 |
| Approach | | 46 | 0.0 | 46 | 0.0 | 0.111 | 34.2 | LOS C | 1.7 | 12.1 | 0.61 | 0.46 | 0.61 | 8.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 77 | 0.0 | 77 | 0.0 | *0.344 | 8.8 | LOS A | 4.8 | 35.3 | 0.20 | 0.25 | 0.20 | 21.8 |
| 28 | T1 | 749 | 11.5 | 749 | 11.5 | 0.344 | 4.1 | LOS A | 4.8 | 35.3 | 0.16 | 0.17 | 0.16 | 27.4 |
| 29 | R2 | 5 | 0.0 | 5 | 0.0 | 0.038 | 73.6 | LOS F | 0.3 | 2.4 | 1.00 | 0.65 | 1.00 | 6.9 |
| Approach | | 831 | 10.3 | 831 | 10.3 | 0.344 | 5.0 | LOS A | 4.8 | 35.3 | 0.17 | 0.18 | 0.17 | 25.4 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| 32 | R2 | 1 | 0.0 | 1 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| Approach | | 2 | 0.0 | 2 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| All Vehicles | | 1671 | 9.2 | 1664 ^{N1} | 9.2 | 0.344 | 8.7 | LOS A | 11.2 | 82.0 | 0.25 | 0.23 | 0.25 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 43 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 48 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 88.1 | 28.6 | 0.32 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 182 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 97.8 | 40.2 | 0.41 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

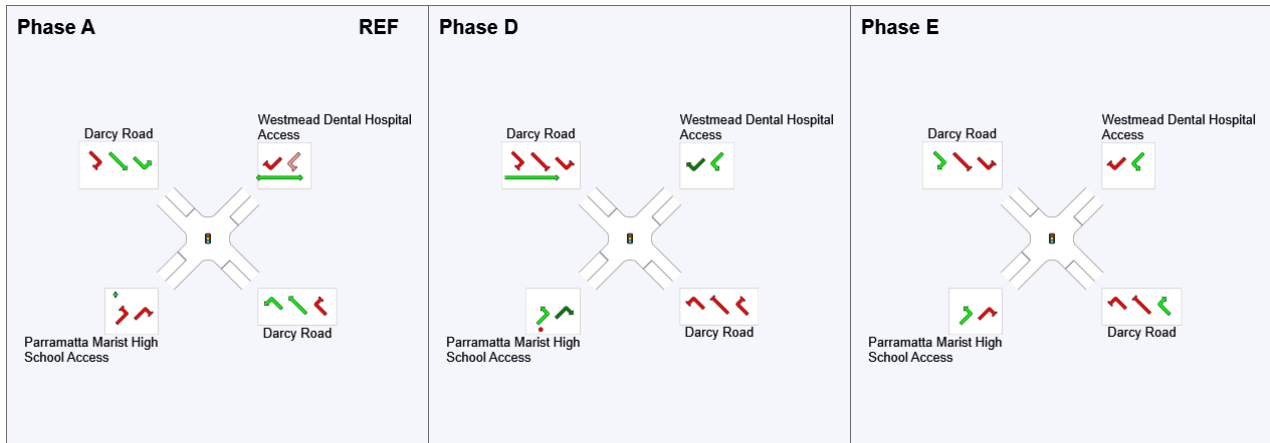
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 10 | 102 | 135 |
| Green Time (sec) | 86 | 27 | 10 |
| Phase Time (sec) | 92 | 32 | 16 |
| Phase Split | 66% | 23% | 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



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: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2023 Do
Minimum)]

0745 - 0845
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 36 | 0.0 | 36 | 0.0 | 0.155 | 3.9 | LOS A | 0.2 | 1.7 | 0.06 | 0.08 | 0.06 | 26.1 |
| 22 | T1 | 733 | 9.3 | 733 | 9.3 | 0.155 | 0.0 | LOS A | 11.1 | 81.5 | 0.02 | 0.02 | 0.02 | 39.1 |
| Approach | | 769 | 8.8 | 769 | 8.8 | 0.155 | 0.2 | NA | 11.1 | 81.5 | 0.02 | 0.02 | 0.02 | 37.4 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 831 | 10.1 | 831 | 10.1 | 0.211 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 831 | 10.1 | 831 | 10.1 | 0.211 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.1 | LOS A | 0.0 | 0.0 | 0.35 | 0.15 | 0.35 | 18.7 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.1 | LOS A | 0.0 | 0.0 | 0.35 | 0.15 | 0.35 | 18.7 |
| All Vehicles | | 1601 | 9.5 | 1601 | 9.5 | 0.211 | 0.1 | NA | 11.1 | 81.5 | 0.01 | 0.01 | 0.01 | 38.4 |

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.

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.

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SITE LAYOUT

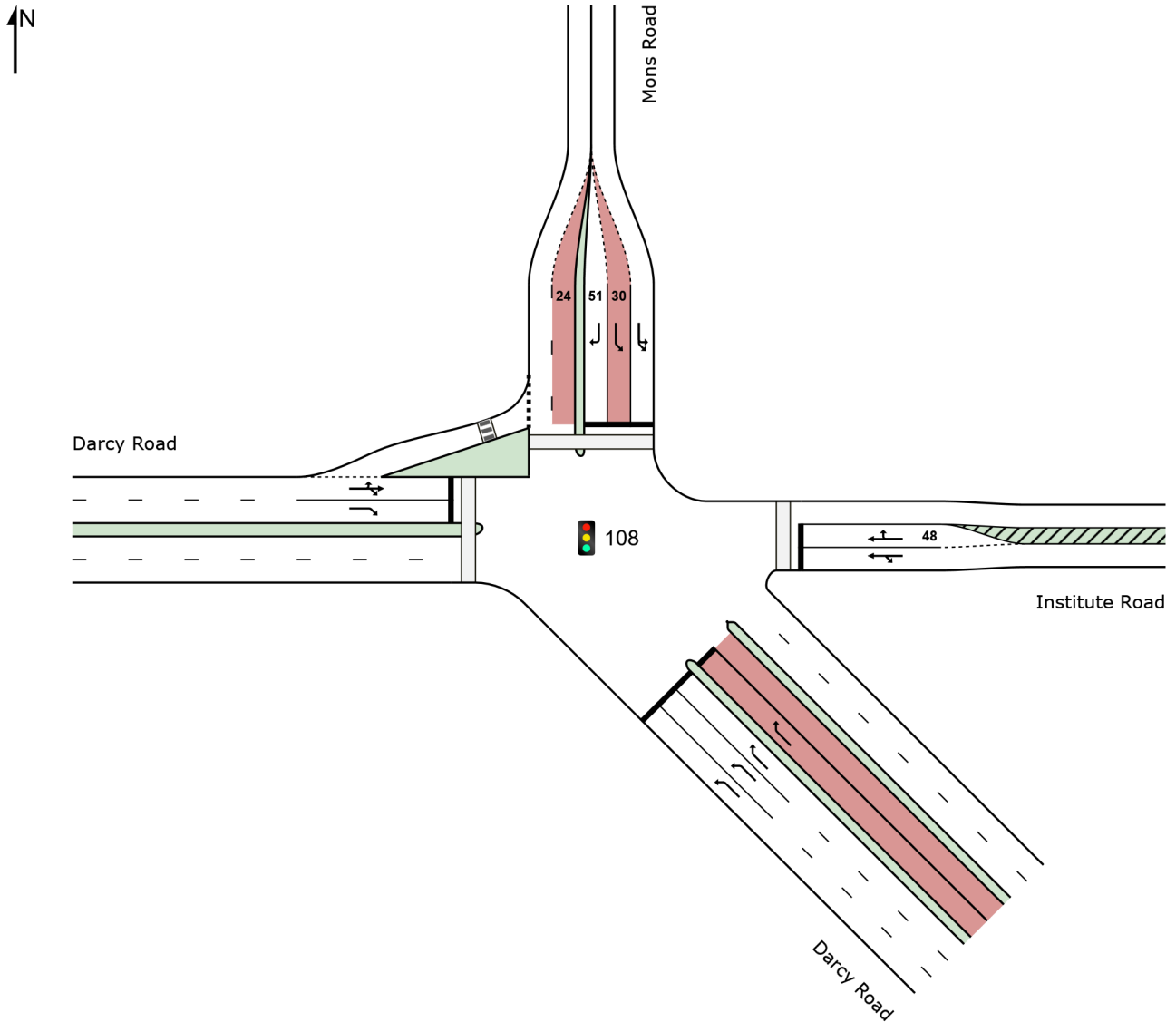
Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)]
(Site Folder: 2023 Do Minimum AM Peak)

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



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MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 458 | 1.7 | 458 | 1.7 | 0.253 | 25.5 | LOS B | 9.7 | 68.7 | 0.65 | 0.70 | 0.65 | 7.5 |
| 23a | R1 | 275 | 22.5 | 275 | 22.5 | * 1.024 | 113.6 | LOS F | 11.6 | 89.8 | 1.00 | 1.17 | 1.47 | 12.2 |
| Approach | | 733 | 9.5 | 733 | 9.5 | 1.024 | 58.5 | LOS E | 11.6 | 89.8 | 0.78 | 0.87 | 0.96 | 11.0 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 46 | 2.2 | 46 | 2.2 | 0.457 | 74.8 | LOS F | 3.7 | 26.4 | 1.00 | 0.76 | 1.00 | 13.0 |
| 5 | T1 | 68 | 2.9 | 68 | 2.9 | * 0.457 | 70.2 | LOS E | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 13.4 |
| 6 | R2 | 2 | 0.0 | 2 | 0.0 | 0.457 | 74.3 | LOS F | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 21.2 |
| Approach | | 116 | 2.6 | 116 | 2.6 | 0.457 | 72.1 | LOS F | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 13.4 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 7 | 0.0 | 7 | 0.0 | 0.155 | 23.4 | LOS B | 4.4 | 38.9 | 0.57 | 0.59 | 0.57 | 31.4 |
| 7a | L1 | 154 | 48.7 | 154 | 48.7 | 0.155 | 21.7 | LOS B | 4.4 | 38.9 | 0.57 | 0.58 | 0.57 | 26.9 |
| 9 | R2 | 108 | 12.0 | 108 | 12.0 | 0.210 | 42.6 | LOS D | 5.5 | 42.2 | 0.79 | 0.73 | 0.79 | 20.4 |
| Approach | | 269 | 32.7 | 269 | 32.7 | 0.210 | 30.2 | LOS C | 5.5 | 42.2 | 0.66 | 0.64 | 0.66 | 24.1 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 177 | 9.6 | 177 | 9.6 | 0.880 | 55.9 | LOS D | 12.6 | 91.4 | 1.00 | 1.01 | 1.11 | 19.4 |
| 11 | T1 | 202 | 0.5 | 202 | 0.5 | * 0.880 | 52.7 | LOS D | 12.6 | 91.4 | 1.00 | 1.01 | 1.11 | 17.2 |
| 12a | R1 | 631 | 1.3 | 631 | 1.3 | 0.880 | 58.2 | LOS E | 12.9 | 91.4 | 1.00 | 0.98 | 1.11 | 4.3 |
| Approach | | 1010 | 2.6 | 1010 | 2.6 | 0.880 | 56.7 | LOS E | 12.9 | 91.4 | 1.00 | 0.99 | 1.11 | 10.9 |
| All Vehicles | | 2128 | 8.8 | 2128 | 8.8 | 1.024 | 54.8 | LOS D | 12.9 | 91.4 | 0.88 | 0.89 | 1.00 | 12.7 |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|---------------------------------|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

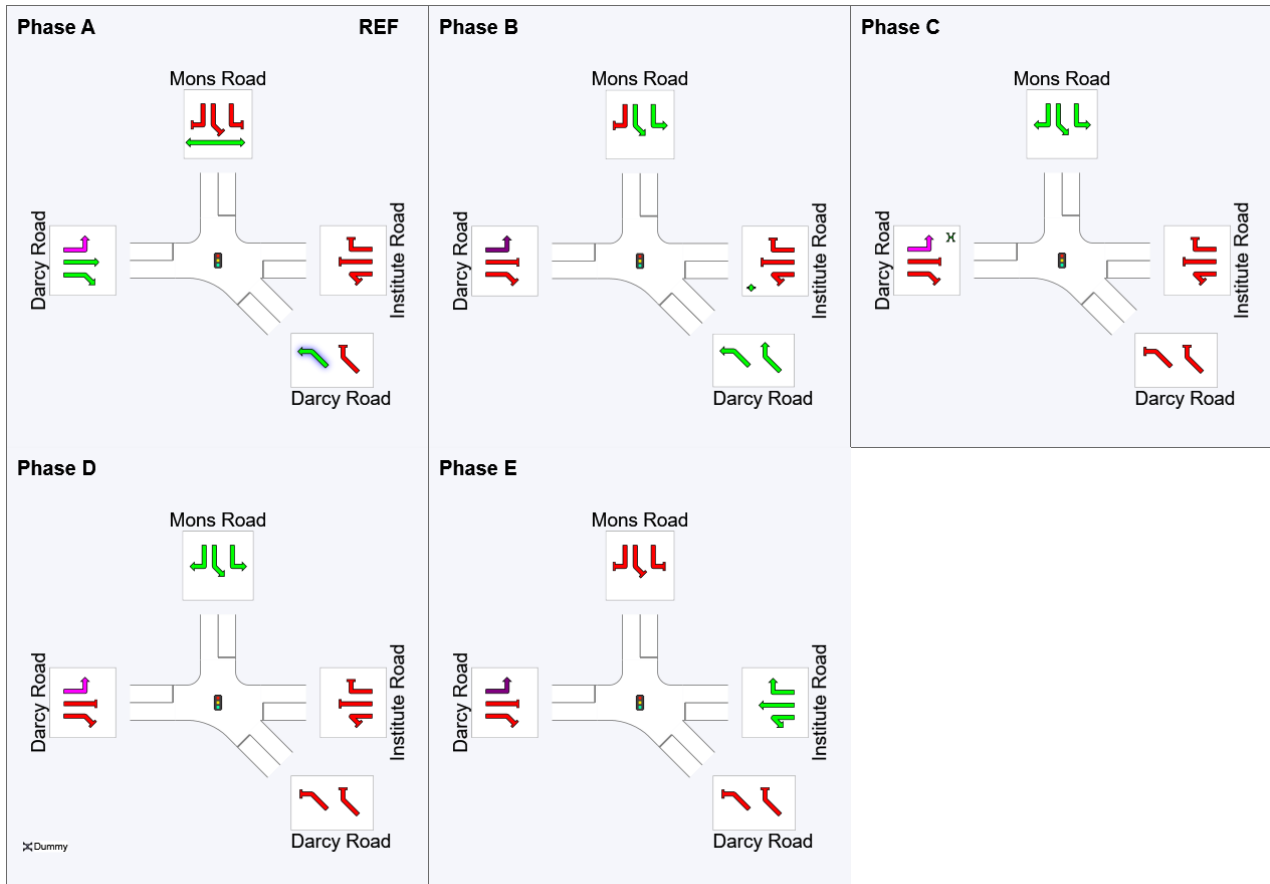
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 48 | 73 | 110 | 124 |
| Green Time (sec) | 42 | 19 | 31 | 8 | 10 |
| Phase Time (sec) | 48 | 25 | 37 | 14 | 16 |
| Phase Split | 34% | 18% | 26% | 10% | 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



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

 Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2023 Do Minimum AM Peak)]

 Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 434 | 1.2 | 434 | 1.2 | 0.629 | 6.1 | LOS A | 4.7 | 33.0 | 0.47 | 1.06 | 0.66 | 9.6 | |
| Approach | | 434 | 1.2 | 434 | 1.2 | 0.629 | 6.1 | LOS A | 4.7 | 33.0 | 0.47 | 1.06 | 0.66 | 9.6 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 176 | 1.7 | 176 | 1.7 | 0.096 | 7.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.76 | 0.00 | 18.9 | |
| 5 | T1 | 458 | 4.1 | 458 | 4.1 | 0.121 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 40.0 | |
| Approach | | 634 | 3.5 | 634 | 3.5 | 0.121 | 2.0 | NA | 0.0 | 0.0 | 0.00 | 0.21 | 0.00 | 30.1 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 1010 | 3.1 | 1010 | 3.1 | 0.264 | 2.1 | LOS A | 22.1 | 158.7 | 0.00 | 0.36 | 0.00 | 37.0 | |
| 12 | R2 | 371 | 1.3 | 371 | 1.3 | 0.738 | 16.2 | LOS B | 4.0 | 28.3 | 0.64 | 1.15 | 1.42 | 24.9 | |
| Approach | | 1381 | 2.6 | 1381 | 2.6 | 0.738 | 5.9 | LOS A | 22.1 | 158.7 | 0.17 | 0.57 | 0.38 | 32.7 | |
| All Vehicles | | 2449 | 2.6 | 2449 | 2.6 | 0.738 | 4.9 | NA | 22.1 | 158.7 | 0.18 | 0.56 | 0.33 | 19.6 | |

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.

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.

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MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 146 | 2.7 | 146 | 2.7 | 0.181 | 26.3 | LOS B | 5.5 | 39.7 | 0.64 | 0.71 | 0.64 | 30.9 |
| 2 | T1 | 16 | 6.3 | 16 | 6.3 | 0.610 | 56.0 | LOS D | 11.8 | 86.1 | 0.92 | 0.81 | 0.92 | 18.8 |
| 3 | R2 | 182 | 4.4 | 182 | 4.4 | *0.610 | 55.5 | LOS D | 11.8 | 86.1 | 0.92 | 0.81 | 0.92 | 18.7 |
| Approach | | 344 | 3.8 | 343 ^{N1} | 3.8 | 0.610 | 43.2 | LOS D | 11.8 | 86.1 | 0.80 | 0.77 | 0.80 | 23.2 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 296 | 2.7 | 296 | 2.7 | *0.639 | 42.0 | LOS C | 25.1 | 180.1 | 0.88 | 0.82 | 0.88 | 17.4 |
| 5 | T1 | 572 | 3.3 | 572 | 3.3 | 0.639 | 34.4 | LOS C | 25.1 | 180.1 | 0.83 | 0.74 | 0.83 | 24.0 |
| 6 | R2 | 23 | 0.0 | 23 | 0.0 | 0.151 | 38.9 | LOS C | 1.1 | 7.4 | 0.67 | 0.70 | 0.67 | 18.1 |
| Approach | | 891 | 3.0 | 891 | 3.0 | 0.639 | 37.0 | LOS C | 25.1 | 180.1 | 0.84 | 0.76 | 0.84 | 21.8 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 14 | 7.1 | 14 | 7.1 | 0.030 | 40.4 | LOS C | 0.7 | 5.2 | 0.77 | 0.55 | 0.77 | 4.5 |
| 8 | T1 | 14 | 0.0 | 14 | 0.0 | 0.122 | 46.2 | LOS D | 2.2 | 15.9 | 0.83 | 0.63 | 0.83 | 4.2 |
| 9 | R2 | 27 | 3.7 | 27 | 3.7 | 0.122 | 46.2 | LOS D | 2.2 | 15.9 | 0.83 | 0.63 | 0.83 | 11.4 |
| Approach | | 55 | 3.6 | 55 | 3.6 | 0.122 | 44.7 | LOS D | 2.2 | 15.9 | 0.81 | 0.61 | 0.81 | 8.2 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | 0.585 | 13.0 | LOS A | 15.5 | 110.4 | 0.36 | 0.34 | 0.36 | 26.5 |
| 11 | T1 | 1184 | 2.0 | 1184 | 2.0 | 0.585 | 7.8 | LOS A | 15.5 | 110.4 | 0.32 | 0.30 | 0.32 | 30.3 |
| 12 | R2 | 211 | 0.9 | 211 | 0.9 | *0.451 | 22.9 | LOS B | 5.3 | 37.4 | 0.72 | 0.76 | 0.72 | 17.4 |
| Approach | | 1424 | 1.8 | 1424 | 1.8 | 0.585 | 10.1 | LOS A | 15.5 | 110.4 | 0.38 | 0.37 | 0.38 | 27.2 |
| All Vehicles | | 2714 | 2.5 | 2713 ^{N1} | 2.5 | 0.639 | 23.8 | LOS B | 25.1 | 180.1 | 0.59 | 0.55 | 0.59 | 23.2 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | ped/h | sec | | [Ped ped | Dist] m | | | sec | m | m/sec |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 67 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 40 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |

| | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 Full | 78 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 92.1 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | |
| P4 Full | 55 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | 240 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 93.4 | 35.0 | 0.37 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E*, E2*

Output Phase Sequence: A, D, E2*

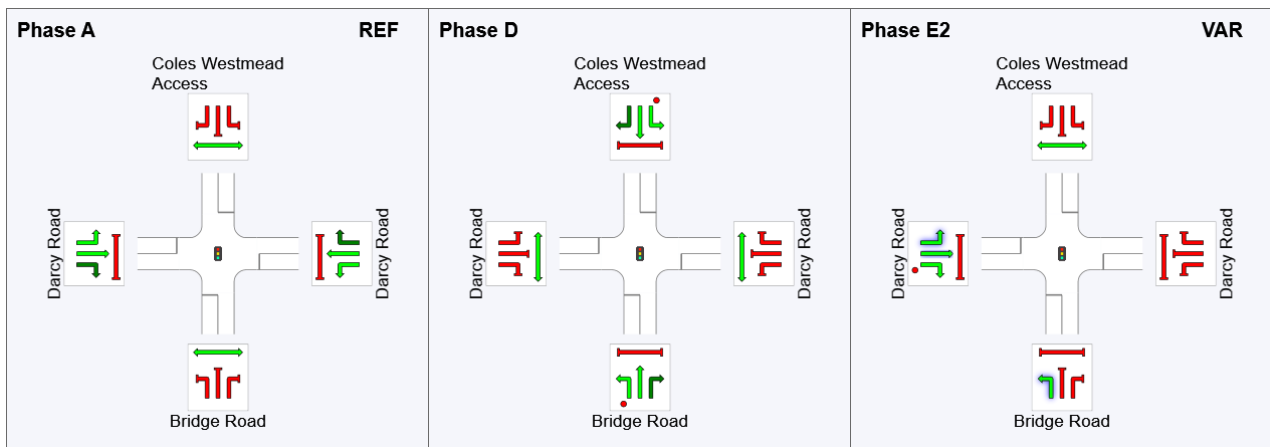
(* Variable Phase)

Phase Timing Summary

| Phase | A | D | E2 |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 121 | 44 | 90 |
| Green Time (sec) | 56 | 39 | 25 |
| Phase Time (sec) | 63 | 45 | 32 |
| Phase Split | 45% | 32% | 23% |

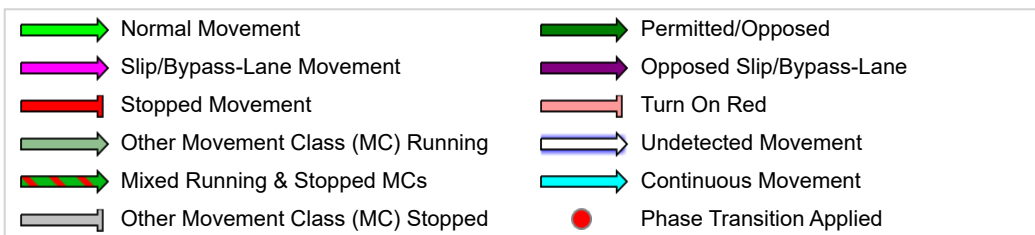
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2023 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 416 | 0.2 | 416 | 0.2 | 0.557 | 3.9 | LOS A | 5.9 | 41.2 | 0.35 | 0.50 | 0.35 | 24.9 |
| 3 | R2 | 272 | 0.4 | 272 | 0.4 | 0.557 | 7.0 | LOS A | 5.9 | 41.2 | 0.35 | 0.50 | 0.35 | 24.9 |
| 3u | U | 4 | 0.0 | 4 | 0.0 | 0.557 | 8.4 | LOS A | 5.9 | 41.2 | 0.35 | 0.50 | 0.35 | 27.9 |
| Approach | | 692 | 0.3 | 692 | 0.3 | 0.557 | 5.2 | LOS A | 5.9 | 41.2 | 0.35 | 0.50 | 0.35 | 25.0 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 109 | 0.9 | 107 | 0.9 | 0.278 | 9.1 | LOS A | 1.5 | 10.4 | 0.62 | 0.79 | 0.62 | 40.5 |
| 6 | R2 | 48 | 2.1 | 47 | 2.1 | 0.278 | 11.7 | LOS A | 1.5 | 10.4 | 0.62 | 0.79 | 0.62 | 41.2 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.278 | 12.9 | LOS A | 1.5 | 10.4 | 0.62 | 0.79 | 0.62 | 41.2 |
| Approach | | 159 | 1.3 | 156 ^{N1} | 1.3 | 0.278 | 9.9 | LOS A | 1.5 | 10.4 | 0.62 | 0.79 | 0.62 | 40.7 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 145 | 0.7 | 145 | 0.7 | 0.873 | 17.0 | LOS B | 15.5 | 108.8 | 0.90 | 1.07 | 1.35 | 33.3 |
| 8 | T1 | 565 | 0.2 | 565 | 0.2 | 0.873 | 16.5 | LOS B | 15.5 | 108.8 | 0.90 | 1.07 | 1.35 | 33.8 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.873 | 20.8 | LOS B | 15.5 | 108.8 | 0.90 | 1.07 | 1.35 | 33.3 |
| Approach | | 711 | 0.3 | 711 | 0.3 | 0.873 | 16.6 | LOS B | 15.5 | 108.8 | 0.90 | 1.07 | 1.35 | 33.7 |
| All Vehicles | | 1562 | 0.4 | 1559 ^{N1} | 0.4 | 0.873 | 10.9 | LOS A | 15.5 | 108.8 | 0.63 | 0.79 | 0.83 | 33.6 |

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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [AM Peak (Network Folder: 2023 Do Minimum)]

0745 - 0845

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 110 | 104 | 101 ¹ | 102 ¹ | 103 | 108 | 106 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -18 | -8 | 0 | 0 | 0 | 0 | 10 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | | | | [Veh. veh | Dist] m | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 43 | 0.0 | 43 | 0.0 | 0.583 | 55.1 | LOS D | 16.1 | 114.1 | 0.94 | 0.80 | 0.94 | 10.9 |
| 2 | T1 | 475 | 1.9 | 475 | 1.9 | 0.583 | 50.5 | LOS D | 16.1 | 114.1 | 0.94 | 0.80 | 0.94 | 11.0 |
| Approach | | 518 | 1.7 | 518 | 1.7 | 0.583 | 50.8 | LOS D | 16.1 | 114.1 | 0.94 | 0.80 | 0.94 | 11.0 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 29 | 0.0 | 29 | 0.0 | 0.872 | 74.9 | LOS F | 12.7 | 92.1 | 1.00 | 1.00 | 1.22 | 13.0 |
| 5 | T1 | 215 | 0.0 | 215 | 0.0 | *0.872 | 70.5 | LOS E | 12.7 | 92.1 | 1.00 | 1.00 | 1.22 | 7.3 |
| 6 | R2 | 274 | 24.5 | 274 | 24.5 | 0.872 | 77.3 | LOS F | 17.3 | 146.4 | 1.00 | 0.98 | 1.26 | 6.9 |
| Approach | | 518 | 12.9 | 518 | 12.9 | 0.872 | 74.3 | LOS F | 17.3 | 146.4 | 1.00 | 0.99 | 1.24 | 7.4 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 287 | 23.3 | 284 | 23.3 | *0.633 | 12.8 | LOS A | 11.9 | 88.1 | 0.40 | 0.52 | 0.40 | 28.0 |
| 8 | T1 | 747 | 1.3 | 740 | 1.3 | 0.633 | 17.9 | LOS B | 12.5 | 88.1 | 0.65 | 0.64 | 0.65 | 24.4 |
| 9 | R2 | 79 | 0.0 | 78 | 0.0 | 0.633 | 27.8 | LOS B | 12.5 | 88.1 | 0.80 | 0.72 | 0.80 | 8.6 |
| Approach | | 1113 | 6.9 | 1103 ^N ₁ | 6.9 | 0.633 | 17.3 | LOS B | 12.5 | 88.1 | 0.60 | 0.61 | 0.60 | 24.2 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 75 | 0.0 | 75 | 0.0 | 0.103 | 31.7 | LOS C | 3.1 | 21.8 | 0.65 | 0.70 | 0.65 | 29.7 |
| 11 | T1 | 170 | 0.6 | 170 | 0.6 | *0.721 | 66.7 | LOS E | 11.7 | 82.1 | 1.00 | 0.86 | 1.07 | 23.2 |
| Approach | | 245 | 0.4 | 245 | 0.4 | 0.721 | 56.0 | LOS D | 11.7 | 82.1 | 0.89 | 0.81 | 0.94 | 24.6 |
| All Vehicles | | 2394 | 6.4 | 2384 ^N ₁ | 6.5 | 0.872 | 41.0 | LOS C | 17.3 | 146.4 | 0.79 | 0.76 | 0.85 | 15.9 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 626 | 11.8 | 626 | 11.8 | 0.360 | 4.7 | LOS A | 7.8 | 56.7 | 0.29 | 0.27 | 0.29 | 24.3 |
| 3 | R2 | 198 | 0.0 | 198 | 0.0 | 0.360 | 15.8 | LOS B | 7.8 | 56.7 | 0.74 | 0.72 | 0.74 | 36.8 |
| Approach | | 824 | 9.0 | 824 | 9.0 | 0.360 | 7.3 | LOS A | 7.8 | 56.7 | 0.39 | 0.38 | 0.39 | 32.2 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 244 | 0.4 | 244 | 0.4 | 0.461 | 18.5 | LOS B | 8.4 | 58.8 | 0.62 | 0.74 | 0.62 | 33.4 |
| 6 | R2 | 22 | 0.0 | 22 | 0.0 | 0.111 | 66.2 | LOS E | 1.4 | 9.6 | 0.94 | 0.71 | 0.94 | 18.0 |
| Approach | | 266 | 0.4 | 266 | 0.4 | 0.461 | 22.4 | LOS B | 8.4 | 58.8 | 0.65 | 0.73 | 0.65 | 31.2 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 66 | 0.0 | 64 | 0.0 | 0.140 | 49.9 | LOS D | 5.2 | 47.3 | 0.84 | 0.71 | 0.84 | 24.3 |
| 8 | T1 | 869 | 9.0 | 841 | 9.0 | *0.886 | 55.5 | LOS D | 28.0 | 204.5 | 0.99 | 0.94 | 1.10 | 7.7 |
| Approach | | 935 | 8.3 | 904 ^{N1} | 8.4 | 0.886 | 55.2 | LOS D | 28.0 | 204.5 | 0.98 | 0.93 | 1.08 | 9.4 |
| All Vehicles | | 2025 | 7.6 | 1994 ^N ₁ | 7.7 | 0.886 | 31.0 | LOS C | 28.0 | 204.5 | 0.69 | 0.67 | 0.74 | 17.2 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

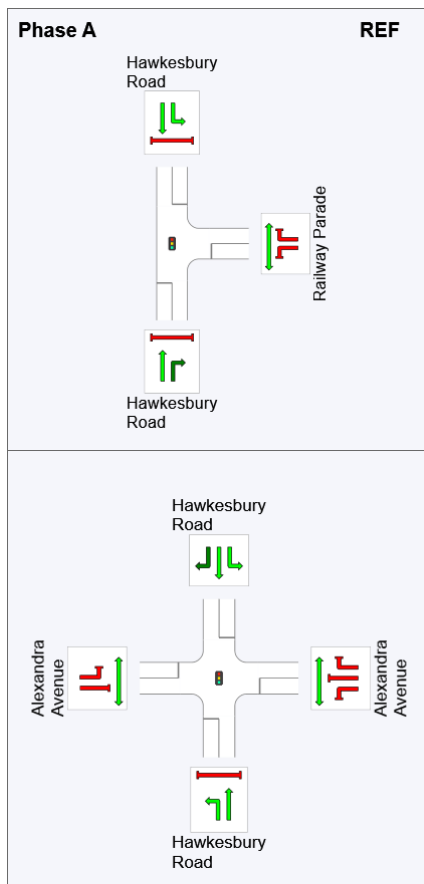
Timings based on settings in the Network Timing dialog
 Phase Times determined by the program
 Downstream lane blockage effects included in determining phase times
 Phase Sequence: CCG Phasing
 Reference Phase: Phase A
 Input Phase Sequence: A, B*, E, D, C
 Output Phase Sequence: A, E, D, C
 (* Variable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

Phase Timing Summary (CCG)

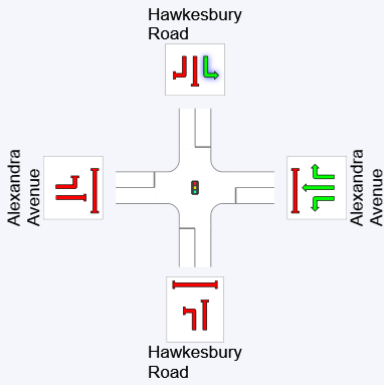
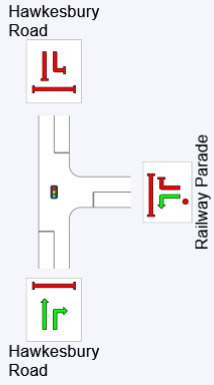
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 40 | 74 | 100 |
| Green Time (sec) | 34 | 25 | 17 | 34 |
| Phase Time (sec) | 43 | 34 | 23 | 40 |
| Phase Split | 31% | 24% | 16% | 29% |

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%.

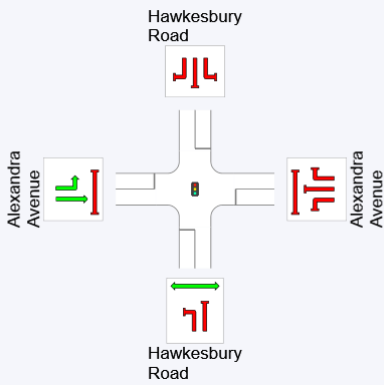
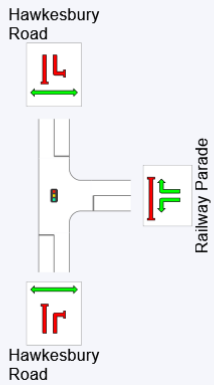
Output Phase Sequence (CCG)

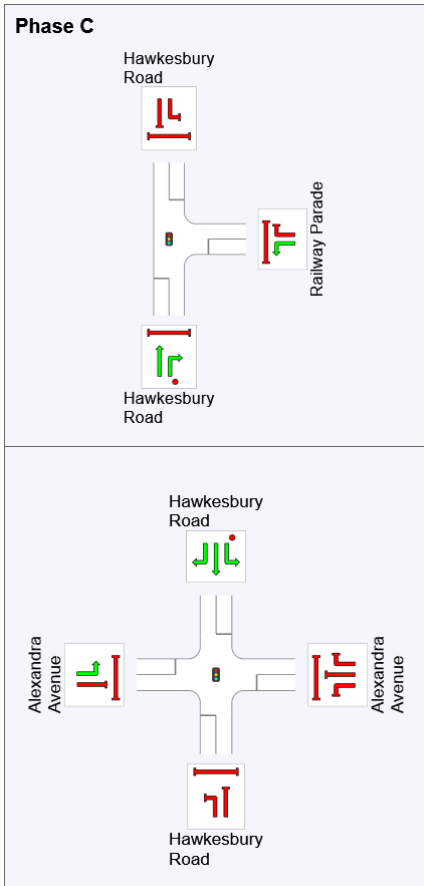


Phase E



Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.188 | 78.4 | LOS F | 0.6 | 15.7 | 0.98 | 0.69 | 0.98 | 10.8 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.188 | 78.4 | LOS F | 0.6 | 15.7 | 0.98 | 0.69 | 0.98 | 10.8 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.126 | 76.7 | LOS F | 0.6 | 15.0 | 0.98 | 0.68 | 0.98 | 10.8 |
| 25 | T1 | 426 | 3.1 | 426 | 3.1 | * 1.103 | 150.3 | LOS F | 48.5 | 348.7 | 1.00 | 1.52 | 1.82 | 4.4 |
| 26 | R2 | 264 | 3.4 | 264 | 3.4 | * 0.968 | 76.5 | LOS F | 19.6 | 141.5 | 0.97 | 1.02 | 1.30 | 7.8 |
| Approach | | 698 | 4.3 | 698 | 4.3 | 1.103 | 121.6 | LOS F | 48.5 | 348.7 | 0.99 | 1.32 | 1.61 | 5.3 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 164 | 6.1 | 164 | 6.1 | 1.114 | 25.9 | LOS B | 4.5 | 58.1 | 0.62 | 0.70 | 0.66 | 21.8 |
| 29 | R2 | 509 | 12.4 | 509 | 12.4 | * 1.114 | 154.7 | LOS F | 19.8 | 146.9 | 0.96 | 1.40 | 1.87 | 2.4 |
| Approach | | 673 | 10.8 | 673 | 10.8 | 1.114 | 123.3 | LOS F | 19.8 | 146.9 | 0.88 | 1.23 | 1.57 | 4.0 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 391 | 17.4 | 391 | 17.4 | 0.217 | 12.0 | LOS A | 8.2 | 62.1 | 0.37 | 0.65 | 0.37 | 23.2 |
| 31 | T1 | 254 | 3.1 | 254 | 3.1 | 0.335 | 53.5 | LOS D | 15.5 | 111.6 | 0.97 | 0.81 | 0.97 | 15.0 |
| Approach | | 645 | 11.8 | 645 | 11.8 | 0.335 | 28.4 | LOS B | 15.5 | 111.6 | 0.60 | 0.71 | 0.60 | 17.4 |
| All Vehicles | | 2024 | 9.2 | 2024 | 9.2 | 1.114 | 92.3 | LOS F | 48.5 | 348.7 | 0.83 | 1.09 | 1.27 | 6.3 |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|---------------------------------|----------|-----------------|-----------------|------------------|------------------------------------|-----|-----------|---------------------|-----------------|----------------|-------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [Ped Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 238.3 | 208.6 | 0.88 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 202 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 29.6 | LOS C | 0.1 | 0.1 | 0.92 | 0.92 | 55.3 | 30.9 | 0.56 |
| P72 | Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P8 Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 98.7 | 41.1 | 0.42 |
| All Pedestrians | 580 | 60.9 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 124.8 | 76.7 | 0.61 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

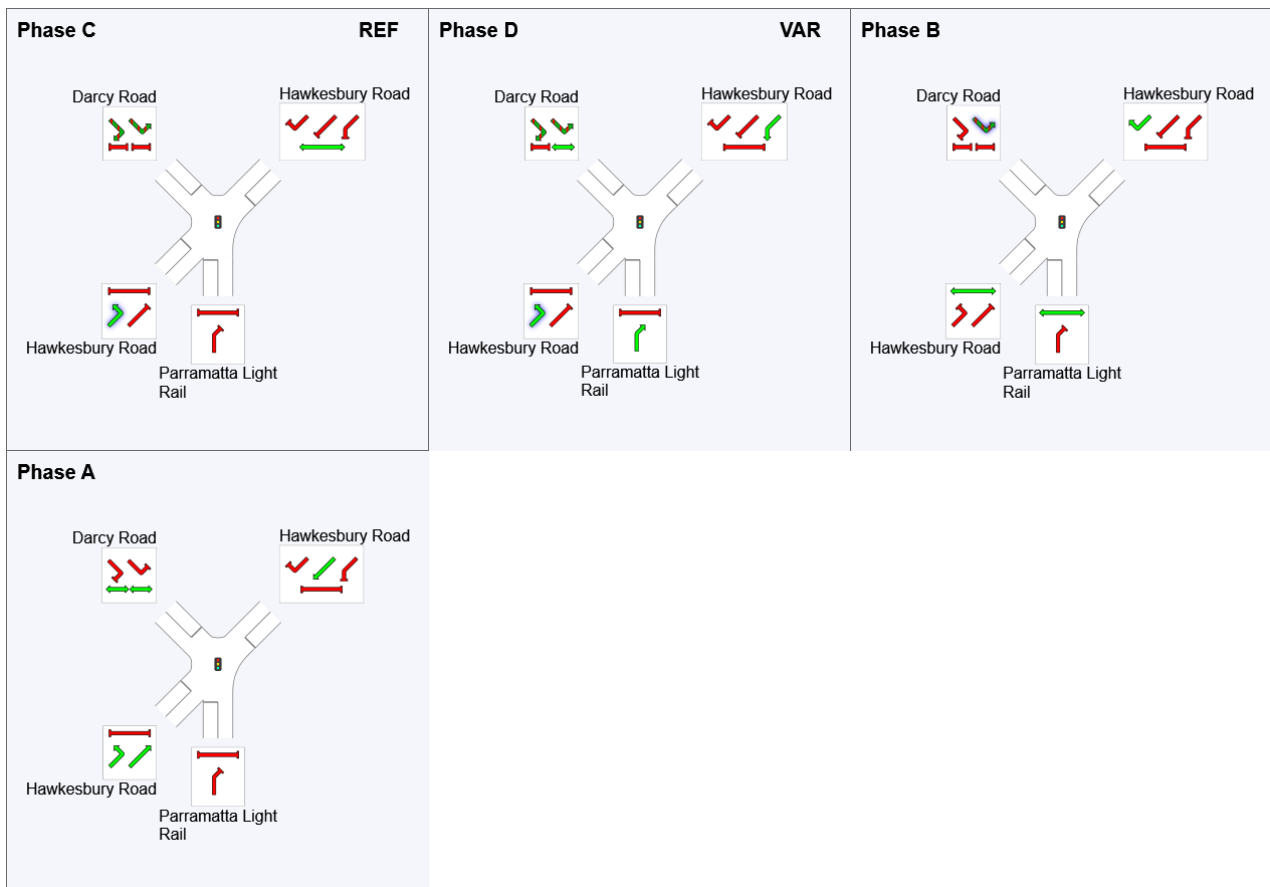
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 46 | 62 | 92 |
| Green Time (sec) | 40 | 8 | 21 | 37 |
| Phase Time (sec) | 48 | 17 | 30 | 45 |
| Phase Split | 34% | 12% | 21% | 32% |

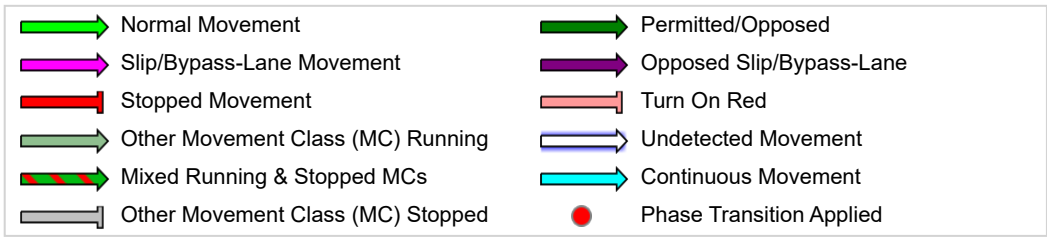
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 6 | 0.0 | 6 | 0.0 | 0.278 | 26.9 | LOS B | 12.9 | 95.7 | 0.75 | 0.65 | 0.75 | 20.9 | |
| 22 | T1 | 583 | 12.2 | 583 | 12.2 | 0.278 | 22.9 | LOS B | 12.9 | 95.7 | 0.73 | 0.63 | 0.73 | 11.6 | |
| 23 | R2 | 68 | 0.0 | 68 | 0.0 | *0.570 | 71.1 | LOS F | 4.6 | 31.9 | 0.97 | 0.76 | 0.97 | 8.8 | |
| Approach | | 657 | 10.8 | 657 | 10.8 | 0.570 | 27.9 | LOS B | 12.9 | 95.7 | 0.75 | 0.64 | 0.75 | 10.8 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 56 | 3.6 | 56 | 3.6 | 0.445 | 53.0 | LOS D | 3.5 | 25.3 | 0.92 | 0.72 | 0.92 | 7.7 | |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.445 | 53.0 | LOS D | 3.5 | 25.3 | 0.92 | 0.72 | 0.92 | 11.9 | |
| 26 | R2 | 137 | 0.0 | 137 | 0.0 | 0.538 | 48.4 | LOS D | 8.0 | 55.7 | 0.93 | 0.74 | 0.93 | 8.1 | |
| Approach | | 194 | 1.0 | 194 | 1.0 | 0.538 | 49.8 | LOS D | 8.0 | 55.7 | 0.93 | 0.73 | 0.93 | 8.0 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 103 | 1.0 | 103 | 1.0 | *0.592 | 21.7 | LOS B | 11.6 | 84.8 | 0.55 | 0.59 | 0.55 | 13.6 | |
| 28 | T1 | 567 | 12.7 | 567 | 12.7 | 0.592 | 21.7 | LOS B | 13.0 | 96.3 | 0.66 | 0.63 | 0.66 | 10.3 | |
| 29 | R2 | 6 | 0.0 | 6 | 0.0 | 0.050 | 74.5 | LOS F | 0.4 | 2.9 | 1.00 | 0.66 | 1.00 | 9.5 | |
| Approach | | 676 | 10.8 | 676 | 10.8 | 0.592 | 22.1 | LOS B | 13.0 | 96.3 | 0.65 | 0.63 | 0.65 | 10.5 | |
| SouthWest: Farm House Road | | | | | | | | | | | | | | | |
| 30 | L2 | 30 | 0.0 | 30 | 0.0 | 0.127 | 53.8 | LOS D | 2.0 | 13.9 | 0.89 | 0.71 | 0.89 | 9.8 | |
| 31 | T1 | 5 | 0.0 | 5 | 0.0 | 0.127 | 56.8 | LOS E | 2.0 | 13.9 | 0.89 | 0.71 | 0.89 | 12.0 | |
| 32 | R2 | 50 | 0.0 | 50 | 0.0 | 0.197 | 49.4 | LOS D | 2.7 | 19.1 | 0.92 | 0.72 | 0.92 | 10.6 | |
| Approach | | 85 | 0.0 | 85 | 0.0 | 0.197 | 51.4 | LOS D | 2.7 | 19.1 | 0.91 | 0.72 | 0.91 | 10.5 | |
| All Vehicles | | 1612 | 9.1 | 1612 | 9.1 | 0.592 | 29.3 | LOS C | 13.0 | 96.3 | 0.74 | 0.65 | 0.74 | 10.0 | |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|-------------------------------------|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 Stage 1 | | 197 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 90.4 | 30.9 | 0.34 |
| P52 Stage 2 | | 41 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |
| P6 Full | | 88 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P71 Stage 1 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 225 | 64.7 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 91.3 | 31.9 | 0.35 |
| All Pedestrians | 603 | 64.6 | LOS F | 0.9 | 0.9 | 0.96 | 0.96 | 91.4 | 32.2 | 0.35 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

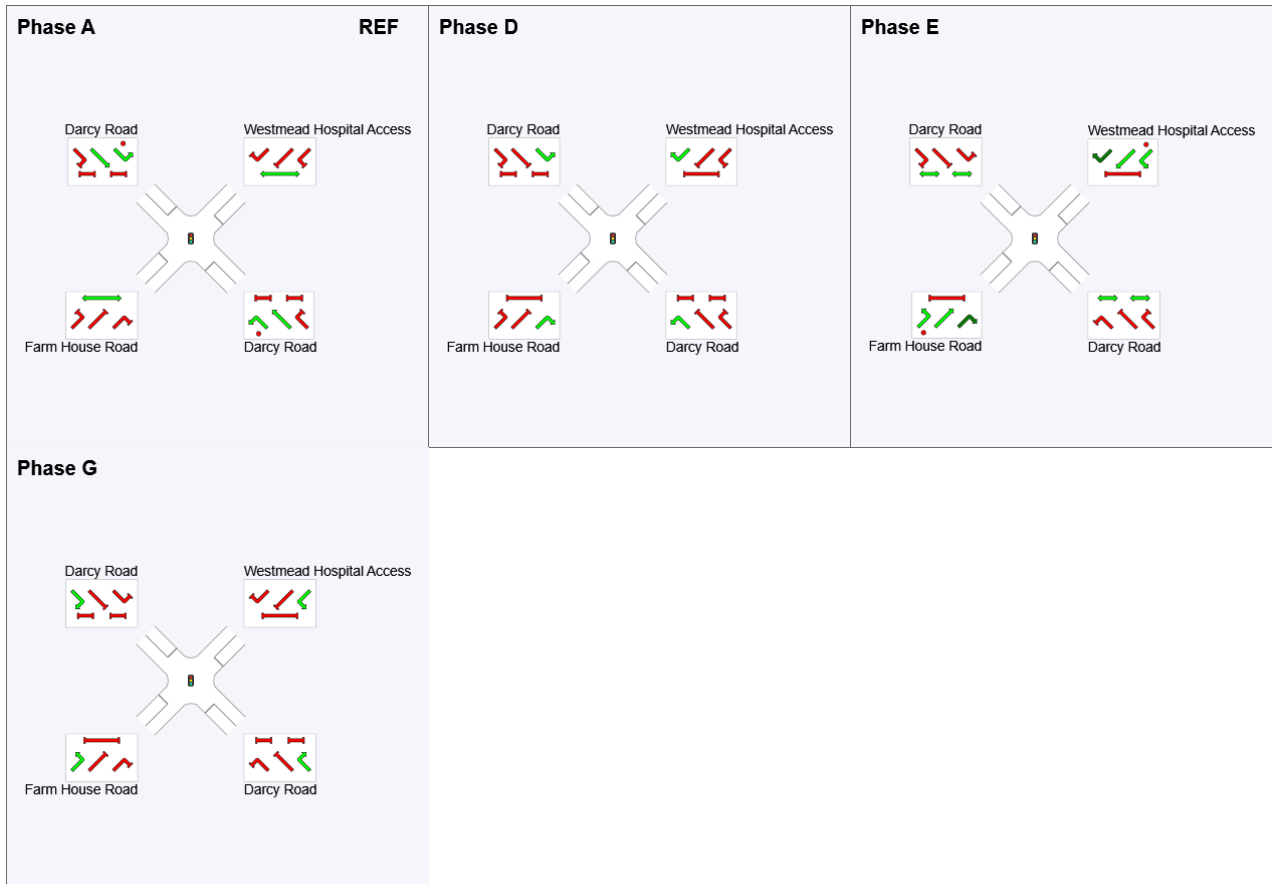
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 121 | 64 | 82 | 106 |
| Green Time (sec) | 75 | 11 | 16 | 9 |
| Phase Time (sec) | 82 | 19 | 22 | 17 |
| Phase Split | 59% | 14% | 16% | 12% |

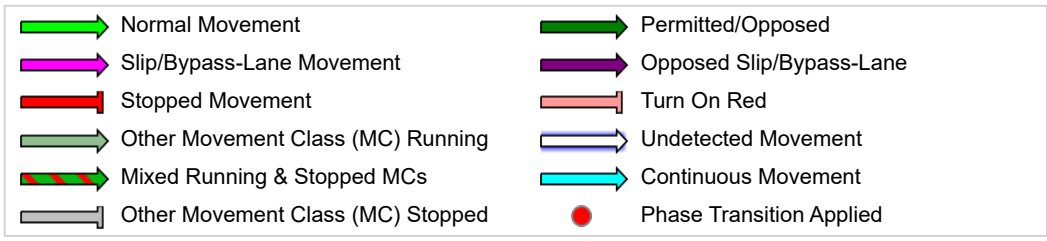
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 5 | 0.0 | 5 | 0.0 | 0.194 | 11.2 | LOS A | 0.1 | 1.0 | 0.04 | 0.01 | 0.04 | 30.2 |
| 22 | T1 | 745 | 9.7 | 745 | 9.7 | 0.194 | 0.1 | LOS A | 0.1 | 1.0 | 0.02 | 0.00 | 0.02 | 38.7 |
| Approach | | 750 | 9.6 | 750 | 9.6 | 0.194 | 0.2 | NA | 0.1 | 1.0 | 0.02 | 0.00 | 0.02 | 38.6 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 675 | 10.1 | 675 | 10.1 | 0.296 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 |
| Approach | | 675 | 10.1 | 675 | 10.1 | 0.296 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.006 | 21.9 | LOS B | 0.0 | 0.1 | 0.87 | 0.77 | 0.87 | 5.1 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.006 | 21.9 | LOS B | 0.0 | 0.1 | 0.87 | 0.77 | 0.87 | 5.1 |
| All Vehicles | | 1426 | 9.8 | 1426 | 9.8 | 0.296 | 0.1 | NA | 0.1 | 1.0 | 0.01 | 0.00 | 0.01 | 39.2 |

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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|---|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | * 0.275 | 14.0 | LOS A | 9.5 | 69.4 | 0.45 | 0.39 | 0.45 | 19.6 | |
| 22 | T1 | 712 | 10.0 | 712 | 10.0 | 0.275 | 10.0 | LOS A | 9.5 | 69.4 | 0.40 | 0.35 | 0.40 | 20.0 | |
| 23 | R2 | 34 | 0.0 | 34 | 0.0 | * 0.427 | 80.4 | LOS F | 2.5 | 17.2 | 1.00 | 0.72 | 1.00 | 8.7 | |
| Approach | | 747 | 9.5 | 747 | 9.5 | 0.427 | 13.2 | LOS A | 9.5 | 69.4 | 0.43 | 0.37 | 0.43 | 17.7 | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 38 | 0.0 | 38 | 0.0 | 0.044 | 4.1 | LOS A | 0.2 | 1.7 | 0.14 | 0.50 | 0.14 | 30.3 | |
| 26 | R2 | 30 | 0.0 | 30 | 0.0 | * 0.119 | 57.4 | LOS E | 1.8 | 12.3 | 0.89 | 0.71 | 0.89 | 7.6 | |
| Approach | | 68 | 0.0 | 68 | 0.0 | 0.119 | 27.7 | LOS B | 1.8 | 12.3 | 0.47 | 0.59 | 0.47 | 13.0 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 60 | 0.0 | 60 | 0.0 | 0.179 | 12.1 | LOS A | 6.7 | 49.0 | 0.33 | 0.34 | 0.33 | 28.1 | |
| 28 | T1 | 636 | 10.7 | 636 | 10.7 | 0.179 | 9.1 | LOS A | 8.3 | 61.2 | 0.37 | 0.34 | 0.37 | 20.1 | |
| 29 | R2 | 2 | 50.0 | 2 | 50.0 | 0.023 | 76.6 | LOS F | 0.1 | 1.4 | 1.00 | 0.61 | 1.00 | 6.7 | |
| Approach | | 698 | 9.9 | 698 | 9.9 | 0.179 | 9.6 | LOS A | 8.3 | 61.2 | 0.37 | 0.35 | 0.37 | 20.9 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | | |
| 30 | L2 | 3 | 0.0 | 3 | 0.0 | 0.012 | 43.8 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.6 | |
| 32 | R2 | 1 | 0.0 | 1 | 0.0 | 0.012 | 43.8 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.6 | |
| Approach | | 4 | 0.0 | 4 | 0.0 | 0.012 | 43.8 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.6 | |
| All Vehicles | | 1517 | 9.2 | 1517 | 9.2 | 0.427 | 12.3 | LOS A | 9.5 | 69.4 | 0.41 | 0.37 | 0.41 | 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)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|--|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed | |
| | | | | | [Ped ped | Dist] m | | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | |
| P6 | Full | 4 | 64.1 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 90.7 | 31.9 | 0.35 | |
| NorthWest: Darcy Road | | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | |
| P8 | Full | 59 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 88.1 | 28.6 | 0.32 | |
| All Pedestrians | | 154 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 98.9 | 41.4 | 0.42 | |

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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Models.sip9

PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

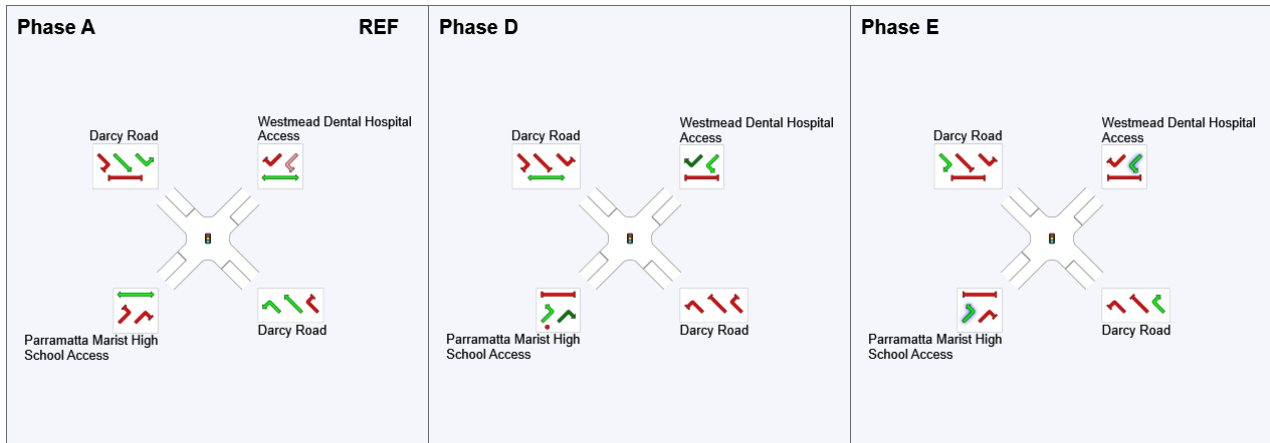
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|----|
| Phase Change Time (sec) | 109 | 67 | 98 |
| Green Time (sec) | 92 | 25 | 6 |
| Phase Time (sec) | 98 | 30 | 12 |
| Phase Split | 70% | 21% | 9% |

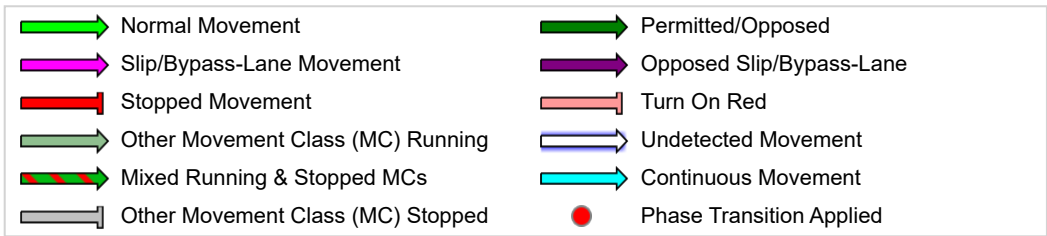
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2023 Do
Minimum)]

1500 - 1600
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.134 | 3.7 | LOS A | 0.6 | 4.6 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 745 | 9.8 | 745 | 9.8 | 0.134 | 0.0 | LOS A | 1.6 | 12.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 746 | 9.8 | 746 | 9.8 | 0.134 | 0.0 | NA | 1.6 | 12.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 698 | 9.7 | 698 | 9.7 | 0.176 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 698 | 9.7 | 698 | 9.7 | 0.176 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 25 | 0.0 | 25 | 0.0 | 0.050 | 1.3 | LOS A | 0.1 | 0.7 | 0.37 | 0.23 | 0.37 | 18.6 |
| Approach | | 25 | 0.0 | 25 | 0.0 | 0.050 | 1.3 | LOS A | 0.1 | 0.7 | 0.37 | 0.23 | 0.37 | 18.6 |
| All Vehicles | | 1469 | 9.6 | 1469 | 9.6 | 0.176 | 0.0 | NA | 1.6 | 12.0 | 0.01 | 0.00 | 0.01 | 38.9 |

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.

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.

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MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 623 | 2.6 | 623 | 2.6 | 0.352 | 27.6 | LOS B | 12.5 | 89.8 | 0.70 | 0.73 | 0.70 | 7.0 |
| 23a | R1 | 147 | 40.8 | 147 | 40.8 | *0.463 | 61.5 | LOS E | 7.5 | 63.2 | 0.98 | 0.78 | 0.98 | 18.0 |
| Approach | | 770 | 9.9 | 770 | 9.9 | 0.463 | 34.1 | LOS C | 12.5 | 89.8 | 0.76 | 0.74 | 0.76 | 11.8 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 94 | 0.0 | 94 | 0.0 | 0.935 | 81.7 | LOS F | 12.6 | 88.0 | 1.00 | 1.02 | 1.31 | 12.4 |
| 5 | T1 | 242 | 0.4 | 242 | 0.4 | *0.935 | 70.5 | LOS F | 13.1 | 92.2 | 1.00 | 0.97 | 1.22 | 13.3 |
| 6 | R2 | 7 | 0.0 | 7 | 0.0 | 0.935 | 71.4 | LOS F | 13.1 | 92.2 | 1.00 | 0.94 | 1.18 | 21.5 |
| Approach | | 343 | 0.3 | 343 | 0.3 | 0.935 | 73.6 | LOS F | 13.1 | 92.2 | 1.00 | 0.98 | 1.24 | 13.3 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 3 | 0.0 | 3 | 0.0 | 0.173 | 10.7 | LOS A | 2.0 | 16.2 | 0.22 | 0.39 | 0.22 | 36.0 |
| 7a | L1 | 175 | 33.1 | 175 | 33.1 | 0.173 | 9.1 | LOS A | 2.0 | 16.2 | 0.22 | 0.39 | 0.22 | 33.2 |
| 9 | R2 | 239 | 3.3 | 239 | 3.3 | 0.473 | 36.9 | LOS C | 11.2 | 80.5 | 0.73 | 0.74 | 0.73 | 21.8 |
| Approach | | 417 | 15.8 | 417 | 15.8 | 0.473 | 25.0 | LOS B | 11.2 | 80.5 | 0.51 | 0.59 | 0.51 | 25.6 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 68 | 1.5 | 68 | 1.5 | 0.524 | 28.8 | LOS C | 10.5 | 74.7 | 0.67 | 0.67 | 0.67 | 26.3 |
| 11 | T1 | 39 | 0.0 | 39 | 0.0 | *0.524 | 25.6 | LOS B | 10.5 | 74.7 | 0.67 | 0.67 | 0.67 | 23.9 |
| 12a | R1 | 429 | 2.3 | 429 | 2.3 | 0.524 | 33.6 | LOS C | 12.8 | 91.4 | 0.73 | 0.70 | 0.73 | 6.9 |
| Approach | | 536 | 2.1 | 536 | 2.1 | 0.524 | 32.4 | LOS C | 12.8 | 91.4 | 0.72 | 0.69 | 0.72 | 12.7 |
| All Vehicles | | 2066 | 7.5 | 2066 | 7.5 | 0.935 | 38.4 | LOS C | 13.1 | 92.2 | 0.74 | 0.74 | 0.78 | 15.5 |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|---------------------------------|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

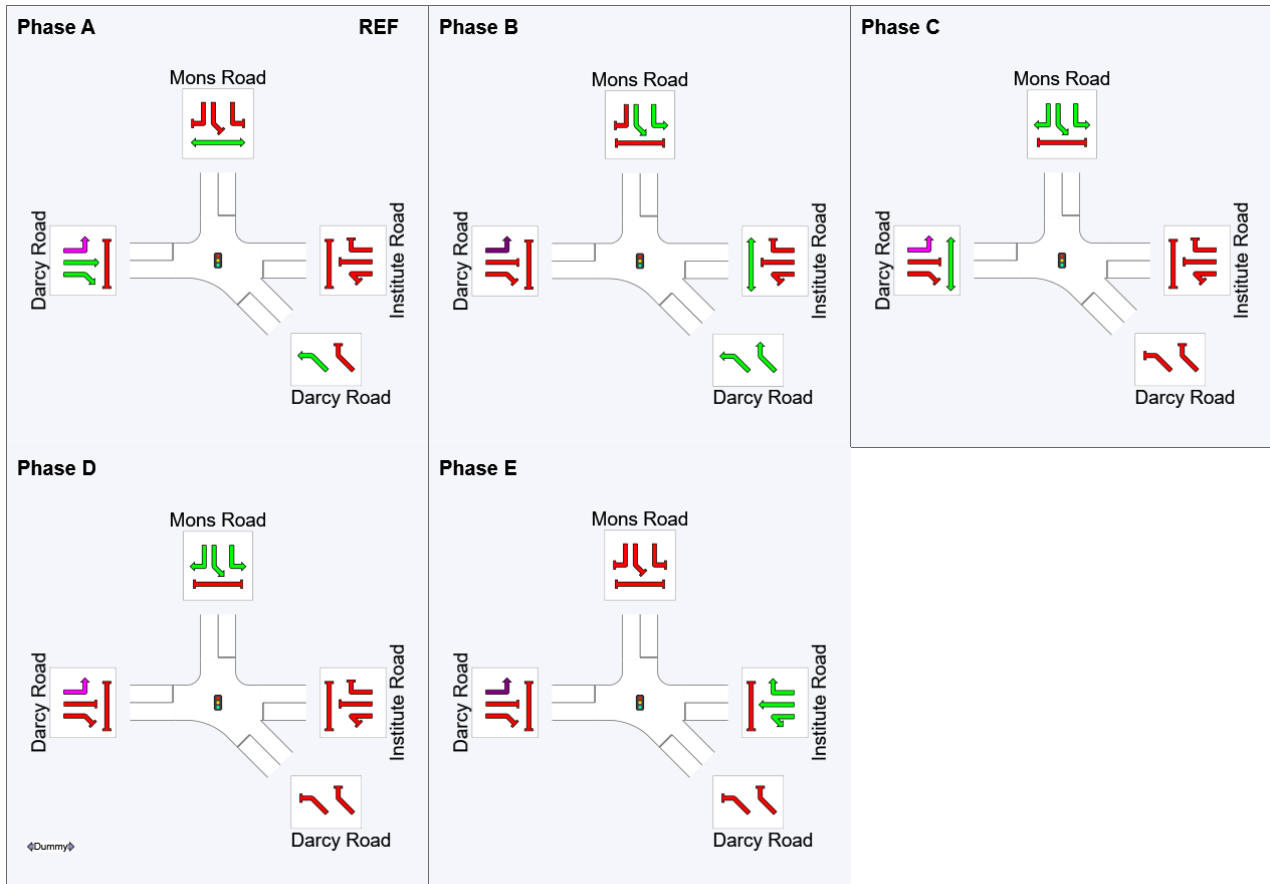
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 28 | 73 | 100 | 133 | 8 |
| Green Time (sec) | 39 | 21 | 27 | 9 | 14 |
| Phase Time (sec) | 45 | 27 | 33 | 15 | 20 |
| Phase Split | 32% | 19% | 24% | 11% | 14% |

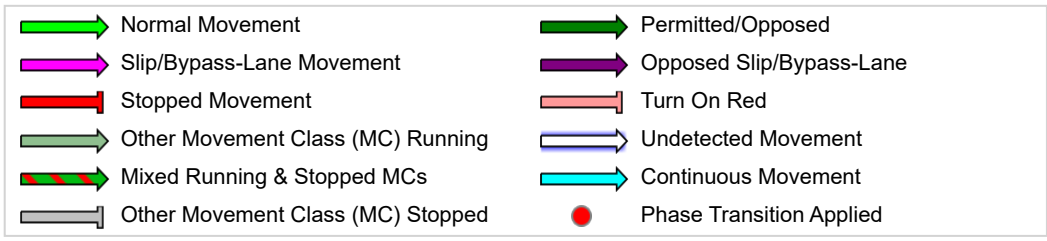
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 244 | 4.1 | 244 | 4.1 | 0.500 | 8.5 | LOS A | 2.4 | 17.5 | 0.61 | 1.27 | 0.88 | 9.5 | |
| Approach | | 244 | 4.1 | 244 | 4.1 | 0.500 | 8.5 | LOS A | 2.4 | 17.5 | 0.61 | 1.27 | 0.88 | 9.5 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 57 | 8.8 | 57 | 8.8 | 0.033 | 7.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.76 | 0.00 | 18.9 | |
| 5 | T1 | 1047 | 1.8 | 1047 | 1.8 | 0.272 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 | |
| Approach | | 1104 | 2.2 | 1104 | 2.2 | 0.272 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.04 | 0.00 | 37.6 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 536 | 3.0 | 536 | 3.0 | 0.166 | 2.1 | LOS A | 0.8 | 5.6 | 0.00 | 0.36 | 0.00 | 37.1 | |
| 12 | R2 | 96 | 4.2 | 96 | 4.2 | 0.281 | 13.2 | LOS A | 0.7 | 4.8 | 0.70 | 0.94 | 0.77 | 26.8 | |
| Approach | | 632 | 3.2 | 632 | 3.2 | 0.281 | 3.8 | LOS A | 0.8 | 5.6 | 0.11 | 0.45 | 0.12 | 35.0 | |
| All Vehicles | | 1980 | 2.7 | 1980 | 2.7 | 0.500 | 2.5 | NA | 2.4 | 17.5 | 0.11 | 0.32 | 0.15 | 20.4 | |

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.
 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.

MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 218 | 1.4 | 218 | 1.4 | * 0.418 | 41.4 | LOS C | 11.1 | 78.9 | 0.83 | 0.78 | 0.83 | 25.6 |
| 2 | T1 | 28 | 0.0 | 28 | 0.0 | * 0.695 | 75.4 | LOS F | 7.8 | 57.8 | 1.00 | 0.84 | 1.09 | 15.7 |
| 3 | R2 | 83 | 9.6 | 83 | 9.6 | 0.695 | 75.0 | LOS F | 7.8 | 57.8 | 1.00 | 0.84 | 1.09 | 15.3 |
| Approach | | 329 | 3.3 | 329 | 3.3 | 0.695 | 52.7 | LOS D | 11.1 | 78.9 | 0.89 | 0.80 | 0.92 | 21.6 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 244 | 5.3 | 244 | 5.3 | * 0.321 | 19.8 | LOS B | 17.0 | 121.8 | 0.44 | 0.51 | 0.44 | 27.9 |
| 5 | T1 | 1023 | 1.7 | 1023 | 1.7 | 0.321 | 15.5 | LOS B | 17.8 | 126.3 | 0.45 | 0.44 | 0.45 | 33.5 |
| 6 | R2 | 24 | 0.0 | 24 | 0.0 | 0.046 | 12.7 | LOS A | 0.3 | 2.4 | 0.38 | 0.60 | 0.38 | 29.1 |
| Approach | | 1291 | 2.3 | 1291 | 2.3 | 0.321 | 16.2 | LOS B | 17.8 | 126.3 | 0.45 | 0.46 | 0.45 | 32.5 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 23 | 0.0 | 23 | 0.0 | 0.060 | 42.9 | LOS D | 1.2 | 8.3 | 0.83 | 0.60 | 0.83 | 4.3 |
| 8 | T1 | 38 | 0.0 | 38 | 0.0 | 0.522 | 67.0 | LOS E | 5.4 | 37.8 | 0.99 | 0.78 | 0.99 | 3.1 |
| 9 | R2 | 42 | 0.0 | 42 | 0.0 | 0.522 | 67.0 | LOS E | 5.4 | 37.8 | 0.99 | 0.78 | 0.99 | 8.8 |
| Approach | | 103 | 0.0 | 103 | 0.0 | 0.522 | 61.7 | LOS E | 5.4 | 37.8 | 0.96 | 0.74 | 0.96 | 6.0 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 57 | 0.0 | 57 | 0.0 | 0.245 | 15.7 | LOS B | 10.2 | 72.3 | 0.45 | 0.44 | 0.45 | 23.9 |
| 11 | T1 | 525 | 1.7 | 525 | 1.7 | 0.245 | 10.7 | LOS A | 10.2 | 72.3 | 0.44 | 0.41 | 0.44 | 26.0 |
| 12 | R2 | 280 | 2.1 | 280 | 2.1 | 0.586 | 14.7 | LOS B | 6.6 | 47.2 | 0.56 | 0.73 | 0.56 | 22.8 |
| Approach | | 862 | 1.7 | 862 | 1.7 | 0.586 | 12.3 | LOS A | 10.2 | 72.3 | 0.48 | 0.51 | 0.48 | 24.7 |
| All Vehicles | | 2585 | 2.2 | 2585 | 2.2 | 0.695 | 21.4 | LOS B | 17.8 | 126.3 | 0.53 | 0.53 | 0.54 | 26.5 |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|---------------------------------|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 47 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 44 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |
| P3 | Full | 127 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 92.2 | 33.3 | 0.36 |

| West: Darcy Road | | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|--|
| P4 Full | 81 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 | |
| All Pedestrians | 299 | 64.4 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, E2

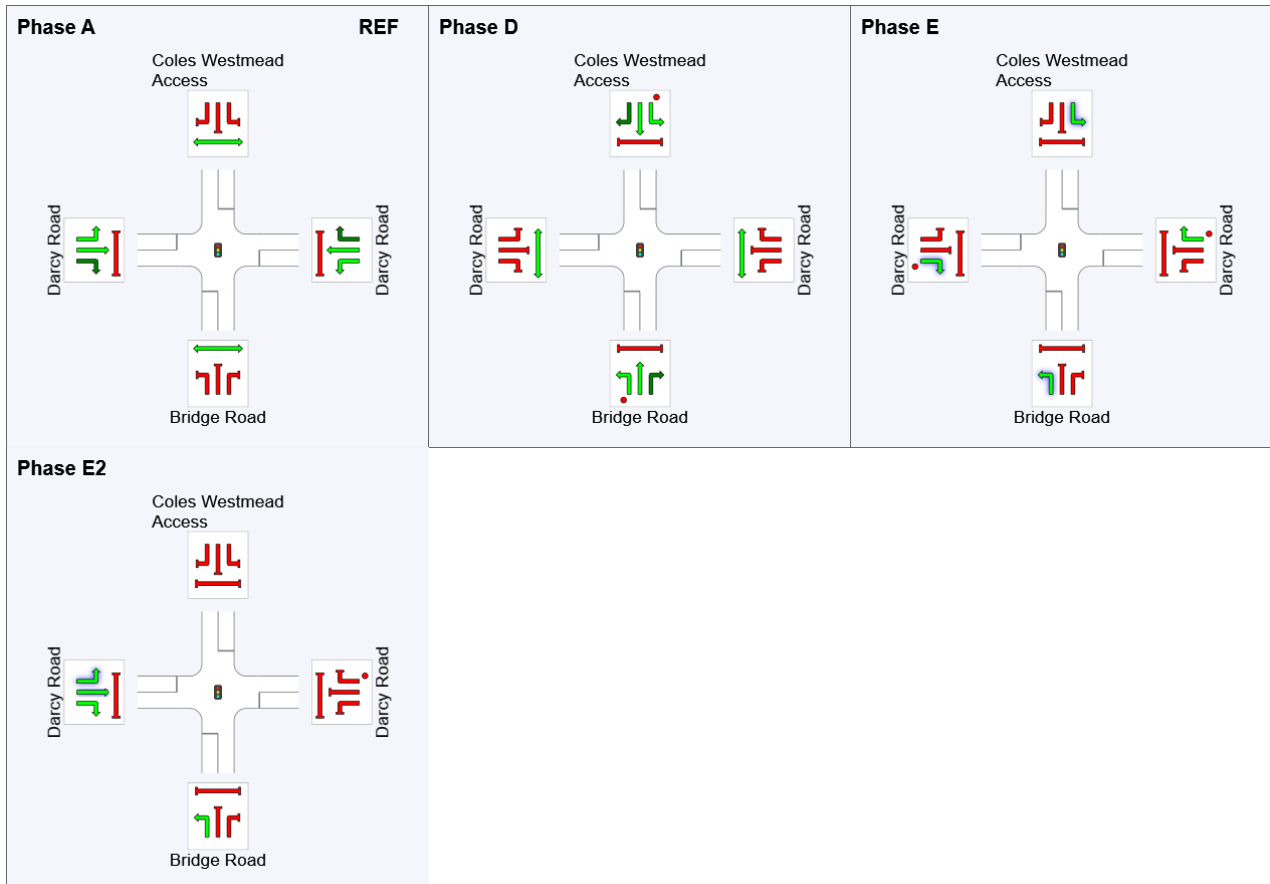
Output Phase Sequence: A, D, E, E2

Phase Timing Summary

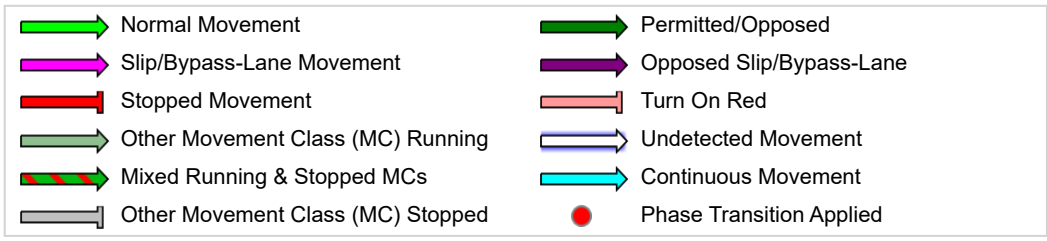
| Phase | A | D | E | E2 |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 14 | 96 | 129 | 140 |
| Green Time (sec) | 75 | 26 | 5 | 8 |
| Phase Time (sec) | 82 | 32 | 11 | 15 |
| Phase Split | 59% | 23% | 8% | 11% |

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



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2023 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600
 Site Category: (None)
 Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|-------|---------------|-------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 401 | 2.7 | 401 | 2.7 | 0.551 | 5.0 | LOS A | 5.1 | 36.2 | 0.58 | 0.58 | 0.58 | 23.6 |
| 3 | R2 | 143 | 0.7 | 143 | 0.7 | 0.551 | 8.1 | LOS A | 5.1 | 36.2 | 0.58 | 0.58 | 0.58 | 23.6 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.551 | 10.8 | LOS A | 5.1 | 36.2 | 0.58 | 0.58 | 0.58 | 24.5 |
| Approach | | 545 | 2.4 | 545 | 2.4 | 0.551 | 5.8 | LOS A | 5.1 | 36.2 | 0.58 | 0.58 | 0.58 | 23.6 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 210 | 0.5 | 210 | 0.5 | 0.589 | 13.0 | LOS A | 4.6 | 32.0 | 0.73 | 0.96 | 0.92 | 38.1 |
| 6 | R2 | 135 | 0.0 | 135 | 0.0 | 0.589 | 15.5 | LOS B | 4.6 | 32.0 | 0.73 | 0.96 | 0.92 | 38.5 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.589 | 16.8 | LOS B | 4.6 | 32.0 | 0.73 | 0.96 | 0.92 | 38.5 |
| Approach | | 346 | 0.3 | 346 | 0.3 | 0.589 | 14.0 | LOS A | 4.6 | 32.0 | 0.73 | 0.96 | 0.92 | 38.2 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 87 | 0.0 | 87 | 0.0 | 0.680 | 6.3 | LOS A | 6.6 | 47.7 | 0.65 | 0.60 | 0.65 | 41.6 |
| 8 | T1 | 570 | 3.3 | 570 | 3.3 | 0.680 | 6.0 | LOS A | 6.6 | 47.7 | 0.65 | 0.60 | 0.65 | 41.1 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.680 | 10.1 | LOS A | 6.6 | 47.7 | 0.65 | 0.60 | 0.65 | 41.6 |
| Approach | | 658 | 2.9 | 658 | 2.9 | 0.680 | 6.1 | LOS A | 6.6 | 47.7 | 0.65 | 0.60 | 0.65 | 41.1 |
| All Vehicles | | 1549 | 2.1 | 1549 | 2.1 | 0.680 | 7.7 | LOS A | 6.6 | 47.7 | 0.64 | 0.67 | 0.68 | 38.0 |

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.
 Roundabout Capacity Model: SIDRA Standard.
 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.

SIGNAL OFFSETS

■ Network: N101 [PM Peak (Network Folder: 2023 Do Minimum)]

1500 - 1600

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 106 | 104 | 101 ¹ | 102 ¹ | 103 | 110 | 108 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -31 | -17 | 0 | 0 | 0 | 15 | 28 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

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CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | | | | [Veh. veh | Dist] m | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 26 | 3.8 | 26 | 3.8 | 1.210 | 207.4 | LOS F | 88.8 | 625.8 | 1.00 | 1.86 | 2.19 | 3.3 |
| 2 | T1 | 1176 | 0.6 | 1176 | 0.6 | * 1.210 | 202.7 | LOS F | 88.8 | 625.8 | 1.00 | 1.86 | 2.19 | 3.3 |
| Approach | | 1202 | 0.7 | 1202 | 0.7 | 1.210 | 202.8 | LOS F | 88.8 | 625.8 | 1.00 | 1.86 | 2.19 | 3.3 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 43 | 0.0 | 43 | 0.0 | 1.221 | 259.0 | LOS F | 13.7 | 102.0 | 1.00 | 1.69 | 2.33 | 4.3 |
| 5 | T1 | 131 | 0.0 | 131 | 0.0 | * 1.221 | 254.5 | LOS F | 13.7 | 102.0 | 1.00 | 1.69 | 2.33 | 2.2 |
| 6 | R2 | 375 | 15.5 | 375 | 15.5 | 1.221 | 260.9 | LOS F | 34.4 | 272.3 | 1.00 | 1.60 | 2.35 | 2.2 |
| Approach | | 549 | 10.6 | 549 | 10.6 | 1.221 | 259.2 | LOS F | 34.4 | 272.3 | 1.00 | 1.63 | 2.35 | 2.3 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 415 | 14.7 | 414 | 14.7 | 0.925 | 34.3 | LOS C | 12.1 | 88.1 | 0.82 | 0.89 | 0.93 | 16.9 |
| 8 | T1 | 484 | 1.9 | 483 | 1.9 | 0.925 | 32.6 | LOS C | 12.1 | 88.1 | 0.89 | 0.92 | 1.00 | 17.3 |
| 9 | R2 | 70 | 0.0 | 70 | 0.0 | 1.235 | 286.2 | LOS F | 10.8 | 75.7 | 1.00 | 1.34 | 2.64 | 0.8 |
| Approach | | 969 | 7.2 | 967 ^{N1} | 7.2 | 1.235 | 51.7 | LOS D | 12.1 | 88.1 | 0.87 | 0.94 | 1.09 | 11.7 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 126 | 0.0 | 122 | 0.0 | 0.700 | 72.2 | LOS F | 8.9 | 62.4 | 1.00 | 0.85 | 1.09 | 19.6 |
| 11 | T1 | 386 | 0.3 | 375 | 0.3 | * 1.221 | 268.2 | LOS F | 56.3 | 395.2 | 1.00 | 1.91 | 2.42 | 8.5 |
| Approach | | 512 | 0.2 | 497 ^{N1} | 0.2 | 1.221 | 220.0 | LOS F | 56.3 | 395.2 | 1.00 | 1.65 | 2.10 | 9.7 |
| All Vehicles | | 3232 | 4.2 | 3215 ^{N1} | 4.3 | 1.235 | 169.6 | LOS F | 88.8 | 625.8 | 0.96 | 1.51 | 1.87 | 5.4 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 1314 | 4.8 | 1311 | 4.8 | 1.105 | 141.7 | LOS F | 12.3 | 88.1 | 1.00 | 1.57 | 1.82 | 1.6 |
| 3 | R2 | 363 | 0.3 | 362 | 0.3 | 1.105 | 145.9 | LOS F | 12.3 | 88.1 | 1.00 | 1.49 | 1.86 | 10.6 |
| Approach | | 1677 | 3.8 | 1673 ^{N1} | 3.8 | 1.105 | 142.6 | LOS F | 12.3 | 88.1 | 1.00 | 1.55 | 1.83 | 4.0 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 224 | 0.9 | 224 | 0.9 | 0.740 | 46.3 | LOS D | 13.2 | 93.0 | 0.95 | 0.87 | 1.02 | 22.2 |
| 6 | R2 | 36 | 0.0 | 36 | 0.0 | 0.342 | 70.7 | LOS F | 2.4 | 16.9 | 0.97 | 0.75 | 0.97 | 17.2 |
| Approach | | 260 | 0.8 | 260 | 0.8 | 0.740 | 49.7 | LOS D | 13.2 | 93.0 | 0.95 | 0.85 | 1.01 | 21.4 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 118 | 0.0 | 118 | 0.0 | 0.100 | 21.2 | LOS B | 4.2 | 35.6 | 0.42 | 0.57 | 0.42 | 34.5 |
| 8 | T1 | 745 | 11.5 | 743 | 11.6 | 0.334 | 18.7 | LOS B | 11.4 | 83.9 | 0.50 | 0.45 | 0.50 | 17.5 |
| Approach | | 863 | 10.0 | 861 ^{N1} | 10.0 | 0.334 | 19.1 | LOS B | 11.4 | 83.9 | 0.49 | 0.47 | 0.49 | 22.0 |
| All Vehicles | | 2800 | 5.4 | 2794 ^{N1} | 5.4 | 1.105 | 95.9 | LOS F | 13.2 | 93.0 | 0.84 | 1.15 | 1.34 | 6.9 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C*

Output Phase Sequence: A, E, D

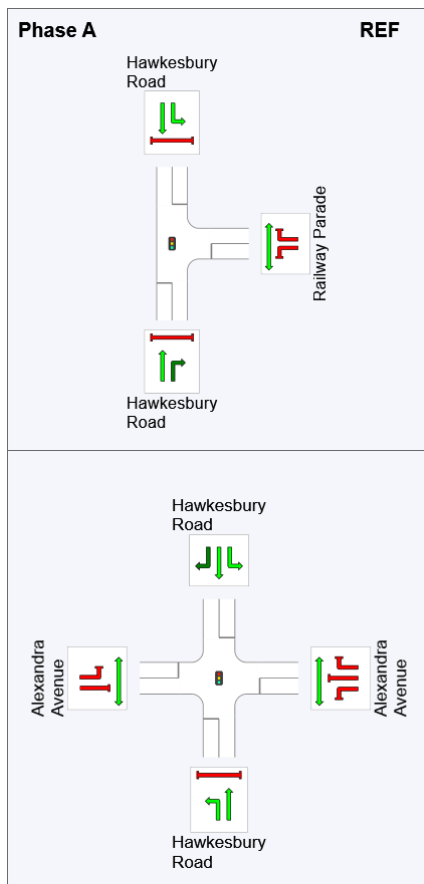
(* Variable Phase)

Phase Timing Summary (CCG)

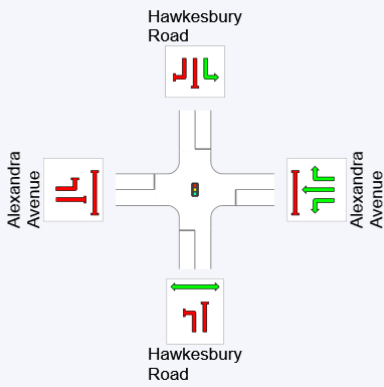
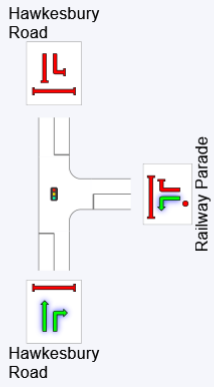
| Phase | A | E | D |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 0 | 77 | 114 |
| Green Time (sec) | 71 | 28 | 17 |
| Phase Time (sec) | 80 | 37 | 23 |
| Phase Split | 57% | 26% | 16% |

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%.

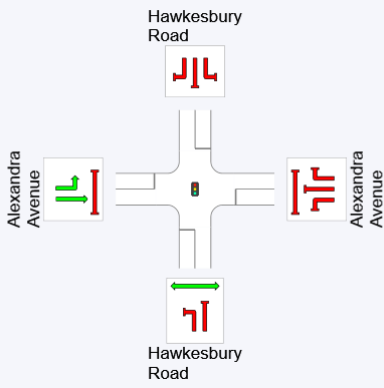
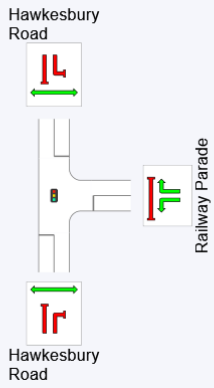
Output Phase Sequence (CCG)



Phase E



Phase D



REF: Reference Phase
VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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 |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 84.0 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.1 |
| 25 | T1 | 346 | 3.5 | 346 | 3.5 | 0.900 | 64.7 | LOS E | 24.9 | 179.8 | 0.93 | 1.01 | 1.20 | 9.1 |
| 26 | R2 | 250 | 2.0 | 250 | 2.0 | * 1.009 | 126.1 | LOS F | 26.0 | 185.3 | 1.00 | 1.29 | 1.69 | 5.1 |
| Approach | | 604 | 4.1 | 604 | 4.1 | 1.009 | 90.3 | LOS F | 26.0 | 185.3 | 0.96 | 1.12 | 1.40 | 6.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 281 | 3.9 | 280 | 3.9 | 0.818 | 13.2 | LOS A | 5.2 | 36.8 | 0.40 | 0.61 | 0.41 | 26.9 |
| 29 | R2 | 518 | 13.1 | 516 | 13.2 | 0.910 | 60.5 | LOS E | 19.8 | 146.9 | 0.94 | 0.93 | 1.14 | 5.7 |
| Approach | | 799 | 9.9 | 795 ^{N1} | 9.9 | 0.910 | 43.9 | LOS D | 19.8 | 146.9 | 0.75 | 0.82 | 0.88 | 10.5 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 845 | 6.9 | 810 | 6.9 | * 0.998 | 92.2 | LOS F | 28.9 | 208.9 | 0.98 | 1.12 | 1.39 | 5.4 |
| 31 | T1 | 506 | 1.2 | 485 | 1.2 | 0.731 | 47.4 | LOS D | 27.7 | 195.9 | 0.90 | 0.81 | 0.90 | 16.2 |
| Approach | | 1351 | 4.7 | 1294 ^{N1} | 4.7 | 0.998 | 75.4 | LOS F | 28.9 | 208.9 | 0.95 | 1.00 | 1.21 | 8.5 |
| All Vehicles | | 2762 | 6.4 | 2701 ^{N1} | 6.5 | 1.009 | 69.5 | LOS E | 28.9 | 208.9 | 0.90 | 0.98 | 1.15 | 8.4 |

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 | 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 |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 238.5 | 208.6 | 0.87 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 191 | 64.6 | LOS F | 0.7 | 0.7 | 0.96 | 0.96 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 32.5 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 58.2 | 30.9 | 0.53 |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P72 Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | |
| P8 Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 98.9 | 41.1 | 0.42 |
| All Pedestrians | 727 | 62.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 135.1 | 87.7 | 0.65 |

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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PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 33 | 47 | 89 |
| Green Time (sec) | 27 | 6 | 33 | 40 |
| Phase Time (sec) | 35 | 15 | 42 | 48 |
| Phase Split | 25% | 11% | 30% | 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



REF: Reference Phase
VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|-------------------------------------|------|-----------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h] | HV % | [Total veh/h] | HV % | | | | [Veh. veh] | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 8 | 0.0 | 0.470 | 25.9 | LOS B | 18.6 | 134.4 | 0.64 | 0.58 | 0.64 | 21.3 | |
| 22 | T1 | 955 | 6.6 | 942 | 6.6 | 0.470 | 22.5 | LOS B | 18.6 | 134.4 | 0.64 | 0.57 | 0.64 | 11.7 | |
| 23 | R2 | 132 | 0.8 | 130 | 0.8 | *0.822 | 79.5 | LOS F | 9.4 | 66.4 | 1.00 | 0.88 | 1.19 | 8.3 | |
| Approach | | 1095 | 5.8 | 1080 ^{N1} | 5.8 | 0.822 | 29.4 | LOS C | 18.6 | 134.4 | 0.69 | 0.61 | 0.71 | 10.5 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 43 | 0.0 | 43 | 0.0 | 0.197 | 48.2 | LOS D | 2.5 | 17.6 | 0.87 | 0.67 | 0.87 | 8.1 | |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.197 | 48.2 | LOS D | 2.5 | 17.6 | 0.87 | 0.67 | 0.87 | 12.4 | |
| 26 | R2 | 75 | 6.7 | 75 | 6.7 | 0.881 | 81.5 | LOS F | 5.7 | 42.1 | 1.00 | 1.25 | 1.49 | 6.2 | |
| Approach | | 119 | 4.2 | 119 | 4.2 | 0.881 | 69.2 | LOS E | 5.7 | 42.1 | 0.95 | 1.03 | 1.26 | 6.8 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 182 | 0.5 | 181 | 0.6 | *0.603 | 26.8 | LOS B | 13.2 | 96.3 | 0.66 | 0.68 | 0.66 | 12.7 | |
| 28 | T1 | 734 | 11.4 | 730 | 11.5 | 0.603 | 22.6 | LOS B | 13.2 | 96.3 | 0.66 | 0.63 | 0.66 | 8.7 | |
| 29 | R2 | 7 | 14.3 | 7 | 14.3 | 0.048 | 72.5 | LOS F | 0.5 | 3.7 | 1.00 | 0.67 | 1.00 | 9.7 | |
| Approach | | 923 | 9.3 | 918 ^{N1} | 9.4 | 0.603 | 23.8 | LOS B | 13.2 | 96.3 | 0.67 | 0.64 | 0.67 | 10.3 | |
| SouthWest: Farm House Road | | | | | | | | | | | | | | | |
| 30 | L2 | 12 | 8.3 | 12 | 8.3 | 0.061 | 52.9 | LOS D | 0.9 | 6.6 | 0.88 | 0.69 | 0.88 | 9.9 | |
| 31 | T1 | 4 | 0.0 | 4 | 0.0 | 0.061 | 55.9 | LOS D | 0.9 | 6.6 | 0.88 | 0.69 | 0.88 | 12.1 | |
| 32 | R2 | 22 | 0.0 | 22 | 0.0 | 0.166 | 71.3 | LOS F | 1.5 | 10.2 | 0.97 | 0.70 | 0.97 | 8.0 | |
| Approach | | 38 | 2.6 | 38 | 2.6 | 0.166 | 63.9 | LOS E | 1.5 | 10.2 | 0.93 | 0.70 | 0.93 | 9.1 | |
| All Vehicles | | 2175 | 7.2 | 2155 ^{N1} | 7.2 | 0.881 | 29.8 | LOS C | 18.6 | 134.4 | 0.70 | 0.65 | 0.73 | 9.9 | |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed | |
| | | | | | [Ped ped] | Dist] m | | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | |
| P51 | Stage 1 | 233 | 64.8 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 90.5 | 30.9 | 0.34 | |
| P52 | Stage 2 | 65 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 98 | 64.4 | LOS F | 0.4 | 0.4 | 0.96 | 0.96 | 91.0 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 258 | 64.8 | LOS F | 1.0 | 1.0 | 0.97 | 0.97 | 91.4 | 31.9 | 0.35 |
| All Pedestrians | 696 | 64.7 | LOS F | 1.0 | 1.0 | 0.96 | 0.96 | 91.6 | 32.3 | 0.35 |

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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PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

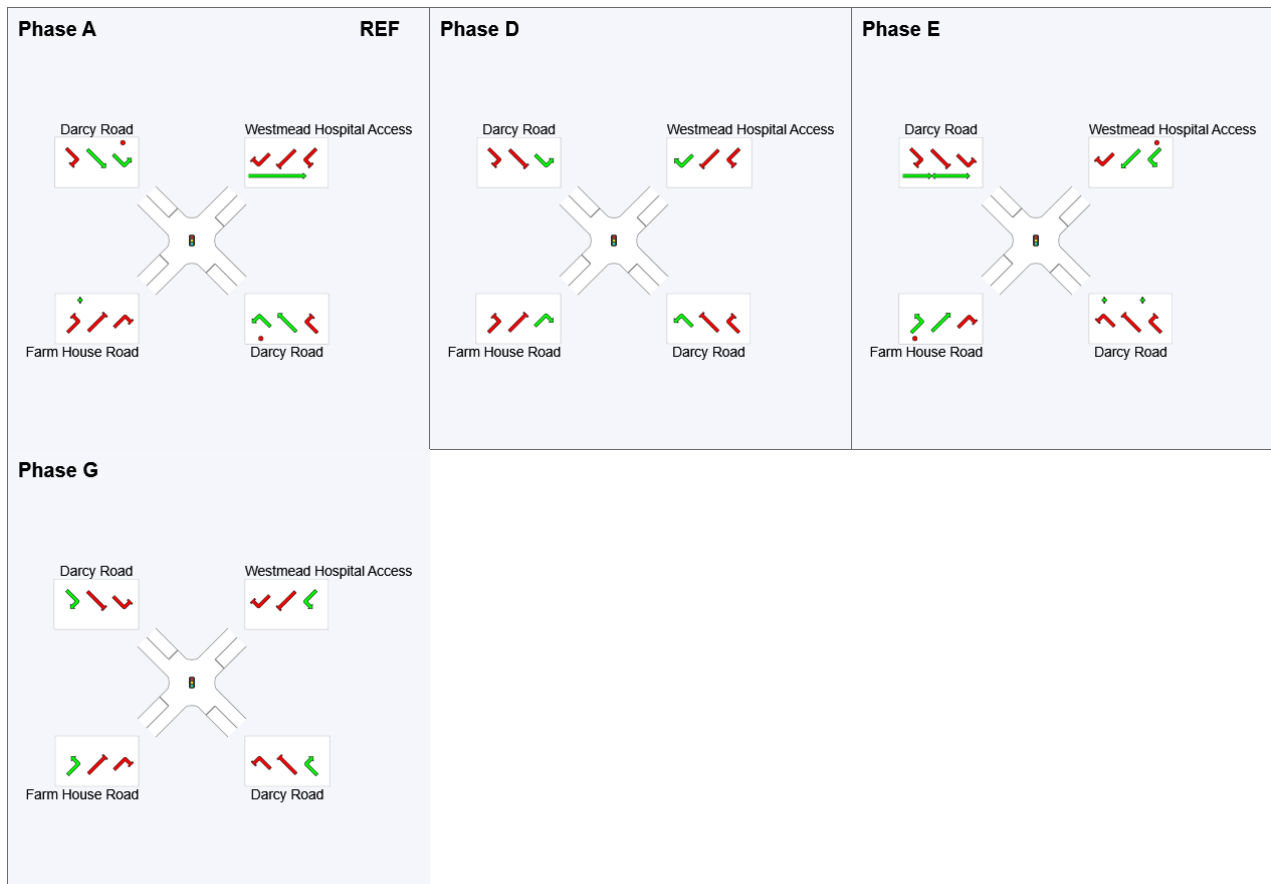
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 130 | 71 | 88 | 112 |
| Green Time (sec) | 73 | 10 | 16 | 12 |
| Phase Time (sec) | 80 | 18 | 22 | 20 |
| Phase Split | 57% | 13% | 16% | 14% |

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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MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | [Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 2 | 0.0 | 2 | 0.0 | 0.296 | 9.3 | LOS A | 0.0 | 0.3 | 0.01 | 0.00 | 0.01 | 31.1 |
| 22 | T1 | 1040 | 6.4 | 1039 | 6.5 | 0.296 | 0.0 | LOS A | 0.0 | 0.3 | 0.00 | 0.00 | 0.01 | 39.7 |
| Approach | | 1042 | 6.4 | 1041 ^N ₁ | 6.4 | 0.296 | 0.1 | NA | 0.0 | 0.3 | 0.00 | 0.00 | 0.01 | 39.6 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 923 | 9.3 | 918 | 9.4 | 0.309 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 923 | 9.3 | 918 ^{N1} | 9.4 | 0.309 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.005 | 15.7 | LOS B | 0.0 | 0.1 | 0.83 | 0.71 | 0.83 | 6.5 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.005 | 15.7 | LOS B | 0.0 | 0.1 | 0.83 | 0.71 | 0.83 | 6.5 |
| All Vehicles | | 1966 | 7.8 | 1960 ^N ₁ | 7.8 | 0.309 | 0.1 | NA | 0.0 | 0.3 | 0.00 | 0.00 | 0.00 | 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.

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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MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 8 | 0.0 | 0.406 | 17.4 | LOS B | 15.7 | 113.3 | 0.53 | 0.48 | 0.53 | 17.8 |
| 22 | T1 | 973 | 6.9 | 972 | 6.9 | 0.406 | 7.5 | LOS A | 15.7 | 113.3 | 0.29 | 0.26 | 0.29 | 23.0 |
| 23 | R2 | 59 | 0.0 | 59 | 0.0 | *0.444 | 77.7 | LOS F | 4.2 | 29.1 | 1.00 | 0.76 | 1.00 | 7.9 |
| Approach | | 1040 | 6.4 | 1039 ^{N1} | 6.5 | 0.444 | 11.5 | LOS A | 15.7 | 113.3 | 0.33 | 0.29 | 0.33 | 18.6 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 19 | 0.0 | 19 | 0.0 | 0.023 | 0.6 | LOS A | 0.1 | 0.8 | 0.13 | 0.10 | 0.13 | 19.5 |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | *0.136 | 52.5 | LOS D | 2.1 | 15.0 | 0.88 | 0.66 | 0.88 | 6.8 |
| Approach | | 56 | 0.0 | 56 | 0.0 | 0.136 | 34.9 | LOS C | 2.1 | 15.0 | 0.62 | 0.47 | 0.62 | 8.7 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 85 | 0.0 | 84 | 0.0 | *0.410 | 8.7 | LOS A | 5.9 | 43.1 | 0.20 | 0.25 | 0.20 | 21.8 |
| 28 | T1 | 904 | 9.5 | 899 | 9.6 | 0.410 | 4.0 | LOS A | 5.9 | 43.1 | 0.16 | 0.17 | 0.16 | 27.6 |
| 29 | R2 | 5 | 0.0 | 5 | 0.0 | 0.037 | 73.6 | LOS F | 0.3 | 2.4 | 1.00 | 0.65 | 1.00 | 6.9 |
| Approach | | 994 | 8.7 | 989 ^{N1} | 8.7 | 0.410 | 4.8 | LOS A | 5.9 | 43.1 | 0.17 | 0.18 | 0.17 | 25.7 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| 32 | R2 | 1 | 0.0 | 1 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| Approach | | 2 | 0.0 | 2 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| All Vehicles | | 2092 | 7.3 | 2085 ^{N1} | 7.3 | 0.444 | 9.0 | LOS A | 15.7 | 113.3 | 0.26 | 0.25 | 0.26 | 20.4 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 43 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 48 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 88.1 | 28.6 | 0.32 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 182 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 97.8 | 40.2 | 0.41 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

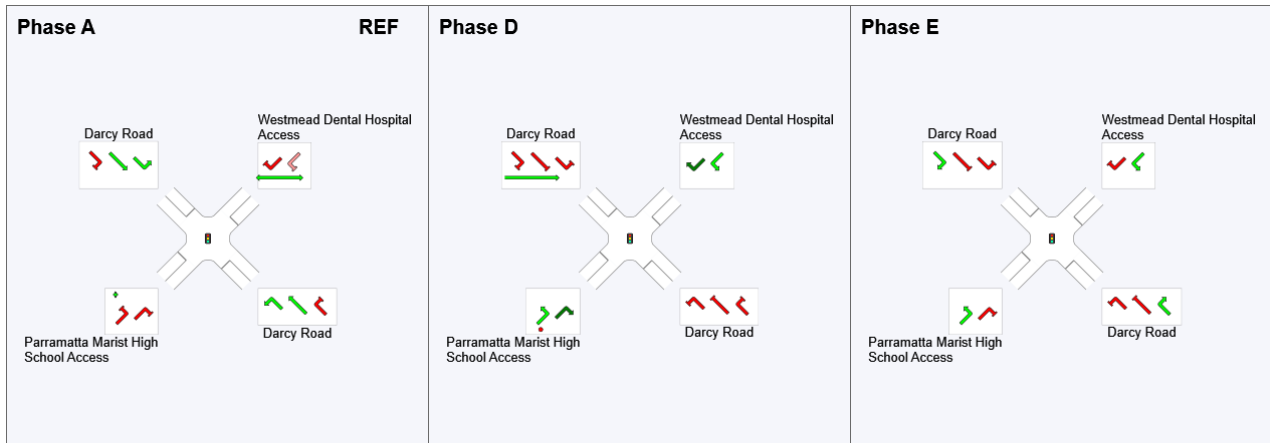
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 10 | 102 | 135 |
| Green Time (sec) | 86 | 27 | 10 |
| Phase Time (sec) | 92 | 32 | 16 |
| Phase Split | 66% | 23% | 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



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: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033 Do
Minimum)]

0745 - 0845
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 36 | 0.0 | 36 | 0.0 | 0.191 | 3.9 | LOS A | 0.2 | 1.7 | 0.06 | 0.07 | 0.06 | 26.2 |
| 22 | T1 | 974 | 7.0 | 973 | 7.0 | 0.191 | 0.0 | LOS A | 11.3 | 81.6 | 0.01 | 0.02 | 0.01 | 39.3 |
| Approach | | 1010 | 6.7 | 1009 ^N ₁ | 6.7 | 0.191 | 0.2 | NA | 11.3 | 81.6 | 0.01 | 0.02 | 0.01 | 38.0 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 994 | 8.5 | 989 | 8.5 | 0.251 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 994 | 8.5 | 989 ^{N1} | 8.5 | 0.251 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.3 | LOS A | 0.0 | 0.0 | 0.37 | 0.16 | 0.37 | 18.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.3 | LOS A | 0.0 | 0.0 | 0.37 | 0.16 | 0.37 | 18.6 |
| All Vehicles | | 2005 | 7.6 | 1998 ^N ₁ | 7.6 | 0.251 | 0.1 | NA | 11.3 | 81.6 | 0.01 | 0.01 | 0.01 | 38.7 |

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.

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MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
(Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033 Do
Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 640 | 1.3 | 639 | 1.3 | 0.311 | 16.9 | LOS B | 10.1 | 71.5 | 0.42 | 0.60 | 0.42 | 10.3 |
| 23a | R1 | 334 | 18.6 | 334 | 18.6 | *0.913 | 74.0 | LOS F | 11.8 | 89.8 | 0.99 | 1.00 | 1.22 | 16.2 |
| Approach | | 974 | 7.2 | 973 ^{N1} | 7.2 | 0.913 | 36.5 | LOS C | 11.8 | 89.8 | 0.61 | 0.74 | 0.69 | 14.6 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 51 | 2.0 | 51 | 2.0 | 0.518 | 75.2 | LOS F | 4.2 | 30.2 | 1.00 | 0.76 | 1.00 | 13.0 |
| 5 | T1 | 79 | 2.5 | 79 | 2.5 | *0.518 | 70.6 | LOS F | 4.9 | 34.9 | 1.00 | 0.76 | 1.00 | 13.3 |
| 6 | R2 | 2 | 0.0 | 2 | 0.0 | 0.518 | 74.9 | LOS F | 4.9 | 34.9 | 1.00 | 0.76 | 1.00 | 21.1 |
| Approach | | 132 | 2.3 | 132 | 2.3 | 0.518 | 72.4 | LOS F | 4.9 | 34.9 | 1.00 | 0.76 | 1.00 | 13.4 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 7 | 0.0 | 7 | 0.0 | 0.176 | 24.8 | LOS B | 5.2 | 44.6 | 0.60 | 0.61 | 0.60 | 30.9 |
| 7a | L1 | 170 | 44.1 | 170 | 44.1 | 0.176 | 23.1 | LOS B | 5.2 | 44.6 | 0.59 | 0.59 | 0.59 | 26.4 |
| 9 | R2 | 126 | 10.3 | 126 | 10.3 | 0.309 | 51.0 | LOS D | 7.1 | 54.1 | 0.87 | 0.77 | 0.87 | 18.6 |
| Approach | | 303 | 29.0 | 303 | 29.0 | 0.309 | 34.7 | LOS C | 7.1 | 54.1 | 0.71 | 0.67 | 0.71 | 22.7 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 196 | 8.7 | 196 | 8.7 | 1.007 | 87.9 | LOS F | 12.7 | 91.4 | 1.00 | 1.18 | 1.46 | 12.9 |
| 11 | T1 | 223 | 0.4 | 223 | 0.4 | *1.007 | 84.7 | LOS F | 12.7 | 91.4 | 1.00 | 1.18 | 1.46 | 11.1 |
| 12a | R1 | 772 | 1.0 | 772 | 1.0 | 1.007 | 101.5 | LOS F | 12.9 | 91.4 | 1.00 | 1.26 | 1.48 | 2.5 |
| Approach | | 1191 | 2.2 | 1191 | 2.2 | 1.007 | 96.1 | LOS F | 12.9 | 91.4 | 1.00 | 1.23 | 1.47 | 6.5 |
| All Vehicles | | 2600 | 7.2 | 2599 ^{N1} | 7.2 | 1.007 | 65.4 | LOS E | 12.9 | 91.4 | 0.82 | 0.96 | 1.07 | 10.3 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

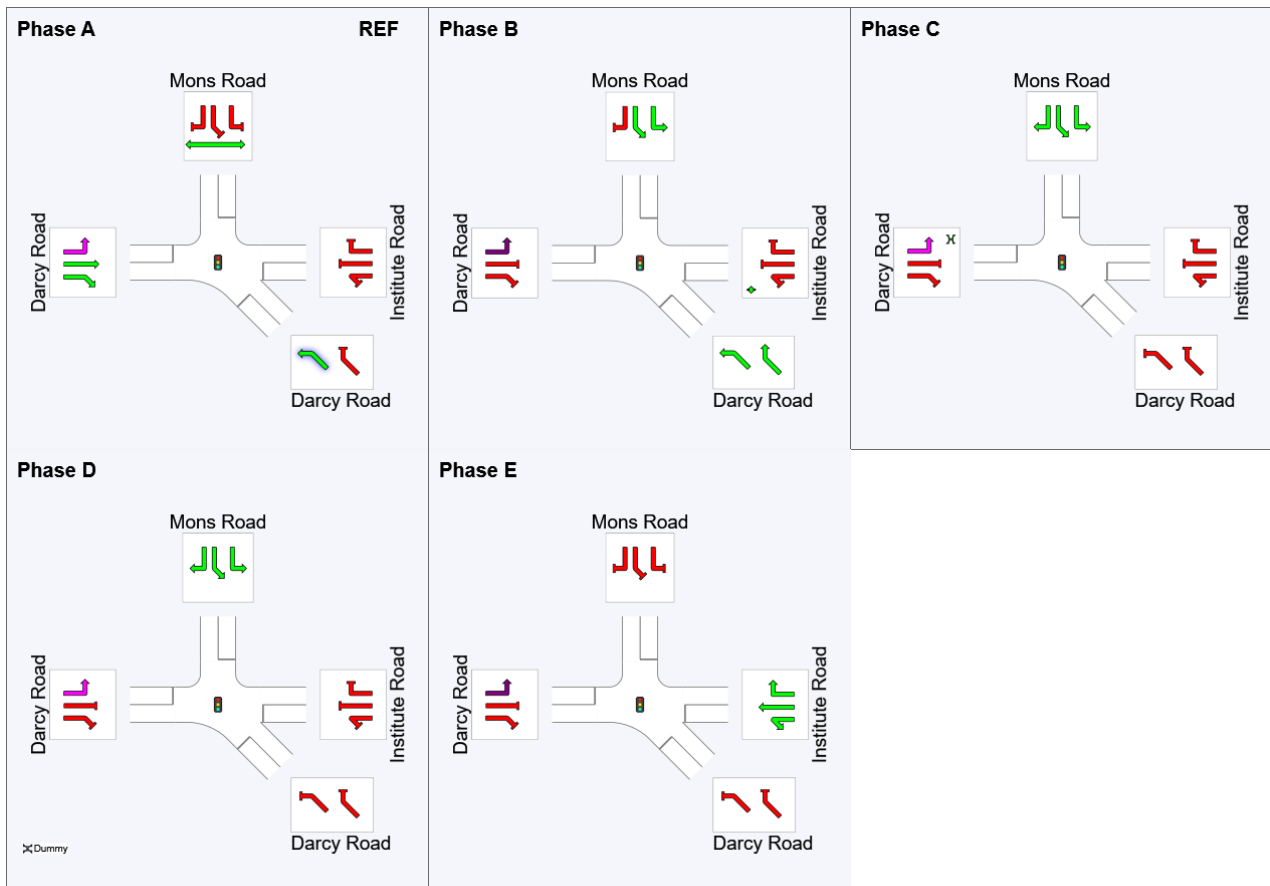
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 50 | 82 | 114 | 124 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 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



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

 Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2033 Do Minimum AM Peak)]

 Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 434 | 1.2 | 434 | 1.2 | 0.704 | 8.7 | LOS A | 5.7 | 40.1 | 0.57 | 1.39 | 1.03 | 9.5 | |
| Approach | | 434 | 1.2 | 434 | 1.2 | 0.704 | 8.7 | LOS A | 5.7 | 40.1 | 0.57 | 1.39 | 1.03 | 9.5 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 176 | 1.7 | 176 | 1.7 | 0.096 | 7.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.76 | 0.00 | 18.9 | |
| 5 | T1 | 669 | 2.8 | 668 | 2.8 | 0.259 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 | |
| Approach | | 845 | 2.6 | 844 ^{N1} | 2.6 | 0.259 | 1.5 | NA | 0.0 | 0.0 | 0.00 | 0.16 | 0.00 | 32.0 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 1191 | 2.6 | 1191 | 2.6 | 0.395 | 2.7 | LOS A | 46.3 | 331.0 | 0.21 | 0.28 | 0.22 | 36.1 | |
| 12 | R2 | 371 | 1.3 | 371 | 1.3 | 0.947 | 41.9 | LOS C | 10.2 | 72.0 | 0.78 | 1.92 | 3.94 | 15.6 | |
| Approach | | 1562 | 2.3 | 1562 | 2.3 | 0.947 | 12.0 | LOS A | 46.3 | 331.0 | 0.34 | 0.67 | 1.11 | 27.4 | |
| All Vehicles | | 2841 | 2.2 | 2840 ^{N1} | 2.2 | 0.947 | 8.4 | NA | 46.3 | 331.0 | 0.28 | 0.63 | 0.77 | 18.8 | |

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.

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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MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 153 | 2.6 | 153 | 2.6 | 0.159 | 19.9 | LOS B | 4.9 | 35.1 | 0.54 | 0.69 | 0.54 | 34.0 |
| 2 | T1 | 17 | 5.9 | 17 | 5.9 | 0.961 | 100.3 | LOS F | 18.1 | 131.1 | 1.00 | 1.09 | 1.54 | 12.9 |
| 3 | R2 | 191 | 4.2 | 191 | 4.2 | *0.961 | 99.8 | LOS F | 18.1 | 131.1 | 1.00 | 1.09 | 1.54 | 12.5 |
| Approach | | 361 | 3.6 | 361 | 3.6 | 0.961 | 66.0 | LOS E | 18.1 | 131.1 | 0.81 | 0.92 | 1.12 | 18.2 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 345 | 2.3 | 345 | 2.3 | 1.044 | 129.7 | LOS F | 58.3 | 416.7 | 1.00 | 1.25 | 1.60 | 7.1 |
| 5 | T1 | 731 | 2.6 | 731 | 2.6 | *1.044 | 126.1 | LOS F | 58.3 | 416.7 | 1.00 | 1.33 | 1.61 | 10.1 |
| 6 | R2 | 27 | 0.0 | 27 | 0.0 | 0.257 | 52.9 | LOS D | 1.7 | 11.9 | 0.90 | 0.76 | 0.90 | 15.1 |
| Approach | | 1103 | 2.4 | 1102 ^N | 2.4 | 1.044 | 125.4 | LOS F | 58.3 | 416.7 | 1.00 | 1.29 | 1.59 | 9.2 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 15 | 6.7 | 15 | 6.7 | 0.046 | 46.8 | LOS D | 0.8 | 6.0 | 0.82 | 0.59 | 0.82 | 4.0 |
| 8 | T1 | 17 | 0.0 | 17 | 0.0 | 0.167 | 52.1 | LOS D | 2.6 | 18.2 | 0.88 | 0.67 | 0.88 | 3.8 |
| 9 | R2 | 27 | 3.7 | 27 | 3.7 | 0.167 | 52.1 | LOS D | 2.6 | 18.2 | 0.88 | 0.67 | 0.88 | 10.5 |
| Approach | | 59 | 3.4 | 59 | 3.4 | 0.167 | 50.8 | LOS D | 2.6 | 18.2 | 0.86 | 0.65 | 0.86 | 7.3 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | 0.666 | 9.6 | LOS A | 14.6 | 103.8 | 0.27 | 0.27 | 0.27 | 29.9 |
| 11 | T1 | 1355 | 1.8 | 1355 | 1.8 | 0.666 | 4.7 | LOS A | 14.6 | 103.8 | 0.25 | 0.23 | 0.25 | 35.9 |
| 12 | R2 | 253 | 0.8 | 253 | 0.8 | *0.951 | 68.8 | LOS E | 14.0 | 98.9 | 0.72 | 0.98 | 1.14 | 7.6 |
| Approach | | 1637 | 1.6 | 1637 | 1.6 | 0.951 | 14.7 | LOS B | 14.6 | 103.8 | 0.32 | 0.35 | 0.38 | 22.6 |
| All Vehicles | | 3160 | 2.2 | 3159 ^N | 2.2 | 1.044 | 59.9 | LOS E | 58.3 | 416.7 | 0.62 | 0.75 | 0.90 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | ped/h | sec | | [Ped ped | Dist] m | | | sec | m | m/sec |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 67 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 40 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |

| | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 Full | 78 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 92.1 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | |
| P4 Full | 55 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | 240 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 93.4 | 35.0 | 0.37 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E*, E2*

Output Phase Sequence: A, D, E2*

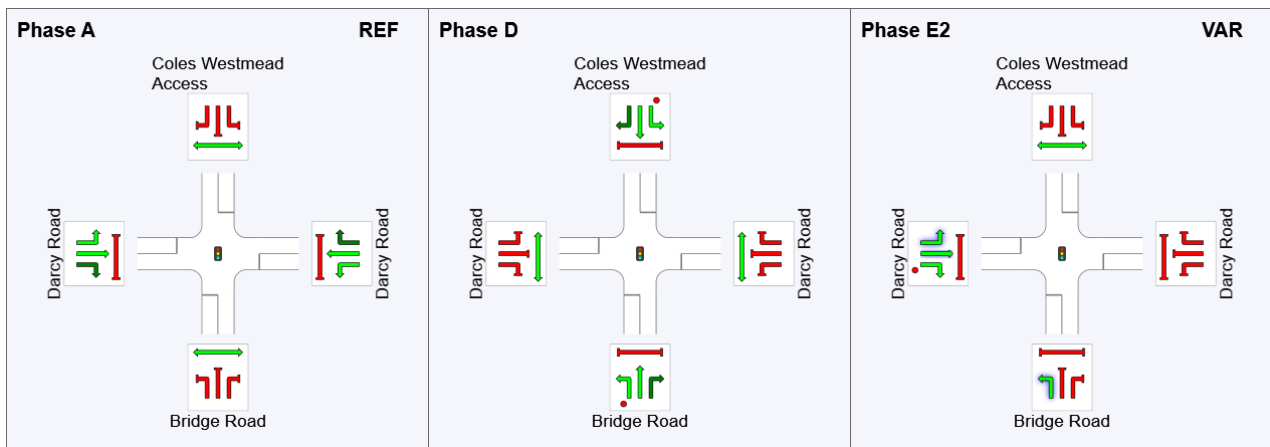
(* Variable Phase)

Phase Timing Summary

| Phase | A | D | E2 |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 121 | 32 | 71 |
| Green Time (sec) | 44 | 32 | 44 |
| Phase Time (sec) | 51 | 38 | 51 |
| Phase Split | 36% | 27% | 36% |

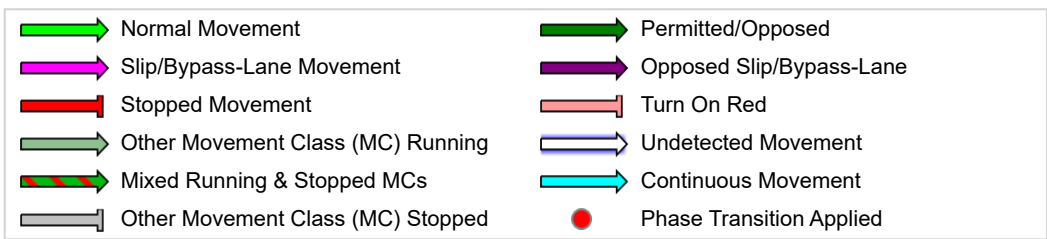
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 471 | 0.2 | 471 | 0.2 | 0.638 | 4.1 | LOS A | 7.7 | 54.1 | 0.45 | 0.50 | 0.45 | 24.2 |
| 3 | R2 | 307 | 0.3 | 307 | 0.3 | 0.638 | 7.2 | LOS A | 7.7 | 54.1 | 0.45 | 0.50 | 0.45 | 24.2 |
| 3u | U | 4 | 0.0 | 4 | 0.0 | 0.638 | 8.6 | LOS A | 7.7 | 54.1 | 0.45 | 0.50 | 0.45 | 27.4 |
| Approach | | 782 | 0.3 | 782 | 0.3 | 0.638 | 5.4 | LOS A | 7.7 | 54.1 | 0.45 | 0.50 | 0.45 | 24.2 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 132 | 0.8 | 132 | 0.8 | 0.380 | 10.2 | LOS A | 2.3 | 15.9 | 0.75 | 0.88 | 0.76 | 39.9 |
| 6 | R2 | 54 | 1.9 | 54 | 1.9 | 0.380 | 12.8 | LOS A | 2.3 | 15.9 | 0.75 | 0.88 | 0.76 | 40.4 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.380 | 14.0 | LOS A | 2.3 | 15.9 | 0.75 | 0.88 | 0.76 | 40.4 |
| Approach | | 188 | 1.1 | 188 | 1.1 | 0.380 | 11.0 | LOS A | 2.3 | 15.9 | 0.75 | 0.88 | 0.76 | 40.0 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 175 | 0.6 | 174 | 0.6 | 1.085 | 101.6 | LOS F | 67.8 | 475.5 | 1.00 | 2.94 | 4.86 | 12.3 |
| 8 | T1 | 682 | 0.1 | 677 | 0.1 | 1.085 | 101.1 | LOS F | 67.8 | 475.5 | 1.00 | 2.94 | 4.86 | 13.3 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 1.085 | 105.3 | LOS F | 67.8 | 475.5 | 1.00 | 2.94 | 4.86 | 12.3 |
| Approach | | 858 | 0.2 | 851 ^{N1} | 0.2 | 1.085 | 101.2 | LOS F | 67.8 | 475.5 | 1.00 | 2.94 | 4.86 | 13.1 |
| All Vehicles | | 1828 | 0.3 | 1821 ^{N1} | 0.3 | 1.085 | 50.7 | LOS D | 67.8 | 475.5 | 0.74 | 1.68 | 2.54 | 16.1 |

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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 110 | 104 | 101 ¹ | 102 ¹ | 103 | 108 | 106 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -18 | -8 | 0 | 0 | 0 | 0 | 10 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total veh/h | HV] % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 54 | 0.0 | 54 | 0.0 | 0.841 | 66.3 | LOS E | 25.3 | 179.2 | 1.00 | 0.96 | 1.13 | 9.3 |
| 2 | T1 | 637 | 1.4 | 637 | 1.4 | 0.841 | 62.0 | LOS E | 25.3 | 179.2 | 1.00 | 0.97 | 1.14 | 9.3 |
| Approach | | 691 | 1.3 | 691 | 1.3 | 0.841 | 62.3 | LOS E | 25.3 | 179.2 | 1.00 | 0.97 | 1.14 | 9.3 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 33 | 0.0 | 33 | 0.0 | 0.876 | 72.9 | LOS F | 12.8 | 92.5 | 1.00 | 1.00 | 1.20 | 13.3 |
| 5 | T1 | 245 | 0.0 | 245 | 0.0 | *0.876 | 68.5 | LOS E | 12.8 | 92.5 | 1.00 | 1.00 | 1.20 | 7.5 |
| 6 | R2 | 312 | 21.5 | 312 | 21.5 | 0.876 | 75.7 | LOS F | 19.4 | 160.9 | 1.00 | 0.99 | 1.25 | 7.0 |
| Approach | | 590 | 11.4 | 590 | 11.4 | 0.876 | 72.6 | LOS F | 19.4 | 160.9 | 1.00 | 0.99 | 1.23 | 7.6 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 351 | 19.1 | 288 | 19.1 | 0.733 | 16.1 | LOS B | 12.1 | 88.1 | 0.54 | 0.62 | 0.54 | 25.6 |
| 8 | T1 | 913 | 1.1 | 749 | 1.0 | 0.733 | 24.4 | LOS B | 12.5 | 88.1 | 0.81 | 0.76 | 0.81 | 20.8 |
| 9 | R2 | 96 | 0.0 | 79 | 0.0 | 0.733 | 39.0 | LOS C | 12.5 | 88.1 | 1.00 | 0.89 | 1.00 | 6.2 |
| Approach | | 1360 | 5.7 | 1116 ^N ₁ | 5.6 | 0.733 | 23.3 | LOS B | 12.5 | 88.1 | 0.75 | 0.74 | 0.75 | 20.6 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 94 | 0.0 | 93 | 0.0 | 0.143 | 34.2 | LOS C | 4.1 | 28.6 | 0.69 | 0.72 | 0.69 | 28.8 |
| 11 | T1 | 212 | 0.5 | 210 | 0.5 | *0.891 | 77.6 | LOS F | 16.1 | 113.0 | 1.00 | 1.04 | 1.31 | 21.3 |
| Approach | | 306 | 0.3 | 304 ^{N1} | 0.3 | 0.891 | 64.3 | LOS E | 16.1 | 113.0 | 0.90 | 0.94 | 1.12 | 22.9 |
| All Vehicles | | 2947 | 5.2 | 2701 ^N ₁ | 5.7 | 0.891 | 48.7 | LOS D | 25.3 | 179.2 | 0.89 | 0.87 | 1.00 | 14.3 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 804 | 9.2 | 803 | 9.2 | 0.458 | 4.4 | LOS A | 8.8 | 63.6 | 0.28 | 0.27 | 0.28 | 25.0 |
| 3 | R2 | 239 | 0.0 | 239 | 0.0 | *0.458 | 14.6 | LOS B | 8.8 | 63.6 | 0.69 | 0.70 | 0.69 | 37.6 |
| Approach | | 1043 | 7.1 | 1042 ^N ₁ | 7.1 | 0.458 | 6.7 | LOS A | 8.8 | 63.6 | 0.37 | 0.37 | 0.37 | 32.9 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 298 | 0.3 | 298 | 0.3 | 0.557 | 19.0 | LOS B | 10.8 | 75.9 | 0.66 | 0.76 | 0.66 | 33.1 |
| 6 | R2 | 27 | 0.0 | 27 | 0.0 | 0.145 | 66.8 | LOS E | 1.7 | 11.9 | 0.94 | 0.72 | 0.94 | 17.9 |
| Approach | | 325 | 0.3 | 325 | 0.3 | 0.557 | 23.0 | LOS B | 10.8 | 75.9 | 0.69 | 0.76 | 0.69 | 30.9 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 79 | 0.0 | 61 | 0.0 | 0.134 | 50.3 | LOS D | 4.9 | 43.8 | 0.83 | 0.71 | 0.83 | 24.2 |
| 8 | T1 | 1061 | 7.4 | 817 | 7.8 | *0.883 | 55.4 | LOS D | 27.1 | 196.5 | 0.99 | 0.94 | 1.10 | 7.7 |
| Approach | | 1140 | 6.8 | 878 ^{N1} | 7.3 | 0.883 | 55.1 | LOS D | 27.1 | 196.5 | 0.98 | 0.93 | 1.08 | 9.3 |
| All Vehicles | | 2508 | 6.1 | 2245 ^N ₁ | 6.8 | 0.883 | 28.0 | LOS B | 27.1 | 196.5 | 0.66 | 0.64 | 0.69 | 18.5 |

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 (CCG) | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|------------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped] | [Dist] m | | | | | |
| | | ped/h | sec | | | | | | sec | m | m/sec |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

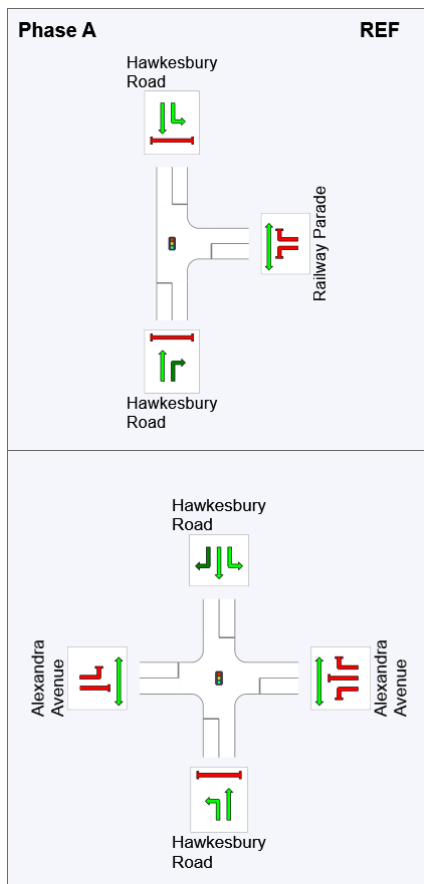
Timings based on settings in the Network Timing dialog
 Phase Times determined by the program
 Downstream lane blockage effects included in determining phase times
 Phase Sequence: CCG Phasing
 Reference Phase: Phase A
 Input Phase Sequence: A, B*, E, D, C
 Output Phase Sequence: A, E, D, C
 (* Variable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

Phase Timing Summary (CCG)

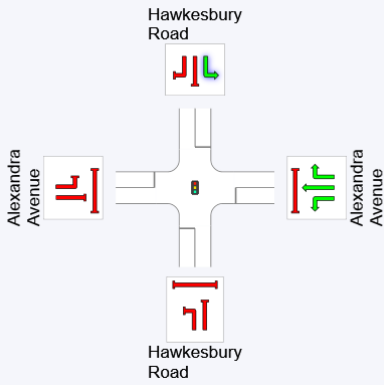
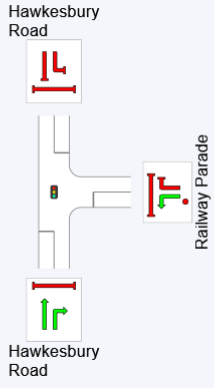
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 39 | 77 | 103 |
| Green Time (sec) | 33 | 29 | 17 | 31 |
| Phase Time (sec) | 42 | 38 | 23 | 37 |
| Phase Split | 30% | 27% | 16% | 26% |

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%.

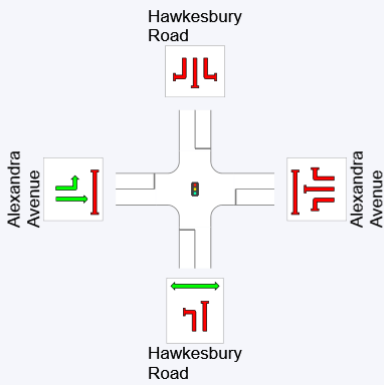
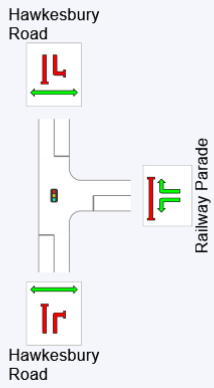
Output Phase Sequence (CCG)

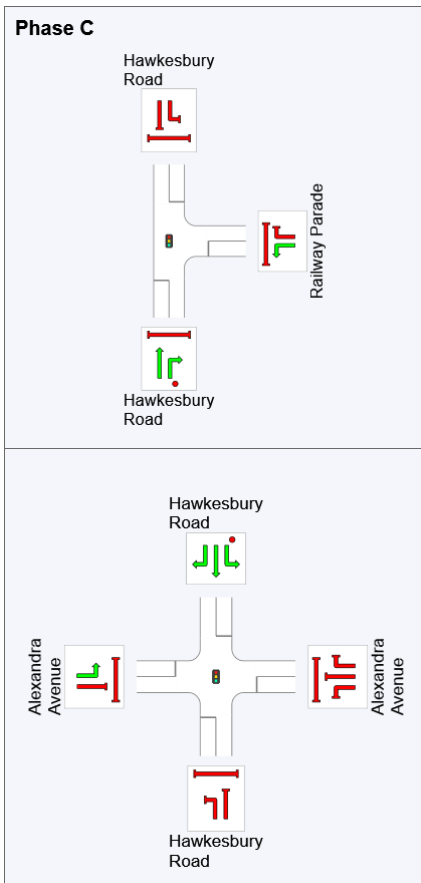


Phase E

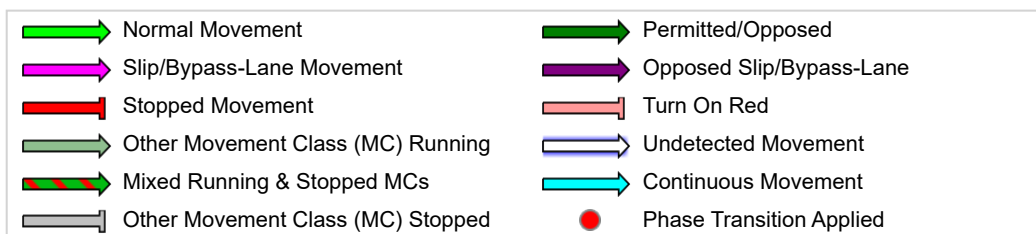


Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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 |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.215 | 80.5 | LOS F | 0.6 | 15.9 | 0.99 | 0.69 | 0.99 | 10.6 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.215 | 80.5 | LOS F | 0.6 | 15.9 | 0.99 | 0.69 | 0.99 | 10.6 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.144 | 78.5 | LOS F | 0.6 | 15.3 | 0.98 | 0.68 | 0.98 | 10.6 |
| 25 | T1 | 537 | 2.4 | 537 | 2.4 | * 1.280 | 296.9 | LOS F | 85.4 | 610.1 | 0.98 | 2.07 | 2.51 | 2.3 |
| 26 | R2 | 347 | 2.6 | 347 | 2.6 | * 1.228 | 263.4 | LOS F | 51.1 | 366.0 | 1.00 | 1.69 | 2.35 | 2.5 |
| Approach | | 892 | 3.4 | 892 | 3.4 | 1.280 | 281.9 | LOS F | 85.4 | 610.1 | 0.99 | 1.91 | 2.43 | 2.4 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 198 | 5.1 | 186 | 5.3 | 1.174 | 21.8 | LOS B | 5.0 | 65.1 | 0.53 | 0.67 | 0.56 | 24.3 |
| 29 | R2 | 604 | 10.4 | 568 | 10.8 | * 1.257 | 268.2 | LOS F | 20.0 | 146.9 | 0.95 | 1.69 | 2.34 | 1.4 |
| Approach | | 802 | 9.1 | 754 ^{N1} | 9.4 | 1.257 | 207.4 | LOS F | 20.0 | 146.9 | 0.84 | 1.44 | 1.90 | 2.5 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 514 | 13.2 | 514 | 13.2 | 0.337 | 13.4 | LOS A | 11.0 | 81.7 | 0.37 | 0.66 | 0.37 | 21.8 |
| 31 | T1 | 317 | 2.5 | 317 | 2.5 | 0.395 | 49.3 | LOS D | 19.3 | 138.1 | 0.97 | 0.82 | 0.97 | 15.8 |
| Approach | | 831 | 9.1 | 831 | 9.2 | 0.395 | 27.1 | LOS B | 19.3 | 138.1 | 0.60 | 0.72 | 0.60 | 17.8 |
| All Vehicles | | 2533 | 7.4 | 2485 ^{N1} | 7.5 | 1.280 | 173.5 | LOS F | 85.4 | 610.1 | 0.81 | 1.37 | 1.65 | 3.6 |

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 | 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 |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 238.3 | 208.6 | 0.88 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 202 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 30.2 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 55.9 | 30.9 | 0.55 |
| P72 | Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |

| SouthWest: Hawkesbury Road | | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|--|
| P8 Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 98.7 | 41.1 | 0.42 | |
| All Pedestrians | 580 | 61.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 124.9 | 76.7 | 0.61 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

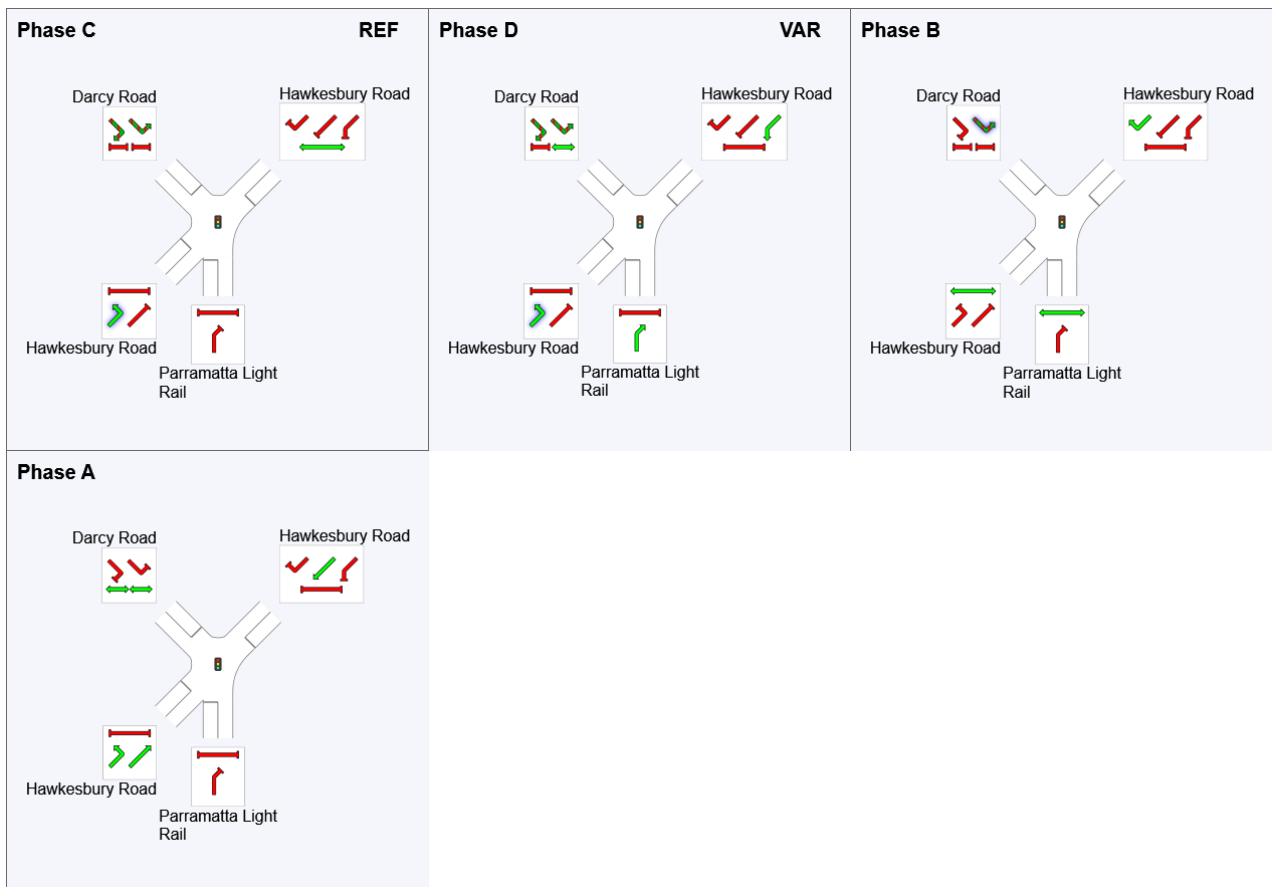
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 42 | 57 | 90 |
| Green Time (sec) | 36 | 7 | 24 | 39 |
| Phase Time (sec) | 44 | 16 | 33 | 47 |
| Phase Split | 31% | 11% | 24% | 34% |

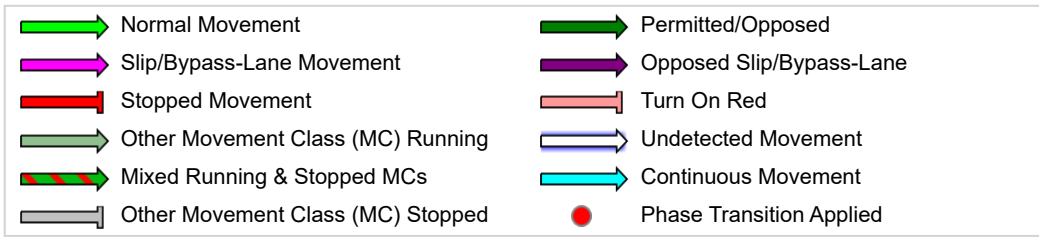
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.339 | 24.9 | LOS B | 14.8 | 108.1 | 0.70 | 0.61 | 0.70 | 21.8 |
| 22 | T1 | 765 | 9.3 | 708 | 9.8 | 0.339 | 21.0 | LOS B | 14.8 | 108.1 | 0.68 | 0.59 | 0.68 | 12.3 |
| 23 | R2 | 89 | 0.0 | 82 | 0.0 | *0.686 | 72.2 | LOS F | 5.6 | 39.4 | 0.99 | 0.78 | 1.02 | 8.8 |
| Approach | | 862 | 8.2 | 797 ^{N1} | 8.7 | 0.686 | 26.3 | LOS B | 14.8 | 108.1 | 0.71 | 0.61 | 0.71 | 11.2 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 67 | 3.0 | 67 | 3.0 | 0.559 | 54.0 | LOS D | 4.3 | 30.6 | 0.93 | 0.75 | 0.95 | 7.7 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.559 | 54.0 | LOS D | 4.3 | 30.6 | 0.93 | 0.75 | 0.95 | 11.9 |
| 26 | R2 | 180 | 0.0 | 180 | 0.0 | 0.716 | 51.7 | LOS D | 11.0 | 76.9 | 0.96 | 0.86 | 1.02 | 7.9 |
| Approach | | 248 | 0.8 | 248 | 0.8 | 0.716 | 52.4 | LOS D | 11.0 | 76.9 | 0.95 | 0.83 | 1.00 | 7.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 124 | 0.8 | 115 | 0.8 | *0.654 | 22.6 | LOS B | 13.2 | 96.3 | 0.59 | 0.62 | 0.59 | 13.4 |
| 28 | T1 | 674 | 10.7 | 626 | 11.2 | 0.654 | 21.2 | LOS B | 13.2 | 96.3 | 0.68 | 0.65 | 0.68 | 10.3 |
| 29 | R2 | 7 | 0.0 | 6 | 0.0 | 0.054 | 74.5 | LOS F | 0.4 | 3.1 | 1.00 | 0.66 | 1.00 | 9.5 |
| Approach | | 805 | 9.1 | 747 ^{N1} | 9.5 | 0.654 | 21.9 | LOS B | 13.2 | 96.3 | 0.67 | 0.64 | 0.67 | 10.6 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 39 | 0.0 | 39 | 0.0 | 0.156 | 53.3 | LOS D | 2.5 | 17.5 | 0.89 | 0.72 | 0.89 | 9.9 |
| 31 | T1 | 5 | 0.0 | 5 | 0.0 | 0.156 | 56.3 | LOS D | 2.5 | 17.5 | 0.89 | 0.72 | 0.89 | 12.1 |
| 32 | R2 | 61 | 0.0 | 61 | 0.0 | 0.256 | 50.1 | LOS D | 3.4 | 23.5 | 0.94 | 0.74 | 0.94 | 10.5 |
| Approach | | 105 | 0.0 | 105 | 0.0 | 0.256 | 51.6 | LOS D | 3.4 | 23.5 | 0.92 | 0.73 | 0.92 | 10.4 |
| All Vehicles | | 2020 | 7.2 | 1897 ^{N1} | 7.7 | 0.716 | 29.4 | LOS C | 14.8 | 108.1 | 0.74 | 0.66 | 0.74 | 10.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 Stage 1 | | 197 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 90.4 | 30.9 | 0.34 |
| P52 Stage 2 | | 41 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 88 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 225 | 64.7 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 91.3 | 31.9 | 0.35 |
| All Pedestrians | 603 | 64.6 | LOS F | 0.9 | 0.9 | 0.96 | 0.96 | 91.4 | 32.2 | 0.35 |

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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PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

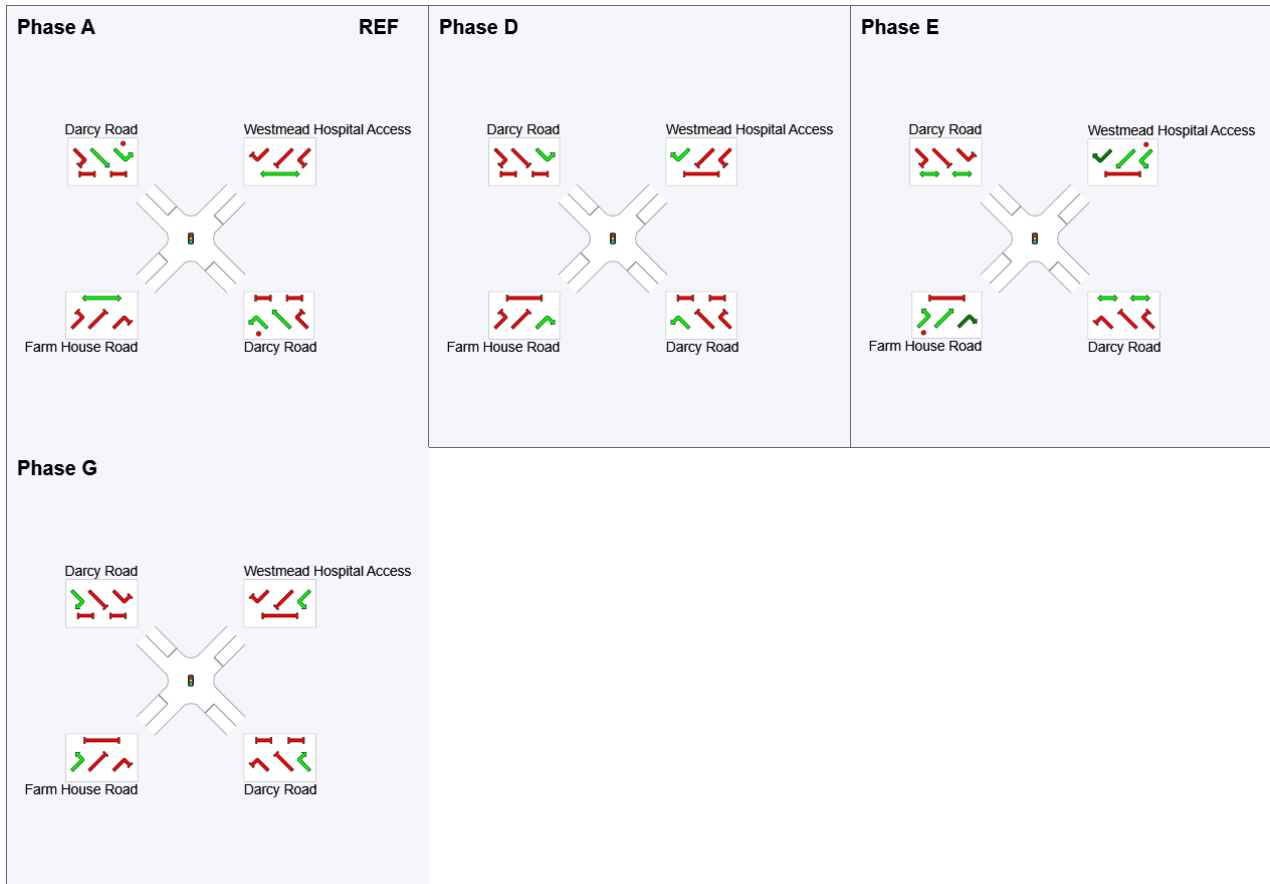
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 121 | 64 | 82 | 106 |
| Green Time (sec) | 75 | 11 | 16 | 9 |
| Phase Time (sec) | 82 | 19 | 22 | 17 |
| Phase Split | 59% | 14% | 16% | 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



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MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 5 | 0.0 | 5 | 0.0 | 0.239 | 11.7 | LOS A | 0.1 | 1.0 | 0.03 | 0.01 | 0.04 | 30.4 |
| 22 | T1 | 979 | 7.4 | 922 | 7.6 | 0.239 | 0.1 | LOS A | 0.1 | 1.0 | 0.02 | 0.00 | 0.02 | 38.9 |
| Approach | | 984 | 7.3 | 927 ^{N1} | 7.6 | 0.239 | 0.2 | NA | 0.1 | 1.0 | 0.02 | 0.00 | 0.02 | 38.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 804 | 8.5 | 746 | 8.9 | 0.245 | 0.0 | LOS A | 11.4 | 83.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 804 | 8.5 | 746 ^{N1} | 8.9 | 0.245 | 0.0 | NA | 11.4 | 83.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.007 | 27.8 | LOS B | 0.0 | 0.2 | 0.89 | 0.81 | 0.89 | 4.3 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.007 | 27.8 | LOS B | 0.0 | 0.2 | 0.89 | 0.81 | 0.89 | 4.3 |
| All Vehicles | | 1789 | 7.8 | 1674 ^{N1} | 8.4 | 0.245 | 0.1 | NA | 11.4 | 83.0 | 0.01 | 0.00 | 0.01 | 39.3 |

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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | * 0.341 | 14.6 | LOS B | 12.5 | 90.8 | 0.48 | 0.42 | 0.48 | 19.3 | |
| 22 | T1 | 935 | 7.6 | 882 | 7.9 | 0.341 | 10.6 | LOS A | 12.5 | 90.8 | 0.45 | 0.40 | 0.45 | 19.4 | |
| 23 | R2 | 45 | 0.0 | 42 | 0.0 | * 0.531 | 81.0 | LOS F | 3.1 | 21.5 | 1.00 | 0.74 | 1.01 | 8.6 | |
| Approach | | 981 | 7.2 | 925 ^{N1} | 7.5 | 0.531 | 13.8 | LOS A | 12.5 | 90.8 | 0.48 | 0.42 | 0.48 | 17.3 | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 46 | 0.0 | 46 | 0.0 | 0.069 | 4.8 | LOS A | 0.4 | 3.0 | 0.19 | 0.52 | 0.19 | 29.2 | |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | * 0.146 | 57.8 | LOS E | 2.2 | 15.3 | 0.89 | 0.72 | 0.89 | 7.6 | |
| Approach | | 83 | 0.0 | 83 | 0.0 | 0.146 | 28.4 | LOS B | 2.2 | 15.3 | 0.50 | 0.61 | 0.50 | 12.7 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 66 | 0.0 | 63 | 0.0 | 0.240 | 13.6 | LOS A | 12.0 | 86.8 | 0.44 | 0.42 | 0.44 | 26.9 | |
| 28 | T1 | 757 | 9.0 | 726 | 9.4 | 0.240 | 11.1 | LOS A | 12.0 | 86.8 | 0.48 | 0.44 | 0.48 | 18.2 | |
| 29 | R2 | 2 | 50.0 | 2 | 51.2 | 0.022 | 76.6 | LOS F | 0.1 | 1.4 | 1.00 | 0.61 | 1.00 | 6.7 | |
| Approach | | 825 | 8.4 | 791 ^{N1} | 8.7 | 0.240 | 11.5 | LOS A | 12.0 | 86.8 | 0.48 | 0.44 | 0.48 | 19.1 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | | |
| 30 | L2 | 3 | 0.0 | 3 | 0.0 | 0.013 | 43.9 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.5 | |
| 32 | R2 | 1 | 0.0 | 1 | 0.0 | 0.013 | 43.9 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.5 | |
| Approach | | 4 | 0.0 | 4 | 0.0 | 0.013 | 43.9 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.5 | |
| All Vehicles | | 1893 | 7.4 | 1803 ^{N1} | 7.8 | 0.531 | 13.5 | LOS A | 12.5 | 90.8 | 0.48 | 0.44 | 0.48 | 17.6 | |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 4 | 64.1 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 90.7 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 59 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 88.1 | 28.6 | 0.32 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 154 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 98.9 | 41.4 | 0.42 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

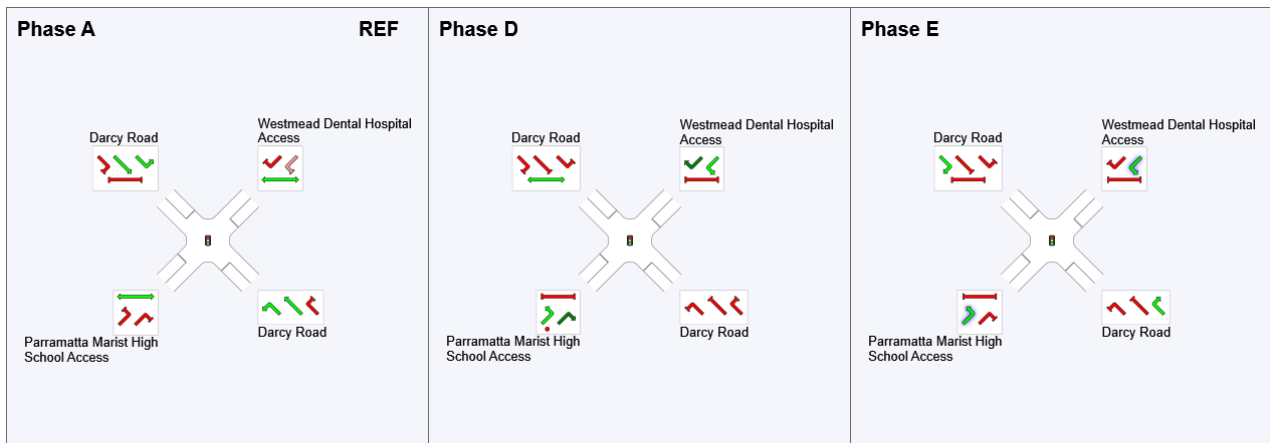
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|----|
| Phase Change Time (sec) | 109 | 67 | 98 |
| Green Time (sec) | 92 | 25 | 6 |
| Phase Time (sec) | 98 | 30 | 12 |
| Phase Split | 70% | 21% | 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



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033 Do
Minimum)]

1500 - 1600
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.177 | 3.7 | LOS A | 2.2 | 16.3 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 975 | 7.5 | 923 | 7.8 | 0.177 | 0.0 | LOS A | 5.5 | 40.3 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 976 | 7.5 | 923 ^{N1} | 7.7 | 0.177 | 0.0 | NA | 5.5 | 40.3 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 825 | 8.2 | 791 | 8.6 | 0.200 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 825 | 8.2 | 791 ^{N1} | 8.6 | 0.200 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 25 | 0.0 | 25 | 0.0 | 0.054 | 1.7 | LOS A | 0.2 | 1.2 | 0.42 | 0.28 | 0.42 | 18.4 |
| Approach | | 25 | 0.0 | 25 | 0.0 | 0.054 | 1.7 | LOS A | 0.2 | 1.2 | 0.42 | 0.28 | 0.42 | 18.4 |
| All Vehicles | | 1826 | 7.7 | 1739 ^{N1} | 8.1 | 0.200 | 0.0 | NA | 5.5 | 40.3 | 0.01 | 0.00 | 0.01 | 39.0 |

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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MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
(Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 822 | 1.9 | 779 | 2.0 | 0.381 | 23.9 | LOS B | 12.6 | 89.8 | 0.68 | 0.73 | 0.68 | 7.9 |
| 23a | R1 | 178 | 33.7 | 171 | 34.5 | *0.441 | 66.0 | LOS E | 9.3 | 75.4 | 1.00 | 0.80 | 1.00 | 17.3 |
| Approach | | 1000 | 7.6 | 950 ^{N1} | 7.9 | 0.441 | 31.5 | LOS C | 12.6 | 89.8 | 0.74 | 0.75 | 0.74 | 12.2 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 104 | 0.0 | 104 | 0.0 | 1.489 | 497.8 | LOS F | 38.9 | 272.3 | 1.00 | 2.21 | 3.24 | 2.6 |
| 5 | T1 | 282 | 0.4 | 282 | 0.4 | *1.489 | 490.1 | LOS F | 42.7 | 300.1 | 1.00 | 2.23 | 3.20 | 2.6 |
| 6 | R2 | 7 | 0.0 | 7 | 0.0 | 1.489 | 492.3 | LOS F | 42.7 | 300.1 | 1.00 | 2.23 | 3.18 | 5.3 |
| Approach | | 393 | 0.3 | 393 | 0.3 | 1.489 | 492.2 | LOS F | 42.7 | 300.1 | 1.00 | 2.22 | 3.21 | 2.6 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 3 | 0.0 | 3 | 0.0 | 0.195 | 11.4 | LOS A | 2.5 | 19.5 | 0.24 | 0.40 | 0.24 | 35.7 |
| 7a | L1 | 193 | 30.1 | 193 | 30.1 | 0.195 | 9.8 | LOS A | 2.5 | 19.5 | 0.23 | 0.40 | 0.23 | 32.8 |
| 9 | R2 | 278 | 2.9 | 278 | 2.9 | *0.795 | 47.1 | LOS D | 16.0 | 115.1 | 0.87 | 0.83 | 0.92 | 19.4 |
| Approach | | 474 | 13.9 | 474 | 13.9 | 0.795 | 31.7 | LOS C | 16.0 | 115.1 | 0.61 | 0.65 | 0.64 | 23.4 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 75 | 1.3 | 75 | 1.3 | 0.573 | 27.1 | LOS B | 12.2 | 86.7 | 0.66 | 0.68 | 0.66 | 26.9 |
| 11 | T1 | 43 | 0.0 | 43 | 0.0 | *0.573 | 24.0 | LOS B | 12.2 | 86.7 | 0.66 | 0.68 | 0.66 | 24.5 |
| 12a | R1 | 528 | 1.9 | 528 | 1.9 | 0.573 | 31.1 | LOS C | 12.8 | 91.4 | 0.72 | 0.70 | 0.72 | 7.4 |
| Approach | | 646 | 1.7 | 645 ^{N1} | 1.7 | 0.573 | 30.2 | LOS C | 12.8 | 91.4 | 0.71 | 0.70 | 0.71 | 12.9 |
| All Vehicles | | 2513 | 6.1 | 2462 ^{N1} | 6.3 | 1.489 | 104.7 | LOS F | 42.7 | 300.1 | 0.75 | 0.95 | 1.11 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

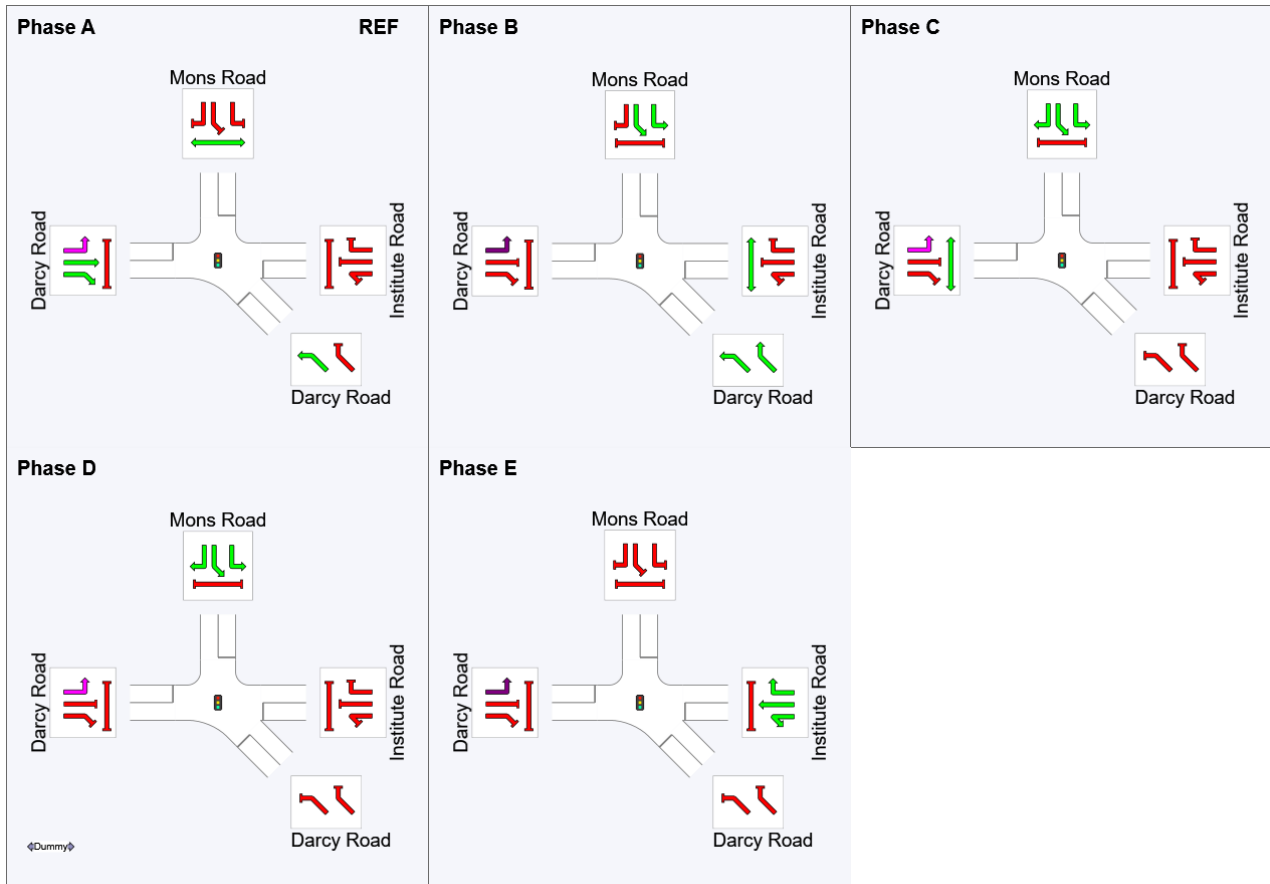
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|----|-----|
| Phase Change Time (sec) | 28 | 78 | 110 | 2 | 12 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 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



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 244 | 4.1 | 244 | 4.1 | 0.551 | 10.4 | LOS A | 2.8 | 20.0 | 0.65 | 1.39 | 1.04 | 9.4 | |
| Approach | | 244 | 4.1 | 244 | 4.1 | 0.551 | 10.4 | LOS A | 2.8 | 20.0 | 0.65 | 1.39 | 1.04 | 9.4 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 57 | 8.8 | 52 | 9.4 | 0.030 | 7.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.76 | 0.00 | 18.9 | |
| 5 | T1 | 1325 | 1.4 | 1197 | 1.5 | 0.310 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 | |
| Approach | | 1382 | 1.7 | 1249 ^N | 1.9 | 0.310 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 38.0 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 645 | 2.5 | 644 | 2.5 | 0.217 | 2.1 | LOS A | 3.6 | 26.0 | 0.00 | 0.36 | 0.00 | 37.0 | |
| 12 | R2 | 96 | 4.2 | 96 | 4.2 | 0.328 | 15.3 | LOS B | 0.8 | 5.7 | 0.75 | 0.97 | 0.87 | 25.5 | |
| Approach | | 741 | 2.7 | 740 ^{N1} | 2.7 | 0.328 | 3.8 | LOS A | 3.6 | 26.0 | 0.10 | 0.44 | 0.11 | 35.0 | |
| All Vehicles | | 2367 | 2.3 | 2233 ^N | 2.4 | 0.551 | 2.6 | NA | 3.6 | 26.0 | 0.10 | 0.31 | 0.15 | 21.2 | |

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.

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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MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 229 | 1.3 | 227 | 1.3 | * 0.439 | 41.6 | LOS C | 11.7 | 82.5 | 0.84 | 0.78 | 0.84 | 25.5 |
| 2 | T1 | 29 | 0.0 | 29 | 0.0 | * 0.739 | 76.7 | LOS F | 8.2 | 60.7 | 1.00 | 0.86 | 1.14 | 15.5 |
| 3 | R2 | 87 | 9.2 | 86 | 9.3 | 0.739 | 76.3 | LOS F | 8.2 | 60.7 | 1.00 | 0.86 | 1.14 | 15.2 |
| Approach | | 345 | 3.2 | 342 ^{N1} | 3.2 | 0.739 | 53.3 | LOS D | 11.7 | 82.5 | 0.89 | 0.81 | 0.94 | 21.5 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 284 | 4.6 | 263 | 4.9 | * 0.359 | 20.2 | LOS B | 19.7 | 141.2 | 0.46 | 0.51 | 0.46 | 27.7 |
| 5 | T1 | 1257 | 1.4 | 1161 | 1.4 | 0.359 | 13.4 | LOS A | 19.7 | 141.2 | 0.40 | 0.40 | 0.40 | 35.0 |
| 6 | R2 | 28 | 0.0 | 26 | 0.0 | 0.055 | 12.8 | LOS A | 0.4 | 2.6 | 0.38 | 0.61 | 0.38 | 29.0 |
| Approach | | 1569 | 1.9 | 1450 ^{N1} | 2.0 | 0.359 | 14.6 | LOS B | 19.7 | 141.2 | 0.41 | 0.42 | 0.41 | 33.7 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 26 | 0.0 | 26 | 0.0 | 0.068 | 43.0 | LOS D | 1.3 | 9.4 | 0.83 | 0.61 | 0.83 | 4.3 |
| 8 | T1 | 45 | 0.0 | 45 | 0.0 | 0.573 | 67.3 | LOS E | 5.9 | 41.3 | 1.00 | 0.78 | 1.00 | 3.1 |
| 9 | R2 | 42 | 0.0 | 42 | 0.0 | 0.573 | 67.3 | LOS E | 5.9 | 41.3 | 1.00 | 0.78 | 1.00 | 8.8 |
| Approach | | 113 | 0.0 | 113 | 0.0 | 0.573 | 61.8 | LOS E | 5.9 | 41.3 | 0.96 | 0.74 | 0.96 | 5.8 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 57 | 0.0 | 57 | 0.0 | 0.310 | 16.3 | LOS B | 13.6 | 96.2 | 0.48 | 0.46 | 0.48 | 23.6 |
| 11 | T1 | 628 | 1.4 | 628 | 1.4 | 0.310 | 11.2 | LOS A | 13.6 | 96.2 | 0.46 | 0.42 | 0.46 | 25.6 |
| 12 | R2 | 335 | 1.8 | 335 | 1.8 | 0.834 | 33.1 | LOS C | 13.7 | 97.7 | 0.70 | 0.88 | 0.86 | 13.5 |
| Approach | | 1020 | 1.5 | 1020 | 1.5 | 0.834 | 18.6 | LOS B | 13.7 | 97.7 | 0.54 | 0.57 | 0.59 | 19.8 |
| All Vehicles | | 3047 | 1.8 | 2925 ^{N1} | 1.9 | 0.834 | 22.4 | LOS B | 19.7 | 141.2 | 0.53 | 0.53 | 0.56 | 25.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 47 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 44 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |

| North: Coles Westmead Access | | | | | | | | | | | |
|------------------------------|------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 | Full | 127 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 92.2 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 81 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | | 299 | 64.4 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, E2

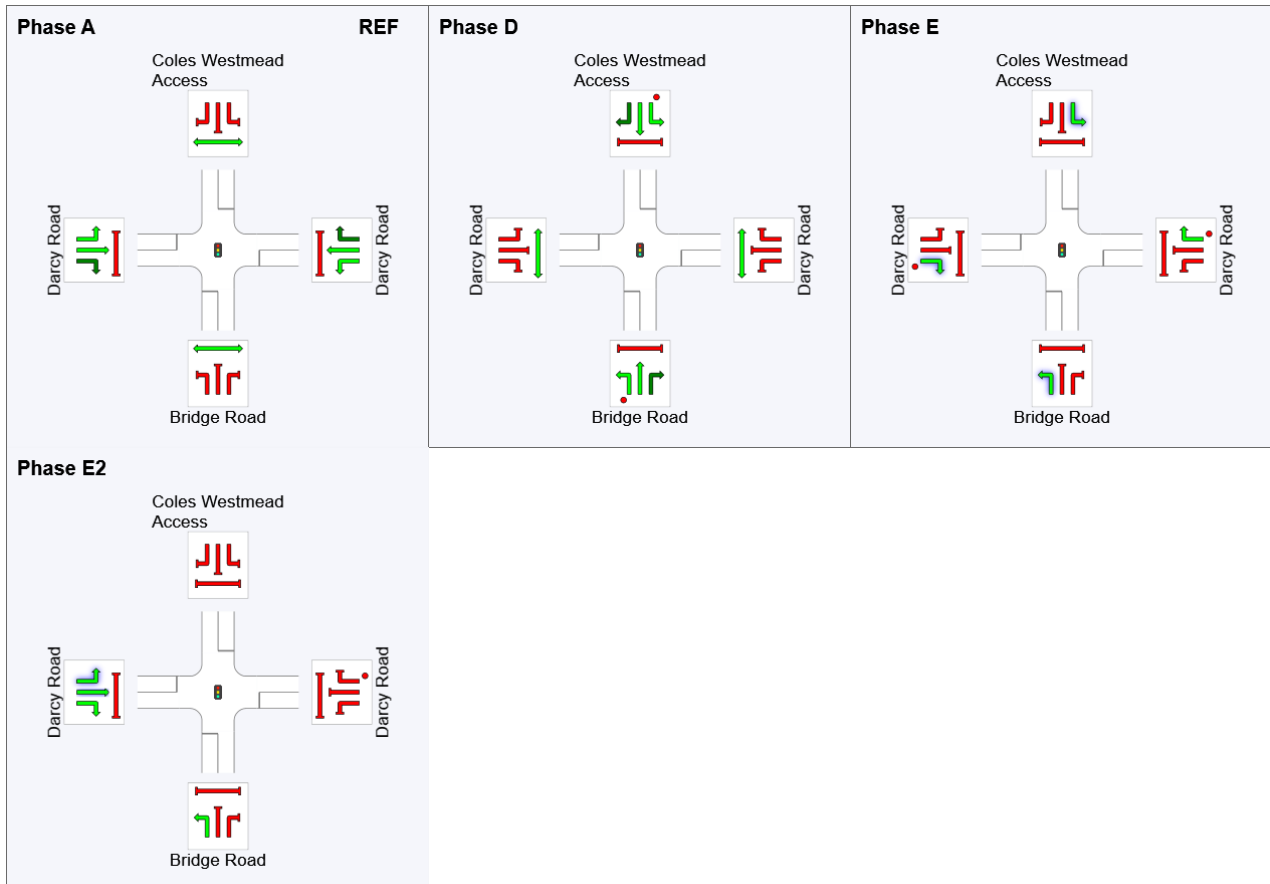
Output Phase Sequence: A, D, E, E2

Phase Timing Summary

| Phase | A | D | E | E2 |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 14 | 96 | 129 | 140 |
| Green Time (sec) | 75 | 26 | 5 | 8 |
| Phase Time (sec) | 82 | 32 | 11 | 15 |
| Phase Split | 59% | 23% | 8% | 11% |

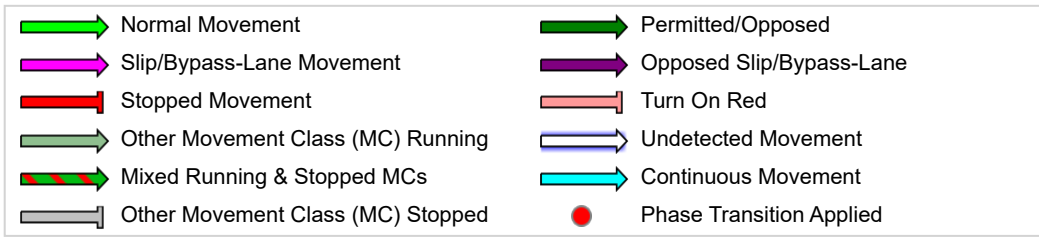
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|-------|--------------------|-------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 454 | 2.4 | 454 | 2.4 | 0.632 | 5.3 | LOS A | 6.5 | 46.5 | 0.68 | 0.61 | 0.68 | 22.8 |
| 3 | R2 | 162 | 0.6 | 162 | 0.6 | 0.632 | 8.4 | LOS A | 6.5 | 46.5 | 0.68 | 0.61 | 0.68 | 22.8 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.632 | 11.5 | LOS A | 6.5 | 46.5 | 0.68 | 0.61 | 0.68 | 24.1 |
| Approach | | 617 | 2.1 | 617 | 2.1 | 0.632 | 6.2 | LOS A | 6.5 | 46.5 | 0.68 | 0.61 | 0.68 | 22.8 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 253 | 0.4 | 242 | 0.4 | 0.787 | 22.0 | LOS B | 8.4 | 59.3 | 0.88 | 1.19 | 1.43 | 33.6 |
| 6 | R2 | 152 | 0.0 | 146 | 0.0 | 0.787 | 24.5 | LOS B | 8.4 | 59.3 | 0.88 | 1.19 | 1.43 | 33.5 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.787 | 25.8 | LOS B | 8.4 | 59.3 | 0.88 | 1.19 | 1.43 | 33.5 |
| Approach | | 406 | 0.2 | 389 ^{N1} | 0.3 | 0.787 | 22.9 | LOS B | 8.4 | 59.3 | 0.88 | 1.19 | 1.43 | 33.6 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 105 | 0.0 | 102 | 0.0 | 0.817 | 9.6 | LOS A | 12.6 | 90.2 | 0.84 | 0.74 | 0.95 | 39.0 |
| 8 | T1 | 687 | 2.8 | 670 | 2.8 | 0.817 | 9.3 | LOS A | 12.6 | 90.2 | 0.84 | 0.74 | 0.95 | 38.8 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.817 | 13.4 | LOS A | 12.6 | 90.2 | 0.84 | 0.74 | 0.95 | 39.0 |
| Approach | | 793 | 2.4 | 774 ^{N1} | 2.4 | 0.817 | 9.4 | LOS A | 12.6 | 90.2 | 0.84 | 0.74 | 0.95 | 38.9 |
| All Vehicles | | 1816 | 1.8 | 1780 ^{N1} | 1.9 | 0.817 | 11.2 | LOS A | 12.6 | 90.2 | 0.79 | 0.79 | 0.96 | 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.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 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.

SIGNAL OFFSETS

■ Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 106 | 104 | 101 ¹ | 102 ¹ | 103 | 110 | 108 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -31 | -17 | 0 | 0 | 0 | 15 | 28 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

Appendix G: Future Year 2023 and 2033 With Development SIDRA Modelling Results



CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|-----------------|----------|--------------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | v/c | sec | | [Veh. veh] | [Dist m] | | | | km/h |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 21 | 4.8 | 21 | 4.8 | 1.412 | 401.2 | LOS F | 92.0 | 648.9 | 1.00 | 2.41 | 2.93 | 1.7 |
| 2 | T1 | 998 | 0.7 | 998 | 0.7 | * 1.412 | 396.2 | LOS F | 104.2 | 733.8 | 1.00 | 2.43 | 2.93 | 1.7 |
| Approach | | 1019 | 0.8 | 1019 | 0.8 | 1.412 | 396.4 | LOS F | 104.2 | 733.8 | 1.00 | 2.43 | 2.93 | 1.7 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 38 | 0.0 | 38 | 0.0 | 1.427 | 440.1 | LOS F | 13.7 | 101.8 | 1.00 | 2.13 | 3.05 | 2.6 |
| 5 | T1 | 115 | 0.0 | 115 | 0.0 | * 1.427 | 435.6 | LOS F | 13.7 | 101.8 | 1.00 | 2.13 | 3.05 | 1.3 |
| 6 | R2 | 333 | 17.4 | 333 | 17.4 | 1.427 | 441.1 | LOS F | 42.4 | 340.9 | 1.00 | 1.96 | 3.06 | 1.3 |
| Approach | | 486 | 11.9 | 486 | 11.9 | 1.427 | 439.7 | LOS F | 42.4 | 340.9 | 1.00 | 2.01 | 3.06 | 1.4 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 364 | 16.8 | 364 | 16.8 | * 0.572 | 11.0 | LOS A | 11.8 | 86.8 | 0.34 | 0.52 | 0.34 | 29.6 |
| 8 | T1 | 432 | 2.1 | 432 | 2.1 | 0.572 | 29.7 | LOS C | 12.4 | 88.1 | 0.68 | 0.71 | 0.68 | 18.3 |
| 9 | R2 | 57 | 0.0 | 57 | 0.0 | 0.572 | 55.9 | LOS D | 12.4 | 88.1 | 1.00 | 0.90 | 1.00 | 4.4 |
| Approach | | 853 | 8.2 | 853 | 8.2 | 0.572 | 23.5 | LOS B | 12.4 | 88.1 | 0.56 | 0.64 | 0.56 | 20.2 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 247 | 0.0 | 244 | 0.0 | 0.462 | 43.1 | LOS D | 13.0 | 91.0 | 0.83 | 0.80 | 0.83 | 25.9 |
| 11 | T1 | 292 | 0.3 | 289 | 0.3 | * 1.050 | 136.3 | LOS F | 29.9 | 210.0 | 1.00 | 1.38 | 1.78 | 14.6 |
| Approach | | 539 | 0.2 | 533 ^{N1} | 0.2 | 1.050 | 93.6 | LOS F | 29.9 | 210.0 | 0.92 | 1.12 | 1.35 | 17.8 |
| All Vehicles | | 2897 | 4.7 | 2891 ^{N1} | 4.7 | 1.427 | 237.8 | LOS F | 104.2 | 733.8 | 0.86 | 1.59 | 1.96 | 4.1 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 1286 | 4.9 | 999 | 4.6 | 0.523 | 6.3 | LOS A | 12.1 | 88.1 | 0.42 | 0.42 | 0.42 | 20.9 |
| 3 | R2 | 292 | 0.3 | 227 | 0.3 | 0.523 | 10.6 | LOS A | 10.7 | 77.0 | 0.46 | 0.53 | 0.46 | 41.3 |
| Approach | | 1578 | 4.1 | 1226 ^{N1} | 3.8 | 0.523 | 7.1 | LOS A | 12.1 | 88.1 | 0.43 | 0.44 | 0.43 | 30.9 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 183 | 1.1 | 183 | 1.1 | 0.405 | 25.3 | LOS B | 7.4 | 52.4 | 0.69 | 0.75 | 0.69 | 29.8 |
| 6 | R2 | 30 | 0.0 | 30 | 0.0 | 0.185 | 67.6 | LOS E | 1.9 | 13.4 | 0.95 | 0.73 | 0.95 | 17.7 |
| Approach | | 213 | 0.9 | 213 | 0.9 | 0.405 | 31.2 | LOS C | 7.4 | 52.4 | 0.73 | 0.74 | 0.73 | 27.2 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 110 | 0.0 | 110 | 0.0 | 0.145 | 37.9 | LOS C | 6.0 | 51.9 | 0.63 | 0.65 | 0.63 | 27.7 |
| 8 | T1 | 669 | 12.9 | 669 | 12.9 | 0.472 | 22.5 | LOS B | 12.5 | 92.9 | 0.57 | 0.50 | 0.57 | 15.6 |
| Approach | | 779 | 11.0 | 779 | 11.0 | 0.472 | 24.7 | LOS B | 12.5 | 92.9 | 0.58 | 0.52 | 0.58 | 19.1 |
| All Vehicles | | 2570 | 5.9 | 2218 ^{N1} | 6.9 | 0.523 | 15.6 | LOS B | 12.5 | 92.9 | 0.51 | 0.50 | 0.51 | 24.7 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C

Output Phase Sequence: A, E, D, C

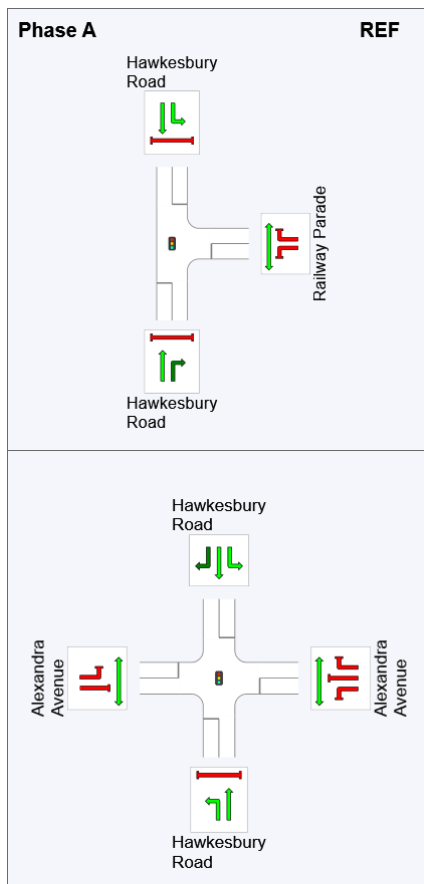
(* Variable Phase)

Phase Timing Summary (CCG)

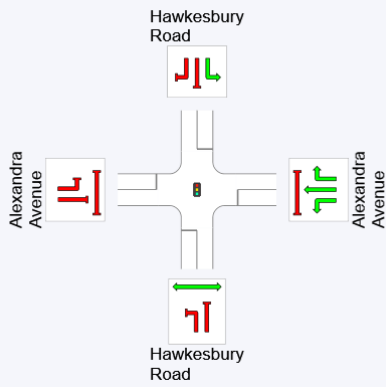
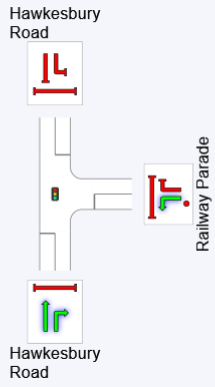
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 54 | 83 | 109 |
| Green Time (sec) | 48 | 20 | 17 | 25 |
| Phase Time (sec) | 57 | 29 | 23 | 31 |
| Phase Split | 41% | 21% | 16% | 22% |

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%.

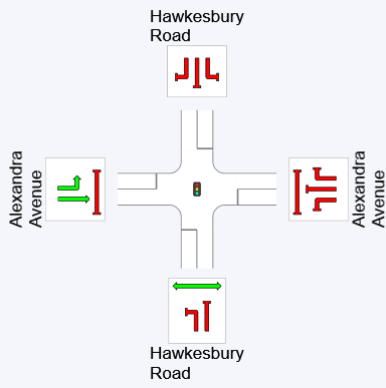
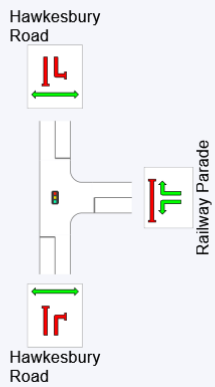
Output Phase Sequence (CCG)

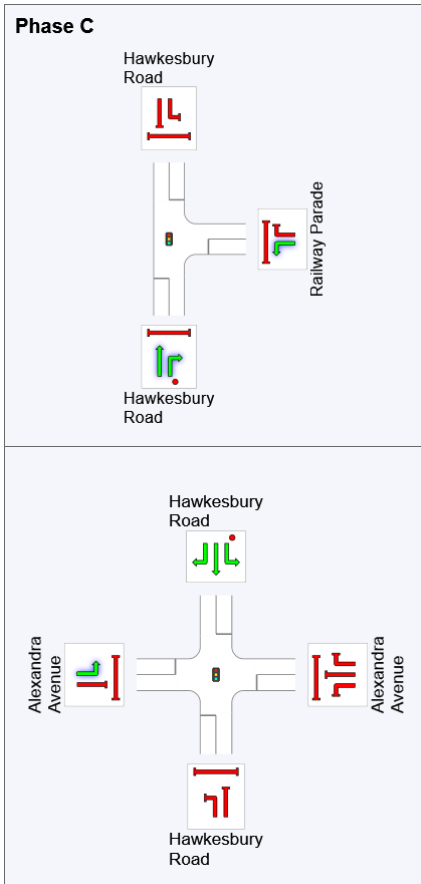


Phase E

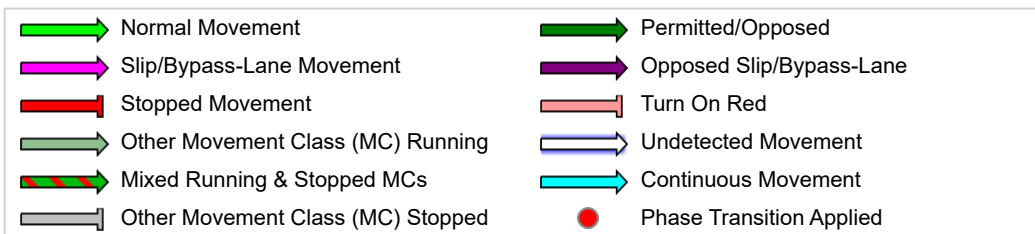


Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|--------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 76.6 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 11.0 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.168 | 76.6 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 11.0 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 77.8 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 10.7 |
| 25 | T1 | 278 | 4.3 | 278 | 4.3 | *0.579 | 47.7 | LOS D | 16.3 | 118.7 | 0.92 | 0.78 | 0.92 | 11.4 |
| 26 | R2 | 131 | 3.8 | 131 | 3.8 | *0.570 | 64.3 | LOS E | 8.5 | 61.7 | 0.98 | 0.80 | 0.98 | 8.9 |
| Approach | | 417 | 6.0 | 417 | 6.0 | 0.579 | 53.5 | LOS D | 16.3 | 118.7 | 0.94 | 0.79 | 0.94 | 10.5 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 245 | 4.5 | 245 | 4.5 | 0.545 | 22.2 | LOS B | 6.9 | 49.1 | 0.65 | 0.70 | 0.65 | 21.9 |
| 29 | R2 | 501 | 13.6 | 501 | 13.6 | *0.579 | 50.6 | LOS D | 15.8 | 117.7 | 0.84 | 0.77 | 0.84 | 6.7 |
| Approach | | 746 | 10.6 | 746 | 10.6 | 0.579 | 41.3 | LOS C | 15.8 | 117.7 | 0.77 | 0.75 | 0.77 | 10.8 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 920 | 6.3 | 733 | 5.9 | 0.551 | 13.7 | LOS A | 18.7 | 134.8 | 0.42 | 0.69 | 0.42 | 21.5 |
| 31 | T1 | 397 | 1.5 | 317 | 1.4 | 0.518 | 47.9 | LOS D | 18.2 | 129.2 | 0.90 | 0.79 | 0.90 | 16.1 |
| Approach | | 1317 | 4.9 | 1050 ^N ₁ | 4.6 | 0.551 | 24.1 | LOS B | 18.7 | 134.8 | 0.57 | 0.72 | 0.57 | 18.4 |
| All Vehicles | | 2488 | 7.1 | 2221 ^N ₁ | 7.9 | 0.579 | 35.6 | LOS C | 18.7 | 134.8 | 0.71 | 0.74 | 0.71 | 13.5 |

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 Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 238.5 | 208.6 | 0.87 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 191 | 64.6 | LOS F | 0.7 | 0.7 | 0.96 | 0.96 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 29.6 | LOS C | 0.1 | 0.1 | 0.92 | 0.92 | 55.3 | 30.9 | 0.56 |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P72 Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | |
| P8 Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 98.9 | 41.1 | 0.42 |
| All Pedestrians | 727 | 61.7 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 134.9 | 87.7 | 0.65 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

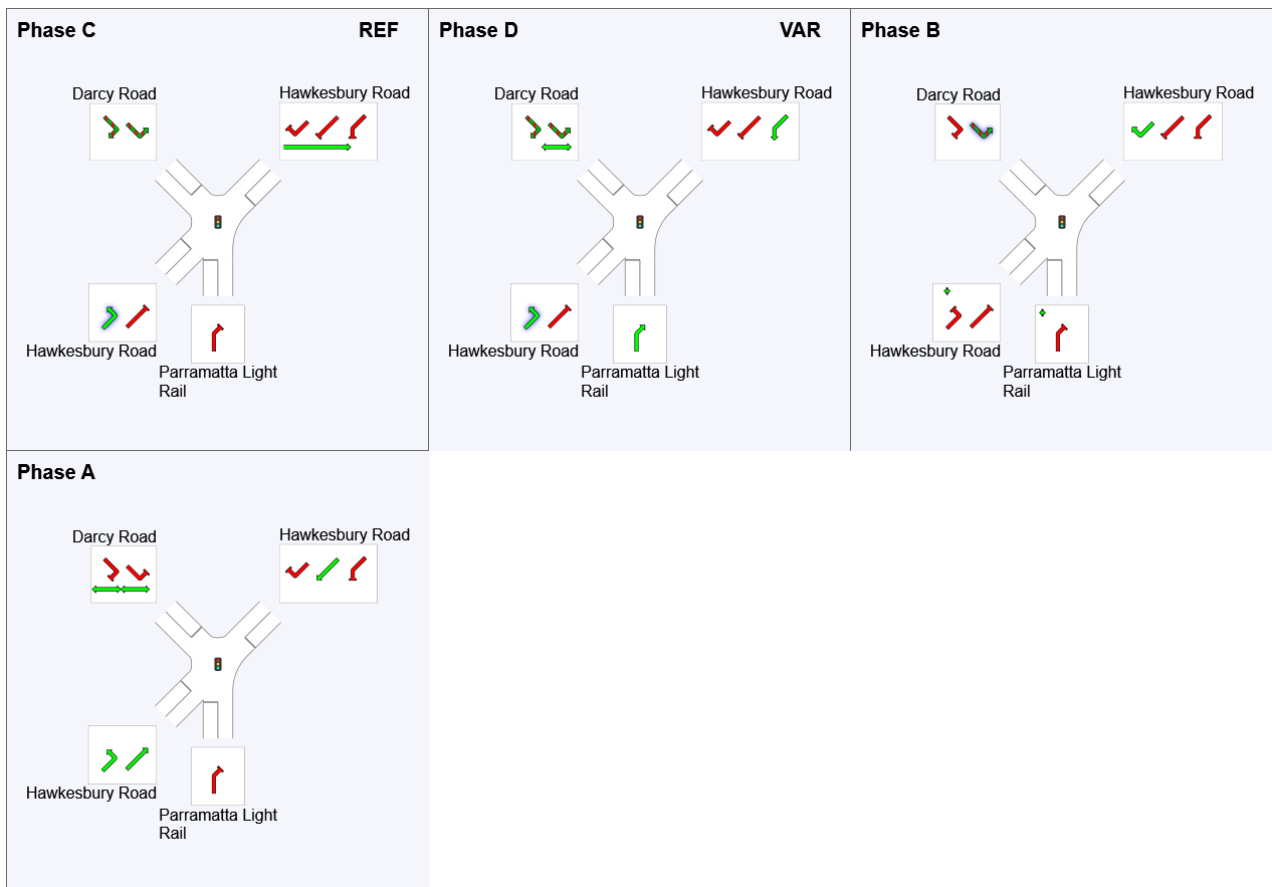
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 45 | 62 | 92 |
| Green Time (sec) | 39 | 9 | 21 | 37 |
| Phase Time (sec) | 47 | 18 | 30 | 45 |
| Phase Split | 34% | 13% | 21% | 32% |

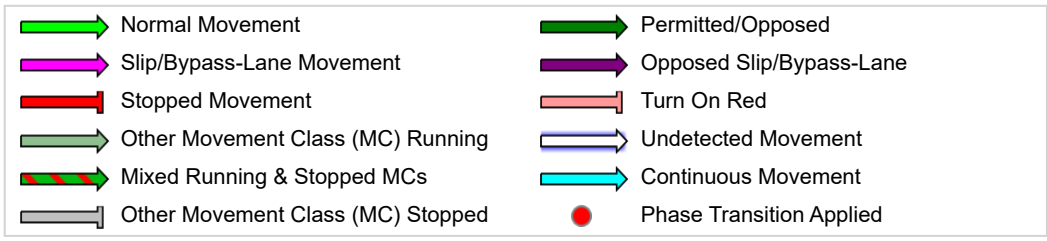
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 6 | 0.0 | 5 | 0.0 | 0.387 | 24.7 | LOS B | 14.1 | 101.4 | 0.59 | 0.52 | 0.59 | 21.9 |
| 22 | T1 | 944 | 6.7 | 786 | 6.3 | 0.387 | 21.1 | LOS B | 14.1 | 101.4 | 0.58 | 0.51 | 0.58 | 12.2 |
| 23 | R2 | 101 | 1.0 | 84 | 0.9 | *0.534 | 70.2 | LOS E | 5.6 | 39.4 | 0.97 | 0.77 | 0.97 | 8.9 |
| Approach | | 1051 | 6.1 | 875 ^{N1} | 5.8 | 0.534 | 25.8 | LOS B | 14.1 | 101.4 | 0.62 | 0.54 | 0.62 | 11.2 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 36 | 0.0 | 36 | 0.0 | 0.133 | 46.9 | LOS D | 2.1 | 14.4 | 0.86 | 0.65 | 0.86 | 8.2 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.133 | 46.9 | LOS D | 2.1 | 14.4 | 0.86 | 0.65 | 0.86 | 12.6 |
| 26 | R2 | 57 | 8.8 | 57 | 8.8 | 0.613 | 71.0 | LOS F | 4.0 | 29.7 | 1.00 | 0.83 | 1.08 | 6.7 |
| Approach | | 94 | 5.3 | 94 | 5.3 | 0.613 | 61.5 | LOS E | 4.0 | 29.7 | 0.95 | 0.76 | 0.99 | 7.3 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 151 | 0.7 | 151 | 0.7 | *0.497 | 22.4 | LOS B | 13.2 | 96.3 | 0.54 | 0.59 | 0.54 | 13.4 |
| 28 | T1 | 693 | 12.1 | 693 | 12.1 | 0.497 | 17.7 | LOS B | 13.2 | 96.3 | 0.54 | 0.52 | 0.54 | 10.5 |
| 29 | R2 | 6 | 16.7 | 6 | 16.7 | 0.042 | 72.5 | LOS F | 0.4 | 3.3 | 1.00 | 0.66 | 1.00 | 9.7 |
| Approach | | 850 | 10.1 | 850 | 10.1 | 0.497 | 19.0 | LOS B | 13.2 | 96.3 | 0.54 | 0.53 | 0.54 | 11.6 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 9 | 11.1 | 9 | 11.1 | 0.052 | 53.7 | LOS D | 0.7 | 5.5 | 0.88 | 0.68 | 0.88 | 9.8 |
| 31 | T1 | 4 | 0.0 | 4 | 0.0 | 0.052 | 56.7 | LOS E | 0.7 | 5.5 | 0.88 | 0.68 | 0.88 | 12.0 |
| 32 | R2 | 18 | 0.0 | 18 | 0.0 | 0.136 | 71.0 | LOS F | 1.2 | 8.3 | 0.97 | 0.70 | 0.97 | 8.1 |
| Approach | | 31 | 3.2 | 31 | 3.2 | 0.136 | 64.1 | LOS E | 1.2 | 8.3 | 0.93 | 0.69 | 0.93 | 9.2 |
| All Vehicles | | 2026 | 7.7 | 1850 ^N | 8.4 | 0.613 | 25.1 | LOS B | 14.1 | 101.4 | 0.60 | 0.55 | 0.61 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 233 | 64.8 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 90.5 | 30.9 | 0.34 |
| P52 | Stage 2 | 65 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 98 | 64.4 | LOS F | 0.4 | 0.4 | 0.96 | 0.96 | 91.0 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 258 | 64.8 | LOS F | 1.0 | 1.0 | 0.97 | 0.97 | 91.4 | 31.9 | 0.35 |
| All Pedestrians | 696 | 64.7 | LOS F | 1.0 | 1.0 | 0.96 | 0.96 | 91.6 | 32.3 | 0.35 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

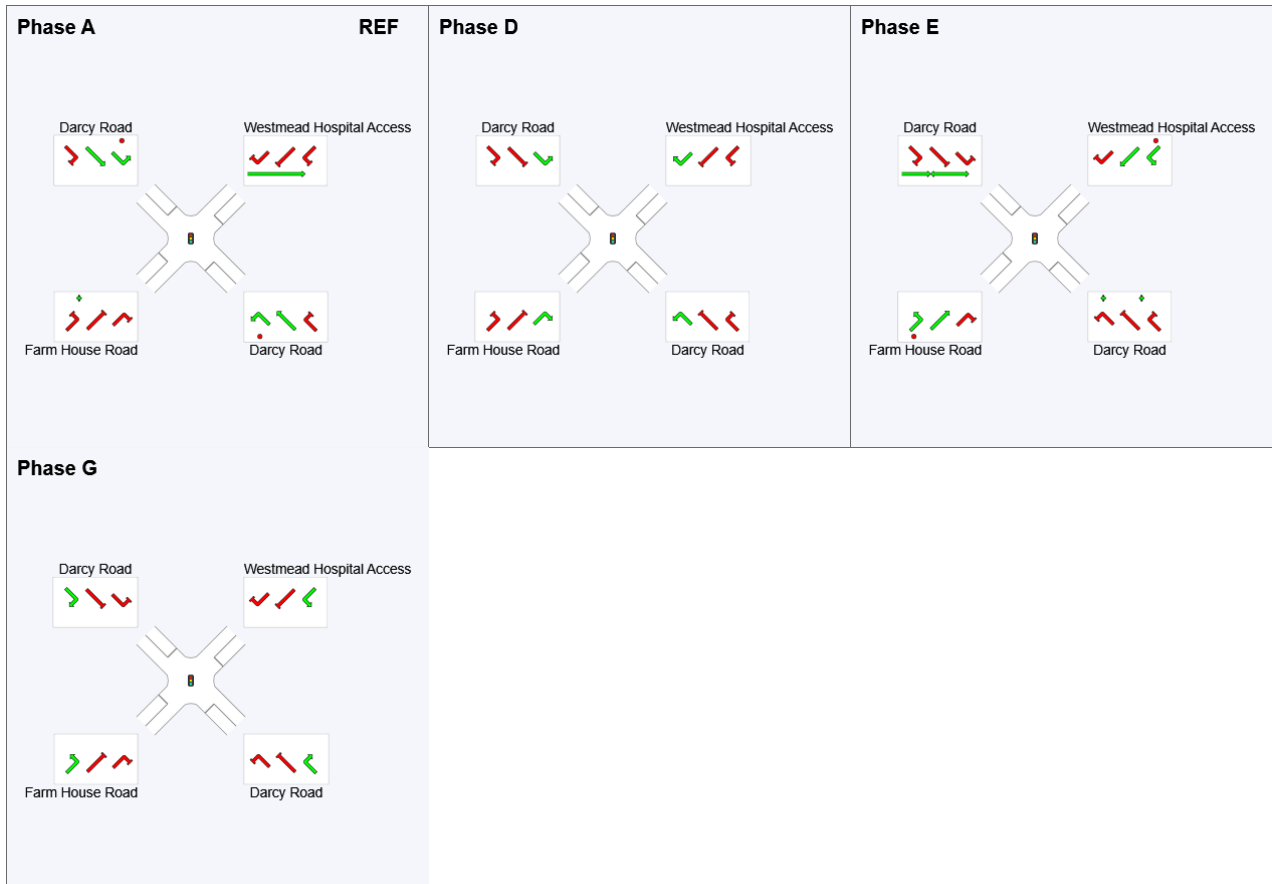
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 130 | 71 | 88 | 112 |
| Green Time (sec) | 73 | 10 | 16 | 12 |
| Phase Time (sec) | 80 | 18 | 22 | 20 |
| Phase Split | 57% | 13% | 16% | 14% |

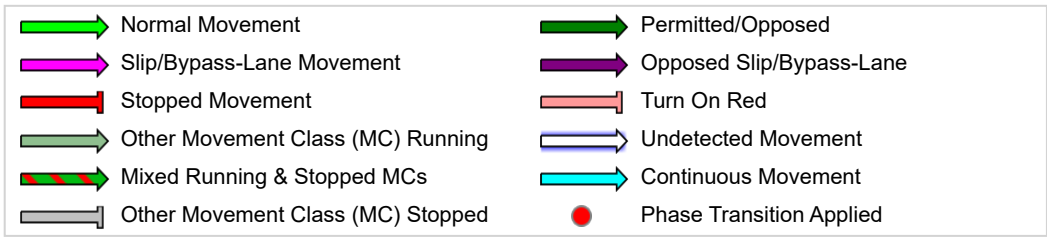
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 350 | 0.0 | 304 | 0.0 | 0.477 | 10.3 | LOS A | 2.3 | 16.4 | 0.71 | 0.96 | 0.97 | 16.7 |
| 22 | T1 | 661 | 10.1 | 572 | 9.7 | 0.292 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1011 | 6.6 | 876 ^{N1} | 6.4 | 0.477 | 3.6 | NA | 2.3 | 16.4 | 0.25 | 0.33 | 0.34 | 24.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 849 | 10.1 | 849 | 10.1 | 0.259 | 0.0 | LOS A | 1.0 | 7.7 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 849 | 10.1 | 849 | 10.1 | 0.259 | 0.0 | NA | 1.0 | 7.7 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 5.4 | LOS A | 0.0 | 0.0 | 0.61 | 0.40 | 0.61 | 11.7 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 5.4 | LOS A | 0.0 | 0.0 | 0.61 | 0.40 | 0.61 | 11.7 |
| All Vehicles | | 1861 | 8.2 | 1726 ^{N1} | 8.9 | 0.477 | 1.8 | NA | 2.3 | 16.4 | 0.13 | 0.17 | 0.17 | 31.6 |

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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.225 | 4.1 | LOS A | 0.5 | 3.4 | 0.03 | 0.04 | 0.03 | 27.4 |
| 22 | T1 | 607 | 11.0 | 537 | 10.7 | 0.225 | 0.7 | LOS A | 0.5 | 3.4 | 0.03 | 0.03 | 0.03 | 37.3 |
| 23 | R2 | 45 | 0.0 | 40 | 0.0 | * 0.301 | 76.6 | LOS F | 2.8 | 19.6 | 1.00 | 0.74 | 1.00 | 8.0 |
| Approach | | 660 | 10.2 | 584 ^{N1} | 9.9 | 0.301 | 5.9 | LOS A | 2.8 | 19.6 | 0.09 | 0.08 | 0.09 | 24.6 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 16 | 0.0 | 16 | 0.0 | 0.018 | 0.5 | LOS A | 0.1 | 0.6 | 0.12 | 0.09 | 0.12 | 19.6 |
| 26 | R2 | 29 | 0.0 | 29 | 0.0 | 0.165 | 60.8 | LOS E | 1.8 | 12.7 | 0.93 | 0.69 | 0.93 | 6.1 |
| Approach | | 45 | 0.0 | 45 | 0.0 | 0.165 | 39.4 | LOS C | 1.8 | 12.7 | 0.64 | 0.48 | 0.64 | 8.1 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 77 | 0.0 | 77 | 0.0 | * 0.344 | 8.8 | LOS A | 4.8 | 35.3 | 0.20 | 0.25 | 0.20 | 21.8 |
| 28 | T1 | 749 | 11.5 | 748 | 11.5 | 0.344 | 4.1 | LOS A | 4.8 | 35.3 | 0.16 | 0.17 | 0.16 | 27.4 |
| 29 | R2 | 5 | 0.0 | 5 | 0.0 | 0.038 | 73.6 | LOS F | 0.3 | 2.4 | 1.00 | 0.65 | 1.00 | 6.9 |
| Approach | | 831 | 10.3 | 830 ^{N1} | 10.4 | 0.344 | 5.0 | LOS A | 4.8 | 35.3 | 0.17 | 0.18 | 0.17 | 25.4 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 156 | 0.0 | 156 | 0.0 | 0.687 | 50.9 | LOS D | 14.7 | 103.0 | 0.98 | 0.83 | 0.99 | 5.0 |
| 32 | R2 | 84 | 0.0 | 84 | 0.0 | * 0.687 | 50.9 | LOS D | 14.7 | 103.0 | 0.98 | 0.83 | 0.99 | 5.0 |
| Approach | | 240 | 0.0 | 240 | 0.0 | 0.687 | 50.9 | LOS D | 14.7 | 103.0 | 0.98 | 0.83 | 0.99 | 5.0 |
| All Vehicles | | 1776 | 8.6 | 1699 ^{N1} | 9.0 | 0.687 | 12.7 | LOS A | 14.7 | 103.0 | 0.27 | 0.25 | 0.27 | 16.4 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 43 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 48 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 88.1 | 28.6 | 0.32 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 182 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 97.8 | 40.2 | 0.41 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

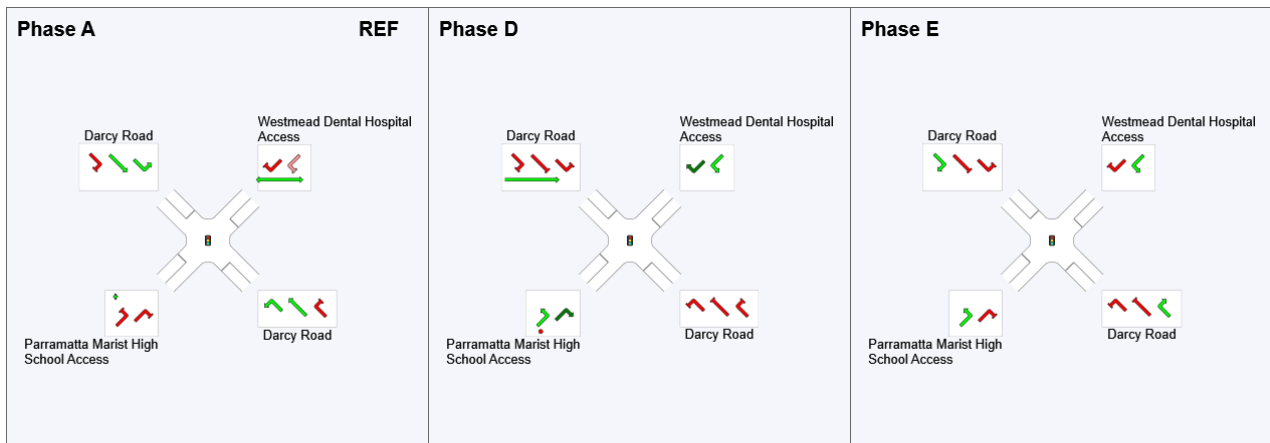
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 10 | 102 | 135 |
| Green Time (sec) | 86 | 27 | 10 |
| Phase Time (sec) | 92 | 32 | 16 |
| Phase Split | 66% | 23% | 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



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: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2023 With Development)]

0745 - 0845
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.161 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 793 | 8.6 | 738 | 8.2 | 0.161 | 0.0 | LOS A | 7.6 | 55.3 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 794 | 8.6 | 739 ^{N1} | 8.2 | 0.161 | 0.0 | NA | 7.6 | 55.3 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 831 | 10.1 | 830 | 10.1 | 0.210 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 831 | 10.1 | 830 ^{N1} | 10.1 | 0.210 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.3 | LOS A | 0.0 | 0.0 | 0.37 | 0.16 | 0.37 | 18.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.3 | LOS A | 0.0 | 0.0 | 0.37 | 0.16 | 0.37 | 18.6 |
| All Vehicles | | 1626 | 9.3 | 1570 ^{N1} | 9.7 | 0.210 | 0.0 | NA | 7.6 | 55.3 | 0.00 | 0.00 | 0.00 | 39.9 |

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.
 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.

MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
(Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 517 | 1.5 | 494 | 1.5 | 0.273 | 26.8 | LOS B | 11.3 | 80.2 | 0.68 | 0.72 | 0.68 | 7.2 |
| 23a | R1 | 275 | 22.5 | 261 | 22.1 | *0.975 | 95.6 | LOS F | 11.6 | 89.8 | 1.00 | 1.06 | 1.33 | 13.8 |
| Approach | | 792 | 8.8 | 755 ^{N1} | 8.7 | 0.975 | 50.6 | LOS D | 11.6 | 89.8 | 0.79 | 0.83 | 0.91 | 11.8 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 46 | 2.2 | 46 | 2.2 | 0.457 | 74.8 | LOS F | 3.7 | 26.4 | 1.00 | 0.76 | 1.00 | 13.0 |
| 5 | T1 | 68 | 2.9 | 68 | 2.9 | *0.457 | 70.2 | LOS E | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 13.4 |
| 6 | R2 | 2 | 0.0 | 2 | 0.0 | 0.457 | 74.3 | LOS F | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 21.2 |
| Approach | | 116 | 2.6 | 116 | 2.6 | 0.457 | 72.1 | LOS F | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 13.4 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 7 | 0.0 | 7 | 0.0 | 0.155 | 23.4 | LOS B | 4.4 | 38.9 | 0.57 | 0.59 | 0.57 | 31.4 |
| 7a | L1 | 154 | 48.7 | 154 | 48.7 | 0.155 | 21.7 | LOS B | 4.4 | 38.9 | 0.57 | 0.58 | 0.57 | 26.9 |
| 9 | R2 | 108 | 12.0 | 108 | 12.0 | 0.210 | 42.6 | LOS D | 5.5 | 42.2 | 0.79 | 0.73 | 0.79 | 20.4 |
| Approach | | 269 | 32.7 | 269 | 32.7 | 0.210 | 30.2 | LOS C | 5.5 | 42.2 | 0.66 | 0.64 | 0.66 | 24.1 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 177 | 9.6 | 177 | 9.6 | 0.878 | 55.6 | LOS D | 12.6 | 91.4 | 1.00 | 1.01 | 1.11 | 19.5 |
| 11 | T1 | 202 | 0.5 | 202 | 0.5 | *0.878 | 52.4 | LOS D | 12.6 | 91.4 | 1.00 | 1.01 | 1.11 | 17.3 |
| 12a | R1 | 631 | 1.3 | 630 | 1.3 | 0.878 | 58.0 | LOS E | 12.9 | 91.4 | 1.00 | 0.98 | 1.11 | 4.3 |
| Approach | | 1010 | 2.6 | 1008 ^N ₁ | 2.6 | 0.878 | 56.5 | LOS D | 12.9 | 91.4 | 1.00 | 0.99 | 1.11 | 11.0 |
| All Vehicles | | 2187 | 8.6 | 2148 ^N ₁ | 8.7 | 0.975 | 51.9 | LOS D | 12.9 | 91.4 | 0.88 | 0.88 | 0.98 | 13.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2023 With
 Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

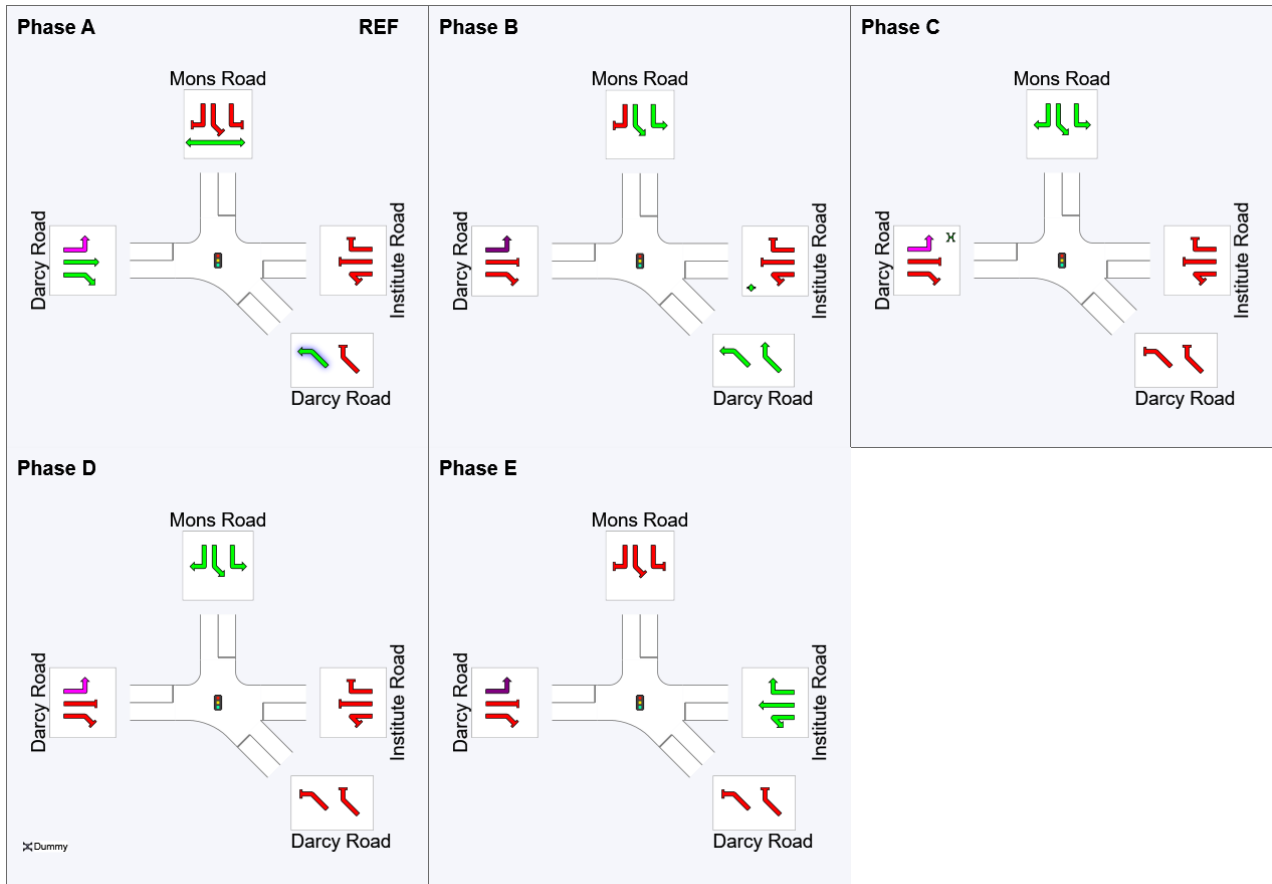
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 48 | 73 | 110 | 124 |
| Green Time (sec) | 42 | 19 | 31 | 8 | 10 |
| Phase Time (sec) | 48 | 25 | 37 | 14 | 16 |
| Phase Split | 34% | 18% | 26% | 10% | 11% |

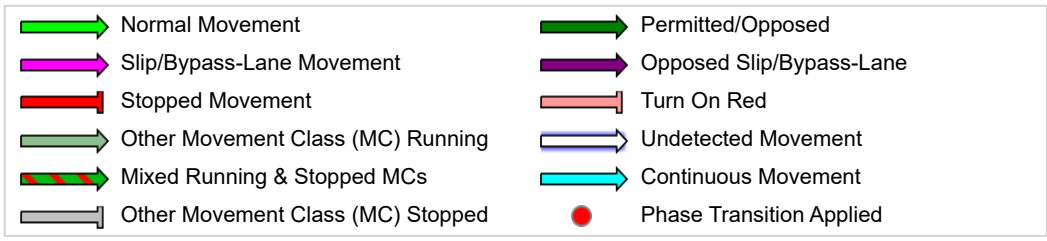
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

 Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2023 With Development AM Peak)]

 Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 250 | 2.0 | 250 | 2.0 | 0.392 | 4.6 | LOS A | 1.5 | 11.0 | 0.45 | 0.94 | 0.49 | 9.7 | |
| Approach | | 250 | 2.0 | 250 | 2.0 | 0.392 | 4.6 | LOS A | 1.5 | 11.0 | 0.45 | 0.94 | 0.49 | 9.7 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 80 | 3.8 | 78 | 3.8 | 0.043 | 7.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.76 | 0.00 | 18.9 | |
| 5 | T1 | 613 | 3.1 | 601 | 3.1 | 0.157 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 40.0 | |
| Approach | | 693 | 3.2 | 679 ^{N1} | 3.2 | 0.157 | 0.8 | NA | 0.0 | 0.0 | 0.00 | 0.09 | 0.00 | 35.1 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 1010 | 3.1 | 1008 | 3.1 | 0.264 | 2.1 | LOS A | 21.9 | 157.5 | 0.00 | 0.36 | 0.00 | 37.0 | |
| 12 | R2 | 193 | 2.6 | 193 | 2.6 | 0.369 | 10.6 | LOS A | 1.1 | 8.0 | 0.58 | 0.91 | 0.69 | 28.7 | |
| Approach | | 1203 | 3.0 | 1201 ^{N1} | 3.0 | 0.369 | 3.5 | LOS A | 21.9 | 157.5 | 0.09 | 0.45 | 0.11 | 35.4 | |
| All Vehicles | | 2146 | 2.9 | 2130 ^{N1} | 3.0 | 0.392 | 2.8 | NA | 21.9 | 157.5 | 0.11 | 0.39 | 0.12 | 23.2 | |

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.

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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MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 146 | 2.7 | 143 | 2.8 | 0.333 | 51.2 | LOS D | 8.1 | 57.7 | 0.87 | 0.77 | 0.87 | 22.9 |
| 2 | T1 | 16 | 6.3 | 16 | 6.3 | 0.624 | 70.1 | LOS E | 8.5 | 63.4 | 1.00 | 0.81 | 1.01 | 16.4 |
| 3 | R2 | 114 | 7.0 | 112 | 7.1 | *0.624 | 69.7 | LOS E | 8.5 | 63.4 | 1.00 | 0.81 | 1.01 | 16.1 |
| Approach | | 276 | 4.7 | 270 ^{N1} | 4.8 | 0.624 | 59.9 | LOS E | 8.5 | 63.4 | 0.93 | 0.79 | 0.94 | 19.6 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 246 | 3.3 | 246 | 3.3 | 0.364 | 16.5 | LOS B | 11.0 | 79.0 | 0.42 | 0.56 | 0.42 | 29.8 |
| 5 | T1 | 594 | 3.2 | 594 | 3.2 | 0.364 | 11.4 | LOS A | 11.0 | 79.0 | 0.41 | 0.42 | 0.41 | 36.4 |
| 6 | R2 | 23 | 0.0 | 23 | 0.0 | *0.064 | 7.8 | LOS A | 0.2 | 1.2 | 0.18 | 0.57 | 0.18 | 32.8 |
| Approach | | 863 | 3.1 | 862 ^{N1} | 3.1 | 0.364 | 12.7 | LOS A | 11.0 | 79.0 | 0.41 | 0.46 | 0.41 | 34.7 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 14 | 7.1 | 14 | 7.1 | 0.034 | 42.6 | LOS D | 0.7 | 5.4 | 0.80 | 0.56 | 0.80 | 4.3 |
| 8 | T1 | 14 | 0.0 | 14 | 0.0 | 0.238 | 62.5 | LOS E | 2.6 | 18.8 | 0.95 | 0.71 | 0.95 | 3.3 |
| 9 | R2 | 27 | 3.7 | 27 | 3.7 | 0.238 | 62.5 | LOS E | 2.6 | 18.8 | 0.95 | 0.71 | 0.95 | 9.2 |
| Approach | | 55 | 3.6 | 55 | 3.6 | 0.238 | 57.5 | LOS E | 2.6 | 18.8 | 0.91 | 0.67 | 0.91 | 6.8 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | *0.577 | 12.4 | LOS A | 14.6 | 103.8 | 0.34 | 0.32 | 0.34 | 27.0 |
| 11 | T1 | 1075 | 2.2 | 1075 | 2.2 | 0.577 | 7.1 | LOS A | 14.6 | 103.8 | 0.30 | 0.28 | 0.30 | 31.3 |
| 12 | R2 | 350 | 0.6 | 350 | 0.6 | 0.755 | 11.9 | LOS A | 6.1 | 43.2 | 0.45 | 0.70 | 0.48 | 25.3 |
| Approach | | 1454 | 1.8 | 1454 | 1.8 | 0.755 | 8.4 | LOS A | 14.6 | 103.8 | 0.33 | 0.38 | 0.34 | 29.5 |
| All Vehicles | | 2648 | 2.6 | 2642 ^{N1} | 2.6 | 0.755 | 16.1 | LOS B | 14.6 | 103.8 | 0.43 | 0.45 | 0.43 | 27.8 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | ped/h | sec | | [Ped ped | Dist] m | | | sec | m | m/sec |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 67 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 40 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |

| | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 Full | 78 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 92.1 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | |
| P4 Full | 55 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | 240 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 93.4 | 35.0 | 0.37 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E*, E2*

Output Phase Sequence: A, D, E*

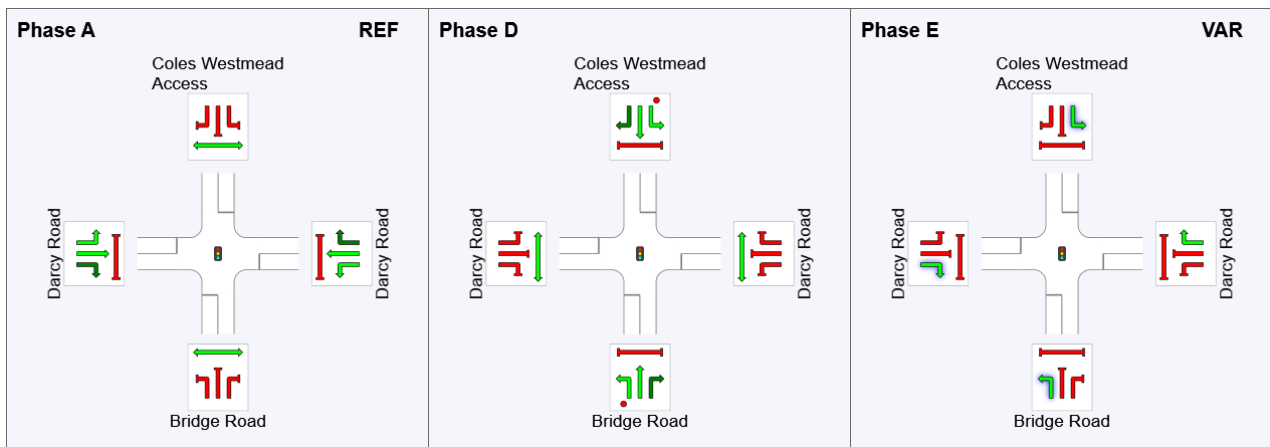
(* Variable Phase)

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 121 | 77 | 109 |
| Green Time (sec) | 89 | 25 | 10 |
| Phase Time (sec) | 96 | 27 | 17 |
| Phase Split | 69% | 19% | 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 |

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MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2023 With Development AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 348 | 0.3 | 348 | 0.3 | 0.525 | 3.8 | LOS A | 5.3 | 37.1 | 0.30 | 0.51 | 0.30 | 24.9 |
| 3 | R2 | 315 | 0.3 | 315 | 0.3 | 0.525 | 6.9 | LOS A | 5.3 | 37.1 | 0.30 | 0.51 | 0.30 | 24.9 |
| 3u | U | 4 | 0.0 | 4 | 0.0 | 0.525 | 8.3 | LOS A | 5.3 | 37.1 | 0.30 | 0.51 | 0.30 | 27.9 |
| Approach | | 667 | 0.3 | 667 | 0.3 | 0.525 | 5.3 | LOS A | 5.3 | 37.1 | 0.30 | 0.51 | 0.30 | 25.0 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 109 | 0.9 | 88 | 1.0 | 0.232 | 8.7 | LOS A | 1.2 | 8.3 | 0.60 | 0.77 | 0.60 | 40.8 |
| 6 | R2 | 48 | 2.1 | 39 | 2.2 | 0.232 | 11.3 | LOS A | 1.2 | 8.3 | 0.60 | 0.77 | 0.60 | 41.5 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.232 | 12.5 | LOS A | 1.2 | 8.3 | 0.60 | 0.77 | 0.60 | 41.5 |
| Approach | | 159 | 1.3 | 129 ^{N1} | 1.4 | 0.232 | 9.5 | LOS A | 1.2 | 8.3 | 0.60 | 0.77 | 0.60 | 41.0 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 247 | 0.4 | 247 | 0.4 | 1.024 | 61.5 | LOS E | 46.4 | 325.7 | 1.00 | 2.19 | 3.45 | 17.5 |
| 8 | T1 | 552 | 0.2 | 552 | 0.2 | 1.024 | 61.1 | LOS E | 46.4 | 325.7 | 1.00 | 2.19 | 3.45 | 18.7 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 1.024 | 65.3 | LOS E | 46.4 | 325.7 | 1.00 | 2.19 | 3.45 | 17.5 |
| Approach | | 800 | 0.3 | 800 | 0.3 | 1.024 | 61.2 | LOS E | 46.4 | 325.7 | 1.00 | 2.19 | 3.45 | 18.3 |
| All Vehicles | | 1626 | 0.4 | 1596 ^{N1} | 0.4 | 1.024 | 33.7 | LOS C | 46.4 | 325.7 | 0.68 | 1.37 | 1.90 | 20.8 |

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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [AM Peak (Network Folder: 2023 With Development)]

0745 - 0845

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 110 | 104 | 101 ¹ | 102 ¹ | 103 | 108 | 106 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -18 | -8 | 0 | 0 | 0 | 0 | 10 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

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CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|-----------------|----------|--------------------------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 43 | 0.0 | 43 | 0.0 | 0.605 | 55.4 | LOS D | 16.8 | 119.3 | 0.94 | 0.81 | 0.94 | 10.9 |
| 2 | T1 | 487 | 1.8 | 487 | 1.8 | 0.605 | 50.8 | LOS D | 16.8 | 119.3 | 0.94 | 0.80 | 0.94 | 10.9 |
| Approach | | 530 | 1.7 | 530 | 1.7 | 0.605 | 51.2 | LOS D | 16.8 | 119.3 | 0.94 | 0.80 | 0.94 | 10.9 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 29 | 0.0 | 29 | 0.0 | 0.854 | 72.2 | LOS F | 12.7 | 92.2 | 1.00 | 0.98 | 1.18 | 13.4 |
| 5 | T1 | 215 | 0.0 | 215 | 0.0 | *0.854 | 67.7 | LOS E | 12.7 | 92.2 | 1.00 | 0.98 | 1.18 | 7.6 |
| 6 | R2 | 276 | 24.3 | 276 | 24.3 | 0.854 | 74.6 | LOS F | 16.8 | 141.8 | 1.00 | 0.96 | 1.22 | 7.1 |
| Approach | | 520 | 12.9 | 520 | 12.9 | 0.854 | 71.6 | LOS F | 16.8 | 141.8 | 1.00 | 0.97 | 1.20 | 7.7 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 304 | 22.0 | 282 | 22.1 | *0.626 | 12.8 | LOS A | 11.9 | 88.1 | 0.40 | 0.52 | 0.40 | 28.1 |
| 8 | T1 | 773 | 1.3 | 716 | 1.3 | 0.626 | 18.2 | LOS B | 12.5 | 88.1 | 0.66 | 0.65 | 0.66 | 24.2 |
| 9 | R2 | 79 | 0.0 | 73 | 0.0 | 0.626 | 28.3 | LOS B | 12.5 | 88.1 | 0.82 | 0.74 | 0.82 | 8.5 |
| Approach | | 1156 | 6.7 | 1071 ^N ₁ | 6.7 | 0.626 | 17.5 | LOS B | 12.5 | 88.1 | 0.60 | 0.62 | 0.60 | 24.1 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 103 | 0.0 | 103 | 0.0 | 0.147 | 32.9 | LOS C | 4.4 | 30.9 | 0.67 | 0.72 | 0.67 | 29.3 |
| 11 | T1 | 155 | 0.6 | 155 | 0.6 | *0.657 | 65.1 | LOS E | 10.4 | 73.3 | 1.00 | 0.82 | 1.02 | 23.5 |
| Approach | | 258 | 0.4 | 258 | 0.4 | 0.657 | 52.2 | LOS D | 10.4 | 73.3 | 0.87 | 0.78 | 0.88 | 25.2 |
| All Vehicles | | 2464 | 6.3 | 2379 ^N ₁ | 6.5 | 0.854 | 40.6 | LOS C | 16.8 | 141.8 | 0.80 | 0.75 | 0.84 | 16.1 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 674 | 11.0 | 674 | 11.0 | 0.374 | 4.8 | LOS A | 7.9 | 57.5 | 0.30 | 0.28 | 0.30 | 24.0 |
| 3 | R2 | 191 | 0.0 | 191 | 0.0 | 0.374 | 15.2 | LOS B | 7.9 | 57.5 | 0.72 | 0.70 | 0.72 | 37.3 |
| Approach | | 865 | 8.6 | 865 | 8.6 | 0.374 | 7.1 | LOS A | 7.9 | 57.5 | 0.39 | 0.37 | 0.39 | 32.1 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 244 | 0.4 | 244 | 0.4 | 0.461 | 18.4 | LOS B | 8.4 | 58.7 | 0.62 | 0.74 | 0.62 | 33.4 |
| 6 | R2 | 22 | 0.0 | 22 | 0.0 | 0.111 | 66.2 | LOS E | 1.4 | 9.6 | 0.94 | 0.71 | 0.94 | 18.0 |
| Approach | | 266 | 0.4 | 266 | 0.4 | 0.461 | 22.4 | LOS B | 8.4 | 58.7 | 0.65 | 0.73 | 0.65 | 31.2 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 74 | 0.0 | 67 | 0.0 | 0.142 | 49.8 | LOS D | 5.3 | 47.6 | 0.83 | 0.71 | 0.83 | 24.3 |
| 8 | T1 | 912 | 8.6 | 822 | 8.7 | *0.863 | 53.6 | LOS D | 26.5 | 193.3 | 0.98 | 0.92 | 1.06 | 8.0 |
| Approach | | 986 | 7.9 | 888 ^{N1} | 8.1 | 0.863 | 53.3 | LOS D | 26.5 | 193.3 | 0.97 | 0.90 | 1.05 | 9.7 |
| All Vehicles | | 2117 | 7.2 | 2019 ^N ₁ | 7.6 | 0.863 | 29.4 | LOS C | 26.5 | 193.3 | 0.68 | 0.65 | 0.71 | 17.6 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C

Output Phase Sequence: A, E, D, C

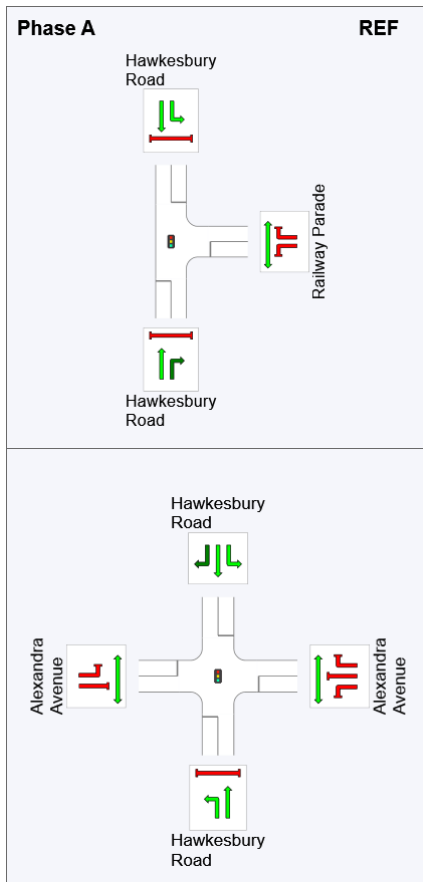
(* Variable Phase)

Phase Timing Summary (CCG)

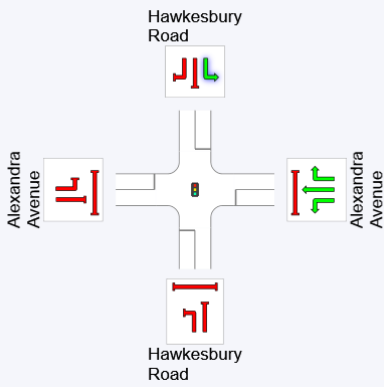
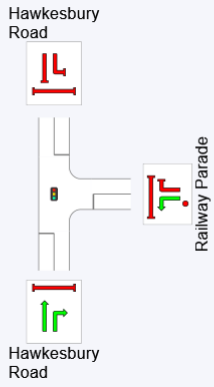
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 40 | 75 | 101 |
| Green Time (sec) | 34 | 26 | 17 | 33 |
| Phase Time (sec) | 43 | 35 | 23 | 39 |
| Phase Split | 31% | 25% | 16% | 28% |

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%.

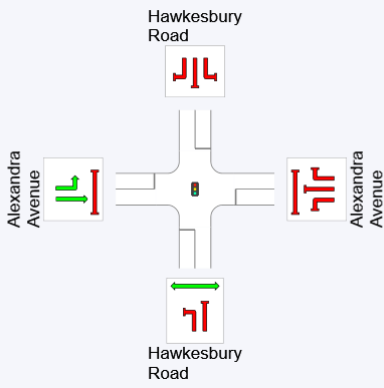
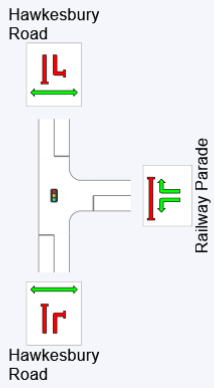
Output Phase Sequence (CCG)

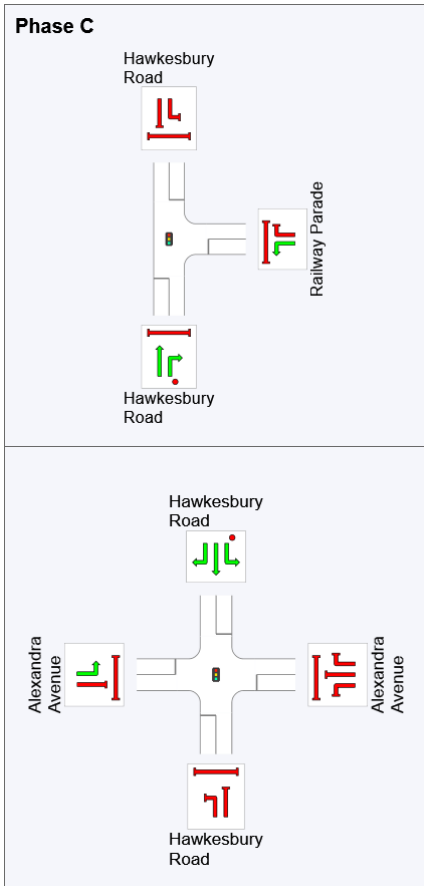


Phase E



Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.188 | 78.4 | LOS F | 0.6 | 15.7 | 0.98 | 0.69 | 0.98 | 10.8 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.188 | 78.4 | LOS F | 0.6 | 15.7 | 0.98 | 0.69 | 0.98 | 10.8 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.126 | 76.7 | LOS F | 0.6 | 15.0 | 0.98 | 0.68 | 0.98 | 10.8 |
| 25 | T1 | 426 | 3.1 | 426 | 3.1 | * 1.147 | 186.5 | LOS F | 53.8 | 386.5 | 1.00 | 1.66 | 2.00 | 3.6 |
| 26 | R2 | 265 | 3.4 | 265 | 3.4 | * 0.993 | 87.1 | LOS F | 21.3 | 153.3 | 0.99 | 1.08 | 1.39 | 7.0 |
| Approach | | 699 | 4.3 | 699 | 4.3 | 1.147 | 147.5 | LOS F | 53.8 | 386.5 | 0.99 | 1.43 | 1.76 | 4.4 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 172 | 5.8 | 172 | 5.8 | 1.091 | 23.3 | LOS B | 4.3 | 30.7 | 0.58 | 0.69 | 0.61 | 22.8 |
| 29 | R2 | 560 | 11.3 | 560 | 11.3 | * 1.131 | 161.9 | LOS F | 19.9 | 146.9 | 0.95 | 1.39 | 1.85 | 2.3 |
| Approach | | 732 | 10.0 | 732 | 10.0 | 1.131 | 129.4 | LOS F | 19.9 | 146.9 | 0.86 | 1.23 | 1.56 | 3.8 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 449 | 15.1 | 449 | 15.1 | 0.270 | 11.9 | LOS A | 9.4 | 70.4 | 0.36 | 0.65 | 0.36 | 23.4 |
| 31 | T1 | 247 | 3.2 | 247 | 3.2 | 0.345 | 50.7 | LOS D | 15.1 | 108.8 | 0.97 | 0.81 | 0.97 | 15.5 |
| Approach | | 696 | 10.9 | 696 | 10.9 | 0.345 | 25.6 | LOS B | 15.1 | 108.8 | 0.58 | 0.71 | 0.58 | 18.2 |
| All Vehicles | | 2135 | 8.8 | 2135 | 8.8 | 1.147 | 101.3 | LOS F | 53.8 | 386.5 | 0.81 | 1.12 | 1.30 | 5.8 |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|---------------------------------|----------|-----------------|-----------------|------------------|------------------------------------|-----|-----------|---------------------|-----------------|----------------|-------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [Ped Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 238.3 | 208.6 | 0.88 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 202 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 29.4 | LOS C | 0.1 | 0.1 | 0.92 | 0.92 | 55.2 | 30.9 | 0.56 |
| P72 | Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P8 Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 98.7 | 41.1 | 0.42 |
| All Pedestrians | 580 | 60.9 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 124.8 | 76.7 | 0.61 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

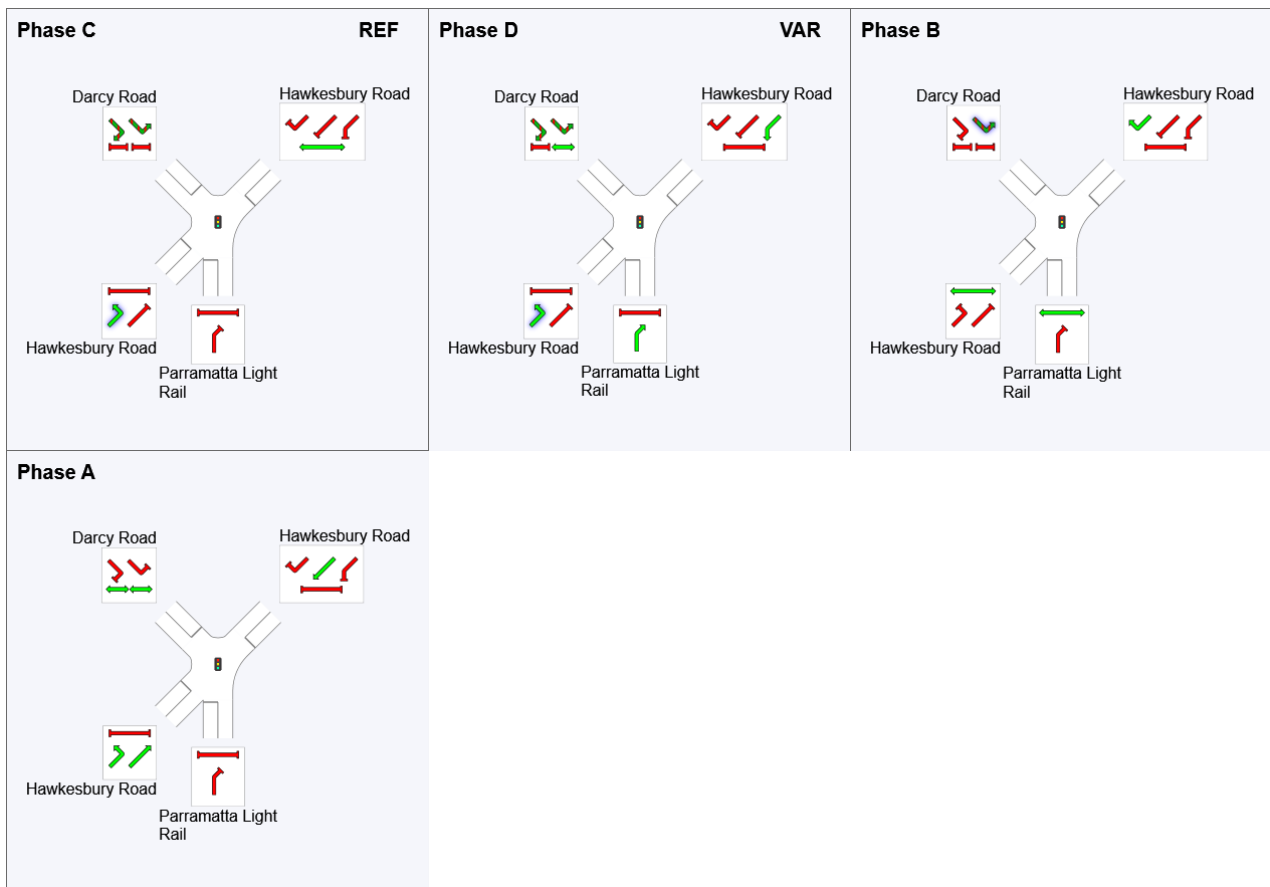
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 48 | 64 | 94 |
| Green Time (sec) | 42 | 8 | 21 | 35 |
| Phase Time (sec) | 50 | 17 | 30 | 43 |
| Phase Split | 36% | 12% | 21% | 31% |

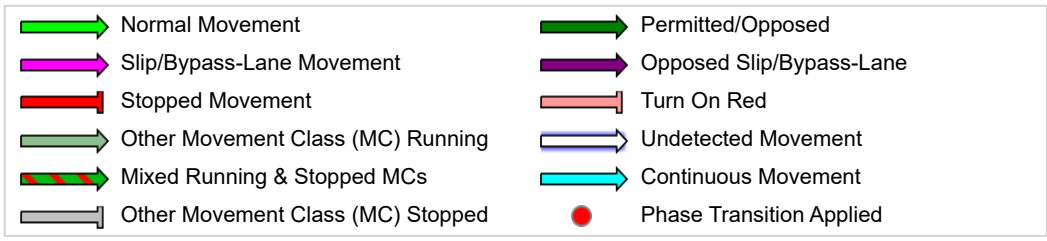
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 6 | 0.0 | 6 | 0.0 | 0.306 | 26.4 | LOS B | 14.0 | 103.1 | 0.73 | 0.64 | 0.73 | 21.1 | |
| 22 | T1 | 640 | 11.1 | 640 | 11.1 | 0.306 | 22.4 | LOS B | 14.0 | 103.1 | 0.72 | 0.62 | 0.72 | 11.7 | |
| 23 | R2 | 68 | 0.0 | 68 | 0.0 | *0.570 | 74.7 | LOS F | 4.7 | 32.7 | 0.99 | 0.76 | 1.00 | 8.6 | |
| Approach | | 714 | 9.9 | 714 | 9.9 | 0.570 | 27.5 | LOS B | 14.0 | 103.1 | 0.74 | 0.64 | 0.74 | 10.8 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 56 | 3.6 | 56 | 3.6 | 0.445 | 53.0 | LOS D | 3.5 | 25.3 | 0.92 | 0.72 | 0.92 | 7.7 | |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.445 | 53.0 | LOS D | 3.5 | 25.3 | 0.92 | 0.72 | 0.92 | 11.9 | |
| 26 | R2 | 137 | 0.0 | 137 | 0.0 | 0.538 | 48.4 | LOS D | 8.0 | 55.7 | 0.93 | 0.74 | 0.93 | 8.1 | |
| Approach | | 194 | 1.0 | 194 | 1.0 | 0.538 | 49.8 | LOS D | 8.0 | 55.7 | 0.93 | 0.73 | 0.93 | 8.0 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 103 | 1.0 | 103 | 1.0 | *0.650 | 26.4 | LOS B | 13.2 | 96.3 | 0.66 | 0.66 | 0.66 | 12.8 | |
| 28 | T1 | 627 | 11.5 | 627 | 11.5 | 0.650 | 25.3 | LOS B | 13.2 | 96.3 | 0.74 | 0.70 | 0.74 | 9.3 | |
| 29 | R2 | 6 | 0.0 | 6 | 0.0 | 0.050 | 74.5 | LOS F | 0.4 | 2.9 | 1.00 | 0.66 | 1.00 | 9.5 | |
| Approach | | 736 | 9.9 | 736 | 9.9 | 0.650 | 25.8 | LOS B | 13.2 | 96.3 | 0.73 | 0.69 | 0.73 | 9.5 | |
| SouthWest: Farm House Road | | | | | | | | | | | | | | | |
| 30 | L2 | 30 | 0.0 | 30 | 0.0 | 0.127 | 53.8 | LOS D | 2.0 | 13.9 | 0.89 | 0.71 | 0.89 | 9.8 | |
| 31 | T1 | 5 | 0.0 | 5 | 0.0 | 0.127 | 56.8 | LOS E | 2.0 | 13.9 | 0.89 | 0.71 | 0.89 | 12.0 | |
| 32 | R2 | 50 | 0.0 | 50 | 0.0 | 0.197 | 49.4 | LOS D | 2.7 | 19.1 | 0.92 | 0.72 | 0.92 | 10.6 | |
| Approach | | 85 | 0.0 | 85 | 0.0 | 0.197 | 51.4 | LOS D | 2.7 | 19.1 | 0.91 | 0.72 | 0.91 | 10.5 | |
| All Vehicles | | 1729 | 8.4 | 1729 | 8.4 | 0.650 | 30.4 | LOS C | 14.0 | 103.1 | 0.77 | 0.67 | 0.77 | 9.7 | |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|-------------------------------------|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 Stage 1 | | 197 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 90.4 | 30.9 | 0.34 |
| P52 Stage 2 | | 41 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |
| P6 Full | | 88 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P71 Stage 1 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 225 | 64.7 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 91.3 | 31.9 | 0.35 |
| All Pedestrians | 603 | 64.6 | LOS F | 0.9 | 0.9 | 0.96 | 0.96 | 91.4 | 32.2 | 0.35 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

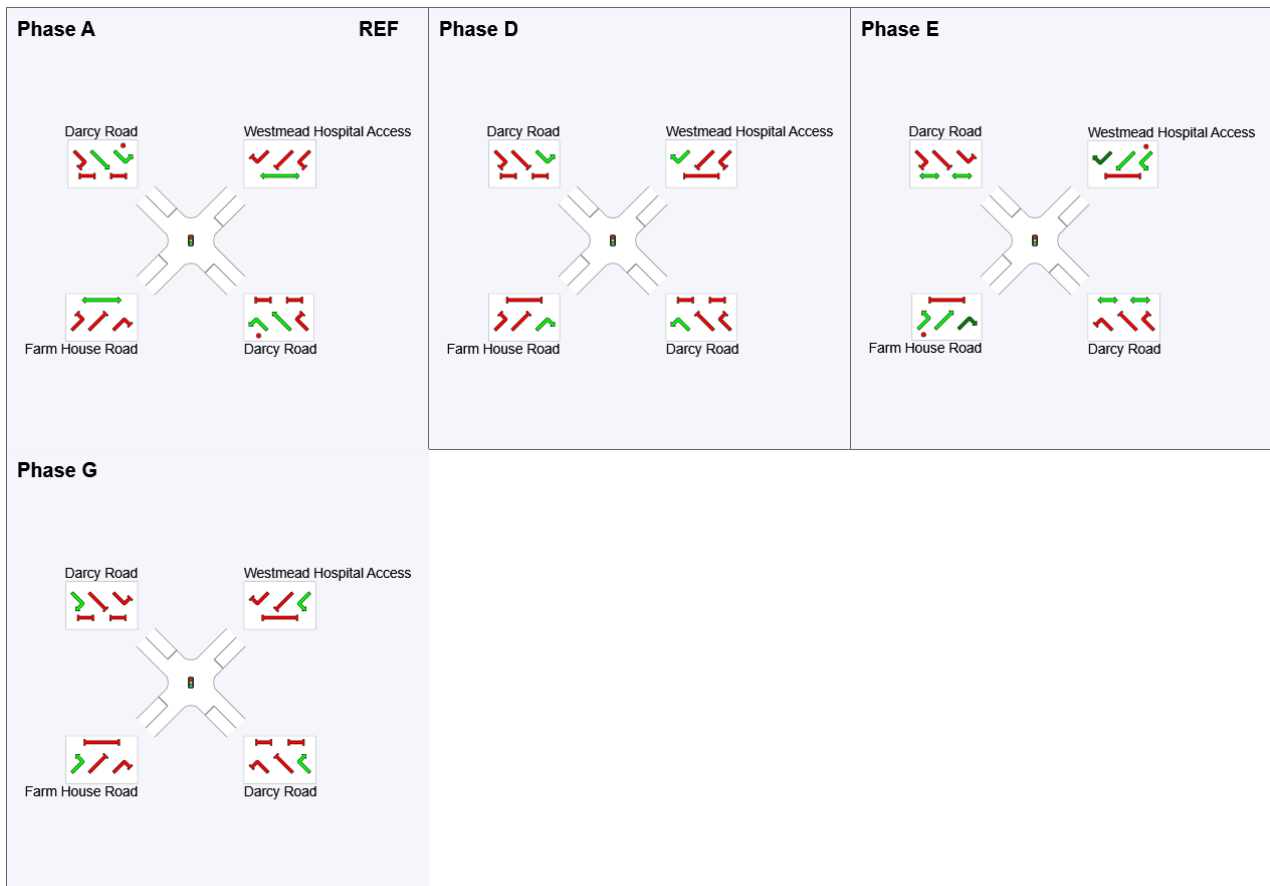
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 121 | 64 | 82 | 106 |
| Green Time (sec) | 75 | 11 | 16 | 9 |
| Phase Time (sec) | 82 | 19 | 22 | 17 |
| Phase Split | 59% | 14% | 16% | 12% |

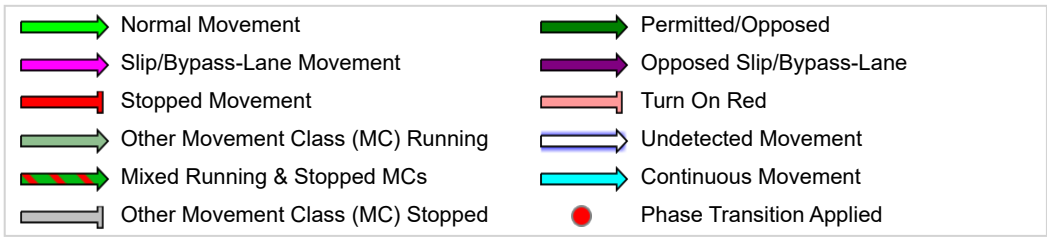
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 86 | 0.0 | 86 | 0.0 | 0.268 | 11.1 | LOS A | 1.6 | 11.6 | 0.61 | 0.27 | 0.68 | 19.1 |
| 22 | T1 | 722 | 10.0 | 722 | 10.0 | 0.268 | 1.4 | LOS A | 1.6 | 11.6 | 0.16 | 0.07 | 0.18 | 30.9 |
| Approach | | 808 | 8.9 | 808 | 8.9 | 0.268 | 2.4 | NA | 1.6 | 11.6 | 0.21 | 0.09 | 0.23 | 28.3 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 735 | 9.3 | 735 | 9.3 | 0.248 | 0.0 | LOS A | 0.1 | 0.6 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 735 | 9.3 | 735 | 9.3 | 0.248 | 0.0 | NA | 0.1 | 0.6 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.004 | 14.4 | LOS A | 0.0 | 0.1 | 0.82 | 0.67 | 0.82 | 6.9 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.004 | 14.4 | LOS A | 0.0 | 0.1 | 0.82 | 0.67 | 0.82 | 6.9 |
| All Vehicles | | 1544 | 9.1 | 1544 | 9.1 | 0.268 | 1.3 | NA | 1.6 | 11.6 | 0.11 | 0.05 | 0.12 | 33.9 |

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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|---|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | * 0.265 | 13.1 | LOS A | 8.4 | 62.0 | 0.42 | 0.36 | 0.42 | 20.1 | |
| 22 | T1 | 687 | 10.3 | 687 | 10.3 | 0.265 | 9.6 | LOS A | 8.4 | 62.0 | 0.39 | 0.34 | 0.39 | 20.3 | |
| 23 | R2 | 34 | 0.0 | 34 | 0.0 | * 0.427 | 80.4 | LOS F | 2.5 | 17.2 | 1.00 | 0.72 | 1.00 | 8.7 | |
| Approach | | 722 | 9.8 | 722 | 9.8 | 0.427 | 13.0 | LOS A | 8.4 | 62.0 | 0.42 | 0.36 | 0.42 | 17.9 | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 38 | 0.0 | 38 | 0.0 | 0.045 | 4.1 | LOS A | 0.2 | 1.7 | 0.14 | 0.50 | 0.14 | 30.3 | |
| 26 | R2 | 29 | 0.0 | 29 | 0.0 | 0.155 | 63.0 | LOS E | 1.8 | 12.6 | 0.92 | 0.72 | 0.92 | 7.1 | |
| Approach | | 67 | 0.0 | 67 | 0.0 | 0.155 | 29.6 | LOS C | 1.8 | 12.6 | 0.48 | 0.60 | 0.48 | 12.4 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 60 | 0.0 | 60 | 0.0 | 0.185 | 12.2 | LOS A | 7.0 | 51.4 | 0.33 | 0.34 | 0.33 | 28.0 | |
| 28 | T1 | 636 | 10.7 | 636 | 10.7 | 0.185 | 9.2 | LOS A | 8.1 | 59.7 | 0.38 | 0.35 | 0.38 | 20.0 | |
| 29 | R2 | 2 | 50.0 | 2 | 50.0 | 0.023 | 76.6 | LOS F | 0.1 | 1.4 | 1.00 | 0.61 | 1.00 | 6.7 | |
| Approach | | 698 | 9.9 | 698 | 9.9 | 0.185 | 9.7 | LOS A | 8.1 | 59.7 | 0.37 | 0.35 | 0.37 | 20.8 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | | |
| 30 | L2 | 115 | 0.0 | 115 | 0.0 | 0.560 | 51.4 | LOS D | 10.6 | 74.3 | 0.96 | 0.79 | 0.96 | 5.0 | |
| 32 | R2 | 61 | 0.0 | 61 | 0.0 | * 0.560 | 51.4 | LOS D | 10.6 | 74.3 | 0.96 | 0.79 | 0.96 | 5.0 | |
| Approach | | 176 | 0.0 | 176 | 0.0 | 0.560 | 51.4 | LOS D | 10.6 | 74.3 | 0.96 | 0.79 | 0.96 | 5.0 | |
| All Vehicles | | 1663 | 8.4 | 1663 | 8.4 | 0.560 | 16.3 | LOS B | 10.6 | 74.3 | 0.46 | 0.41 | 0.46 | 15.1 | |

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)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|--|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed | |
| | | | | | [Ped ped | Dist] m | | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | |
| P6 | Full | 4 | 64.1 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 90.7 | 31.9 | 0.35 | |
| NorthWest: Darcy Road | | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | |
| P8 | Full | 59 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 88.1 | 28.6 | 0.32 | |
| All Pedestrians | | 154 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 98.9 | 41.4 | 0.42 | |

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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Models.sip9

PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

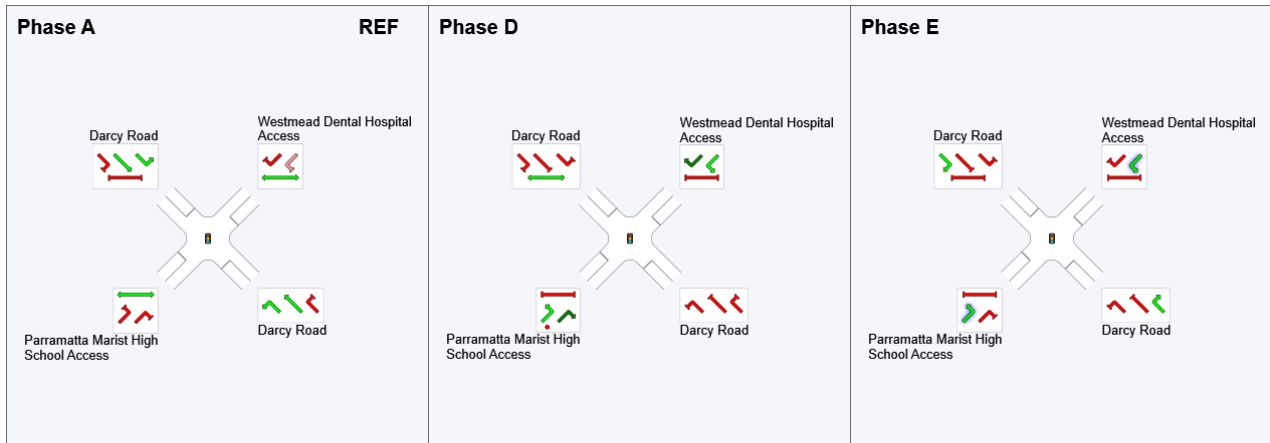
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|----|
| Phase Change Time (sec) | 109 | 67 | 98 |
| Green Time (sec) | 92 | 25 | 6 |
| Phase Time (sec) | 98 | 30 | 12 |
| Phase Split | 70% | 21% | 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



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2023 With
Development)]

1500 - 1600
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.148 | 3.7 | LOS A | 2.3 | 16.6 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 832 | 8.8 | 832 | 8.8 | 0.148 | 0.0 | LOS A | 3.0 | 21.8 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 833 | 8.8 | 833 | 8.8 | 0.148 | 0.0 | NA | 3.0 | 21.8 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 698 | 9.7 | 698 | 9.7 | 0.176 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 698 | 9.7 | 698 | 9.7 | 0.176 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.3 | LOS A | 0.0 | 0.1 | 0.38 | 0.18 | 0.38 | 18.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.3 | LOS A | 0.0 | 0.1 | 0.38 | 0.18 | 0.38 | 18.6 |
| All Vehicles | | 1532 | 9.2 | 1532 | 9.2 | 0.176 | 0.0 | NA | 3.0 | 21.8 | 0.00 | 0.00 | 0.00 | 39.9 |

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.

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.

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MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2023 With
 Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21a | L1 | 685 | 2.3 | 685 | 2.3 | 0.386 | 27.9 | LOS B | 12.6 | 89.8 | 0.71 | 0.74 | 0.71 | 6.9 | |
| 23a | R1 | 147 | 40.8 | 147 | 40.8 | *0.463 | 61.4 | LOS E | 7.3 | 61.1 | 0.96 | 0.77 | 0.96 | 18.0 | |
| Approach | | 832 | 9.1 | 832 | 9.1 | 0.463 | 33.8 | LOS C | 12.6 | 89.8 | 0.75 | 0.74 | 0.75 | 11.5 | |
| East: Institute Road | | | | | | | | | | | | | | | |
| 4b | L3 | 94 | 0.0 | 94 | 0.0 | 0.935 | 81.7 | LOS F | 12.6 | 88.0 | 1.00 | 1.02 | 1.31 | 12.4 | |
| 5 | T1 | 242 | 0.4 | 242 | 0.4 | *0.935 | 70.5 | LOS F | 13.1 | 92.2 | 1.00 | 0.97 | 1.22 | 13.3 | |
| 6 | R2 | 7 | 0.0 | 7 | 0.0 | 0.935 | 71.4 | LOS F | 13.1 | 92.2 | 1.00 | 0.94 | 1.18 | 21.5 | |
| Approach | | 343 | 0.3 | 343 | 0.3 | 0.935 | 73.6 | LOS F | 13.1 | 92.2 | 1.00 | 0.98 | 1.24 | 13.3 | |
| North: Mons Road | | | | | | | | | | | | | | | |
| 7 | L2 | 3 | 0.0 | 3 | 0.0 | 0.173 | 10.7 | LOS A | 2.0 | 16.2 | 0.22 | 0.39 | 0.22 | 36.0 | |
| 7a | L1 | 175 | 33.1 | 175 | 33.1 | 0.173 | 9.1 | LOS A | 2.0 | 16.2 | 0.22 | 0.39 | 0.22 | 33.2 | |
| 9 | R2 | 239 | 3.3 | 239 | 3.3 | 0.473 | 36.9 | LOS C | 11.2 | 80.5 | 0.73 | 0.74 | 0.73 | 21.8 | |
| Approach | | 417 | 15.8 | 417 | 15.8 | 0.473 | 25.0 | LOS B | 11.2 | 80.5 | 0.51 | 0.59 | 0.51 | 25.6 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 10 | L2 | 68 | 1.5 | 68 | 1.5 | 0.524 | 28.8 | LOS C | 10.5 | 74.6 | 0.66 | 0.67 | 0.66 | 26.3 | |
| 11 | T1 | 39 | 0.0 | 39 | 0.0 | *0.524 | 25.6 | LOS B | 10.5 | 74.6 | 0.66 | 0.67 | 0.66 | 24.0 | |
| 12a | R1 | 429 | 2.3 | 429 | 2.3 | 0.524 | 33.1 | LOS C | 12.8 | 91.4 | 0.73 | 0.70 | 0.73 | 7.0 | |
| Approach | | 536 | 2.1 | 536 | 2.1 | 0.524 | 32.0 | LOS C | 12.8 | 91.4 | 0.72 | 0.69 | 0.72 | 12.8 | |
| All Vehicles | | 2128 | 7.2 | 2128 | 7.2 | 0.935 | 38.1 | LOS C | 13.1 | 92.2 | 0.74 | 0.74 | 0.77 | 15.4 | |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|---------------------------------|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

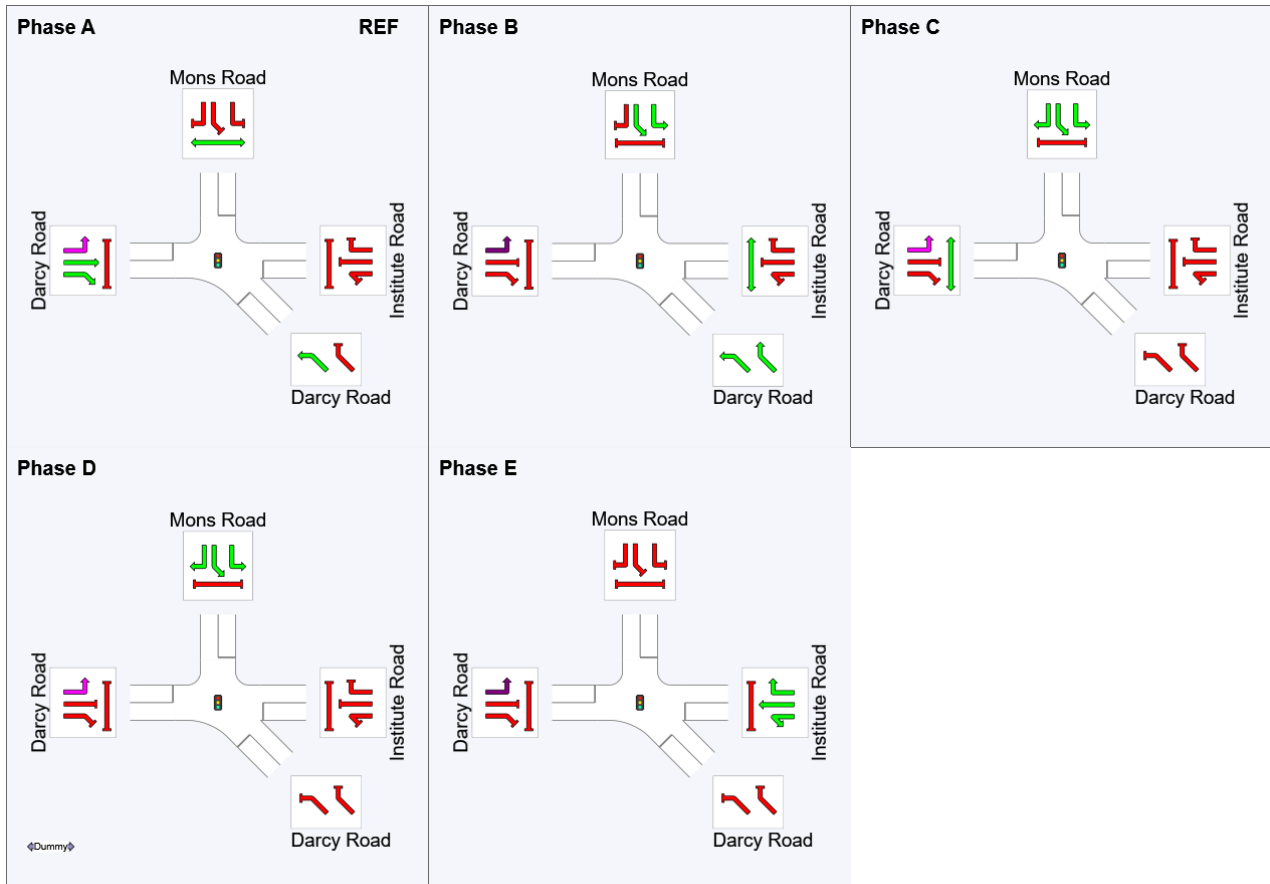
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 28 | 73 | 100 | 133 | 8 |
| Green Time (sec) | 39 | 21 | 27 | 9 | 14 |
| Phase Time (sec) | 45 | 27 | 33 | 15 | 20 |
| Phase Split | 32% | 19% | 24% | 11% | 14% |

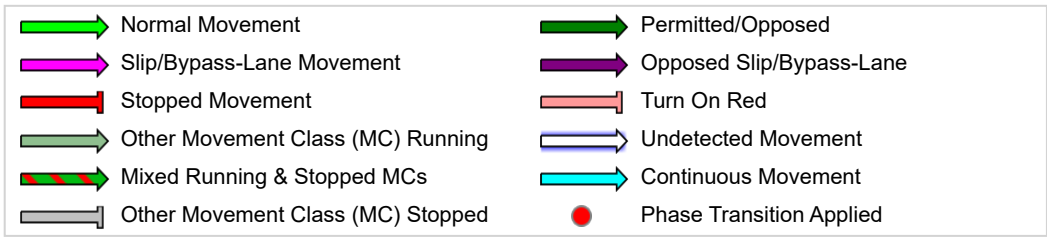
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

 Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2023 With Development PM Peak)]

 Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | |
| 1 | L2 | 100 | 10.0 | 100 | 10.0 | 0.226 | 6.6 | LOS A | 0.7 | 5.1 | 0.56 | 0.97 | 0.56 | 9.6 |
| Approach | | 100 | 10.0 | 100 | 10.0 | 0.226 | 6.6 | LOS A | 0.7 | 5.1 | 0.56 | 0.97 | 0.56 | 9.6 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 33 | 15.2 | 33 | 15.2 | 0.020 | 7.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.76 | 0.00 | 18.9 |
| 5 | T1 | 1132 | 1.7 | 1132 | 1.7 | 0.293 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1165 | 2.1 | 1165 | 2.1 | 0.293 | 0.2 | NA | 0.0 | 0.0 | 0.00 | 0.02 | 0.00 | 38.6 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 11 | T1 | 536 | 3.0 | 536 | 3.0 | 0.166 | 2.1 | LOS A | 0.6 | 4.4 | 0.00 | 0.36 | 0.00 | 37.1 |
| 12 | R2 | 52 | 7.7 | 52 | 7.7 | 0.156 | 12.6 | LOS A | 0.3 | 2.5 | 0.68 | 0.92 | 0.68 | 27.3 |
| Approach | | 588 | 3.4 | 588 | 3.4 | 0.166 | 3.0 | LOS A | 0.6 | 4.4 | 0.06 | 0.41 | 0.06 | 35.9 |
| All Vehicles | | 1853 | 2.9 | 1853 | 2.9 | 0.293 | 1.5 | NA | 0.7 | 5.1 | 0.05 | 0.20 | 0.05 | 26.5 |

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.

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.

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MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 218 | 1.4 | 217 | 1.4 | * 0.412 | 41.4 | LOS C | 11.1 | 78.7 | 0.83 | 0.78 | 0.83 | 25.6 |
| 2 | T1 | 28 | 0.0 | 28 | 0.0 | 0.584 | 73.3 | LOS F | 6.4 | 48.0 | 1.00 | 0.79 | 1.00 | 16.0 |
| 3 | R2 | 66 | 12.1 | 66 | 12.1 | 0.584 | 72.9 | LOS F | 6.4 | 48.0 | 1.00 | 0.79 | 1.00 | 15.6 |
| Approach | | 312 | 3.5 | 311 ^{N1} | 3.5 | 0.584 | 50.9 | LOS D | 11.1 | 78.7 | 0.88 | 0.78 | 0.88 | 22.1 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 191 | 6.8 | 191 | 6.8 | * 0.305 | 17.9 | LOS B | 14.3 | 103.2 | 0.39 | 0.45 | 0.39 | 29.7 |
| 5 | T1 | 1017 | 1.7 | 1017 | 1.7 | 0.305 | 14.8 | LOS B | 17.0 | 120.7 | 0.43 | 0.42 | 0.43 | 34.0 |
| 6 | R2 | 24 | 0.0 | 24 | 0.0 | 0.045 | 12.8 | LOS A | 0.3 | 2.4 | 0.39 | 0.60 | 0.39 | 29.0 |
| Approach | | 1232 | 2.4 | 1232 | 2.4 | 0.305 | 15.2 | LOS B | 17.0 | 120.7 | 0.42 | 0.43 | 0.42 | 33.4 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 23 | 0.0 | 23 | 0.0 | 0.060 | 42.9 | LOS D | 1.2 | 8.3 | 0.83 | 0.60 | 0.83 | 4.3 |
| 8 | T1 | 38 | 0.0 | 38 | 0.0 | 0.522 | 67.0 | LOS E | 5.4 | 37.8 | 0.99 | 0.78 | 0.99 | 3.1 |
| 9 | R2 | 42 | 0.0 | 42 | 0.0 | 0.522 | 67.0 | LOS E | 5.4 | 37.8 | 0.99 | 0.78 | 0.99 | 8.8 |
| Approach | | 103 | 0.0 | 103 | 0.0 | 0.522 | 61.7 | LOS E | 5.4 | 37.8 | 0.96 | 0.74 | 0.96 | 6.0 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 57 | 0.0 | 57 | 0.0 | 0.240 | 15.6 | LOS B | 9.9 | 70.2 | 0.45 | 0.44 | 0.45 | 23.9 |
| 11 | T1 | 498 | 1.8 | 498 | 1.8 | 0.240 | 10.7 | LOS A | 9.9 | 70.2 | 0.44 | 0.40 | 0.44 | 26.1 |
| 12 | R2 | 312 | 1.9 | 312 | 1.9 | 0.630 | 15.6 | LOS B | 7.4 | 52.6 | 0.59 | 0.75 | 0.59 | 22.0 |
| Approach | | 867 | 1.7 | 867 | 1.7 | 0.630 | 12.8 | LOS A | 9.9 | 70.2 | 0.49 | 0.53 | 0.49 | 24.3 |
| All Vehicles | | 2514 | 2.2 | 2513 ^N | 2.2 | 0.630 | 20.7 | LOS B | 17.0 | 120.7 | 0.53 | 0.52 | 0.53 | 26.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 47 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 44 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |

| North: Coles Westmead Access | | | | | | | | | | | |
|------------------------------|------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 | Full | 127 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 92.2 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 81 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | | 299 | 64.4 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, E2

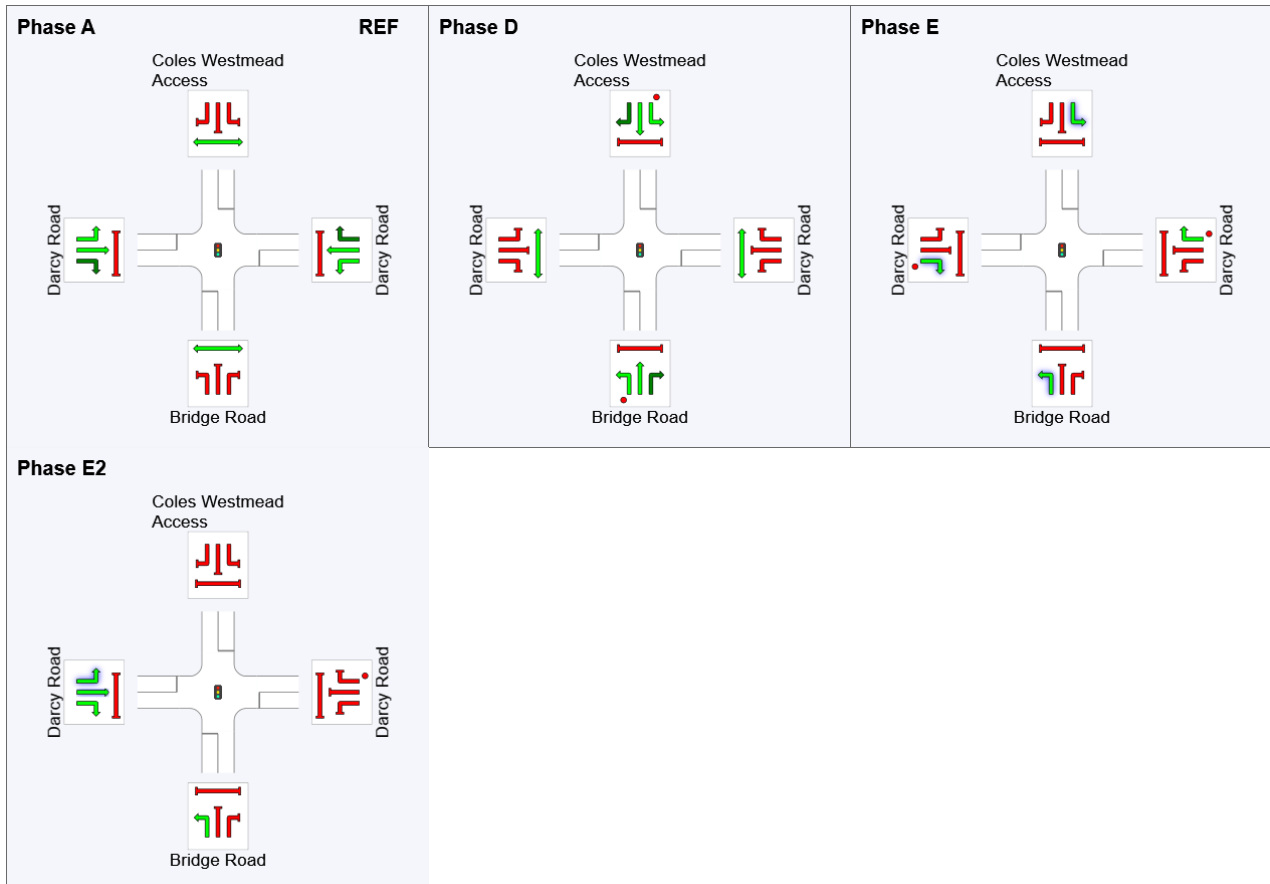
Output Phase Sequence: A, D, E, E2

Phase Timing Summary

| Phase | A | D | E | E2 |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 14 | 96 | 129 | 140 |
| Green Time (sec) | 75 | 26 | 5 | 8 |
| Phase Time (sec) | 82 | 32 | 11 | 15 |
| Phase Split | 59% | 23% | 8% | 11% |

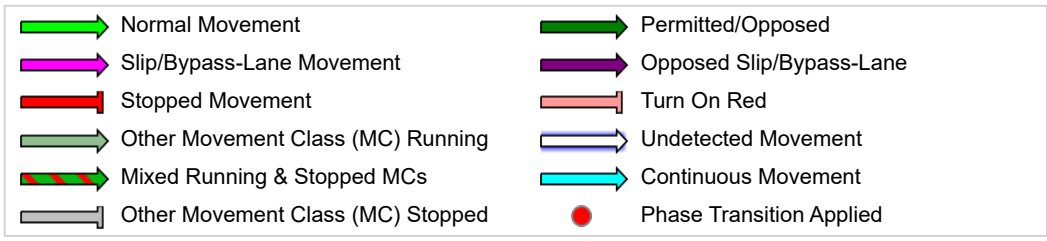
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2023 With Development PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|-------|--------------------|-------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 384 | 2.9 | 384 | 2.9 | 0.542 | 5.0 | LOS A | 4.9 | 35.2 | 0.56 | 0.58 | 0.56 | 23.6 |
| 3 | R2 | 153 | 0.7 | 153 | 0.7 | 0.542 | 8.0 | LOS A | 4.9 | 35.2 | 0.56 | 0.58 | 0.56 | 23.6 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.542 | 10.7 | LOS A | 4.9 | 35.2 | 0.56 | 0.58 | 0.56 | 24.6 |
| Approach | | 538 | 2.4 | 538 | 2.4 | 0.542 | 5.9 | LOS A | 4.9 | 35.2 | 0.56 | 0.58 | 0.56 | 23.6 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 210 | 0.5 | 207 | 0.5 | 0.567 | 12.1 | LOS A | 4.2 | 29.7 | 0.71 | 0.93 | 0.87 | 38.6 |
| 6 | R2 | 135 | 0.0 | 133 | 0.0 | 0.567 | 14.6 | LOS B | 4.2 | 29.7 | 0.71 | 0.93 | 0.87 | 39.0 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.567 | 16.0 | LOS B | 4.2 | 29.7 | 0.71 | 0.93 | 0.87 | 39.0 |
| Approach | | 346 | 0.3 | 341 ^{N1} | 0.3 | 0.567 | 13.1 | LOS A | 4.2 | 29.7 | 0.71 | 0.93 | 0.87 | 38.7 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 91 | 0.0 | 91 | 0.0 | 0.674 | 6.6 | LOS A | 6.5 | 46.6 | 0.65 | 0.62 | 0.66 | 41.6 |
| 8 | T1 | 546 | 3.5 | 546 | 3.5 | 0.674 | 6.2 | LOS A | 6.5 | 46.6 | 0.65 | 0.62 | 0.66 | 41.1 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.674 | 10.4 | LOS A | 6.5 | 46.6 | 0.65 | 0.62 | 0.66 | 41.6 |
| Approach | | 638 | 3.0 | 638 | 3.0 | 0.674 | 6.3 | LOS A | 6.5 | 46.6 | 0.65 | 0.62 | 0.66 | 41.1 |
| All Vehicles | | 1522 | 2.2 | 1517 ^{N1} | 2.2 | 0.674 | 7.7 | LOS A | 6.5 | 46.6 | 0.63 | 0.67 | 0.67 | 38.2 |

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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [PM Peak (Network Folder: 2023 With Development)]

1500 - 1600

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 106 | 104 | 101 ¹ | 102 ¹ | 103 | 110 | 108 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -31 | -17 | 0 | 0 | 0 | 15 | 28 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | | | | [Veh. veh | Dist] m | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 26 | 3.8 | 26 | 3.8 | 1.210 | 207.4 | LOS F | 88.8 | 625.8 | 1.00 | 1.86 | 2.19 | 3.3 |
| 2 | T1 | 1176 | 0.6 | 1176 | 0.6 | * 1.210 | 202.7 | LOS F | 88.8 | 625.8 | 1.00 | 1.86 | 2.19 | 3.3 |
| Approach | | 1202 | 0.7 | 1202 | 0.7 | 1.210 | 202.8 | LOS F | 88.8 | 625.8 | 1.00 | 1.86 | 2.19 | 3.3 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 43 | 0.0 | 43 | 0.0 | 1.221 | 259.0 | LOS F | 13.7 | 102.0 | 1.00 | 1.69 | 2.33 | 4.3 |
| 5 | T1 | 131 | 0.0 | 131 | 0.0 | * 1.221 | 254.5 | LOS F | 13.7 | 102.0 | 1.00 | 1.69 | 2.33 | 2.2 |
| 6 | R2 | 375 | 15.5 | 375 | 15.5 | 1.221 | 260.9 | LOS F | 34.4 | 272.3 | 1.00 | 1.60 | 2.35 | 2.2 |
| Approach | | 549 | 10.6 | 549 | 10.6 | 1.221 | 259.2 | LOS F | 34.4 | 272.3 | 1.00 | 1.63 | 2.35 | 2.3 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 415 | 14.7 | 414 | 14.7 | 0.925 | 34.3 | LOS C | 12.1 | 88.1 | 0.82 | 0.89 | 0.93 | 16.9 |
| 8 | T1 | 484 | 1.9 | 483 | 1.9 | 0.925 | 32.6 | LOS C | 12.1 | 88.1 | 0.89 | 0.92 | 1.00 | 17.3 |
| 9 | R2 | 70 | 0.0 | 70 | 0.0 | 1.235 | 286.2 | LOS F | 10.8 | 75.7 | 1.00 | 1.34 | 2.64 | 0.8 |
| Approach | | 969 | 7.2 | 967 ^{N1} | 7.2 | 1.235 | 51.7 | LOS D | 12.1 | 88.1 | 0.87 | 0.94 | 1.09 | 11.7 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 126 | 0.0 | 122 | 0.0 | 0.700 | 72.2 | LOS F | 8.9 | 62.4 | 1.00 | 0.85 | 1.09 | 19.6 |
| 11 | T1 | 386 | 0.3 | 375 | 0.3 | * 1.221 | 268.2 | LOS F | 56.3 | 395.2 | 1.00 | 1.91 | 2.42 | 8.5 |
| Approach | | 512 | 0.2 | 497 ^{N1} | 0.2 | 1.221 | 220.0 | LOS F | 56.3 | 395.2 | 1.00 | 1.65 | 2.10 | 9.7 |
| All Vehicles | | 3232 | 4.2 | 3215 ^{N1} | 4.3 | 1.235 | 169.6 | LOS F | 88.8 | 625.8 | 0.96 | 1.51 | 1.87 | 5.4 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 1314 | 4.8 | 1311 | 4.8 | 1.105 | 141.7 | LOS F | 12.3 | 88.1 | 1.00 | 1.57 | 1.82 | 1.6 |
| 3 | R2 | 363 | 0.3 | 362 | 0.3 | 1.105 | 145.9 | LOS F | 12.3 | 88.1 | 1.00 | 1.49 | 1.86 | 10.6 |
| Approach | | 1677 | 3.8 | 1673 ^{N1} | 3.8 | 1.105 | 142.6 | LOS F | 12.3 | 88.1 | 1.00 | 1.55 | 1.83 | 4.0 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 224 | 0.9 | 224 | 0.9 | 0.740 | 46.3 | LOS D | 13.2 | 93.0 | 0.95 | 0.87 | 1.02 | 22.2 |
| 6 | R2 | 36 | 0.0 | 36 | 0.0 | 0.342 | 70.7 | LOS F | 2.4 | 16.9 | 0.97 | 0.75 | 0.97 | 17.2 |
| Approach | | 260 | 0.8 | 260 | 0.8 | 0.740 | 49.7 | LOS D | 13.2 | 93.0 | 0.95 | 0.85 | 1.01 | 21.4 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 118 | 0.0 | 118 | 0.0 | 0.100 | 21.2 | LOS B | 4.2 | 35.6 | 0.42 | 0.57 | 0.42 | 34.5 |
| 8 | T1 | 745 | 11.5 | 743 | 11.6 | 0.334 | 18.7 | LOS B | 11.4 | 83.9 | 0.50 | 0.45 | 0.50 | 17.5 |
| Approach | | 863 | 10.0 | 861 ^{N1} | 10.0 | 0.334 | 19.1 | LOS B | 11.4 | 83.9 | 0.49 | 0.47 | 0.49 | 22.0 |
| All Vehicles | | 2800 | 5.4 | 2794 ^{N1} | 5.4 | 1.105 | 95.9 | LOS F | 13.2 | 93.0 | 0.84 | 1.15 | 1.34 | 6.9 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C*

Output Phase Sequence: A, E, D

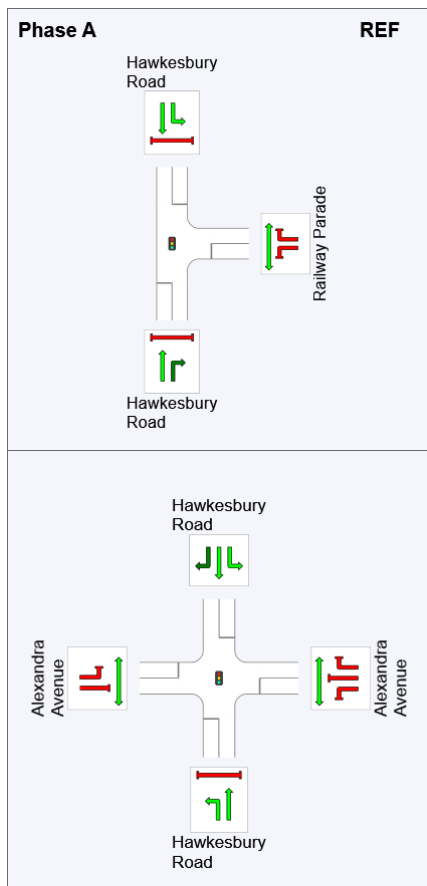
(* Variable Phase)

Phase Timing Summary (CCG)

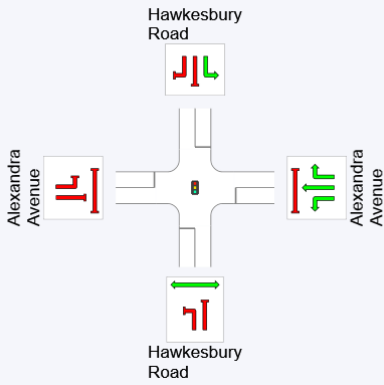
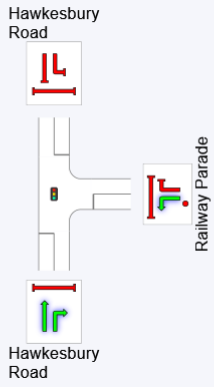
| Phase | A | E | D |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 0 | 77 | 114 |
| Green Time (sec) | 71 | 28 | 17 |
| Phase Time (sec) | 80 | 37 | 23 |
| Phase Split | 57% | 26% | 16% |

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%.

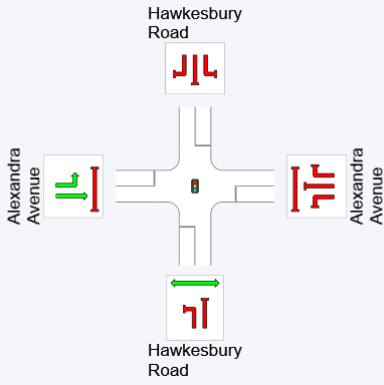
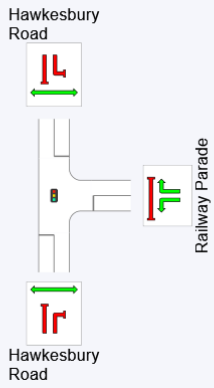
Output Phase Sequence (CCG)



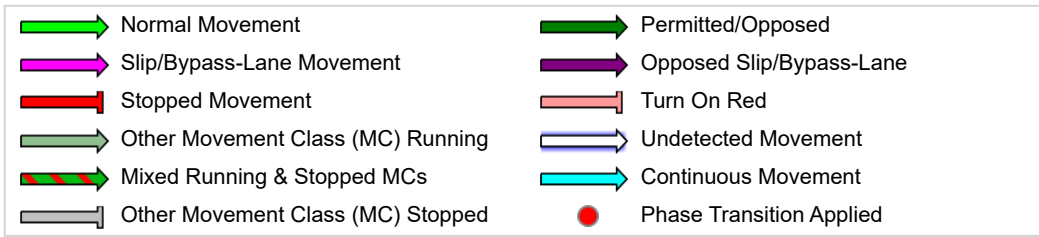
Phase E



Phase D



REF: Reference Phase
VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 84.0 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.1 |
| 25 | T1 | 346 | 3.5 | 346 | 3.5 | 0.900 | 64.7 | LOS E | 24.9 | 179.8 | 0.93 | 1.01 | 1.20 | 9.1 |
| 26 | R2 | 250 | 2.0 | 250 | 2.0 | * 1.009 | 126.1 | LOS F | 26.0 | 185.3 | 1.00 | 1.29 | 1.69 | 5.1 |
| Approach | | 604 | 4.1 | 604 | 4.1 | 1.009 | 90.3 | LOS F | 26.0 | 185.3 | 0.96 | 1.12 | 1.40 | 6.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 281 | 3.9 | 280 | 3.9 | 0.818 | 13.2 | LOS A | 5.2 | 36.8 | 0.40 | 0.61 | 0.41 | 26.9 |
| 29 | R2 | 518 | 13.1 | 516 | 13.2 | 0.910 | 60.5 | LOS E | 19.8 | 146.9 | 0.94 | 0.93 | 1.14 | 5.7 |
| Approach | | 799 | 9.9 | 795 ^{N1} | 9.9 | 0.910 | 43.9 | LOS D | 19.8 | 146.9 | 0.75 | 0.82 | 0.88 | 10.5 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 845 | 6.9 | 810 | 6.9 | * 0.998 | 92.2 | LOS F | 28.9 | 208.9 | 0.98 | 1.12 | 1.39 | 5.4 |
| 31 | T1 | 506 | 1.2 | 485 | 1.2 | 0.731 | 47.4 | LOS D | 27.7 | 195.9 | 0.90 | 0.81 | 0.90 | 16.2 |
| Approach | | 1351 | 4.7 | 1294 ^{N1} | 4.7 | 0.998 | 75.4 | LOS F | 28.9 | 208.9 | 0.95 | 1.00 | 1.21 | 8.5 |
| All Vehicles | | 2762 | 6.4 | 2701 ^{N1} | 6.5 | 1.009 | 69.5 | LOS E | 28.9 | 208.9 | 0.90 | 0.98 | 1.15 | 8.4 |

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 Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 238.5 | 208.6 | 0.87 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 191 | 64.6 | LOS F | 0.7 | 0.7 | 0.96 | 0.96 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 32.5 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 58.2 | 30.9 | 0.53 |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P72 Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | |
| P8 Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 98.9 | 41.1 | 0.42 |
| All Pedestrians | 727 | 62.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 135.1 | 87.7 | 0.65 |

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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PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

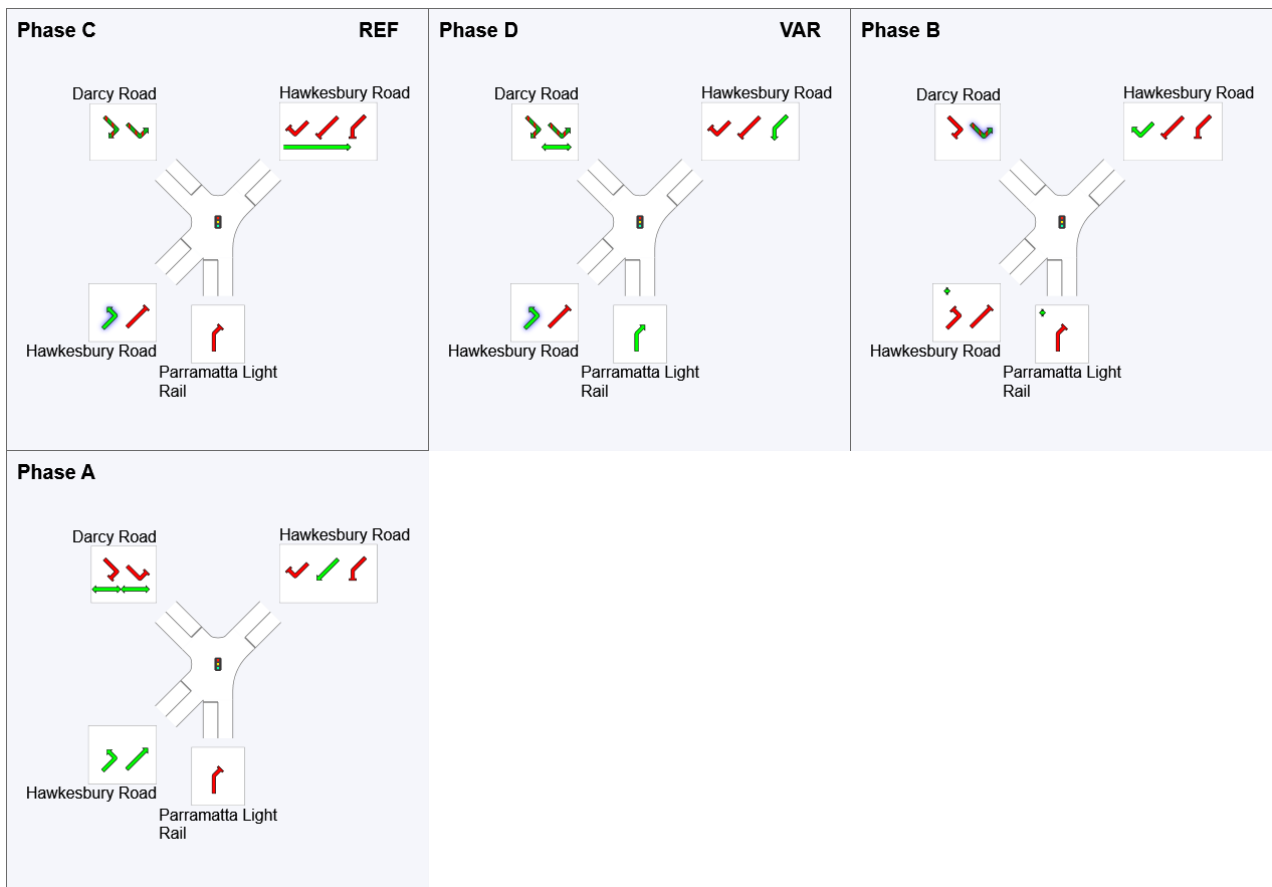
(* Variable Phase)

Phase Timing Summary

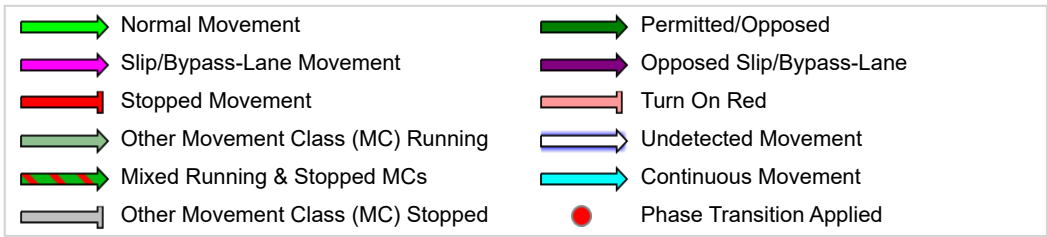
| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 33 | 47 | 89 |
| Green Time (sec) | 27 | 6 | 33 | 40 |
| Phase Time (sec) | 35 | 15 | 42 | 48 |
| Phase Split | 25% | 11% | 30% | 34% |

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



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|-------------------------------------|------|-----------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h] | HV % | [Total veh/h] | HV % | | | | [Veh. veh] | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 8 | 0.0 | 0.470 | 25.9 | LOS B | 18.6 | 134.4 | 0.64 | 0.58 | 0.64 | 21.3 | |
| 22 | T1 | 955 | 6.6 | 942 | 6.6 | 0.470 | 22.5 | LOS B | 18.6 | 134.4 | 0.64 | 0.57 | 0.64 | 11.7 | |
| 23 | R2 | 132 | 0.8 | 130 | 0.8 | *0.822 | 79.5 | LOS F | 9.4 | 66.4 | 1.00 | 0.88 | 1.19 | 8.3 | |
| Approach | | 1095 | 5.8 | 1080 ^{N1} | 5.8 | 0.822 | 29.4 | LOS C | 18.6 | 134.4 | 0.69 | 0.61 | 0.71 | 10.5 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 43 | 0.0 | 43 | 0.0 | 0.197 | 48.2 | LOS D | 2.5 | 17.6 | 0.87 | 0.67 | 0.87 | 8.1 | |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.197 | 48.2 | LOS D | 2.5 | 17.6 | 0.87 | 0.67 | 0.87 | 12.4 | |
| 26 | R2 | 75 | 6.7 | 75 | 6.7 | 0.881 | 81.5 | LOS F | 5.7 | 42.1 | 1.00 | 1.25 | 1.49 | 6.2 | |
| Approach | | 119 | 4.2 | 119 | 4.2 | 0.881 | 69.2 | LOS E | 5.7 | 42.1 | 0.95 | 1.03 | 1.26 | 6.8 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 182 | 0.5 | 181 | 0.6 | *0.603 | 26.8 | LOS B | 13.2 | 96.3 | 0.66 | 0.68 | 0.66 | 12.7 | |
| 28 | T1 | 734 | 11.4 | 730 | 11.5 | 0.603 | 22.6 | LOS B | 13.2 | 96.3 | 0.66 | 0.63 | 0.66 | 8.7 | |
| 29 | R2 | 7 | 14.3 | 7 | 14.3 | 0.048 | 72.5 | LOS F | 0.5 | 3.7 | 1.00 | 0.67 | 1.00 | 9.7 | |
| Approach | | 923 | 9.3 | 918 ^{N1} | 9.4 | 0.603 | 23.8 | LOS B | 13.2 | 96.3 | 0.67 | 0.64 | 0.67 | 10.3 | |
| SouthWest: Farm House Road | | | | | | | | | | | | | | | |
| 30 | L2 | 12 | 8.3 | 12 | 8.3 | 0.061 | 52.9 | LOS D | 0.9 | 6.6 | 0.88 | 0.69 | 0.88 | 9.9 | |
| 31 | T1 | 4 | 0.0 | 4 | 0.0 | 0.061 | 55.9 | LOS D | 0.9 | 6.6 | 0.88 | 0.69 | 0.88 | 12.1 | |
| 32 | R2 | 22 | 0.0 | 22 | 0.0 | 0.166 | 71.3 | LOS F | 1.5 | 10.2 | 0.97 | 0.70 | 0.97 | 8.0 | |
| Approach | | 38 | 2.6 | 38 | 2.6 | 0.166 | 63.9 | LOS E | 1.5 | 10.2 | 0.93 | 0.70 | 0.93 | 9.1 | |
| All Vehicles | | 2175 | 7.2 | 2155 ^{N1} | 7.2 | 0.881 | 29.8 | LOS C | 18.6 | 134.4 | 0.70 | 0.65 | 0.73 | 9.9 | |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed | |
| | | | | | [Ped ped] | Dist] m | | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | |
| P51 | Stage 1 | 233 | 64.8 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 90.5 | 30.9 | 0.34 | |
| P52 | Stage 2 | 65 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 98 | 64.4 | LOS F | 0.4 | 0.4 | 0.96 | 0.96 | 91.0 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 258 | 64.8 | LOS F | 1.0 | 1.0 | 0.97 | 0.97 | 91.4 | 31.9 | 0.35 |
| All Pedestrians | 696 | 64.7 | LOS F | 1.0 | 1.0 | 0.96 | 0.96 | 91.6 | 32.3 | 0.35 |

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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PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

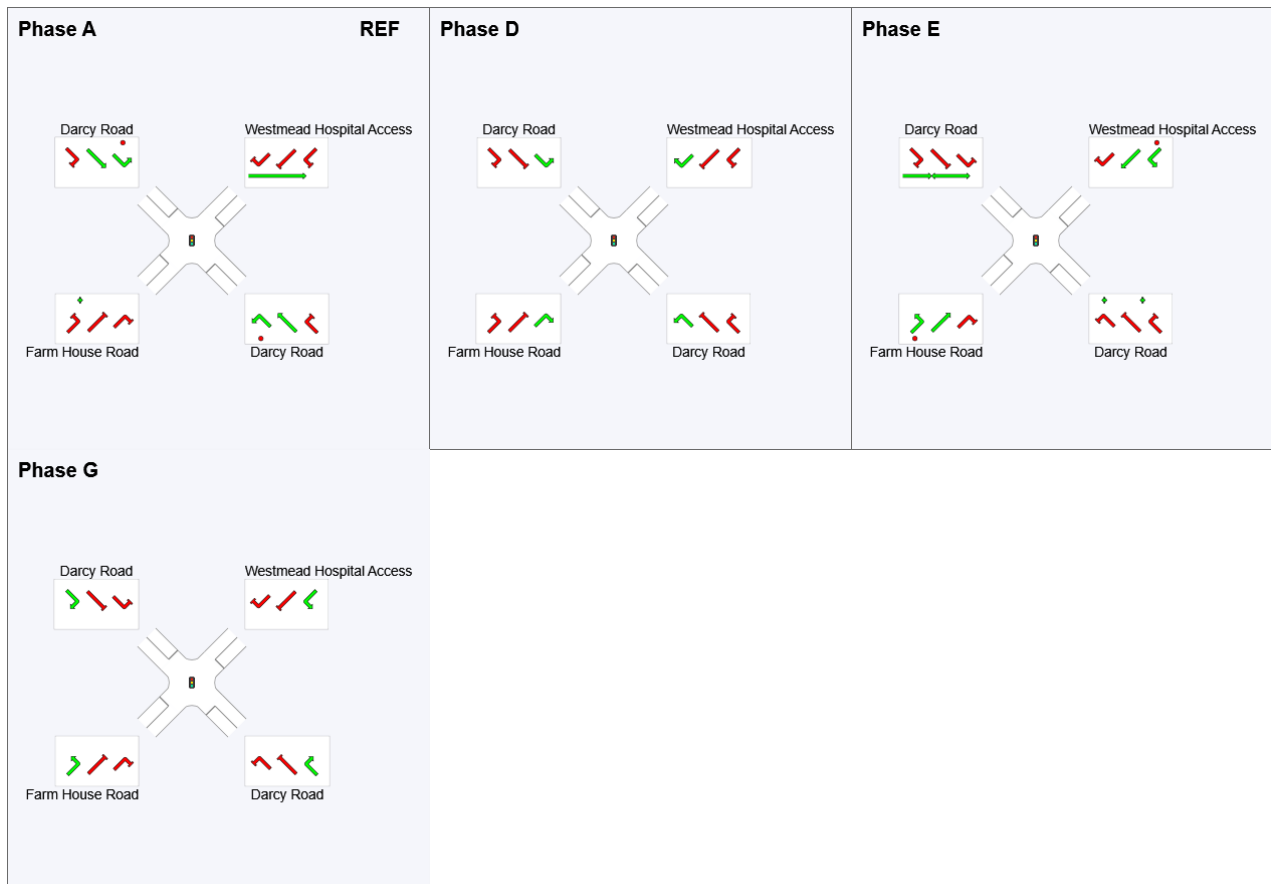
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 130 | 71 | 88 | 112 |
| Green Time (sec) | 73 | 10 | 16 | 12 |
| Phase Time (sec) | 80 | 18 | 22 | 20 |
| Phase Split | 57% | 13% | 16% | 14% |

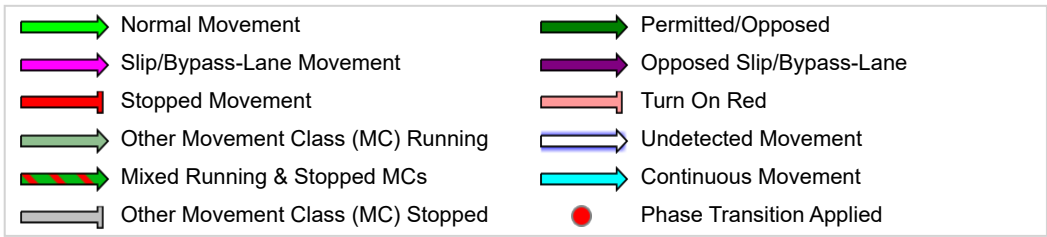
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | [Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 2 | 0.0 | 2 | 0.0 | 0.296 | 9.3 | LOS A | 0.0 | 0.3 | 0.01 | 0.00 | 0.01 | 31.1 |
| 22 | T1 | 1040 | 6.4 | 1039 | 6.5 | 0.296 | 0.0 | LOS A | 0.0 | 0.3 | 0.00 | 0.00 | 0.01 | 39.7 |
| Approach | | 1042 | 6.4 | 1041 ^N ₁ | 6.4 | 0.296 | 0.1 | NA | 0.0 | 0.3 | 0.00 | 0.00 | 0.01 | 39.6 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 923 | 9.3 | 918 | 9.4 | 0.309 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 923 | 9.3 | 918 ^{N1} | 9.4 | 0.309 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.005 | 15.7 | LOS B | 0.0 | 0.1 | 0.83 | 0.71 | 0.83 | 6.5 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.005 | 15.7 | LOS B | 0.0 | 0.1 | 0.83 | 0.71 | 0.83 | 6.5 |
| All Vehicles | | 1966 | 7.8 | 1960 ^N ₁ | 7.8 | 0.309 | 0.1 | NA | 0.0 | 0.3 | 0.00 | 0.00 | 0.00 | 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.

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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MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 8 | 0.0 | 0.406 | 17.4 | LOS B | 15.7 | 113.3 | 0.53 | 0.48 | 0.53 | 17.8 |
| 22 | T1 | 973 | 6.9 | 972 | 6.9 | 0.406 | 7.5 | LOS A | 15.7 | 113.3 | 0.29 | 0.26 | 0.29 | 23.0 |
| 23 | R2 | 59 | 0.0 | 59 | 0.0 | *0.444 | 77.7 | LOS F | 4.2 | 29.1 | 1.00 | 0.76 | 1.00 | 7.9 |
| Approach | | 1040 | 6.4 | 1039 ^{N1} | 6.5 | 0.444 | 11.5 | LOS A | 15.7 | 113.3 | 0.33 | 0.29 | 0.33 | 18.6 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 19 | 0.0 | 19 | 0.0 | 0.023 | 0.6 | LOS A | 0.1 | 0.8 | 0.13 | 0.10 | 0.13 | 19.5 |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | *0.136 | 52.5 | LOS D | 2.1 | 15.0 | 0.88 | 0.66 | 0.88 | 6.8 |
| Approach | | 56 | 0.0 | 56 | 0.0 | 0.136 | 34.9 | LOS C | 2.1 | 15.0 | 0.62 | 0.47 | 0.62 | 8.7 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 85 | 0.0 | 84 | 0.0 | *0.410 | 8.7 | LOS A | 5.9 | 43.1 | 0.20 | 0.25 | 0.20 | 21.8 |
| 28 | T1 | 904 | 9.5 | 899 | 9.6 | 0.410 | 4.0 | LOS A | 5.9 | 43.1 | 0.16 | 0.17 | 0.16 | 27.6 |
| 29 | R2 | 5 | 0.0 | 5 | 0.0 | 0.037 | 73.6 | LOS F | 0.3 | 2.4 | 1.00 | 0.65 | 1.00 | 6.9 |
| Approach | | 994 | 8.7 | 989 ^{N1} | 8.7 | 0.410 | 4.8 | LOS A | 5.9 | 43.1 | 0.17 | 0.18 | 0.17 | 25.7 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| 32 | R2 | 1 | 0.0 | 1 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| Approach | | 2 | 0.0 | 2 | 0.0 | 0.006 | 42.7 | LOS D | 0.1 | 0.7 | 0.81 | 0.51 | 0.81 | 5.7 |
| All Vehicles | | 2092 | 7.3 | 2085 ^{N1} | 7.3 | 0.444 | 9.0 | LOS A | 15.7 | 113.3 | 0.26 | 0.25 | 0.26 | 20.4 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 43 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 48 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 88.1 | 28.6 | 0.32 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 182 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 97.8 | 40.2 | 0.41 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

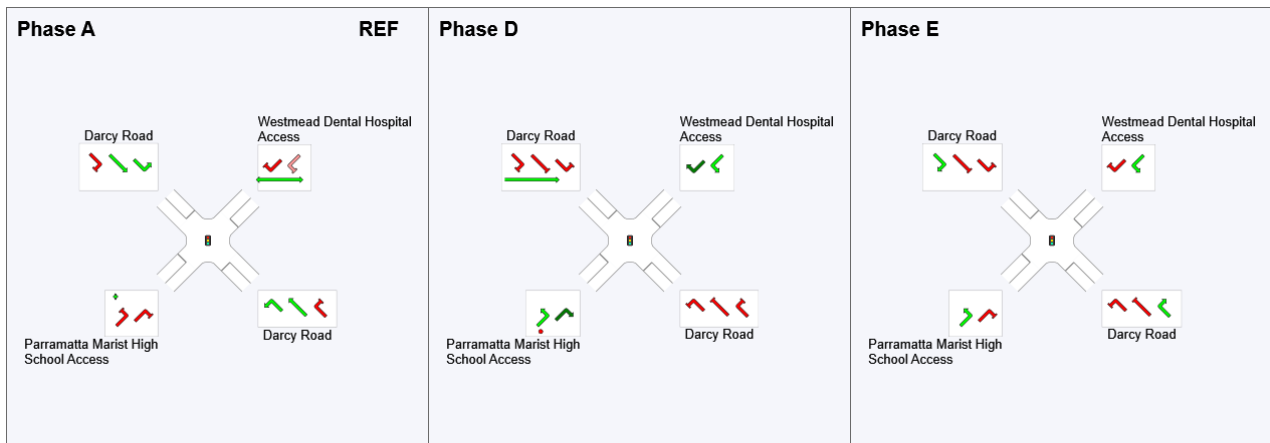
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 10 | 102 | 135 |
| Green Time (sec) | 86 | 27 | 10 |
| Phase Time (sec) | 92 | 32 | 16 |
| Phase Split | 66% | 23% | 11% |

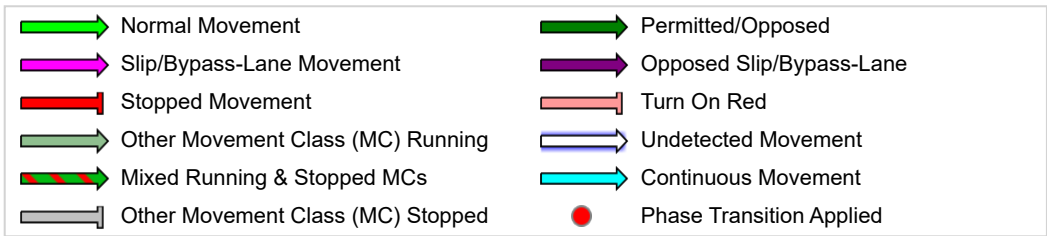
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033 Do
Minimum)]

0745 - 0845
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 36 | 0.0 | 36 | 0.0 | 0.191 | 3.9 | LOS A | 0.2 | 1.7 | 0.06 | 0.07 | 0.06 | 26.2 |
| 22 | T1 | 974 | 7.0 | 973 | 7.0 | 0.191 | 0.0 | LOS A | 11.3 | 81.6 | 0.01 | 0.02 | 0.01 | 39.3 |
| Approach | | 1010 | 6.7 | 1009 ^N ₁ | 6.7 | 0.191 | 0.2 | NA | 11.3 | 81.6 | 0.01 | 0.02 | 0.01 | 38.0 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 994 | 8.5 | 989 | 8.5 | 0.251 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 994 | 8.5 | 989 ^{N1} | 8.5 | 0.251 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.3 | LOS A | 0.0 | 0.0 | 0.37 | 0.16 | 0.37 | 18.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.3 | LOS A | 0.0 | 0.0 | 0.37 | 0.16 | 0.37 | 18.6 |
| All Vehicles | | 2005 | 7.6 | 1998 ^N ₁ | 7.6 | 0.251 | 0.1 | NA | 11.3 | 81.6 | 0.01 | 0.01 | 0.01 | 38.7 |

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.

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MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
(Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033 Do
Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 640 | 1.3 | 639 | 1.3 | 0.311 | 16.9 | LOS B | 10.1 | 71.5 | 0.42 | 0.60 | 0.42 | 10.3 |
| 23a | R1 | 334 | 18.6 | 334 | 18.6 | *0.913 | 74.0 | LOS F | 11.8 | 89.8 | 0.99 | 1.00 | 1.22 | 16.2 |
| Approach | | 974 | 7.2 | 973 ^{N1} | 7.2 | 0.913 | 36.5 | LOS C | 11.8 | 89.8 | 0.61 | 0.74 | 0.69 | 14.6 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 51 | 2.0 | 51 | 2.0 | 0.518 | 75.2 | LOS F | 4.2 | 30.2 | 1.00 | 0.76 | 1.00 | 13.0 |
| 5 | T1 | 79 | 2.5 | 79 | 2.5 | *0.518 | 70.6 | LOS F | 4.9 | 34.9 | 1.00 | 0.76 | 1.00 | 13.3 |
| 6 | R2 | 2 | 0.0 | 2 | 0.0 | 0.518 | 74.9 | LOS F | 4.9 | 34.9 | 1.00 | 0.76 | 1.00 | 21.1 |
| Approach | | 132 | 2.3 | 132 | 2.3 | 0.518 | 72.4 | LOS F | 4.9 | 34.9 | 1.00 | 0.76 | 1.00 | 13.4 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 7 | 0.0 | 7 | 0.0 | 0.176 | 24.8 | LOS B | 5.2 | 44.6 | 0.60 | 0.61 | 0.60 | 30.9 |
| 7a | L1 | 170 | 44.1 | 170 | 44.1 | 0.176 | 23.1 | LOS B | 5.2 | 44.6 | 0.59 | 0.59 | 0.59 | 26.4 |
| 9 | R2 | 126 | 10.3 | 126 | 10.3 | 0.309 | 51.0 | LOS D | 7.1 | 54.1 | 0.87 | 0.77 | 0.87 | 18.6 |
| Approach | | 303 | 29.0 | 303 | 29.0 | 0.309 | 34.7 | LOS C | 7.1 | 54.1 | 0.71 | 0.67 | 0.71 | 22.7 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 196 | 8.7 | 196 | 8.7 | 1.007 | 87.9 | LOS F | 12.7 | 91.4 | 1.00 | 1.18 | 1.46 | 12.9 |
| 11 | T1 | 223 | 0.4 | 223 | 0.4 | *1.007 | 84.7 | LOS F | 12.7 | 91.4 | 1.00 | 1.18 | 1.46 | 11.1 |
| 12a | R1 | 772 | 1.0 | 772 | 1.0 | 1.007 | 101.5 | LOS F | 12.9 | 91.4 | 1.00 | 1.26 | 1.48 | 2.5 |
| Approach | | 1191 | 2.2 | 1191 | 2.2 | 1.007 | 96.1 | LOS F | 12.9 | 91.4 | 1.00 | 1.23 | 1.47 | 6.5 |
| All Vehicles | | 2600 | 7.2 | 2599 ^{N1} | 7.2 | 1.007 | 65.4 | LOS E | 12.9 | 91.4 | 0.82 | 0.96 | 1.07 | 10.3 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

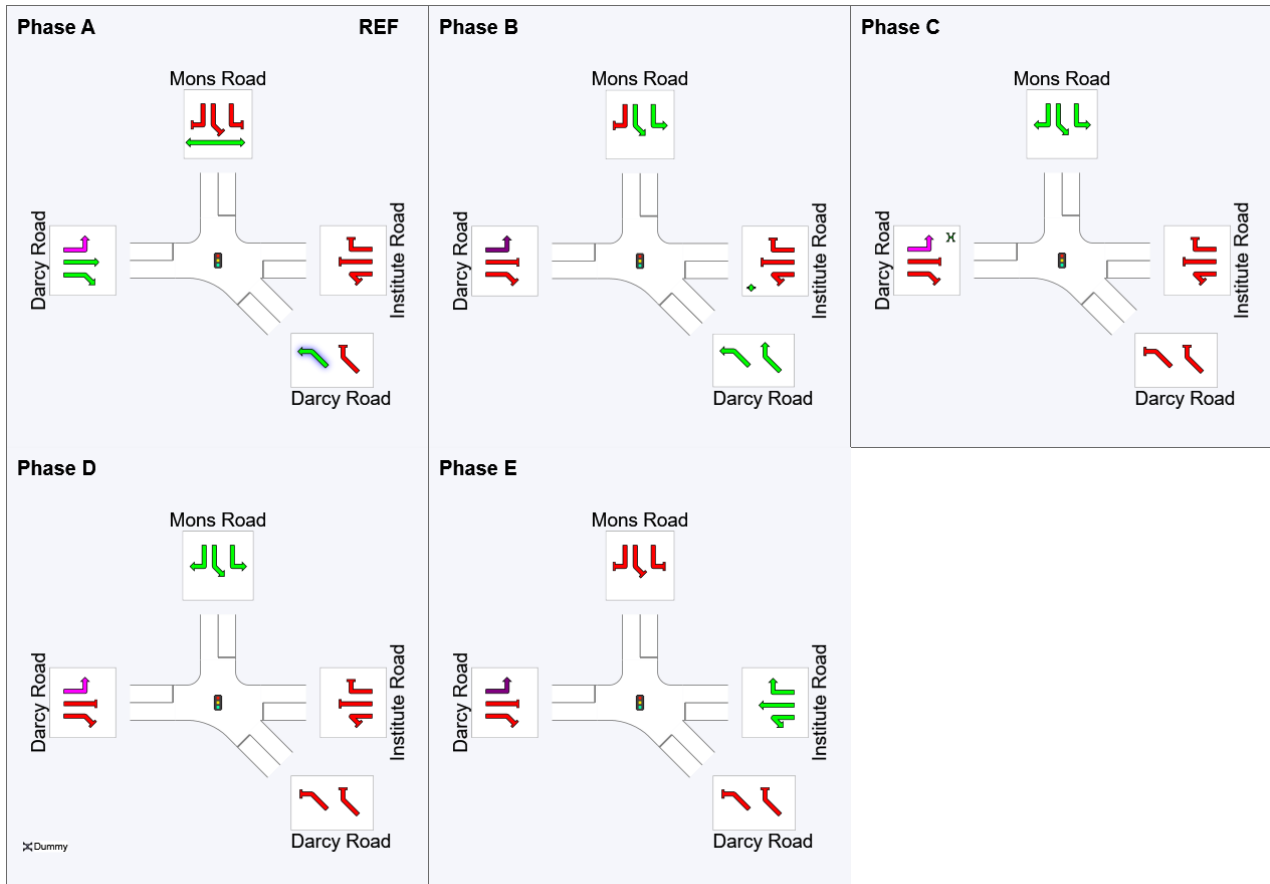
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 50 | 82 | 114 | 124 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 11% |

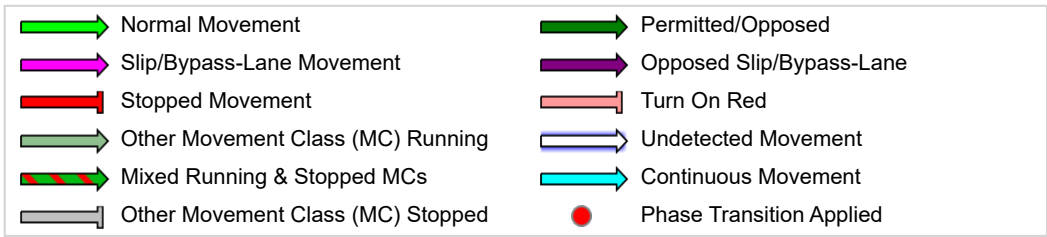
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

 Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2033 Do Minimum AM Peak)]

 Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 434 | 1.2 | 434 | 1.2 | 0.704 | 8.7 | LOS A | 5.7 | 40.1 | 0.57 | 1.39 | 1.03 | 9.5 | |
| Approach | | 434 | 1.2 | 434 | 1.2 | 0.704 | 8.7 | LOS A | 5.7 | 40.1 | 0.57 | 1.39 | 1.03 | 9.5 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 176 | 1.7 | 176 | 1.7 | 0.096 | 7.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.76 | 0.00 | 18.9 | |
| 5 | T1 | 669 | 2.8 | 668 | 2.8 | 0.259 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 | |
| Approach | | 845 | 2.6 | 844 ^{N1} | 2.6 | 0.259 | 1.5 | NA | 0.0 | 0.0 | 0.00 | 0.16 | 0.00 | 32.0 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 1191 | 2.6 | 1191 | 2.6 | 0.395 | 2.7 | LOS A | 46.3 | 331.0 | 0.21 | 0.28 | 0.22 | 36.1 | |
| 12 | R2 | 371 | 1.3 | 371 | 1.3 | 0.947 | 41.9 | LOS C | 10.2 | 72.0 | 0.78 | 1.92 | 3.94 | 15.6 | |
| Approach | | 1562 | 2.3 | 1562 | 2.3 | 0.947 | 12.0 | LOS A | 46.3 | 331.0 | 0.34 | 0.67 | 1.11 | 27.4 | |
| All Vehicles | | 2841 | 2.2 | 2840 ^{N1} | 2.2 | 0.947 | 8.4 | NA | 46.3 | 331.0 | 0.28 | 0.63 | 0.77 | 18.8 | |

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.

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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MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 153 | 2.6 | 153 | 2.6 | 0.159 | 19.9 | LOS B | 4.9 | 35.1 | 0.54 | 0.69 | 0.54 | 34.0 |
| 2 | T1 | 17 | 5.9 | 17 | 5.9 | 0.961 | 100.3 | LOS F | 18.1 | 131.1 | 1.00 | 1.09 | 1.54 | 12.9 |
| 3 | R2 | 191 | 4.2 | 191 | 4.2 | *0.961 | 99.8 | LOS F | 18.1 | 131.1 | 1.00 | 1.09 | 1.54 | 12.5 |
| Approach | | 361 | 3.6 | 361 | 3.6 | 0.961 | 66.0 | LOS E | 18.1 | 131.1 | 0.81 | 0.92 | 1.12 | 18.2 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 345 | 2.3 | 345 | 2.3 | 1.044 | 129.7 | LOS F | 58.3 | 416.7 | 1.00 | 1.25 | 1.60 | 7.1 |
| 5 | T1 | 731 | 2.6 | 731 | 2.6 | *1.044 | 126.1 | LOS F | 58.3 | 416.7 | 1.00 | 1.33 | 1.61 | 10.1 |
| 6 | R2 | 27 | 0.0 | 27 | 0.0 | 0.257 | 52.9 | LOS D | 1.7 | 11.9 | 0.90 | 0.76 | 0.90 | 15.1 |
| Approach | | 1103 | 2.4 | 1102 ^N | 2.4 | 1.044 | 125.4 | LOS F | 58.3 | 416.7 | 1.00 | 1.29 | 1.59 | 9.2 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 15 | 6.7 | 15 | 6.7 | 0.046 | 46.8 | LOS D | 0.8 | 6.0 | 0.82 | 0.59 | 0.82 | 4.0 |
| 8 | T1 | 17 | 0.0 | 17 | 0.0 | 0.167 | 52.1 | LOS D | 2.6 | 18.2 | 0.88 | 0.67 | 0.88 | 3.8 |
| 9 | R2 | 27 | 3.7 | 27 | 3.7 | 0.167 | 52.1 | LOS D | 2.6 | 18.2 | 0.88 | 0.67 | 0.88 | 10.5 |
| Approach | | 59 | 3.4 | 59 | 3.4 | 0.167 | 50.8 | LOS D | 2.6 | 18.2 | 0.86 | 0.65 | 0.86 | 7.3 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | 0.666 | 9.6 | LOS A | 14.6 | 103.8 | 0.27 | 0.27 | 0.27 | 29.9 |
| 11 | T1 | 1355 | 1.8 | 1355 | 1.8 | 0.666 | 4.7 | LOS A | 14.6 | 103.8 | 0.25 | 0.23 | 0.25 | 35.9 |
| 12 | R2 | 253 | 0.8 | 253 | 0.8 | *0.951 | 68.8 | LOS E | 14.0 | 98.9 | 0.72 | 0.98 | 1.14 | 7.6 |
| Approach | | 1637 | 1.6 | 1637 | 1.6 | 0.951 | 14.7 | LOS B | 14.6 | 103.8 | 0.32 | 0.35 | 0.38 | 22.6 |
| All Vehicles | | 3160 | 2.2 | 3159 ^N | 2.2 | 1.044 | 59.9 | LOS E | 58.3 | 416.7 | 0.62 | 0.75 | 0.90 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | ped/h | sec | | [Ped ped | Dist] m | | | sec | m | m/sec |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 67 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 40 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |

| | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 Full | 78 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 92.1 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | |
| P4 Full | 55 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | 240 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 93.4 | 35.0 | 0.37 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E*, E2*

Output Phase Sequence: A, D, E2*

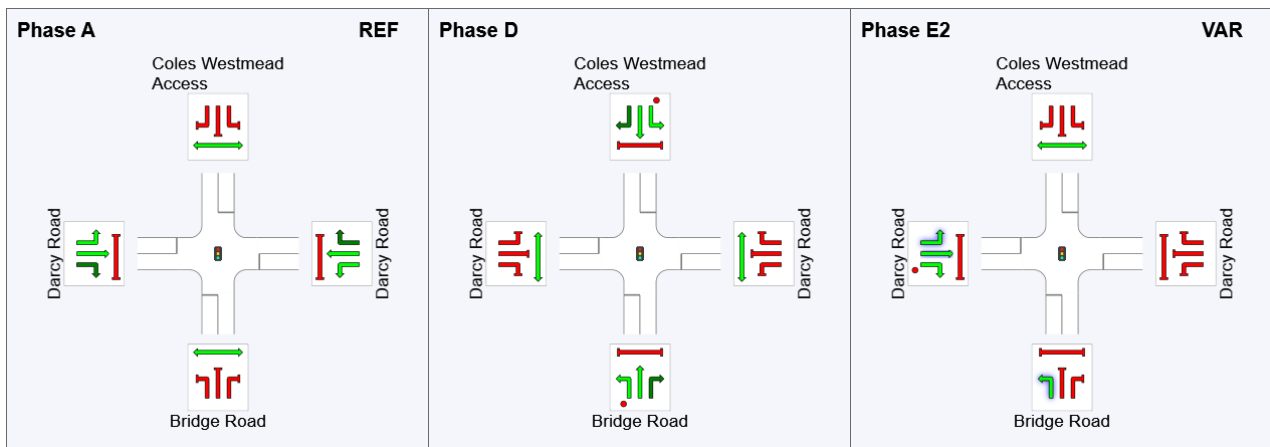
(* Variable Phase)

Phase Timing Summary

| Phase | A | D | E2 |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 121 | 32 | 71 |
| Green Time (sec) | 44 | 32 | 44 |
| Phase Time (sec) | 51 | 38 | 51 |
| Phase Split | 36% | 27% | 36% |

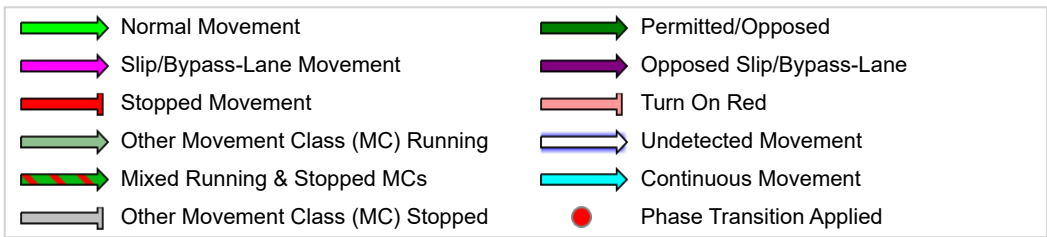
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 Do Minimum AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 471 | 0.2 | 471 | 0.2 | 0.638 | 4.1 | LOS A | 7.7 | 54.1 | 0.45 | 0.50 | 0.45 | 24.2 |
| 3 | R2 | 307 | 0.3 | 307 | 0.3 | 0.638 | 7.2 | LOS A | 7.7 | 54.1 | 0.45 | 0.50 | 0.45 | 24.2 |
| 3u | U | 4 | 0.0 | 4 | 0.0 | 0.638 | 8.6 | LOS A | 7.7 | 54.1 | 0.45 | 0.50 | 0.45 | 27.4 |
| Approach | | 782 | 0.3 | 782 | 0.3 | 0.638 | 5.4 | LOS A | 7.7 | 54.1 | 0.45 | 0.50 | 0.45 | 24.2 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 132 | 0.8 | 132 | 0.8 | 0.380 | 10.2 | LOS A | 2.3 | 15.9 | 0.75 | 0.88 | 0.76 | 39.9 |
| 6 | R2 | 54 | 1.9 | 54 | 1.9 | 0.380 | 12.8 | LOS A | 2.3 | 15.9 | 0.75 | 0.88 | 0.76 | 40.4 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.380 | 14.0 | LOS A | 2.3 | 15.9 | 0.75 | 0.88 | 0.76 | 40.4 |
| Approach | | 188 | 1.1 | 188 | 1.1 | 0.380 | 11.0 | LOS A | 2.3 | 15.9 | 0.75 | 0.88 | 0.76 | 40.0 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 175 | 0.6 | 174 | 0.6 | 1.085 | 101.6 | LOS F | 67.8 | 475.5 | 1.00 | 2.94 | 4.86 | 12.3 |
| 8 | T1 | 682 | 0.1 | 677 | 0.1 | 1.085 | 101.1 | LOS F | 67.8 | 475.5 | 1.00 | 2.94 | 4.86 | 13.3 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 1.085 | 105.3 | LOS F | 67.8 | 475.5 | 1.00 | 2.94 | 4.86 | 12.3 |
| Approach | | 858 | 0.2 | 851 ^{N1} | 0.2 | 1.085 | 101.2 | LOS F | 67.8 | 475.5 | 1.00 | 2.94 | 4.86 | 13.1 |
| All Vehicles | | 1828 | 0.3 | 1821 ^{N1} | 0.3 | 1.085 | 50.7 | LOS D | 67.8 | 475.5 | 0.74 | 1.68 | 2.54 | 16.1 |

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.

Roundabout Capacity Model: SIDRA Standard.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

SIGNAL OFFSETS

■ Network: N101 [AM Peak (Network Folder: 2033 Do Minimum)]

0745 - 0845

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 110 | 104 | 101 ¹ | 102 ¹ | 103 | 108 | 106 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -18 | -8 | 0 | 0 | 0 | 0 | 10 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|-----------------|----------|--------------------------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | v/c | sec | | [Veh. veh] | [Dist m] | | | | km/h |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 54 | 0.0 | 54 | 0.0 | 0.841 | 66.3 | LOS E | 25.3 | 179.2 | 1.00 | 0.96 | 1.13 | 9.3 |
| 2 | T1 | 637 | 1.4 | 637 | 1.4 | 0.841 | 62.0 | LOS E | 25.3 | 179.2 | 1.00 | 0.97 | 1.14 | 9.3 |
| Approach | | 691 | 1.3 | 691 | 1.3 | 0.841 | 62.3 | LOS E | 25.3 | 179.2 | 1.00 | 0.97 | 1.14 | 9.3 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 33 | 0.0 | 33 | 0.0 | 0.876 | 72.9 | LOS F | 12.8 | 92.5 | 1.00 | 1.00 | 1.20 | 13.3 |
| 5 | T1 | 245 | 0.0 | 245 | 0.0 | *0.876 | 68.5 | LOS E | 12.8 | 92.5 | 1.00 | 1.00 | 1.20 | 7.5 |
| 6 | R2 | 312 | 21.5 | 312 | 21.5 | 0.876 | 75.7 | LOS F | 19.4 | 160.9 | 1.00 | 0.99 | 1.25 | 7.0 |
| Approach | | 590 | 11.4 | 590 | 11.4 | 0.876 | 72.6 | LOS F | 19.4 | 160.9 | 1.00 | 0.99 | 1.23 | 7.6 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 351 | 19.1 | 288 | 19.1 | 0.733 | 16.1 | LOS B | 12.1 | 88.1 | 0.54 | 0.62 | 0.54 | 25.6 |
| 8 | T1 | 913 | 1.1 | 749 | 1.0 | 0.733 | 24.4 | LOS B | 12.5 | 88.1 | 0.81 | 0.76 | 0.81 | 20.8 |
| 9 | R2 | 96 | 0.0 | 79 | 0.0 | 0.733 | 39.0 | LOS C | 12.5 | 88.1 | 1.00 | 0.89 | 1.00 | 6.2 |
| Approach | | 1360 | 5.7 | 1116 ^N ₁ | 5.6 | 0.733 | 23.3 | LOS B | 12.5 | 88.1 | 0.75 | 0.74 | 0.75 | 20.6 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 94 | 0.0 | 93 | 0.0 | 0.143 | 34.2 | LOS C | 4.1 | 28.6 | 0.69 | 0.72 | 0.69 | 28.8 |
| 11 | T1 | 212 | 0.5 | 210 | 0.5 | *0.891 | 77.6 | LOS F | 16.1 | 113.0 | 1.00 | 1.04 | 1.31 | 21.3 |
| Approach | | 306 | 0.3 | 304 ^{N1} | 0.3 | 0.891 | 64.3 | LOS E | 16.1 | 113.0 | 0.90 | 0.94 | 1.12 | 22.9 |
| All Vehicles | | 2947 | 5.2 | 2701 ^N ₁ | 5.7 | 0.891 | 48.7 | LOS D | 25.3 | 179.2 | 0.89 | 0.87 | 1.00 | 14.3 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 804 | 9.2 | 803 | 9.2 | 0.458 | 4.4 | LOS A | 8.8 | 63.6 | 0.28 | 0.27 | 0.28 | 25.0 |
| 3 | R2 | 239 | 0.0 | 239 | 0.0 | *0.458 | 14.6 | LOS B | 8.8 | 63.6 | 0.69 | 0.70 | 0.69 | 37.6 |
| Approach | | 1043 | 7.1 | 1042 ^N ₁ | 7.1 | 0.458 | 6.7 | LOS A | 8.8 | 63.6 | 0.37 | 0.37 | 0.37 | 32.9 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 298 | 0.3 | 298 | 0.3 | 0.557 | 19.0 | LOS B | 10.8 | 75.9 | 0.66 | 0.76 | 0.66 | 33.1 |
| 6 | R2 | 27 | 0.0 | 27 | 0.0 | 0.145 | 66.8 | LOS E | 1.7 | 11.9 | 0.94 | 0.72 | 0.94 | 17.9 |
| Approach | | 325 | 0.3 | 325 | 0.3 | 0.557 | 23.0 | LOS B | 10.8 | 75.9 | 0.69 | 0.76 | 0.69 | 30.9 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 79 | 0.0 | 61 | 0.0 | 0.134 | 50.3 | LOS D | 4.9 | 43.8 | 0.83 | 0.71 | 0.83 | 24.2 |
| 8 | T1 | 1061 | 7.4 | 817 | 7.8 | *0.883 | 55.4 | LOS D | 27.1 | 196.5 | 0.99 | 0.94 | 1.10 | 7.7 |
| Approach | | 1140 | 6.8 | 878 ^{N1} | 7.3 | 0.883 | 55.1 | LOS D | 27.1 | 196.5 | 0.98 | 0.93 | 1.08 | 9.3 |
| All Vehicles | | 2508 | 6.1 | 2245 ^N ₁ | 6.8 | 0.883 | 28.0 | LOS B | 27.1 | 196.5 | 0.66 | 0.64 | 0.69 | 18.5 |

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 (CCG) | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| | | ped/h | sec | | | | | | sec | m | m/sec |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C

Output Phase Sequence: A, E, D, C

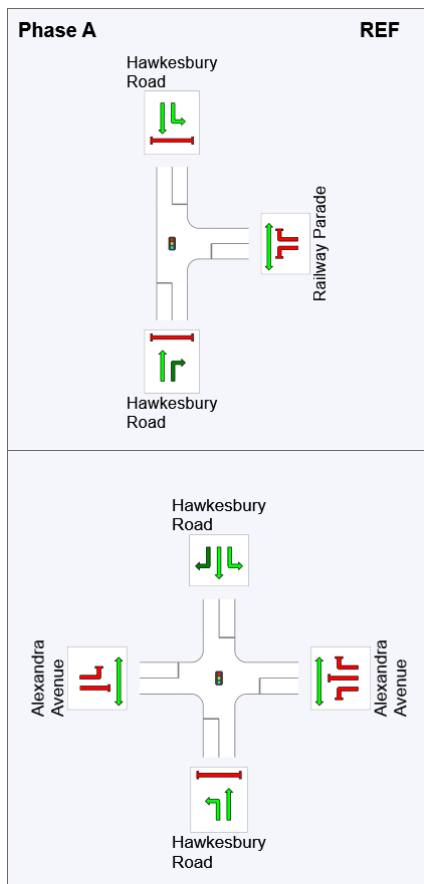
(* Variable Phase)

Phase Timing Summary (CCG)

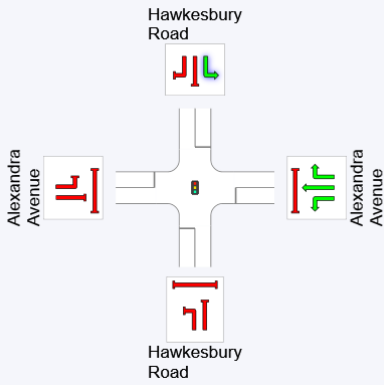
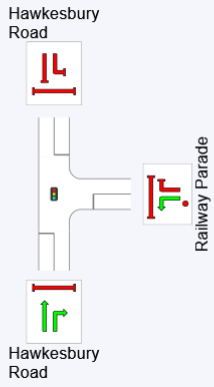
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 39 | 77 | 103 |
| Green Time (sec) | 33 | 29 | 17 | 31 |
| Phase Time (sec) | 42 | 38 | 23 | 37 |
| Phase Split | 30% | 27% | 16% | 26% |

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%.

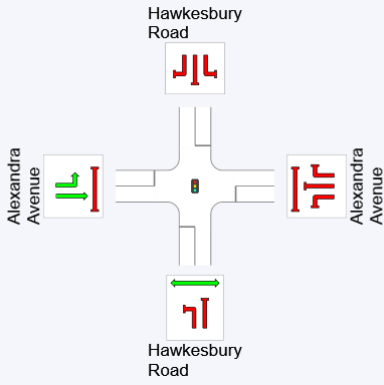
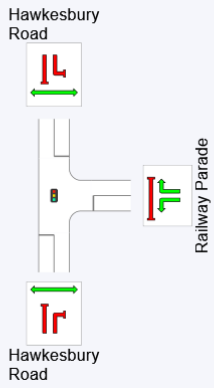
Output Phase Sequence (CCG)

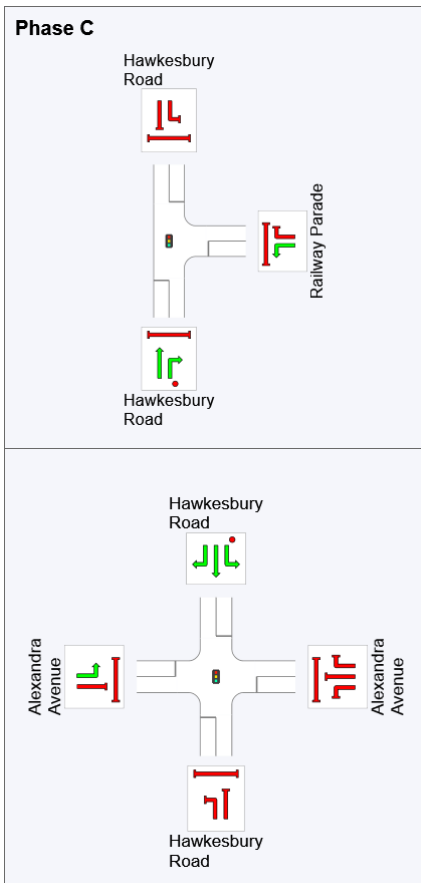


Phase E

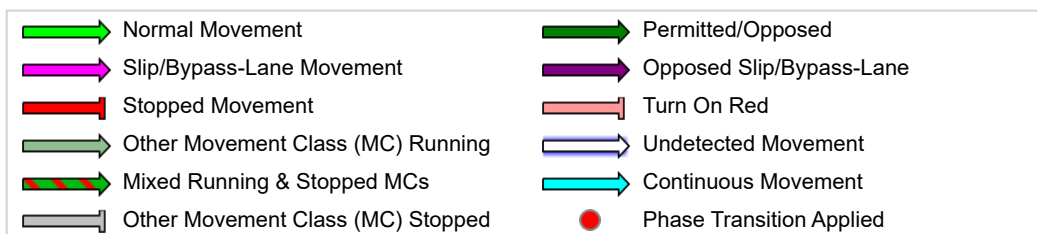


Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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 |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.215 | 80.5 | LOS F | 0.6 | 15.9 | 0.99 | 0.69 | 0.99 | 10.6 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.215 | 80.5 | LOS F | 0.6 | 15.9 | 0.99 | 0.69 | 0.99 | 10.6 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.144 | 78.5 | LOS F | 0.6 | 15.3 | 0.98 | 0.68 | 0.98 | 10.6 |
| 25 | T1 | 537 | 2.4 | 537 | 2.4 | * 1.280 | 296.9 | LOS F | 85.4 | 610.1 | 0.98 | 2.07 | 2.51 | 2.3 |
| 26 | R2 | 347 | 2.6 | 347 | 2.6 | * 1.228 | 263.4 | LOS F | 51.1 | 366.0 | 1.00 | 1.69 | 2.35 | 2.5 |
| Approach | | 892 | 3.4 | 892 | 3.4 | 1.280 | 281.9 | LOS F | 85.4 | 610.1 | 0.99 | 1.91 | 2.43 | 2.4 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 198 | 5.1 | 186 | 5.3 | 1.174 | 21.8 | LOS B | 5.0 | 65.1 | 0.53 | 0.67 | 0.56 | 24.3 |
| 29 | R2 | 604 | 10.4 | 568 | 10.8 | * 1.257 | 268.2 | LOS F | 20.0 | 146.9 | 0.95 | 1.69 | 2.34 | 1.4 |
| Approach | | 802 | 9.1 | 754 ^{N1} | 9.4 | 1.257 | 207.4 | LOS F | 20.0 | 146.9 | 0.84 | 1.44 | 1.90 | 2.5 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 514 | 13.2 | 514 | 13.2 | 0.337 | 13.4 | LOS A | 11.0 | 81.7 | 0.37 | 0.66 | 0.37 | 21.8 |
| 31 | T1 | 317 | 2.5 | 317 | 2.5 | 0.395 | 49.3 | LOS D | 19.3 | 138.1 | 0.97 | 0.82 | 0.97 | 15.8 |
| Approach | | 831 | 9.1 | 831 | 9.2 | 0.395 | 27.1 | LOS B | 19.3 | 138.1 | 0.60 | 0.72 | 0.60 | 17.8 |
| All Vehicles | | 2533 | 7.4 | 2485 ^{N1} | 7.5 | 1.280 | 173.5 | LOS F | 85.4 | 610.1 | 0.81 | 1.37 | 1.65 | 3.6 |

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 | 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 |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 238.3 | 208.6 | 0.88 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 202 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 30.2 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 55.9 | 30.9 | 0.55 |
| P72 | Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |

| SouthWest: Hawkesbury Road | | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|--|
| P8 Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 98.7 | 41.1 | 0.42 | |
| All Pedestrians | 580 | 61.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 124.9 | 76.7 | 0.61 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

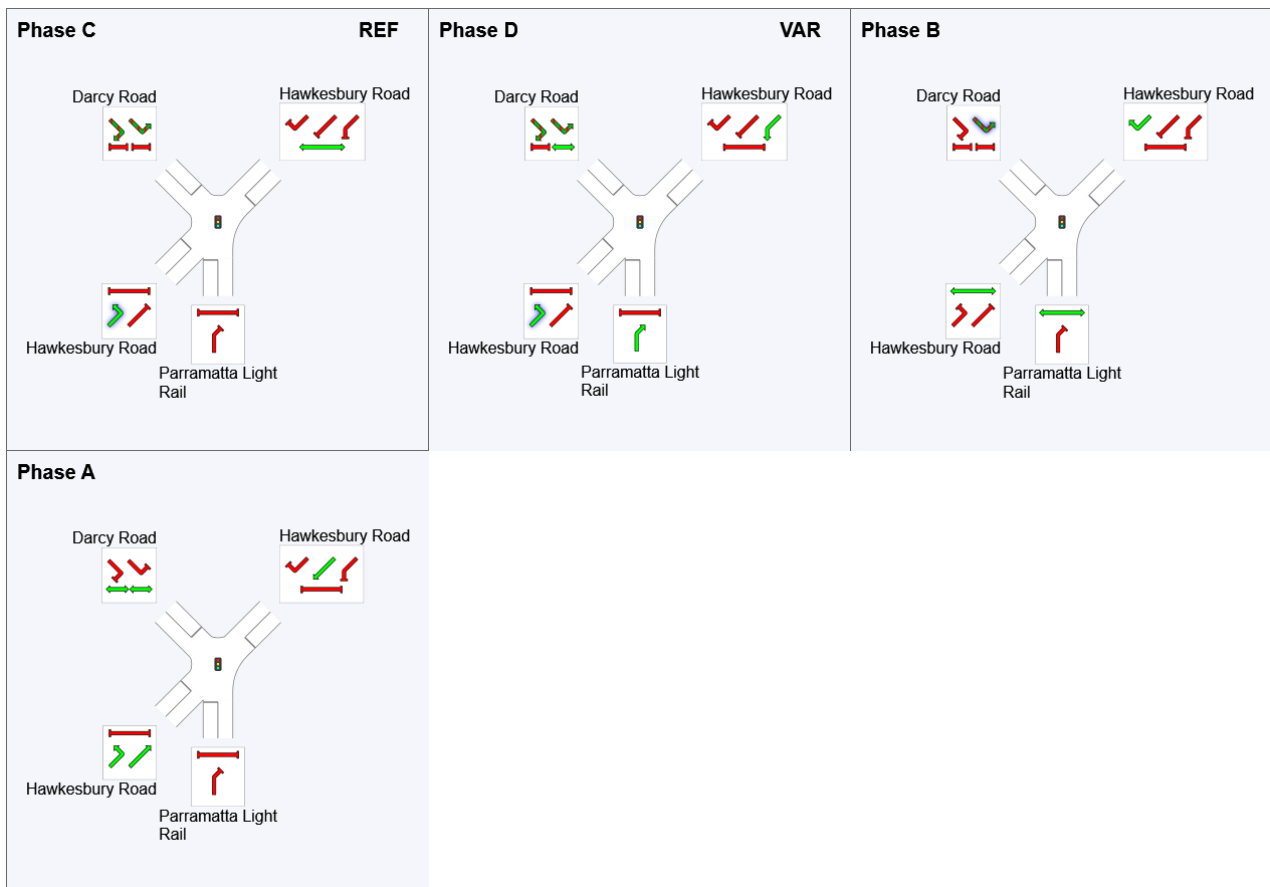
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 42 | 57 | 90 |
| Green Time (sec) | 36 | 7 | 24 | 39 |
| Phase Time (sec) | 44 | 16 | 33 | 47 |
| Phase Split | 31% | 11% | 24% | 34% |

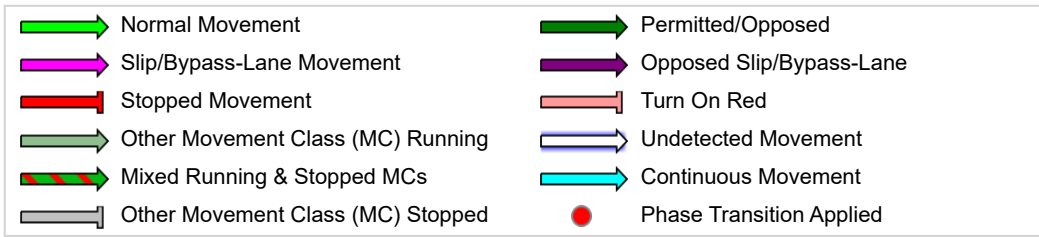
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.339 | 24.9 | LOS B | 14.8 | 108.1 | 0.70 | 0.61 | 0.70 | 21.8 | |
| 22 | T1 | 765 | 9.3 | 708 | 9.8 | 0.339 | 21.0 | LOS B | 14.8 | 108.1 | 0.68 | 0.59 | 0.68 | 12.3 | |
| 23 | R2 | 89 | 0.0 | 82 | 0.0 | *0.686 | 72.2 | LOS F | 5.6 | 39.4 | 0.99 | 0.78 | 1.02 | 8.8 | |
| Approach | | 862 | 8.2 | 797 ^{N1} | 8.7 | 0.686 | 26.3 | LOS B | 14.8 | 108.1 | 0.71 | 0.61 | 0.71 | 11.2 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 67 | 3.0 | 67 | 3.0 | 0.559 | 54.0 | LOS D | 4.3 | 30.6 | 0.93 | 0.75 | 0.95 | 7.7 | |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.559 | 54.0 | LOS D | 4.3 | 30.6 | 0.93 | 0.75 | 0.95 | 11.9 | |
| 26 | R2 | 180 | 0.0 | 180 | 0.0 | 0.716 | 51.7 | LOS D | 11.0 | 76.9 | 0.96 | 0.86 | 1.02 | 7.9 | |
| Approach | | 248 | 0.8 | 248 | 0.8 | 0.716 | 52.4 | LOS D | 11.0 | 76.9 | 0.95 | 0.83 | 1.00 | 7.8 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 124 | 0.8 | 115 | 0.8 | *0.654 | 22.6 | LOS B | 13.2 | 96.3 | 0.59 | 0.62 | 0.59 | 13.4 | |
| 28 | T1 | 674 | 10.7 | 626 | 11.2 | 0.654 | 21.2 | LOS B | 13.2 | 96.3 | 0.68 | 0.65 | 0.68 | 10.3 | |
| 29 | R2 | 7 | 0.0 | 6 | 0.0 | 0.054 | 74.5 | LOS F | 0.4 | 3.1 | 1.00 | 0.66 | 1.00 | 9.5 | |
| Approach | | 805 | 9.1 | 747 ^{N1} | 9.5 | 0.654 | 21.9 | LOS B | 13.2 | 96.3 | 0.67 | 0.64 | 0.67 | 10.6 | |
| SouthWest: Farm House Road | | | | | | | | | | | | | | | |
| 30 | L2 | 39 | 0.0 | 39 | 0.0 | 0.156 | 53.3 | LOS D | 2.5 | 17.5 | 0.89 | 0.72 | 0.89 | 9.9 | |
| 31 | T1 | 5 | 0.0 | 5 | 0.0 | 0.156 | 56.3 | LOS D | 2.5 | 17.5 | 0.89 | 0.72 | 0.89 | 12.1 | |
| 32 | R2 | 61 | 0.0 | 61 | 0.0 | 0.256 | 50.1 | LOS D | 3.4 | 23.5 | 0.94 | 0.74 | 0.94 | 10.5 | |
| Approach | | 105 | 0.0 | 105 | 0.0 | 0.256 | 51.6 | LOS D | 3.4 | 23.5 | 0.92 | 0.73 | 0.92 | 10.4 | |
| All Vehicles | | 2020 | 7.2 | 1897 ^{N1} | 7.7 | 0.716 | 29.4 | LOS C | 14.8 | 108.1 | 0.74 | 0.66 | 0.74 | 10.0 | |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 Stage 1 | | 197 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 90.4 | 30.9 | 0.34 |
| P52 Stage 2 | | 41 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 88 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 225 | 64.7 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 91.3 | 31.9 | 0.35 |
| All Pedestrians | 603 | 64.6 | LOS F | 0.9 | 0.9 | 0.96 | 0.96 | 91.4 | 32.2 | 0.35 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

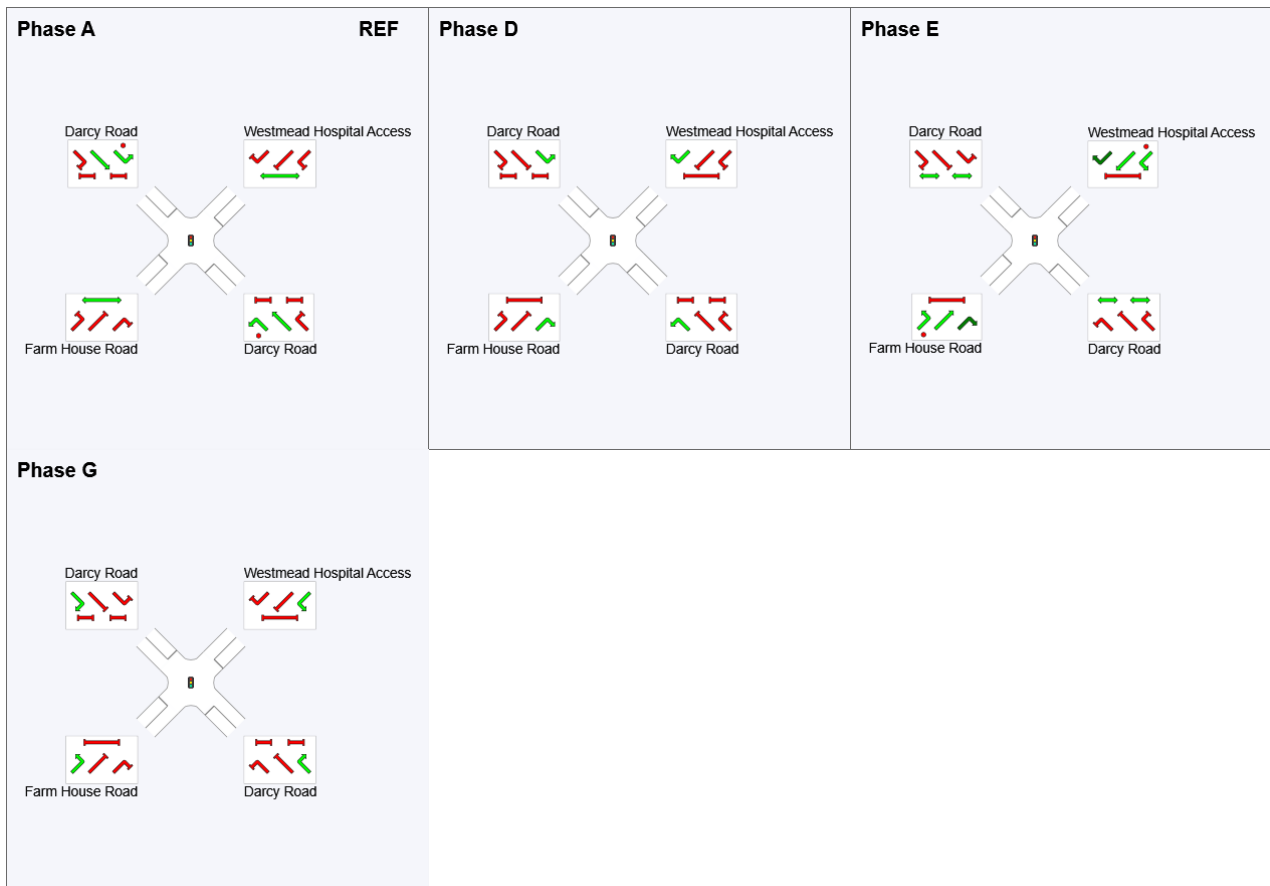
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 121 | 64 | 82 | 106 |
| Green Time (sec) | 75 | 11 | 16 | 9 |
| Phase Time (sec) | 82 | 19 | 22 | 17 |
| Phase Split | 59% | 14% | 16% | 12% |

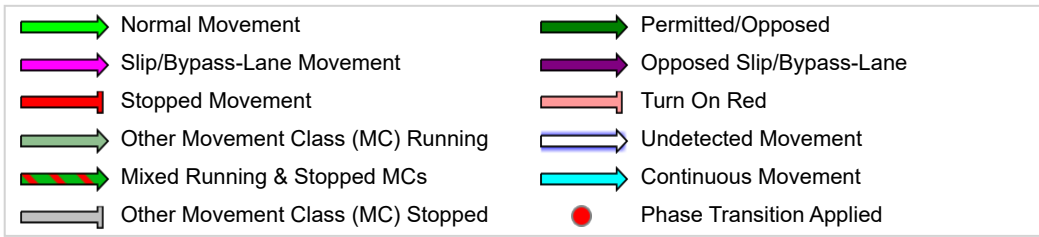
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 5 | 0.0 | 5 | 0.0 | 0.239 | 11.7 | LOS A | 0.1 | 1.0 | 0.03 | 0.01 | 0.04 | 30.4 |
| 22 | T1 | 979 | 7.4 | 922 | 7.6 | 0.239 | 0.1 | LOS A | 0.1 | 1.0 | 0.02 | 0.00 | 0.02 | 38.9 |
| Approach | | 984 | 7.3 | 927 ^{N1} | 7.6 | 0.239 | 0.2 | NA | 0.1 | 1.0 | 0.02 | 0.00 | 0.02 | 38.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 804 | 8.5 | 746 | 8.9 | 0.245 | 0.0 | LOS A | 11.4 | 83.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 804 | 8.5 | 746 ^{N1} | 8.9 | 0.245 | 0.0 | NA | 11.4 | 83.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.007 | 27.8 | LOS B | 0.0 | 0.2 | 0.89 | 0.81 | 0.89 | 4.3 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.007 | 27.8 | LOS B | 0.0 | 0.2 | 0.89 | 0.81 | 0.89 | 4.3 |
| All Vehicles | | 1789 | 7.8 | 1674 ^{N1} | 8.4 | 0.245 | 0.1 | NA | 11.4 | 83.0 | 0.01 | 0.00 | 0.01 | 39.3 |

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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | * 0.341 | 14.6 | LOS B | 12.5 | 90.8 | 0.48 | 0.42 | 0.48 | 19.3 | |
| 22 | T1 | 935 | 7.6 | 882 | 7.9 | 0.341 | 10.6 | LOS A | 12.5 | 90.8 | 0.45 | 0.40 | 0.45 | 19.4 | |
| 23 | R2 | 45 | 0.0 | 42 | 0.0 | * 0.531 | 81.0 | LOS F | 3.1 | 21.5 | 1.00 | 0.74 | 1.01 | 8.6 | |
| Approach | | 981 | 7.2 | 925 ^{N1} | 7.5 | 0.531 | 13.8 | LOS A | 12.5 | 90.8 | 0.48 | 0.42 | 0.48 | 17.3 | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 46 | 0.0 | 46 | 0.0 | 0.069 | 4.8 | LOS A | 0.4 | 3.0 | 0.19 | 0.52 | 0.19 | 29.2 | |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | * 0.146 | 57.8 | LOS E | 2.2 | 15.3 | 0.89 | 0.72 | 0.89 | 7.6 | |
| Approach | | 83 | 0.0 | 83 | 0.0 | 0.146 | 28.4 | LOS B | 2.2 | 15.3 | 0.50 | 0.61 | 0.50 | 12.7 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 66 | 0.0 | 63 | 0.0 | 0.240 | 13.6 | LOS A | 12.0 | 86.8 | 0.44 | 0.42 | 0.44 | 26.9 | |
| 28 | T1 | 757 | 9.0 | 726 | 9.4 | 0.240 | 11.1 | LOS A | 12.0 | 86.8 | 0.48 | 0.44 | 0.48 | 18.2 | |
| 29 | R2 | 2 | 50.0 | 2 | 51.2 | 0.022 | 76.6 | LOS F | 0.1 | 1.4 | 1.00 | 0.61 | 1.00 | 6.7 | |
| Approach | | 825 | 8.4 | 791 ^{N1} | 8.7 | 0.240 | 11.5 | LOS A | 12.0 | 86.8 | 0.48 | 0.44 | 0.48 | 19.1 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | | |
| 30 | L2 | 3 | 0.0 | 3 | 0.0 | 0.013 | 43.9 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.5 | |
| 32 | R2 | 1 | 0.0 | 1 | 0.0 | 0.013 | 43.9 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.5 | |
| Approach | | 4 | 0.0 | 4 | 0.0 | 0.013 | 43.9 | LOS D | 0.2 | 1.5 | 0.82 | 0.54 | 0.82 | 5.5 | |
| All Vehicles | | 1893 | 7.4 | 1803 ^{N1} | 7.8 | 0.531 | 13.5 | LOS A | 12.5 | 90.8 | 0.48 | 0.44 | 0.48 | 17.6 | |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 4 | 64.1 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 90.7 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 59 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 88.1 | 28.6 | 0.32 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 154 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 98.9 | 41.4 | 0.42 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

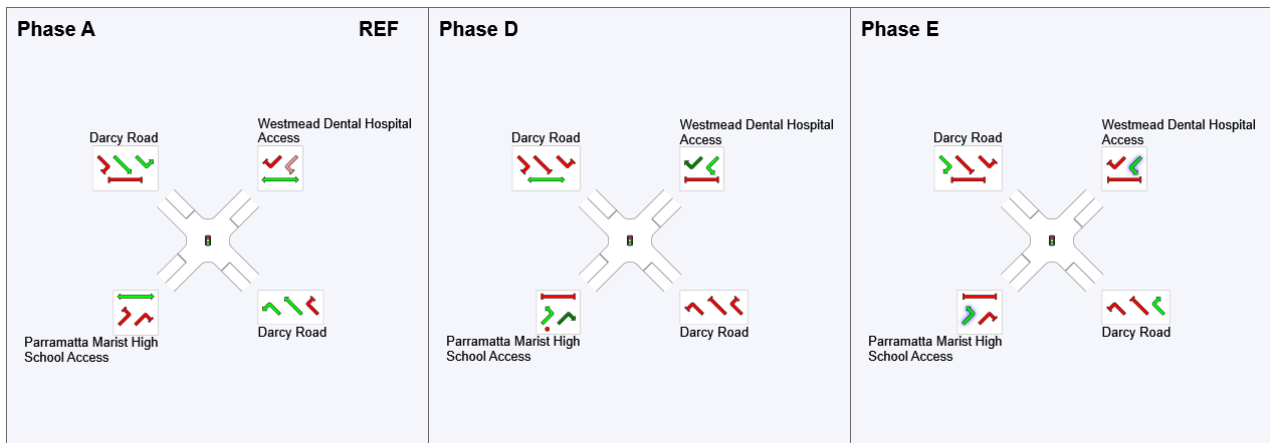
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|----|
| Phase Change Time (sec) | 109 | 67 | 98 |
| Green Time (sec) | 92 | 25 | 6 |
| Phase Time (sec) | 98 | 30 | 12 |
| Phase Split | 70% | 21% | 9% |

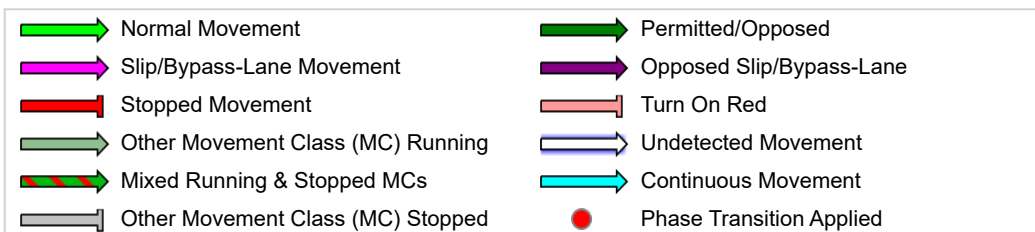
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033 Do
Minimum)]

1500 - 1600
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.177 | 3.7 | LOS A | 2.2 | 16.3 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 975 | 7.5 | 923 | 7.8 | 0.177 | 0.0 | LOS A | 5.5 | 40.3 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 976 | 7.5 | 923 ^{N1} | 7.7 | 0.177 | 0.0 | NA | 5.5 | 40.3 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 825 | 8.2 | 791 | 8.6 | 0.200 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 825 | 8.2 | 791 ^{N1} | 8.6 | 0.200 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 25 | 0.0 | 25 | 0.0 | 0.054 | 1.7 | LOS A | 0.2 | 1.2 | 0.42 | 0.28 | 0.42 | 18.4 |
| Approach | | 25 | 0.0 | 25 | 0.0 | 0.054 | 1.7 | LOS A | 0.2 | 1.2 | 0.42 | 0.28 | 0.42 | 18.4 |
| All Vehicles | | 1826 | 7.7 | 1739 ^{N1} | 8.1 | 0.200 | 0.0 | NA | 5.5 | 40.3 | 0.01 | 0.00 | 0.01 | 39.0 |

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
(Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 822 | 1.9 | 779 | 2.0 | 0.381 | 23.9 | LOS B | 12.6 | 89.8 | 0.68 | 0.73 | 0.68 | 7.9 |
| 23a | R1 | 178 | 33.7 | 171 | 34.5 | *0.441 | 66.0 | LOS E | 9.3 | 75.4 | 1.00 | 0.80 | 1.00 | 17.3 |
| Approach | | 1000 | 7.6 | 950 ^{N1} | 7.9 | 0.441 | 31.5 | LOS C | 12.6 | 89.8 | 0.74 | 0.75 | 0.74 | 12.2 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 104 | 0.0 | 104 | 0.0 | 1.489 | 497.8 | LOS F | 38.9 | 272.3 | 1.00 | 2.21 | 3.24 | 2.6 |
| 5 | T1 | 282 | 0.4 | 282 | 0.4 | *1.489 | 490.1 | LOS F | 42.7 | 300.1 | 1.00 | 2.23 | 3.20 | 2.6 |
| 6 | R2 | 7 | 0.0 | 7 | 0.0 | 1.489 | 492.3 | LOS F | 42.7 | 300.1 | 1.00 | 2.23 | 3.18 | 5.3 |
| Approach | | 393 | 0.3 | 393 | 0.3 | 1.489 | 492.2 | LOS F | 42.7 | 300.1 | 1.00 | 2.22 | 3.21 | 2.6 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 3 | 0.0 | 3 | 0.0 | 0.195 | 11.4 | LOS A | 2.5 | 19.5 | 0.24 | 0.40 | 0.24 | 35.7 |
| 7a | L1 | 193 | 30.1 | 193 | 30.1 | 0.195 | 9.8 | LOS A | 2.5 | 19.5 | 0.23 | 0.40 | 0.23 | 32.8 |
| 9 | R2 | 278 | 2.9 | 278 | 2.9 | *0.795 | 47.1 | LOS D | 16.0 | 115.1 | 0.87 | 0.83 | 0.92 | 19.4 |
| Approach | | 474 | 13.9 | 474 | 13.9 | 0.795 | 31.7 | LOS C | 16.0 | 115.1 | 0.61 | 0.65 | 0.64 | 23.4 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 75 | 1.3 | 75 | 1.3 | 0.573 | 27.1 | LOS B | 12.2 | 86.7 | 0.66 | 0.68 | 0.66 | 26.9 |
| 11 | T1 | 43 | 0.0 | 43 | 0.0 | *0.573 | 24.0 | LOS B | 12.2 | 86.7 | 0.66 | 0.68 | 0.66 | 24.5 |
| 12a | R1 | 528 | 1.9 | 528 | 1.9 | 0.573 | 31.1 | LOS C | 12.8 | 91.4 | 0.72 | 0.70 | 0.72 | 7.4 |
| Approach | | 646 | 1.7 | 645 ^{N1} | 1.7 | 0.573 | 30.2 | LOS C | 12.8 | 91.4 | 0.71 | 0.70 | 0.71 | 12.9 |
| All Vehicles | | 2513 | 6.1 | 2462 ^{N1} | 6.3 | 1.489 | 104.7 | LOS F | 42.7 | 300.1 | 0.75 | 0.95 | 1.11 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

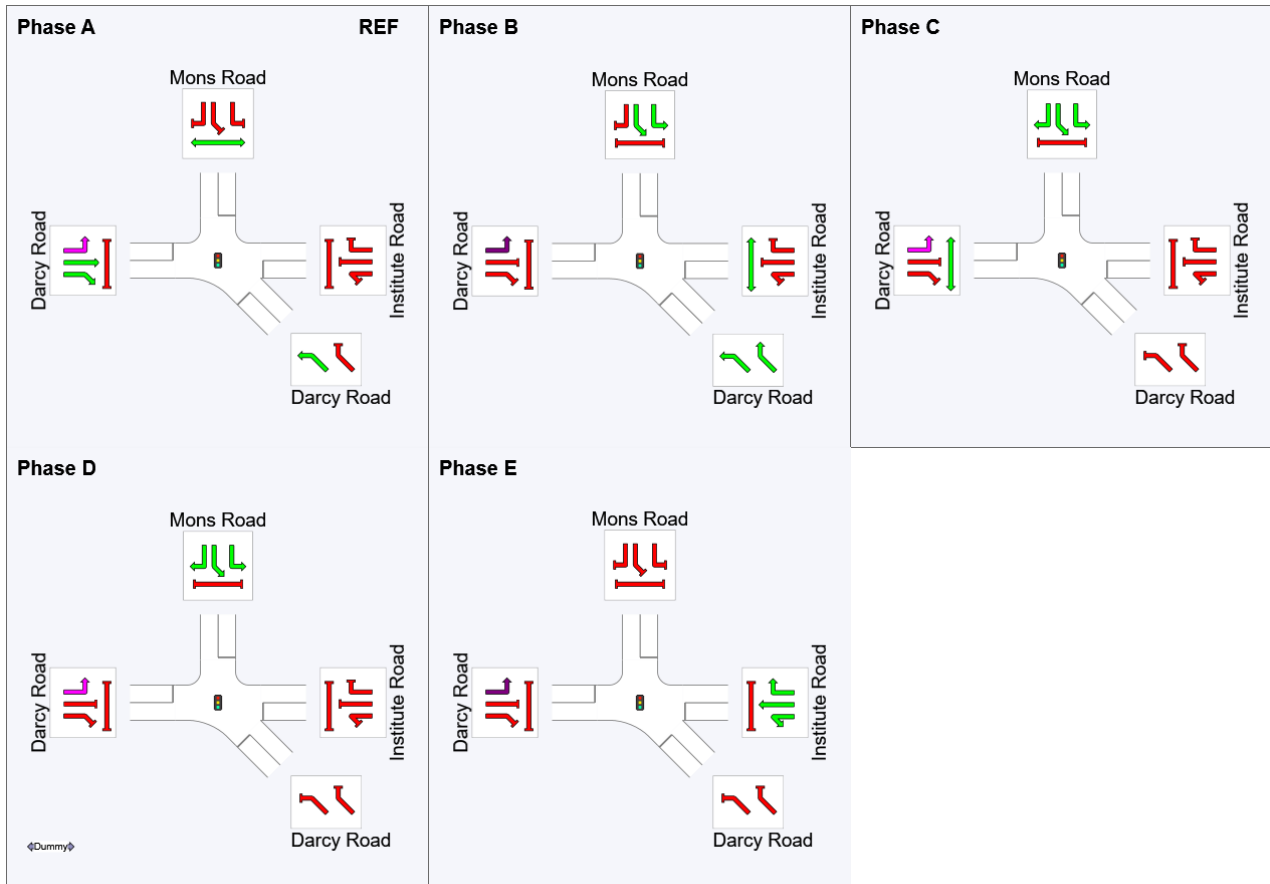
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|----|-----|
| Phase Change Time (sec) | 28 | 78 | 110 | 2 | 12 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 11% |

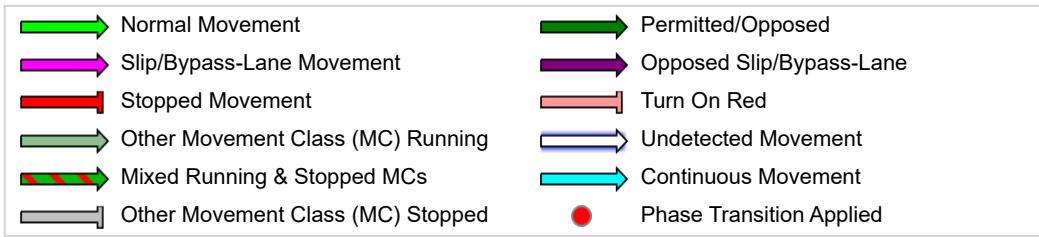
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 244 | 4.1 | 244 | 4.1 | 0.551 | 10.4 | LOS A | 2.8 | 20.0 | 0.65 | 1.39 | 1.04 | 9.4 | |
| Approach | | 244 | 4.1 | 244 | 4.1 | 0.551 | 10.4 | LOS A | 2.8 | 20.0 | 0.65 | 1.39 | 1.04 | 9.4 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 57 | 8.8 | 52 | 9.4 | 0.030 | 7.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.76 | 0.00 | 18.9 | |
| 5 | T1 | 1325 | 1.4 | 1197 | 1.5 | 0.310 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 | |
| Approach | | 1382 | 1.7 | 1249 ^N | 1.9 | 0.310 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 38.0 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 645 | 2.5 | 644 | 2.5 | 0.217 | 2.1 | LOS A | 3.6 | 26.0 | 0.00 | 0.36 | 0.00 | 37.0 | |
| 12 | R2 | 96 | 4.2 | 96 | 4.2 | 0.328 | 15.3 | LOS B | 0.8 | 5.7 | 0.75 | 0.97 | 0.87 | 25.5 | |
| Approach | | 741 | 2.7 | 740 ^{N1} | 2.7 | 0.328 | 3.8 | LOS A | 3.6 | 26.0 | 0.10 | 0.44 | 0.11 | 35.0 | |
| All Vehicles | | 2367 | 2.3 | 2233 ^N | 2.4 | 0.551 | 2.6 | NA | 3.6 | 26.0 | 0.10 | 0.31 | 0.15 | 21.2 | |

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.

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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MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 229 | 1.3 | 227 | 1.3 | * 0.439 | 41.6 | LOS C | 11.7 | 82.5 | 0.84 | 0.78 | 0.84 | 25.5 |
| 2 | T1 | 29 | 0.0 | 29 | 0.0 | * 0.739 | 76.7 | LOS F | 8.2 | 60.7 | 1.00 | 0.86 | 1.14 | 15.5 |
| 3 | R2 | 87 | 9.2 | 86 | 9.3 | 0.739 | 76.3 | LOS F | 8.2 | 60.7 | 1.00 | 0.86 | 1.14 | 15.2 |
| Approach | | 345 | 3.2 | 342 ^{N1} | 3.2 | 0.739 | 53.3 | LOS D | 11.7 | 82.5 | 0.89 | 0.81 | 0.94 | 21.5 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 284 | 4.6 | 263 | 4.9 | * 0.359 | 20.2 | LOS B | 19.7 | 141.2 | 0.46 | 0.51 | 0.46 | 27.7 |
| 5 | T1 | 1257 | 1.4 | 1161 | 1.4 | 0.359 | 13.4 | LOS A | 19.7 | 141.2 | 0.40 | 0.40 | 0.40 | 35.0 |
| 6 | R2 | 28 | 0.0 | 26 | 0.0 | 0.055 | 12.8 | LOS A | 0.4 | 2.6 | 0.38 | 0.61 | 0.38 | 29.0 |
| Approach | | 1569 | 1.9 | 1450 ^{N1} | 2.0 | 0.359 | 14.6 | LOS B | 19.7 | 141.2 | 0.41 | 0.42 | 0.41 | 33.7 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 26 | 0.0 | 26 | 0.0 | 0.068 | 43.0 | LOS D | 1.3 | 9.4 | 0.83 | 0.61 | 0.83 | 4.3 |
| 8 | T1 | 45 | 0.0 | 45 | 0.0 | 0.573 | 67.3 | LOS E | 5.9 | 41.3 | 1.00 | 0.78 | 1.00 | 3.1 |
| 9 | R2 | 42 | 0.0 | 42 | 0.0 | 0.573 | 67.3 | LOS E | 5.9 | 41.3 | 1.00 | 0.78 | 1.00 | 8.8 |
| Approach | | 113 | 0.0 | 113 | 0.0 | 0.573 | 61.8 | LOS E | 5.9 | 41.3 | 0.96 | 0.74 | 0.96 | 5.8 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 57 | 0.0 | 57 | 0.0 | 0.310 | 16.3 | LOS B | 13.6 | 96.2 | 0.48 | 0.46 | 0.48 | 23.6 |
| 11 | T1 | 628 | 1.4 | 628 | 1.4 | 0.310 | 11.2 | LOS A | 13.6 | 96.2 | 0.46 | 0.42 | 0.46 | 25.6 |
| 12 | R2 | 335 | 1.8 | 335 | 1.8 | 0.834 | 33.1 | LOS C | 13.7 | 97.7 | 0.70 | 0.88 | 0.86 | 13.5 |
| Approach | | 1020 | 1.5 | 1020 | 1.5 | 0.834 | 18.6 | LOS B | 13.7 | 97.7 | 0.54 | 0.57 | 0.59 | 19.8 |
| All Vehicles | | 3047 | 1.8 | 2925 ^{N1} | 1.9 | 0.834 | 22.4 | LOS B | 19.7 | 141.2 | 0.53 | 0.53 | 0.56 | 25.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed | |
| | | | | | [Ped ped | Dist] m | | | | | | |
| South: Bridge Road | | | | | | | | | | | | |
| P1 | Full | 47 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 | |
| East: Darcy Road | | | | | | | | | | | | |
| P2 | Full | 44 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 | |

| North: Coles Westmead Access | | | | | | | | | | | |
|------------------------------|------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 | Full | 127 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 92.2 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 81 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | | 299 | 64.4 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, E2

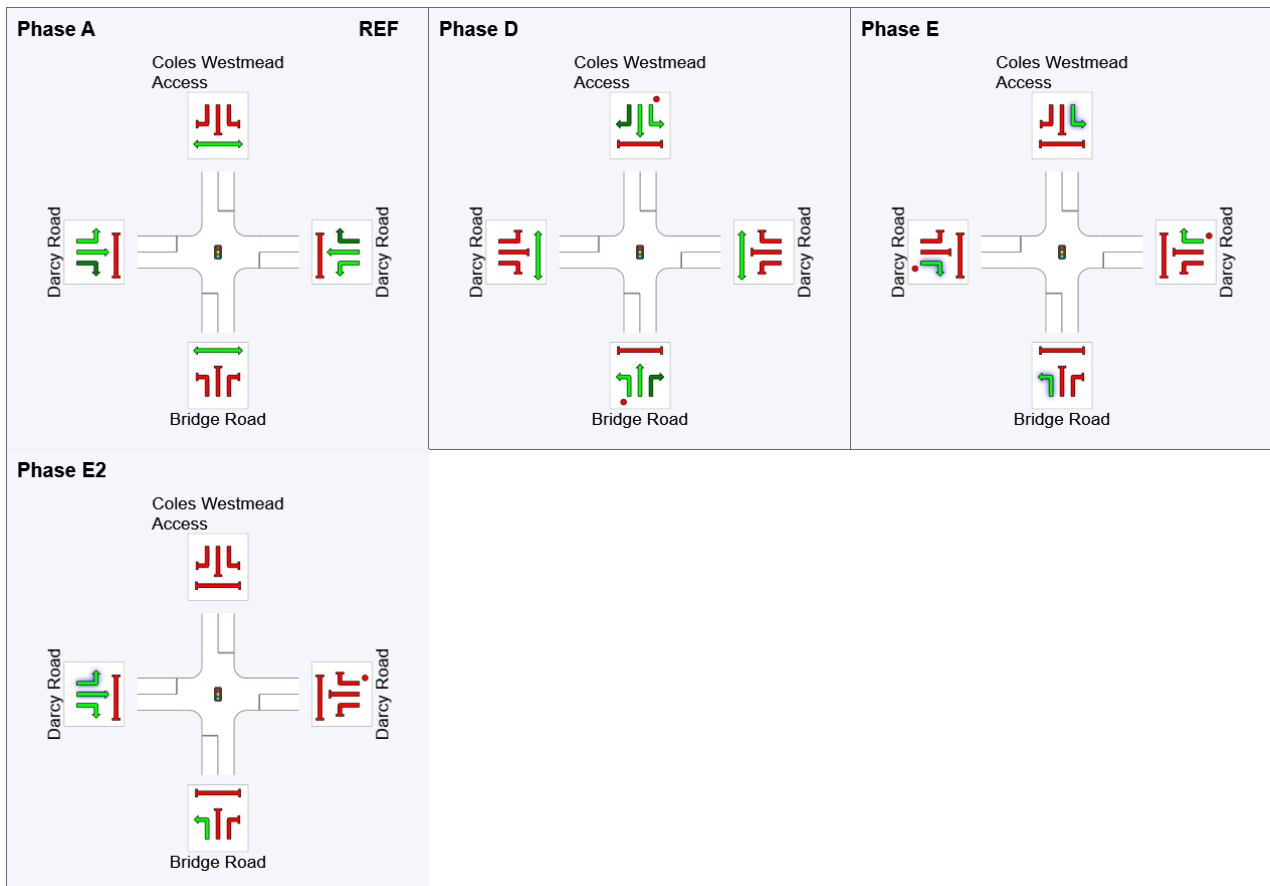
Output Phase Sequence: A, D, E, E2

Phase Timing Summary

| Phase | A | D | E | E2 |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 14 | 96 | 129 | 140 |
| Green Time (sec) | 75 | 26 | 5 | 8 |
| Phase Time (sec) | 82 | 32 | 11 | 15 |
| Phase Split | 59% | 23% | 8% | 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



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 Do Minimum PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|-------|--------------------|-------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 454 | 2.4 | 454 | 2.4 | 0.632 | 5.3 | LOS A | 6.5 | 46.5 | 0.68 | 0.61 | 0.68 | 22.8 |
| 3 | R2 | 162 | 0.6 | 162 | 0.6 | 0.632 | 8.4 | LOS A | 6.5 | 46.5 | 0.68 | 0.61 | 0.68 | 22.8 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.632 | 11.5 | LOS A | 6.5 | 46.5 | 0.68 | 0.61 | 0.68 | 24.1 |
| Approach | | 617 | 2.1 | 617 | 2.1 | 0.632 | 6.2 | LOS A | 6.5 | 46.5 | 0.68 | 0.61 | 0.68 | 22.8 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 253 | 0.4 | 242 | 0.4 | 0.787 | 22.0 | LOS B | 8.4 | 59.3 | 0.88 | 1.19 | 1.43 | 33.6 |
| 6 | R2 | 152 | 0.0 | 146 | 0.0 | 0.787 | 24.5 | LOS B | 8.4 | 59.3 | 0.88 | 1.19 | 1.43 | 33.5 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.787 | 25.8 | LOS B | 8.4 | 59.3 | 0.88 | 1.19 | 1.43 | 33.5 |
| Approach | | 406 | 0.2 | 389 ^{N1} | 0.3 | 0.787 | 22.9 | LOS B | 8.4 | 59.3 | 0.88 | 1.19 | 1.43 | 33.6 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 105 | 0.0 | 102 | 0.0 | 0.817 | 9.6 | LOS A | 12.6 | 90.2 | 0.84 | 0.74 | 0.95 | 39.0 |
| 8 | T1 | 687 | 2.8 | 670 | 2.8 | 0.817 | 9.3 | LOS A | 12.6 | 90.2 | 0.84 | 0.74 | 0.95 | 38.8 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.817 | 13.4 | LOS A | 12.6 | 90.2 | 0.84 | 0.74 | 0.95 | 39.0 |
| Approach | | 793 | 2.4 | 774 ^{N1} | 2.4 | 0.817 | 9.4 | LOS A | 12.6 | 90.2 | 0.84 | 0.74 | 0.95 | 38.9 |
| All Vehicles | | 1816 | 1.8 | 1780 ^{N1} | 1.9 | 0.817 | 11.2 | LOS A | 12.6 | 90.2 | 0.79 | 0.79 | 0.96 | 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.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [PM Peak (Network Folder: 2033 Do Minimum)]

1500 - 1600

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 106 | 104 | 101 ¹ | 102 ¹ | 103 | 110 | 108 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -31 | -17 | 0 | 0 | 0 | 15 | 28 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

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Appendix H: Future Year 2023 and 2033 With Development With Upgrade SIDRA Modelling Results



CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | | | | [Veh. veh | Dist] m | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 21 | 4.8 | 21 | 4.8 | 1.412 | 401.2 | LOS F | 92.0 | 648.9 | 1.00 | 2.41 | 2.93 | 1.7 |
| 2 | T1 | 998 | 0.7 | 998 | 0.7 | * 1.412 | 396.2 | LOS F | 104.2 | 733.8 | 1.00 | 2.43 | 2.93 | 1.7 |
| Approach | | 1019 | 0.8 | 1019 | 0.8 | 1.412 | 396.3 | LOS F | 104.2 | 733.8 | 1.00 | 2.43 | 2.93 | 1.7 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 38 | 0.0 | 38 | 0.0 | 1.427 | 440.1 | LOS F | 13.7 | 101.8 | 1.00 | 2.13 | 3.05 | 2.6 |
| 5 | T1 | 115 | 0.0 | 115 | 0.0 | * 1.427 | 435.6 | LOS F | 13.7 | 101.8 | 1.00 | 2.13 | 3.05 | 1.3 |
| 6 | R2 | 333 | 17.4 | 333 | 17.4 | 1.427 | 441.1 | LOS F | 42.4 | 340.9 | 1.00 | 1.96 | 3.06 | 1.3 |
| Approach | | 486 | 11.9 | 486 | 11.9 | 1.427 | 439.7 | LOS F | 42.4 | 340.9 | 1.00 | 2.01 | 3.06 | 1.4 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 364 | 16.8 | 364 | 16.8 | * 0.572 | 11.0 | LOS A | 11.8 | 86.8 | 0.34 | 0.52 | 0.34 | 29.6 |
| 8 | T1 | 432 | 2.1 | 432 | 2.1 | 0.572 | 29.7 | LOS C | 12.4 | 88.1 | 0.68 | 0.71 | 0.68 | 18.3 |
| 9 | R2 | 57 | 0.0 | 57 | 0.0 | 0.572 | 55.9 | LOS D | 12.4 | 88.1 | 1.00 | 0.90 | 1.00 | 4.4 |
| Approach | | 853 | 8.2 | 853 | 8.2 | 0.572 | 23.5 | LOS B | 12.4 | 88.1 | 0.56 | 0.64 | 0.56 | 20.2 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 247 | 0.0 | 244 | 0.0 | 0.462 | 43.1 | LOS D | 13.0 | 91.0 | 0.83 | 0.80 | 0.83 | 25.9 |
| 11 | T1 | 292 | 0.3 | 289 | 0.3 | * 1.050 | 136.3 | LOS F | 29.9 | 210.0 | 1.00 | 1.38 | 1.78 | 14.6 |
| Approach | | 539 | 0.2 | 533 ^{N1} | 0.2 | 1.050 | 93.6 | LOS F | 29.9 | 210.0 | 0.92 | 1.12 | 1.35 | 17.8 |
| All Vehicles | | 2897 | 4.7 | 2891 ^{N1} | 4.7 | 1.427 | 237.8 | LOS F | 104.2 | 733.8 | 0.86 | 1.59 | 1.96 | 4.1 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 1286 | 4.9 | 999 | 4.6 | 0.523 | 6.3 | LOS A | 12.1 | 88.1 | 0.42 | 0.42 | 0.42 | 20.9 |
| 3 | R2 | 292 | 0.3 | 227 | 0.3 | 0.523 | 10.6 | LOS A | 10.7 | 77.0 | 0.46 | 0.53 | 0.46 | 41.3 |
| Approach | | 1578 | 4.1 | 1226 ^{N1} | 3.8 | 0.523 | 7.1 | LOS A | 12.1 | 88.1 | 0.43 | 0.44 | 0.43 | 30.9 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 183 | 1.1 | 183 | 1.1 | 0.405 | 25.3 | LOS B | 7.4 | 52.4 | 0.69 | 0.75 | 0.69 | 29.8 |
| 6 | R2 | 30 | 0.0 | 30 | 0.0 | 0.185 | 67.6 | LOS E | 1.9 | 13.4 | 0.95 | 0.73 | 0.95 | 17.7 |
| Approach | | 213 | 0.9 | 213 | 0.9 | 0.405 | 31.2 | LOS C | 7.4 | 52.4 | 0.73 | 0.74 | 0.73 | 27.2 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 110 | 0.0 | 110 | 0.0 | 0.145 | 37.9 | LOS C | 6.0 | 51.9 | 0.63 | 0.65 | 0.63 | 27.7 |
| 8 | T1 | 669 | 12.9 | 669 | 12.9 | 0.472 | 22.5 | LOS B | 12.5 | 92.9 | 0.57 | 0.50 | 0.57 | 15.6 |
| Approach | | 779 | 11.0 | 779 | 11.0 | 0.472 | 24.7 | LOS B | 12.5 | 92.9 | 0.58 | 0.52 | 0.58 | 19.0 |
| All Vehicles | | 2570 | 5.9 | 2218 ^{N1} | 6.9 | 0.523 | 15.6 | LOS B | 12.5 | 92.9 | 0.51 | 0.50 | 0.51 | 24.7 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C

Output Phase Sequence: A, E, D, C

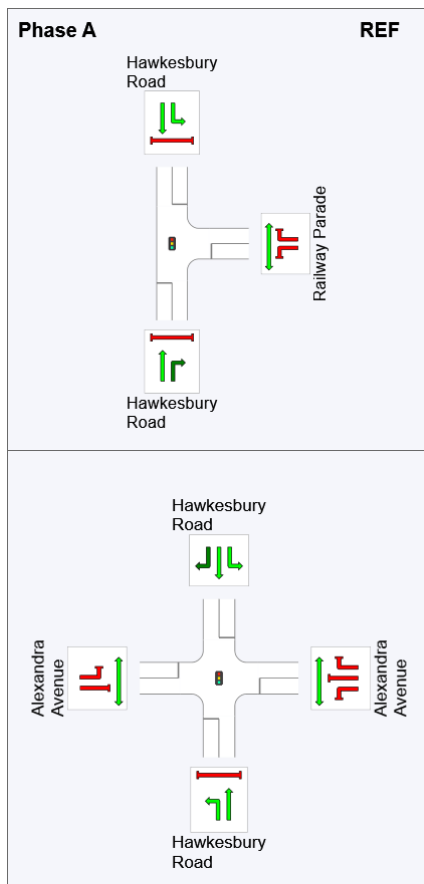
(* Variable Phase)

Phase Timing Summary (CCG)

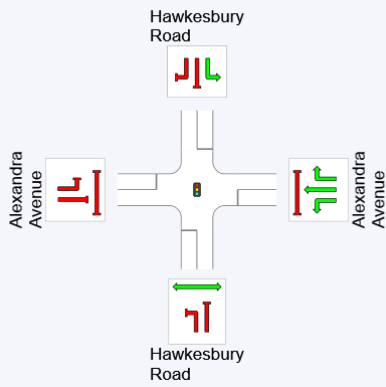
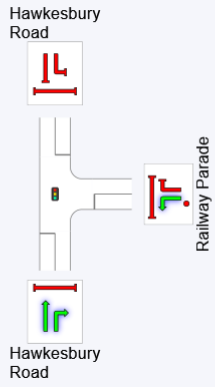
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 54 | 83 | 109 |
| Green Time (sec) | 48 | 20 | 17 | 25 |
| Phase Time (sec) | 57 | 29 | 23 | 31 |
| Phase Split | 41% | 21% | 16% | 22% |

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%.

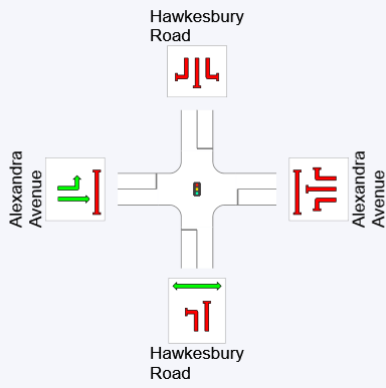
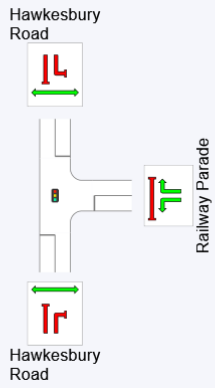
Output Phase Sequence (CCG)

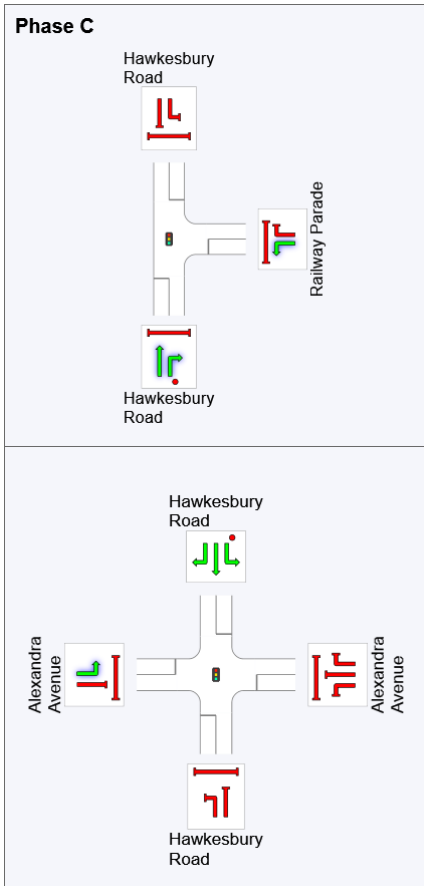


Phase E

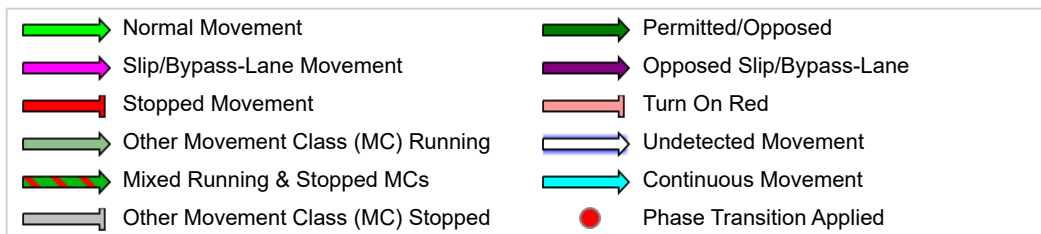


Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|--------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 76.6 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 11.0 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.168 | 76.6 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 11.0 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 77.8 | LOS F | 0.6 | 15.4 | 0.97 | 0.69 | 0.97 | 10.7 |
| 25 | T1 | 278 | 4.3 | 278 | 4.3 | *0.579 | 47.7 | LOS D | 16.3 | 118.7 | 0.92 | 0.78 | 0.92 | 11.4 |
| 26 | R2 | 131 | 3.8 | 131 | 3.8 | *0.570 | 64.3 | LOS E | 8.5 | 61.7 | 0.98 | 0.80 | 0.98 | 8.9 |
| Approach | | 417 | 6.0 | 417 | 6.0 | 0.579 | 53.5 | LOS D | 16.3 | 118.7 | 0.94 | 0.79 | 0.94 | 10.5 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 245 | 4.5 | 245 | 4.5 | 0.545 | 22.2 | LOS B | 6.9 | 49.1 | 0.65 | 0.70 | 0.65 | 21.9 |
| 29 | R2 | 501 | 13.6 | 501 | 13.6 | *0.579 | 50.6 | LOS D | 15.8 | 117.4 | 0.83 | 0.77 | 0.84 | 6.7 |
| Approach | | 746 | 10.6 | 746 | 10.6 | 0.579 | 41.3 | LOS C | 15.8 | 117.4 | 0.77 | 0.75 | 0.77 | 10.8 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 920 | 6.3 | 733 | 5.9 | 0.551 | 13.7 | LOS A | 18.7 | 134.8 | 0.42 | 0.69 | 0.42 | 21.5 |
| 31 | T1 | 397 | 1.5 | 317 | 1.4 | 0.518 | 47.9 | LOS D | 18.2 | 129.2 | 0.90 | 0.79 | 0.90 | 16.1 |
| Approach | | 1317 | 4.9 | 1050 ^N ₁ | 4.6 | 0.551 | 24.1 | LOS B | 18.7 | 134.8 | 0.57 | 0.72 | 0.57 | 18.4 |
| All Vehicles | | 2488 | 7.1 | 2221 ^N ₁ | 7.9 | 0.579 | 35.6 | LOS C | 18.7 | 134.8 | 0.71 | 0.74 | 0.71 | 13.5 |

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 Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 238.5 | 208.6 | 0.87 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 191 | 64.6 | LOS F | 0.7 | 0.7 | 0.96 | 0.96 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 29.6 | LOS C | 0.1 | 0.1 | 0.92 | 0.92 | 55.3 | 30.9 | 0.56 |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P72 Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | |
| P8 Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 98.9 | 41.1 | 0.42 |
| All Pedestrians | 727 | 61.7 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 134.9 | 87.7 | 0.65 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

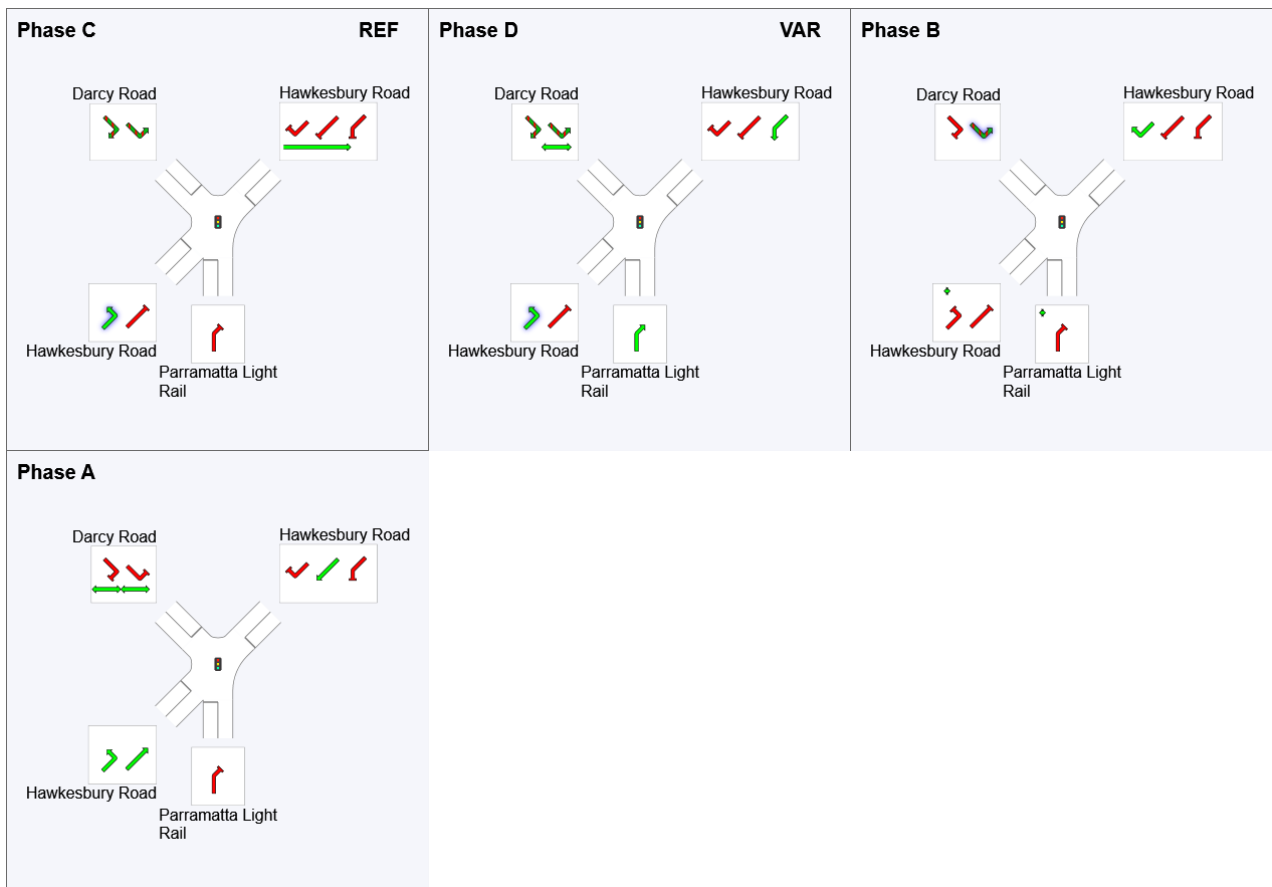
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 45 | 62 | 92 |
| Green Time (sec) | 39 | 9 | 21 | 37 |
| Phase Time (sec) | 47 | 18 | 30 | 45 |
| Phase Split | 34% | 13% | 21% | 32% |

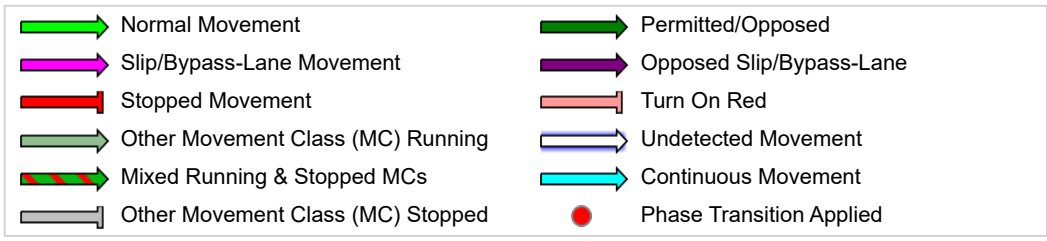
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 6 | 0.0 | 5 | 0.0 | 0.387 | 24.7 | LOS B | 14.1 | 101.4 | 0.59 | 0.52 | 0.59 | 21.9 | |
| 22 | T1 | 944 | 6.7 | 786 | 6.3 | 0.387 | 21.1 | LOS B | 14.1 | 101.4 | 0.58 | 0.51 | 0.58 | 12.2 | |
| 23 | R2 | 101 | 1.0 | 84 | 0.9 | *0.534 | 70.2 | LOS E | 5.6 | 39.4 | 0.97 | 0.77 | 0.97 | 8.9 | |
| Approach | | 1051 | 6.1 | 875 ^{N1} | 5.8 | 0.534 | 25.8 | LOS B | 14.1 | 101.4 | 0.62 | 0.54 | 0.62 | 11.2 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 36 | 0.0 | 36 | 0.0 | 0.133 | 46.9 | LOS D | 2.1 | 14.4 | 0.86 | 0.65 | 0.86 | 8.2 | |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.133 | 46.9 | LOS D | 2.1 | 14.4 | 0.86 | 0.65 | 0.86 | 12.6 | |
| 26 | R2 | 57 | 8.8 | 57 | 8.8 | 0.612 | 71.0 | LOS F | 4.0 | 29.7 | 1.00 | 0.83 | 1.07 | 6.7 | |
| Approach | | 94 | 5.3 | 94 | 5.3 | 0.612 | 61.5 | LOS E | 4.0 | 29.7 | 0.95 | 0.76 | 0.99 | 7.3 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 151 | 0.7 | 151 | 0.7 | *0.497 | 24.4 | LOS B | 13.2 | 96.3 | 0.59 | 0.62 | 0.59 | 13.1 | |
| 28 | T1 | 693 | 12.1 | 693 | 12.1 | 0.497 | 19.6 | LOS B | 13.2 | 96.3 | 0.58 | 0.55 | 0.58 | 9.7 | |
| 29 | R2 | 6 | 16.7 | 6 | 16.7 | 0.042 | 67.8 | LOS E | 0.4 | 3.2 | 0.97 | 0.66 | 0.97 | 10.2 | |
| Approach | | 850 | 10.1 | 850 | 10.1 | 0.497 | 20.8 | LOS B | 13.2 | 96.3 | 0.58 | 0.57 | 0.58 | 11.0 | |
| SouthWest: Farm House Road | | | | | | | | | | | | | | | |
| 30 | L2 | 9 | 11.1 | 9 | 11.1 | 0.052 | 53.7 | LOS D | 0.7 | 5.5 | 0.88 | 0.68 | 0.88 | 9.8 | |
| 31 | T1 | 4 | 0.0 | 4 | 0.0 | 0.052 | 56.7 | LOS E | 0.7 | 5.5 | 0.88 | 0.68 | 0.88 | 12.0 | |
| 32 | R2 | 18 | 0.0 | 18 | 0.0 | 0.136 | 71.0 | LOS F | 1.2 | 8.3 | 0.97 | 0.70 | 0.97 | 8.1 | |
| Approach | | 31 | 3.2 | 31 | 3.2 | 0.136 | 64.1 | LOS E | 1.2 | 8.3 | 0.93 | 0.69 | 0.93 | 9.2 | |
| All Vehicles | | 2026 | 7.7 | 1850 ^N | 8.4 | 0.612 | 26.0 | LOS B | 14.1 | 101.4 | 0.62 | 0.56 | 0.63 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 233 | 64.8 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 90.5 | 30.9 | 0.34 |
| P52 | Stage 2 | 65 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 98 | 64.4 | LOS F | 0.4 | 0.4 | 0.96 | 0.96 | 91.0 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 258 | 64.8 | LOS F | 1.0 | 1.0 | 0.97 | 0.97 | 91.4 | 31.9 | 0.35 |
| All Pedestrians | 696 | 64.7 | LOS F | 1.0 | 1.0 | 0.96 | 0.96 | 91.6 | 32.3 | 0.35 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

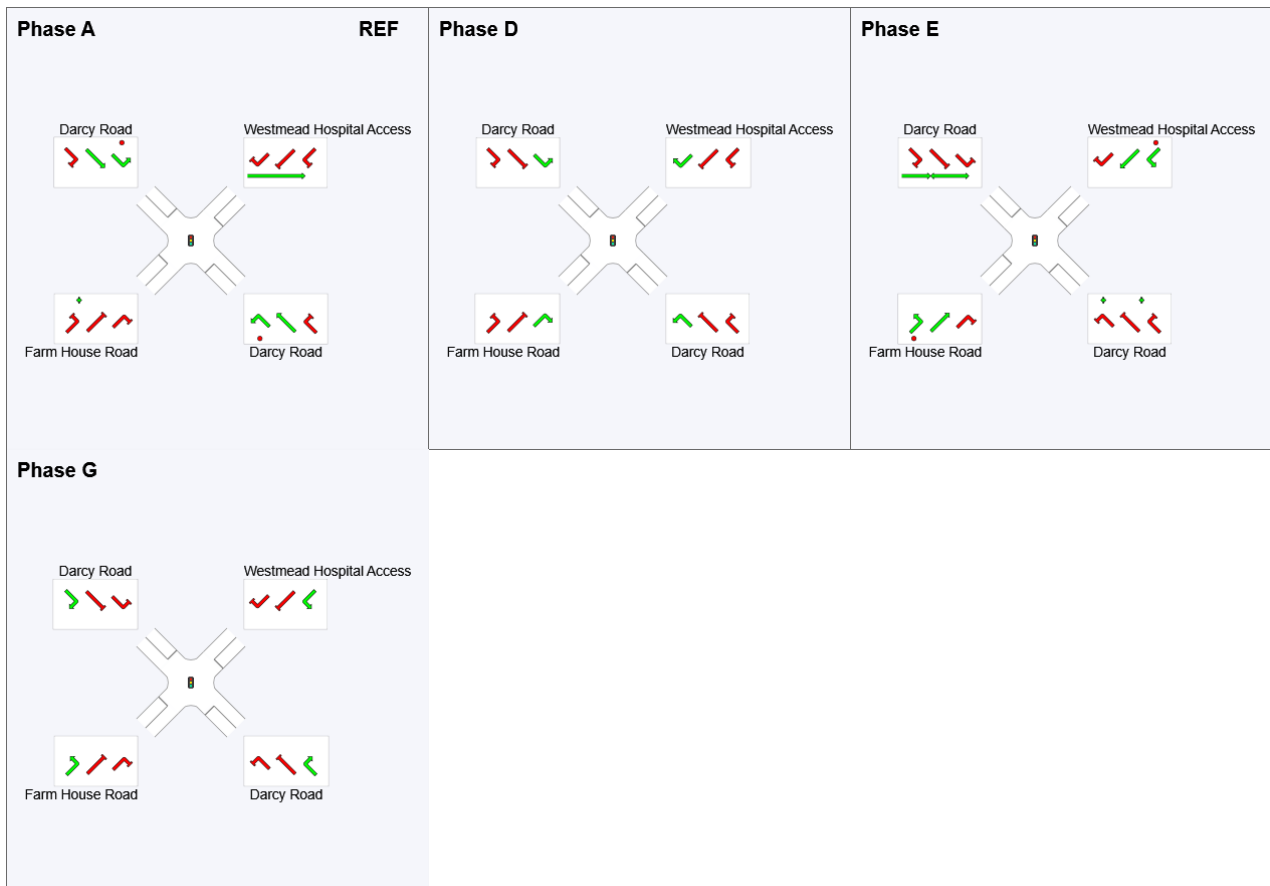
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 130 | 71 | 88 | 112 |
| Green Time (sec) | 73 | 10 | 16 | 12 |
| Phase Time (sec) | 80 | 18 | 22 | 20 |
| Phase Split | 57% | 13% | 16% | 14% |

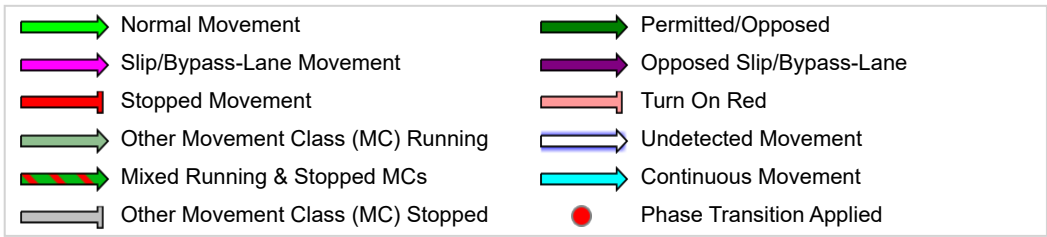
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|-----------------------------------|------|------------------------------|------|---------------|-----------------|------------------|---------------------------------|------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 350 | 0.0 | 304 | 0.0 | 0.477 | 10.3 | LOS A | 2.3 | 16.4 | 0.71 | 0.96 | 0.97 | 16.7 |
| 22 | T1 | 661 | 10.1 | 572 | 9.7 | 0.292 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1011 | 6.6 | 876 ^{N1} | 6.4 | 0.477 | 3.6 | NA | 2.3 | 16.4 | 0.25 | 0.33 | 0.34 | 24.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 849 | 10.1 | 849 | 10.1 | 0.273 | 0.0 | LOS A | 2.2 | 16.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 849 | 10.1 | 849 | 10.1 | 0.273 | 0.0 | NA | 2.2 | 16.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 5.4 | LOS A | 0.0 | 0.0 | 0.61 | 0.40 | 0.61 | 11.7 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 5.4 | LOS A | 0.0 | 0.0 | 0.61 | 0.40 | 0.61 | 11.7 |
| All Vehicles | | 1861 | 8.2 | 1726 ^{N1} | 8.9 | 0.477 | 1.8 | NA | 2.3 | 16.4 | 0.13 | 0.17 | 0.17 | 31.5 |

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.
 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.

SITE LAYOUT

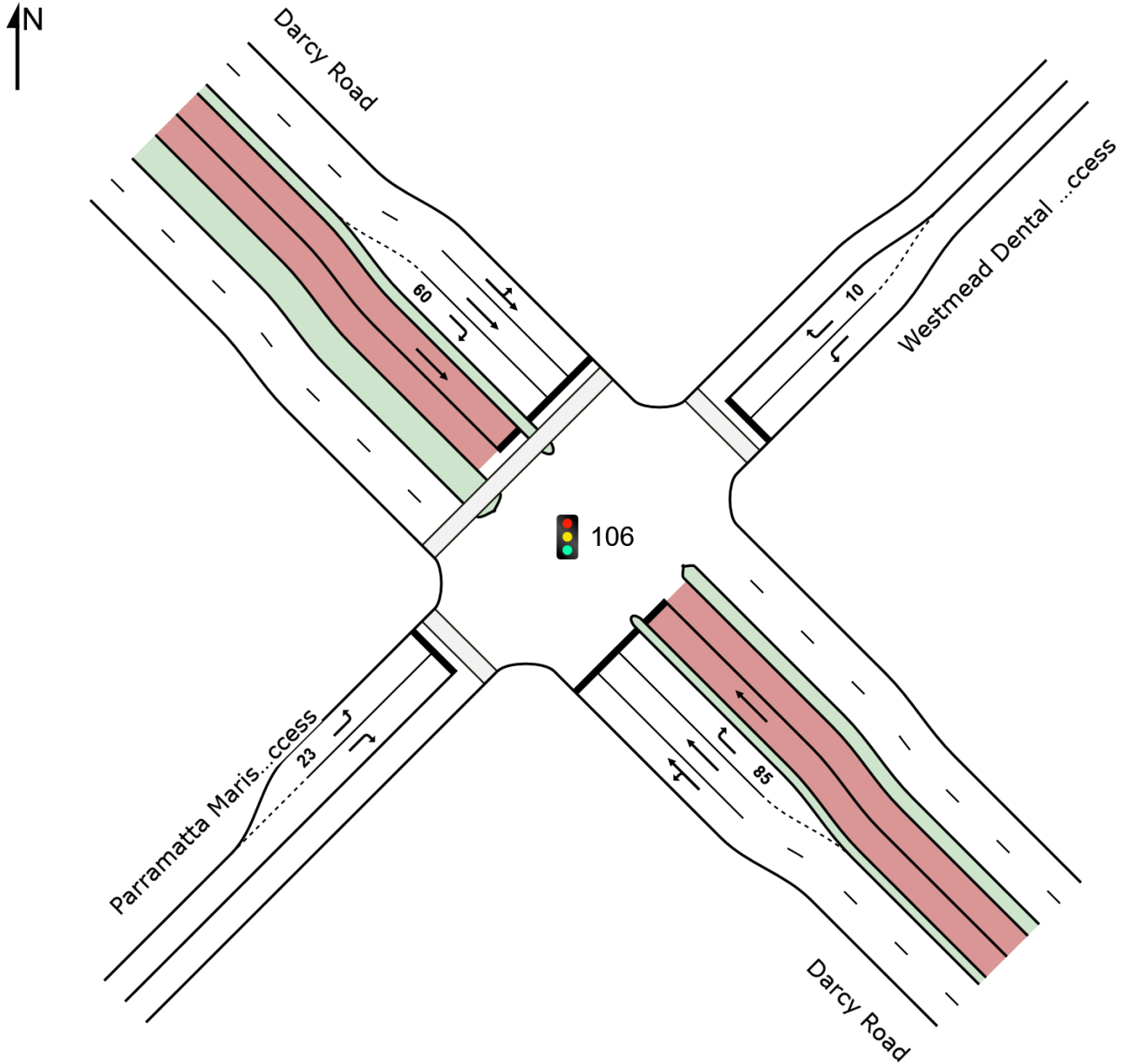
Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development + Upgrades AM Peak)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.225 | 4.1 | LOS A | 0.5 | 3.4 | 0.03 | 0.04 | 0.03 | 27.4 |
| 22 | T1 | 607 | 11.0 | 537 | 10.7 | 0.225 | 0.7 | LOS A | 0.5 | 3.4 | 0.03 | 0.03 | 0.03 | 37.3 |
| 23 | R2 | 45 | 0.0 | 40 | 0.0 | * 0.301 | 76.6 | LOS F | 2.8 | 19.6 | 1.00 | 0.74 | 1.00 | 8.0 |
| Approach | | 660 | 10.2 | 584 ^{N1} | 9.9 | 0.301 | 5.9 | LOS A | 2.8 | 19.6 | 0.09 | 0.08 | 0.09 | 24.6 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 16 | 0.0 | 16 | 0.0 | 0.018 | 0.5 | LOS A | 0.1 | 0.6 | 0.12 | 0.09 | 0.12 | 19.6 |
| 26 | R2 | 29 | 0.0 | 29 | 0.0 | 0.147 | 59.4 | LOS E | 1.8 | 12.6 | 0.92 | 0.68 | 0.92 | 6.2 |
| Approach | | 45 | 0.0 | 45 | 0.0 | 0.147 | 38.5 | LOS C | 1.8 | 12.6 | 0.64 | 0.47 | 0.64 | 8.2 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 77 | 0.0 | 77 | 0.0 | * 0.344 | 8.8 | LOS A | 4.8 | 35.3 | 0.20 | 0.25 | 0.20 | 21.8 |
| 28 | T1 | 749 | 11.5 | 748 | 11.5 | 0.344 | 4.1 | LOS A | 4.8 | 35.3 | 0.16 | 0.17 | 0.16 | 27.4 |
| 29 | R2 | 5 | 0.0 | 5 | 0.0 | 0.038 | 73.8 | LOS F | 0.3 | 2.4 | 1.00 | 0.65 | 1.00 | 6.9 |
| Approach | | 831 | 10.3 | 830 ^{N1} | 10.4 | 0.344 | 5.0 | LOS A | 4.8 | 35.3 | 0.17 | 0.18 | 0.17 | 25.4 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 156 | 0.0 | 156 | 0.0 | * 0.408 | 44.4 | LOS D | 8.6 | 60.1 | 0.88 | 0.71 | 0.88 | 5.5 |
| 32 | R2 | 84 | 0.0 | 84 | 0.0 | 0.289 | 52.6 | LOS D | 5.0 | 34.7 | 0.90 | 0.71 | 0.90 | 5.0 |
| Approach | | 240 | 0.0 | 240 | 0.0 | 0.408 | 47.2 | LOS D | 8.6 | 60.1 | 0.89 | 0.71 | 0.89 | 5.3 |
| All Vehicles | | 1776 | 8.6 | 1699 ^{N1} | 9.0 | 0.408 | 12.2 | LOS A | 8.6 | 60.1 | 0.26 | 0.23 | 0.26 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 43 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 48 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 182 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 98.5 | 41.1 | 0.42 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

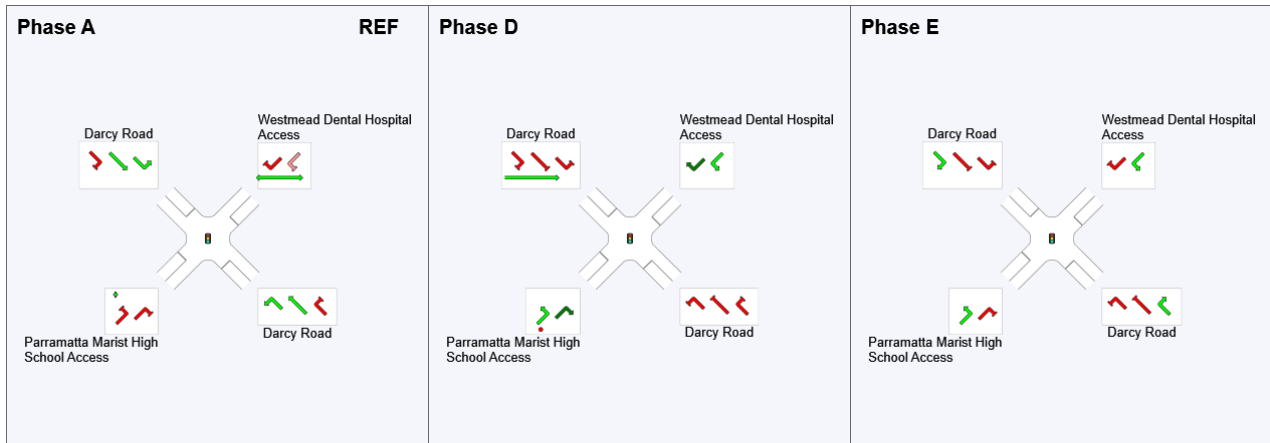
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 10 | 102 | 135 |
| Green Time (sec) | 86 | 27 | 10 |
| Phase Time (sec) | 92 | 32 | 16 |
| Phase Split | 66% | 23% | 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



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: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2023 With
Development + Upgrades)]

0745 - 0845

Site Category: (None)

Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.160 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 793 | 8.6 | 738 | 8.2 | 0.160 | 0.0 | LOS A | 7.6 | 55.3 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 794 | 8.6 | 739 ^{N1} | 8.2 | 0.160 | 0.0 | NA | 7.6 | 55.3 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 831 | 10.1 | 830 | 10.1 | 0.210 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 831 | 10.1 | 830 ^{N1} | 10.1 | 0.210 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.3 | LOS A | 0.0 | 0.0 | 0.37 | 0.16 | 0.37 | 18.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.001 | 1.3 | LOS A | 0.0 | 0.0 | 0.37 | 0.16 | 0.37 | 18.6 |
| All Vehicles | | 1626 | 9.3 | 1570 ^{N1} | 9.7 | 0.210 | 0.0 | NA | 7.6 | 55.3 | 0.00 | 0.00 | 0.00 | 39.9 |

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.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)]
 (Site Folder: 2023 With Development + Upgrades AM Peak)

Network: N101 [AM Peak
 (Network Folder: 2023 With
 Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 517 | 1.5 | 494 | 1.5 | 0.273 | 26.4 | LOS B | 11.0 | 78.2 | 0.68 | 0.71 | 0.68 | 7.3 |
| 23a | R1 | 275 | 22.5 | 261 | 22.1 | *0.975 | 95.6 | LOS F | 11.6 | 89.8 | 1.00 | 1.06 | 1.33 | 13.8 |
| Approach | | 792 | 8.8 | 755 ^{N1} | 8.7 | 0.975 | 50.3 | LOS D | 11.6 | 89.8 | 0.79 | 0.83 | 0.90 | 11.8 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 46 | 2.2 | 46 | 2.2 | 0.457 | 74.8 | LOS F | 3.7 | 26.4 | 1.00 | 0.76 | 1.00 | 13.0 |
| 5 | T1 | 68 | 2.9 | 68 | 2.9 | *0.457 | 70.2 | LOS E | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 13.4 |
| 6 | R2 | 2 | 0.0 | 2 | 0.0 | 0.457 | 74.3 | LOS F | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 21.2 |
| Approach | | 116 | 2.6 | 116 | 2.6 | 0.457 | 72.1 | LOS F | 4.3 | 30.6 | 1.00 | 0.76 | 1.00 | 13.4 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 7 | 0.0 | 7 | 0.0 | 0.155 | 23.4 | LOS B | 4.4 | 38.9 | 0.57 | 0.59 | 0.57 | 31.4 |
| 7a | L1 | 154 | 48.7 | 154 | 48.7 | 0.155 | 21.7 | LOS B | 4.4 | 38.9 | 0.57 | 0.58 | 0.57 | 26.9 |
| 9 | R2 | 108 | 12.0 | 108 | 12.0 | 0.210 | 42.6 | LOS D | 5.5 | 42.2 | 0.79 | 0.73 | 0.79 | 20.4 |
| Approach | | 269 | 32.7 | 269 | 32.7 | 0.210 | 30.2 | LOS C | 5.5 | 42.2 | 0.66 | 0.64 | 0.66 | 24.1 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 177 | 9.6 | 177 | 9.6 | 0.878 | 55.6 | LOS D | 12.6 | 91.4 | 1.00 | 1.01 | 1.11 | 19.5 |
| 11 | T1 | 202 | 0.5 | 202 | 0.5 | *0.878 | 52.4 | LOS D | 12.6 | 91.4 | 1.00 | 1.01 | 1.11 | 17.3 |
| 12a | R1 | 631 | 1.3 | 630 | 1.3 | 0.878 | 58.0 | LOS E | 12.9 | 91.4 | 1.00 | 0.98 | 1.11 | 4.3 |
| Approach | | 1010 | 2.6 | 1008 ^N ₁ | 2.6 | 0.878 | 56.5 | LOS D | 12.9 | 91.4 | 1.00 | 0.99 | 1.11 | 11.0 |
| All Vehicles | | 2187 | 8.6 | 2148 ^N ₁ | 8.7 | 0.975 | 51.8 | LOS D | 12.9 | 91.4 | 0.88 | 0.88 | 0.97 | 13.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2023 With
 Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

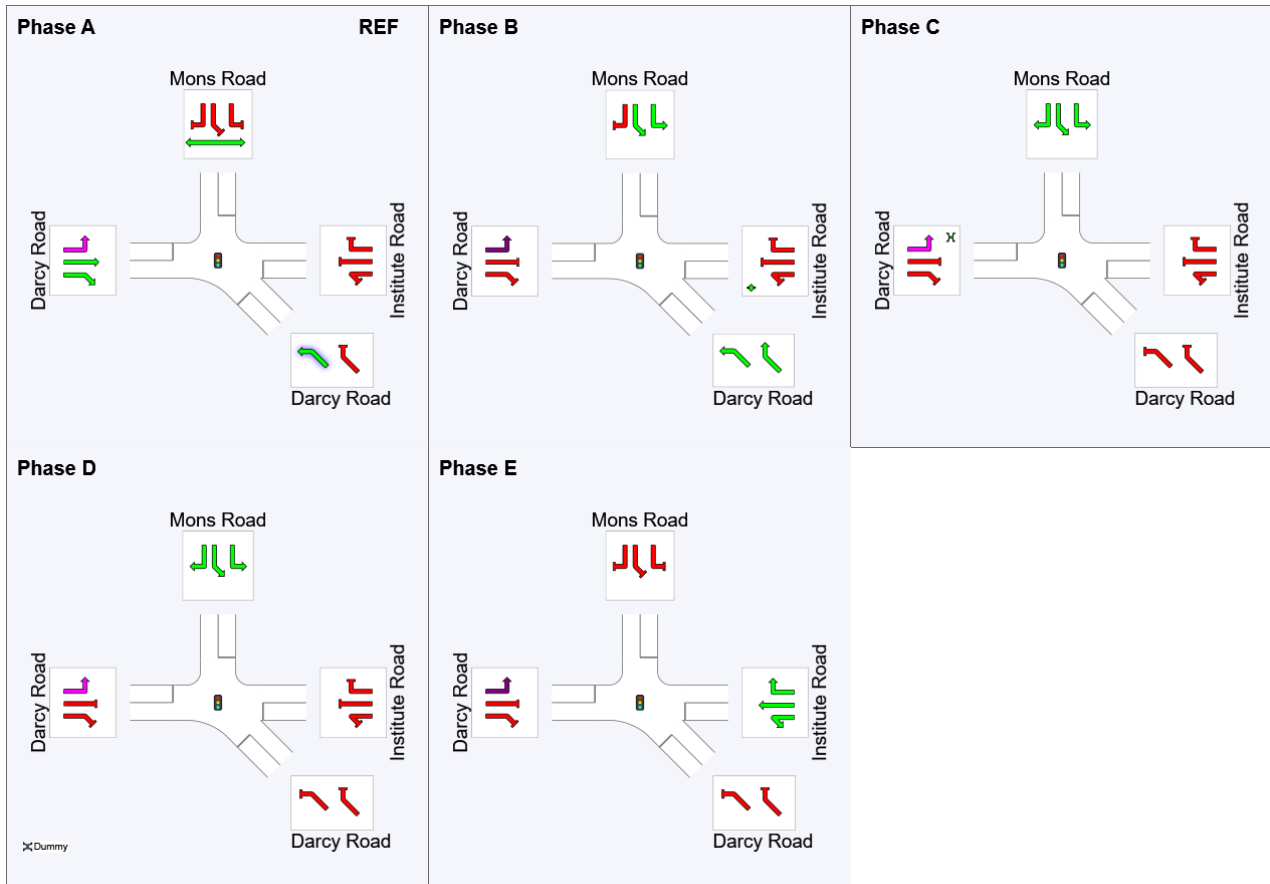
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 48 | 73 | 110 | 124 |
| Green Time (sec) | 42 | 19 | 31 | 8 | 10 |
| Phase Time (sec) | 48 | 25 | 37 | 14 | 16 |
| Phase Split | 34% | 18% | 26% | 10% | 11% |

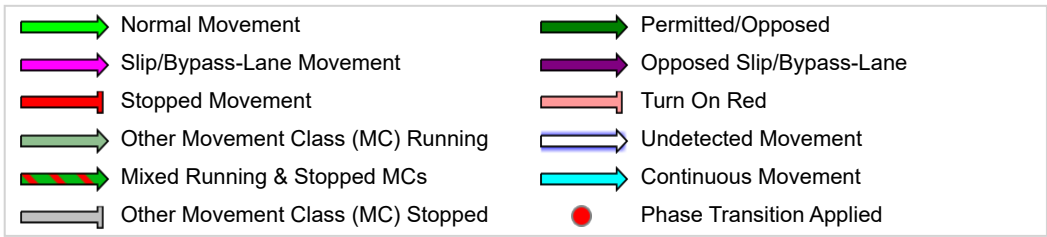
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

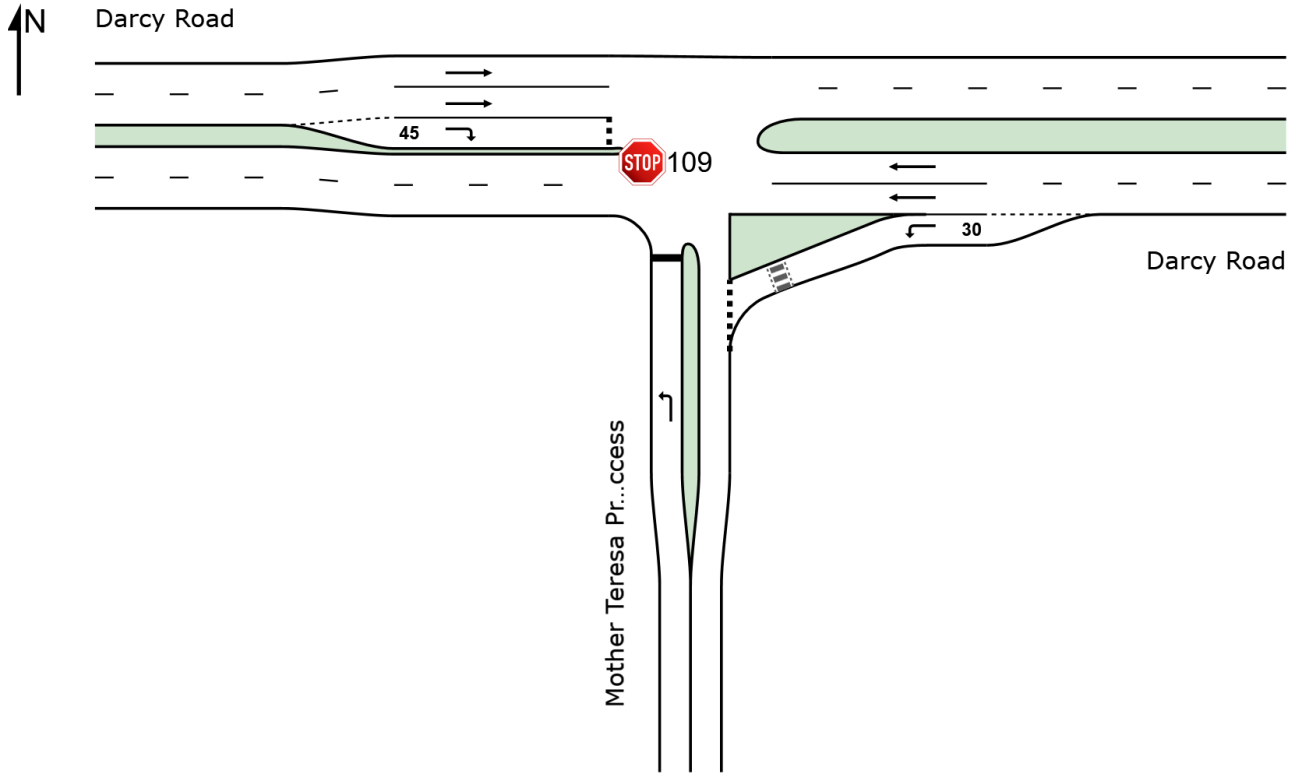


SITE LAYOUT

 Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2023 With Development + Upgrades AM Peak)]

0745 - 0845
Site Category: (None)
Stop (Two-Way)

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



MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 250 | 2.0 | 250 | 2.0 | 0.392 | 4.6 | LOS A | 1.5 | 11.0 | 0.45 | 0.94 | 0.49 | 9.7 | |
| Approach | | 250 | 2.0 | 250 | 2.0 | 0.392 | 4.6 | LOS A | 1.5 | 11.0 | 0.45 | 0.94 | 0.49 | 9.7 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 80 | 3.8 | 78 | 3.8 | 0.061 | 10.3 | LOS A | 0.2 | 1.5 | 0.25 | 0.75 | 0.25 | 16.6 | |
| 5 | T1 | 613 | 3.1 | 601 | 3.1 | 0.157 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 40.0 | |
| Approach | | 693 | 3.2 | 679 ^{N1} | 3.2 | 0.157 | 1.2 | LOS A | 0.2 | 1.5 | 0.03 | 0.09 | 0.03 | 33.5 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 1010 | 3.1 | 1008 | 3.1 | 0.264 | 2.1 | LOS A | 21.9 | 157.5 | 0.00 | 0.36 | 0.00 | 37.0 | |
| 12 | R2 | 193 | 2.6 | 193 | 2.6 | 0.344 | 9.9 | LOS A | 1.0 | 7.2 | 0.55 | 0.87 | 0.63 | 29.2 | |
| Approach | | 1203 | 3.0 | 1201 ^{N1} | 3.0 | 0.344 | 3.4 | LOS A | 21.9 | 157.5 | 0.09 | 0.44 | 0.10 | 35.5 | |
| All Vehicles | | 2146 | 2.9 | 2130 ^{N1} | 3.0 | 0.392 | 2.8 | NA | 21.9 | 157.5 | 0.11 | 0.39 | 0.12 | 23.2 | |

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.

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.

MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 146 | 2.7 | 143 | 2.8 | 0.333 | 51.2 | LOS D | 8.1 | 57.7 | 0.87 | 0.77 | 0.87 | 22.9 |
| 2 | T1 | 16 | 6.3 | 16 | 6.3 | 0.624 | 70.1 | LOS E | 8.5 | 63.4 | 1.00 | 0.81 | 1.01 | 16.4 |
| 3 | R2 | 114 | 7.0 | 112 | 7.1 | *0.624 | 69.7 | LOS E | 8.5 | 63.4 | 1.00 | 0.81 | 1.01 | 16.1 |
| Approach | | 276 | 4.7 | 270 ^{N1} | 4.8 | 0.624 | 59.9 | LOS E | 8.5 | 63.4 | 0.93 | 0.79 | 0.94 | 19.6 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 246 | 3.3 | 246 | 3.3 | 0.364 | 16.5 | LOS B | 11.0 | 79.4 | 0.42 | 0.56 | 0.42 | 29.8 |
| 5 | T1 | 594 | 3.2 | 594 | 3.2 | 0.364 | 11.5 | LOS A | 11.0 | 79.4 | 0.41 | 0.42 | 0.41 | 36.3 |
| 6 | R2 | 23 | 0.0 | 23 | 0.0 | *0.064 | 7.9 | LOS A | 0.2 | 1.2 | 0.19 | 0.57 | 0.19 | 32.7 |
| Approach | | 863 | 3.1 | 862 ^{N1} | 3.1 | 0.364 | 12.8 | LOS A | 11.0 | 79.4 | 0.41 | 0.46 | 0.41 | 34.6 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 14 | 7.1 | 14 | 7.1 | 0.034 | 42.6 | LOS D | 0.7 | 5.4 | 0.80 | 0.56 | 0.80 | 4.3 |
| 8 | T1 | 14 | 0.0 | 14 | 0.0 | 0.238 | 62.5 | LOS E | 2.6 | 18.8 | 0.95 | 0.71 | 0.95 | 3.3 |
| 9 | R2 | 27 | 3.7 | 27 | 3.7 | 0.238 | 62.5 | LOS E | 2.6 | 18.8 | 0.95 | 0.71 | 0.95 | 9.2 |
| Approach | | 55 | 3.6 | 55 | 3.6 | 0.238 | 57.5 | LOS E | 2.6 | 18.8 | 0.91 | 0.67 | 0.91 | 6.8 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | *0.577 | 12.4 | LOS A | 14.6 | 103.8 | 0.34 | 0.32 | 0.34 | 27.0 |
| 11 | T1 | 1075 | 2.2 | 1075 | 2.2 | 0.577 | 7.1 | LOS A | 14.6 | 103.8 | 0.30 | 0.28 | 0.30 | 31.3 |
| 12 | R2 | 350 | 0.6 | 350 | 0.6 | 0.756 | 12.0 | LOS A | 6.2 | 43.3 | 0.45 | 0.70 | 0.48 | 25.3 |
| Approach | | 1454 | 1.8 | 1454 | 1.8 | 0.756 | 8.4 | LOS A | 14.6 | 103.8 | 0.33 | 0.38 | 0.34 | 29.5 |
| All Vehicles | | 2648 | 2.6 | 2642 ^{N1} | 2.6 | 0.756 | 16.1 | LOS B | 14.6 | 103.8 | 0.43 | 0.46 | 0.44 | 27.7 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | ped/h | sec | | [Ped ped | Dist] m | | | sec | m | m/sec |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 67 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 40 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |

| | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 Full | 78 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 92.1 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | |
| P4 Full | 55 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | 240 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 93.4 | 35.0 | 0.37 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E*, E2*

Output Phase Sequence: A, D, E*

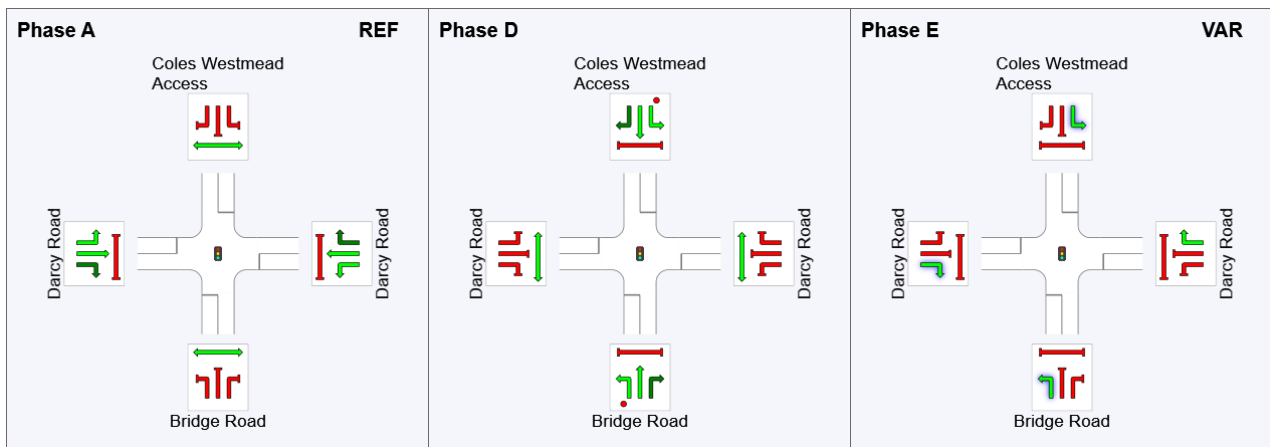
(* Variable Phase)

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 121 | 77 | 109 |
| Green Time (sec) | 89 | 25 | 10 |
| Phase Time (sec) | 96 | 27 | 17 |
| Phase Split | 69% | 19% | 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 |

Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2023 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 348 | 0.3 | 348 | 0.3 | 0.525 | 3.8 | LOS A | 5.3 | 37.1 | 0.30 | 0.51 | 0.30 | 24.9 |
| 3 | R2 | 315 | 0.3 | 315 | 0.3 | 0.525 | 6.9 | LOS A | 5.3 | 37.1 | 0.30 | 0.51 | 0.30 | 24.9 |
| 3u | U | 4 | 0.0 | 4 | 0.0 | 0.525 | 8.3 | LOS A | 5.3 | 37.1 | 0.30 | 0.51 | 0.30 | 27.9 |
| Approach | | 667 | 0.3 | 667 | 0.3 | 0.525 | 5.3 | LOS A | 5.3 | 37.1 | 0.30 | 0.51 | 0.30 | 25.0 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 109 | 0.9 | 88 | 1.0 | 0.232 | 8.7 | LOS A | 1.2 | 8.3 | 0.60 | 0.77 | 0.60 | 40.8 |
| 6 | R2 | 48 | 2.1 | 39 | 2.2 | 0.232 | 11.3 | LOS A | 1.2 | 8.3 | 0.60 | 0.77 | 0.60 | 41.5 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.232 | 12.5 | LOS A | 1.2 | 8.3 | 0.60 | 0.77 | 0.60 | 41.5 |
| Approach | | 159 | 1.3 | 129 ^{N1} | 1.4 | 0.232 | 9.5 | LOS A | 1.2 | 8.3 | 0.60 | 0.77 | 0.60 | 41.0 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 247 | 0.4 | 247 | 0.4 | 1.024 | 61.5 | LOS E | 46.4 | 325.6 | 1.00 | 2.19 | 3.45 | 17.5 |
| 8 | T1 | 552 | 0.2 | 552 | 0.2 | 1.024 | 61.1 | LOS E | 46.4 | 325.6 | 1.00 | 2.19 | 3.45 | 18.7 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 1.024 | 65.3 | LOS E | 46.4 | 325.6 | 1.00 | 2.19 | 3.45 | 17.5 |
| Approach | | 800 | 0.3 | 800 | 0.3 | 1.024 | 61.2 | LOS E | 46.4 | 325.6 | 1.00 | 2.19 | 3.45 | 18.3 |
| All Vehicles | | 1626 | 0.4 | 1596 ^{N1} | 0.4 | 1.024 | 33.7 | LOS C | 46.4 | 325.6 | 0.68 | 1.37 | 1.90 | 20.8 |

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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [AM Peak (Network Folder: 2023 With Development + Upgrades)]

0745 - 0845

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 110 | 104 | 101 ¹ | 102 ¹ | 103 | 108 | 106 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -18 | -8 | 0 | 0 | 0 | 0 | 10 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|-----------------|----------|--------------------------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 43 | 0.0 | 43 | 0.0 | 0.605 | 55.4 | LOS D | 16.8 | 119.3 | 0.94 | 0.81 | 0.94 | 10.9 |
| 2 | T1 | 487 | 1.8 | 487 | 1.8 | 0.605 | 50.8 | LOS D | 16.8 | 119.3 | 0.94 | 0.80 | 0.94 | 10.9 |
| Approach | | 530 | 1.7 | 530 | 1.7 | 0.605 | 51.2 | LOS D | 16.8 | 119.3 | 0.94 | 0.80 | 0.94 | 10.9 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 29 | 0.0 | 29 | 0.0 | 0.854 | 72.2 | LOS F | 12.7 | 92.2 | 1.00 | 0.98 | 1.18 | 13.4 |
| 5 | T1 | 215 | 0.0 | 215 | 0.0 | *0.854 | 67.7 | LOS E | 12.7 | 92.2 | 1.00 | 0.98 | 1.18 | 7.6 |
| 6 | R2 | 276 | 24.3 | 276 | 24.3 | 0.854 | 74.6 | LOS F | 16.8 | 141.8 | 1.00 | 0.96 | 1.22 | 7.1 |
| Approach | | 520 | 12.9 | 520 | 12.9 | 0.854 | 71.6 | LOS F | 16.8 | 141.8 | 1.00 | 0.97 | 1.20 | 7.7 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 304 | 22.0 | 282 | 22.1 | *0.626 | 12.8 | LOS A | 11.9 | 88.1 | 0.40 | 0.52 | 0.40 | 28.1 |
| 8 | T1 | 773 | 1.3 | 716 | 1.3 | 0.626 | 18.2 | LOS B | 12.5 | 88.1 | 0.66 | 0.65 | 0.66 | 24.2 |
| 9 | R2 | 79 | 0.0 | 73 | 0.0 | 0.626 | 28.3 | LOS B | 12.5 | 88.1 | 0.82 | 0.74 | 0.82 | 8.5 |
| Approach | | 1156 | 6.7 | 1071 ^N ₁ | 6.7 | 0.626 | 17.5 | LOS B | 12.5 | 88.1 | 0.60 | 0.62 | 0.60 | 24.1 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 103 | 0.0 | 103 | 0.0 | 0.147 | 32.9 | LOS C | 4.4 | 30.9 | 0.67 | 0.72 | 0.67 | 29.3 |
| 11 | T1 | 155 | 0.6 | 155 | 0.6 | *0.657 | 65.1 | LOS E | 10.4 | 73.3 | 1.00 | 0.82 | 1.02 | 23.5 |
| Approach | | 258 | 0.4 | 258 | 0.4 | 0.657 | 52.2 | LOS D | 10.4 | 73.3 | 0.87 | 0.78 | 0.88 | 25.2 |
| All Vehicles | | 2464 | 6.3 | 2379 ^N ₁ | 6.5 | 0.854 | 40.6 | LOS C | 16.8 | 141.8 | 0.80 | 0.75 | 0.84 | 16.1 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 674 | 11.0 | 674 | 11.0 | 0.374 | 4.8 | LOS A | 7.9 | 57.5 | 0.30 | 0.28 | 0.30 | 24.0 |
| 3 | R2 | 191 | 0.0 | 191 | 0.0 | 0.374 | 15.2 | LOS B | 7.9 | 57.5 | 0.72 | 0.70 | 0.72 | 37.3 |
| Approach | | 865 | 8.6 | 865 | 8.6 | 0.374 | 7.1 | LOS A | 7.9 | 57.5 | 0.39 | 0.37 | 0.39 | 32.1 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 244 | 0.4 | 244 | 0.4 | 0.461 | 18.4 | LOS B | 8.4 | 58.7 | 0.62 | 0.74 | 0.62 | 33.4 |
| 6 | R2 | 22 | 0.0 | 22 | 0.0 | 0.111 | 66.2 | LOS E | 1.4 | 9.6 | 0.94 | 0.71 | 0.94 | 18.0 |
| Approach | | 266 | 0.4 | 266 | 0.4 | 0.461 | 22.4 | LOS B | 8.4 | 58.7 | 0.65 | 0.73 | 0.65 | 31.2 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 74 | 0.0 | 67 | 0.0 | 0.142 | 49.8 | LOS D | 5.3 | 47.6 | 0.83 | 0.71 | 0.83 | 24.3 |
| 8 | T1 | 912 | 8.6 | 822 | 8.7 | *0.863 | 53.6 | LOS D | 26.5 | 193.3 | 0.98 | 0.92 | 1.06 | 8.0 |
| Approach | | 986 | 7.9 | 888 ^{N1} | 8.1 | 0.863 | 53.3 | LOS D | 26.5 | 193.3 | 0.97 | 0.90 | 1.05 | 9.7 |
| All Vehicles | | 2117 | 7.2 | 2019 ^N ₁ | 7.6 | 0.863 | 29.4 | LOS C | 26.5 | 193.3 | 0.68 | 0.65 | 0.71 | 17.6 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C

Output Phase Sequence: A, E, D, C

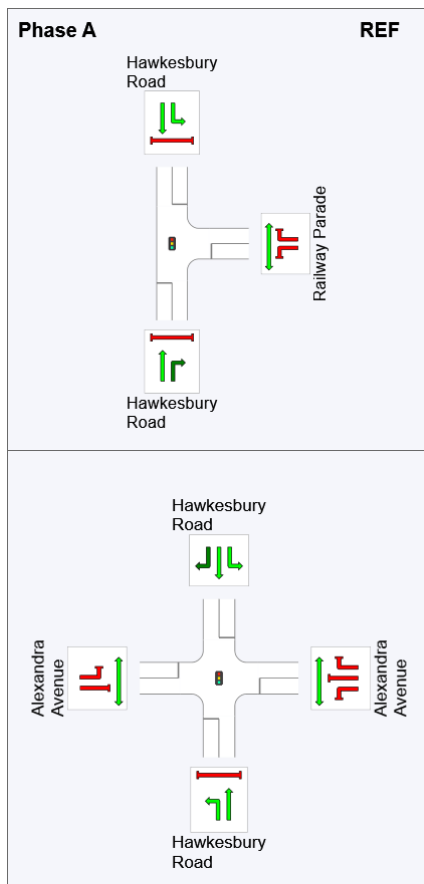
(* Variable Phase)

Phase Timing Summary (CCG)

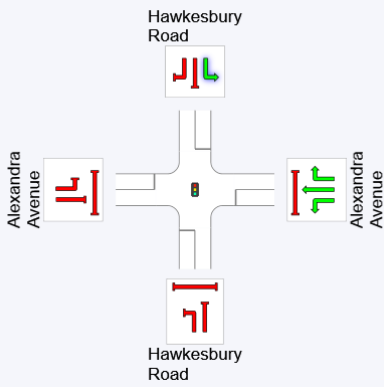
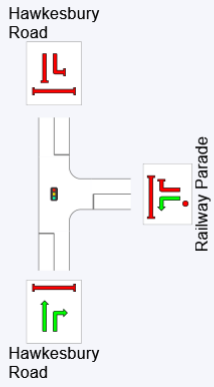
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 40 | 75 | 101 |
| Green Time (sec) | 34 | 26 | 17 | 33 |
| Phase Time (sec) | 43 | 35 | 23 | 39 |
| Phase Split | 31% | 25% | 16% | 28% |

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%.

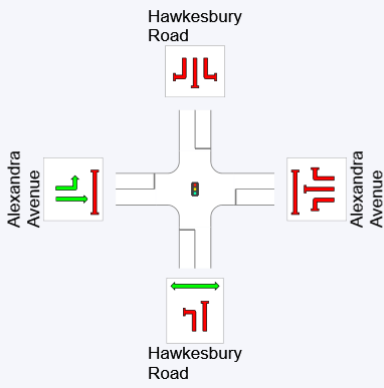
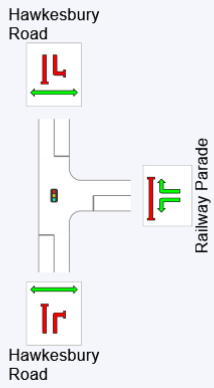
Output Phase Sequence (CCG)

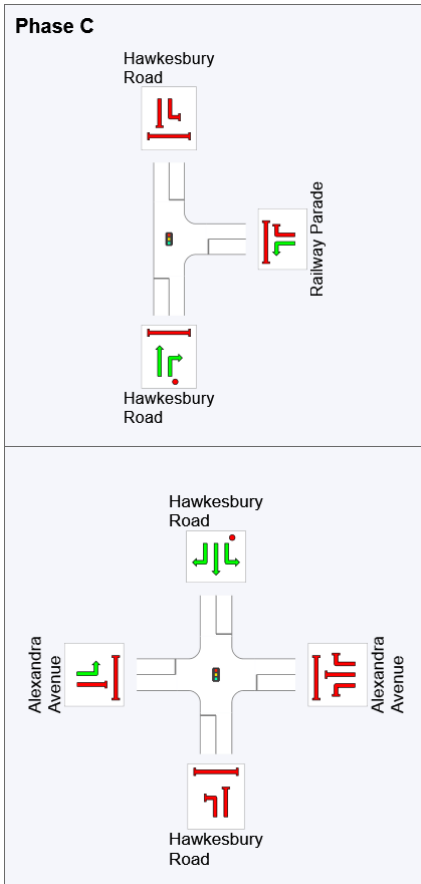


Phase E

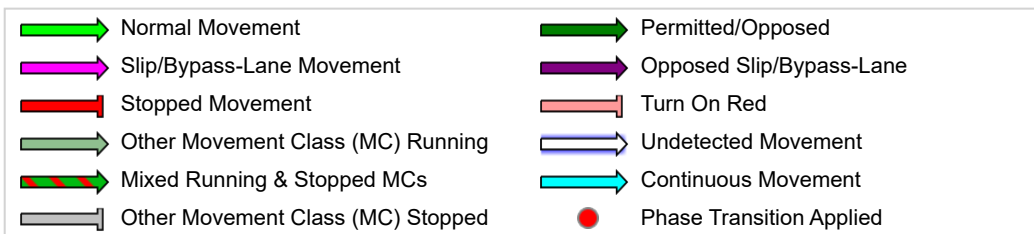


Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.188 | 78.4 | LOS F | 0.6 | 15.7 | 0.98 | 0.69 | 0.98 | 10.8 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.188 | 78.4 | LOS F | 0.6 | 15.7 | 0.98 | 0.69 | 0.98 | 10.8 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.126 | 76.7 | LOS F | 0.6 | 15.0 | 0.98 | 0.68 | 0.98 | 10.8 |
| 25 | T1 | 426 | 3.1 | 426 | 3.1 | * 1.147 | 186.5 | LOS F | 53.8 | 386.5 | 1.00 | 1.66 | 2.00 | 3.6 |
| 26 | R2 | 265 | 3.4 | 265 | 3.4 | * 0.993 | 87.1 | LOS F | 21.3 | 153.3 | 0.99 | 1.08 | 1.39 | 7.0 |
| Approach | | 699 | 4.3 | 699 | 4.3 | 1.147 | 147.5 | LOS F | 53.8 | 386.5 | 0.99 | 1.43 | 1.76 | 4.4 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 172 | 5.8 | 172 | 5.8 | 1.091 | 23.3 | LOS B | 4.3 | 30.7 | 0.58 | 0.69 | 0.61 | 22.8 |
| 29 | R2 | 560 | 11.3 | 560 | 11.3 | * 1.131 | 161.9 | LOS F | 19.9 | 146.9 | 0.95 | 1.39 | 1.85 | 2.3 |
| Approach | | 732 | 10.0 | 732 | 10.0 | 1.131 | 129.4 | LOS F | 19.9 | 146.9 | 0.86 | 1.23 | 1.56 | 3.8 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 449 | 15.1 | 449 | 15.1 | 0.270 | 11.9 | LOS A | 9.4 | 70.4 | 0.36 | 0.65 | 0.36 | 23.4 |
| 31 | T1 | 247 | 3.2 | 247 | 3.2 | 0.345 | 50.7 | LOS D | 15.1 | 108.8 | 0.97 | 0.81 | 0.97 | 15.5 |
| Approach | | 696 | 10.9 | 696 | 10.9 | 0.345 | 25.6 | LOS B | 15.1 | 108.8 | 0.58 | 0.71 | 0.58 | 18.2 |
| All Vehicles | | 2135 | 8.8 | 2135 | 8.8 | 1.147 | 101.3 | LOS F | 53.8 | 386.5 | 0.81 | 1.12 | 1.30 | 5.8 |

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)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|-----------------|-----------------|------------------|------------------------------------|-----|-----------|---------------------|-----------------|----------------|-------------------|--|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [Ped Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec | |
| South: Parramatta Light Rail | | | | | | | | | | | | |
| P1 | Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 238.3 | 208.6 | 0.88 | |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | |
| P6 | Full | 202 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 97.1 | 38.9 | 0.40 | |
| NorthWest: Darcy Road | | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 29.4 | LOS C | 0.1 | 0.1 | 0.92 | 0.92 | 55.2 | 30.9 | 0.56 | |
| P72 | Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 | |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P8 Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 98.7 | 41.1 | 0.42 |
| All Pedestrians | 580 | 60.9 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 124.8 | 76.7 | 0.61 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

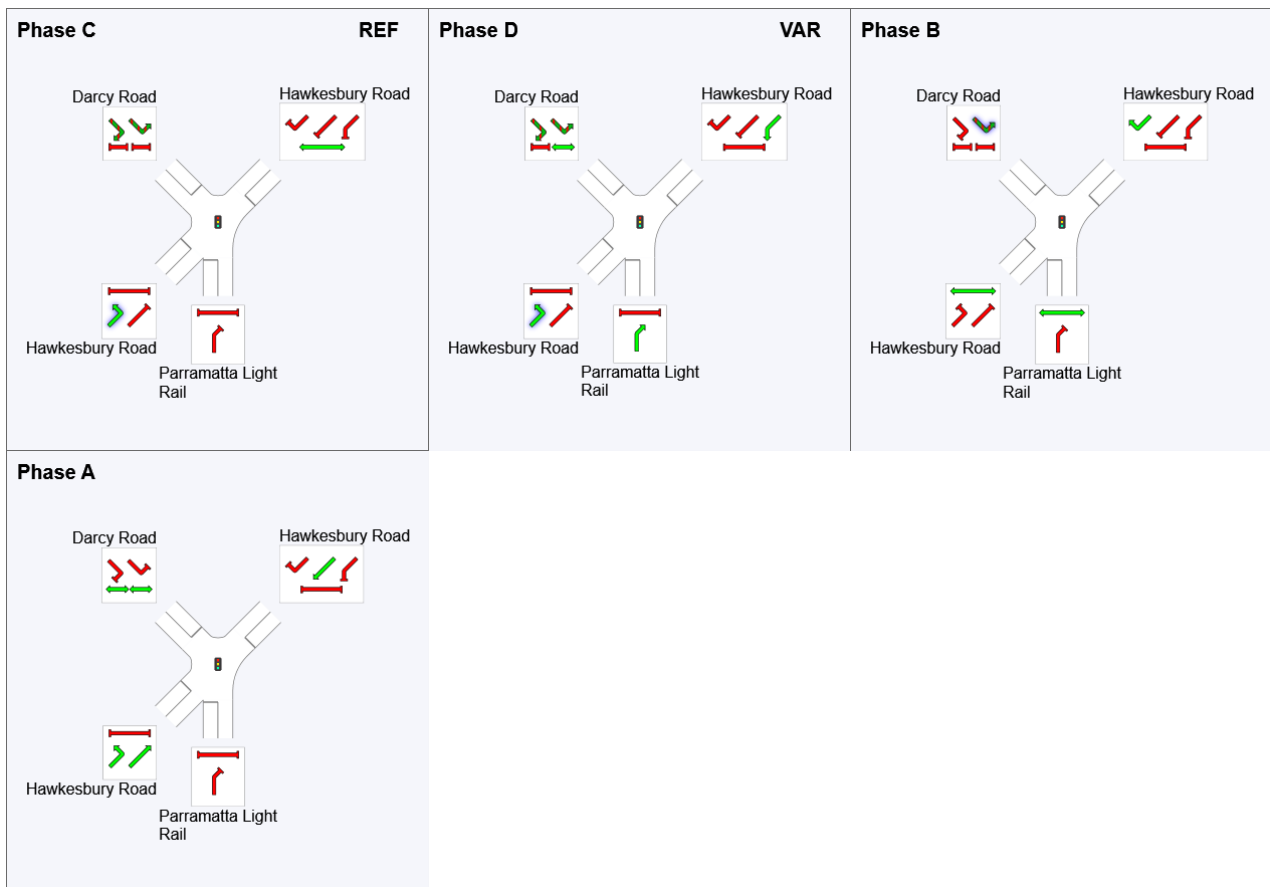
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 48 | 64 | 94 |
| Green Time (sec) | 42 | 8 | 21 | 35 |
| Phase Time (sec) | 50 | 17 | 30 | 43 |
| Phase Split | 36% | 12% | 21% | 31% |

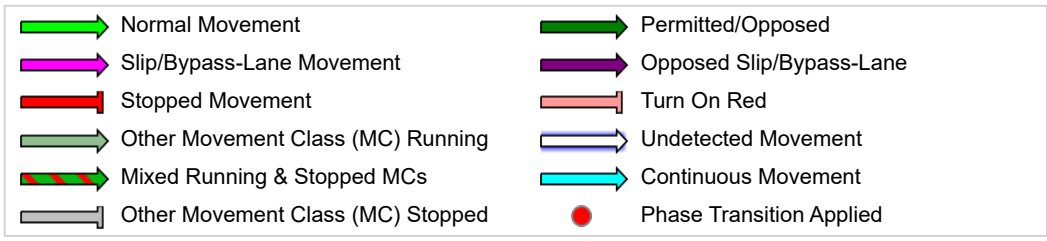
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 6 | 0.0 | 6 | 0.0 | 0.306 | 26.4 | LOS B | 14.0 | 103.1 | 0.73 | 0.64 | 0.73 | 21.1 | |
| 22 | T1 | 640 | 11.1 | 640 | 11.1 | 0.306 | 22.4 | LOS B | 14.0 | 103.1 | 0.72 | 0.62 | 0.72 | 11.7 | |
| 23 | R2 | 68 | 0.0 | 68 | 0.0 | *0.570 | 74.7 | LOS F | 4.7 | 32.7 | 0.99 | 0.76 | 1.00 | 8.6 | |
| Approach | | 714 | 9.9 | 714 | 9.9 | 0.570 | 27.5 | LOS B | 14.0 | 103.1 | 0.74 | 0.64 | 0.74 | 10.8 | |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 56 | 3.6 | 56 | 3.6 | 0.445 | 53.0 | LOS D | 3.5 | 25.3 | 0.92 | 0.72 | 0.92 | 7.7 | |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.445 | 53.0 | LOS D | 3.5 | 25.3 | 0.92 | 0.72 | 0.92 | 11.9 | |
| 26 | R2 | 137 | 0.0 | 137 | 0.0 | 0.538 | 48.4 | LOS D | 8.0 | 55.7 | 0.93 | 0.74 | 0.93 | 8.1 | |
| Approach | | 194 | 1.0 | 194 | 1.0 | 0.538 | 49.8 | LOS D | 8.0 | 55.7 | 0.93 | 0.73 | 0.93 | 8.0 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 103 | 1.0 | 103 | 1.0 | *0.650 | 26.4 | LOS B | 13.2 | 96.3 | 0.66 | 0.66 | 0.66 | 12.8 | |
| 28 | T1 | 627 | 11.5 | 627 | 11.5 | 0.650 | 25.3 | LOS B | 13.2 | 96.3 | 0.74 | 0.70 | 0.74 | 9.3 | |
| 29 | R2 | 6 | 0.0 | 6 | 0.0 | 0.050 | 74.5 | LOS F | 0.4 | 2.9 | 1.00 | 0.66 | 1.00 | 9.5 | |
| Approach | | 736 | 9.9 | 736 | 9.9 | 0.650 | 25.8 | LOS B | 13.2 | 96.3 | 0.73 | 0.69 | 0.73 | 9.5 | |
| SouthWest: Farm House Road | | | | | | | | | | | | | | | |
| 30 | L2 | 30 | 0.0 | 30 | 0.0 | 0.127 | 53.8 | LOS D | 2.0 | 13.9 | 0.89 | 0.71 | 0.89 | 9.8 | |
| 31 | T1 | 5 | 0.0 | 5 | 0.0 | 0.127 | 56.8 | LOS E | 2.0 | 13.9 | 0.89 | 0.71 | 0.89 | 12.0 | |
| 32 | R2 | 50 | 0.0 | 50 | 0.0 | 0.197 | 49.4 | LOS D | 2.7 | 19.1 | 0.92 | 0.72 | 0.92 | 10.6 | |
| Approach | | 85 | 0.0 | 85 | 0.0 | 0.197 | 51.4 | LOS D | 2.7 | 19.1 | 0.91 | 0.72 | 0.91 | 10.5 | |
| All Vehicles | | 1729 | 8.4 | 1729 | 8.4 | 0.650 | 30.4 | LOS C | 14.0 | 103.1 | 0.77 | 0.67 | 0.77 | 9.7 | |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|-------------------------------------|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 Stage 1 | | 197 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 90.4 | 30.9 | 0.34 |
| P52 Stage 2 | | 41 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |
| P6 Full | | 88 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P71 Stage 1 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 225 | 64.7 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 91.3 | 31.9 | 0.35 |
| All Pedestrians | 603 | 64.6 | LOS F | 0.9 | 0.9 | 0.96 | 0.96 | 91.4 | 32.2 | 0.35 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

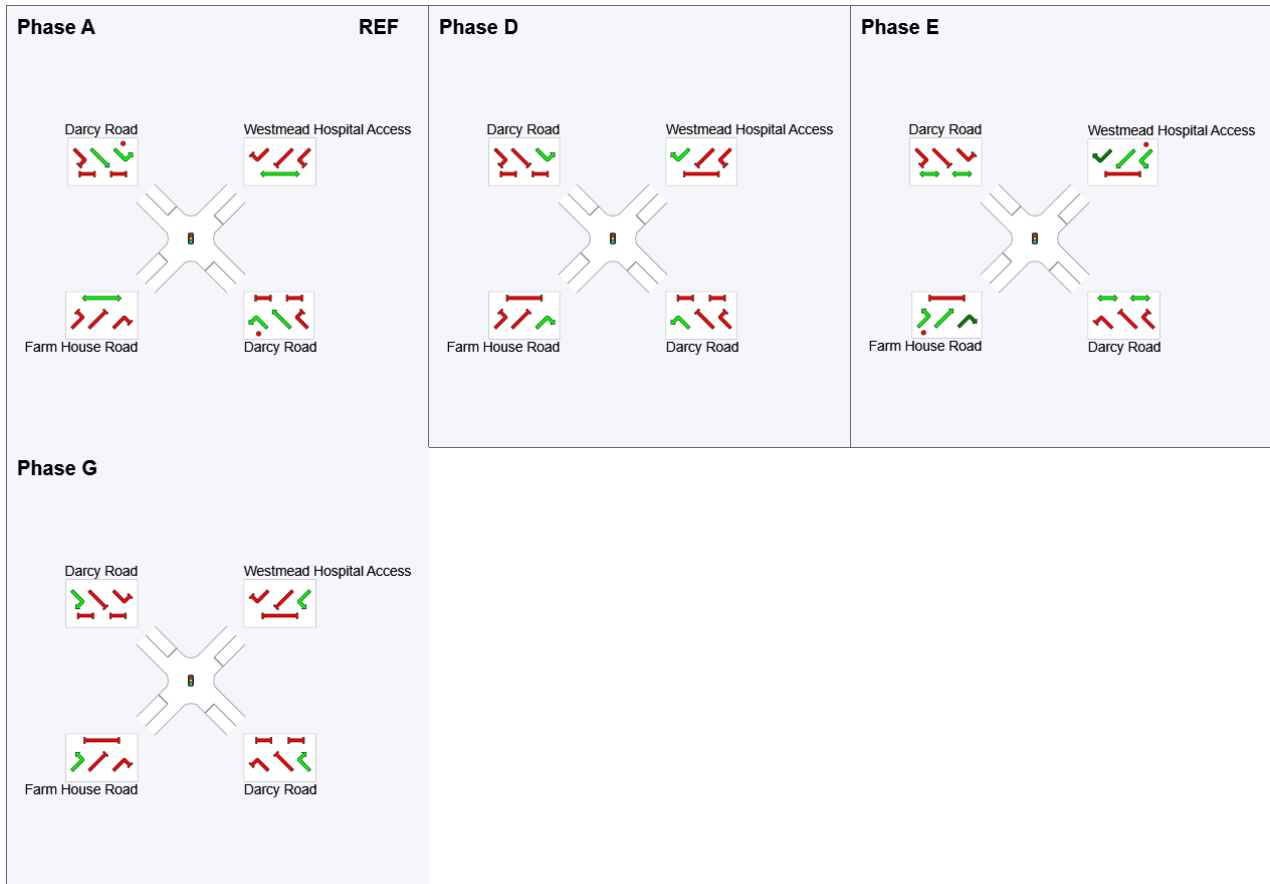
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 121 | 64 | 82 | 106 |
| Green Time (sec) | 75 | 11 | 16 | 9 |
| Phase Time (sec) | 82 | 19 | 22 | 17 |
| Phase Split | 59% | 14% | 16% | 12% |

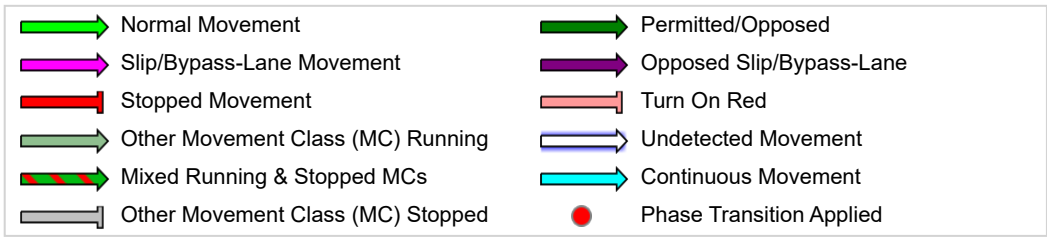
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 86 | 0.0 | 86 | 0.0 | 0.268 | 11.1 | LOS A | 1.6 | 11.6 | 0.61 | 0.27 | 0.68 | 19.1 |
| 22 | T1 | 722 | 10.0 | 722 | 10.0 | 0.268 | 1.4 | LOS A | 1.6 | 11.6 | 0.16 | 0.07 | 0.18 | 30.9 |
| Approach | | 808 | 8.9 | 808 | 8.9 | 0.268 | 2.4 | NA | 1.6 | 11.6 | 0.21 | 0.09 | 0.23 | 28.3 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 735 | 9.3 | 735 | 9.3 | 0.248 | 0.0 | LOS A | 0.1 | 0.6 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 735 | 9.3 | 735 | 9.3 | 0.248 | 0.0 | NA | 0.1 | 0.6 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.004 | 14.4 | LOS A | 0.0 | 0.1 | 0.82 | 0.67 | 0.82 | 6.9 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.004 | 14.4 | LOS A | 0.0 | 0.1 | 0.82 | 0.67 | 0.82 | 6.9 |
| All Vehicles | | 1544 | 9.1 | 1544 | 9.1 | 0.268 | 1.3 | NA | 1.6 | 11.6 | 0.11 | 0.05 | 0.12 | 33.9 |

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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|---|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | * 0.265 | 13.1 | LOS A | 8.4 | 62.0 | 0.42 | 0.36 | 0.42 | 20.1 | |
| 22 | T1 | 687 | 10.3 | 687 | 10.3 | 0.265 | 9.6 | LOS A | 8.4 | 62.0 | 0.39 | 0.34 | 0.39 | 20.3 | |
| 23 | R2 | 34 | 0.0 | 34 | 0.0 | * 0.427 | 80.4 | LOS F | 2.5 | 17.2 | 1.00 | 0.72 | 1.00 | 8.7 | |
| Approach | | 722 | 9.8 | 722 | 9.8 | 0.427 | 13.0 | LOS A | 8.4 | 62.0 | 0.42 | 0.36 | 0.42 | 17.9 | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 38 | 0.0 | 38 | 0.0 | 0.045 | 4.1 | LOS A | 0.2 | 1.7 | 0.14 | 0.50 | 0.14 | 30.3 | |
| 26 | R2 | 29 | 0.0 | 29 | 0.0 | 0.143 | 62.6 | LOS E | 1.8 | 12.5 | 0.92 | 0.71 | 0.92 | 7.1 | |
| Approach | | 67 | 0.0 | 67 | 0.0 | 0.143 | 29.4 | LOS C | 1.8 | 12.5 | 0.48 | 0.59 | 0.48 | 12.4 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 60 | 0.0 | 60 | 0.0 | 0.185 | 12.2 | LOS A | 7.0 | 51.3 | 0.33 | 0.34 | 0.33 | 28.0 | |
| 28 | T1 | 636 | 10.7 | 636 | 10.7 | 0.185 | 9.2 | LOS A | 8.1 | 59.7 | 0.38 | 0.35 | 0.38 | 20.0 | |
| 29 | R2 | 2 | 50.0 | 2 | 50.0 | 0.023 | 76.8 | LOS F | 0.1 | 1.4 | 1.00 | 0.61 | 1.00 | 6.7 | |
| Approach | | 698 | 9.9 | 698 | 9.9 | 0.185 | 9.7 | LOS A | 8.1 | 59.7 | 0.37 | 0.35 | 0.37 | 20.8 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | | |
| 30 | L2 | 115 | 0.0 | 115 | 0.0 | * 0.340 | 48.6 | LOS D | 6.6 | 45.9 | 0.90 | 0.72 | 0.90 | 5.1 | |
| 32 | R2 | 61 | 0.0 | 61 | 0.0 | 0.237 | 53.9 | LOS D | 3.6 | 25.4 | 0.90 | 0.70 | 0.90 | 4.9 | |
| Approach | | 176 | 0.0 | 176 | 0.0 | 0.340 | 50.4 | LOS D | 6.6 | 45.9 | 0.90 | 0.71 | 0.90 | 5.0 | |
| All Vehicles | | 1663 | 8.4 | 1663 | 8.4 | 0.427 | 16.2 | LOS B | 8.4 | 62.0 | 0.45 | 0.40 | 0.45 | 15.1 | |

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)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|--|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed | |
| | | | | | [Ped ped | Dist] m | | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | |
| P6 | Full | 4 | 64.1 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 90.7 | 31.9 | 0.35 | |
| NorthWest: Darcy Road | | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | |
| P8 | Full | 59 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 | |
| All Pedestrians | | 154 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 | |

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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Models.sip9

PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

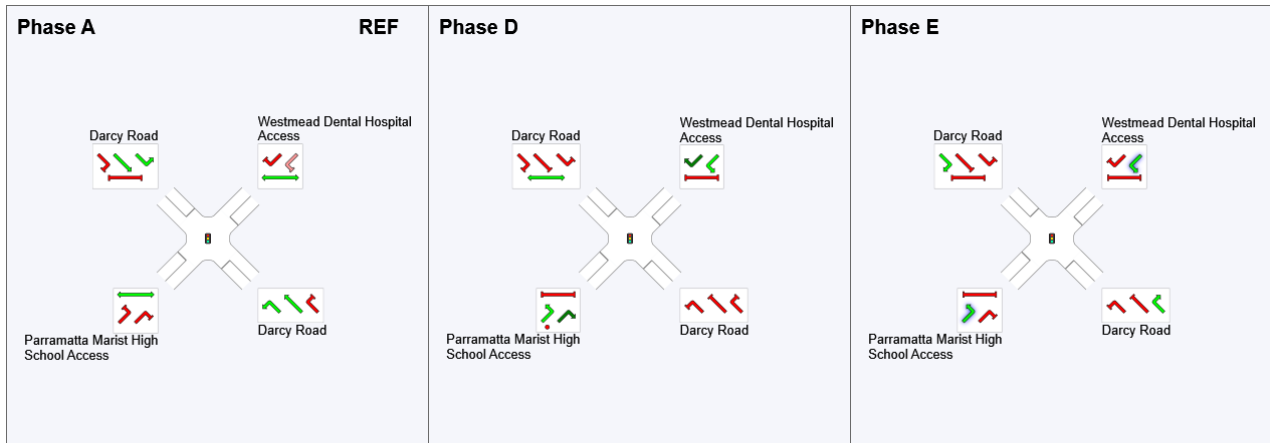
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|----|
| Phase Change Time (sec) | 109 | 67 | 98 |
| Green Time (sec) | 92 | 25 | 6 |
| Phase Time (sec) | 98 | 30 | 12 |
| Phase Split | 70% | 21% | 9% |

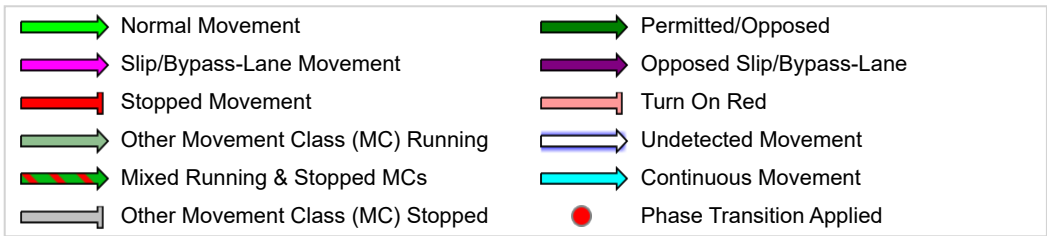
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2023 With
Development + Upgrades)]

1500 - 1600
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.180 | 3.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 832 | 8.8 | 832 | 8.8 | 0.180 | 0.0 | LOS A | 3.0 | 21.8 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 833 | 8.8 | 833 | 8.8 | 0.180 | 0.0 | NA | 3.0 | 21.8 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 698 | 9.7 | 698 | 9.7 | 0.176 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 698 | 9.7 | 698 | 9.7 | 0.176 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 0.8 | LOS A | 0.0 | 0.0 | 0.30 | 0.12 | 0.30 | 18.9 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 0.8 | LOS A | 0.0 | 0.0 | 0.30 | 0.12 | 0.30 | 18.9 |
| All Vehicles | | 1532 | 9.2 | 1532 | 9.2 | 0.180 | 0.0 | NA | 3.0 | 21.8 | 0.00 | 0.00 | 0.00 | 39.9 |

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.

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.

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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2023 With
 Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21a | L1 | 685 | 2.3 | 685 | 2.3 | 0.386 | 27.9 | LOS B | 12.6 | 89.8 | 0.71 | 0.74 | 0.71 | 6.9 | |
| 23a | R1 | 147 | 40.8 | 147 | 40.8 | *0.463 | 61.5 | LOS E | 7.3 | 61.7 | 0.97 | 0.78 | 0.97 | 18.0 | |
| Approach | | 832 | 9.1 | 832 | 9.1 | 0.463 | 33.8 | LOS C | 12.6 | 89.8 | 0.75 | 0.74 | 0.75 | 11.5 | |
| East: Institute Road | | | | | | | | | | | | | | | |
| 4b | L3 | 94 | 0.0 | 94 | 0.0 | 0.935 | 81.7 | LOS F | 12.6 | 88.0 | 1.00 | 1.02 | 1.31 | 12.4 | |
| 5 | T1 | 242 | 0.4 | 242 | 0.4 | *0.935 | 70.5 | LOS F | 13.1 | 92.2 | 1.00 | 0.97 | 1.22 | 13.3 | |
| 6 | R2 | 7 | 0.0 | 7 | 0.0 | 0.935 | 71.4 | LOS F | 13.1 | 92.2 | 1.00 | 0.94 | 1.18 | 21.5 | |
| Approach | | 343 | 0.3 | 343 | 0.3 | 0.935 | 73.6 | LOS F | 13.1 | 92.2 | 1.00 | 0.98 | 1.24 | 13.3 | |
| North: Mons Road | | | | | | | | | | | | | | | |
| 7 | L2 | 3 | 0.0 | 3 | 0.0 | 0.173 | 10.7 | LOS A | 2.0 | 16.2 | 0.22 | 0.39 | 0.22 | 36.0 | |
| 7a | L1 | 175 | 33.1 | 175 | 33.1 | 0.173 | 9.1 | LOS A | 2.0 | 16.2 | 0.22 | 0.39 | 0.22 | 33.2 | |
| 9 | R2 | 239 | 3.3 | 239 | 3.3 | 0.473 | 36.9 | LOS C | 11.2 | 80.5 | 0.73 | 0.74 | 0.73 | 21.8 | |
| Approach | | 417 | 15.8 | 417 | 15.8 | 0.473 | 25.0 | LOS B | 11.2 | 80.5 | 0.51 | 0.59 | 0.51 | 25.6 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 10 | L2 | 68 | 1.5 | 68 | 1.5 | 0.524 | 28.8 | LOS C | 10.5 | 74.6 | 0.66 | 0.67 | 0.66 | 26.3 | |
| 11 | T1 | 39 | 0.0 | 39 | 0.0 | *0.524 | 25.6 | LOS B | 10.5 | 74.6 | 0.66 | 0.67 | 0.66 | 24.0 | |
| 12a | R1 | 429 | 2.3 | 429 | 2.3 | 0.524 | 33.1 | LOS C | 12.8 | 91.4 | 0.73 | 0.70 | 0.73 | 7.0 | |
| Approach | | 536 | 2.1 | 536 | 2.1 | 0.524 | 32.0 | LOS C | 12.8 | 91.4 | 0.72 | 0.69 | 0.72 | 12.8 | |
| All Vehicles | | 2128 | 7.2 | 2128 | 7.2 | 0.935 | 38.1 | LOS C | 13.1 | 92.2 | 0.74 | 0.74 | 0.78 | 15.4 | |

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)

| Pedestrian Movement Performance | | | | | | | | | | | |
|---------------------------------|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2023 With
 Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

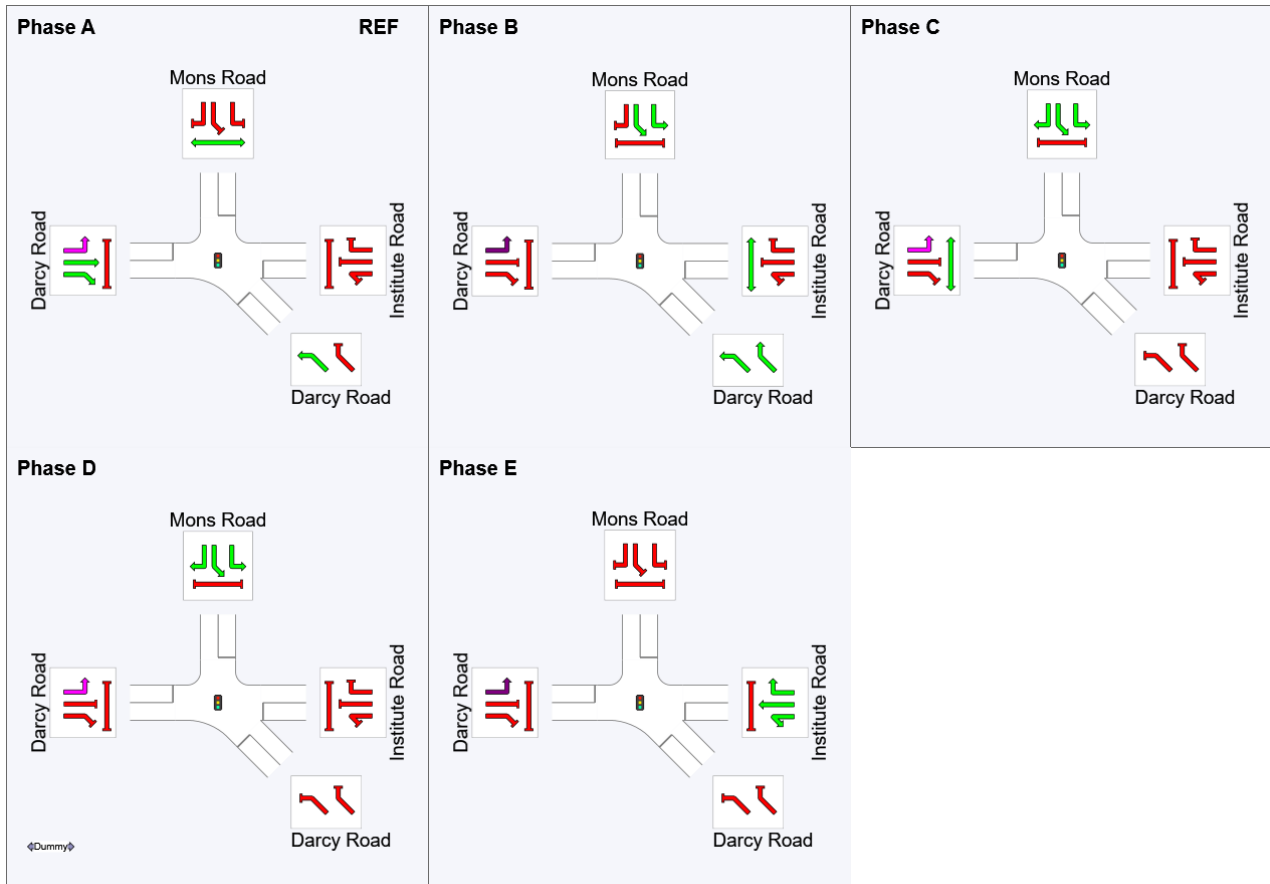
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 28 | 73 | 100 | 133 | 8 |
| Green Time (sec) | 39 | 21 | 27 | 9 | 14 |
| Phase Time (sec) | 45 | 27 | 33 | 15 | 20 |
| Phase Split | 32% | 19% | 24% | 11% | 14% |

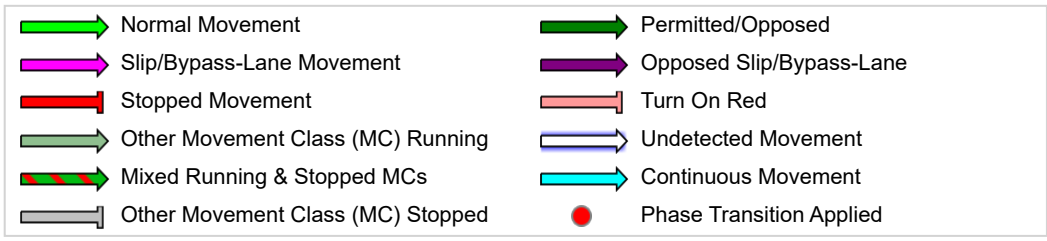
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | |
| 1 | L2 | 100 | 10.0 | 100 | 10.0 | 0.226 | 6.6 | LOS A | 0.7 | 5.1 | 0.56 | 0.97 | 0.56 | 9.6 |
| Approach | | 100 | 10.0 | 100 | 10.0 | 0.226 | 6.6 | LOS A | 0.7 | 5.1 | 0.56 | 0.97 | 0.56 | 9.6 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 33 | 15.2 | 33 | 15.2 | 0.024 | 9.9 | LOS A | 0.1 | 0.7 | 0.15 | 0.74 | 0.15 | 17.1 |
| 5 | T1 | 1132 | 1.7 | 1132 | 1.7 | 0.293 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1165 | 2.1 | 1165 | 2.1 | 0.293 | 0.3 | LOS A | 0.1 | 0.7 | 0.00 | 0.02 | 0.00 | 38.2 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 11 | T1 | 536 | 3.0 | 536 | 3.0 | 0.166 | 2.1 | LOS A | 0.6 | 4.4 | 0.00 | 0.36 | 0.00 | 37.1 |
| 12 | R2 | 52 | 7.7 | 52 | 7.7 | 0.150 | 12.2 | LOS A | 0.3 | 2.4 | 0.67 | 0.91 | 0.67 | 27.5 |
| Approach | | 588 | 3.4 | 588 | 3.4 | 0.166 | 3.0 | LOS A | 0.6 | 4.4 | 0.06 | 0.41 | 0.06 | 35.9 |
| All Vehicles | | 1853 | 2.9 | 1853 | 2.9 | 0.293 | 1.5 | NA | 0.7 | 5.1 | 0.05 | 0.20 | 0.05 | 26.4 |

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.
 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.

MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 218 | 1.4 | 217 | 1.4 | * 0.412 | 41.4 | LOS C | 11.1 | 78.7 | 0.83 | 0.78 | 0.83 | 25.6 |
| 2 | T1 | 28 | 0.0 | 28 | 0.0 | 0.584 | 73.3 | LOS F | 6.4 | 48.0 | 1.00 | 0.79 | 1.00 | 16.0 |
| 3 | R2 | 66 | 12.1 | 66 | 12.1 | 0.584 | 72.9 | LOS F | 6.4 | 48.0 | 1.00 | 0.79 | 1.00 | 15.6 |
| Approach | | 312 | 3.5 | 311 ^{N1} | 3.5 | 0.584 | 50.9 | LOS D | 11.1 | 78.7 | 0.88 | 0.78 | 0.88 | 22.1 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 191 | 6.8 | 191 | 6.8 | * 0.305 | 17.8 | LOS B | 14.2 | 102.3 | 0.39 | 0.44 | 0.39 | 29.8 |
| 5 | T1 | 1017 | 1.7 | 1017 | 1.7 | 0.305 | 14.6 | LOS B | 16.8 | 119.0 | 0.42 | 0.42 | 0.42 | 34.1 |
| 6 | R2 | 24 | 0.0 | 24 | 0.0 | 0.045 | 12.7 | LOS A | 0.3 | 2.4 | 0.38 | 0.60 | 0.38 | 29.1 |
| Approach | | 1232 | 2.4 | 1232 | 2.4 | 0.305 | 15.0 | LOS B | 16.8 | 119.0 | 0.42 | 0.42 | 0.42 | 33.5 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 23 | 0.0 | 23 | 0.0 | 0.060 | 42.9 | LOS D | 1.2 | 8.3 | 0.83 | 0.60 | 0.83 | 4.3 |
| 8 | T1 | 38 | 0.0 | 38 | 0.0 | 0.522 | 67.0 | LOS E | 5.4 | 37.8 | 0.99 | 0.78 | 0.99 | 3.1 |
| 9 | R2 | 42 | 0.0 | 42 | 0.0 | 0.522 | 67.0 | LOS E | 5.4 | 37.8 | 0.99 | 0.78 | 0.99 | 8.8 |
| Approach | | 103 | 0.0 | 103 | 0.0 | 0.522 | 61.7 | LOS E | 5.4 | 37.8 | 0.96 | 0.74 | 0.96 | 6.0 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 57 | 0.0 | 57 | 0.0 | 0.240 | 15.6 | LOS B | 9.9 | 70.2 | 0.45 | 0.44 | 0.45 | 23.9 |
| 11 | T1 | 498 | 1.8 | 498 | 1.8 | 0.240 | 10.7 | LOS A | 9.9 | 70.2 | 0.44 | 0.40 | 0.44 | 26.1 |
| 12 | R2 | 312 | 1.9 | 312 | 1.9 | 0.630 | 15.6 | LOS B | 7.4 | 52.6 | 0.59 | 0.75 | 0.59 | 22.0 |
| Approach | | 867 | 1.7 | 867 | 1.7 | 0.630 | 12.8 | LOS A | 9.9 | 70.2 | 0.49 | 0.53 | 0.49 | 24.3 |
| All Vehicles | | 2514 | 2.2 | 2513 ^{N1} | 2.2 | 0.630 | 20.6 | LOS B | 16.8 | 119.0 | 0.52 | 0.52 | 0.52 | 27.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 47 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 44 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |

| North: Coles Westmead Access | | | | | | | | | | | |
|------------------------------|------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 | Full | 127 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 92.2 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 81 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | | 299 | 64.4 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, E2

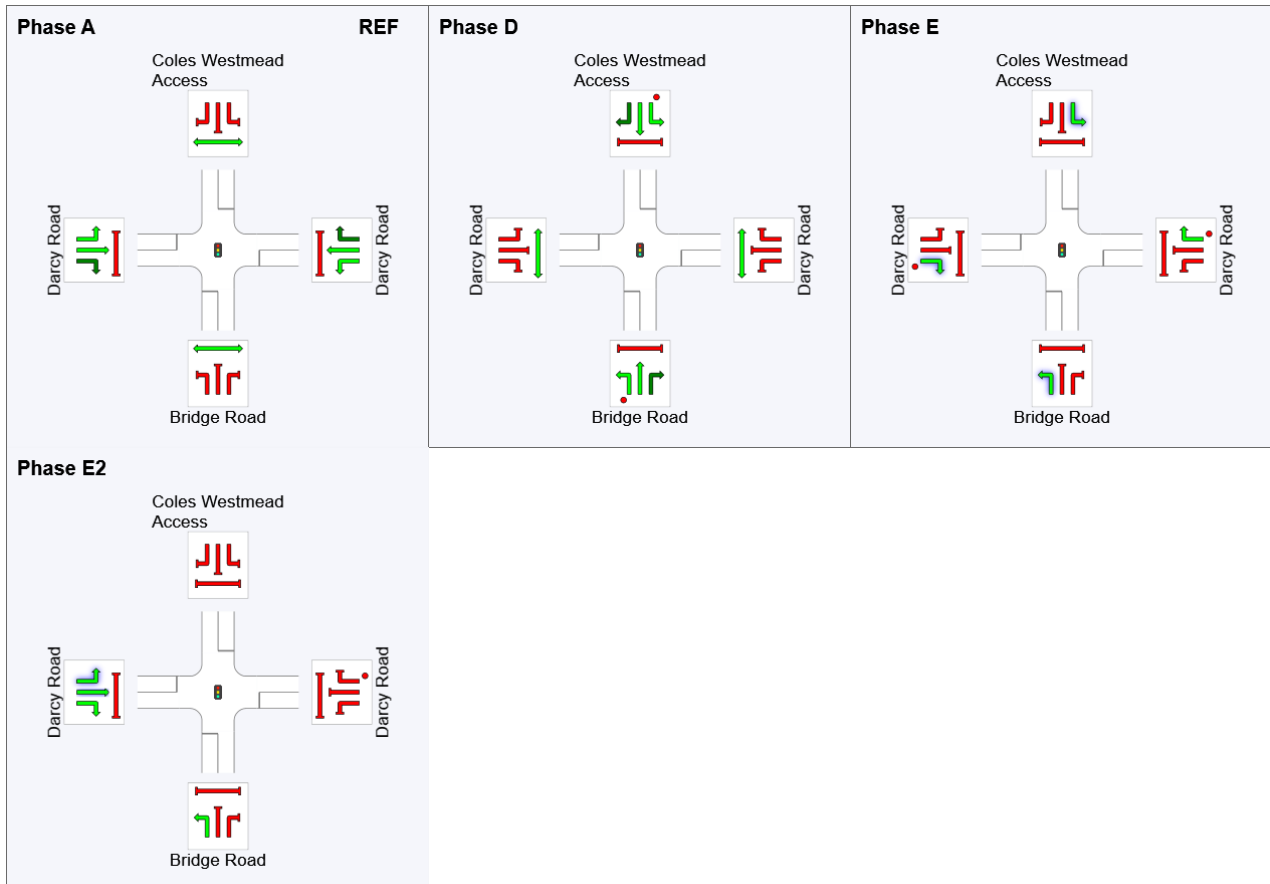
Output Phase Sequence: A, D, E, E2

Phase Timing Summary

| Phase | A | D | E | E2 |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 14 | 96 | 129 | 140 |
| Green Time (sec) | 75 | 26 | 5 | 8 |
| Phase Time (sec) | 82 | 32 | 11 | 15 |
| Phase Split | 59% | 23% | 8% | 11% |

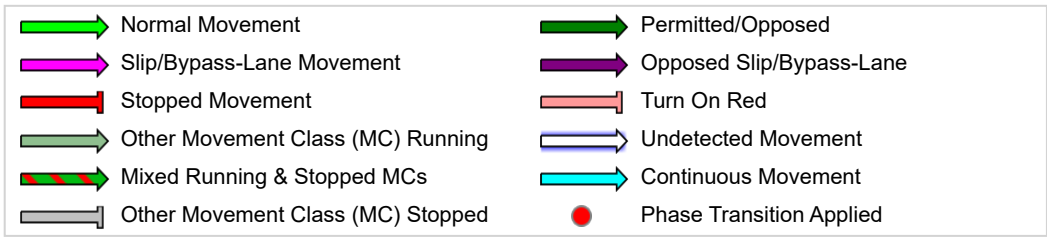
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2023 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600
 Site Category: (None)
 Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|-------|--------------------|-------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 384 | 2.9 | 384 | 2.9 | 0.542 | 5.0 | LOS A | 4.9 | 35.2 | 0.56 | 0.58 | 0.56 | 23.6 |
| 3 | R2 | 153 | 0.7 | 153 | 0.7 | 0.542 | 8.0 | LOS A | 4.9 | 35.2 | 0.56 | 0.58 | 0.56 | 23.6 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.542 | 10.7 | LOS A | 4.9 | 35.2 | 0.56 | 0.58 | 0.56 | 24.6 |
| Approach | | 538 | 2.4 | 538 | 2.4 | 0.542 | 5.9 | LOS A | 4.9 | 35.2 | 0.56 | 0.58 | 0.56 | 23.6 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 210 | 0.5 | 207 | 0.5 | 0.567 | 12.1 | LOS A | 4.2 | 29.7 | 0.71 | 0.93 | 0.87 | 38.6 |
| 6 | R2 | 135 | 0.0 | 133 | 0.0 | 0.567 | 14.6 | LOS B | 4.2 | 29.7 | 0.71 | 0.93 | 0.87 | 39.0 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.567 | 16.0 | LOS B | 4.2 | 29.7 | 0.71 | 0.93 | 0.87 | 39.0 |
| Approach | | 346 | 0.3 | 341 ^{N1} | 0.3 | 0.567 | 13.1 | LOS A | 4.2 | 29.7 | 0.71 | 0.93 | 0.87 | 38.7 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 91 | 0.0 | 91 | 0.0 | 0.674 | 6.6 | LOS A | 6.5 | 46.6 | 0.65 | 0.62 | 0.66 | 41.6 |
| 8 | T1 | 546 | 3.5 | 546 | 3.5 | 0.674 | 6.2 | LOS A | 6.5 | 46.6 | 0.65 | 0.62 | 0.66 | 41.1 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.674 | 10.4 | LOS A | 6.5 | 46.6 | 0.65 | 0.62 | 0.66 | 41.6 |
| Approach | | 638 | 3.0 | 638 | 3.0 | 0.674 | 6.3 | LOS A | 6.5 | 46.6 | 0.65 | 0.62 | 0.66 | 41.1 |
| All Vehicles | | 1522 | 2.2 | 1517 ^{N1} | 2.2 | 0.674 | 7.7 | LOS A | 6.5 | 46.6 | 0.63 | 0.67 | 0.67 | 38.2 |

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.
 Roundabout Capacity Model: SIDRA Standard.
 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.

SIGNAL OFFSETS

■ Network: N101 [PM Peak (Network Folder: 2023 With Development + Upgrades)]

1500 - 1600

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 106 | 104 | 101 ¹ | 102 ¹ | 103 | 110 | 108 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -31 | -17 | 0 | 0 | 0 | 15 | 28 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | | | | [Veh. veh | Dist] m | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 26 | 3.8 | 26 | 3.8 | 1.364 | 344.0 | LOS F | 121.4 | 854.9 | 1.00 | 2.31 | 2.77 | 2.0 |
| 2 | T1 | 1290 | 0.5 | 1290 | 0.5 | * 1.364 | 339.4 | LOS F | 121.4 | 854.9 | 1.00 | 2.32 | 2.77 | 2.0 |
| Approach | | 1316 | 0.6 | 1316 | 0.6 | 1.364 | 339.5 | LOS F | 121.4 | 854.9 | 1.00 | 2.32 | 2.77 | 2.0 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 43 | 0.0 | 43 | 0.0 | 1.337 | 357.9 | LOS F | 16.1 | 119.1 | 1.00 | 1.94 | 2.75 | 3.2 |
| 5 | T1 | 131 | 0.0 | 131 | 0.0 | * 1.337 | 353.4 | LOS F | 16.1 | 119.1 | 1.00 | 1.94 | 2.75 | 1.6 |
| 6 | R2 | 422 | 13.7 | 422 | 13.7 | 1.337 | 359.4 | LOS F | 44.8 | 350.8 | 1.00 | 1.82 | 2.77 | 1.6 |
| Approach | | 596 | 9.7 | 596 | 9.7 | 1.337 | 358.0 | LOS F | 44.8 | 350.8 | 1.00 | 1.86 | 2.76 | 1.7 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 439 | 13.9 | 436 | 14.0 | 1.009 | 58.7 | LOS E | 12.1 | 88.1 | 0.93 | 1.09 | 1.22 | 12.0 |
| 8 | T1 | 520 | 1.7 | 515 | 1.7 | 1.009 | 58.7 | LOS E | 12.1 | 88.1 | 1.00 | 1.13 | 1.31 | 11.5 |
| 9 | R2 | 70 | 0.0 | 69 | 0.0 | 1.227 | 279.5 | LOS F | 10.6 | 74.2 | 1.00 | 1.33 | 2.61 | 0.8 |
| Approach | | 1029 | 6.8 | 1020 ^N | 6.8 | 1.227 | 73.7 | LOS F | 12.1 | 88.1 | 0.97 | 1.12 | 1.36 | 8.9 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 324 | 0.0 | 264 | 0.0 | * 1.349 | 386.5 | LOS F | 48.6 | 340.2 | 1.00 | 1.75 | 2.93 | 5.2 |
| 11 | T1 | 405 | 0.2 | 329 | 0.2 | 1.133 | 197.4 | LOS F | 42.0 | 294.4 | 1.00 | 1.64 | 2.10 | 11.0 |
| Approach | | 729 | 0.1 | 593 ^{N1} | 0.1 | 1.349 | 281.5 | LOS F | 48.6 | 340.2 | 1.00 | 1.69 | 2.47 | 7.6 |
| All Vehicles | | 3670 | 3.7 | 3525 ^N | 3.9 | 1.364 | 255.9 | LOS F | 121.4 | 854.9 | 0.99 | 1.79 | 2.31 | 3.7 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 1663 | 3.8 | 1427 | 3.9 | 1.045 | 106.3 | LOS F | 12.3 | 88.1 | 1.00 | 1.39 | 1.59 | 2.1 |
| 3 | R2 | 373 | 0.3 | 320 | 0.3 | 1.045 | 101.9 | LOS F | 12.3 | 88.1 | 1.00 | 1.33 | 1.57 | 13.5 |
| Approach | | 2036 | 3.1 | 1747 ^N | 3.2 | 1.045 | 105.5 | LOS F | 12.3 | 88.1 | 1.00 | 1.38 | 1.59 | 4.7 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 224 | 0.9 | 224 | 0.9 | 0.689 | 41.8 | LOS C | 18.4 | 129.8 | 0.92 | 0.84 | 0.94 | 23.5 |
| 6 | R2 | 59 | 0.0 | 59 | 0.0 | 0.431 | 68.9 | LOS E | 4.6 | 32.1 | 0.97 | 0.77 | 0.97 | 17.5 |
| Approach | | 283 | 0.7 | 283 | 0.7 | 0.689 | 47.4 | LOS D | 18.4 | 129.8 | 0.93 | 0.82 | 0.94 | 22.0 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 130 | 0.0 | 128 | 0.0 | 0.109 | 19.8 | LOS B | 4.0 | 33.6 | 0.38 | 0.56 | 0.38 | 35.2 |
| 8 | T1 | 805 | 10.7 | 795 | 10.8 | 0.351 | 16.5 | LOS B | 28.4 | 208.9 | 0.44 | 0.40 | 0.44 | 19.0 |
| Approach | | 935 | 9.2 | 923 ^{N1} | 9.3 | 0.351 | 16.9 | LOS B | 28.4 | 208.9 | 0.43 | 0.42 | 0.43 | 23.6 |
| All Vehicles | | 3254 | 4.7 | 2953 ^N | 5.1 | 1.045 | 72.2 | LOS F | 28.4 | 208.9 | 0.82 | 1.03 | 1.17 | 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 (CCG) | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|------------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped] | [Dist] m | | | | | |
| | | ped/h | sec | | | | | | sec | m | m/sec |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C*

Output Phase Sequence: A, E, D

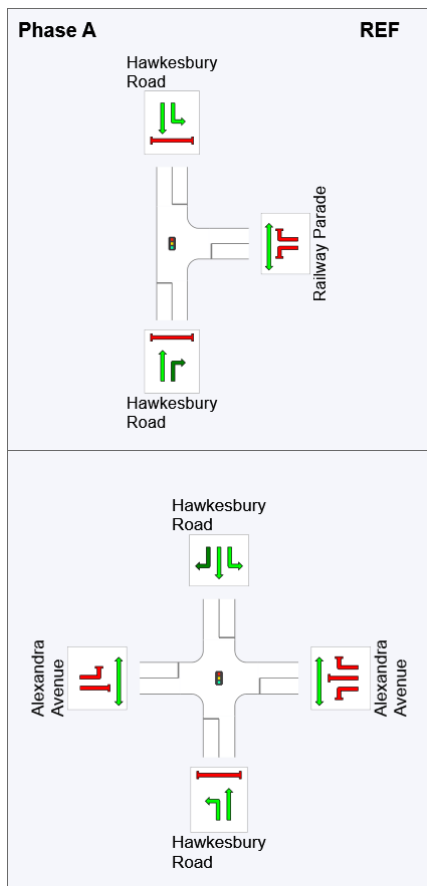
(* Variable Phase)

Phase Timing Summary (CCG)

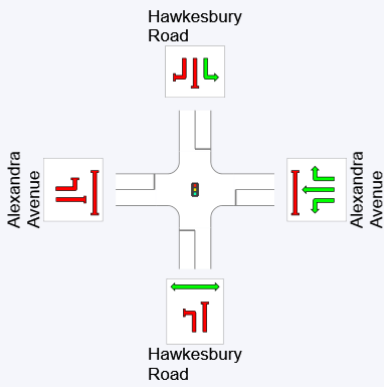
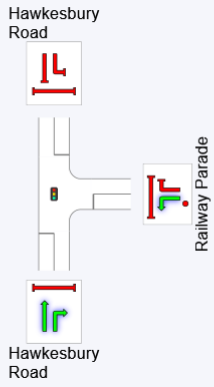
| Phase | A | E | D |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 0 | 75 | 112 |
| Green Time (sec) | 69 | 28 | 19 |
| Phase Time (sec) | 78 | 37 | 25 |
| Phase Split | 56% | 26% | 18% |

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%.

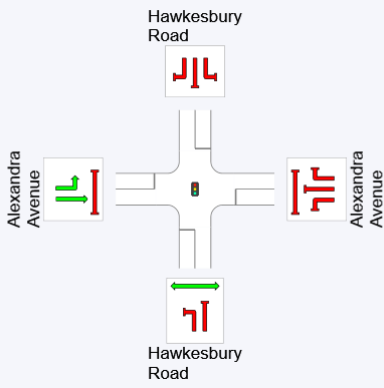
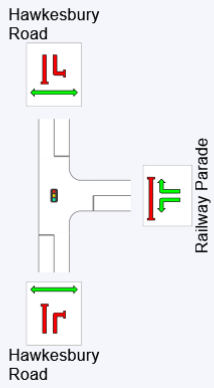
Output Phase Sequence (CCG)



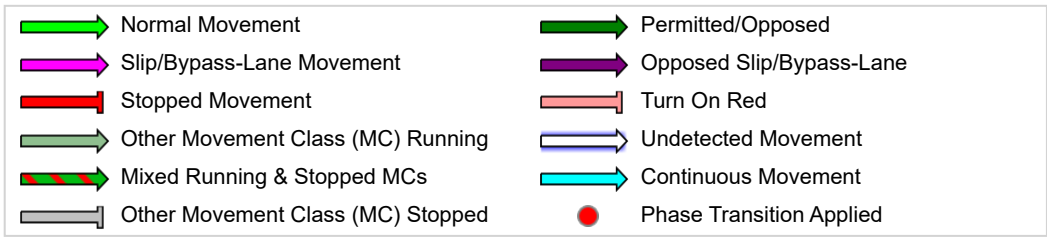
Phase E



Phase D



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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 |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 84.0 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.1 |
| 25 | T1 | 346 | 3.5 | 346 | 3.5 | 1.104 | 182.9 | LOS F | 45.0 | 324.4 | 1.00 | 1.68 | 2.02 | 3.7 |
| 26 | R2 | 274 | 1.8 | 274 | 1.8 | * 1.243 | 298.1 | LOS F | 44.8 | 318.5 | 1.00 | 1.85 | 2.58 | 2.2 |
| Approach | | 628 | 4.0 | 628 | 4.0 | 1.243 | 231.9 | LOS F | 45.0 | 324.4 | 1.00 | 1.74 | 2.25 | 2.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 293 | 3.8 | 286 | 3.8 | 1.173 | 16.8 | LOS B | 5.8 | 41.2 | 0.44 | 0.63 | 0.46 | 26.1 |
| 29 | R2 | 590 | 11.5 | 576 | 11.7 | 1.173 | 167.7 | LOS F | 19.9 | 146.9 | 0.99 | 1.40 | 1.90 | 2.2 |
| Approach | | 883 | 8.9 | 862 ^{N1} | 9.1 | 1.173 | 117.7 | LOS F | 19.9 | 146.9 | 0.81 | 1.15 | 1.42 | 4.5 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 1207 | 4.8 | 1024 | 4.9 | * 1.236 | 274.4 | LOS F | 29.2 | 208.9 | 0.99 | 1.60 | 2.37 | 2.2 |
| 31 | T1 | 515 | 1.2 | 437 | 1.2 | 0.612 | 33.6 | LOS C | 21.4 | 151.4 | 0.78 | 0.72 | 0.78 | 19.9 |
| Approach | | 1722 | 3.7 | 1461 ^{N1} | 3.8 | 1.236 | 202.5 | LOS F | 29.2 | 208.9 | 0.92 | 1.34 | 1.90 | 3.3 |
| All Vehicles | | 3241 | 5.4 | 2959 ^{N1} | 5.9 | 1.243 | 183.7 | LOS F | 45.0 | 324.4 | 0.91 | 1.36 | 1.83 | 3.4 |

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 | 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 |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 238.5 | 208.6 | 0.87 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 191 | 64.6 | LOS F | 0.7 | 0.7 | 0.96 | 0.96 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 32.2 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 57.9 | 30.9 | 0.53 |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P72 Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | |
| P8 Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 98.9 | 41.1 | 0.42 |
| All Pedestrians | 727 | 62.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 135.1 | 87.7 | 0.65 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

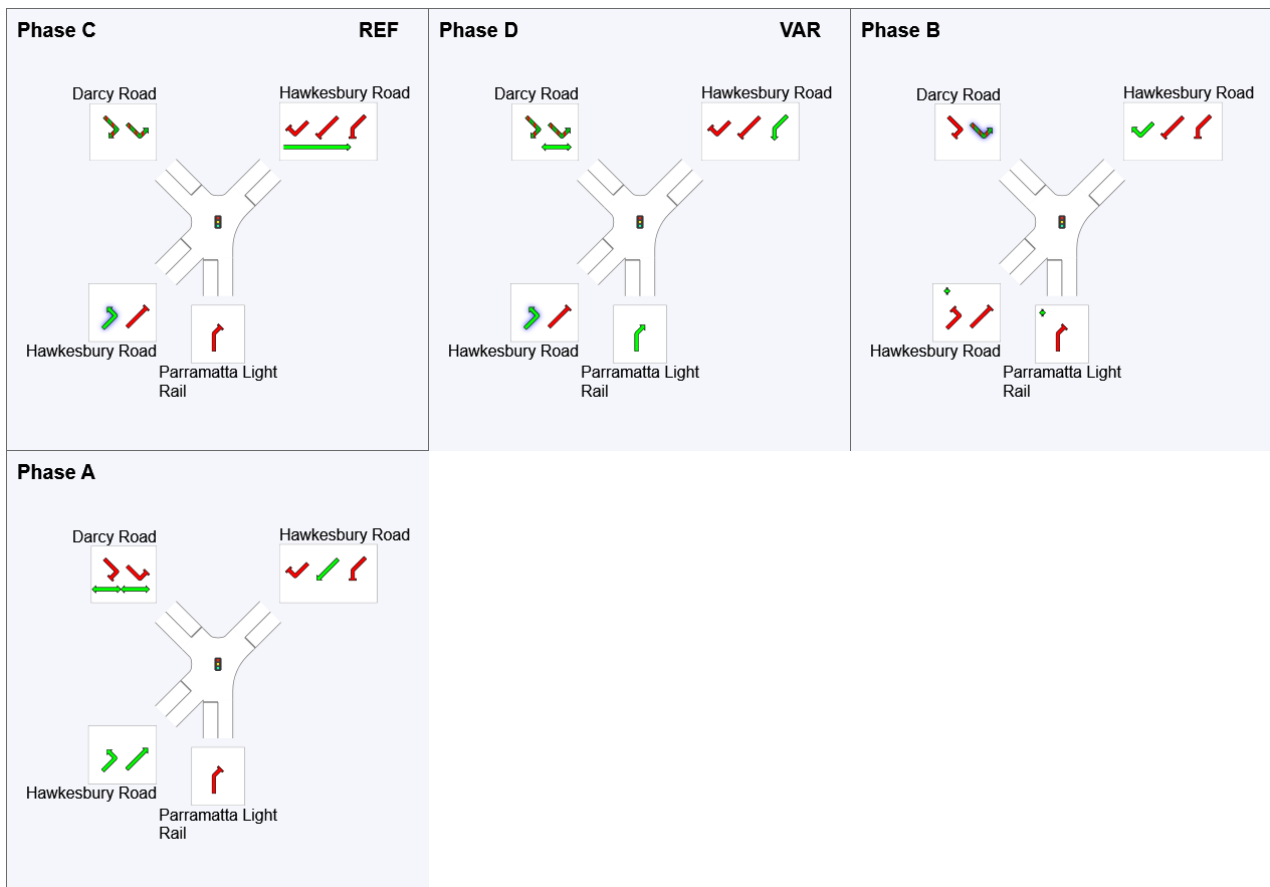
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 34 | 48 | 86 |
| Green Time (sec) | 28 | 6 | 29 | 43 |
| Phase Time (sec) | 36 | 15 | 38 | 51 |
| Phase Split | 26% | 11% | 27% | 36% |

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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 Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 6 | 0.0 | * 0.598 | 28.2 | LOS B | 20.5 | 146.9 | 0.71 | 0.64 | 0.71 | 20.4 |
| 22 | T1 | 1341 | 4.7 | 967 | 5.1 | 0.598 | 24.9 | LOS B | 20.5 | 146.9 | 0.71 | 0.64 | 0.71 | 10.9 |
| 23 | R2 | 132 | 0.8 | 95 | 0.8 | * 0.599 | 74.5 | LOS F | 6.5 | 45.6 | 1.00 | 0.79 | 1.02 | 8.6 |
| Approach | | 1481 | 4.3 | 1068 ^{N1} | 4.7 | 0.599 | 29.3 | LOS C | 20.5 | 146.9 | 0.73 | 0.65 | 0.73 | 10.3 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 43 | 0.0 | 43 | 0.0 | 0.221 | 48.7 | LOS D | 2.5 | 17.7 | 0.88 | 0.67 | 0.88 | 8.0 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | * 0.221 | 48.7 | LOS D | 2.5 | 17.7 | 0.88 | 0.67 | 0.88 | 12.4 |
| 26 | R2 | 75 | 6.7 | 75 | 6.7 | 1.099 | 180.7 | LOS F | 9.1 | 67.1 | 1.00 | 2.00 | 2.23 | 3.5 |
| Approach | | 119 | 4.2 | 119 | 4.2 | 1.099 | 131.9 | LOS F | 9.1 | 67.1 | 0.95 | 1.51 | 1.73 | 4.4 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 182 | 0.5 | 177 | 0.6 | 0.732 | 31.7 | LOS C | 13.3 | 96.3 | 0.79 | 0.77 | 0.79 | 12.0 |
| 28 | T1 | 818 | 10.3 | 796 | 10.5 | * 0.732 | 27.3 | LOS B | 13.3 | 96.3 | 0.78 | 0.73 | 0.78 | 7.6 |
| 29 | R2 | 7 | 14.3 | 7 | 14.5 | 0.047 | 67.9 | LOS E | 0.5 | 3.6 | 0.98 | 0.66 | 0.98 | 10.2 |
| Approach | | 1007 | 8.5 | 980 ^{N1} | 8.7 | 0.732 | 28.4 | LOS B | 13.3 | 96.3 | 0.78 | 0.74 | 0.79 | 9.2 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 12 | 8.3 | 12 | 8.3 | 0.062 | 53.0 | LOS D | 0.9 | 6.6 | 0.88 | 0.69 | 0.88 | 9.9 |
| 31 | T1 | 4 | 0.0 | 4 | 0.0 | 0.062 | 56.0 | LOS D | 0.9 | 6.6 | 0.88 | 0.69 | 0.88 | 12.1 |
| 32 | R2 | 22 | 0.0 | 22 | 0.0 | 0.166 | 71.3 | LOS F | 1.5 | 10.2 | 0.97 | 0.70 | 0.97 | 8.0 |
| Approach | | 38 | 2.6 | 38 | 2.6 | 0.166 | 63.9 | LOS E | 1.5 | 10.2 | 0.93 | 0.70 | 0.93 | 9.1 |
| All Vehicles | | 2645 | 5.9 | 2204 ^{N1} | 7.1 | 1.099 | 35.0 | LOS C | 20.5 | 146.9 | 0.77 | 0.74 | 0.81 | 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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 233 | 64.8 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 90.5 | 30.9 | 0.34 |
| P52 | Stage 2 | 65 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 98 | 64.4 | LOS F | 0.4 | 0.4 | 0.96 | 0.96 | 91.0 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 258 | 64.8 | LOS F | 1.0 | 1.0 | 0.97 | 0.97 | 91.4 | 31.9 | 0.35 |
| All Pedestrians | 696 | 64.7 | LOS F | 1.0 | 1.0 | 0.96 | 0.96 | 91.6 | 32.3 | 0.35 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

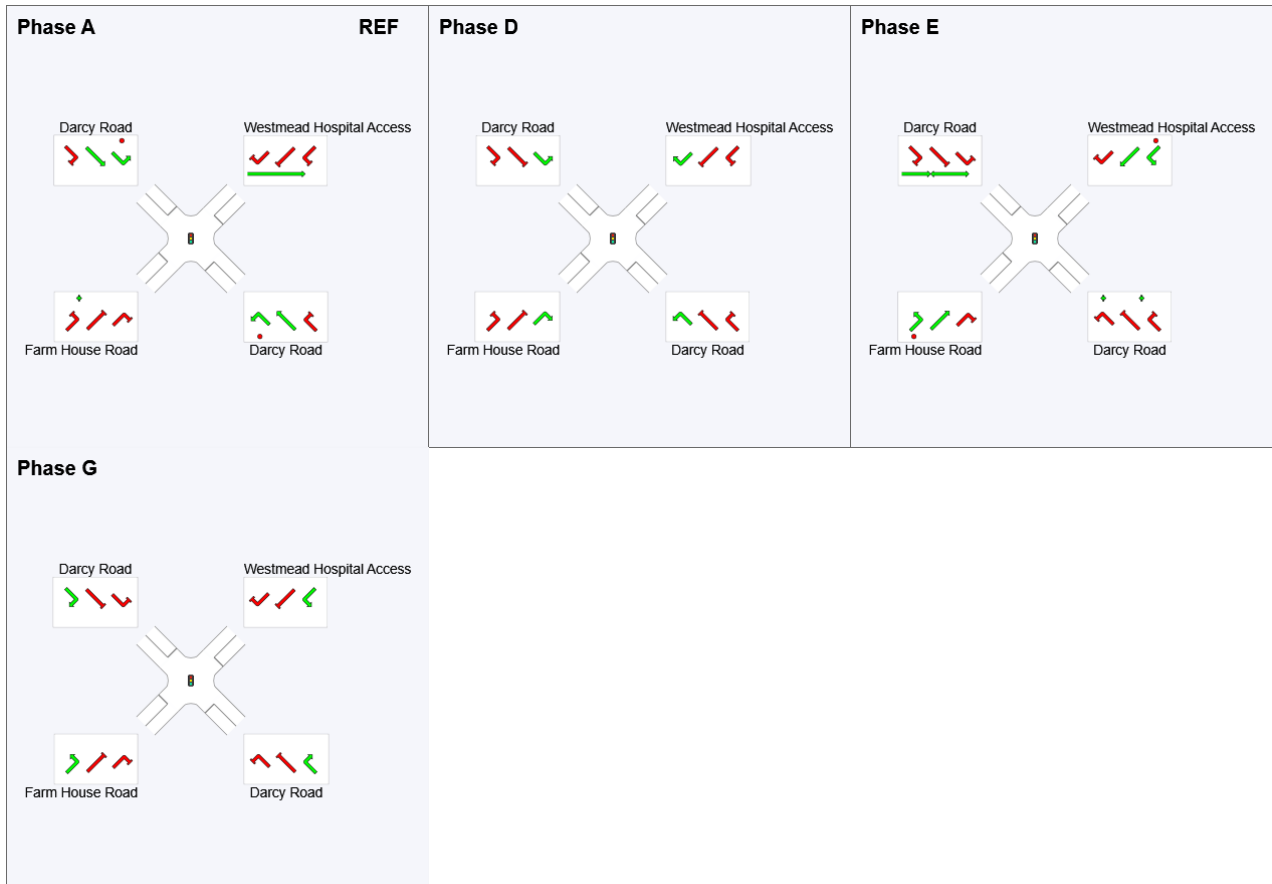
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 130 | 71 | 88 | 112 |
| Green Time (sec) | 73 | 10 | 16 | 12 |
| Phase Time (sec) | 80 | 18 | 22 | 20 |
| Phase Split | 57% | 13% | 16% | 14% |

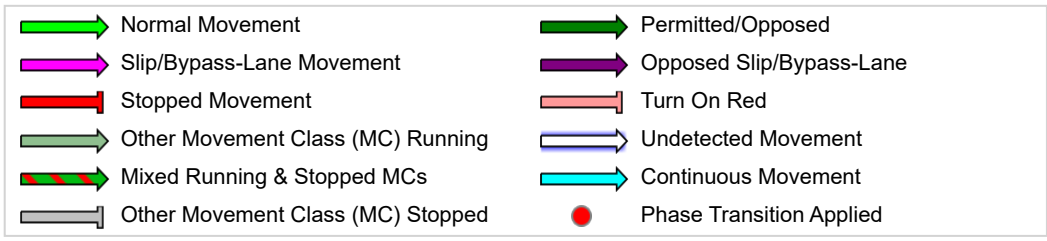
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | [Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 378 | 0.0 | 281 | 0.0 | 0.560 | 11.5 | LOS A | 4.5 | 32.3 | 0.78 | 0.60 | 1.17 | 16.9 |
| 22 | T1 | 1050 | 6.4 | 787 | 7.1 | 0.560 | 2.1 | LOS A | 4.5 | 32.3 | 0.22 | 0.17 | 0.33 | 27.8 |
| Approach | | 1428 | 4.7 | 1069 ^N ₁ | 5.2 | 0.560 | 4.6 | NA | 4.5 | 32.3 | 0.37 | 0.28 | 0.55 | 22.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 1007 | 8.5 | 977 | 8.7 | 0.496 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.5 |
| Approach | | 1007 | 8.5 | 977 ^{N1} | 8.7 | 0.496 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.5 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.003 | 9.0 | LOS A | 0.0 | 0.1 | 0.73 | 0.55 | 0.73 | 9.1 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.003 | 9.0 | LOS A | 0.0 | 0.1 | 0.73 | 0.55 | 0.73 | 9.1 |
| All Vehicles | | 2436 | 6.3 | 2046 ^N ₁ | 7.5 | 0.560 | 2.5 | NA | 4.5 | 32.3 | 0.19 | 0.15 | 0.29 | 29.9 |

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.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 6 | 0.0 | * 0.420 | 5.4 | LOS A | 2.7 | 19.6 | 0.09 | 0.09 | 0.09 | 26.2 |
| 22 | T1 | 984 | 6.8 | 757 | 7.6 | 0.420 | 1.8 | LOS A | 19.6 | 141.8 | 0.08 | 0.08 | 0.08 | 33.9 |
| 23 | R2 | 59 | 0.0 | 45 | 0.0 | * 0.339 | 76.9 | LOS F | 3.2 | 22.1 | 1.00 | 0.74 | 1.00 | 8.0 |
| Approach | | 1051 | 6.4 | 808 ^{N1} | 7.1 | 0.420 | 6.0 | LOS A | 19.6 | 141.8 | 0.13 | 0.11 | 0.13 | 24.6 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 19 | 0.0 | 19 | 0.0 | 0.023 | 0.6 | LOS A | 0.1 | 0.8 | 0.13 | 0.10 | 0.13 | 19.5 |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | 0.281 | 62.2 | LOS E | 2.4 | 16.7 | 0.94 | 0.72 | 0.94 | 6.0 |
| Approach | | 56 | 0.0 | 56 | 0.0 | 0.281 | 41.3 | LOS C | 2.4 | 16.7 | 0.67 | 0.51 | 0.67 | 7.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 85 | 0.0 | 82 | 0.0 | 0.399 | 8.8 | LOS A | 5.8 | 42.3 | 0.21 | 0.25 | 0.21 | 21.8 |
| 28 | T1 | 904 | 9.5 | 874 | 9.8 | 0.399 | 4.1 | LOS A | 5.8 | 42.3 | 0.17 | 0.17 | 0.17 | 27.5 |
| 29 | R2 | 5 | 0.0 | 5 | 0.0 | 0.036 | 73.7 | LOS F | 0.3 | 2.3 | 1.00 | 0.65 | 1.00 | 6.9 |
| Approach | | 994 | 8.7 | 961 ^{N1} | 8.9 | 0.399 | 4.9 | LOS A | 5.8 | 42.3 | 0.17 | 0.18 | 0.17 | 25.6 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 156 | 0.0 | 156 | 0.0 | * 0.408 | 44.4 | LOS D | 8.6 | 60.1 | 0.88 | 0.71 | 0.88 | 5.5 |
| 32 | R2 | 84 | 0.0 | 84 | 0.0 | 0.290 | 52.6 | LOS D | 5.0 | 34.8 | 0.90 | 0.71 | 0.90 | 5.0 |
| Approach | | 240 | 0.0 | 240 | 0.0 | 0.408 | 47.2 | LOS D | 8.6 | 60.1 | 0.89 | 0.71 | 0.89 | 5.3 |
| All Vehicles | | 2341 | 6.5 | 2065 ^{N1} | 7.4 | 0.420 | 11.2 | LOS A | 19.6 | 141.8 | 0.25 | 0.23 | 0.25 | 17.5 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 43 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 48 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 182 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 98.5 | 41.1 | 0.42 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

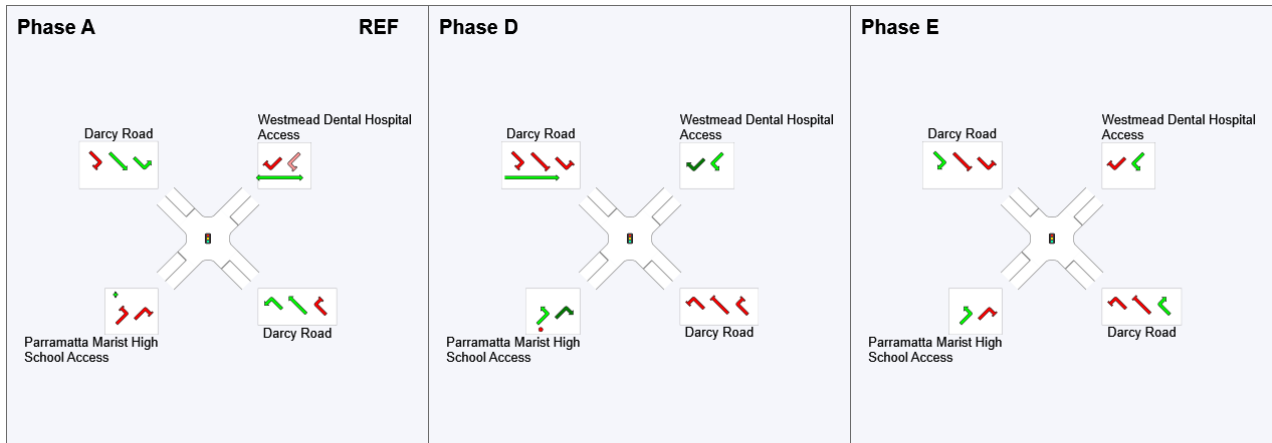
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 10 | 102 | 135 |
| Green Time (sec) | 86 | 27 | 10 |
| Phase Time (sec) | 92 | 32 | 16 |
| Phase Split | 66% | 23% | 11% |

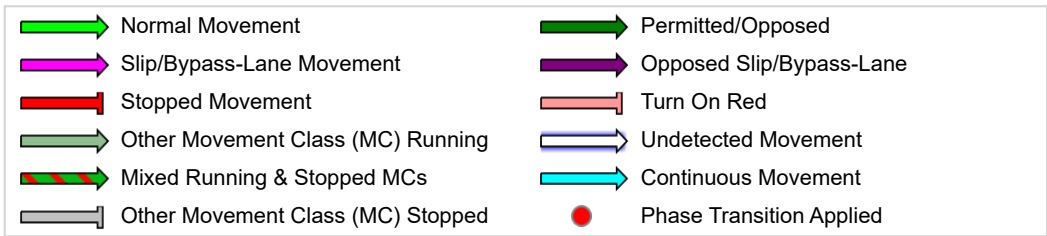
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033 With
Development + Upgrades)]

0745 - 0845

Site Category: (None)

Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.199 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 1176 | 5.8 | 979 | 6.1 | 0.199 | 0.0 | LOS A | 20.9 | 150.1 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1177 | 5.8 | 980 ^{N1} | 6.1 | 0.199 | 0.0 | NA | 20.9 | 150.1 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 994 | 8.5 | 962 | 8.7 | 0.244 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 994 | 8.5 | 962 ^{N1} | 8.7 | 0.244 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.1 | LOS A | 0.0 | 0.0 | 0.35 | 0.15 | 0.35 | 18.7 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.1 | LOS A | 0.0 | 0.0 | 0.35 | 0.15 | 0.35 | 18.7 |
| All Vehicles | | 2172 | 7.0 | 1943 ^{N1} | 7.8 | 0.244 | 0.0 | NA | 20.9 | 150.1 | 0.00 | 0.00 | 0.00 | 39.9 |

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.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2033 With
 Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 842 | 1.0 | 725 | 1.0 | 0.469 | 21.9 | LOS B | 12.7 | 89.8 | 0.56 | 0.68 | 0.56 | 8.4 |
| 23a | R1 | 334 | 18.6 | 291 | 19.7 | *0.789 | 63.2 | LOS E | 11.8 | 89.8 | 0.99 | 0.88 | 1.06 | 17.7 |
| Approach | | 1176 | 6.0 | 1017 ^N ₁ | 6.3 | 0.789 | 33.8 | LOS C | 12.7 | 89.8 | 0.68 | 0.74 | 0.70 | 14.1 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 51 | 2.0 | 51 | 2.0 | 0.686 | 77.3 | LOS F | 6.0 | 42.7 | 1.00 | 0.84 | 1.11 | 12.8 |
| 5 | T1 | 79 | 2.5 | 79 | 2.5 | *0.686 | 75.2 | LOS F | 9.6 | 68.9 | 1.00 | 0.85 | 1.16 | 12.7 |
| 6 | R2 | 2 | 0.0 | 2 | 0.0 | 0.686 | 81.0 | LOS F | 9.6 | 68.9 | 1.00 | 0.86 | 1.19 | 20.3 |
| Approach | | 132 | 2.3 | 132 | 2.3 | 0.686 | 76.1 | LOS F | 9.6 | 68.9 | 1.00 | 0.85 | 1.14 | 12.9 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 7 | 0.0 | 7 | 0.0 | 0.176 | 24.8 | LOS B | 5.2 | 44.6 | 0.60 | 0.61 | 0.60 | 30.9 |
| 7a | L1 | 170 | 44.1 | 170 | 44.1 | 0.176 | 23.1 | LOS B | 5.2 | 44.6 | 0.59 | 0.59 | 0.59 | 26.4 |
| 9 | R2 | 126 | 10.3 | 126 | 10.3 | *0.618 | 57.2 | LOS E | 26.5 | 201.6 | 0.95 | 0.82 | 0.96 | 17.5 |
| Approach | | 303 | 29.0 | 303 | 29.0 | 0.618 | 37.3 | LOS C | 26.5 | 201.6 | 0.74 | 0.69 | 0.74 | 22.0 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 196 | 8.7 | 187 | 8.4 | 0.965 | 80.0 | LOS F | 12.7 | 91.4 | 1.00 | 1.17 | 1.31 | 15.7 |
| 11 | T1 | 223 | 0.4 | 214 | 0.4 | *0.965 | 76.8 | LOS F | 12.7 | 91.4 | 1.00 | 1.17 | 1.31 | 13.7 |
| 12a | R1 | 772 | 1.0 | 740 | 1.0 | 0.965 | 83.3 | LOS F | 12.9 | 91.4 | 1.00 | 1.16 | 1.34 | 3.1 |
| Approach | | 1191 | 2.2 | 1141 ^N ₁ | 2.1 | 0.965 | 81.6 | LOS F | 12.9 | 91.4 | 1.00 | 1.16 | 1.33 | 8.0 |
| All Vehicles | | 2802 | 6.7 | 2593 ^N ₁ | 7.2 | 0.965 | 57.4 | LOS E | 26.5 | 201.6 | 0.85 | 0.93 | 1.01 | 11.6 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |

| West: Darcy Road | | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|--|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 | |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2033 With
 Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

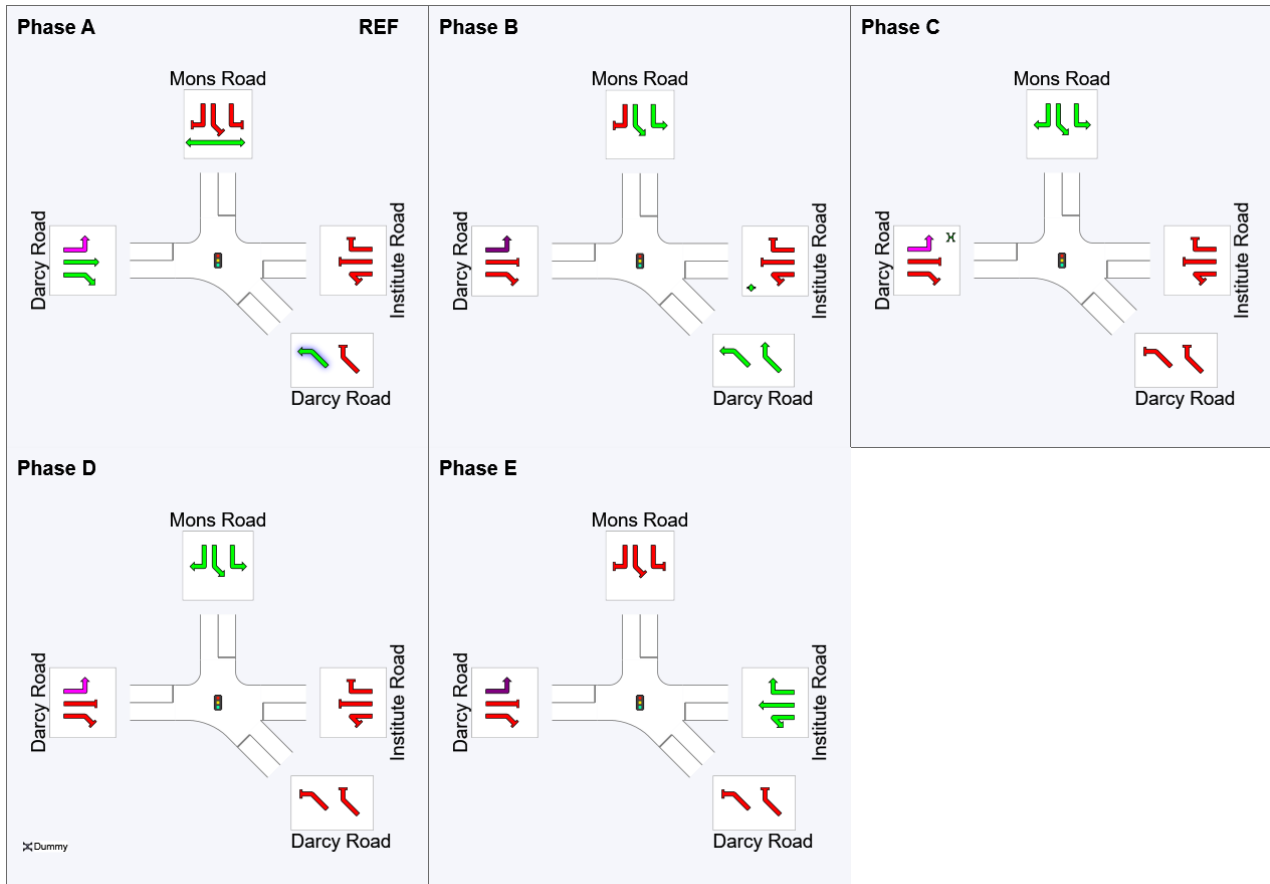
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 50 | 82 | 114 | 124 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 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



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist m | | | | km/h | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 625 | 0.8 | 625 | 0.8 | 0.928 | 21.0 | LOS B | 21.2 | 149.7 | 0.64 | 2.24 | 2.00 | 8.8 | |
| Approach | | 625 | 0.8 | 625 | 0.8 | 0.928 | 21.0 | LOS B | 21.2 | 149.7 | 0.64 | 2.24 | 2.00 | 8.8 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 222 | 1.4 | 204 | 1.4 | 0.204 | 11.6 | LOS A | 0.7 | 5.0 | 0.44 | 0.84 | 0.44 | 15.3 | |
| 5 | T1 | 824 | 2.3 | 758 | 2.4 | 0.263 | 0.0 | LOS A | 12.8 | 91.4 | 0.00 | 0.00 | 0.00 | 39.9 | |
| Approach | | 1046 | 2.1 | 962 ^{N1} | 2.2 | 0.263 | 2.5 | LOS A | 12.8 | 91.4 | 0.09 | 0.18 | 0.09 | 28.7 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 1191 | 2.6 | 1142 | 2.5 | 0.389 | 4.0 | LOS A | 37.5 | 268.0 | 0.21 | 0.28 | 0.28 | 34.7 | |
| 12 | R2 | 457 | 1.1 | 438 | 1.1 | 1.139 | 157.7 | LOS F | 42.7 | 301.7 | 1.00 | 4.56 | 12.57 | 5.8 | |
| Approach | | 1648 | 2.2 | 1580 ^{N1} | 2.1 | 1.139 | 46.7 | LOS D | 42.7 | 301.7 | 0.43 | 1.47 | 3.69 | 14.5 | |
| All Vehicles | | 3319 | 1.9 | 3167 ^{N1} | 2.0 | 1.139 | 28.2 | NA | 42.7 | 301.7 | 0.37 | 1.23 | 2.26 | 12.4 | |

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.

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.

MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 153 | 2.6 | 151 | 2.6 | 0.161 | 21.2 | LOS B | 5.1 | 36.4 | 0.56 | 0.69 | 0.56 | 33.3 |
| 2 | T1 | 17 | 5.9 | 17 | 5.9 | * 1.461 | 481.8 | LOS F | 48.9 | 353.4 | 1.00 | 1.91 | 3.26 | 3.4 |
| 3 | R2 | 224 | 3.6 | 221 | 3.6 | 1.461 | 481.3 | LOS F | 48.9 | 353.4 | 1.00 | 1.91 | 3.26 | 3.1 |
| Approach | | 394 | 3.3 | 389 ^{N1} | 3.3 | 1.461 | 302.7 | LOS F | 48.9 | 353.4 | 0.83 | 1.43 | 2.21 | 5.3 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 520 | 1.5 | 505 | 1.6 | 1.440 | 459.6 | LOS F | 65.3 | 463.5 | 1.00 | 2.00 | 3.10 | 2.2 |
| 5 | T1 | 903 | 2.1 | 878 | 2.1 | * 1.440 | 452.0 | LOS F | 65.3 | 463.5 | 1.00 | 2.51 | 3.08 | 3.3 |
| 6 | R2 | 27 | 0.0 | 26 | 0.0 | 0.240 | 51.5 | LOS D | 1.6 | 11.5 | 0.90 | 0.76 | 0.90 | 15.3 |
| Approach | | 1450 | 1.9 | 1409 ^{N1} | 1.9 | 1.440 | 447.3 | LOS F | 65.3 | 463.5 | 1.00 | 2.29 | 3.05 | 2.9 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 15 | 6.7 | 15 | 6.7 | 0.059 | 56.0 | LOS D | 0.9 | 6.6 | 0.89 | 0.63 | 0.89 | 3.5 |
| 8 | T1 | 17 | 0.0 | 17 | 0.0 | 0.302 | 63.7 | LOS E | 2.9 | 20.5 | 0.96 | 0.73 | 0.96 | 3.2 |
| 9 | R2 | 27 | 3.7 | 27 | 3.7 | 0.302 | 63.7 | LOS E | 2.9 | 20.5 | 0.96 | 0.73 | 0.96 | 9.1 |
| Approach | | 59 | 3.4 | 59 | 3.4 | 0.302 | 61.7 | LOS E | 2.9 | 20.5 | 0.94 | 0.70 | 0.94 | 6.3 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | 0.497 | 5.5 | LOS A | 2.6 | 18.2 | 0.06 | 0.07 | 0.06 | 35.3 |
| 11 | T1 | 1408 | 1.7 | 1408 | 1.7 | 0.497 | 0.8 | LOS A | 2.6 | 18.2 | 0.05 | 0.06 | 0.05 | 46.6 |
| 12 | R2 | 403 | 0.5 | 403 | 0.5 | * 1.356 | 368.2 | LOS F | 63.8 | 448.5 | 0.92 | 1.61 | 2.80 | 1.5 |
| Approach | | 1840 | 1.4 | 1840 | 1.4 | 1.356 | 81.3 | LOS F | 63.8 | 448.5 | 0.24 | 0.40 | 0.65 | 6.1 |
| All Vehicles | | 3743 | 1.8 | 3698 ^{N1} | 1.8 | 1.461 | 243.8 | LOS F | 65.3 | 463.5 | 0.60 | 1.23 | 1.74 | 3.8 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | ped/h | sec | | [Ped ped | Dist] m | | | sec | m | m/sec |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 67 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 40 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |

| | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 Full | 78 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 92.1 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | |
| P4 Full | 55 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | 240 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 93.4 | 35.0 | 0.37 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E*, E2*

Output Phase Sequence: A, D, E2*

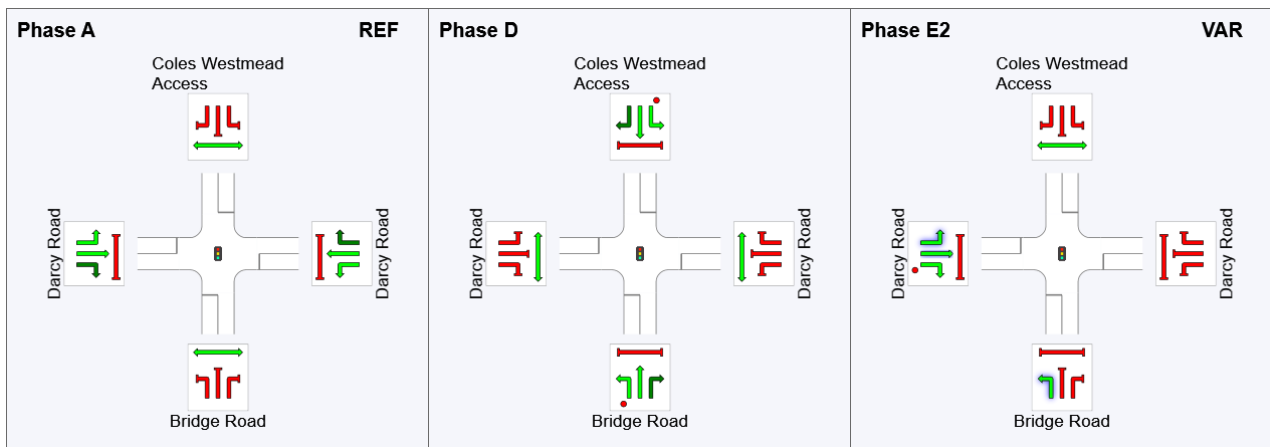
(* Variable Phase)

Phase Timing Summary

| Phase | A | D | E2 |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 121 | 34 | 63 |
| Green Time (sec) | 46 | 22 | 52 |
| Phase Time (sec) | 53 | 28 | 59 |
| Phase Split | 38% | 20% | 42% |

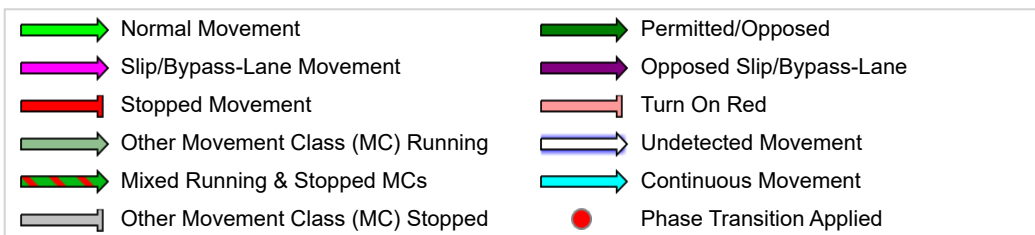
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 With Development + Upgrades AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845
 Site Category: (None)
 Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 504 | 0.2 | 504 | 0.2 | 0.680 | 4.1 | LOS A | 9.2 | 64.6 | 0.44 | 0.49 | 0.44 | 24.2 |
| 3 | R2 | 354 | 0.3 | 354 | 0.3 | 0.680 | 7.2 | LOS A | 9.2 | 64.6 | 0.44 | 0.49 | 0.44 | 24.2 |
| 3u | U | 5 | 0.0 | 5 | 0.0 | 0.680 | 8.5 | LOS A | 9.2 | 64.6 | 0.44 | 0.49 | 0.44 | 27.4 |
| Approach | | 863 | 0.2 | 863 | 0.2 | 0.680 | 5.4 | LOS A | 9.2 | 64.6 | 0.44 | 0.49 | 0.44 | 24.2 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 132 | 0.8 | 114 | 0.8 | 0.282 | 8.6 | LOS A | 1.5 | 10.3 | 0.60 | 0.77 | 0.60 | 40.9 |
| 6 | R2 | 54 | 1.9 | 47 | 2.0 | 0.282 | 11.2 | LOS A | 1.5 | 10.3 | 0.60 | 0.77 | 0.60 | 41.6 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.282 | 12.4 | LOS A | 1.5 | 10.3 | 0.60 | 0.77 | 0.60 | 41.6 |
| Approach | | 188 | 1.1 | 162 ^{N1} | 1.2 | 0.282 | 9.4 | LOS A | 1.5 | 10.3 | 0.60 | 0.77 | 0.60 | 41.1 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 364 | 0.3 | 281 | 0.2 | 1.229 | 223.6 | LOS F | 126.3 | 885.3 | 1.00 | 5.03 | 9.10 | 6.4 |
| 8 | T1 | 818 | 0.1 | 631 | 0.1 | 1.229 | 223.2 | LOS F | 126.3 | 885.3 | 1.00 | 5.03 | 9.10 | 7.1 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 1.229 | 227.4 | LOS F | 126.3 | 885.3 | 1.00 | 5.03 | 9.10 | 6.4 |
| Approach | | 1183 | 0.2 | 912 ^{N1} | 0.2 | 1.229 | 223.4 | LOS F | 126.3 | 885.3 | 1.00 | 5.03 | 9.10 | 6.9 |
| All Vehicles | | 2234 | 0.3 | 1937 ^{N1} | 0.3 | 1.229 | 108.3 | LOS F | 126.3 | 885.3 | 0.72 | 2.65 | 4.53 | 8.9 |

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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [AM Peak (Network Folder: 2033 With Development + Upgrades)]

0745 - 0845

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 110 | 104 | 101 ¹ | 102 ¹ | 103 | 108 | 106 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -18 | -8 | 0 | 0 | 0 | 0 | 10 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

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CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | | | | [Veh. veh | Dist] m | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 54 | 0.0 | 54 | 0.0 | 1.072 | 166.3 | LOS F | 35.6 | 251.8 | 1.00 | 1.54 | 1.91 | 4.0 |
| 2 | T1 | 667 | 1.3 | 667 | 1.3 | * 1.072 | 157.0 | LOS F | 50.2 | 355.7 | 1.00 | 1.54 | 1.86 | 4.1 |
| Approach | | 721 | 1.2 | 721 | 1.2 | 1.072 | 157.7 | LOS F | 50.2 | 355.7 | 1.00 | 1.54 | 1.86 | 4.1 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 33 | 0.0 | 33 | 0.0 | 1.057 | 149.5 | LOS F | 13.0 | 94.0 | 1.00 | 1.43 | 1.80 | 7.2 |
| 5 | T1 | 245 | 0.0 | 245 | 0.0 | * 1.057 | 145.1 | LOS F | 13.0 | 94.0 | 1.00 | 1.43 | 1.80 | 3.8 |
| 6 | R2 | 326 | 20.6 | 326 | 20.6 | 1.057 | 153.0 | LOS F | 30.3 | 249.5 | 1.00 | 1.31 | 1.84 | 3.6 |
| Approach | | 604 | 11.1 | 604 | 11.1 | 1.057 | 149.6 | LOS F | 30.3 | 249.5 | 1.00 | 1.37 | 1.82 | 3.9 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 370 | 18.1 | 299 | 17.5 | 0.794 | 17.3 | LOS B | 12.1 | 88.1 | 0.61 | 0.73 | 0.61 | 24.9 |
| 8 | T1 | 942 | 1.1 | 767 | 1.0 | 0.794 | 33.9 | LOS C | 12.5 | 88.1 | 0.82 | 0.83 | 0.83 | 17.1 |
| 9 | R2 | 96 | 0.0 | 78 | 0.0 | 0.794 | 61.4 | LOS E | 12.5 | 88.1 | 1.00 | 0.93 | 1.02 | 4.0 |
| Approach | | 1408 | 5.5 | 1145 ^N | 5.2 | 0.794 | 31.4 | LOS C | 12.5 | 88.1 | 0.78 | 0.81 | 0.79 | 17.2 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 136 | 0.0 | 135 | 0.0 | 0.327 | 39.3 | LOS C | 6.7 | 46.7 | 0.77 | 0.76 | 0.77 | 27.1 |
| 11 | T1 | 211 | 0.5 | 209 | 0.5 | * 0.885 | 76.8 | LOS F | 15.9 | 111.5 | 1.00 | 1.03 | 1.30 | 21.4 |
| Approach | | 347 | 0.3 | 344 ^{N1} | 0.3 | 0.885 | 62.1 | LOS E | 15.9 | 111.5 | 0.91 | 0.92 | 1.09 | 23.1 |
| All Vehicles | | 3080 | 5.0 | 2813 ^N | 5.5 | 1.072 | 92.9 | LOS F | 50.2 | 355.7 | 0.90 | 1.13 | 1.32 | 8.6 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 889 | 8.3 | 888 | 8.3 | 0.489 | 6.1 | LOS A | 11.8 | 88.1 | 0.37 | 0.36 | 0.37 | 21.3 |
| 3 | R2 | 239 | 0.0 | 239 | 0.0 | * 0.489 | 14.2 | LOS A | 9.0 | 64.7 | 0.65 | 0.67 | 0.65 | 38.0 |
| Approach | | 1128 | 6.6 | 1127 ^N | 6.6 | 0.489 | 7.8 | LOS A | 11.8 | 88.1 | 0.43 | 0.42 | 0.43 | 30.7 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 298 | 0.3 | 298 | 0.3 | 0.587 | 21.4 | LOS B | 11.7 | 82.4 | 0.71 | 0.77 | 0.71 | 31.7 |
| 6 | R2 | 34 | 0.0 | 34 | 0.0 | 0.176 | 67.0 | LOS E | 2.2 | 15.1 | 0.95 | 0.73 | 0.95 | 17.8 |
| Approach | | 332 | 0.3 | 332 | 0.3 | 0.587 | 26.1 | LOS B | 11.7 | 82.4 | 0.73 | 0.77 | 0.73 | 29.4 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 89 | 0.0 | 68 | 0.0 | 0.122 | 47.3 | LOS D | 4.7 | 40.8 | 0.77 | 0.69 | 0.77 | 24.9 |
| 8 | T1 | 1110 | 7.0 | 845 | 7.2 | 0.816 | 42.8 | LOS D | 25.4 | 184.0 | 0.94 | 0.85 | 0.97 | 9.6 |
| Approach | | 1199 | 6.5 | 913 ^{N1} | 6.6 | 0.816 | 43.1 | LOS D | 25.4 | 184.0 | 0.92 | 0.83 | 0.96 | 11.5 |
| All Vehicles | | 2659 | 5.8 | 2372 ^N | 6.5 | 0.816 | 23.9 | LOS B | 25.4 | 184.0 | 0.66 | 0.63 | 0.68 | 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.

| Pedestrian Movement Performance (CCG) | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|------------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped] | [Dist] m | | | | | |
| | | ped/h | sec | | | | | | sec | m | m/sec |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C

Output Phase Sequence: A, E, D, C

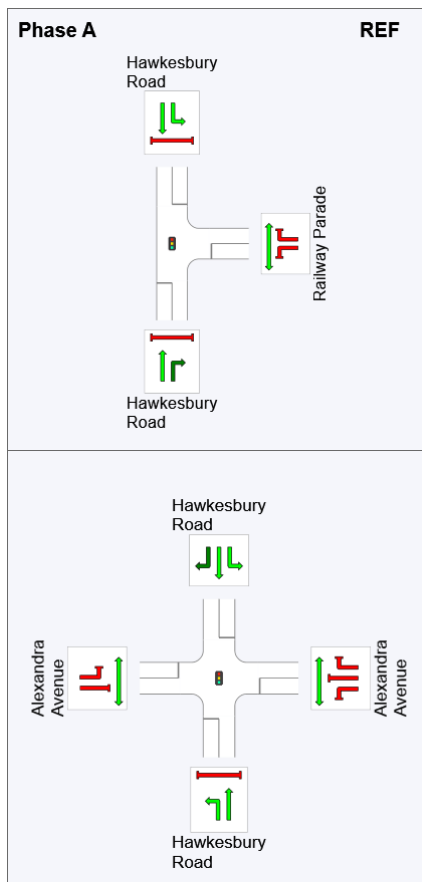
(* Variable Phase)

Phase Timing Summary (CCG)

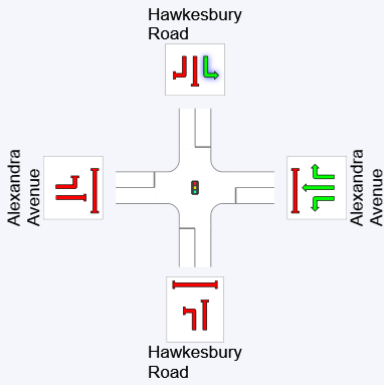
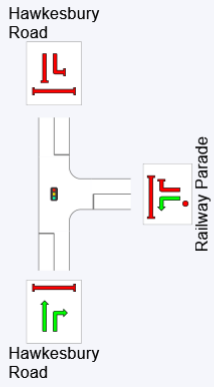
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 43 | 80 | 106 |
| Green Time (sec) | 37 | 28 | 17 | 28 |
| Phase Time (sec) | 46 | 37 | 23 | 34 |
| Phase Split | 33% | 26% | 16% | 24% |

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%.

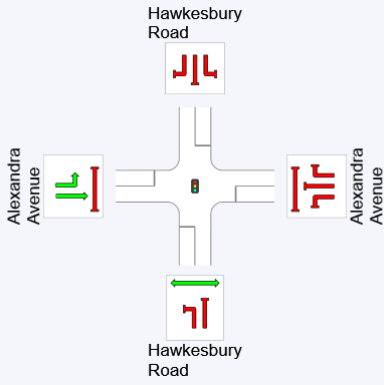
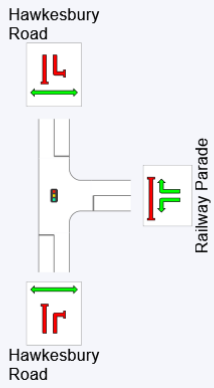
Output Phase Sequence (CCG)

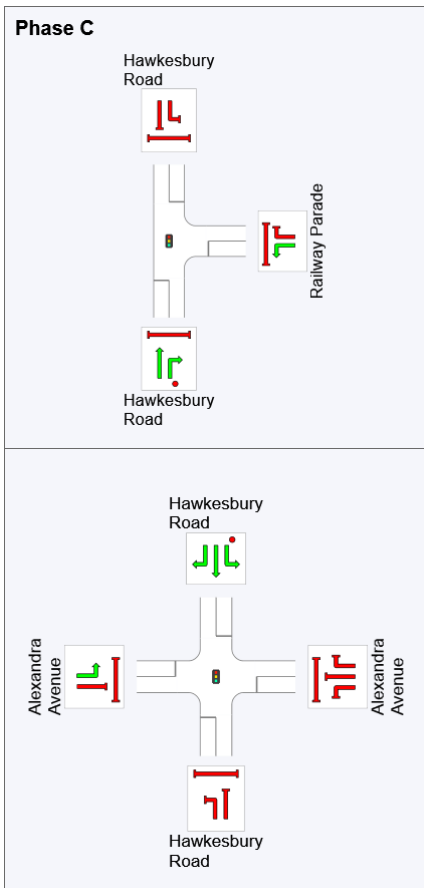


Phase E

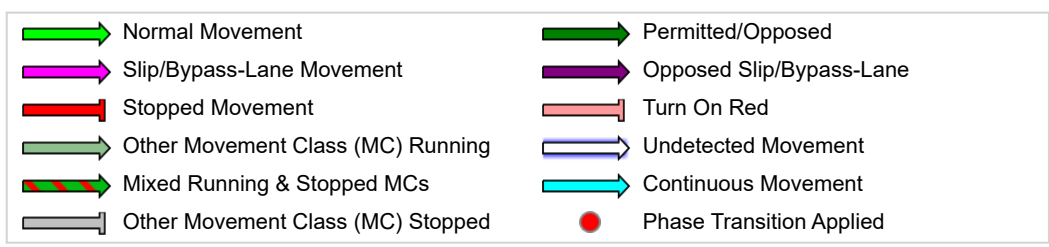


Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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 |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 80.5 | LOS F | 0.6 | 15.6 | 0.99 | 0.68 | 0.99 | 10.4 |
| 25 | T1 | 537 | 2.4 | 537 | 2.4 | * 1.320 | 332.1 | LOS F | 90.1 | 643.5 | 0.97 | 2.18 | 2.64 | 2.1 |
| 26 | R2 | 353 | 2.5 | 353 | 2.5 | * 1.305 | 329.3 | LOS F | 59.2 | 423.4 | 1.00 | 1.88 | 2.64 | 2.1 |
| Approach | | 898 | 3.3 | 898 | 3.3 | 1.320 | 328.8 | LOS F | 90.1 | 643.5 | 0.98 | 2.04 | 2.63 | 2.1 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 208 | 4.8 | 196 | 5.0 | 1.325 | 26.7 | LOS B | 6.4 | 83.7 | 0.54 | 0.68 | 0.58 | 23.3 |
| 29 | R2 | 663 | 9.5 | 625 | 9.8 | * 1.325 | 316.2 | LOS F | 20.1 | 146.9 | 0.97 | 1.82 | 2.56 | 1.2 |
| Approach | | 871 | 8.4 | 821 ^{N1} | 8.7 | 1.325 | 247.1 | LOS F | 20.1 | 146.9 | 0.86 | 1.55 | 2.09 | 2.1 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 606 | 11.2 | 605 | 11.2 | 0.480 | 14.1 | LOS A | 14.2 | 104.9 | 0.40 | 0.68 | 0.40 | 21.2 |
| 31 | T1 | 316 | 2.5 | 316 | 2.5 | 0.404 | 45.6 | LOS D | 18.1 | 129.2 | 0.91 | 0.79 | 0.91 | 16.6 |
| Approach | | 922 | 8.2 | 921 ^{N1} | 8.3 | 0.480 | 24.9 | LOS B | 18.1 | 129.2 | 0.57 | 0.71 | 0.57 | 18.4 |
| All Vehicles | | 2699 | 6.9 | 2648 ^{N1} | 7.1 | 1.325 | 197.0 | LOS F | 90.1 | 643.5 | 0.80 | 1.42 | 1.74 | 3.2 |

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 | 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 |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 238.3 | 208.6 | 0.88 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 202 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 30.2 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 55.9 | 30.9 | 0.55 |
| P72 | Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |

| SouthWest: Hawkesbury Road | | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|--|
| P8 Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 98.7 | 41.1 | 0.42 | |
| All Pedestrians | 580 | 61.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 124.9 | 76.7 | 0.61 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

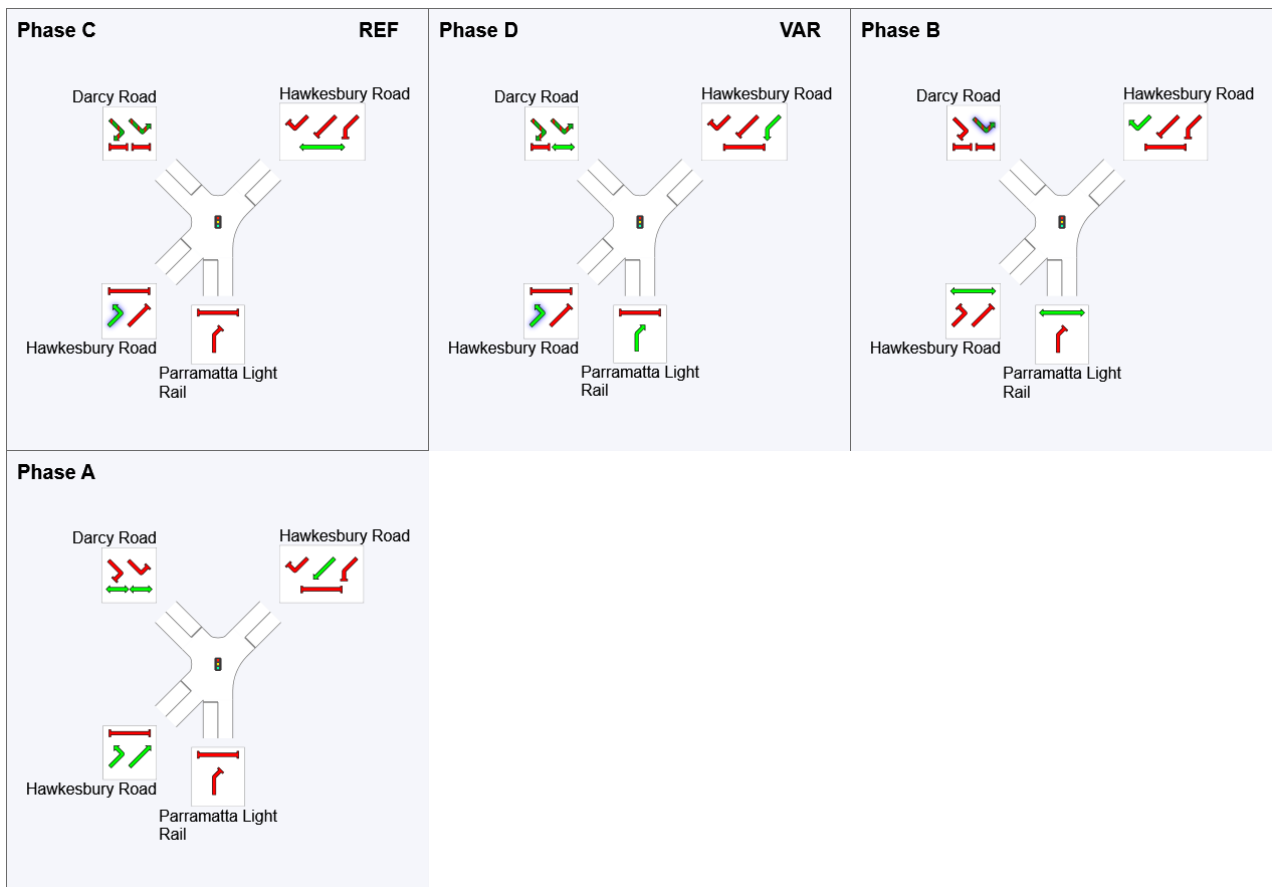
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 43 | 57 | 91 |
| Green Time (sec) | 37 | 6 | 25 | 38 |
| Phase Time (sec) | 45 | 15 | 34 | 46 |
| Phase Split | 32% | 11% | 24% | 33% |

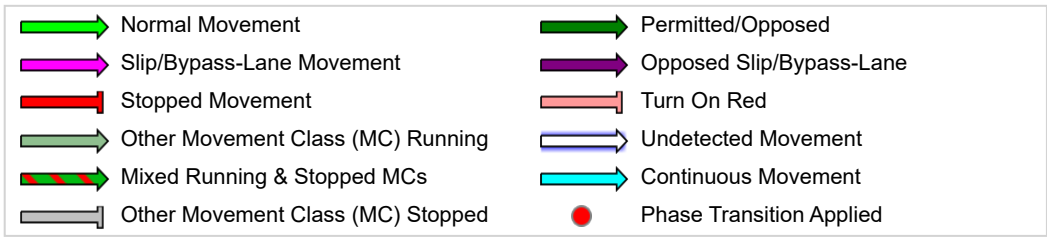
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.379 | 25.7 | LOS B | 17.1 | 124.4 | 0.72 | 0.64 | 0.72 | 21.4 |
| 22 | T1 | 864 | 8.2 | 793 | 8.7 | 0.379 | 21.8 | LOS B | 17.1 | 124.4 | 0.70 | 0.62 | 0.70 | 12.0 |
| 23 | R2 | 89 | 0.0 | 81 | 0.0 | *0.680 | 74.1 | LOS F | 5.6 | 39.5 | 1.00 | 0.79 | 1.05 | 8.6 |
| Approach | | 961 | 7.4 | 881 ^{N1} | 7.8 | 0.680 | 26.7 | LOS B | 17.1 | 124.4 | 0.73 | 0.63 | 0.73 | 11.0 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 67 | 3.0 | 67 | 3.0 | 0.559 | 54.0 | LOS D | 5.0 | 36.2 | 0.93 | 0.75 | 0.95 | 7.7 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.559 | 54.0 | LOS D | 5.0 | 36.2 | 0.93 | 0.75 | 0.95 | 11.9 |
| 26 | R2 | 180 | 0.0 | 180 | 0.0 | 0.716 | 51.7 | LOS D | 11.0 | 76.9 | 0.96 | 0.86 | 1.02 | 7.9 |
| Approach | | 248 | 0.8 | 248 | 0.8 | 0.716 | 52.4 | LOS D | 11.0 | 76.9 | 0.95 | 0.83 | 1.00 | 7.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 124 | 0.8 | 115 | 0.8 | *0.719 | 13.9 | LOS A | 13.3 | 96.3 | 0.44 | 0.51 | 0.44 | 15.1 |
| 28 | T1 | 743 | 9.7 | 693 | 10.1 | *0.719 | 19.2 | LOS B | 13.3 | 96.3 | 0.63 | 0.61 | 0.63 | 10.0 |
| 29 | R2 | 7 | 0.0 | 6 | 0.0 | 0.054 | 74.5 | LOS F | 0.4 | 3.1 | 1.00 | 0.66 | 1.00 | 9.5 |
| Approach | | 874 | 8.4 | 814 ^{N1} | 8.7 | 0.719 | 18.9 | LOS B | 13.3 | 96.3 | 0.61 | 0.60 | 0.61 | 11.5 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 39 | 0.0 | 39 | 0.0 | 0.156 | 53.3 | LOS D | 2.5 | 17.5 | 0.89 | 0.72 | 0.89 | 9.9 |
| 31 | T1 | 5 | 0.0 | 5 | 0.0 | 0.156 | 56.3 | LOS D | 2.5 | 17.5 | 0.89 | 0.72 | 0.89 | 12.1 |
| 32 | R2 | 61 | 0.0 | 61 | 0.0 | 0.256 | 50.1 | LOS D | 3.4 | 23.5 | 0.94 | 0.74 | 0.94 | 10.5 |
| Approach | | 105 | 0.0 | 105 | 0.0 | 0.256 | 51.6 | LOS D | 3.4 | 23.5 | 0.92 | 0.73 | 0.92 | 10.4 |
| All Vehicles | | 2188 | 6.7 | 2049 ^{N1} | 7.1 | 0.719 | 28.0 | LOS B | 17.1 | 124.4 | 0.72 | 0.65 | 0.72 | 10.2 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 197 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 90.4 | 30.9 | 0.34 |
| P52 | Stage 2 | 41 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 88 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 225 | 64.7 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 91.3 | 31.9 | 0.35 |
| All Pedestrians | 603 | 64.6 | LOS F | 0.9 | 0.9 | 0.96 | 0.96 | 91.4 | 32.2 | 0.35 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

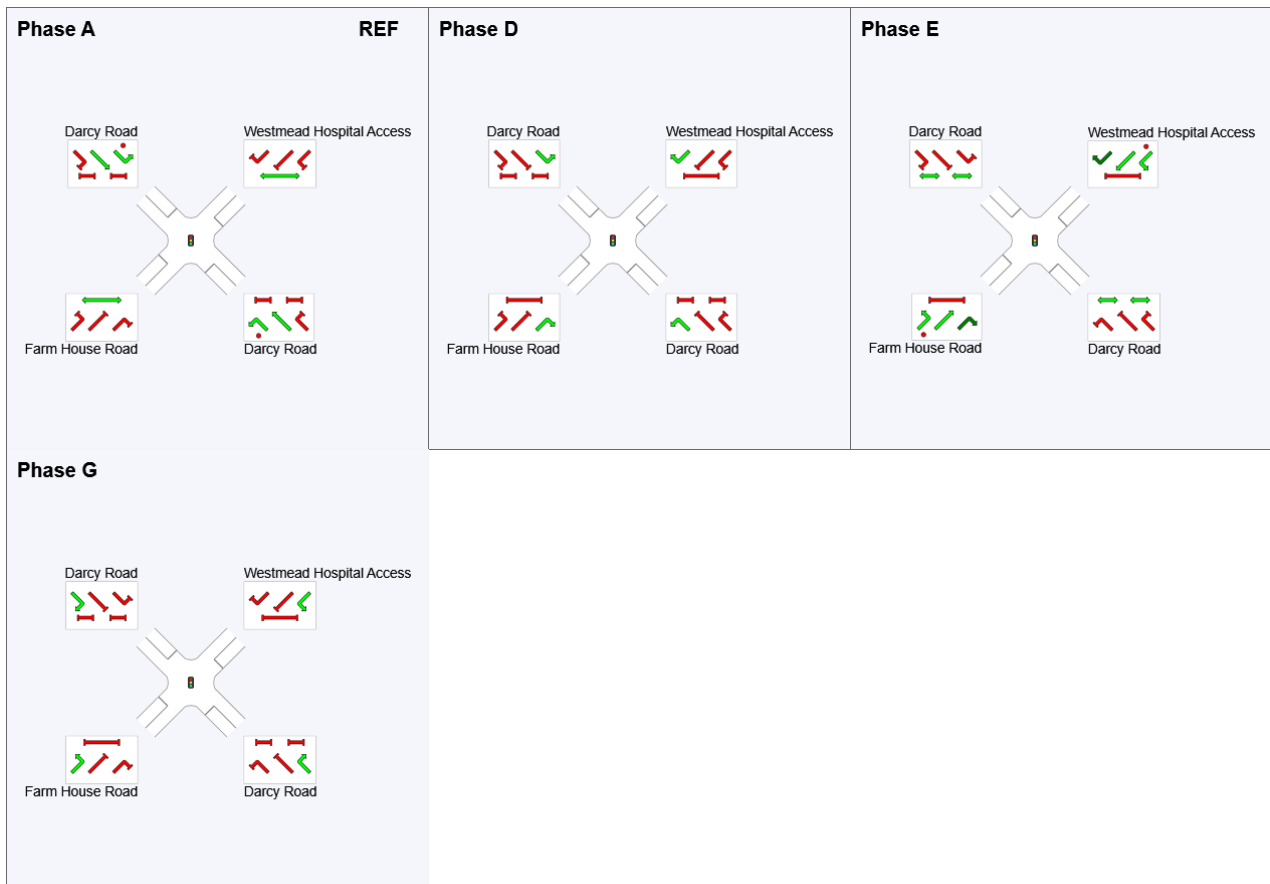
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 121 | 64 | 82 | 106 |
| Green Time (sec) | 75 | 11 | 16 | 9 |
| Phase Time (sec) | 82 | 19 | 22 | 17 |
| Phase Split | 59% | 14% | 16% | 12% |

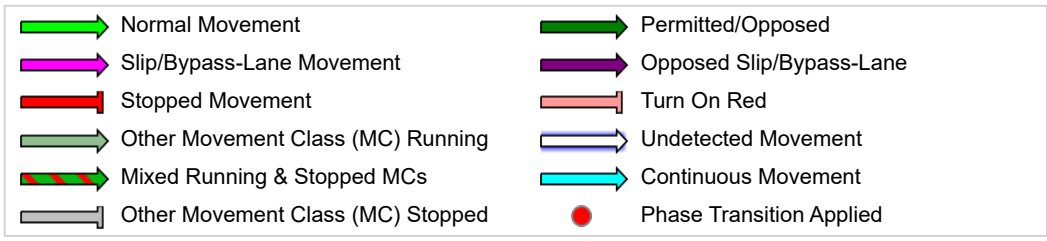
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|-----------------|----------|--------------------------------|----------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | | | | [Veh.] | [Dist] | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 86 | 0.0 | 80 | 0.0 | 0.318 | 11.8 | LOS A | 1.9 | 14.0 | 0.51 | 0.17 | 0.61 | 20.4 |
| 22 | T1 | 998 | 7.2 | 934 | 7.5 | 0.318 | 1.4 | LOS A | 1.9 | 14.0 | 0.16 | 0.05 | 0.19 | 30.7 |
| Approach | | 1084 | 6.6 | 1014 ^N ₁ | 6.9 | 0.318 | 2.2 | NA | 1.9 | 14.0 | 0.19 | 0.06 | 0.23 | 29.0 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 873 | 7.8 | 813 | 8.1 | 0.206 | 0.0 | LOS A | 18.9 | 137.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 873 | 7.8 | 813 ^{N1} | 8.1 | 0.206 | 0.0 | NA | 18.9 | 137.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.005 | 19.2 | LOS B | 0.0 | 0.1 | 0.86 | 0.74 | 0.86 | 5.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.005 | 19.2 | LOS B | 0.0 | 0.1 | 0.86 | 0.74 | 0.86 | 5.6 |
| All Vehicles | | 1958 | 7.2 | 1828 ^N ₁ | 7.7 | 0.318 | 1.3 | NA | 18.9 | 137.0 | 0.11 | 0.04 | 0.13 | 34.1 |

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | * 0.345 | 14.6 | LOS B | 12.7 | 92.3 | 0.48 | 0.43 | 0.48 | 19.3 | |
| 22 | T1 | 952 | 7.5 | 893 | 7.8 | 0.345 | 10.3 | LOS A | 12.7 | 92.3 | 0.42 | 0.37 | 0.42 | 19.7 | |
| 23 | R2 | 45 | 0.0 | 42 | 0.0 | * 0.528 | 81.0 | LOS F | 3.1 | 21.4 | 1.00 | 0.74 | 1.01 | 8.6 | |
| Approach | | 998 | 7.1 | 936 ^{N1} | 7.4 | 0.528 | 13.5 | LOS A | 12.7 | 92.3 | 0.44 | 0.39 | 0.45 | 17.5 | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | | |
| 24 | L2 | 46 | 0.0 | 46 | 0.0 | 0.084 | 4.7 | LOS A | 0.4 | 2.9 | 0.18 | 0.52 | 0.18 | 29.4 | |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | 0.193 | 64.2 | LOS E | 2.3 | 16.3 | 0.94 | 0.73 | 0.94 | 6.9 | |
| Approach | | 83 | 0.0 | 83 | 0.0 | 0.193 | 31.2 | LOS C | 2.3 | 16.3 | 0.52 | 0.61 | 0.52 | 11.9 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 27 | L2 | 66 | 0.0 | 60 | 0.0 | 0.277 | 11.9 | LOS A | 8.9 | 64.8 | 0.33 | 0.33 | 0.33 | 28.4 | |
| 28 | T1 | 757 | 9.0 | 697 | 9.5 | 0.277 | 9.4 | LOS A | 8.9 | 64.8 | 0.38 | 0.36 | 0.38 | 19.8 | |
| 29 | R2 | 2 | 50.0 | 2 | 50.9 | 0.021 | 73.3 | LOS F | 0.1 | 1.2 | 0.95 | 0.60 | 0.95 | 7.0 | |
| Approach | | 825 | 8.4 | 759 ^{N1} | 8.8 | 0.277 | 9.8 | LOS A | 8.9 | 64.8 | 0.38 | 0.36 | 0.38 | 20.7 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | | |
| 30 | L2 | 131 | 0.0 | 131 | 0.0 | * 0.431 | 49.1 | LOS D | 7.5 | 52.8 | 0.91 | 0.73 | 0.91 | 5.1 | |
| 32 | R2 | 70 | 0.0 | 70 | 0.0 | 0.397 | 56.8 | LOS E | 4.4 | 30.7 | 0.93 | 0.74 | 0.93 | 4.7 | |
| Approach | | 201 | 0.0 | 201 | 0.0 | 0.431 | 51.8 | LOS D | 7.5 | 52.8 | 0.92 | 0.73 | 0.92 | 4.9 | |
| All Vehicles | | 2107 | 6.6 | 1979 ^{N1} | 7.1 | 0.528 | 16.7 | LOS B | 12.7 | 92.3 | 0.47 | 0.42 | 0.47 | 14.9 | |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 4 | 64.1 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 90.7 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 59 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 154 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

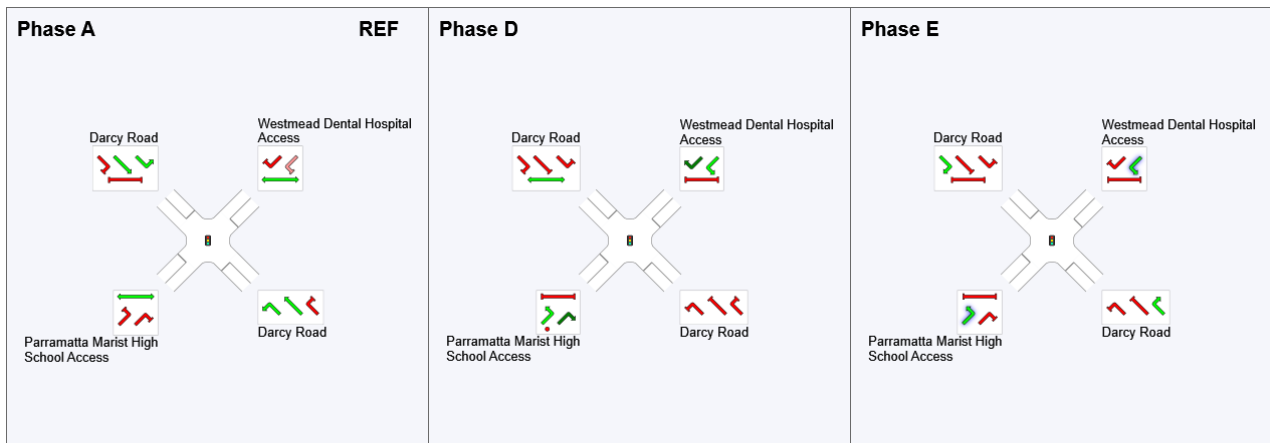
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|----|
| Phase Change Time (sec) | 109 | 67 | 98 |
| Green Time (sec) | 92 | 25 | 6 |
| Phase Time (sec) | 98 | 30 | 12 |
| Phase Split | 70% | 21% | 9% |

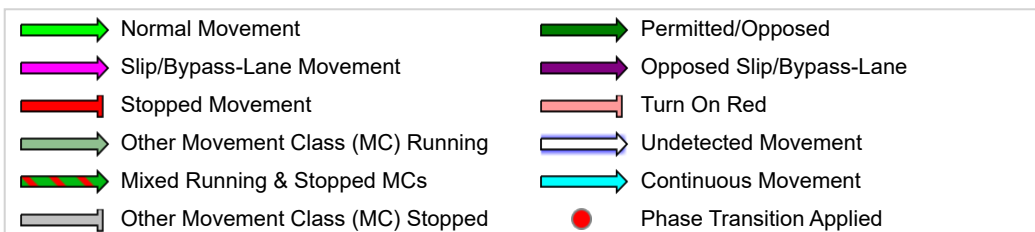
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033 With
Development + Upgrades)]

1500 - 1600
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|-----------------|----------|--------------------------------|----------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | | | | [Veh.] | [Dist] | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.246 | 3.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 1119 | 6.5 | 1061 | 6.7 | 0.246 | 0.0 | LOS A | 7.3 | 52.5 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1120 | 6.5 | 1062 ^N ₁ | 6.7 | 0.246 | 0.0 | NA | 7.3 | 52.5 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 825 | 8.2 | 759 | 8.7 | 0.192 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 825 | 8.2 | 759 ^{N1} | 8.7 | 0.192 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.1 | LOS A | 0.0 | 0.0 | 0.35 | 0.15 | 0.35 | 18.7 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.1 | LOS A | 0.0 | 0.0 | 0.35 | 0.15 | 0.35 | 18.7 |
| All Vehicles | | 1946 | 7.2 | 1822 ^N ₁ | 7.7 | 0.246 | 0.0 | NA | 7.3 | 52.5 | 0.00 | 0.00 | 0.00 | 39.9 |

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.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
(Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033 With
Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 941 | 1.7 | 893 | 1.7 | 0.435 | 23.6 | LOS B | 12.6 | 89.8 | 0.68 | 0.74 | 0.68 | 7.9 |
| 23a | R1 | 178 | 33.7 | 171 | 34.4 | *0.441 | 59.2 | LOS E | 8.9 | 72.4 | 0.99 | 0.80 | 0.99 | 18.4 |
| Approach | | 1119 | 6.8 | 1063 ^{N1} | 7.0 | 0.441 | 29.3 | LOS C | 12.6 | 89.8 | 0.73 | 0.75 | 0.73 | 12.2 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 104 | 0.0 | 104 | 0.0 | 1.489 | 497.8 | LOS F | 38.9 | 272.3 | 1.00 | 2.21 | 3.24 | 2.6 |
| 5 | T1 | 282 | 0.4 | 282 | 0.4 | *1.489 | 490.1 | LOS F | 42.7 | 300.1 | 1.00 | 2.23 | 3.20 | 2.6 |
| 6 | R2 | 7 | 0.0 | 7 | 0.0 | 1.489 | 492.3 | LOS F | 42.7 | 300.1 | 1.00 | 2.23 | 3.18 | 5.3 |
| Approach | | 393 | 0.3 | 393 | 0.3 | 1.489 | 492.2 | LOS F | 42.7 | 300.1 | 1.00 | 2.22 | 3.21 | 2.6 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 3 | 0.0 | 3 | 0.0 | 0.195 | 11.4 | LOS A | 2.5 | 19.5 | 0.24 | 0.40 | 0.24 | 35.7 |
| 7a | L1 | 193 | 30.1 | 193 | 30.1 | 0.195 | 9.8 | LOS A | 2.5 | 19.5 | 0.23 | 0.40 | 0.23 | 32.8 |
| 9 | R2 | 278 | 2.9 | 278 | 2.9 | *0.795 | 47.1 | LOS D | 16.0 | 115.1 | 0.87 | 0.83 | 0.92 | 19.4 |
| Approach | | 474 | 13.9 | 474 | 13.9 | 0.795 | 31.7 | LOS C | 16.0 | 115.1 | 0.61 | 0.65 | 0.64 | 23.4 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 75 | 1.3 | 71 | 1.2 | 0.538 | 18.1 | LOS B | 8.0 | 56.5 | 0.46 | 0.55 | 0.46 | 30.6 |
| 11 | T1 | 43 | 0.0 | 41 | 0.0 | *0.538 | 14.9 | LOS B | 8.0 | 56.5 | 0.46 | 0.55 | 0.46 | 28.4 |
| 12a | R1 | 528 | 1.9 | 497 | 1.6 | 0.538 | 32.8 | LOS C | 12.9 | 91.4 | 0.67 | 0.67 | 0.67 | 7.0 |
| Approach | | 646 | 1.7 | 608 ^{N1} | 1.5 | 0.538 | 30.0 | LOS C | 12.9 | 91.4 | 0.63 | 0.65 | 0.63 | 12.9 |
| All Vehicles | | 2632 | 5.9 | 2538 ^{N1} | 6.1 | 1.489 | 101.6 | LOS F | 42.7 | 300.1 | 0.72 | 0.93 | 1.07 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2033 With
 Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

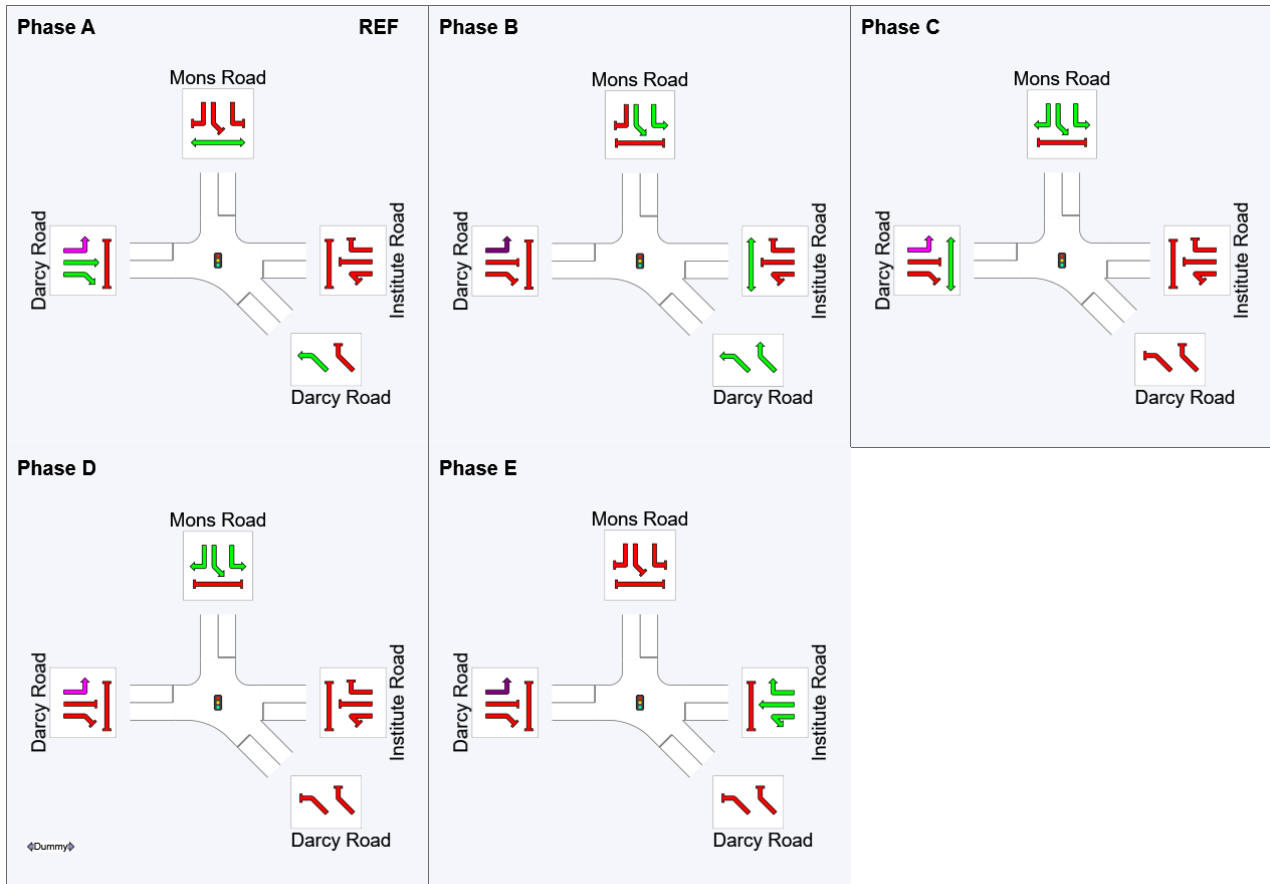
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|----|-----|
| Phase Change Time (sec) | 28 | 78 | 110 | 2 | 12 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 11% |

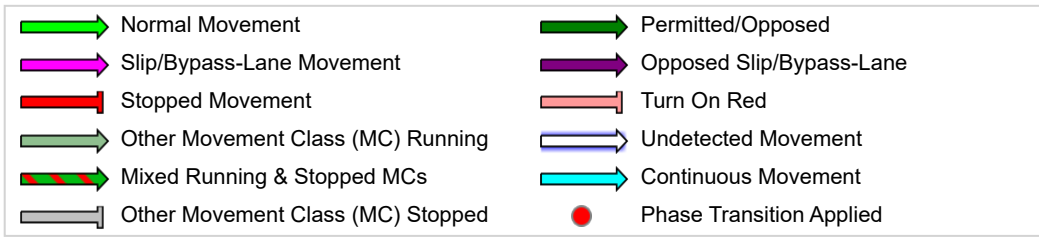
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600
 Site Category: (None)
 Stop (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | |
| 1 | L2 | 240 | 4.2 | 240 | 4.2 | 0.579 | 11.8 | LOS A | 2.9 | 21.2 | 0.67 | 1.46 | 1.14 | 9.3 |
| Approach | | 240 | 4.2 | 240 | 4.2 | 0.579 | 11.8 | LOS A | 2.9 | 21.2 | 0.67 | 1.46 | 1.14 | 9.3 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 75 | 6.7 | 68 | 7.1 | 0.050 | 10.0 | LOS A | 0.2 | 1.3 | 0.20 | 0.74 | 0.20 | 16.8 |
| 5 | T1 | 1427 | 1.3 | 1295 | 1.4 | 0.335 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1502 | 1.6 | 1364 ^N ₁ | 1.7 | 0.335 | 0.5 | LOS A | 0.2 | 1.3 | 0.01 | 0.04 | 0.01 | 36.9 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 11 | T1 | 645 | 2.5 | 606 | 2.1 | 0.162 | 2.1 | LOS A | 3.1 | 22.3 | 0.00 | 0.36 | 0.00 | 37.1 |
| 12 | R2 | 130 | 3.1 | 122 | 2.7 | 0.429 | 17.1 | LOS B | 1.1 | 8.0 | 0.77 | 1.01 | 0.99 | 24.4 |
| Approach | | 775 | 2.6 | 728 ^{N1} | 2.2 | 0.429 | 4.6 | LOS A | 3.1 | 22.3 | 0.13 | 0.47 | 0.17 | 34.1 |
| All Vehicles | | 2517 | 2.1 | 2331 ^N ₁ | 2.3 | 0.579 | 3.0 | NA | 3.1 | 22.3 | 0.12 | 0.32 | 0.17 | 21.1 |

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 229 | 1.3 | 227 | 1.3 | * 0.460 | 41.6 | LOS C | 11.6 | 82.5 | 0.84 | 0.78 | 0.84 | 25.5 |
| 2 | T1 | 29 | 0.0 | 29 | 0.0 | * 1.886 | 852.0 | LOS F | 34.3 | 252.9 | 1.00 | 2.10 | 4.21 | 2.0 |
| 3 | R2 | 100 | 8.0 | 99 | 8.1 | 1.886 | 851.6 | LOS F | 34.3 | 252.9 | 1.00 | 2.10 | 4.21 | 1.8 |
| Approach | | 358 | 3.1 | 354 ^{N1} | 3.1 | 1.886 | 333.6 | LOS F | 34.3 | 252.9 | 0.90 | 1.26 | 2.05 | 5.2 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 321 | 4.0 | 297 | 4.3 | * 0.381 | 20.5 | LOS B | 21.4 | 153.2 | 0.47 | 0.53 | 0.47 | 27.4 |
| 5 | T1 | 1317 | 1.3 | 1216 | 1.4 | 0.381 | 14.0 | LOS A | 21.4 | 153.2 | 0.42 | 0.42 | 0.42 | 34.5 |
| 6 | R2 | 28 | 0.0 | 26 | 0.0 | 0.056 | 12.9 | LOS A | 0.4 | 2.6 | 0.39 | 0.61 | 0.39 | 28.9 |
| Approach | | 1666 | 1.8 | 1539 ^{N1} | 1.9 | 0.381 | 15.2 | LOS B | 21.4 | 153.2 | 0.43 | 0.44 | 0.43 | 33.2 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 26 | 0.0 | 26 | 0.0 | 0.068 | 43.0 | LOS D | 1.3 | 9.4 | 0.83 | 0.61 | 0.83 | 4.3 |
| 8 | T1 | 45 | 0.0 | 45 | 0.0 | 1.036 | 131.7 | LOS F | 8.7 | 60.9 | 1.00 | 1.60 | 1.93 | 1.7 |
| 9 | R2 | 42 | 0.0 | 42 | 0.0 | 1.036 | 131.7 | LOS F | 8.7 | 60.9 | 1.00 | 1.60 | 1.93 | 5.1 |
| Approach | | 113 | 0.0 | 113 | 0.0 | 1.036 | 111.3 | LOS F | 8.7 | 60.9 | 0.96 | 1.37 | 1.68 | 3.5 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 57 | 0.0 | 57 | 0.0 | 0.320 | 16.3 | LOS B | 14.2 | 100.2 | 0.48 | 0.46 | 0.48 | 23.5 |
| 11 | T1 | 649 | 1.4 | 649 | 1.4 | 0.320 | 11.2 | LOS A | 14.2 | 100.2 | 0.46 | 0.42 | 0.46 | 25.5 |
| 12 | R2 | 368 | 1.6 | 368 | 1.6 | 0.935 | 66.6 | LOS E | 24.9 | 176.5 | 0.82 | 1.05 | 1.21 | 7.8 |
| Approach | | 1074 | 1.4 | 1074 | 1.4 | 0.935 | 30.5 | LOS C | 24.9 | 176.5 | 0.59 | 0.64 | 0.72 | 14.3 |
| All Vehicles | | 3211 | 1.7 | 3080 ^{N1} | 1.8 | 1.886 | 60.7 | LOS E | 34.3 | 252.9 | 0.56 | 0.64 | 0.76 | 14.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 47 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 44 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |

| North: Coles Westmead Access | | | | | | | | | | | |
|------------------------------|------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 | Full | 127 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 92.2 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 81 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | | 299 | 64.4 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, E2

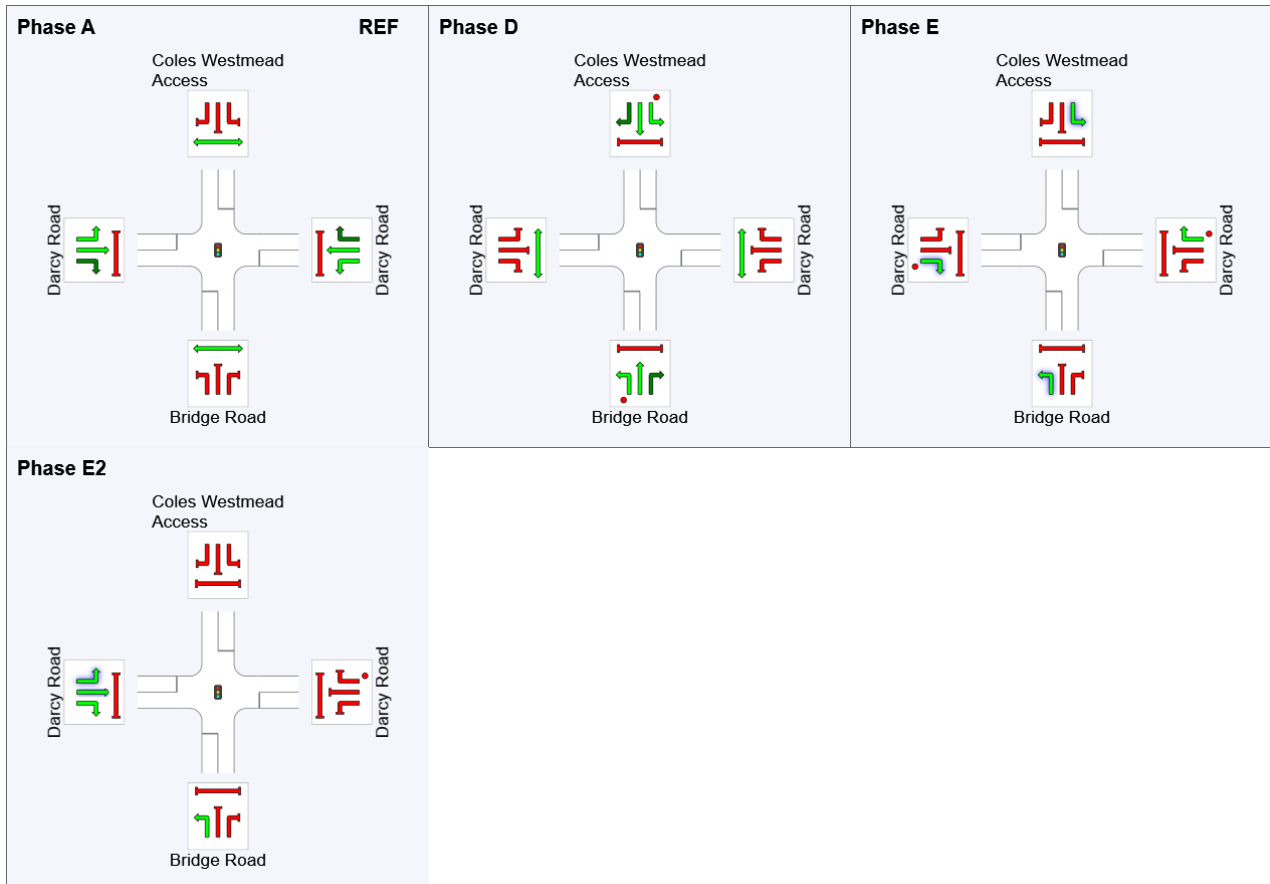
Output Phase Sequence: A, D, E, E2

Phase Timing Summary

| Phase | A | D | E | E2 |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 14 | 96 | 129 | 140 |
| Green Time (sec) | 75 | 26 | 5 | 8 |
| Phase Time (sec) | 82 | 32 | 11 | 15 |
| Phase Split | 59% | 23% | 8% | 11% |

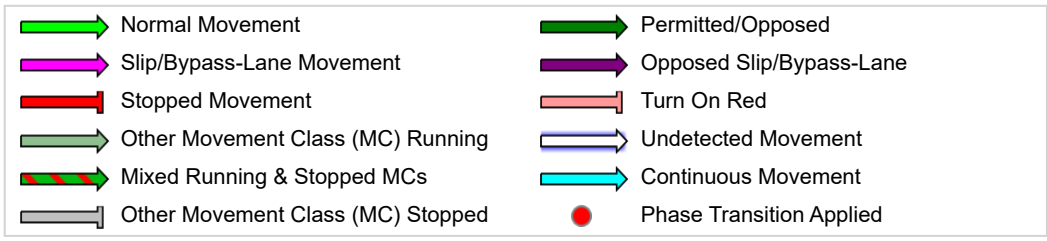
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 With Development + Upgrades PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|-------|--------------------|-------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 467 | 2.4 | 467 | 2.4 | 0.656 | 5.4 | LOS A | 7.0 | 49.9 | 0.71 | 0.62 | 0.71 | 22.6 |
| 3 | R2 | 172 | 0.6 | 172 | 0.6 | 0.656 | 8.5 | LOS A | 7.0 | 49.9 | 0.71 | 0.62 | 0.71 | 22.6 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.656 | 11.6 | LOS A | 7.0 | 49.9 | 0.71 | 0.62 | 0.71 | 23.9 |
| Approach | | 640 | 2.0 | 640 | 2.0 | 0.656 | 6.2 | LOS A | 7.0 | 49.9 | 0.71 | 0.62 | 0.71 | 22.6 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 253 | 0.4 | 242 | 0.4 | 0.869 | 30.3 | LOS C | 11.0 | 76.9 | 0.93 | 1.34 | 1.79 | 30.3 |
| 6 | R2 | 152 | 0.0 | 145 | 0.0 | 0.869 | 32.8 | LOS C | 11.0 | 76.9 | 0.93 | 1.34 | 1.79 | 29.9 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.869 | 34.2 | LOS C | 11.0 | 76.9 | 0.93 | 1.34 | 1.79 | 29.9 |
| Approach | | 406 | 0.2 | 388 ^{N1} | 0.3 | 0.869 | 31.3 | LOS C | 11.0 | 76.9 | 0.93 | 1.34 | 1.79 | 30.1 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 136 | 0.0 | 132 | 0.0 | 0.894 | 13.7 | LOS A | 19.4 | 138.5 | 0.98 | 0.87 | 1.24 | 35.5 |
| 8 | T1 | 725 | 2.6 | 705 | 2.7 | 0.894 | 13.4 | LOS A | 19.4 | 138.5 | 0.98 | 0.87 | 1.24 | 35.8 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.894 | 17.5 | LOS B | 19.4 | 138.5 | 0.98 | 0.87 | 1.24 | 35.5 |
| Approach | | 862 | 2.2 | 838 ^{N1} | 2.2 | 0.894 | 13.5 | LOS A | 19.4 | 138.5 | 0.98 | 0.87 | 1.24 | 35.8 |
| All Vehicles | | 1908 | 1.7 | 1867 ^{N1} | 1.8 | 0.894 | 14.7 | LOS B | 19.4 | 138.5 | 0.88 | 0.88 | 1.17 | 32.3 |

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.

Roundabout Capacity Model: SIDRA Standard.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

SIGNAL OFFSETS

■ Network: N101 [PM Peak (Network Folder: 2033 With Development + Upgrades)]

1500 - 1600

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 106 | 104 | 101 ¹ | 102 ¹ | 103 | 110 | 108 |
|------------------------|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -31 | -17 | 0 | 0 | 0 | 15 | 28 |
| Program / User | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

Appendix I: Future Year Sensitivity Analysis SIDRA Modelling Results



CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|-----------------|----------|--------------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 26 | 3.8 | 26 | 3.8 | 1.268 | 258.4 | LOS F | 102.3 | 720.4 | 1.00 | 2.04 | 2.42 | 2.7 |
| 2 | T1 | 1233 | 0.6 | 1233 | 0.6 | * 1.268 | 253.7 | LOS F | 102.3 | 720.4 | 1.00 | 2.05 | 2.42 | 2.7 |
| Approach | | 1259 | 0.6 | 1259 | 0.6 | 1.268 | 253.8 | LOS F | 102.3 | 720.4 | 1.00 | 2.05 | 2.42 | 2.7 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 43 | 0.0 | 43 | 0.0 | 1.268 | 298.7 | LOS F | 17.6 | 131.0 | 1.00 | 1.79 | 2.51 | 3.8 |
| 5 | T1 | 131 | 0.0 | 131 | 0.0 | * 1.268 | 294.2 | LOS F | 17.6 | 131.0 | 1.00 | 1.79 | 2.51 | 1.9 |
| 6 | R2 | 394 | 14.7 | 394 | 14.7 | 1.268 | 300.4 | LOS F | 38.6 | 303.9 | 1.00 | 1.69 | 2.53 | 1.9 |
| Approach | | 568 | 10.2 | 568 | 10.2 | 1.268 | 298.9 | LOS F | 38.6 | 303.9 | 1.00 | 1.72 | 2.52 | 2.0 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 439 | 13.9 | 424 | 14.3 | 0.953 | 42.1 | LOS C | 12.1 | 88.1 | 0.88 | 0.97 | 1.04 | 14.9 |
| 8 | T1 | 520 | 1.7 | 500 | 1.8 | 0.953 | 40.9 | LOS C | 12.1 | 88.1 | 0.95 | 1.00 | 1.12 | 14.9 |
| 9 | R2 | 70 | 0.0 | 67 | 0.0 | 1.190 | 248.9 | LOS F | 9.6 | 67.3 | 1.00 | 1.29 | 2.49 | 0.9 |
| Approach | | 1029 | 6.8 | 992 ^{N1} | 7.0 | 1.190 | 55.6 | LOS D | 12.1 | 88.1 | 0.92 | 1.01 | 1.18 | 11.1 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 170 | 0.0 | 154 | 0.0 | 0.880 | 83.7 | LOS F | 14.8 | 103.5 | 1.00 | 0.98 | 1.35 | 17.9 |
| 11 | T1 | 389 | 0.3 | 352 | 0.2 | * 1.187 | 239.9 | LOS F | 49.7 | 348.7 | 1.00 | 1.80 | 2.30 | 9.4 |
| Approach | | 559 | 0.2 | 505 ^{N1} | 0.2 | 1.187 | 192.4 | LOS F | 49.7 | 348.7 | 1.00 | 1.55 | 2.01 | 10.7 |
| All Vehicles | | 3415 | 4.0 | 3324 ^{N1} | 4.1 | 1.268 | 193.0 | LOS F | 102.3 | 720.4 | 0.98 | 1.61 | 2.01 | 4.8 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 1433 | 4.4 | 1420 | 4.4 | 1.121 | 164.2 | LOS F | 12.3 | 88.1 | 1.00 | 1.65 | 1.93 | 1.4 |
| 3 | R2 | 365 | 0.3 | 362 | 0.3 | 1.121 | 159.1 | LOS F | 12.3 | 88.1 | 1.00 | 1.54 | 1.91 | 9.9 |
| Approach | | 1798 | 3.6 | 1782 ^{N1} | 3.6 | 1.121 | 163.2 | LOS F | 12.3 | 88.1 | 1.00 | 1.63 | 1.93 | 3.4 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 224 | 0.9 | 224 | 0.9 | 0.688 | 42.8 | LOS D | 16.6 | 117.0 | 0.92 | 0.83 | 0.94 | 23.2 |
| 6 | R2 | 50 | 0.0 | 50 | 0.0 | 0.443 | 71.4 | LOS F | 3.4 | 23.8 | 0.98 | 0.77 | 0.98 | 17.1 |
| Approach | | 274 | 0.7 | 274 | 0.7 | 0.688 | 48.0 | LOS D | 16.6 | 117.0 | 0.93 | 0.82 | 0.95 | 21.8 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 130 | 0.0 | 123 | 0.0 | 0.104 | 20.5 | LOS B | 4.1 | 35.2 | 0.40 | 0.57 | 0.40 | 34.9 |
| 8 | T1 | 805 | 10.7 | 767 | 11.1 | 0.305 | 17.2 | LOS B | 28.4 | 208.9 | 0.46 | 0.42 | 0.46 | 18.4 |
| Approach | | 935 | 9.2 | 891 ^{N1} | 9.6 | 0.305 | 17.7 | LOS B | 28.4 | 208.9 | 0.46 | 0.44 | 0.46 | 23.0 |
| All Vehicles | | 3007 | 5.1 | 2947 ^{N1} | 5.2 | 1.121 | 108.5 | LOS F | 28.4 | 208.9 | 0.83 | 1.19 | 1.39 | 6.1 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

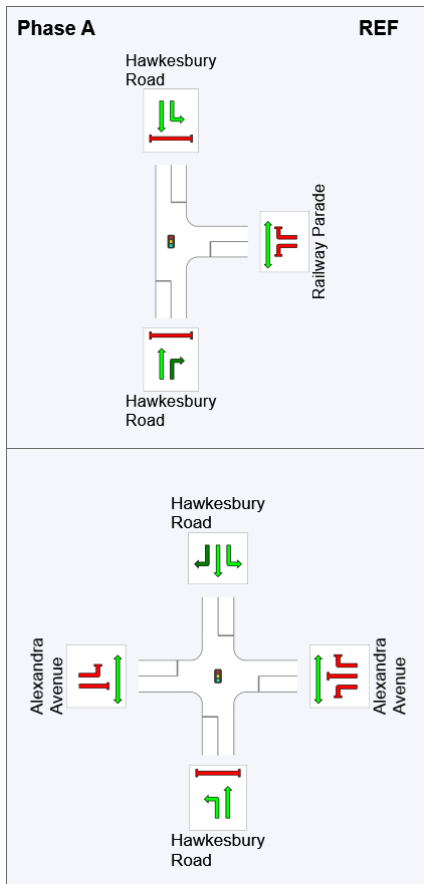
Timings based on settings in the Network Timing dialog
 Phase Times determined by the program
 Downstream lane blockage effects included in determining phase times
 Phase Sequence: CCG Phasing
 Reference Phase: Phase A
 Input Phase Sequence: A, B*, E, D, C*
 Output Phase Sequence: A, E, D
 (* Variable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

Phase Timing Summary (CCG)

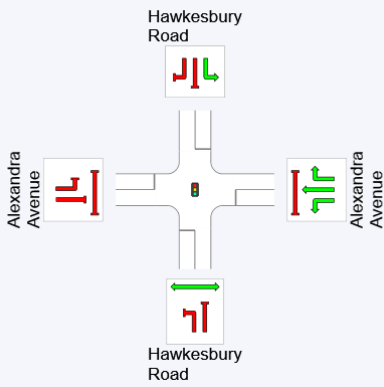
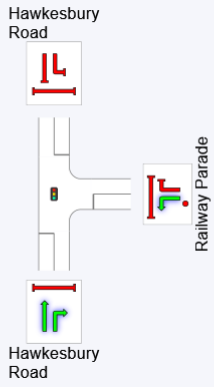
| Phase | A | E | D |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 0 | 77 | 114 |
| Green Time (sec) | 71 | 28 | 17 |
| Phase Time (sec) | 80 | 37 | 23 |
| Phase Split | 57% | 26% | 16% |

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%.

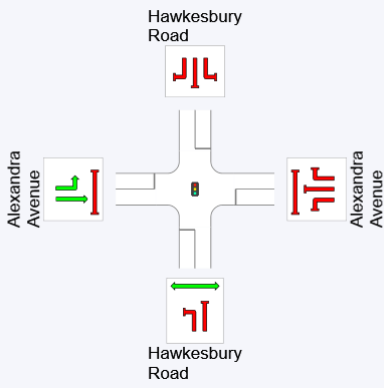
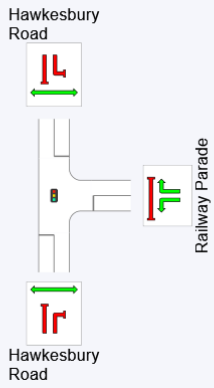
Output Phase Sequence (CCG)



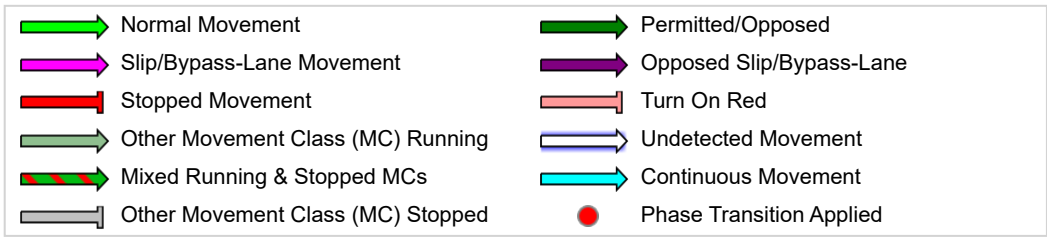
Phase E



Phase D



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 84.0 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.1 |
| 25 | T1 | 346 | 3.5 | 346 | 3.5 | 0.942 | 77.3 | LOS F | 27.4 | 197.2 | 0.94 | 1.11 | 1.32 | 7.9 |
| 26 | R2 | 265 | 1.9 | 265 | 1.9 | * 1.087 | 175.3 | LOS F | 32.8 | 233.3 | 1.00 | 1.48 | 1.98 | 3.7 |
| Approach | | 619 | 4.0 | 619 | 4.0 | 1.087 | 119.3 | LOS F | 32.8 | 233.3 | 0.96 | 1.26 | 1.60 | 5.4 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 293 | 3.8 | 269 | 4.0 | 0.831 | 13.0 | LOS A | 4.8 | 34.3 | 0.39 | 0.61 | 0.39 | 27.1 |
| 29 | R2 | 590 | 11.5 | 545 | 12.3 | 0.923 | 59.4 | LOS E | 19.8 | 146.9 | 0.93 | 0.94 | 1.15 | 5.8 |
| Approach | | 883 | 8.9 | 815 ^{N1} | 9.6 | 0.923 | 44.0 | LOS D | 19.8 | 146.9 | 0.75 | 0.83 | 0.90 | 10.3 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 975 | 5.9 | 896 | 6.0 | * 1.089 | 154.3 | LOS F | 29.0 | 208.9 | 0.99 | 1.30 | 1.77 | 3.5 |
| 31 | T1 | 507 | 1.2 | 466 | 1.2 | 0.702 | 37.0 | LOS C | 25.0 | 176.8 | 0.85 | 0.77 | 0.85 | 18.8 |
| Approach | | 1482 | 4.3 | 1362 ^{N1} | 4.3 | 1.089 | 114.2 | LOS F | 29.0 | 208.9 | 0.94 | 1.12 | 1.45 | 5.7 |
| All Vehicles | | 2992 | 5.9 | 2803 ^{N1} | 6.3 | 1.089 | 94.9 | LOS F | 32.8 | 233.3 | 0.89 | 1.07 | 1.32 | 6.4 |

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 Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 238.5 | 208.6 | 0.87 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 191 | 64.6 | LOS F | 0.7 | 0.7 | 0.96 | 0.96 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 32.2 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 57.9 | 30.9 | 0.53 |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P72 Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | |
| P8 Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 98.9 | 41.1 | 0.42 |
| All Pedestrians | 727 | 62.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 135.1 | 87.7 | 0.65 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

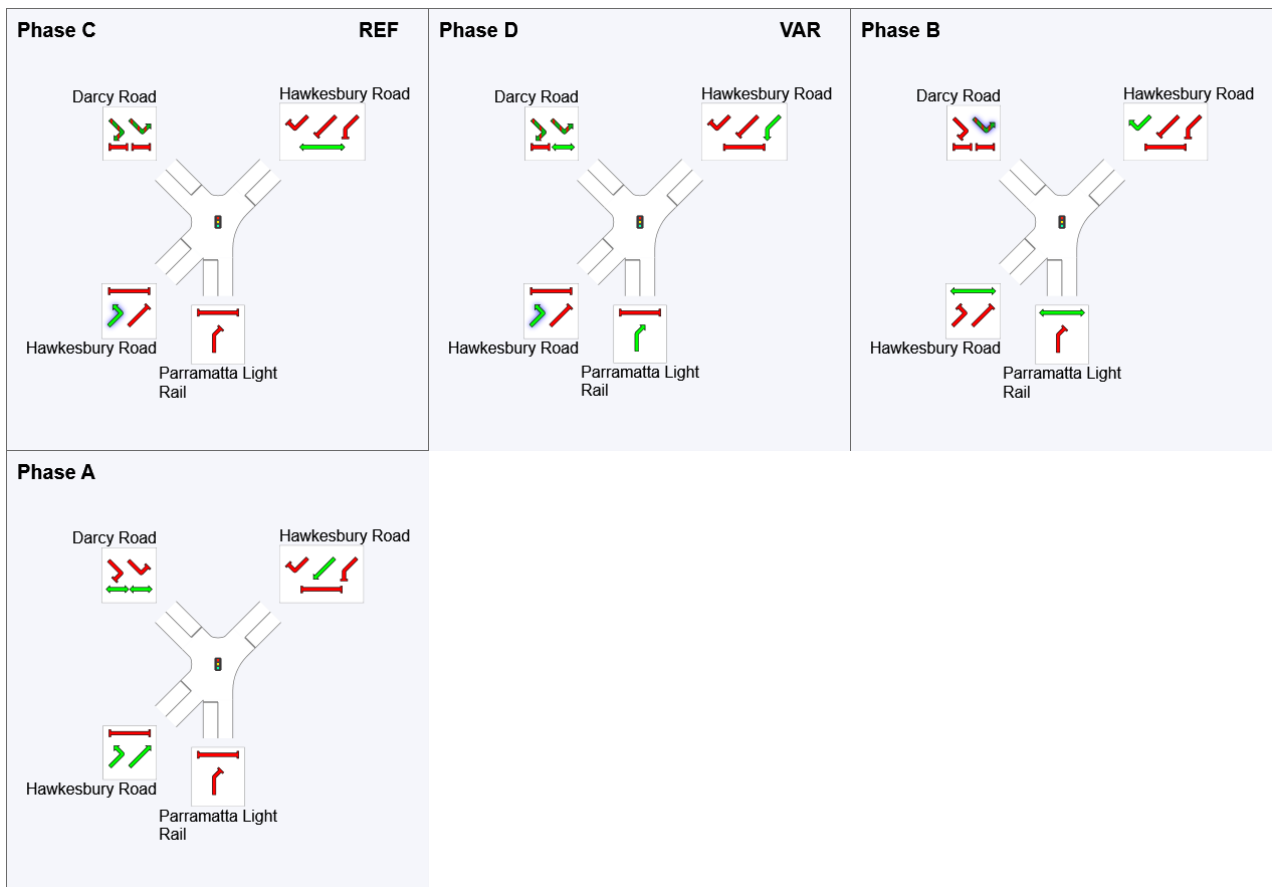
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 34 | 48 | 89 |
| Green Time (sec) | 28 | 6 | 32 | 40 |
| Phase Time (sec) | 36 | 15 | 41 | 48 |
| Phase Split | 26% | 11% | 29% | 34% |

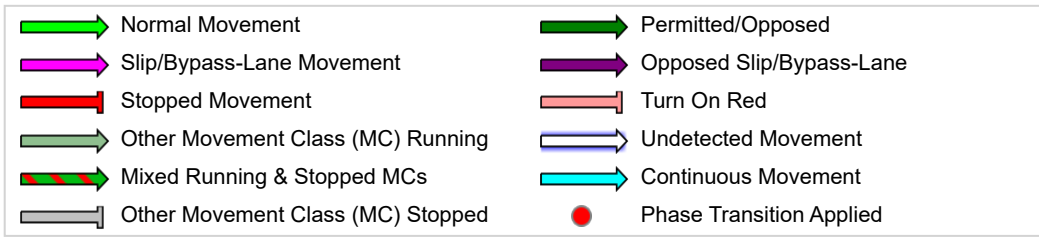
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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 Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|-----------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | HV % | [Total veh/h] | HV % | | | | [Veh. veh] | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.474 | 26.0 | LOS B | 18.7 | 134.1 | 0.64 | 0.57 | 0.64 | 21.3 |
| 22 | T1 | 1100 | 5.7 | 954 | 5.9 | 0.474 | 22.5 | LOS B | 18.7 | 134.1 | 0.64 | 0.57 | 0.64 | 11.7 |
| 23 | R2 | 132 | 0.8 | 114 | 0.8 | 0.722 | 76.8 | LOS F | 8.1 | 56.7 | 1.00 | 0.84 | 1.12 | 8.5 |
| Approach | | 1240 | 5.2 | 1076 ^N | 5.3 | 0.722 | 28.3 | LOS B | 18.7 | 134.1 | 0.67 | 0.60 | 0.69 | 10.7 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 43 | 0.0 | 43 | 0.0 | 0.197 | 48.2 | LOS D | 2.5 | 17.6 | 0.87 | 0.67 | 0.87 | 8.1 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | 0.197 | 48.2 | LOS D | 2.5 | 17.6 | 0.87 | 0.67 | 0.87 | 12.4 |
| 26 | R2 | 75 | 6.7 | 75 | 6.7 | 0.881 | 81.5 | LOS F | 5.7 | 42.1 | 1.00 | 1.25 | 1.49 | 6.2 |
| Approach | | 119 | 4.2 | 119 | 4.2 | 0.881 | 69.2 | LOS E | 5.7 | 42.1 | 0.95 | 1.03 | 1.26 | 6.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 182 | 0.5 | 165 | 0.6 | * 0.635 | 29.5 | LOS C | 13.2 | 96.3 | 0.73 | 0.72 | 0.73 | 12.3 |
| 28 | T1 | 818 | 10.3 | 750 | 11.1 | 0.635 | 24.4 | LOS B | 13.2 | 96.3 | 0.71 | 0.66 | 0.71 | 8.2 |
| 29 | R2 | 137 | 0.7 | 124 | 0.8 | * 1.073 | 156.3 | LOS F | 13.7 | 96.3 | 1.00 | 1.34 | 1.93 | 5.0 |
| Approach | | 1137 | 7.6 | 1039 ^N | 8.2 | 1.073 | 41.0 | LOS C | 13.7 | 96.3 | 0.74 | 0.75 | 0.86 | 8.0 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 142 | 0.7 | 142 | 0.7 | 0.413 | 52.3 | LOS D | 8.5 | 60.0 | 0.92 | 0.78 | 0.92 | 10.0 |
| 31 | T1 | 4 | 0.0 | 4 | 0.0 | * 0.413 | 55.3 | LOS D | 8.5 | 60.0 | 0.92 | 0.78 | 0.92 | 12.2 |
| 32 | R2 | 22 | 0.0 | 22 | 0.0 | 0.166 | 71.3 | LOS F | 1.5 | 10.2 | 0.97 | 0.70 | 0.97 | 8.0 |
| Approach | | 168 | 0.6 | 168 | 0.6 | 0.413 | 54.8 | LOS D | 8.5 | 60.0 | 0.93 | 0.77 | 0.93 | 9.8 |
| All Vehicles | | 2664 | 5.9 | 2402 ^N | 6.5 | 1.073 | 37.7 | LOS C | 18.7 | 134.1 | 0.74 | 0.70 | 0.81 | 8.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped] | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 233 | 64.8 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 90.5 | 30.9 | 0.34 |
| P52 | Stage 2 | 65 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |

| NorthEast: Westmead Hospital Access | | | | | | | | | | | |
|-------------------------------------|-----|------|-------|-----|-----|------|------|------|------|------|--|
| P6 Full | 98 | 64.4 | LOS F | 0.4 | 0.4 | 0.96 | 0.96 | 91.0 | 31.9 | 0.35 | |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 Stage 1 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 | |
| P72 Stage 2 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 | |
| SouthWest: Farm House Road | | | | | | | | | | | |
| P8 Full | 258 | 64.8 | LOS F | 1.0 | 1.0 | 0.97 | 0.97 | 91.4 | 31.9 | 0.35 | |
| All Pedestrians | 696 | 64.7 | LOS F | 1.0 | 1.0 | 0.96 | 0.96 | 91.6 | 32.3 | 0.35 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

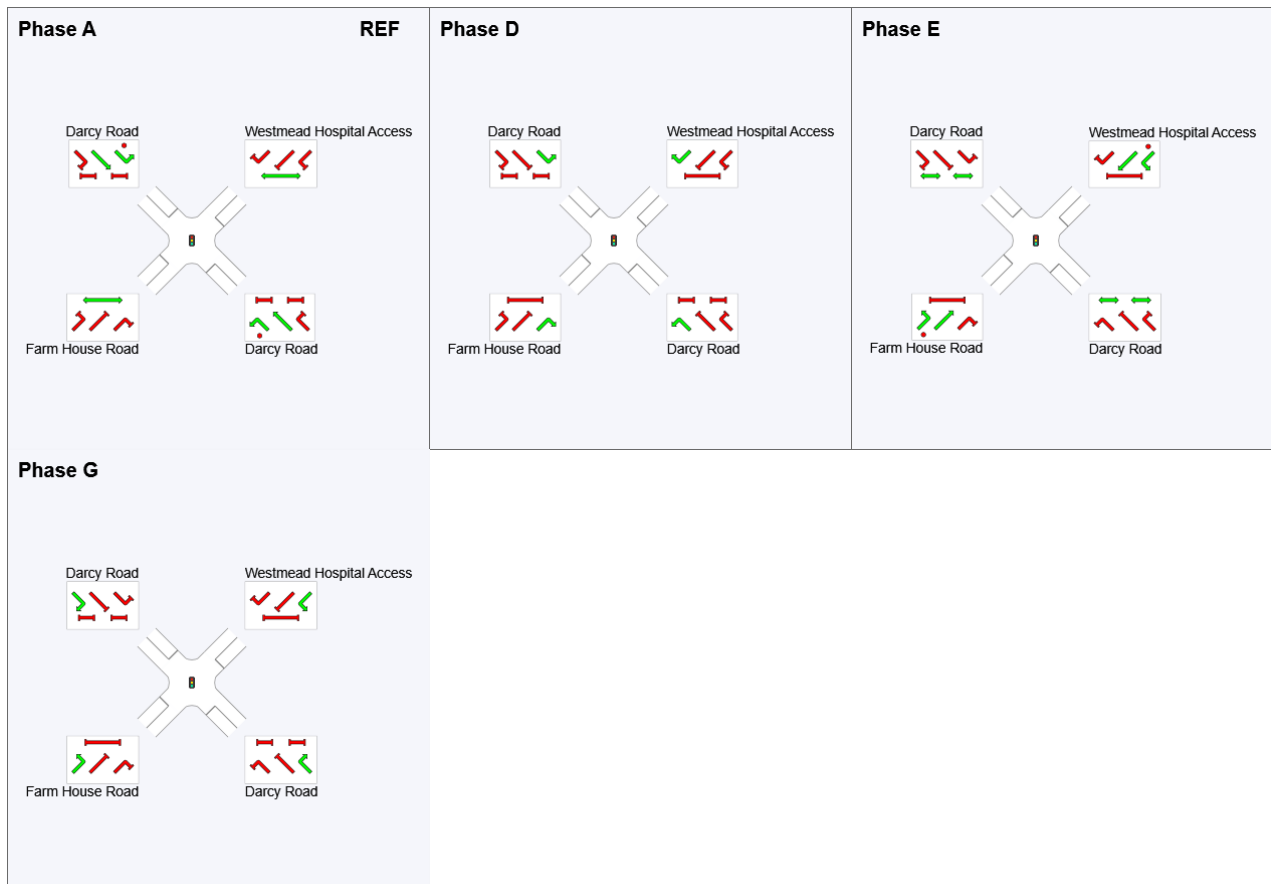
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 130 | 71 | 88 | 112 |
| Green Time (sec) | 73 | 10 | 16 | 12 |
| Phase Time (sec) | 80 | 18 | 22 | 20 |
| Phase Split | 57% | 13% | 16% | 14% |

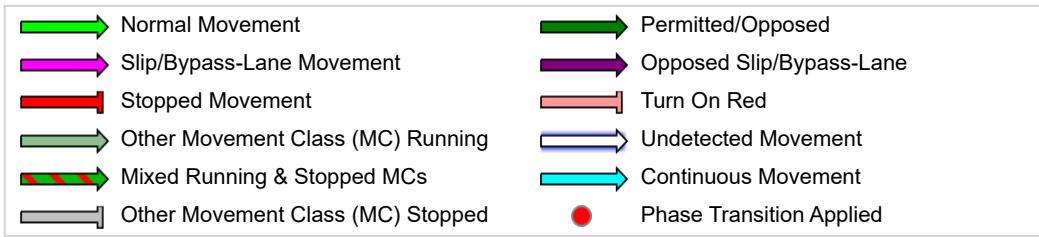
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|---|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. % | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 327 | 0.0 | 294 | 0.0 | 0.456 | 10.1 | LOS A | 2.2 | 15.5 | 0.70 | 0.95 | 0.94 | 16.9 | |
| 22 | T1 | 990 | 6.8 | 892 | 6.9 | 0.455 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 | |
| Approach | | 1317 | 5.1 | 1186 ^N | 5.2 | 0.456 | 2.5 | NA | 2.2 | 15.5 | 0.17 | 0.23 | 0.23 | 27.6 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 28 | T1 | 1137 | 7.6 | 1039 | 8.2 | 0.351 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 | |
| Approach | | 1137 | 7.6 | 1039 ^N | 8.2 | 0.351 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 5.4 | LOS A | 0.0 | 0.0 | 0.61 | 0.41 | 0.61 | 11.6 | |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 5.4 | LOS A | 0.0 | 0.0 | 0.61 | 0.41 | 0.61 | 11.6 | |
| All Vehicles | | 2455 | 6.2 | 2226 ^N | 6.9 | 0.456 | 1.4 | NA | 2.2 | 15.5 | 0.09 | 0.13 | 0.12 | 33.2 | |

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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|-----------------|------|--------------------|------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | HV % | [Total veh/h] | HV % | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.354 | 8.6 | LOS A | 4.9 | 35.4 | 0.19 | 0.18 | 0.19 | 23.3 |
| 22 | T1 | 923 | 7.3 | 849 | 7.5 | 0.354 | 4.9 | LOS A | 4.9 | 35.4 | 0.18 | 0.17 | 0.18 | 26.8 |
| 23 | R2 | 59 | 0.0 | 54 | 0.0 | *0.408 | 77.4 | LOS F | 3.8 | 26.7 | 1.00 | 0.75 | 1.00 | 7.9 |
| Approach | | 990 | 6.8 | 910 ^{N1} | 7.0 | 0.408 | 9.2 | LOS A | 4.9 | 35.4 | 0.23 | 0.20 | 0.23 | 20.7 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 19 | 0.0 | 19 | 0.0 | 0.023 | 0.6 | LOS A | 0.1 | 0.8 | 0.13 | 0.10 | 0.13 | 19.5 |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | 0.188 | 59.9 | LOS E | 2.3 | 16.1 | 0.93 | 0.70 | 0.93 | 6.2 |
| Approach | | 56 | 0.0 | 56 | 0.0 | 0.188 | 39.8 | LOS C | 2.3 | 16.1 | 0.66 | 0.49 | 0.66 | 8.0 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 85 | 0.0 | 76 | 0.0 | *0.422 | 8.5 | LOS A | 6.0 | 43.3 | 0.20 | 0.24 | 0.20 | 22.0 |
| 28 | T1 | 1034 | 8.3 | 936 | 9.1 | 0.422 | 4.0 | LOS A | 6.0 | 43.3 | 0.16 | 0.17 | 0.16 | 27.8 |
| 29 | R2 | 5 | 0.0 | 4 | 0.0 | 0.034 | 73.7 | LOS F | 0.3 | 2.1 | 1.00 | 0.65 | 1.00 | 6.9 |
| Approach | | 1124 | 7.7 | 1017 ^{N1} | 8.4 | 0.422 | 4.6 | LOS A | 6.0 | 43.3 | 0.17 | 0.18 | 0.17 | 26.1 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 156 | 0.0 | 156 | 0.0 | *0.408 | 44.4 | LOS D | 8.6 | 60.1 | 0.88 | 0.71 | 0.88 | 5.5 |
| 32 | R2 | 84 | 0.0 | 84 | 0.0 | 0.290 | 52.6 | LOS D | 5.0 | 34.8 | 0.90 | 0.71 | 0.90 | 5.0 |
| Approach | | 240 | 0.0 | 240 | 0.0 | 0.408 | 47.2 | LOS D | 8.6 | 60.1 | 0.89 | 0.71 | 0.89 | 5.3 |
| All Vehicles | | 2410 | 6.3 | 2223 ^{N1} | 6.9 | 0.422 | 12.0 | LOS A | 8.6 | 60.1 | 0.28 | 0.25 | 0.28 | 17.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped] | [Dist m] | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 43 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 48 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 182 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 98.5 | 41.1 | 0.42 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

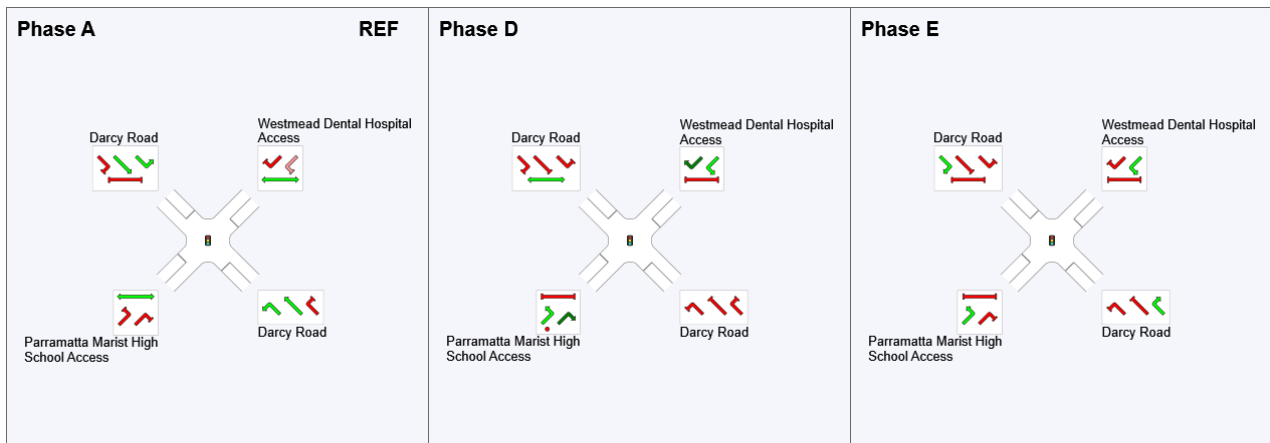
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 10 | 102 | 135 |
| Green Time (sec) | 86 | 27 | 10 |
| Phase Time (sec) | 92 | 32 | 16 |
| Phase Split | 66% | 23% | 11% |

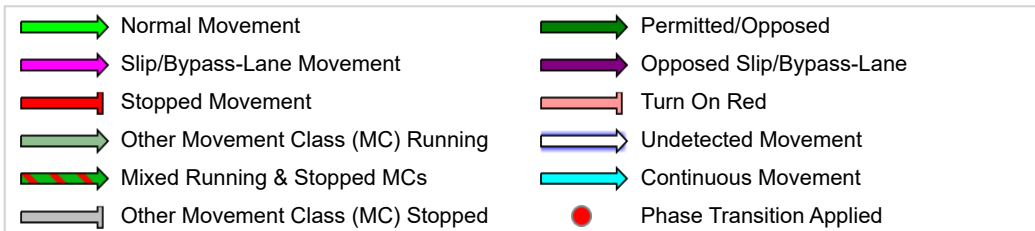
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033
Sensitivity Analysis (50%))]

0745 - 0845
Site Category: (None)
Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|--------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. % | Dist m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.216 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 1116 | 6.1 | 1061 | 6.2 | 0.216 | 0.0 | LOS A | 10.0 | 72.4 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1117 | 6.1 | 1062 ^N | 6.2 | 0.216 | 0.0 | NA | 10.0 | 72.4 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 1124 | 7.5 | 1017 | 8.2 | 0.258 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1124 | 7.5 | 1017 ^N | 8.2 | 0.258 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.2 | LOS A | 0.0 | 0.0 | 0.36 | 0.16 | 0.36 | 18.7 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.2 | LOS A | 0.0 | 0.0 | 0.36 | 0.16 | 0.36 | 18.7 |
| All Vehicles | | 2242 | 6.8 | 2080 ^N | 7.3 | 0.258 | 0.0 | NA | 10.0 | 72.4 | 0.00 | 0.00 | 0.00 | 39.9 |

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.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)]
 (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2033
 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 781 | 1.0 | 760 | 1.0 | 0.492 | 21.9 | LOS B | 12.7 | 89.8 | 0.57 | 0.69 | 0.57 | 8.4 |
| 23a | R1 | 334 | 18.6 | 326 | 18.8 | * 0.891 | 70.7 | LOS F | 11.8 | 89.8 | 0.99 | 0.97 | 1.18 | 16.6 |
| Approach | | 1115 | 6.3 | 1086 ^N ₁ | 6.3 | 0.891 | 36.5 | LOS C | 12.7 | 89.8 | 0.70 | 0.77 | 0.75 | 13.7 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 51 | 2.0 | 51 | 2.0 | 0.686 | 77.3 | LOS F | 6.0 | 42.7 | 1.00 | 0.84 | 1.11 | 12.8 |
| 5 | T1 | 79 | 2.5 | 79 | 2.5 | * 0.686 | 75.2 | LOS F | 6.0 | 42.7 | 1.00 | 0.85 | 1.16 | 12.7 |
| 6 | R2 | 2 | 0.0 | 2 | 0.0 | 0.686 | 81.0 | LOS F | 3.6 | 25.5 | 1.00 | 0.86 | 1.19 | 20.3 |
| Approach | | 132 | 2.3 | 132 | 2.3 | 0.686 | 76.1 | LOS F | 6.0 | 42.7 | 1.00 | 0.85 | 1.14 | 12.9 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 7 | 0.0 | 7 | 0.0 | 0.176 | 24.8 | LOS B | 5.2 | 44.6 | 0.60 | 0.61 | 0.60 | 30.9 |
| 7a | L1 | 170 | 44.1 | 170 | 44.1 | 0.176 | 23.1 | LOS B | 5.2 | 44.6 | 0.59 | 0.59 | 0.59 | 26.4 |
| 9 | R2 | 126 | 10.3 | 126 | 10.3 | * 0.618 | 57.2 | LOS E | 8.0 | 61.1 | 0.95 | 0.82 | 0.96 | 17.5 |
| Approach | | 303 | 29.0 | 303 | 29.0 | 0.618 | 37.3 | LOS C | 8.0 | 61.1 | 0.74 | 0.69 | 0.74 | 22.0 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 196 | 8.7 | 193 | 8.6 | 1.120 | 165.9 | LOS F | 12.7 | 91.4 | 1.00 | 1.49 | 1.91 | 8.5 |
| 11 | T1 | 223 | 0.4 | 220 | 0.4 | * 1.120 | 162.7 | LOS F | 12.7 | 91.4 | 1.00 | 1.49 | 1.91 | 7.2 |
| 12a | R1 | 902 | 0.9 | 890 | 0.9 | 1.120 | 173.5 | LOS F | 13.0 | 91.4 | 1.00 | 1.58 | 1.91 | 1.5 |
| Approach | | 1321 | 2.0 | 1304 ^N ₁ | 1.9 | 1.120 | 170.6 | LOS F | 13.0 | 91.4 | 1.00 | 1.55 | 1.91 | 3.8 |
| All Vehicles | | 2871 | 6.5 | 2825 ^N ₁ | 6.6 | 1.120 | 100.3 | LOS F | 13.0 | 91.4 | 0.86 | 1.13 | 1.30 | 7.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |

| West: Darcy Road | | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|--|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 | |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2033
 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

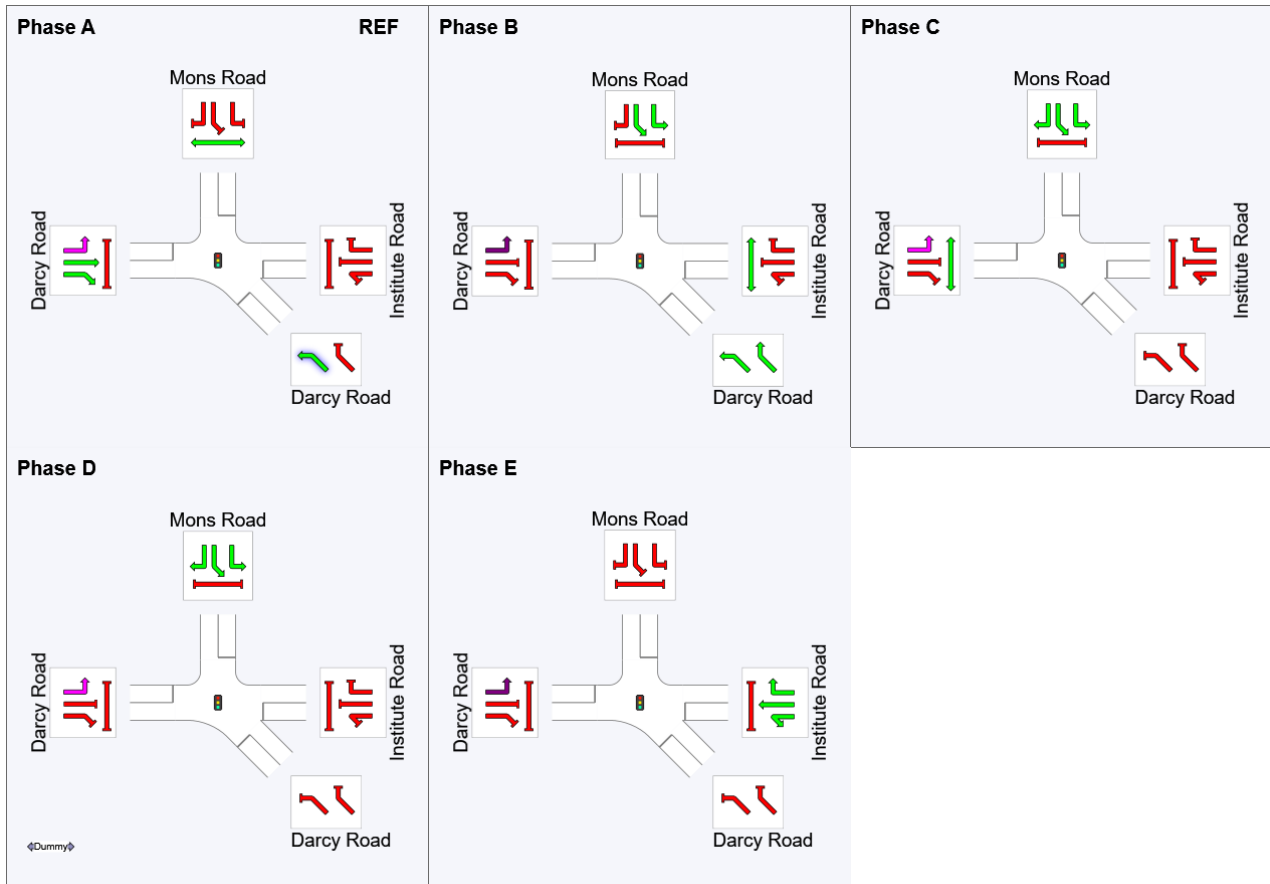
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 50 | 82 | 114 | 124 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 11% |

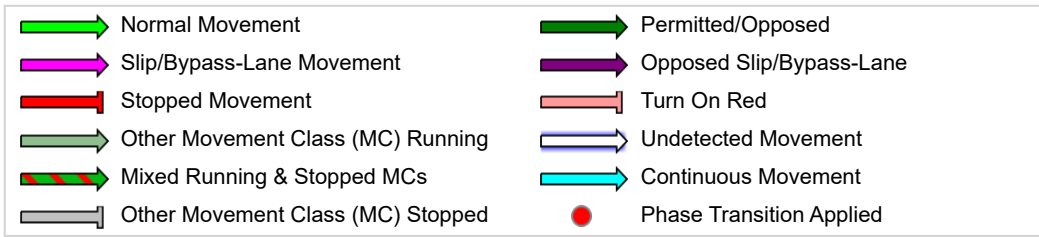
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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SITE LAYOUT

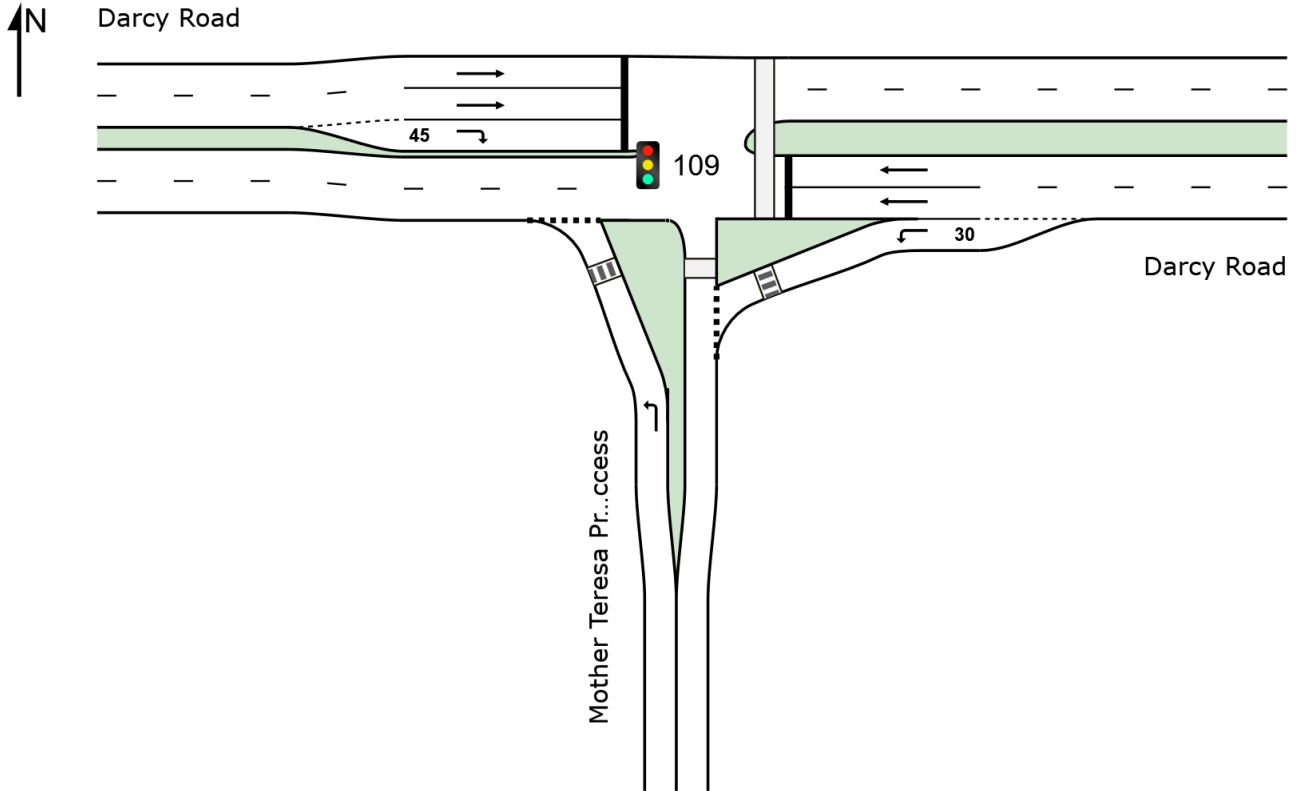
 Site: 109 [Darcy Road / Mother Teresa Primary School Access
(Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access
(Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033
Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | |
| 1 | L2 | 466 | 1.1 | 466 | 1.1 | 0.812 | 30.0 | LOS C | 24.4 | 172.1 | 0.91 | 1.08 | 0.97 | 8.3 |
| Approach | | 466 | 1.1 | 466 | 1.1 | 0.812 | 30.0 | LOS C | 24.4 | 172.1 | 0.91 | 1.08 | 0.97 | 8.3 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 162 | 1.9 | 161 | 1.9 | 0.219 | 28.1 | LOS B | 6.2 | 44.4 | 0.78 | 0.82 | 0.78 | 8.1 |
| 5 | T1 | 824 | 2.3 | 821 | 2.3 | 0.647 | 11.5 | LOS A | 12.8 | 91.4 | 0.43 | 0.39 | 0.43 | 13.6 |
| Approach | | 986 | 2.2 | 982 ^{N1} | 2.2 | 0.647 | 14.2 | LOS A | 12.8 | 91.4 | 0.49 | 0.46 | 0.49 | 12.1 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 11 | T1 | 1321 | 2.3 | 1305 | 2.3 | * 0.968 | 61.9 | LOS E | 64.9 | 463.5 | 0.63 | 0.88 | 1.00 | 12.0 |
| 12 | R2 | 345 | 1.4 | 341 | 1.4 | 0.672 | 25.8 | LOS B | 17.2 | 122.2 | 0.88 | 0.92 | 0.88 | 20.4 |
| Approach | | 1666 | 2.2 | 1645 ^{N1} | 2.1 | 0.968 | 54.4 | LOS D | 64.9 | 463.5 | 0.68 | 0.89 | 0.97 | 13.1 |
| All Vehicles | | 3118 | 2.0 | 3094 ^{N1} | 2.0 | 0.968 | 38.0 | LOS C | 64.9 | 463.5 | 0.66 | 0.78 | 0.82 | 11.3 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 86.8 | 27.1 | 0.31 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.6 | 38.8 | 0.40 |
| All Pedestrians | | 100 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 91.7 | 33.0 | 0.36 |

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: 109 [Darcy Road / Mother Teresa Primary School Access
(Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033
Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, B1

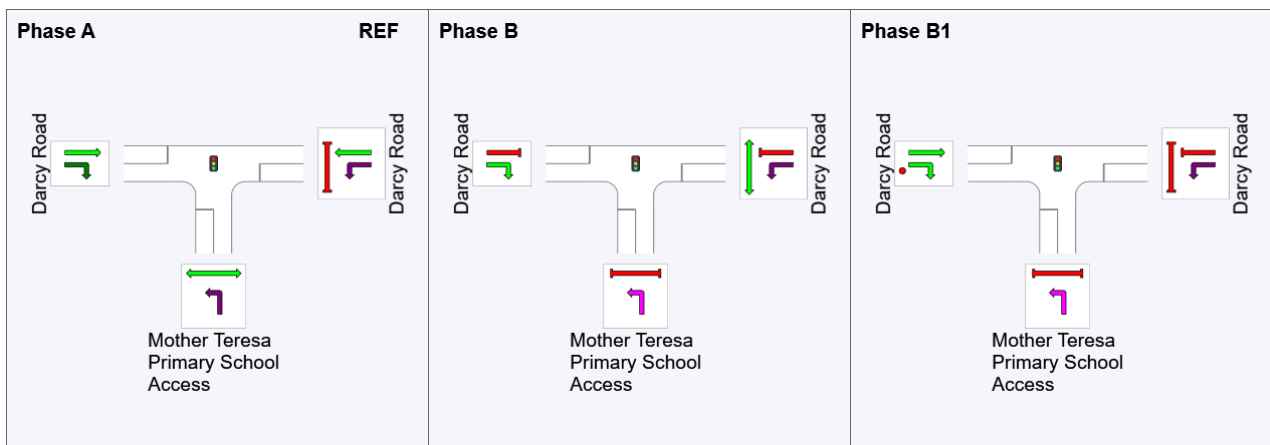
Output Phase Sequence: A, B, B1

Phase Timing Summary

| Phase | A | B | B1 |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 135 | 85 | 108 |
| Green Time (sec) | 84 | 17 | 22 |
| Phase Time (sec) | 90 | 22 | 28 |
| Phase Split | 64% | 16% | 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



MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|--------|--------------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total veh/h | HV] % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 153 | 2.6 | 153 | 2.6 | 0.301 | 45.9 | LOS D | 8.1 | 57.9 | 0.83 | 0.77 | 0.83 | 24.3 |
| 2 | T1 | 17 | 5.9 | 17 | 5.9 | * 1.342 | 384.8 | LOS F | 36.7 | 266.7 | 1.00 | 1.78 | 2.95 | 4.1 |
| 3 | R2 | 181 | 4.4 | 181 | 4.4 | 1.342 | 384.3 | LOS F | 36.7 | 266.7 | 1.00 | 1.78 | 2.95 | 3.8 |
| Approach | | 351 | 3.7 | 350 ^{N1} | 3.7 | 1.342 | 236.8 | LOS F | 36.7 | 266.7 | 0.93 | 1.34 | 2.03 | 6.7 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 425 | 1.9 | 424 | 1.9 | 0.637 | 25.6 | LOS B | 26.0 | 185.3 | 0.75 | 0.79 | 0.75 | 23.4 |
| 5 | T1 | 839 | 2.3 | 837 | 2.3 | 0.637 | 18.7 | LOS B | 27.0 | 192.5 | 0.64 | 0.60 | 0.64 | 31.4 |
| 6 | R2 | 27 | 0.0 | 27 | 0.0 | * 0.142 | 45.1 | LOS D | 1.3 | 9.2 | 0.99 | 0.70 | 0.99 | 16.6 |
| Approach | | 1291 | 2.1 | 1288 ^{N1} | 2.1 | 0.637 | 21.5 | LOS B | 27.0 | 192.5 | 0.68 | 0.66 | 0.68 | 28.5 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 15 | 6.7 | 15 | 6.7 | 0.055 | 38.9 | LOS C | 0.7 | 5.5 | 0.76 | 0.55 | 0.76 | 4.7 |
| 8 | T1 | 17 | 0.0 | 17 | 0.0 | 0.210 | 56.6 | LOS E | 2.7 | 19.1 | 0.91 | 0.70 | 0.91 | 3.5 |
| 9 | R2 | 27 | 3.7 | 27 | 3.7 | 0.210 | 56.6 | LOS E | 2.7 | 19.1 | 0.91 | 0.70 | 0.91 | 9.9 |
| Approach | | 59 | 3.4 | 59 | 3.4 | 0.210 | 52.1 | LOS D | 2.7 | 19.1 | 0.87 | 0.66 | 0.87 | 7.1 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | 1.278 | 268.6 | LOS F | 146.6 | 1039.9 | 1.00 | 2.08 | 2.45 | 2.7 |
| 11 | T1 | 1469 | 1.6 | 1469 | 1.6 | * 1.278 | 264.3 | LOS F | 146.6 | 1039.9 | 0.65 | 1.76 | 2.11 | 2.2 |
| 12 | R2 | 253 | 0.8 | 253 | 0.8 | 1.263 | 261.4 | LOS F | 34.4 | 242.1 | 0.97 | 1.55 | 2.42 | 2.2 |
| Approach | | 1751 | 1.5 | 1751 | 1.5 | 1.278 | 264.0 | LOS F | 146.6 | 1039.9 | 0.70 | 1.73 | 2.16 | 2.2 |
| All Vehicles | | 3452 | 2.0 | 3448 ^{N1} | 2.0 | 1.342 | 167.0 | LOS F | 146.6 | 1039.9 | 0.72 | 1.27 | 1.57 | 5.5 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | ped/h | sec | | [Ped ped | Dist] m | | | sec | m | m/sec |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 67 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 40 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |

| | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 Full | 78 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 92.1 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | |
| P4 Full | 55 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | 240 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 93.4 | 35.0 | 0.37 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing - Copy

Reference Phase: Phase A

Input Phase Sequence: A, D, E*, E2*

Output Phase Sequence: A, D, E*

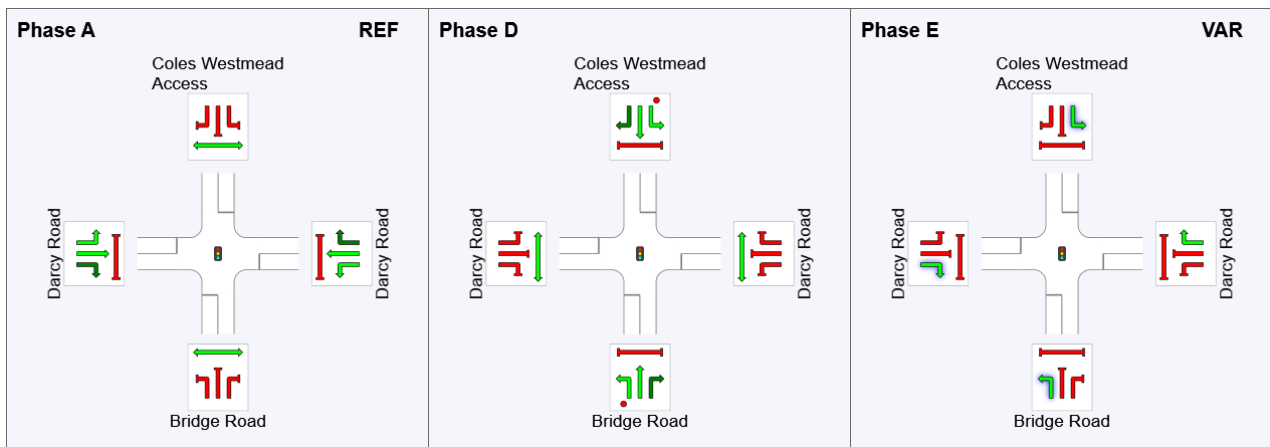
(* Variable Phase)

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 121 | 71 | 109 |
| Green Time (sec) | 83 | 31 | 10 |
| Phase Time (sec) | 90 | 33 | 17 |
| Phase Split | 64% | 24% | 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 |

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MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 Sensitivity Analysis (50%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 491 | 0.2 | 491 | 0.2 | 0.682 | 4.2 | LOS A | 9.1 | 64.1 | 0.48 | 0.50 | 0.48 | 23.9 |
| 3 | R2 | 349 | 0.3 | 349 | 0.3 | 0.682 | 7.3 | LOS A | 9.1 | 64.1 | 0.48 | 0.50 | 0.48 | 23.9 |
| 3u | U | 5 | 0.0 | 5 | 0.0 | 0.682 | 8.6 | LOS A | 9.1 | 64.1 | 0.48 | 0.50 | 0.48 | 27.2 |
| Approach | | 845 | 0.2 | 845 | 0.2 | 0.682 | 5.5 | LOS A | 9.1 | 64.1 | 0.48 | 0.50 | 0.48 | 23.9 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 132 | 0.8 | 130 | 0.8 | 0.359 | 9.6 | LOS A | 1.9 | 13.7 | 0.67 | 0.83 | 0.67 | 40.3 |
| 6 | R2 | 54 | 1.9 | 53 | 1.9 | 0.359 | 12.2 | LOS A | 1.9 | 13.7 | 0.67 | 0.83 | 0.67 | 40.9 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.359 | 13.4 | LOS A | 1.9 | 13.7 | 0.67 | 0.83 | 0.67 | 40.9 |
| Approach | | 188 | 1.1 | 186 ^{N1} | 1.1 | 0.359 | 10.4 | LOS A | 1.9 | 13.7 | 0.67 | 0.83 | 0.67 | 40.4 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 204 | 0.5 | 178 | 0.5 | 1.181 | 182.4 | LOS F | 104.9 | 735.6 | 1.00 | 4.37 | 7.77 | 7.6 |
| 8 | T1 | 800 | 0.1 | 696 | 0.1 | 1.181 | 182.0 | LOS F | 104.9 | 735.6 | 1.00 | 4.37 | 7.77 | 8.4 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 1.181 | 186.2 | LOS F | 104.9 | 735.6 | 1.00 | 4.37 | 7.77 | 7.6 |
| Approach | | 1005 | 0.2 | 875 ^{N1} | 0.2 | 1.181 | 182.0 | LOS F | 104.9 | 735.6 | 1.00 | 4.37 | 7.77 | 8.3 |
| All Vehicles | | 2038 | 0.3 | 1906 ^{N1} | 0.3 | 1.181 | 87.0 | LOS F | 104.9 | 735.6 | 0.74 | 2.31 | 3.84 | 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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

0745 - 0845

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 110 | 104 | 109 | 101 ¹ | 102 ¹ | 103 | 108 | 106 |
|------------------------|-----|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -18 | -8 | -5 | 0 | 0 | 0 | 0 | 10 |
| Program / User | U | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

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CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 54 | 0.0 | 54 | 0.0 | * 0.885 | 72.4 | LOS F | 27.0 | 190.6 | 1.00 | 1.03 | 1.22 | 8.6 |
| 2 | T1 | 660 | 1.4 | 660 | 1.4 | 0.885 | 67.6 | LOS E | 27.2 | 192.3 | 1.00 | 1.04 | 1.22 | 8.7 |
| Approach | | 714 | 1.3 | 714 | 1.3 | 0.885 | 68.0 | LOS E | 27.2 | 192.3 | 1.00 | 1.04 | 1.22 | 8.7 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 33 | 0.0 | 33 | 0.0 | 0.917 | 80.8 | LOS F | 12.8 | 92.8 | 1.00 | 1.07 | 1.30 | 12.2 |
| 5 | T1 | 245 | 0.0 | 245 | 0.0 | * 0.917 | 76.4 | LOS F | 12.8 | 92.8 | 1.00 | 1.07 | 1.30 | 6.8 |
| 6 | R2 | 321 | 20.9 | 321 | 20.9 | 0.917 | 84.3 | LOS F | 21.1 | 174.3 | 1.00 | 1.04 | 1.35 | 6.4 |
| Approach | | 599 | 11.2 | 599 | 11.2 | 0.917 | 80.9 | LOS F | 21.1 | 174.3 | 1.00 | 1.06 | 1.33 | 6.9 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 366 | 18.3 | 294 | 17.5 | 0.766 | 16.5 | LOS B | 12.1 | 88.1 | 0.57 | 0.68 | 0.57 | 25.4 |
| 8 | T1 | 937 | 1.1 | 760 | 1.0 | 0.766 | 29.5 | LOS C | 12.5 | 88.1 | 0.81 | 0.80 | 0.81 | 18.6 |
| 9 | R2 | 96 | 0.0 | 78 | 0.0 | 0.766 | 50.0 | LOS D | 12.5 | 88.1 | 1.00 | 0.91 | 1.01 | 4.9 |
| Approach | | 1399 | 5.5 | 1132 ^N ₁ | 5.2 | 0.766 | 27.5 | LOS B | 12.5 | 88.1 | 0.76 | 0.77 | 0.77 | 18.7 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 98 | 0.0 | 97 | 0.0 | 0.168 | 36.0 | LOS C | 4.4 | 30.7 | 0.71 | 0.73 | 0.71 | 28.2 |
| 11 | T1 | 205 | 0.5 | 202 | 0.5 | * 0.858 | 73.8 | LOS F | 15.0 | 105.3 | 1.00 | 0.99 | 1.25 | 21.9 |
| Approach | | 303 | 0.3 | 299 ^{N1} | 0.3 | 0.858 | 61.6 | LOS E | 15.0 | 105.3 | 0.91 | 0.90 | 1.07 | 23.4 |
| All Vehicles | | 3015 | 5.1 | 2744 ^N ₁ | 5.6 | 0.917 | 53.4 | LOS D | 27.2 | 192.3 | 0.89 | 0.92 | 1.04 | 13.3 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 842 | 8.8 | 841 | 8.8 | 0.470 | 4.5 | LOS A | 8.6 | 62.2 | 0.28 | 0.28 | 0.28 | 24.6 |
| 3 | R2 | 236 | 0.0 | 236 | 0.0 | * 0.470 | 14.4 | LOS A | 8.6 | 62.2 | 0.65 | 0.67 | 0.65 | 37.9 |
| Approach | | 1078 | 6.9 | 1077 ^N ₁ | 6.9 | 0.470 | 6.7 | LOS A | 8.6 | 62.2 | 0.36 | 0.36 | 0.36 | 32.6 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 298 | 0.3 | 298 | 0.3 | 0.572 | 20.1 | LOS B | 11.3 | 79.0 | 0.69 | 0.77 | 0.69 | 32.4 |
| 6 | R2 | 31 | 0.0 | 31 | 0.0 | 0.162 | 66.9 | LOS E | 2.0 | 13.7 | 0.94 | 0.72 | 0.94 | 17.9 |
| Approach | | 329 | 0.3 | 329 | 0.3 | 0.572 | 24.6 | LOS B | 11.3 | 79.0 | 0.71 | 0.76 | 0.71 | 30.1 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 87 | 0.0 | 66 | 0.0 | 0.126 | 48.9 | LOS D | 4.8 | 41.7 | 0.81 | 0.70 | 0.81 | 24.5 |
| 8 | T1 | 1101 | 7.1 | 831 | 7.2 | 0.850 | 51.3 | LOS D | 26.4 | 191.3 | 0.97 | 0.90 | 1.04 | 8.3 |
| Approach | | 1188 | 6.6 | 897 ^{N1} | 6.6 | 0.850 | 51.1 | LOS D | 26.4 | 191.3 | 0.96 | 0.88 | 1.02 | 10.0 |
| All Vehicles | | 2595 | 5.9 | 2303 ^N ₁ | 6.6 | 0.850 | 26.6 | LOS B | 26.4 | 191.3 | 0.65 | 0.62 | 0.67 | 19.0 |

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 (CCG) | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| | | ped/h | sec | | | | | | sec | m | m/sec |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

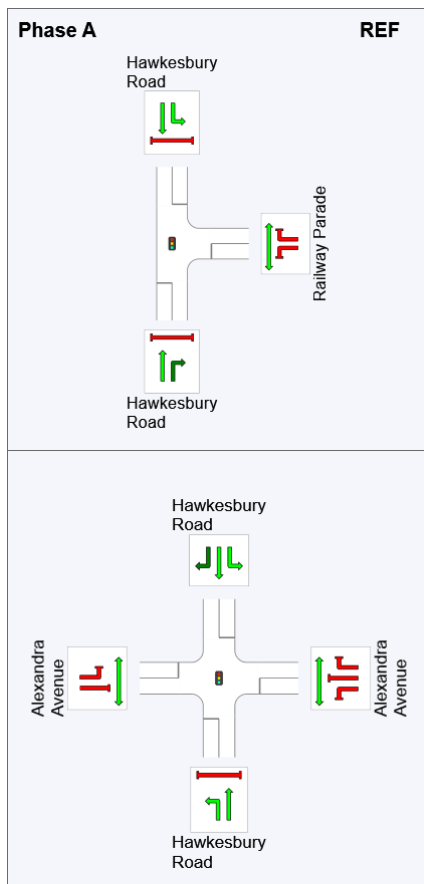
Timings based on settings in the Network Timing dialog
 Phase Times determined by the program
 Downstream lane blockage effects included in determining phase times
 Phase Sequence: CCG Phasing
 Reference Phase: Phase A
 Input Phase Sequence: A, B*, E, D, C
 Output Phase Sequence: A, E, D, C
 (* Variable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

Phase Timing Summary (CCG)

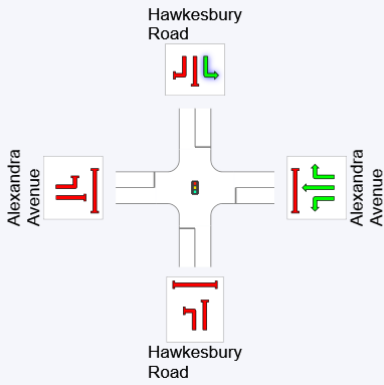
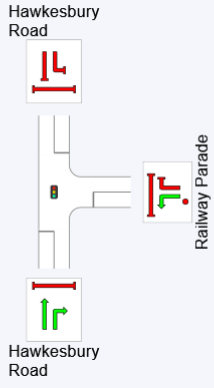
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 41 | 79 | 105 |
| Green Time (sec) | 35 | 29 | 17 | 29 |
| Phase Time (sec) | 44 | 38 | 23 | 35 |
| Phase Split | 31% | 27% | 16% | 25% |

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%.

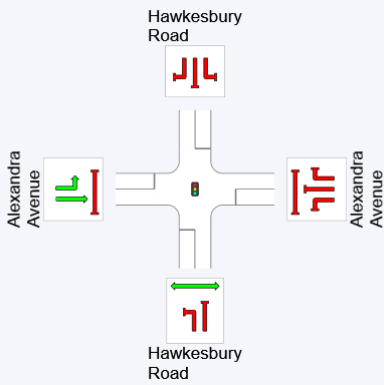
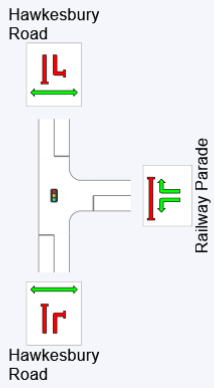
Output Phase Sequence (CCG)

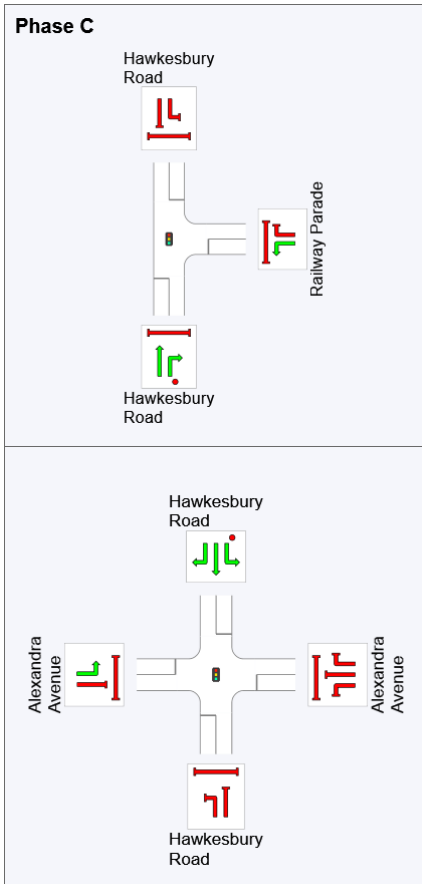


Phase E

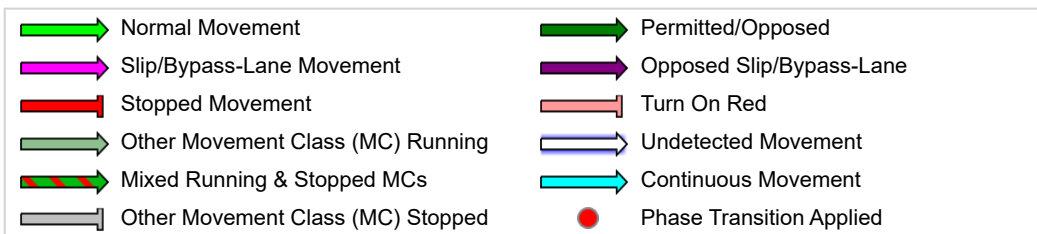


Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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 |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 80.5 | LOS F | 0.6 | 15.6 | 0.99 | 0.68 | 0.99 | 10.4 |
| 25 | T1 | 537 | 2.4 | 537 | 2.4 | * 1.304 | 318.3 | LOS F | 88.5 | 632.3 | 0.98 | 2.14 | 2.60 | 2.2 |
| 26 | R2 | 351 | 2.6 | 351 | 2.6 | * 1.287 | 314.5 | LOS F | 57.1 | 408.6 | 1.00 | 1.83 | 2.57 | 2.1 |
| Approach | | 896 | 3.3 | 896 | 3.3 | 1.304 | 314.7 | LOS F | 88.5 | 632.3 | 0.99 | 2.01 | 2.57 | 2.2 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 206 | 4.9 | 191 | 5.1 | 1.390 | 26.0 | LOS B | 6.9 | 89.9 | 0.52 | 0.67 | 0.57 | 24.5 |
| 29 | R2 | 651 | 9.7 | 605 | 10.2 | * 1.390 | 301.7 | LOS F | 20.0 | 146.9 | 0.93 | 1.77 | 2.47 | 1.3 |
| Approach | | 857 | 8.5 | 796 ^{N1} | 8.9 | 1.390 | 235.6 | LOS F | 20.0 | 146.9 | 0.83 | 1.51 | 2.02 | 2.2 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 559 | 12.2 | 559 | 12.2 | 0.379 | 13.2 | LOS A | 12.1 | 89.4 | 0.37 | 0.66 | 0.37 | 22.0 |
| 31 | T1 | 314 | 2.5 | 314 | 2.6 | 0.391 | 47.4 | LOS D | 18.6 | 133.4 | 0.94 | 0.81 | 0.94 | 16.2 |
| Approach | | 873 | 8.7 | 872 ^{N1} | 8.7 | 0.391 | 25.5 | LOS B | 18.6 | 133.4 | 0.58 | 0.71 | 0.58 | 18.3 |
| All Vehicles | | 2634 | 7.1 | 2572 ^{N1} | 7.3 | 1.390 | 191.4 | LOS F | 88.5 | 632.3 | 0.80 | 1.41 | 1.72 | 3.3 |

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 | 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 |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 238.3 | 208.6 | 0.88 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 202 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 30.0 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 55.8 | 30.9 | 0.55 |
| P72 | Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |

| SouthWest: Hawkesbury Road | | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|--|
| P8 Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 98.7 | 41.1 | 0.42 | |
| All Pedestrians | 580 | 61.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 124.9 | 76.7 | 0.61 | |

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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PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

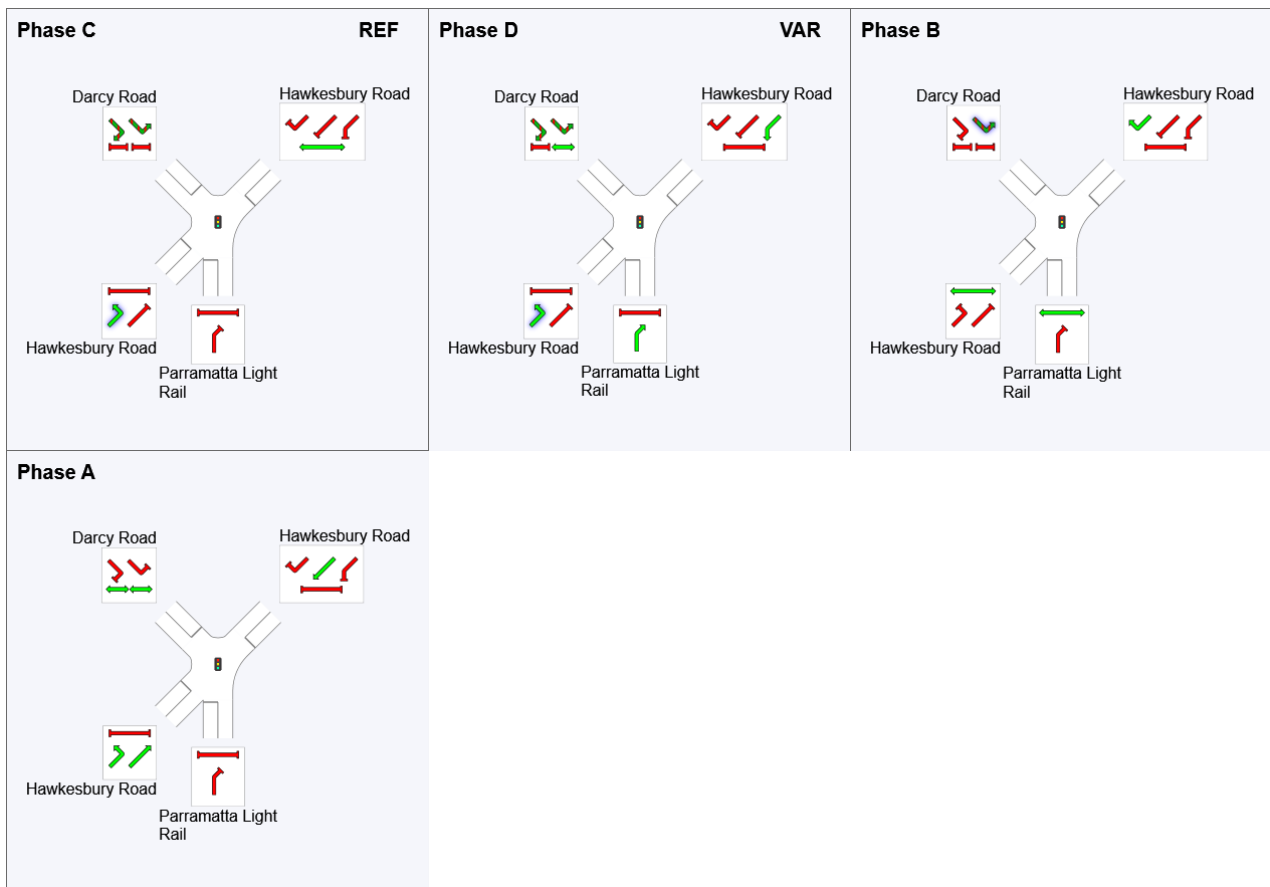
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 44 | 58 | 90 |
| Green Time (sec) | 38 | 6 | 23 | 39 |
| Phase Time (sec) | 46 | 15 | 32 | 47 |
| Phase Split | 33% | 11% | 23% | 34% |

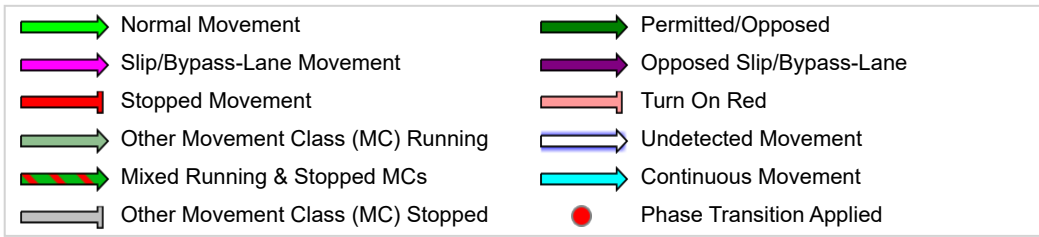
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Sensitivity Analysis (50% PM Peak))]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.357 | 24.5 | LOS B | 15.3 | 112.1 | 0.69 | 0.61 | 0.69 | 22.0 |
| 22 | T1 | 814 | 8.7 | 745 | 9.3 | 0.357 | 20.6 | LOS B | 15.3 | 112.1 | 0.67 | 0.59 | 0.67 | 12.4 |
| 23 | R2 | 89 | 0.0 | 81 | 0.0 | *0.678 | 72.9 | LOS F | 5.6 | 39.0 | 0.99 | 0.78 | 1.02 | 8.7 |
| Approach | | 911 | 7.8 | 833 ^{N1} | 8.3 | 0.678 | 25.7 | LOS B | 15.3 | 112.1 | 0.70 | 0.61 | 0.70 | 11.3 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 67 | 3.0 | 67 | 3.0 | 0.559 | 54.0 | LOS D | 5.0 | 36.0 | 0.93 | 0.75 | 0.95 | 7.7 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.559 | 54.0 | LOS D | 5.0 | 36.0 | 0.93 | 0.75 | 0.95 | 11.9 |
| 26 | R2 | 180 | 0.0 | 180 | 0.0 | 0.787 | 54.8 | LOS D | 11.4 | 79.5 | 0.98 | 0.96 | 1.13 | 7.7 |
| Approach | | 248 | 0.8 | 248 | 0.8 | 0.787 | 54.6 | LOS D | 11.4 | 79.5 | 0.96 | 0.90 | 1.08 | 7.7 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 124 | 0.8 | 113 | 0.8 | *0.703 | 26.6 | LOS B | 13.3 | 96.3 | 0.69 | 0.69 | 0.69 | 12.8 |
| 28 | T1 | 729 | 9.9 | 667 | 10.5 | 0.703 | 23.9 | LOS B | 13.3 | 96.3 | 0.74 | 0.69 | 0.74 | 9.5 |
| 29 | R2 | 39 | 0.0 | 35 | 0.0 | 0.297 | 76.9 | LOS F | 2.5 | 17.4 | 1.00 | 0.73 | 1.00 | 9.3 |
| Approach | | 892 | 8.2 | 815 ^{N1} | 8.7 | 0.703 | 26.6 | LOS B | 13.3 | 96.3 | 0.74 | 0.69 | 0.74 | 9.7 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 71 | 0.0 | 71 | 0.0 | 0.257 | 53.6 | LOS D | 4.4 | 30.7 | 0.91 | 0.75 | 0.91 | 9.8 |
| 31 | T1 | 5 | 0.0 | 5 | 0.0 | 0.257 | 56.7 | LOS E | 4.4 | 30.7 | 0.91 | 0.75 | 0.91 | 12.0 |
| 32 | R2 | 61 | 0.0 | 61 | 0.0 | 0.264 | 50.2 | LOS D | 3.4 | 23.6 | 0.94 | 0.74 | 0.94 | 10.5 |
| Approach | | 137 | 0.0 | 137 | 0.0 | 0.264 | 52.2 | LOS D | 4.4 | 30.7 | 0.92 | 0.74 | 0.92 | 10.3 |
| All Vehicles | | 2188 | 6.7 | 2033 ^{N1} | 7.2 | 0.787 | 31.4 | LOS C | 15.3 | 112.1 | 0.76 | 0.69 | 0.78 | 9.7 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 197 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 90.4 | 30.9 | 0.34 |
| P52 | Stage 2 | 41 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 88 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 225 | 64.7 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 91.3 | 31.9 | 0.35 |
| All Pedestrians | 603 | 64.6 | LOS F | 0.9 | 0.9 | 0.96 | 0.96 | 91.4 | 32.2 | 0.35 |

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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PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Sensitivity Analysis (50% PM Peak))]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

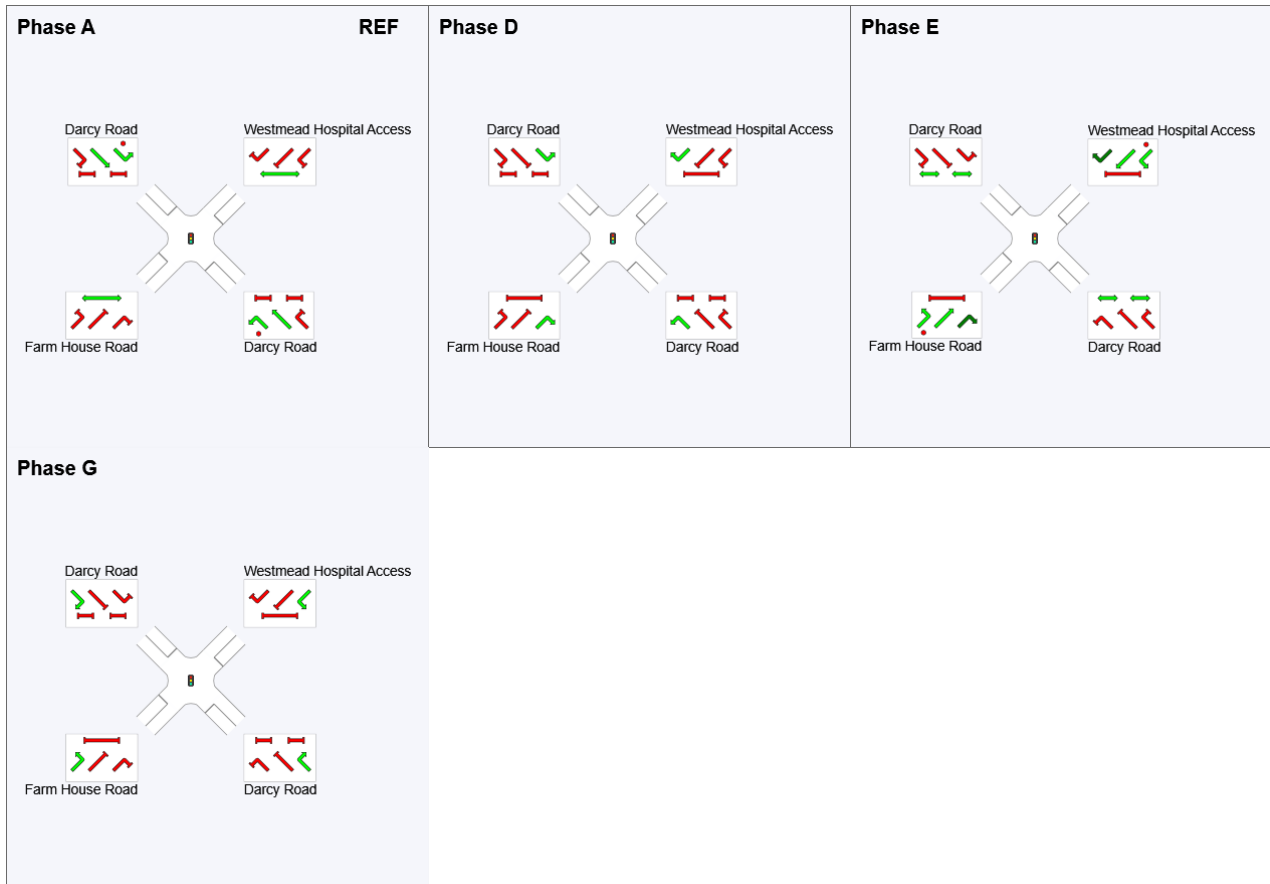
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 121 | 64 | 82 | 106 |
| Green Time (sec) | 75 | 11 | 16 | 9 |
| Phase Time (sec) | 82 | 19 | 22 | 17 |
| Phase Split | 59% | 14% | 16% | 12% |

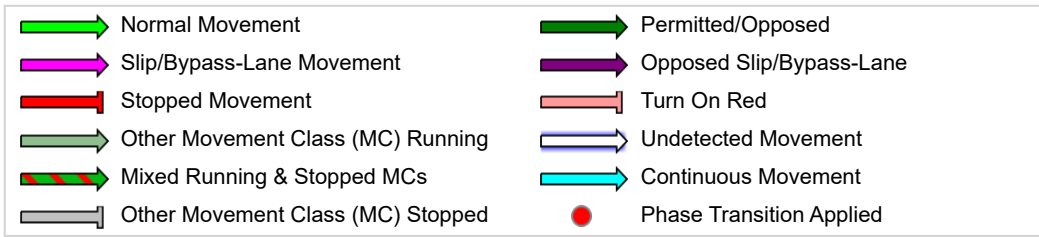
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 86 | 0.0 | 80 | 0.0 | 0.313 | 11.7 | LOS A | 1.9 | 13.8 | 0.51 | 0.17 | 0.61 | 20.3 |
| 22 | T1 | 980 | 7.3 | 918 | 7.6 | 0.313 | 1.4 | LOS A | 1.9 | 13.8 | 0.16 | 0.05 | 0.19 | 30.6 |
| Approach | | 1066 | 6.8 | 998 ^{N1} | 7.0 | 0.313 | 2.3 | NA | 1.9 | 13.8 | 0.19 | 0.06 | 0.23 | 29.0 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 892 | 7.6 | 813 | 8.1 | 0.205 | 0.0 | LOS A | 17.5 | 126.9 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 892 | 7.6 | 813 ^{N1} | 8.1 | 0.205 | 0.0 | NA | 17.5 | 126.9 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.005 | 18.8 | LOS B | 0.0 | 0.1 | 0.85 | 0.74 | 0.85 | 5.7 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.005 | 18.8 | LOS B | 0.0 | 0.1 | 0.85 | 0.74 | 0.85 | 5.7 |
| All Vehicles | | 1959 | 7.1 | 1812 ^{N1} | 7.7 | 0.313 | 1.3 | NA | 17.5 | 126.9 | 0.11 | 0.04 | 0.13 | 34.1 |

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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | * 0.341 | 14.3 | LOS A | 12.2 | 88.6 | 0.46 | 0.41 | 0.46 | 19.5 |
| 22 | T1 | 936 | 7.6 | 881 | 7.9 | 0.341 | 10.4 | LOS A | 12.2 | 88.6 | 0.45 | 0.40 | 0.45 | 19.6 |
| 23 | R2 | 45 | 0.0 | 42 | 0.0 | * 0.531 | 81.0 | LOS F | 3.1 | 21.5 | 1.00 | 0.74 | 1.01 | 8.6 |
| Approach | | 982 | 7.2 | 924 ^{N1} | 7.5 | 0.531 | 13.6 | LOS A | 12.2 | 88.6 | 0.47 | 0.41 | 0.47 | 17.4 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 46 | 0.0 | 46 | 0.0 | 0.084 | 5.3 | LOS A | 0.5 | 3.7 | 0.22 | 0.53 | 0.22 | 28.3 |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | 0.177 | 62.0 | LOS E | 2.3 | 16.0 | 0.92 | 0.73 | 0.92 | 7.1 |
| Approach | | 83 | 0.0 | 83 | 0.0 | 0.177 | 30.6 | LOS C | 2.3 | 16.0 | 0.53 | 0.62 | 0.53 | 12.1 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 66 | 0.0 | 61 | 0.0 | 0.283 | 14.4 | LOS A | 14.3 | 103.9 | 0.50 | 0.48 | 0.50 | 26.2 |
| 28 | T1 | 789 | 8.6 | 736 | 9.2 | 0.283 | 12.0 | LOS A | 14.3 | 103.9 | 0.54 | 0.49 | 0.54 | 17.5 |
| 29 | R2 | 2 | 50.0 | 2 | 51.9 | 0.022 | 76.8 | LOS F | 0.1 | 1.3 | 1.00 | 0.61 | 1.00 | 6.7 |
| Approach | | 857 | 8.1 | 799 ^{N1} | 8.6 | 0.283 | 12.4 | LOS A | 14.3 | 103.9 | 0.53 | 0.49 | 0.53 | 18.3 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 106 | 0.0 | 106 | 0.0 | * 0.302 | 48.3 | LOS D | 6.0 | 42.0 | 0.90 | 0.71 | 0.90 | 5.1 |
| 32 | R2 | 56 | 0.0 | 56 | 0.0 | 0.306 | 55.6 | LOS D | 3.4 | 24.0 | 0.91 | 0.72 | 0.91 | 4.8 |
| Approach | | 162 | 0.0 | 162 | 0.0 | 0.306 | 50.8 | LOS D | 6.0 | 42.0 | 0.90 | 0.71 | 0.90 | 5.0 |
| All Vehicles | | 2084 | 6.7 | 1969 ^{N1} | 7.1 | 0.531 | 16.9 | LOS B | 14.3 | 103.9 | 0.53 | 0.47 | 0.53 | 14.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 4 | 64.1 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 90.7 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 59 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 154 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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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PHASING SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

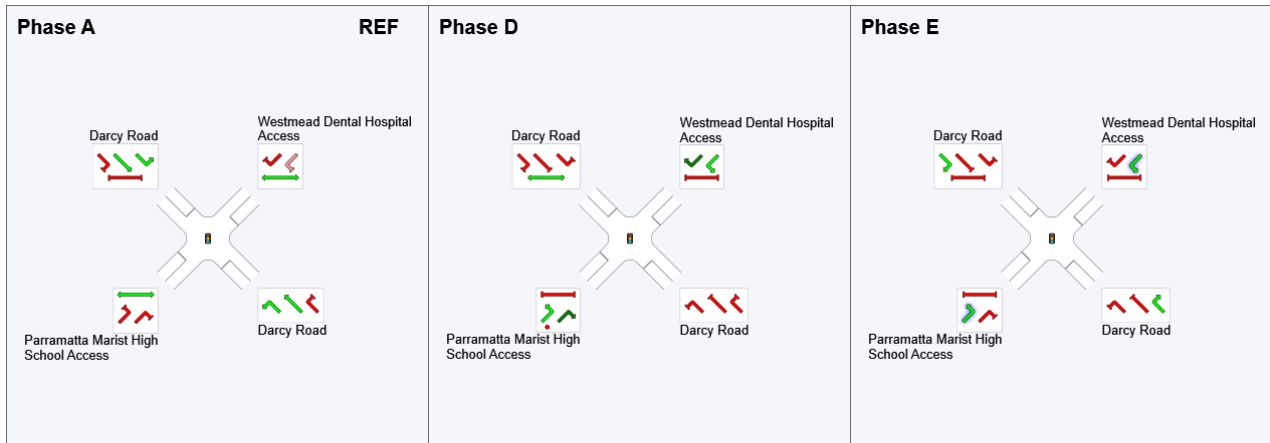
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|----|
| Phase Change Time (sec) | 109 | 67 | 98 |
| Green Time (sec) | 92 | 25 | 6 |
| Phase Time (sec) | 98 | 30 | 12 |
| Phase Split | 70% | 21% | 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 |

MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033
Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|-----------------|----------|--------------------------------|----------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | | | | [Veh.] | [Dist] | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.308 | 3.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 1078 | 6.8 | 1020 | 7.0 | 0.308 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1079 | 6.8 | 1021 ^N ₁ | 7.0 | 0.308 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 857 | 7.9 | 798 | 8.5 | 0.210 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 857 | 7.9 | 798 ^{N1} | 8.5 | 0.210 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.4 | LOS A | 0.0 | 0.0 | 0.39 | 0.18 | 0.39 | 18.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.4 | LOS A | 0.0 | 0.0 | 0.39 | 0.18 | 0.39 | 18.6 |
| All Vehicles | | 1937 | 7.3 | 1820 ^N ₁ | 7.7 | 0.308 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 |

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.

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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MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
(Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033
Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 900 | 1.8 | 851 | 1.8 | * 0.831 | 42.9 | LOS D | 12.6 | 89.8 | 0.93 | 0.94 | 1.03 | 4.8 |
| 23a | R1 | 178 | 33.7 | 170 | 34.5 | 0.440 | 60.4 | LOS E | 9.0 | 73.4 | 1.00 | 0.80 | 1.00 | 18.2 |
| Approach | | 1078 | 7.1 | 1022 ^N ₁ | 7.3 | 0.831 | 45.8 | LOS D | 12.6 | 89.8 | 0.94 | 0.92 | 1.03 | 8.9 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 104 | 0.0 | 104 | 0.0 | 2.543 | 1427.9 | LOS F | 68.9 | 483.0 | 1.00 | 2.92 | 4.97 | 0.9 |
| 5 | T1 | 282 | 0.4 | 282 | 0.4 | * 2.543 | 1421.6 | LOS F | 68.9 | 483.0 | 1.00 | 2.82 | 4.95 | 0.9 |
| 6 | R2 | 7 | 0.0 | 7 | 0.0 | 2.543 | 1424.0 | LOS F | 58.2 | 408.5 | 1.00 | 2.76 | 4.94 | 2.0 |
| Approach | | 393 | 0.3 | 393 | 0.3 | 2.543 | 1423.4 | LOS F | 68.9 | 483.0 | 1.00 | 2.85 | 4.95 | 1.0 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 3 | 0.0 | 3 | 0.0 | 0.195 | 11.4 | LOS A | 2.5 | 19.5 | 0.24 | 0.40 | 0.24 | 35.7 |
| 7a | L1 | 193 | 30.1 | 193 | 30.1 | 0.195 | 9.8 | LOS A | 2.5 | 19.5 | 0.23 | 0.40 | 0.23 | 32.8 |
| 9 | R2 | 278 | 2.9 | 278 | 2.9 | * 1.343 | 362.3 | LOS F | 50.4 | 361.2 | 1.00 | 1.88 | 2.79 | 4.2 |
| Approach | | 474 | 13.9 | 474 | 13.9 | 1.343 | 216.6 | LOS F | 50.4 | 361.2 | 0.68 | 1.27 | 1.74 | 6.7 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 75 | 1.3 | 75 | 1.3 | 0.604 | 28.6 | LOS C | 12.9 | 91.4 | 0.69 | 0.70 | 0.69 | 26.4 |
| 11 | T1 | 43 | 0.0 | 43 | 0.0 | 0.604 | 25.4 | LOS B | 12.9 | 91.4 | 0.69 | 0.70 | 0.69 | 24.0 |
| 12a | R1 | 560 | 1.8 | 560 | 1.8 | 0.604 | 31.9 | LOS C | 12.9 | 91.4 | 0.75 | 0.72 | 0.75 | 7.2 |
| Approach | | 678 | 1.6 | 677 ^{N1} | 1.6 | 0.604 | 31.2 | LOS C | 12.9 | 91.4 | 0.74 | 0.72 | 0.74 | 12.4 |
| All Vehicles | | 2623 | 5.9 | 2566 ^N ₁ | 6.0 | 2.543 | 284.5 | LOS F | 68.9 | 483.0 | 0.85 | 1.22 | 1.68 | 2.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2033
 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

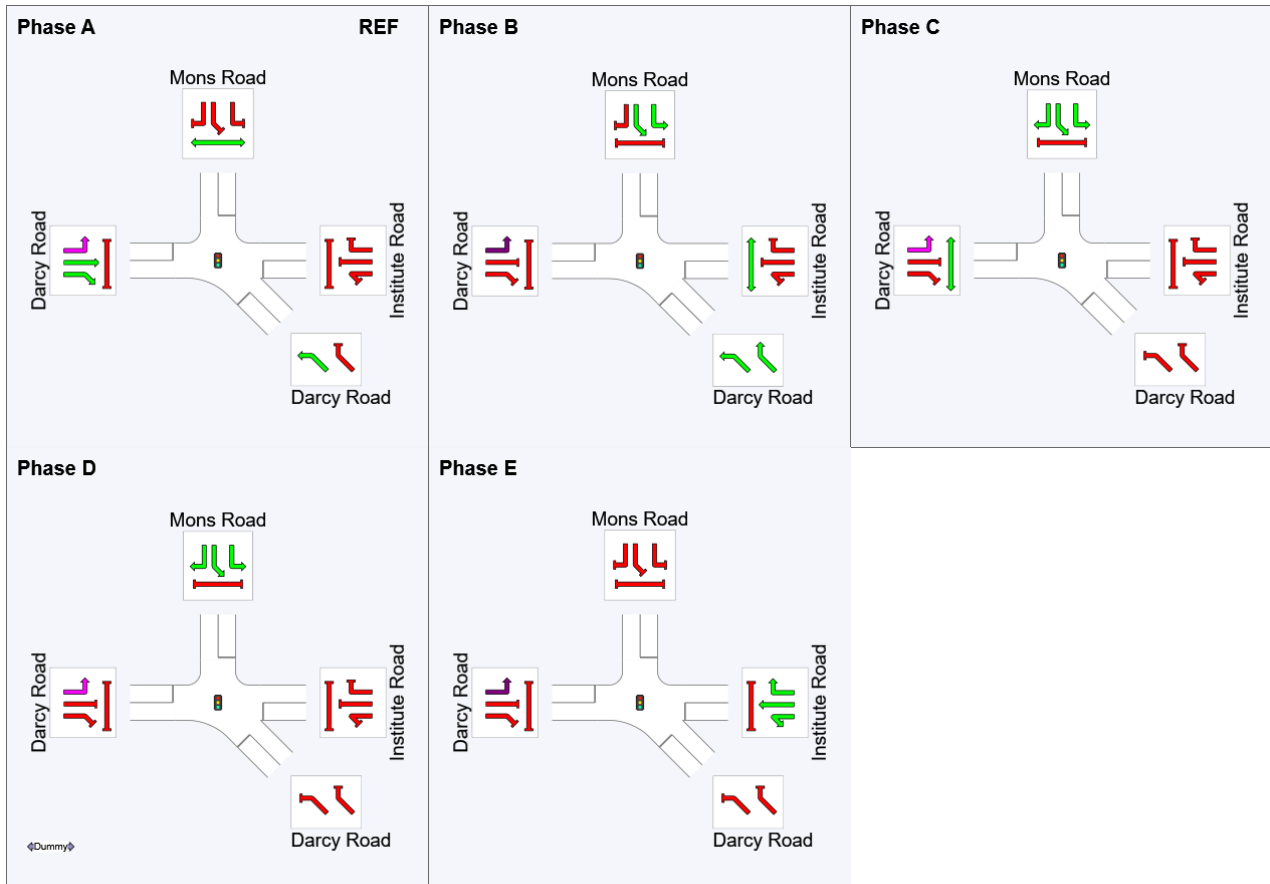
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|----|-----|
| Phase Change Time (sec) | 28 | 78 | 110 | 2 | 12 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 11% |

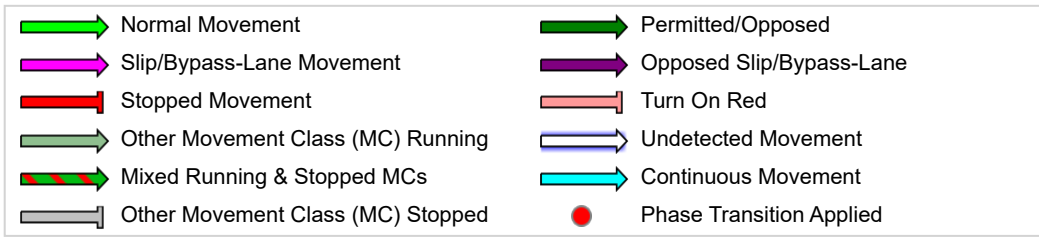
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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 Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access
(Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033
Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | | |
| 1 | L2 | 182 | 5.5 | 182 | 5.5 | 0.345 | 4.9 | LOS A | 4.4 | 32.6 | 0.42 | 0.37 | 0.42 | 9.7 | |
| Approach | | 182 | 5.5 | 182 | 5.5 | 0.345 | 4.9 | LOS A | 4.4 | 32.6 | 0.42 | 0.37 | 0.42 | 9.7 | |
| East: Darcy Road | | | | | | | | | | | | | | | |
| 4 | L2 | 58 | 8.6 | 48 | 9.4 | 0.039 | 10.2 | LOS A | 0.2 | 1.5 | 0.09 | 0.80 | 0.09 | 16.7 | |
| 5 | T1 | 1403 | 1.4 | 1158 | 1.5 | 0.514 | 11.8 | LOS A | 12.9 | 91.4 | 0.42 | 0.38 | 0.42 | 13.4 | |
| Approach | | 1461 | 1.6 | 1207 ^{N1} | 1.8 | 0.514 | 11.7 | LOS A | 12.9 | 91.4 | 0.41 | 0.40 | 0.41 | 13.6 | |
| West: Darcy Road | | | | | | | | | | | | | | | |
| 11 | T1 | 678 | 2.4 | 677 | 2.4 | *0.441 | 4.3 | LOS A | 6.9 | 49.2 | 0.29 | 0.27 | 0.29 | 34.4 | |
| 12 | R2 | 98 | 4.1 | 98 | 4.1 | 0.207 | 10.1 | LOS A | 1.8 | 12.8 | 0.31 | 0.78 | 0.31 | 29.1 | |
| Approach | | 776 | 2.6 | 775 ^{N1} | 2.6 | 0.441 | 5.0 | LOS A | 6.9 | 49.2 | 0.30 | 0.33 | 0.30 | 33.6 | |
| All Vehicles | | 2419 | 2.2 | 2164 ^{N1} | 2.5 | 0.514 | 8.7 | LOS A | 12.9 | 91.4 | 0.37 | 0.37 | 0.37 | 18.8 | |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed | |
| | | | | | [Ped ped | Dist] m | | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 86.8 | 27.1 | 0.31 | |
| East: Darcy Road | | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.6 | 38.8 | 0.40 | |
| All Pedestrians | | 100 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 91.7 | 33.0 | 0.36 | |

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: 109 [Darcy Road / Mother Teresa Primary School Access
 (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2033
 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, B1

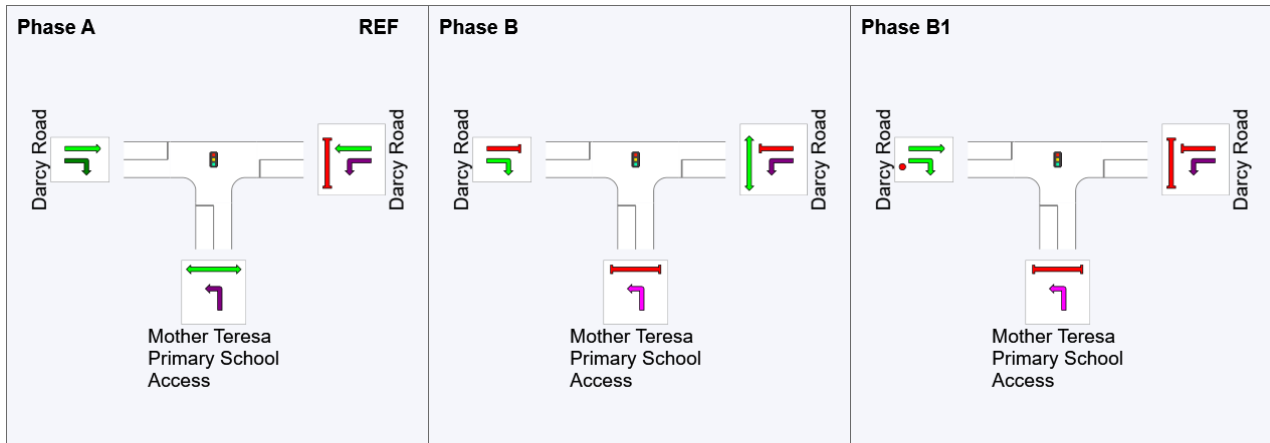
Output Phase Sequence: A, B, B1

Phase Timing Summary

| Phase | A | B | B1 |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 135 | 85 | 108 |
| Green Time (sec) | 84 | 17 | 22 |
| Phase Time (sec) | 90 | 22 | 28 |
| Phase Split | 64% | 16% | 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 |

MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 229 | 1.3 | 227 | 1.3 | * 0.439 | 41.6 | LOS C | 11.6 | 82.4 | 0.84 | 0.78 | 0.84 | 25.5 |
| 2 | T1 | 29 | 0.0 | 29 | 0.0 | * 0.745 | 76.9 | LOS F | 8.3 | 61.3 | 1.00 | 0.86 | 1.15 | 15.5 |
| 3 | R2 | 88 | 9.1 | 87 | 9.2 | 0.745 | 76.5 | LOS F | 8.3 | 61.3 | 1.00 | 0.86 | 1.15 | 15.1 |
| Approach | | 346 | 3.2 | 342 ^{N1} | 3.2 | 0.745 | 53.4 | LOS D | 11.6 | 82.4 | 0.89 | 0.81 | 0.94 | 21.4 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 287 | 4.5 | 246 | 5.0 | * 0.336 | 17.1 | LOS B | 15.1 | 108.4 | 0.37 | 0.46 | 0.37 | 30.1 |
| 5 | T1 | 1270 | 1.3 | 1086 | 1.5 | 0.336 | 8.9 | LOS A | 15.1 | 108.4 | 0.29 | 0.31 | 0.29 | 38.7 |
| 6 | R2 | 28 | 0.0 | 24 | 0.0 | 0.052 | 12.1 | LOS A | 0.3 | 2.2 | 0.35 | 0.60 | 0.35 | 29.5 |
| Approach | | 1585 | 1.9 | 1356 ^{N1} | 2.1 | 0.336 | 10.5 | LOS A | 15.1 | 108.4 | 0.31 | 0.34 | 0.31 | 37.1 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 26 | 0.0 | 26 | 0.0 | 0.068 | 43.0 | LOS D | 1.3 | 9.4 | 0.83 | 0.61 | 0.83 | 4.3 |
| 8 | T1 | 45 | 0.0 | 45 | 0.0 | 0.573 | 67.3 | LOS E | 5.9 | 41.3 | 1.00 | 0.78 | 1.00 | 3.1 |
| 9 | R2 | 42 | 0.0 | 42 | 0.0 | 0.573 | 67.3 | LOS E | 5.9 | 41.3 | 1.00 | 0.78 | 1.00 | 8.8 |
| Approach | | 113 | 0.0 | 113 | 0.0 | 0.573 | 61.7 | LOS E | 5.9 | 41.3 | 0.96 | 0.74 | 0.96 | 5.8 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 57 | 0.0 | 57 | 0.0 | 0.329 | 16.4 | LOS B | 14.7 | 103.7 | 0.49 | 0.47 | 0.49 | 23.5 |
| 11 | T1 | 661 | 1.4 | 661 | 1.4 | 0.329 | 11.3 | LOS A | 14.7 | 103.7 | 0.47 | 0.43 | 0.47 | 25.5 |
| 12 | R2 | 335 | 1.8 | 335 | 1.8 | 0.716 | 17.0 | LOS B | 8.7 | 61.7 | 0.65 | 0.79 | 0.65 | 21.0 |
| Approach | | 1053 | 1.4 | 1053 | 1.4 | 0.716 | 13.4 | LOS A | 14.7 | 103.7 | 0.52 | 0.54 | 0.52 | 23.7 |
| All Vehicles | | 3097 | 1.8 | 2865 ^{N1} | 2.0 | 0.745 | 18.7 | LOS B | 15.1 | 108.4 | 0.48 | 0.49 | 0.49 | 27.8 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 47 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 44 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |

| North: Coles Westmead Access | | | | | | | | | | | |
|------------------------------|------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 | Full | 127 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 92.2 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 81 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | | 299 | 64.4 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, E2

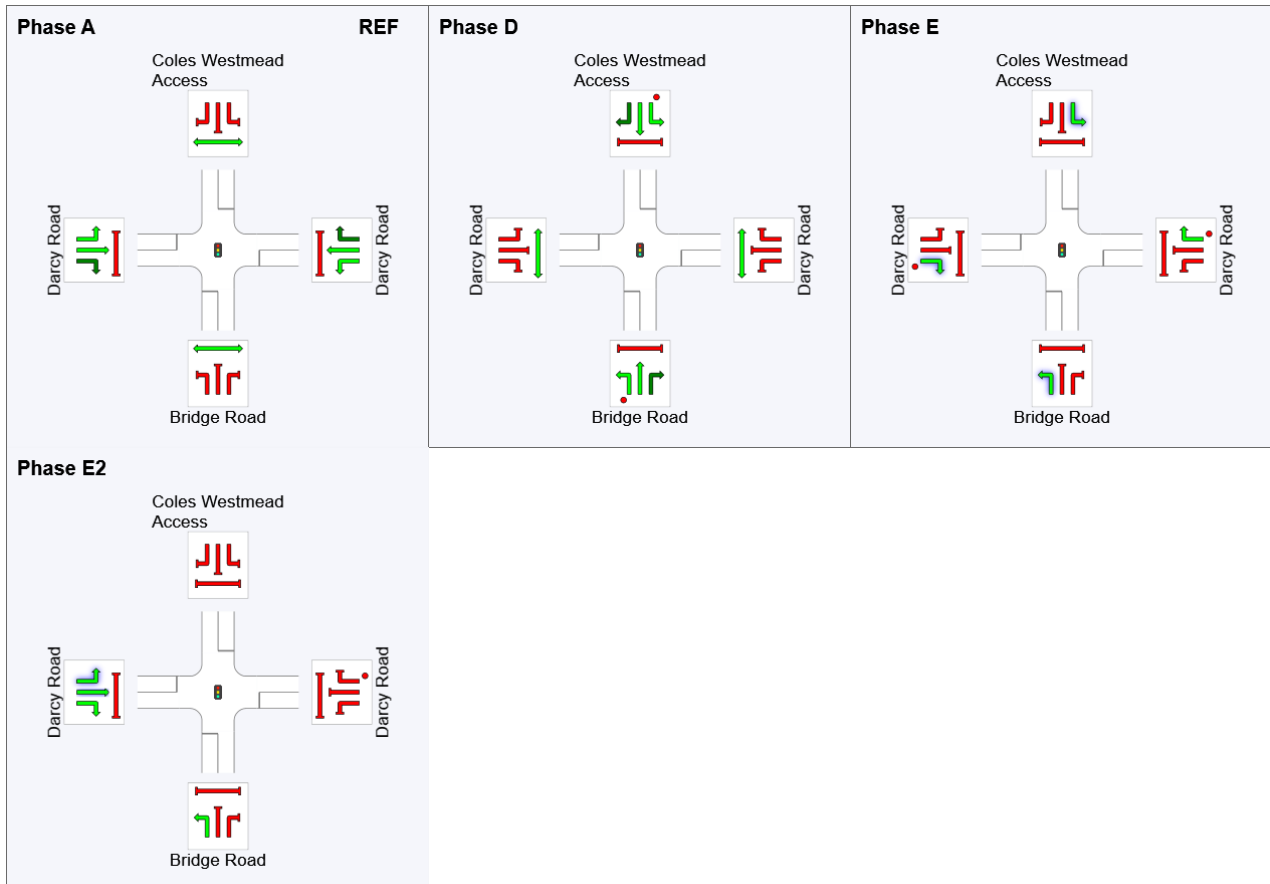
Output Phase Sequence: A, D, E, E2

Phase Timing Summary

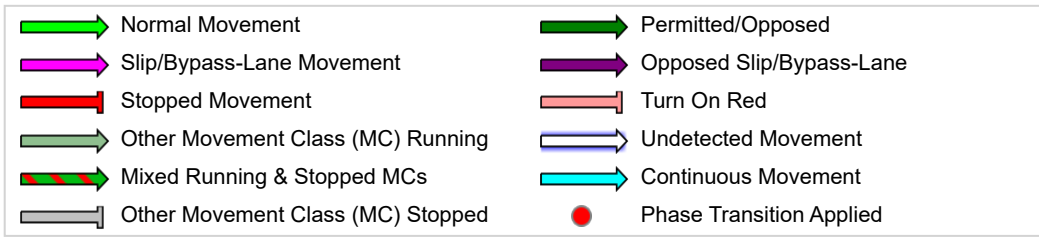
| Phase | A | D | E | E2 |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 14 | 96 | 129 | 140 |
| Green Time (sec) | 75 | 26 | 5 | 8 |
| Phase Time (sec) | 82 | 32 | 11 | 15 |
| Phase Split | 59% | 23% | 8% | 11% |

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



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 Sensitivity Analysis (50%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|-------|--------------------|-------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 454 | 2.4 | 454 | 2.4 | 0.641 | 5.4 | LOS A | 6.7 | 47.8 | 0.69 | 0.62 | 0.69 | 22.8 |
| 3 | R2 | 172 | 0.6 | 172 | 0.6 | 0.641 | 8.4 | LOS A | 6.7 | 47.8 | 0.69 | 0.62 | 0.69 | 22.8 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.641 | 11.5 | LOS A | 6.7 | 47.8 | 0.69 | 0.62 | 0.69 | 24.0 |
| Approach | | 627 | 2.1 | 627 | 2.1 | 0.641 | 6.2 | LOS A | 6.7 | 47.8 | 0.69 | 0.62 | 0.69 | 22.8 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 253 | 0.4 | 242 | 0.4 | 0.791 | 22.1 | LOS B | 8.5 | 59.3 | 0.88 | 1.19 | 1.44 | 33.6 |
| 6 | R2 | 152 | 0.0 | 145 | 0.0 | 0.791 | 24.6 | LOS B | 8.5 | 59.3 | 0.88 | 1.19 | 1.44 | 33.4 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.791 | 25.9 | LOS B | 8.5 | 59.3 | 0.88 | 1.19 | 1.44 | 33.4 |
| Approach | | 406 | 0.2 | 388 ^{N1} | 0.3 | 0.791 | 23.0 | LOS B | 8.5 | 59.3 | 0.88 | 1.19 | 1.44 | 33.5 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 93 | 0.0 | 89 | 0.0 | 0.817 | 10.2 | LOS A | 12.9 | 91.8 | 0.87 | 0.77 | 1.00 | 38.5 |
| 8 | T1 | 702 | 2.7 | 669 | 2.7 | 0.817 | 9.9 | LOS A | 12.9 | 91.8 | 0.87 | 0.77 | 1.00 | 38.4 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.817 | 14.0 | LOS A | 12.9 | 91.8 | 0.87 | 0.77 | 1.00 | 38.5 |
| Approach | | 796 | 2.4 | 759 ^{N1} | 2.4 | 0.817 | 9.9 | LOS A | 12.9 | 91.8 | 0.87 | 0.77 | 1.00 | 38.4 |
| All Vehicles | | 1829 | 1.8 | 1774 ^{N1} | 1.9 | 0.817 | 11.5 | LOS A | 12.9 | 91.8 | 0.81 | 0.81 | 0.98 | 34.8 |

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.

Roundabout Capacity Model: SIDRA Standard.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

SIGNAL OFFSETS

■ Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (50%))]

1500 - 1600

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 106 | 104 | 109 | 101 ¹ | 102 ¹ | 103 | 110 | 108 |
|------------------------|-----|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -31 | -17 | -5 | 0 | 0 | 0 | 15 | 28 |
| Program / User | U | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | | | | [Veh. veh | Dist] m | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 26 | 3.8 | 26 | 3.8 | 1.290 | 278.2 | LOS F | 107.5 | 757.1 | 1.00 | 2.11 | 2.51 | 2.5 |
| 2 | T1 | 1255 | 0.6 | 1255 | 0.6 | * 1.290 | 273.5 | LOS F | 107.5 | 757.1 | 1.00 | 2.12 | 2.51 | 2.5 |
| Approach | | 1281 | 0.6 | 1281 | 0.6 | 1.290 | 273.6 | LOS F | 107.5 | 757.1 | 1.00 | 2.11 | 2.51 | 2.5 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 43 | 0.0 | 43 | 0.0 | 1.300 | 326.1 | LOS F | 14.4 | 107.0 | 1.00 | 1.86 | 2.62 | 3.5 |
| 5 | T1 | 131 | 0.0 | 131 | 0.0 | * 1.300 | 321.6 | LOS F | 14.4 | 107.0 | 1.00 | 1.86 | 2.62 | 1.8 |
| 6 | R2 | 407 | 14.3 | 407 | 14.3 | 1.300 | 327.7 | LOS F | 41.5 | 325.6 | 1.00 | 1.76 | 2.64 | 1.7 |
| Approach | | 581 | 10.0 | 581 | 10.0 | 1.300 | 326.2 | LOS F | 41.5 | 325.6 | 1.00 | 1.79 | 2.64 | 1.9 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 439 | 13.9 | 424 | 14.3 | 0.951 | 41.7 | LOS C | 12.1 | 88.1 | 0.88 | 0.96 | 1.04 | 15.0 |
| 8 | T1 | 520 | 1.7 | 500 | 1.8 | 0.951 | 40.5 | LOS C | 12.1 | 88.1 | 0.94 | 1.00 | 1.11 | 15.0 |
| 9 | R2 | 70 | 0.0 | 67 | 0.0 | 1.188 | 247.6 | LOS F | 9.6 | 66.9 | 1.00 | 1.28 | 2.48 | 0.9 |
| Approach | | 1029 | 6.8 | 990 ^{N1} | 7.0 | 1.188 | 55.1 | LOS D | 12.1 | 88.1 | 0.92 | 1.00 | 1.17 | 11.2 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 183 | 0.0 | 166 | 0.0 | 0.951 | 99.1 | LOS F | 14.3 | 100.1 | 1.00 | 1.08 | 1.54 | 16.0 |
| 11 | T1 | 401 | 0.2 | 364 | 0.2 | * 1.235 | 280.4 | LOS F | 56.1 | 393.5 | 1.00 | 1.94 | 2.48 | 8.2 |
| Approach | | 584 | 0.2 | 530 ^{N1} | 0.2 | 1.235 | 223.6 | LOS F | 56.1 | 393.5 | 1.00 | 1.67 | 2.19 | 9.5 |
| All Vehicles | | 3475 | 3.9 | 3383 ^{N1} | 4.0 | 1.300 | 210.8 | LOS F | 107.5 | 757.1 | 0.98 | 1.66 | 2.09 | 4.4 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 1474 | 4.3 | 1266 | 4.2 | 0.975 | 58.2 | LOS E | 12.3 | 88.1 | 0.93 | 1.17 | 1.24 | 3.8 |
| 3 | R2 | 370 | 0.3 | 318 | 0.3 | 0.975 | 62.3 | LOS E | 12.3 | 88.1 | 0.98 | 1.27 | 1.28 | 20.2 |
| Approach | | 1844 | 3.5 | 1584 ^{N1} | 3.4 | 0.975 | 59.0 | LOS E | 12.3 | 88.1 | 0.94 | 1.19 | 1.25 | 8.5 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 224 | 0.9 | 224 | 0.9 | 0.688 | 42.8 | LOS D | 18.0 | 127.2 | 0.92 | 0.83 | 0.94 | 23.2 |
| 6 | R2 | 56 | 0.0 | 56 | 0.0 | 0.484 | 71.7 | LOS F | 3.8 | 26.7 | 0.98 | 0.77 | 0.98 | 17.1 |
| Approach | | 280 | 0.7 | 280 | 0.7 | 0.688 | 48.6 | LOS D | 18.0 | 127.2 | 0.93 | 0.82 | 0.95 | 21.7 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 130 | 0.0 | 123 | 0.0 | 0.103 | 20.3 | LOS B | 4.1 | 34.7 | 0.40 | 0.57 | 0.40 | 35.0 |
| 8 | T1 | 805 | 10.7 | 766 | 11.1 | 0.304 | 17.0 | LOS B | 28.4 | 208.9 | 0.46 | 0.41 | 0.46 | 18.6 |
| Approach | | 935 | 9.2 | 889 ^{N1} | 9.6 | 0.304 | 17.4 | LOS B | 28.4 | 208.9 | 0.45 | 0.43 | 0.45 | 23.2 |
| All Vehicles | | 3059 | 5.0 | 2753 ^{N1} | 5.5 | 0.975 | 44.5 | LOS D | 28.4 | 208.9 | 0.78 | 0.91 | 0.96 | 13.0 |

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 (CCG) | | | | | | | | | | | |
|---|----------|--------------------|--------------------|------------------|-----------------------|-------------|-----------|---------------------|--------------------|-------------------|----------------------|
| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| | | | | | [Ped ped | Dist] m | | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C*

Output Phase Sequence: A, E, D

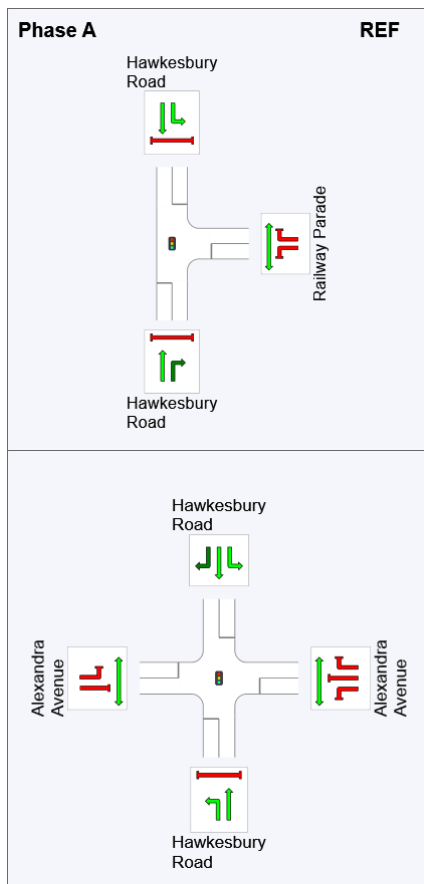
(* Variable Phase)

Phase Timing Summary (CCG)

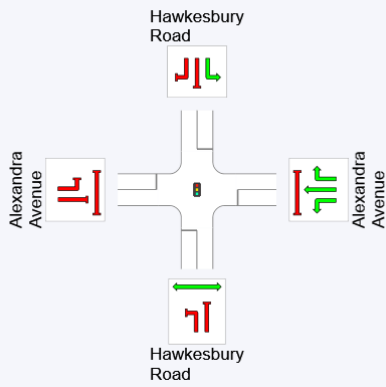
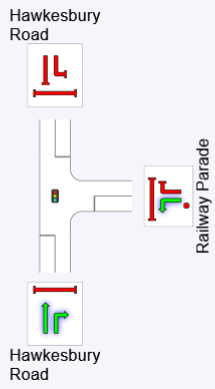
| Phase | A | E | D |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 0 | 77 | 114 |
| Green Time (sec) | 71 | 28 | 17 |
| Phase Time (sec) | 80 | 37 | 23 |
| Phase Split | 57% | 26% | 16% |

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%.

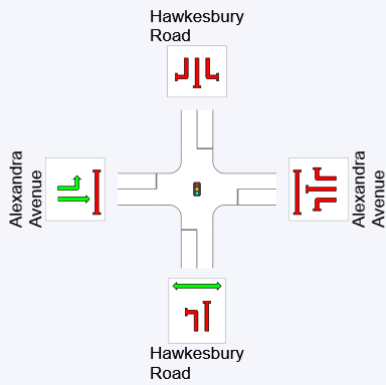
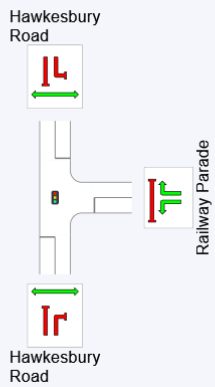
Output Phase Sequence (CCG)



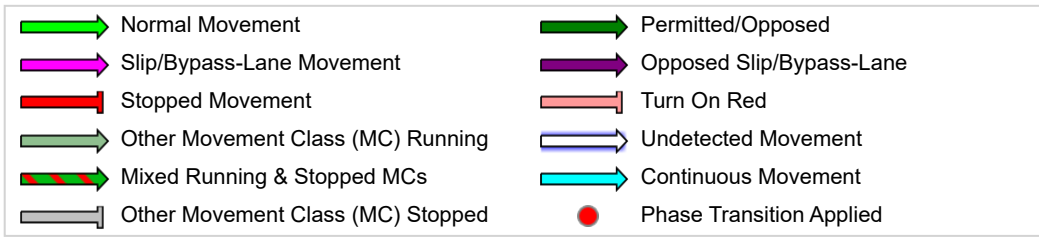
Phase E



Phase D



REF: Reference Phase
VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------------------|-------|------------------------------|-------|---------------|-----------------|------------------|---------------------------------|-------|-----------|---------------------|------------------|------------------|
| Mov ID | Turn | DEMAND FLOWS [Total veh/h HV %] | | ARRIVAL FLOWS [Total HV %] | | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [Veh. Dist] | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 84.0 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.1 |
| 25 | T1 | 346 | 3.5 | 346 | 3.5 | 0.935 | 74.5 | LOS F | 26.9 | 193.6 | 0.93 | 1.08 | 1.29 | 8.1 |
| 26 | R2 | 271 | 1.8 | 271 | 1.8 | * 1.113 | 194.2 | LOS F | 35.4 | 251.8 | 1.00 | 1.54 | 2.08 | 3.4 |
| Approach | | 625 | 4.0 | 625 | 4.0 | 1.113 | 126.5 | LOS F | 35.4 | 251.8 | 0.96 | 1.28 | 1.63 | 5.1 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 293 | 3.8 | 268 | 4.1 | 0.838 | 12.9 | LOS A | 4.7 | 33.7 | 0.38 | 0.60 | 0.39 | 27.2 |
| 29 | R2 | 590 | 11.5 | 544 | 12.4 | 0.963 | 60.5 | LOS E | 19.8 | 146.9 | 0.93 | 0.93 | 1.13 | 5.7 |
| Approach | | 883 | 8.9 | 812 ^{N1} | 9.6 | 0.963 | 44.8 | LOS D | 19.8 | 146.9 | 0.75 | 0.83 | 0.89 | 10.2 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 1017 | 5.7 | 903 | 5.7 | * 1.100 | 162.8 | LOS F | 29.1 | 208.9 | 0.99 | 1.32 | 1.82 | 3.3 |
| 31 | T1 | 513 | 1.2 | 456 | 1.2 | 0.670 | 35.2 | LOS C | 23.5 | 166.2 | 0.82 | 0.75 | 0.82 | 19.4 |
| Approach | | 1530 | 4.2 | 1359 ^{N1} | 4.2 | 1.100 | 120.0 | LOS F | 29.1 | 208.9 | 0.93 | 1.13 | 1.48 | 5.5 |
| All Vehicles | | 3046 | 5.8 | 2804 ^{N1} | 6.3 | 1.113 | 99.6 | LOS F | 35.4 | 251.8 | 0.88 | 1.07 | 1.34 | 6.1 |

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 Dist] | | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 238.5 | 208.6 | 0.87 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 191 | 64.6 | LOS F | 0.7 | 0.7 | 0.96 | 0.96 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 32.5 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 58.2 | 30.9 | 0.53 |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|
| P72 Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
| SouthWest: Hawkesbury Road | | | | | | | | | | |
| P8 Full | 208 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 98.9 | 41.1 | 0.42 |
| All Pedestrians | 727 | 62.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 135.1 | 87.7 | 0.65 |

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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PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

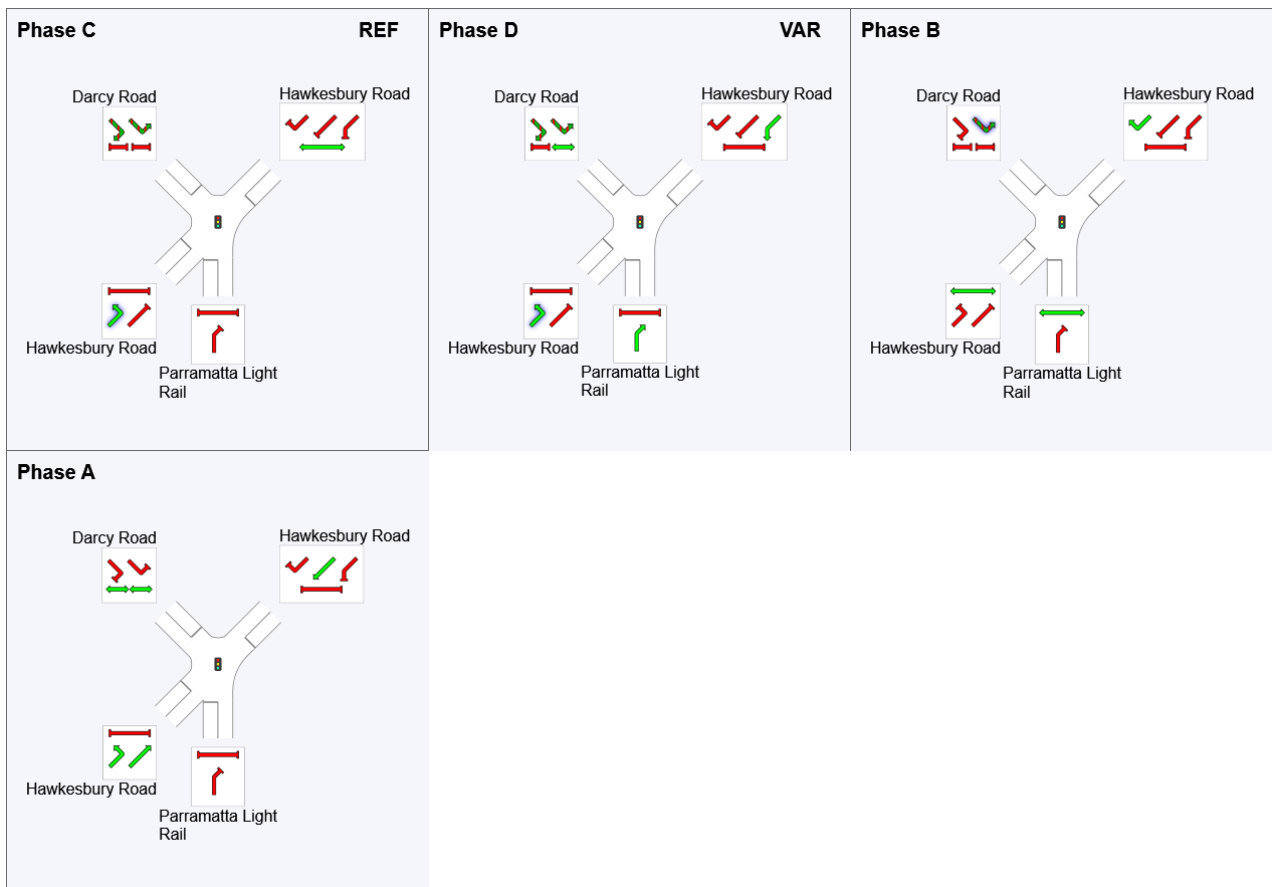
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 33 | 47 | 88 |
| Green Time (sec) | 27 | 6 | 32 | 41 |
| Phase Time (sec) | 35 | 15 | 41 | 49 |
| Phase Split | 25% | 11% | 29% | 35% |

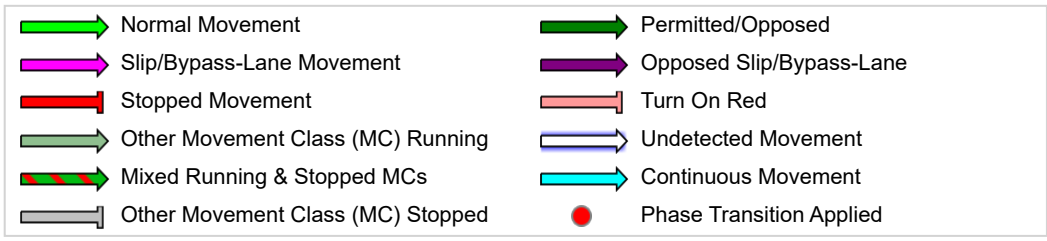
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.475 | 26.0 | LOS B | 18.7 | 134.4 | 0.64 | 0.57 | 0.64 | 21.3 |
| 22 | T1 | 1149 | 5.5 | 956 | 5.7 | 0.475 | 22.5 | LOS B | 18.7 | 134.4 | 0.64 | 0.57 | 0.64 | 11.7 |
| 23 | R2 | 132 | 0.8 | 110 | 0.8 | 0.692 | 76.1 | LOS F | 7.7 | 53.9 | 1.00 | 0.83 | 1.09 | 8.5 |
| Approach | | 1289 | 5.0 | 1072 ^N | 5.2 | 0.692 | 28.0 | LOS B | 18.7 | 134.4 | 0.67 | 0.59 | 0.68 | 10.7 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 43 | 0.0 | 43 | 0.0 | 0.197 | 48.2 | LOS D | 2.5 | 17.6 | 0.87 | 0.67 | 0.87 | 8.1 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | 0.197 | 48.2 | LOS D | 2.5 | 17.6 | 0.87 | 0.67 | 0.87 | 12.4 |
| 26 | R2 | 75 | 6.7 | 75 | 6.7 | 0.881 | 81.5 | LOS F | 5.7 | 42.1 | 1.00 | 1.25 | 1.49 | 6.2 |
| Approach | | 119 | 4.2 | 119 | 4.2 | 0.881 | 69.2 | LOS E | 5.7 | 42.1 | 0.95 | 1.03 | 1.26 | 6.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 182 | 0.5 | 165 | 0.6 | * 0.634 | 29.5 | LOS C | 13.2 | 96.3 | 0.73 | 0.72 | 0.73 | 12.3 |
| 28 | T1 | 818 | 10.3 | 747 | 11.1 | 0.634 | 24.3 | LOS B | 13.2 | 96.3 | 0.70 | 0.66 | 0.70 | 8.3 |
| 29 | R2 | 141 | 0.7 | 128 | 0.8 | * 1.098 | 174.5 | LOS F | 13.7 | 96.3 | 1.00 | 1.40 | 2.02 | 4.5 |
| Approach | | 1141 | 7.5 | 1040 ^N | 8.2 | 1.098 | 43.6 | LOS D | 13.7 | 96.3 | 0.74 | 0.76 | 0.87 | 7.6 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 147 | 0.7 | 147 | 0.7 | 0.427 | 52.5 | LOS D | 8.8 | 62.2 | 0.92 | 0.78 | 0.92 | 10.0 |
| 31 | T1 | 4 | 0.0 | 4 | 0.0 | * 0.427 | 55.5 | LOS D | 8.8 | 62.2 | 0.92 | 0.78 | 0.92 | 12.1 |
| 32 | R2 | 22 | 0.0 | 22 | 0.0 | 0.166 | 71.3 | LOS F | 1.5 | 10.2 | 0.97 | 0.70 | 0.97 | 8.0 |
| Approach | | 173 | 0.6 | 173 | 0.6 | 0.427 | 54.9 | LOS D | 8.8 | 62.2 | 0.93 | 0.77 | 0.93 | 9.8 |
| All Vehicles | | 2722 | 5.7 | 2404 ^N | 6.5 | 1.098 | 38.7 | LOS C | 18.7 | 134.4 | 0.74 | 0.70 | 0.81 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 233 | 64.8 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 90.5 | 30.9 | 0.34 |
| P52 | Stage 2 | 65 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |

| NorthEast: Westmead Hospital Access | | | | | | | | | | | |
|-------------------------------------|-----|------|-------|-----|-----|------|------|------|------|------|--|
| P6 Full | 98 | 64.4 | LOS F | 0.4 | 0.4 | 0.96 | 0.96 | 91.0 | 31.9 | 0.35 | |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 Stage 1 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 | |
| P72 Stage 2 | 21 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 | |
| SouthWest: Farm House Road | | | | | | | | | | | |
| P8 Full | 258 | 64.8 | LOS F | 1.0 | 1.0 | 0.97 | 0.97 | 91.4 | 31.9 | 0.35 | |
| All Pedestrians | 696 | 64.7 | LOS F | 1.0 | 1.0 | 0.96 | 0.96 | 91.6 | 32.3 | 0.35 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

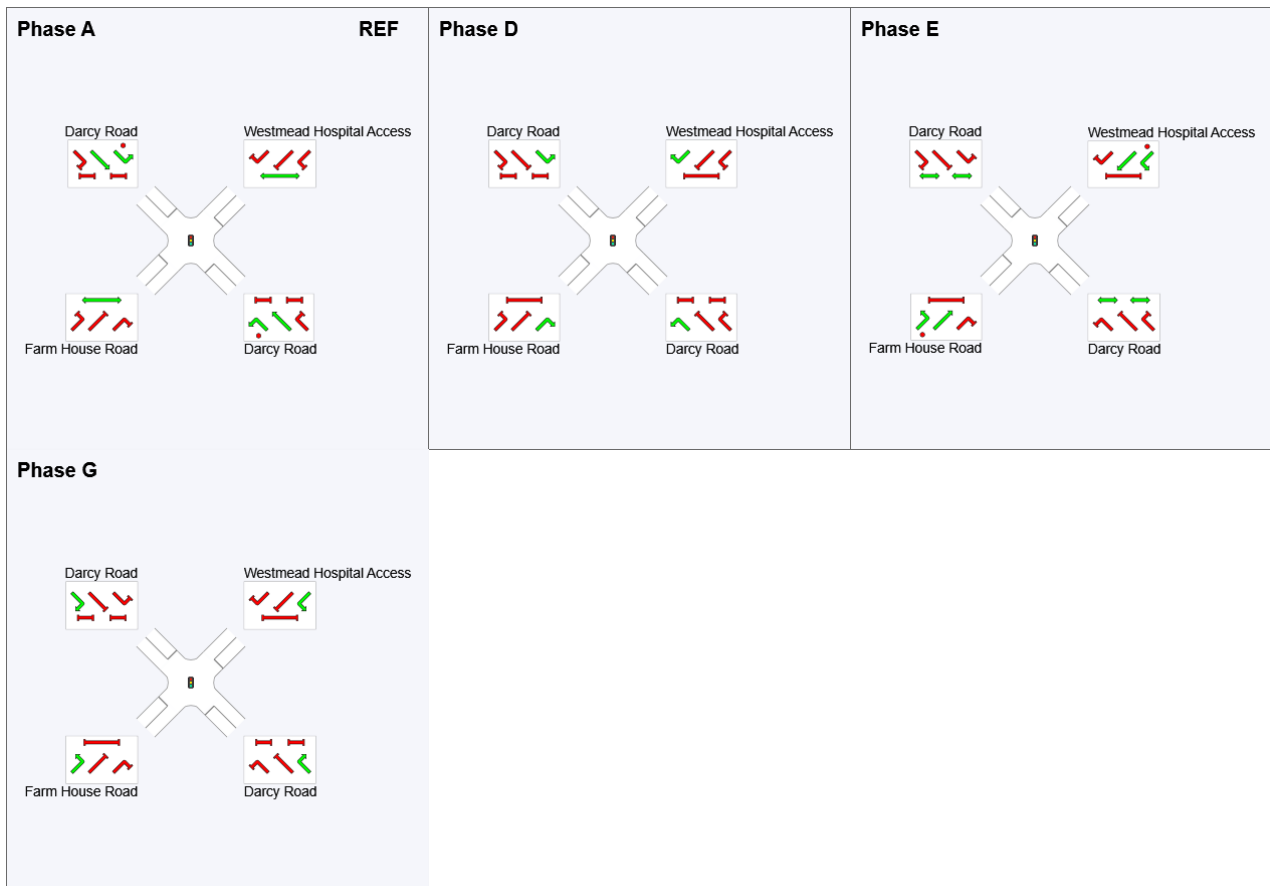
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 130 | 71 | 88 | 112 |
| Green Time (sec) | 73 | 10 | 16 | 12 |
| Phase Time (sec) | 80 | 18 | 22 | 20 |
| Phase Split | 57% | 13% | 16% | 14% |

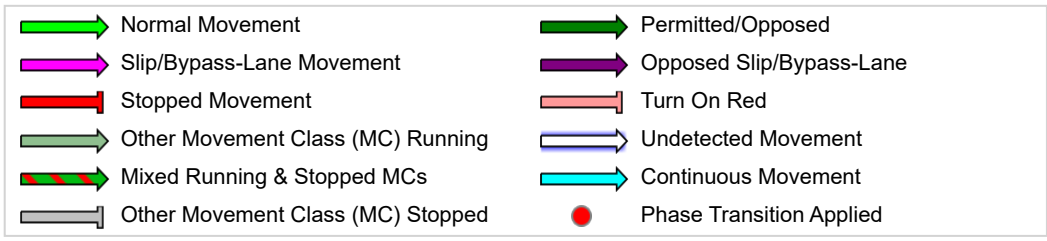
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | | |
|---|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|--|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed | |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. % | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | | |
| 21 | L2 | 338 | 0.0 | 293 | 0.0 | 0.456 | 10.1 | LOS A | 2.2 | 15.6 | 0.71 | 0.94 | 0.95 | 16.9 | |
| 22 | T1 | 1032 | 6.5 | 897 | 6.7 | 0.456 | 0.0 | LOS A | 2.2 | 15.6 | 0.00 | 0.00 | 0.00 | 39.6 | |
| Approach | | 1370 | 4.9 | 1191 ^N | 5.0 | 0.456 | 2.5 | NA | 2.2 | 15.6 | 0.18 | 0.23 | 0.23 | 27.6 | |
| NorthWest: Darcy Road | | | | | | | | | | | | | | | |
| 28 | T1 | 1141 | 7.5 | 1040 | 8.2 | 0.352 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 | |
| Approach | | 1141 | 7.5 | 1040 ^N | 8.2 | 0.352 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 | |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 5.4 | LOS A | 0.0 | 0.1 | 0.61 | 0.41 | 0.61 | 11.6 | |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 5.4 | LOS A | 0.0 | 0.1 | 0.61 | 0.41 | 0.61 | 11.6 | |
| All Vehicles | | 2512 | 6.1 | 2231 ^N | 6.9 | 0.456 | 1.4 | NA | 2.2 | 15.6 | 0.09 | 0.12 | 0.13 | 33.2 | |

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.
 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.

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | * 0.464 | 9.2 | LOS A | 7.7 | 55.6 | 0.23 | 0.21 | 0.23 | 22.8 |
| 22 | T1 | 966 | 6.9 | 857 | 7.2 | 0.464 | 5.6 | LOS A | 7.7 | 55.6 | 0.22 | 0.20 | 0.22 | 25.7 |
| 23 | R2 | 59 | 0.0 | 52 | 0.0 | * 0.394 | 77.3 | LOS F | 3.7 | 25.7 | 1.00 | 0.75 | 1.00 | 8.0 |
| Approach | | 1033 | 6.5 | 917 ^{N1} | 6.7 | 0.464 | 9.7 | LOS A | 7.7 | 55.6 | 0.26 | 0.23 | 0.26 | 20.2 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 19 | 0.0 | 19 | 0.0 | 0.023 | 0.6 | LOS A | 0.1 | 0.8 | 0.13 | 0.10 | 0.13 | 19.5 |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | 0.267 | 61.8 | LOS E | 2.4 | 16.7 | 0.94 | 0.72 | 0.94 | 6.1 |
| Approach | | 56 | 0.0 | 56 | 0.0 | 0.267 | 41.1 | LOS C | 2.4 | 16.7 | 0.67 | 0.51 | 0.67 | 7.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 85 | 0.0 | 76 | 0.0 | 0.422 | 8.5 | LOS A | 5.9 | 43.1 | 0.20 | 0.24 | 0.20 | 22.0 |
| 28 | T1 | 1038 | 8.3 | 937 | 9.1 | 0.422 | 4.0 | LOS A | 5.9 | 43.1 | 0.16 | 0.17 | 0.16 | 27.8 |
| 29 | R2 | 5 | 0.0 | 4 | 0.0 | 0.034 | 73.7 | LOS F | 0.3 | 2.1 | 1.00 | 0.65 | 1.00 | 6.9 |
| Approach | | 1128 | 7.6 | 1017 ^{N1} | 8.3 | 0.422 | 4.6 | LOS A | 5.9 | 43.1 | 0.17 | 0.18 | 0.17 | 26.1 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 156 | 0.0 | 156 | 0.0 | * 0.408 | 44.4 | LOS D | 8.6 | 60.1 | 0.88 | 0.71 | 0.88 | 5.5 |
| 32 | R2 | 84 | 0.0 | 84 | 0.0 | 0.290 | 52.6 | LOS D | 5.0 | 34.8 | 0.90 | 0.71 | 0.90 | 5.0 |
| Approach | | 240 | 0.0 | 240 | 0.0 | 0.408 | 47.2 | LOS D | 8.6 | 60.1 | 0.89 | 0.71 | 0.89 | 5.3 |
| All Vehicles | | 2457 | 6.2 | 2230 ^{N1} | 6.9 | 0.464 | 12.2 | LOS A | 8.6 | 60.1 | 0.30 | 0.26 | 0.30 | 16.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 43 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 48 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 182 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 98.5 | 41.1 | 0.42 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

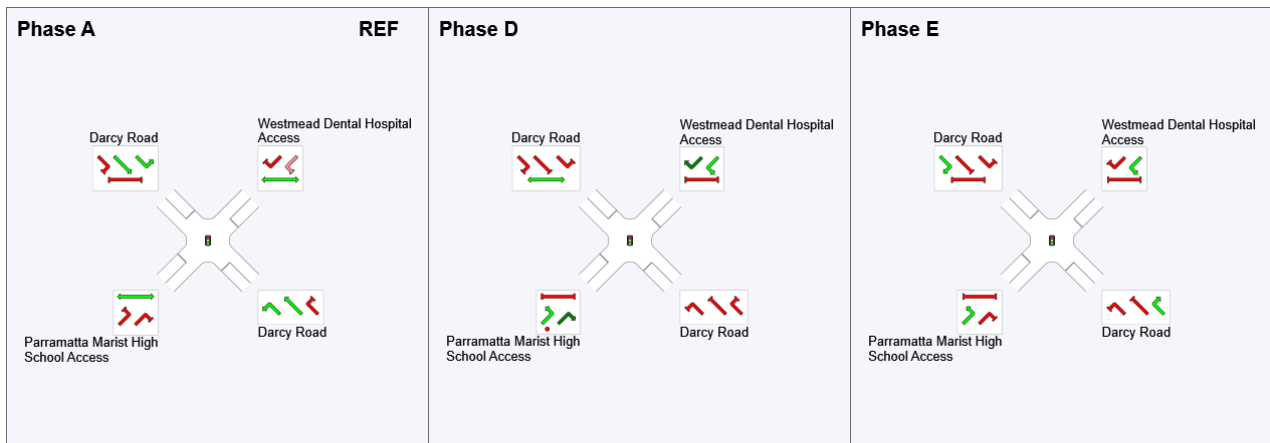
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 10 | 102 | 135 |
| Green Time (sec) | 86 | 27 | 10 |
| Phase Time (sec) | 92 | 32 | 16 |
| Phase Split | 66% | 23% | 11% |

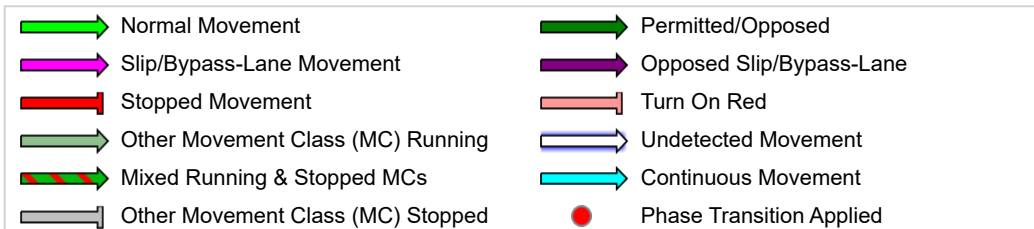
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033
Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|-------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. % | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.218 | 3.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 1158 | 5.9 | 1071 | 6.0 | 0.218 | 0.0 | LOS A | 9.0 | 65.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1159 | 5.9 | 1072 ^N | 6.0 | 0.218 | 0.0 | NA | 9.0 | 65.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 1128 | 7.4 | 1017 | 8.1 | 0.258 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1128 | 7.4 | 1017 ^N | 8.1 | 0.258 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.2 | LOS A | 0.0 | 0.0 | 0.36 | 0.16 | 0.36 | 18.7 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.2 | LOS A | 0.0 | 0.0 | 0.36 | 0.16 | 0.36 | 18.7 |
| All Vehicles | | 2288 | 6.6 | 2090 ^N | 7.3 | 0.258 | 0.0 | NA | 9.0 | 65.0 | 0.00 | 0.00 | 0.00 | 39.9 |

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.

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)]
 (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2033
 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 824 | 1.0 | 784 | 1.0 | 0.532 | 22.4 | LOS B | 12.7 | 89.8 | 0.59 | 0.70 | 0.59 | 8.3 |
| 23a | R1 | 334 | 18.6 | 319 | 18.9 | *0.870 | 68.4 | LOS E | 11.8 | 89.8 | 0.99 | 0.95 | 1.15 | 16.9 |
| Approach | | 1158 | 6.0 | 1103 ^N ₁ | 6.2 | 0.870 | 35.7 | LOS C | 12.7 | 89.8 | 0.70 | 0.77 | 0.75 | 13.7 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 51 | 2.0 | 51 | 2.0 | 0.700 | 77.8 | LOS F | 6.0 | 42.5 | 1.00 | 0.85 | 1.13 | 12.8 |
| 5 | T1 | 79 | 2.5 | 79 | 2.5 | *0.700 | 75.7 | LOS F | 7.4 | 52.6 | 1.00 | 0.86 | 1.17 | 12.7 |
| 6 | R2 | 2 | 0.0 | 2 | 0.0 | 0.700 | 81.4 | LOS F | 7.4 | 52.6 | 1.00 | 0.87 | 1.21 | 20.2 |
| Approach | | 132 | 2.3 | 132 | 2.3 | 0.700 | 76.6 | LOS F | 7.4 | 52.6 | 1.00 | 0.86 | 1.16 | 12.9 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 7 | 0.0 | 7 | 0.0 | 0.176 | 24.8 | LOS B | 5.2 | 44.6 | 0.60 | 0.61 | 0.60 | 30.9 |
| 7a | L1 | 170 | 44.1 | 170 | 44.1 | 0.176 | 23.1 | LOS B | 5.2 | 44.6 | 0.59 | 0.59 | 0.59 | 26.4 |
| 9 | R2 | 126 | 10.3 | 126 | 10.3 | *0.618 | 57.2 | LOS E | 19.8 | 150.7 | 0.95 | 0.82 | 0.96 | 17.5 |
| Approach | | 303 | 29.0 | 303 | 29.0 | 0.618 | 37.3 | LOS C | 19.8 | 150.7 | 0.74 | 0.69 | 0.74 | 22.0 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 196 | 8.7 | 193 | 8.6 | 1.122 | 169.3 | LOS F | 12.7 | 91.4 | 1.00 | 1.50 | 1.93 | 8.4 |
| 11 | T1 | 223 | 0.4 | 220 | 0.4 | *1.122 | 166.1 | LOS F | 12.7 | 91.4 | 1.00 | 1.50 | 1.93 | 7.1 |
| 12a | R1 | 907 | 0.9 | 893 | 0.9 | 1.122 | 176.9 | LOS F | 13.0 | 91.4 | 1.00 | 1.59 | 1.92 | 1.4 |
| Approach | | 1326 | 2.0 | 1306 ^N ₁ | 1.9 | 1.122 | 174.0 | LOS F | 13.0 | 91.4 | 1.00 | 1.56 | 1.92 | 3.7 |
| All Vehicles | | 2919 | 6.4 | 2844 ^N ₁ | 6.6 | 1.122 | 101.3 | LOS F | 19.8 | 150.7 | 0.86 | 1.13 | 1.31 | 6.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |

| West: Darcy Road | | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|--|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 | |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 | |

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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Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak
 (Network Folder: 2033
 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

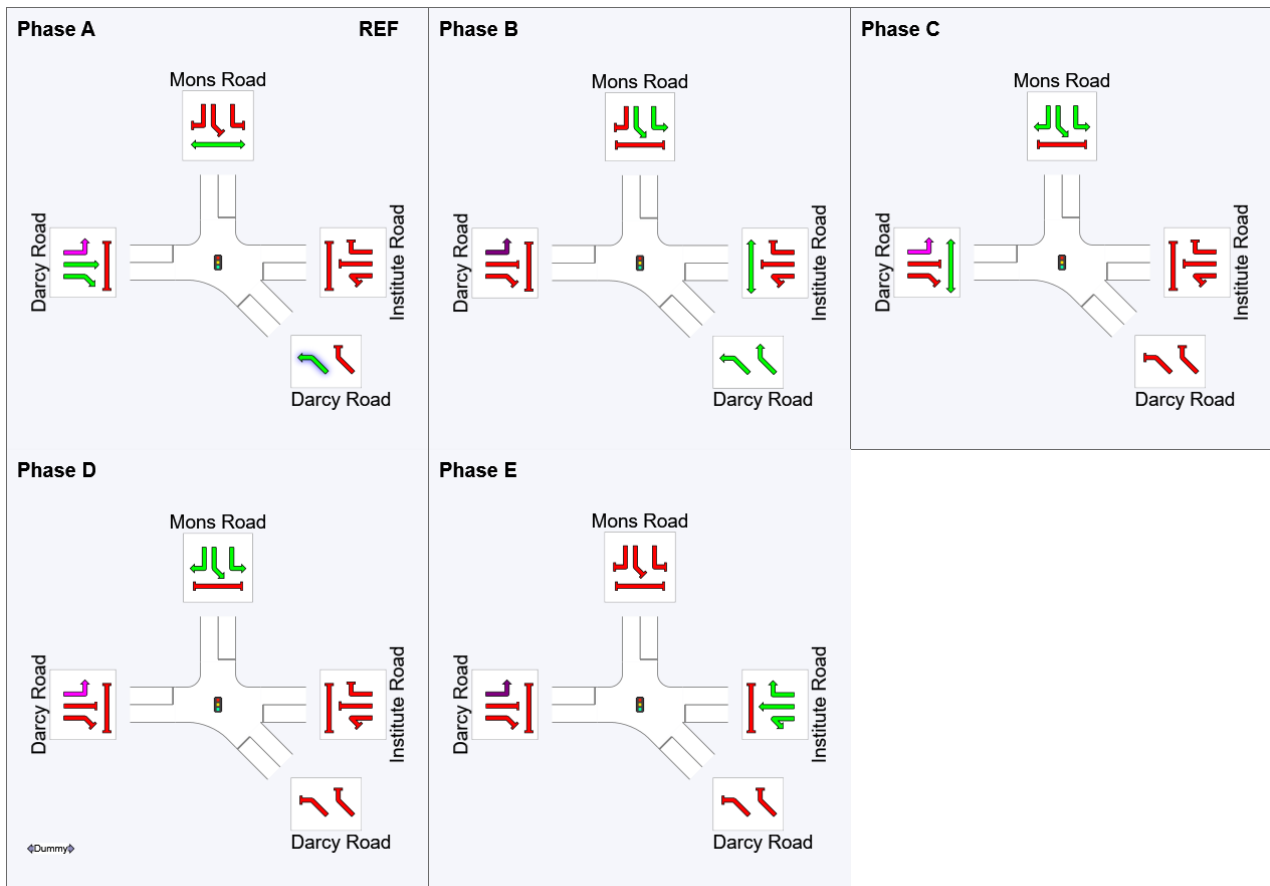
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 50 | 82 | 114 | 124 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 11% |

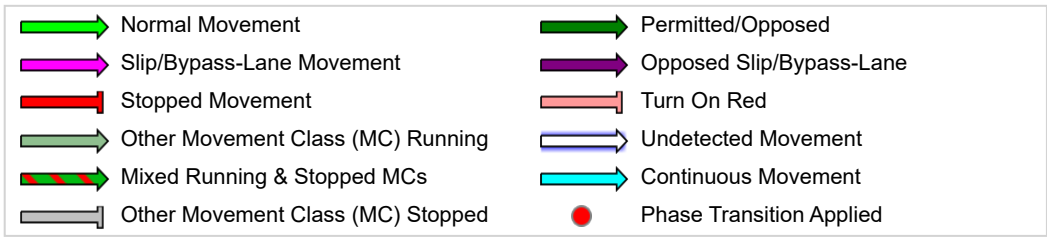
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access
(Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033
Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | |
| 1 | L2 | 579 | 0.9 | 579 | 0.9 | 1.036 | 108.5 | LOS F | 56.7 | 400.0 | 1.00 | 1.59 | 1.66 | 5.4 |
| Approach | | 579 | 0.9 | 579 | 0.9 | 1.036 | 108.5 | LOS F | 56.7 | 400.0 | 1.00 | 1.59 | 1.66 | 5.4 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 205 | 1.5 | 202 | 1.5 | 0.297 | 27.4 | LOS B | 6.5 | 45.9 | 0.82 | 0.83 | 0.82 | 8.3 |
| 5 | T1 | 824 | 2.3 | 813 | 2.3 | 0.716 | 12.3 | LOS A | 12.8 | 91.4 | 0.48 | 0.43 | 0.48 | 13.0 |
| Approach | | 1029 | 2.1 | 1016 ^N ₁ | 2.2 | 0.716 | 15.3 | LOS B | 12.8 | 91.4 | 0.54 | 0.51 | 0.54 | 11.5 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 11 | T1 | 1325 | 2.3 | 1290 | 2.3 | * 1.007 | 93.8 | LOS F | 64.9 | 463.5 | 0.96 | 1.31 | 1.48 | 8.8 |
| 12 | R2 | 424 | 1.2 | 413 | 1.2 | 0.828 | 46.4 | LOS D | 24.2 | 171.0 | 0.97 | 1.01 | 1.08 | 14.6 |
| Approach | | 1749 | 2.1 | 1702 ^N ₁ | 2.0 | 1.007 | 82.3 | LOS F | 64.9 | 463.5 | 0.96 | 1.24 | 1.38 | 9.7 |
| All Vehicles | | 3357 | 1.9 | 3297 ^N ₁ | 1.9 | 1.036 | 66.3 | LOS E | 64.9 | 463.5 | 0.84 | 1.07 | 1.17 | 8.0 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 86.8 | 27.1 | 0.31 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.6 | 38.8 | 0.40 |
| All Pedestrians | | 100 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 91.7 | 33.0 | 0.36 |

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.

Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

PHASING SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access
(Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak
(Network Folder: 2033
Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, B1

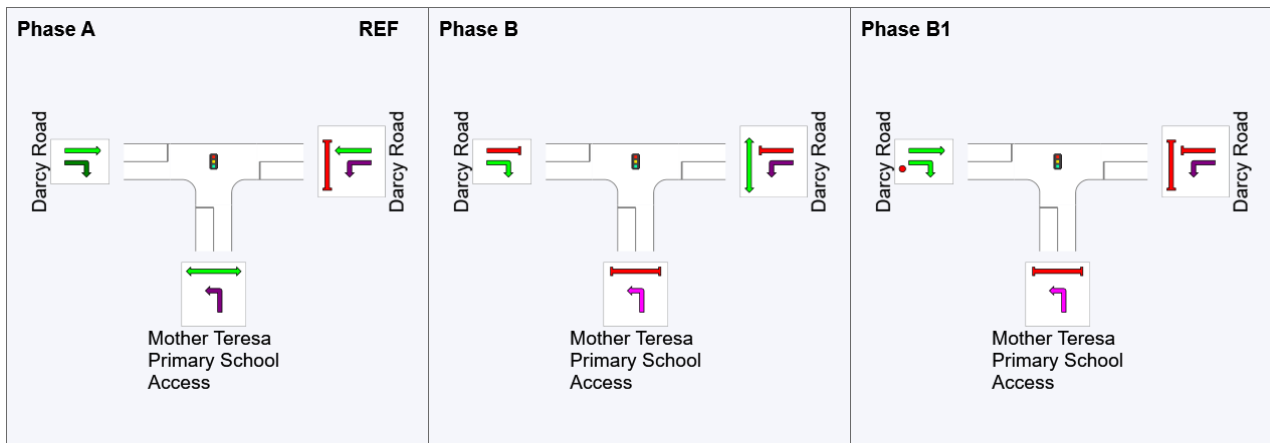
Output Phase Sequence: A, B, B1

Phase Timing Summary

| Phase | A | B | B1 |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 135 | 85 | 108 |
| Green Time (sec) | 84 | 17 | 22 |
| Phase Time (sec) | 90 | 22 | 28 |
| Phase Split | 64% | 16% | 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



MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 153 | 2.6 | 153 | 2.6 | 0.279 | 43.3 | LOS D | 7.8 | 56.0 | 0.81 | 0.76 | 0.81 | 25.0 |
| 2 | T1 | 17 | 5.9 | 17 | 5.9 | * 1.345 | 388.1 | LOS F | 0.7 | 5.2 | 1.00 | 1.78 | 2.95 | 4.1 |
| 3 | R2 | 212 | 3.8 | 212 | 3.8 | 1.345 | 387.6 | LOS F | 0.7 | 5.2 | 1.00 | 1.78 | 2.95 | 3.8 |
| Approach | | 382 | 3.4 | 381 ^{N1} | 3.4 | 1.345 | 249.7 | LOS F | 7.8 | 56.0 | 0.92 | 1.37 | 2.09 | 6.3 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 492 | 1.6 | 491 | 1.6 | 0.717 | 27.9 | LOS B | 29.4 | 209.1 | 0.78 | 0.81 | 0.78 | 22.2 |
| 5 | T1 | 884 | 2.1 | 882 | 2.2 | 0.717 | 22.7 | LOS B | 35.4 | 252.1 | 0.75 | 0.70 | 0.75 | 29.2 |
| 6 | R2 | 27 | 0.0 | 27 | 0.0 | * 0.142 | 43.9 | LOS D | 1.3 | 8.9 | 0.99 | 0.70 | 0.99 | 16.9 |
| Approach | | 1403 | 1.9 | 1400 ^{N1} | 1.9 | 0.717 | 25.0 | LOS B | 35.4 | 252.1 | 0.77 | 0.74 | 0.77 | 26.6 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 15 | 6.7 | 15 | 6.7 | 0.051 | 36.4 | LOS C | 0.1 | 0.5 | 0.74 | 0.53 | 0.74 | 4.9 |
| 8 | T1 | 17 | 0.0 | 17 | 0.0 | 0.181 | 52.5 | LOS D | 2.6 | 18.3 | 0.88 | 0.68 | 0.88 | 3.8 |
| 9 | R2 | 27 | 3.7 | 27 | 3.7 | 0.181 | 52.5 | LOS D | 2.6 | 18.3 | 0.88 | 0.68 | 0.88 | 10.4 |
| Approach | | 59 | 3.4 | 59 | 3.4 | 0.181 | 48.4 | LOS D | 2.6 | 18.3 | 0.84 | 0.64 | 0.84 | 7.5 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 29 | 0.0 | 29 | 0.0 | 1.359 | 341.0 | LOS F | 170.9 | 1212.1 | 1.00 | 2.31 | 2.75 | 2.2 |
| 11 | T1 | 1522 | 1.6 | 1522 | 1.6 | * 1.359 | 336.7 | LOS F | 170.9 | 1212.1 | 0.65 | 1.99 | 2.40 | 1.7 |
| 12 | R2 | 253 | 0.8 | 253 | 0.8 | 1.490 | 465.7 | LOS F | 45.3 | 319.4 | 0.91 | 1.82 | 3.10 | 1.2 |
| Approach | | 1804 | 1.4 | 1804 | 1.4 | 1.490 | 354.8 | LOS F | 170.9 | 1212.1 | 0.69 | 1.97 | 2.51 | 1.6 |
| All Vehicles | | 3648 | 1.9 | 3644 ^{N1} | 1.9 | 1.490 | 212.1 | LOS F | 170.9 | 1212.1 | 0.75 | 1.41 | 1.77 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | ped/h | sec | | [Ped ped | Dist] m | | | sec | m | m/sec |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 67 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 40 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |
| North: Coles Westmead Access | | | | | | | | | | | |

| | | | | | | | | | | |
|------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 Full | 78 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 92.1 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | |
| P4 Full | 55 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | 240 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 93.4 | 35.0 | 0.37 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing - Copy

Reference Phase: Phase A

Input Phase Sequence: A, D, E*, E2*

Output Phase Sequence: A, D, E*

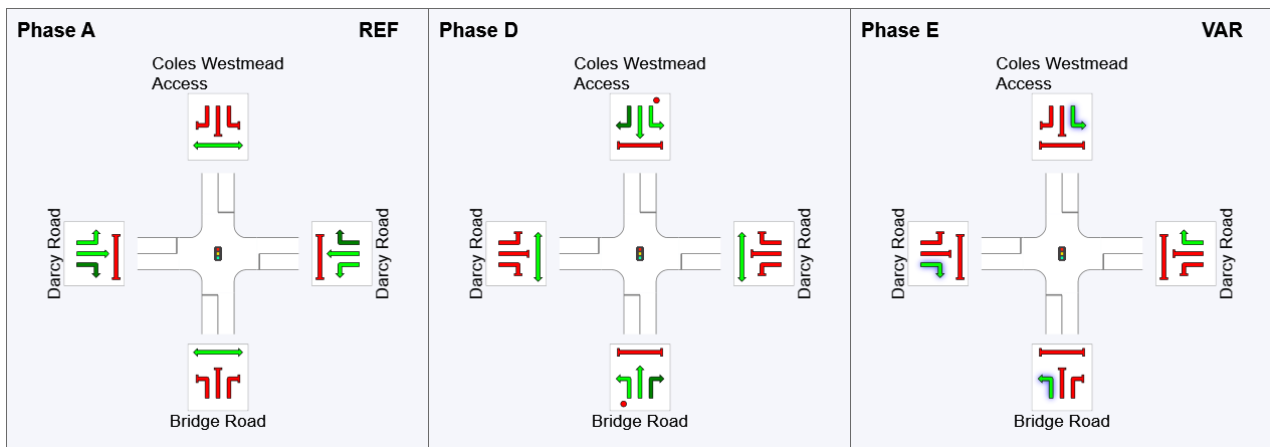
(* Variable Phase)

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 121 | 68 | 109 |
| Green Time (sec) | 80 | 34 | 10 |
| Phase Time (sec) | 87 | 36 | 17 |
| Phase Split | 62% | 26% | 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 |

Project: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 Sensitivity Analysis (70%) AM Peak)]

Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 491 | 0.2 | 491 | 0.2 | 0.671 | 4.1 | LOS A | 8.9 | 62.4 | 0.44 | 0.49 | 0.44 | 24.2 |
| 3 | R2 | 349 | 0.3 | 349 | 0.3 | 0.671 | 7.2 | LOS A | 8.9 | 62.4 | 0.44 | 0.49 | 0.44 | 24.2 |
| 3u | U | 5 | 0.0 | 5 | 0.0 | 0.671 | 8.5 | LOS A | 8.9 | 62.4 | 0.44 | 0.49 | 0.44 | 27.4 |
| Approach | | 845 | 0.2 | 845 | 0.2 | 0.671 | 5.4 | LOS A | 8.9 | 62.4 | 0.44 | 0.49 | 0.44 | 24.2 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 132 | 0.8 | 117 | 0.8 | 0.322 | 9.5 | LOS A | 1.7 | 12.1 | 0.65 | 0.82 | 0.65 | 40.3 |
| 6 | R2 | 54 | 1.9 | 48 | 1.9 | 0.322 | 12.1 | LOS A | 1.7 | 12.1 | 0.65 | 0.82 | 0.65 | 40.9 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.322 | 13.3 | LOS A | 1.7 | 12.1 | 0.65 | 0.82 | 0.65 | 40.9 |
| Approach | | 188 | 1.1 | 166 ^{N1} | 1.1 | 0.322 | 10.3 | LOS A | 1.7 | 12.1 | 0.65 | 0.82 | 0.65 | 40.5 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 204 | 0.5 | 177 | 0.4 | 1.171 | 174.0 | LOS F | 100.9 | 707.0 | 1.00 | 4.25 | 7.53 | 8.0 |
| 8 | T1 | 800 | 0.1 | 693 | 0.1 | 1.171 | 173.5 | LOS F | 100.9 | 707.0 | 1.00 | 4.25 | 7.53 | 8.8 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 1.171 | 177.7 | LOS F | 100.9 | 707.0 | 1.00 | 4.25 | 7.53 | 8.0 |
| Approach | | 1005 | 0.2 | 870 ^{N1} | 0.2 | 1.171 | 173.6 | LOS F | 100.9 | 707.0 | 1.00 | 4.25 | 7.53 | 8.6 |
| All Vehicles | | 2038 | 0.3 | 1881 ^{N1} | 0.3 | 1.171 | 83.6 | LOS F | 100.9 | 707.0 | 0.72 | 2.26 | 3.74 | 11.0 |

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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [AM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

0745 - 0845

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 110 | 104 | 109 | 101 ¹ | 102 ¹ | 103 | 108 | 106 |
|------------------------|-----|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -18 | -8 | -5 | 0 | 0 | 0 | 0 | 10 |
| Program / User | U | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

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CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

| Vehicle Movement Performance (CCG) | | | | | | | | | | | | | | |
|---|------|---------------|--------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total HV] veh/h | % | | | | [Veh. veh | Dist] m | | | | |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 1 | L2 | 54 | 0.0 | 54 | 0.0 | 0.956 | 94.2 | LOS F | 30.3 | 214.0 | 1.00 | 1.19 | 1.43 | 6.8 |
| 2 | T1 | 665 | 1.4 | 665 | 1.4 | *0.956 | 88.4 | LOS F | 33.1 | 234.3 | 1.00 | 1.19 | 1.41 | 6.9 |
| Approach | | 719 | 1.3 | 719 | 1.3 | 0.956 | 88.8 | LOS F | 33.1 | 234.3 | 1.00 | 1.19 | 1.41 | 6.9 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 33 | 0.0 | 33 | 0.0 | 0.947 | 90.1 | LOS F | 12.9 | 93.1 | 1.00 | 1.14 | 1.39 | 11.2 |
| 5 | T1 | 245 | 0.0 | 245 | 0.0 | *0.947 | 85.7 | LOS F | 12.9 | 93.1 | 1.00 | 1.14 | 1.39 | 6.2 |
| 6 | R2 | 324 | 20.7 | 324 | 20.7 | 0.947 | 94.0 | LOS F | 22.7 | 187.2 | 1.00 | 1.09 | 1.44 | 5.8 |
| Approach | | 602 | 11.1 | 602 | 11.1 | 0.947 | 90.4 | LOS F | 22.7 | 187.2 | 1.00 | 1.11 | 1.42 | 6.3 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 367 | 18.3 | 294 | 17.5 | 0.785 | 17.2 | LOS B | 12.1 | 88.1 | 0.60 | 0.71 | 0.60 | 24.9 |
| 8 | T1 | 938 | 1.1 | 759 | 1.0 | 0.785 | 34.4 | LOS C | 12.5 | 88.1 | 0.82 | 0.82 | 0.83 | 16.9 |
| 9 | R2 | 96 | 0.0 | 78 | 0.0 | 0.785 | 61.3 | LOS E | 12.5 | 88.1 | 1.00 | 0.93 | 1.03 | 4.0 |
| Approach | | 1401 | 5.5 | 1131 ^N ₁ | 5.2 | 0.785 | 31.7 | LOS C | 12.5 | 88.1 | 0.78 | 0.80 | 0.79 | 17.1 |
| West: Alexandra Avenue | | | | | | | | | | | | | | |
| 10 | L2 | 102 | 0.0 | 100 | 0.0 | 0.190 | 36.3 | LOS C | 4.6 | 32.2 | 0.71 | 0.73 | 0.71 | 28.1 |
| 11 | T1 | 209 | 0.5 | 206 | 0.5 | *0.872 | 75.2 | LOS F | 15.4 | 108.3 | 1.00 | 1.01 | 1.27 | 21.7 |
| Approach | | 311 | 0.3 | 306 ^{N1} | 0.3 | 0.872 | 62.5 | LOS E | 15.4 | 108.3 | 0.91 | 0.92 | 1.09 | 23.2 |
| All Vehicles | | 3033 | 5.1 | 2758 ^N ₁ | 5.6 | 0.956 | 62.8 | LOS E | 33.1 | 234.3 | 0.90 | 0.98 | 1.12 | 11.8 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | | | | |
| 2 | T1 | 852 | 8.7 | 851 | 8.7 | 0.476 | 4.9 | LOS A | 8.8 | 66.2 | 0.30 | 0.29 | 0.30 | 23.9 |
| 3 | R2 | 238 | 0.0 | 238 | 0.0 | *0.476 | 14.4 | LOS A | 8.7 | 63.0 | 0.65 | 0.68 | 0.65 | 37.8 |
| Approach | | 1090 | 6.8 | 1089 ^N ₁ | 6.8 | 0.476 | 6.9 | LOS A | 8.8 | 66.2 | 0.38 | 0.38 | 0.38 | 32.2 |
| East: Railway Parade | | | | | | | | | | | | | | |
| 4 | L2 | 298 | 0.3 | 298 | 0.3 | 0.572 | 20.1 | LOS B | 11.3 | 79.0 | 0.69 | 0.77 | 0.69 | 32.4 |
| 6 | R2 | 33 | 0.0 | 33 | 0.0 | 0.173 | 67.0 | LOS E | 2.1 | 14.7 | 0.94 | 0.73 | 0.94 | 17.8 |
| Approach | | 331 | 0.3 | 331 | 0.3 | 0.572 | 24.8 | LOS B | 11.3 | 79.0 | 0.71 | 0.76 | 0.71 | 30.0 |
| North: Hawkesbury Road | | | | | | | | | | | | | | |
| 7 | L2 | 88 | 0.0 | 66 | 0.0 | 0.127 | 48.9 | LOS D | 4.8 | 42.1 | 0.80 | 0.70 | 0.80 | 24.5 |
| 8 | T1 | 1103 | 7.1 | 833 | 7.2 | 0.852 | 51.1 | LOS D | 26.5 | 191.9 | 0.97 | 0.90 | 1.04 | 8.3 |
| Approach | | 1191 | 6.5 | 900 ^{N1} | 6.7 | 0.852 | 50.9 | LOS D | 26.5 | 191.9 | 0.96 | 0.88 | 1.02 | 10.1 |
| All Vehicles | | 2612 | 5.9 | 2319 ^N ₁ | 6.6 | 0.852 | 26.6 | LOS B | 26.5 | 191.9 | 0.65 | 0.63 | 0.68 | 19.0 |

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 (CCG) | | | | | | | | | | | |
|---|----------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| | | ped/h | sec | | | | | | sec | m | m/sec |
| Site: 101 [Hawkesbury Road / Alexandra Avenue (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.6 | 35.2 | 0.38 |
| East: Alexandra Avenue | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |
| West: Alexandra Avenue | | | | | | | | | | | |
| P4 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.3 | 36.1 | 0.38 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 93.9 | 35.5 | 0.38 |
| Site: 102 [Hawkesbury Road / Railway Parade (TCS 1571)] | | | | | | | | | | | |
| South: Hawkesbury Road | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.1 | 40.6 | 0.41 |
| East: Railway Parade | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Hawkesbury Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 98.8 | 41.5 | 0.42 |
| All Pedestrians | | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.9 | 38.0 | 0.40 |

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.

CCG PHASING SUMMARY

Common Control Group: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: CCG Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, E, D, C

Output Phase Sequence: A, E, D, C

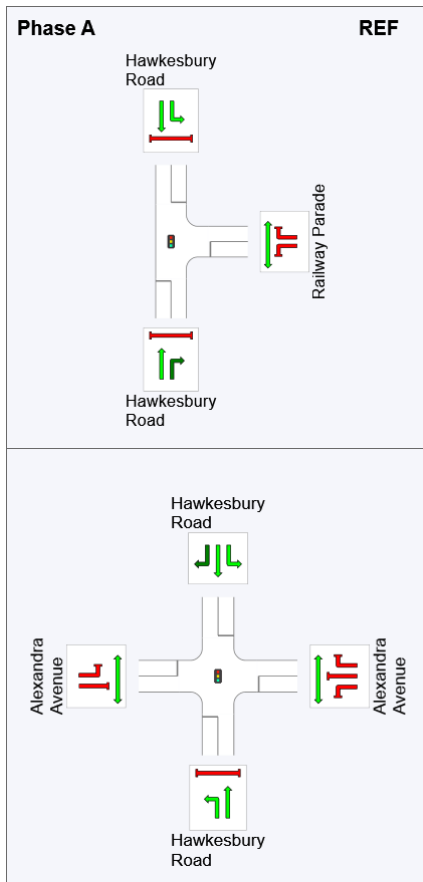
(* Variable Phase)

Phase Timing Summary (CCG)

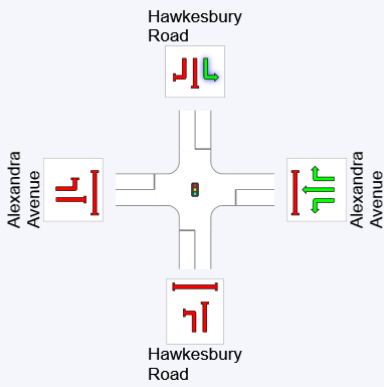
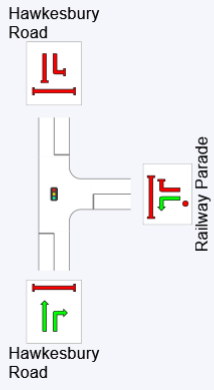
| Phase | A | E | D | C |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 0 | 41 | 79 | 105 |
| Green Time (sec) | 35 | 29 | 17 | 29 |
| Phase Time (sec) | 44 | 38 | 23 | 35 |
| Phase Split | 31% | 27% | 16% | 25% |

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%.

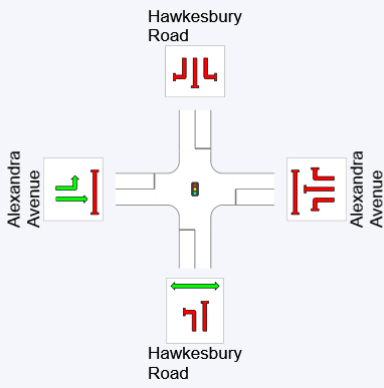
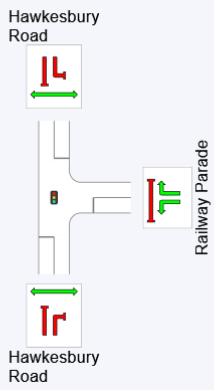
Output Phase Sequence (CCG)

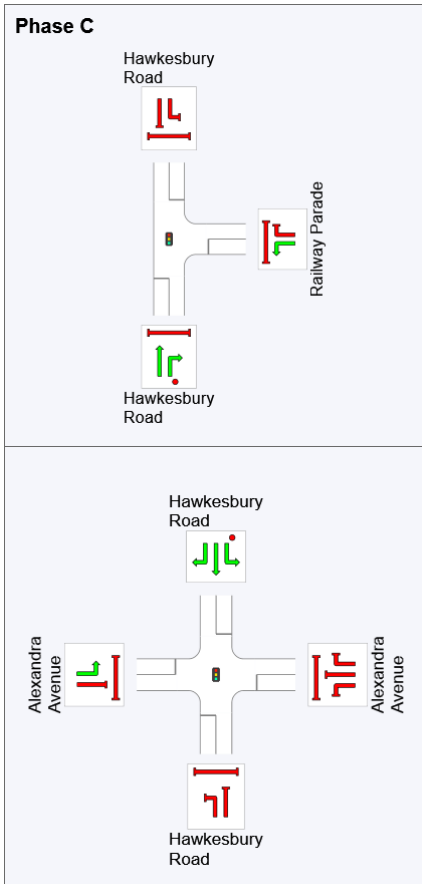


Phase E



Phase D





REF: Reference Phase
 VAR: Variable Phase



MOVEMENT SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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 |
| South: Parramatta Light Rail | | | | | | | | | | | | | | |
| 3a | R1 | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| Approach | | 8 | 100.0 | 8 | 100.0 | 0.251 | 82.7 | LOS F | 0.6 | 16.3 | 1.00 | 0.69 | 1.00 | 10.4 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | | | | |
| 24a | L1 | 8 | 100.0 | 8 | 100.0 | 0.168 | 80.5 | LOS F | 0.6 | 15.6 | 0.99 | 0.68 | 0.99 | 10.4 |
| 25 | T1 | 537 | 2.4 | 537 | 2.4 | * 1.319 | 331.4 | LOS F | 90.2 | 644.8 | 0.98 | 2.18 | 2.65 | 2.1 |
| 26 | R2 | 353 | 2.5 | 353 | 2.5 | * 1.297 | 322.4 | LOS F | 58.3 | 417.2 | 1.00 | 1.85 | 2.61 | 2.1 |
| Approach | | 898 | 3.3 | 898 | 3.3 | 1.319 | 325.6 | LOS F | 90.2 | 644.8 | 0.99 | 2.04 | 2.62 | 2.1 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 206 | 4.9 | 190 | 5.1 | 1.392 | 26.0 | LOS B | 6.9 | 90.1 | 0.51 | 0.67 | 0.57 | 24.5 |
| 29 | R2 | 654 | 9.6 | 606 | 10.1 | * 1.392 | 331.0 | LOS F | 20.0 | 146.9 | 0.93 | 1.85 | 2.60 | 1.1 |
| Approach | | 860 | 8.5 | 796 ^{N1} | 8.9 | 1.392 | 258.1 | LOS F | 20.0 | 146.9 | 0.83 | 1.57 | 2.11 | 2.0 |
| SouthWest: Hawkesbury Road | | | | | | | | | | | | | | |
| 30 | L2 | 569 | 12.0 | 568 | 12.0 | 0.413 | 13.5 | LOS A | 12.4 | 92.0 | 0.37 | 0.66 | 0.37 | 21.8 |
| 31 | T1 | 316 | 2.5 | 316 | 2.5 | 0.394 | 46.6 | LOS D | 18.5 | 132.5 | 0.93 | 0.80 | 0.93 | 16.4 |
| Approach | | 885 | 8.6 | 884 ^{N1} | 8.6 | 0.413 | 25.3 | LOS B | 18.5 | 132.5 | 0.57 | 0.71 | 0.57 | 18.4 |
| All Vehicles | | 2651 | 7.1 | 2586 ^{N1} | 7.2 | 1.392 | 201.4 | LOS F | 90.2 | 644.8 | 0.80 | 1.44 | 1.76 | 3.1 |

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 | 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 |
| South: Parramatta Light Rail | | | | | | | | | | | |
| P1 | Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 238.3 | 208.6 | 0.88 |
| NorthEast: Hawkesbury Road | | | | | | | | | | | |
| P6 | Full | 202 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 97.1 | 38.9 | 0.40 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P71 | Stage 1 | 60 | 30.2 | LOS D | 0.1 | 0.1 | 0.92 | 0.92 | 55.9 | 30.9 | 0.55 |
| P72 | Stage 2 | 60 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |

| SouthWest: Hawkesbury Road | | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|-------|------|------|--|
| P8 Full | 129 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 98.7 | 41.1 | 0.42 | |
| All Pedestrians | 580 | 61.0 | LOS F | 0.8 | 0.8 | 0.96 | 0.96 | 124.9 | 76.7 | 0.61 | |

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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PHASING SUMMARY

Site: 103 [Hawkesbury Road / Darcy Road (TCS 1631) (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 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: Variable Phasing

Reference Phase: Phase C

Input Phase Sequence: C, D*, B, A, F*

Output Phase Sequence: C, D*, B, A

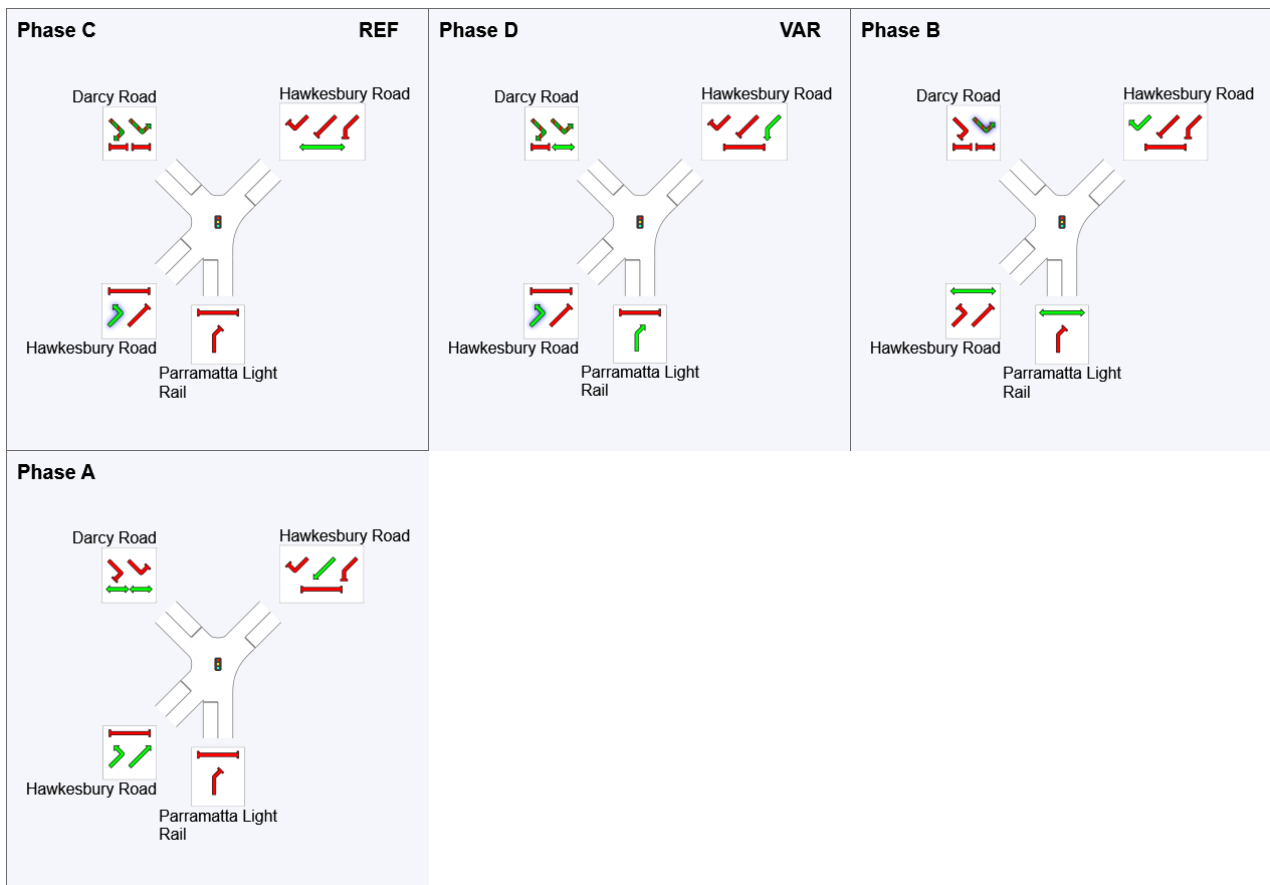
(* Variable Phase)

Phase Timing Summary

| Phase | C | D | B | A |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 138 | 43 | 57 | 90 |
| Green Time (sec) | 37 | 6 | 24 | 39 |
| Phase Time (sec) | 45 | 15 | 33 | 47 |
| Phase Split | 32% | 11% | 24% | 34% |

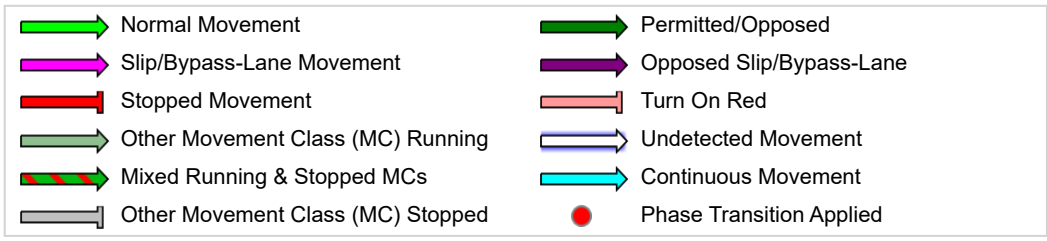
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Sensitivity Analysis (70% PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|-------------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 8 | 0.0 | 7 | 0.0 | 0.364 | 25.3 | LOS B | 16.1 | 117.5 | 0.71 | 0.62 | 0.71 | 21.6 |
| 22 | T1 | 826 | 8.6 | 760 | 9.1 | 0.364 | 21.4 | LOS B | 16.1 | 117.5 | 0.69 | 0.61 | 0.69 | 12.1 |
| 23 | R2 | 89 | 0.0 | 81 | 0.0 | *0.682 | 73.0 | LOS F | 5.6 | 39.3 | 1.00 | 0.78 | 1.02 | 8.7 |
| Approach | | 923 | 7.7 | 848 ^{N1} | 8.2 | 0.682 | 26.4 | LOS B | 16.1 | 117.5 | 0.72 | 0.62 | 0.72 | 11.1 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 67 | 3.0 | 67 | 3.0 | 0.559 | 54.0 | LOS D | 4.7 | 33.6 | 0.93 | 0.75 | 0.95 | 7.7 |
| 25 | T1 | 1 | 0.0 | 1 | 0.0 | *0.559 | 54.0 | LOS D | 4.7 | 33.6 | 0.93 | 0.75 | 0.95 | 11.9 |
| 26 | R2 | 180 | 0.0 | 180 | 0.0 | 0.787 | 54.8 | LOS D | 11.4 | 79.5 | 0.98 | 0.96 | 1.13 | 7.7 |
| Approach | | 248 | 0.8 | 248 | 0.8 | 0.787 | 54.6 | LOS D | 11.4 | 79.5 | 0.96 | 0.90 | 1.08 | 7.7 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 124 | 0.8 | 112 | 0.8 | *0.703 | 26.9 | LOS B | 13.3 | 96.3 | 0.69 | 0.69 | 0.69 | 12.7 |
| 28 | T1 | 732 | 9.8 | 666 | 10.5 | 0.703 | 24.0 | LOS B | 13.3 | 96.3 | 0.74 | 0.69 | 0.74 | 9.5 |
| 29 | R2 | 39 | 0.0 | 35 | 0.0 | 0.295 | 76.9 | LOS F | 2.5 | 17.4 | 1.00 | 0.73 | 1.00 | 9.3 |
| Approach | | 895 | 8.2 | 814 ^{N1} | 8.7 | 0.703 | 26.7 | LOS B | 13.3 | 96.3 | 0.74 | 0.69 | 0.74 | 9.7 |
| SouthWest: Farm House Road | | | | | | | | | | | | | | |
| 30 | L2 | 71 | 0.0 | 71 | 0.0 | 0.257 | 53.6 | LOS D | 4.4 | 30.7 | 0.91 | 0.75 | 0.91 | 9.8 |
| 31 | T1 | 5 | 0.0 | 5 | 0.0 | 0.257 | 56.7 | LOS E | 4.4 | 30.7 | 0.91 | 0.75 | 0.91 | 12.0 |
| 32 | R2 | 61 | 0.0 | 61 | 0.0 | 0.256 | 50.1 | LOS D | 3.4 | 23.5 | 0.94 | 0.74 | 0.94 | 10.5 |
| Approach | | 137 | 0.0 | 137 | 0.0 | 0.257 | 52.2 | LOS D | 4.4 | 30.7 | 0.92 | 0.74 | 0.92 | 10.3 |
| All Vehicles | | 2203 | 6.6 | 2047 ^{N1} | 7.1 | 0.787 | 31.6 | LOS C | 16.1 | 117.5 | 0.77 | 0.69 | 0.79 | 9.7 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | |
| P51 | Stage 1 | 197 | 64.7 | LOS F | 0.8 | 0.8 | 0.97 | 0.97 | 90.4 | 30.9 | 0.34 |
| P52 | Stage 2 | 41 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.1 | 39.4 | 0.41 |
| NorthEast: Westmead Hospital Access | | | | | | | | | | | |

| | | | | | | | | | | |
|----------------------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P6 Full | 88 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | |
| P71 Stage 1 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 96.4 | 38.7 | 0.40 |
| P72 Stage 2 | 26 | 64.2 | LOS F | 0.1 | 0.1 | 0.96 | 0.96 | 87.2 | 27.6 | 0.32 |
| SouthWest: Farm House Road | | | | | | | | | | |
| P8 Full | 225 | 64.7 | LOS F | 0.9 | 0.9 | 0.97 | 0.97 | 91.3 | 31.9 | 0.35 |
| All Pedestrians | 603 | 64.6 | LOS F | 0.9 | 0.9 | 0.96 | 0.96 | 91.4 | 32.2 | 0.35 |

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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PHASING SUMMARY

Site: 104 [Darcy Road / Farm House Road / Westmead Hospital Access (TCS 3281) (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, G

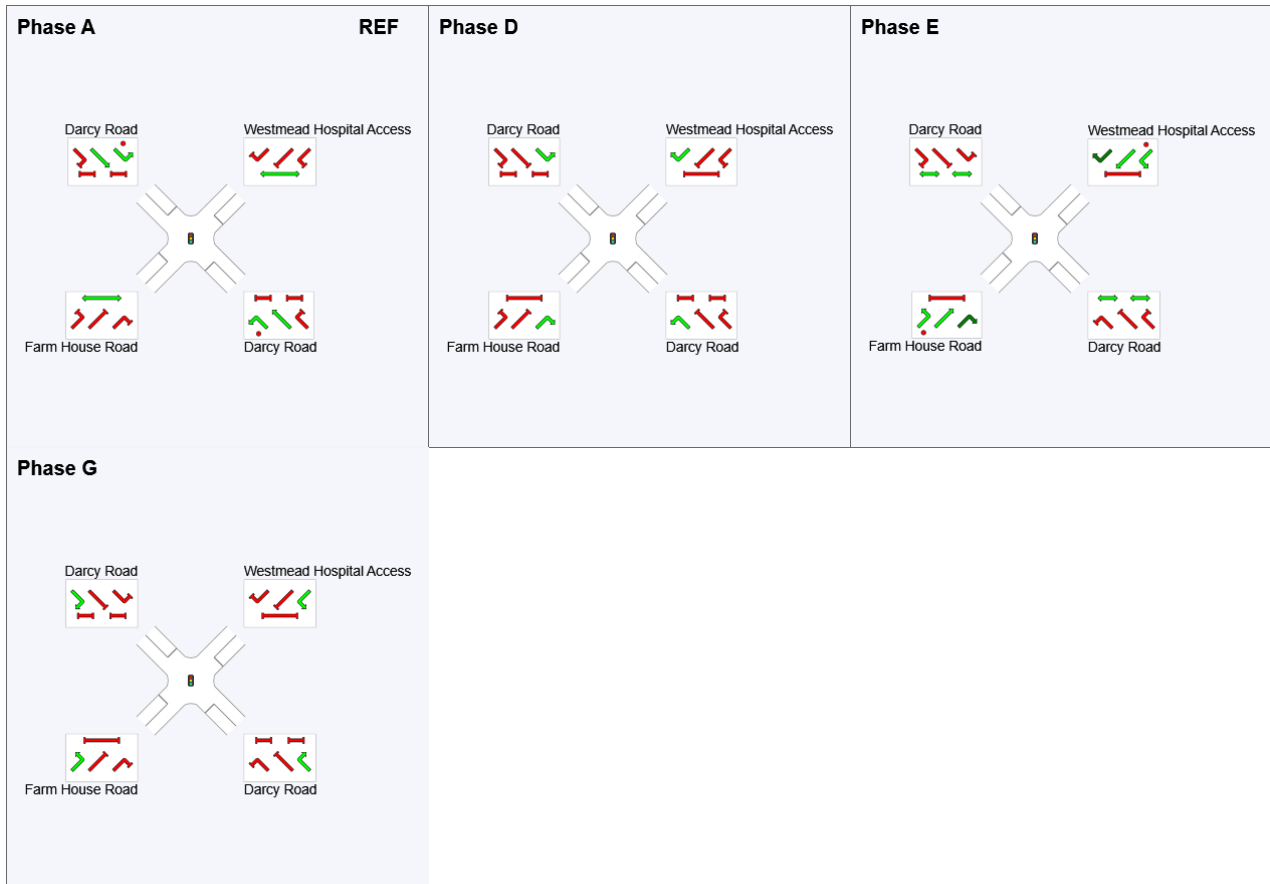
Output Phase Sequence: A, D, E, G

Phase Timing Summary

| Phase | A | D | E | G |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 121 | 64 | 82 | 106 |
| Green Time (sec) | 75 | 11 | 16 | 9 |
| Phase Time (sec) | 82 | 19 | 22 | 17 |
| Phase Split | 59% | 14% | 16% | 12% |

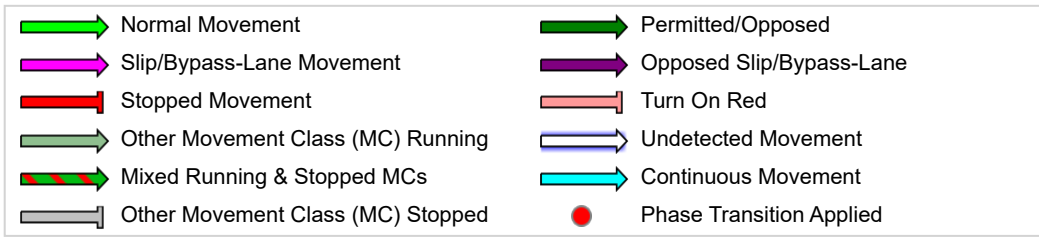
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 105 [Darcy Road / Parramatta Marist High School Access (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | v/c | sec | | [Veh. veh | Dist] m | | | | km/h |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 86 | 0.0 | 81 | 0.0 | 0.317 | 11.8 | LOS A | 2.0 | 14.0 | 0.51 | 0.17 | 0.61 | 20.4 |
| 22 | T1 | 992 | 7.3 | 932 | 7.5 | 0.317 | 1.4 | LOS A | 2.0 | 14.0 | 0.16 | 0.05 | 0.19 | 30.6 |
| Approach | | 1078 | 6.7 | 1012 ^N ₁ | 6.9 | 0.317 | 2.2 | NA | 2.0 | 14.0 | 0.19 | 0.06 | 0.23 | 29.0 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 895 | 7.6 | 812 | 8.1 | 0.205 | 0.0 | LOS A | 16.3 | 118.4 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 895 | 7.6 | 812 ^{N1} | 8.1 | 0.205 | 0.0 | NA | 16.3 | 118.4 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.005 | 19.2 | LOS B | 0.0 | 0.1 | 0.86 | 0.74 | 0.86 | 5.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.005 | 19.2 | LOS B | 0.0 | 0.1 | 0.86 | 0.74 | 0.86 | 5.6 |
| All Vehicles | | 1974 | 7.1 | 1825 ^N ₁ | 7.7 | 0.317 | 1.3 | NA | 16.3 | 118.4 | 0.11 | 0.04 | 0.13 | 34.0 |

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: P:\P4803 2 Darcy Road Westmead EIS Peer Review\Technical Work\Models\P4803.001M 2 Darcy Road Westmead EIS SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|---|------|-----------------|------|--------------------|------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | HV % | [Total veh/h] | HV % | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | * 0.345 | 14.4 | LOS A | 12.5 | 90.5 | 0.47 | 0.42 | 0.47 | 19.4 |
| 22 | T1 | 948 | 7.5 | 891 | 7.8 | 0.345 | 10.6 | LOS A | 12.5 | 90.5 | 0.45 | 0.40 | 0.45 | 19.4 |
| 23 | R2 | 45 | 0.0 | 42 | 0.0 | * 0.530 | 81.0 | LOS F | 3.1 | 21.5 | 1.00 | 0.74 | 1.01 | 8.6 |
| Approach | | 994 | 7.1 | 934 ^{N1} | 7.4 | 0.530 | 13.8 | LOS A | 12.5 | 90.5 | 0.48 | 0.42 | 0.48 | 17.3 |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | | | | |
| 24 | L2 | 46 | 0.0 | 46 | 0.0 | 0.080 | 5.0 | LOS A | 0.5 | 3.3 | 0.20 | 0.53 | 0.20 | 28.9 |
| 26 | R2 | 37 | 0.0 | 37 | 0.0 | 0.180 | 62.1 | LOS E | 2.3 | 16.0 | 0.92 | 0.73 | 0.92 | 7.1 |
| Approach | | 83 | 0.0 | 83 | 0.0 | 0.180 | 30.5 | LOS C | 2.3 | 16.0 | 0.52 | 0.62 | 0.52 | 12.1 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 27 | L2 | 66 | 0.0 | 58 | 0.0 | 0.263 | 13.8 | LOS A | 12.1 | 87.7 | 0.45 | 0.43 | 0.45 | 26.8 |
| 28 | T1 | 789 | 8.6 | 704 | 9.4 | 0.263 | 11.2 | LOS A | 12.1 | 87.7 | 0.49 | 0.44 | 0.49 | 18.1 |
| 29 | R2 | 2 | 50.0 | 2 | 51.5 | 0.021 | 76.8 | LOS F | 0.1 | 1.3 | 1.00 | 0.61 | 1.00 | 6.7 |
| Approach | | 857 | 8.1 | 765 ^{N1} | 8.7 | 0.263 | 11.5 | LOS A | 12.1 | 87.7 | 0.49 | 0.44 | 0.49 | 19.0 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | | | | |
| 30 | L2 | 112 | 0.0 | 112 | 0.0 | * 0.333 | 48.5 | LOS D | 6.4 | 44.6 | 0.90 | 0.71 | 0.90 | 5.1 |
| 32 | R2 | 60 | 0.0 | 60 | 0.0 | 0.320 | 55.7 | LOS D | 3.7 | 25.8 | 0.91 | 0.72 | 0.91 | 4.8 |
| Approach | | 172 | 0.0 | 172 | 0.0 | 0.333 | 51.0 | LOS D | 6.4 | 44.6 | 0.91 | 0.72 | 0.91 | 5.0 |
| All Vehicles | | 2106 | 6.6 | 1954 ^{N1} | 7.2 | 0.530 | 16.9 | LOS B | 12.5 | 90.5 | 0.52 | 0.46 | 0.52 | 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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped] | [Dist m] | | | | | |
| NorthEast: Westmead Dental Hospital Access | | | | | | | | | | | |
| P6 | Full | 4 | 64.1 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 90.7 | 31.9 | 0.35 |
| NorthWest: Darcy Road | | | | | | | | | | | |
| P7 | Full | 91 | 64.4 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 106.2 | 50.2 | 0.47 |
| SouthWest: Parramatta Marist High School Access | | | | | | | | | | | |
| P8 | Full | 59 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.9 | 31.9 | 0.35 |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| All Pedestrians | 154 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 99.9 | 42.7 | 0.43 |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|

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: 106 [Darcy Road / Westmead Dental Hospital Access / Parramatta Marist High School Access (TCS 3282) (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E

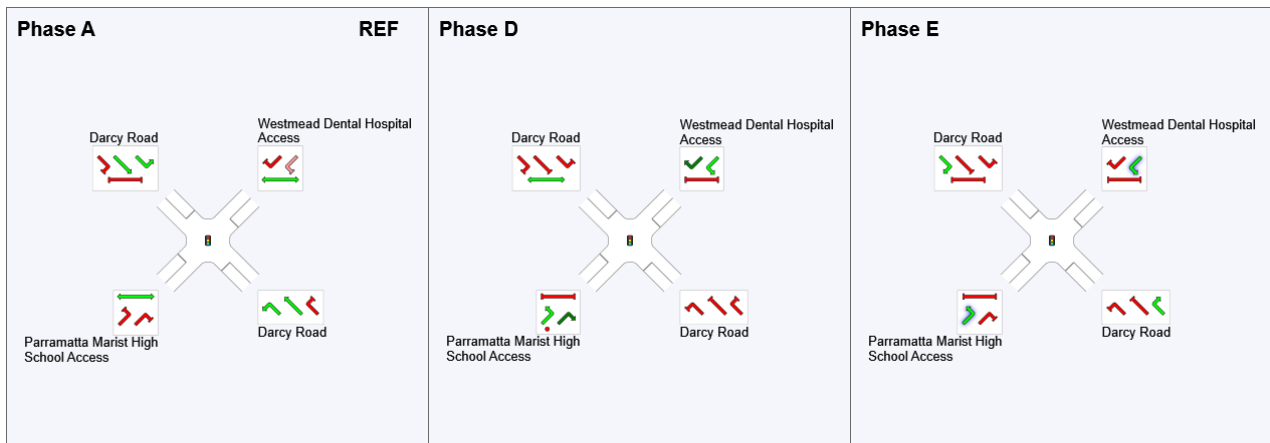
Output Phase Sequence: A, D, E

Phase Timing Summary

| Phase | A | D | E |
|-------------------------|-----|-----|----|
| Phase Change Time (sec) | 109 | 67 | 98 |
| Green Time (sec) | 92 | 25 | 6 |
| Phase Time (sec) | 98 | 30 | 12 |
| Phase Split | 70% | 21% | 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



MOVEMENT SUMMARY

Site: 107 [Darcy Road / Catherine McAuley Westmead Access
(Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033
Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21 | L2 | 1 | 0.0 | 1 | 0.0 | 0.314 | 3.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 26.8 |
| 22 | T1 | 1096 | 6.7 | 1040 | 6.9 | 0.314 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 1097 | 6.7 | 1041 ^N ₁ | 6.9 | 0.314 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 |
| NorthWest: Darcy Road | | | | | | | | | | | | | | |
| 28 | T1 | 857 | 7.9 | 764 | 8.6 | 0.193 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| Approach | | 857 | 7.9 | 764 ^{N1} | 8.6 | 0.193 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.9 |
| SouthWest: Catherine McAuley Westmead Access | | | | | | | | | | | | | | |
| 30 | L2 | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.4 | LOS A | 0.0 | 0.0 | 0.39 | 0.18 | 0.39 | 18.6 |
| Approach | | 1 | 0.0 | 1 | 0.0 | 0.002 | 1.4 | LOS A | 0.0 | 0.0 | 0.39 | 0.18 | 0.39 | 18.6 |
| All Vehicles | | 1955 | 7.2 | 1805 ^N ₁ | 7.8 | 0.314 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 39.8 |

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.

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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MOVEMENT SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
(Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033
Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Darcy Road | | | | | | | | | | | | | | |
| 21a | L1 | 918 | 1.7 | 868 | 1.8 | * 0.847 | 46.0 | LOS D | 12.6 | 89.8 | 0.94 | 0.96 | 1.07 | 4.5 |
| 23a | R1 | 178 | 33.7 | 170 | 34.5 | 0.440 | 60.3 | LOS E | 9.0 | 73.3 | 1.00 | 0.80 | 1.00 | 18.2 |
| Approach | | 1096 | 6.9 | 1038 ^{N1} | 7.2 | 0.847 | 48.3 | LOS D | 12.6 | 89.8 | 0.95 | 0.93 | 1.06 | 8.5 |
| East: Institute Road | | | | | | | | | | | | | | |
| 4b | L3 | 104 | 0.0 | 104 | 0.0 | 2.543 | 1427.9 | LOS F | 68.9 | 483.0 | 1.00 | 2.92 | 4.97 | 0.9 |
| 5 | T1 | 282 | 0.4 | 282 | 0.4 | * 2.543 | 1421.6 | LOS F | 68.9 | 483.0 | 1.00 | 2.82 | 4.95 | 0.9 |
| 6 | R2 | 7 | 0.0 | 7 | 0.0 | 2.543 | 1424.0 | LOS F | 58.2 | 408.5 | 1.00 | 2.76 | 4.94 | 2.0 |
| Approach | | 393 | 0.3 | 393 | 0.3 | 2.543 | 1423.3 | LOS F | 68.9 | 483.0 | 1.00 | 2.85 | 4.95 | 1.0 |
| North: Mons Road | | | | | | | | | | | | | | |
| 7 | L2 | 3 | 0.0 | 3 | 0.0 | 0.195 | 11.4 | LOS A | 2.5 | 19.5 | 0.24 | 0.40 | 0.24 | 35.7 |
| 7a | L1 | 193 | 30.1 | 193 | 30.1 | 0.195 | 9.8 | LOS A | 2.5 | 19.5 | 0.23 | 0.40 | 0.23 | 32.8 |
| 9 | R2 | 278 | 2.9 | 278 | 2.9 | * 1.343 | 362.3 | LOS F | 50.4 | 361.2 | 1.00 | 1.88 | 2.79 | 4.2 |
| Approach | | 474 | 13.9 | 474 | 13.9 | 1.343 | 216.6 | LOS F | 50.4 | 361.2 | 0.68 | 1.27 | 1.74 | 6.7 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 75 | 1.3 | 70 | 1.1 | 0.566 | 27.0 | LOS B | 11.9 | 84.1 | 0.65 | 0.67 | 0.65 | 26.9 |
| 11 | T1 | 43 | 0.0 | 40 | 0.0 | 0.566 | 23.9 | LOS B | 11.9 | 84.1 | 0.65 | 0.67 | 0.65 | 24.6 |
| 12a | R1 | 560 | 1.8 | 525 | 1.5 | 0.566 | 28.9 | LOS C | 12.9 | 91.4 | 0.69 | 0.68 | 0.69 | 7.8 |
| Approach | | 678 | 1.6 | 636 ^{N1} | 1.4 | 0.566 | 28.4 | LOS B | 12.9 | 91.4 | 0.68 | 0.68 | 0.68 | 13.2 |
| All Vehicles | | 2641 | 5.8 | 2541 ^{N1} | 6.1 | 2.543 | 287.4 | LOS F | 68.9 | 483.0 | 0.84 | 1.23 | 1.69 | 2.9 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| East: Institute Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| North: Mons Road | | | | | | | | | | | |
| P3 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 97.4 | 39.8 | 0.41 |
| West: Darcy Road | | | | | | | | | | | |

| | | | | | | | | | | |
|-----------------|-----|------|-------|-----|-----|------|------|------|------|------|
| P4 Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 95.2 | 37.1 | 0.39 |
| All Pedestrians | 150 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 94.5 | 36.3 | 0.38 |

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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PHASING SUMMARY

Site: 108 [Darcy Road / Mons Road / Institute Road (TCS 2393)
 (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak
 (Network Folder: 2033
 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

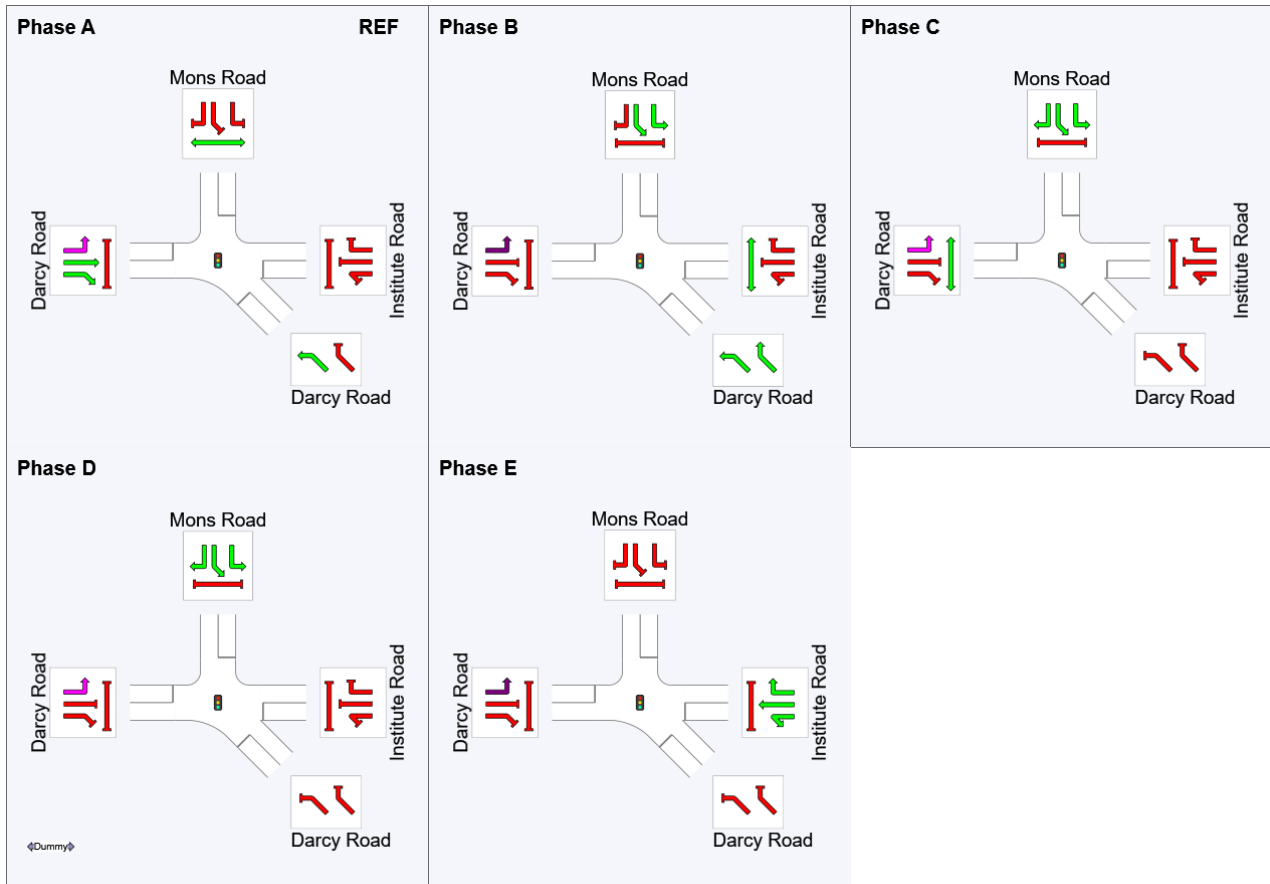
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

| Phase | A | B | C | D | E |
|-------------------------|-----|-----|-----|----|-----|
| Phase Change Time (sec) | 28 | 78 | 110 | 2 | 12 |
| Green Time (sec) | 44 | 26 | 26 | 4 | 10 |
| Phase Time (sec) | 50 | 32 | 32 | 10 | 16 |
| Phase Split | 36% | 23% | 23% | 7% | 11% |

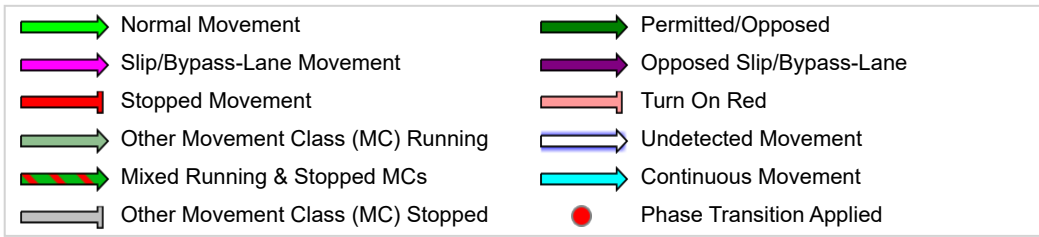
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 109 [Darcy Road / Mother Teresa Primary School Access
(Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033
Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | | | | |
| 1 | L2 | 222 | 4.5 | 222 | 4.5 | 0.421 | 6.7 | LOS A | 7.2 | 52.2 | 0.54 | 0.48 | 0.54 | 9.6 |
| Approach | | 222 | 4.5 | 222 | 4.5 | 0.421 | 6.7 | LOS A | 7.2 | 52.2 | 0.54 | 0.48 | 0.54 | 9.6 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 70 | 7.1 | 58 | 7.8 | 0.047 | 10.2 | LOS A | 0.3 | 2.0 | 0.10 | 0.80 | 0.10 | 16.7 |
| 5 | T1 | 1409 | 1.3 | 1169 | 1.5 | *0.522 | 12.4 | LOS A | 12.9 | 91.4 | 0.44 | 0.40 | 0.44 | 13.0 |
| Approach | | 1479 | 1.6 | 1227 ^{N1} | 1.8 | 0.522 | 12.3 | LOS A | 12.9 | 91.4 | 0.43 | 0.42 | 0.43 | 13.1 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 11 | T1 | 678 | 2.4 | 635 | 2.0 | 0.382 | 3.9 | LOS A | 6.4 | 45.8 | 0.29 | 0.26 | 0.29 | 34.8 |
| 12 | R2 | 120 | 3.3 | 112 | 2.8 | *0.237 | 9.9 | LOS A | 1.6 | 11.8 | 0.25 | 0.77 | 0.25 | 29.2 |
| Approach | | 798 | 2.5 | 747 ^{N1} | 2.1 | 0.382 | 4.8 | LOS A | 6.4 | 45.8 | 0.28 | 0.34 | 0.28 | 33.8 |
| All Vehicles | | 2499 | 2.2 | 2196 ^{N1} | 2.5 | 0.522 | 9.2 | LOS A | 12.9 | 91.4 | 0.39 | 0.40 | 0.39 | 17.7 |

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 | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Mother Teresa Primary School Access | | | | | | | | | | | |
| P1 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 86.8 | 27.1 | 0.31 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.6 | 38.8 | 0.40 |
| All Pedestrians | | 100 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 91.7 | 33.0 | 0.36 |

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: 109 [Darcy Road / Mother Teresa Primary School Access
(Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak
(Network Folder: 2033
Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, B1

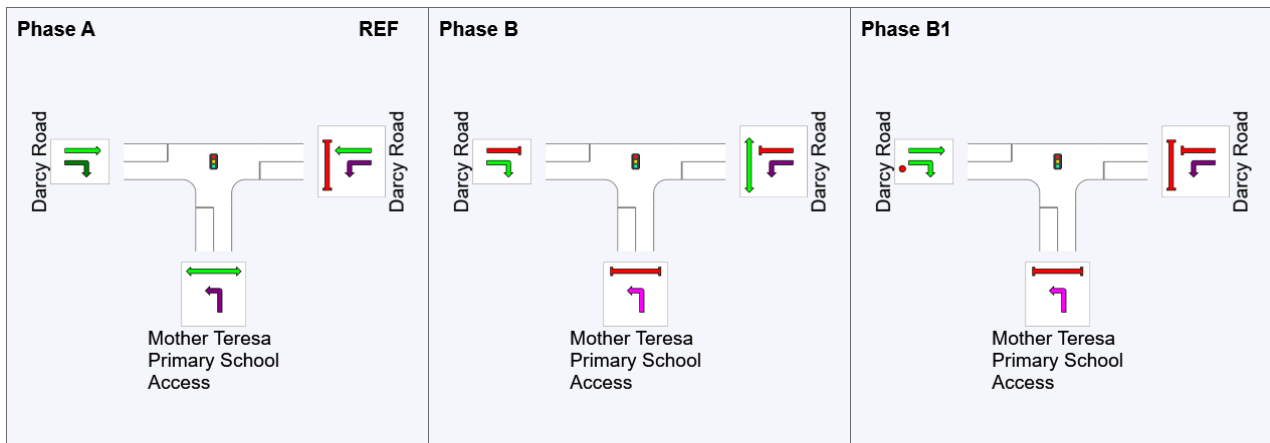
Output Phase Sequence: A, B, B1

Phase Timing Summary

| Phase | A | B | B1 |
|-------------------------|-----|-----|-----|
| Phase Change Time (sec) | 135 | 85 | 108 |
| Green Time (sec) | 84 | 17 | 22 |
| Phase Time (sec) | 90 | 22 | 28 |
| Phase Split | 64% | 16% | 20% |

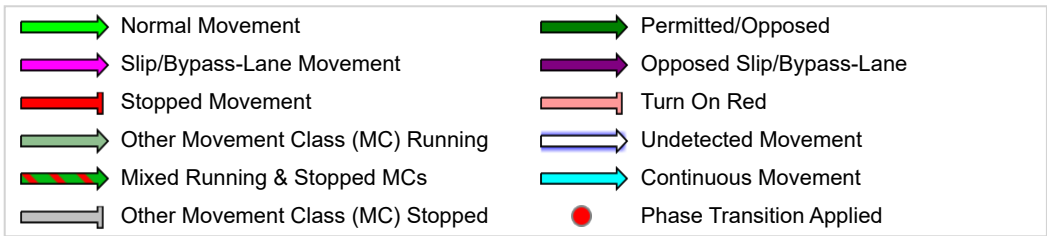
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|------|--------------------|------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 1 | L2 | 229 | 1.3 | 226 | 1.3 | 0.459 | 41.6 | LOS C | 11.6 | 82.4 | 0.84 | 0.78 | 0.84 | 25.5 |
| 2 | T1 | 29 | 0.0 | 29 | 0.0 | * 2.111 | 1050.0 | LOS F | 36.1 | 266.8 | 1.00 | 2.15 | 4.55 | 1.6 |
| 3 | R2 | 96 | 8.3 | 95 | 8.4 | 2.111 | 1049.6 | LOS F | 36.1 | 266.8 | 1.00 | 2.15 | 4.55 | 1.5 |
| Approach | | 354 | 3.1 | 350 ^{N1} | 3.1 | 2.111 | 397.7 | LOS F | 36.1 | 266.8 | 0.89 | 1.27 | 2.15 | 4.5 |
| East: Darcy Road | | | | | | | | | | | | | | |
| 4 | L2 | 313 | 4.2 | 270 | 4.6 | 0.348 | 18.1 | LOS B | 16.7 | 119.9 | 0.40 | 0.48 | 0.40 | 29.2 |
| 5 | T1 | 1290 | 1.3 | 1109 | 1.4 | 0.348 | 9.4 | LOS A | 16.7 | 119.9 | 0.31 | 0.32 | 0.31 | 38.2 |
| 6 | R2 | 28 | 0.0 | 24 | 0.0 | * 0.053 | 12.2 | LOS A | 0.3 | 2.2 | 0.36 | 0.60 | 0.36 | 29.4 |
| Approach | | 1631 | 1.8 | 1403 ^{N1} | 2.0 | 0.348 | 11.1 | LOS A | 16.7 | 119.9 | 0.33 | 0.36 | 0.33 | 36.6 |
| North: Coles Westmead Access | | | | | | | | | | | | | | |
| 7 | L2 | 26 | 0.0 | 26 | 0.0 | 0.068 | 43.0 | LOS D | 1.3 | 9.4 | 0.83 | 0.61 | 0.83 | 4.3 |
| 8 | T1 | 45 | 0.0 | 45 | 0.0 | 1.115 | 187.1 | LOS F | 10.7 | 74.6 | 1.00 | 1.84 | 2.21 | 1.2 |
| 9 | R2 | 42 | 0.0 | 42 | 0.0 | 1.115 | 187.1 | LOS F | 10.7 | 74.6 | 1.00 | 1.84 | 2.21 | 3.7 |
| Approach | | 113 | 0.0 | 113 | 0.0 | 1.115 | 154.0 | LOS F | 10.7 | 74.6 | 0.96 | 1.56 | 1.90 | 2.5 |
| West: Darcy Road | | | | | | | | | | | | | | |
| 10 | L2 | 57 | 0.0 | 57 | 0.0 | 0.340 | 16.5 | LOS B | 15.3 | 108.4 | 0.49 | 0.47 | 0.49 | 23.4 |
| 11 | T1 | 675 | 1.3 | 675 | 1.3 | * 0.340 | 11.4 | LOS A | 15.3 | 108.4 | 0.47 | 0.43 | 0.47 | 25.4 |
| 12 | R2 | 335 | 1.8 | 335 | 1.8 | 0.732 | 18.7 | LOS B | 9.5 | 67.8 | 0.67 | 0.80 | 0.69 | 19.8 |
| Approach | | 1067 | 1.4 | 1067 | 1.4 | 0.732 | 14.0 | LOS A | 15.3 | 108.4 | 0.53 | 0.55 | 0.54 | 23.2 |
| All Vehicles | | 3165 | 1.8 | 2933 ^{N1} | 1.9 | 2.111 | 63.8 | LOS E | 36.1 | 266.8 | 0.49 | 0.58 | 0.68 | 13.4 |

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 | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | [Ped ped | Dist] m | | | | | |
| South: Bridge Road | | | | | | | | | | | |
| P1 | Full | 47 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 90.8 | 31.9 | 0.35 |
| East: Darcy Road | | | | | | | | | | | |
| P2 | Full | 44 | 64.2 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | 96.3 | 38.5 | 0.40 |

| North: Coles Westmead Access | | | | | | | | | | | |
|------------------------------|------|-----|------|-------|-----|-----|------|------|------|------|------|
| P3 | Full | 127 | 64.5 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 92.2 | 33.3 | 0.36 |
| West: Darcy Road | | | | | | | | | | | |
| P4 | Full | 81 | 64.3 | LOS F | 0.3 | 0.3 | 0.96 | 0.96 | 96.4 | 38.5 | 0.40 |
| All Pedestrians | | 299 | 64.4 | LOS F | 0.5 | 0.5 | 0.96 | 0.96 | 93.7 | 35.3 | 0.38 |

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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PHASING SUMMARY

Site: 110 [Darcy Road / Bridge Road / Coles Westmead Access (TCS 1630) (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, D, E, E2

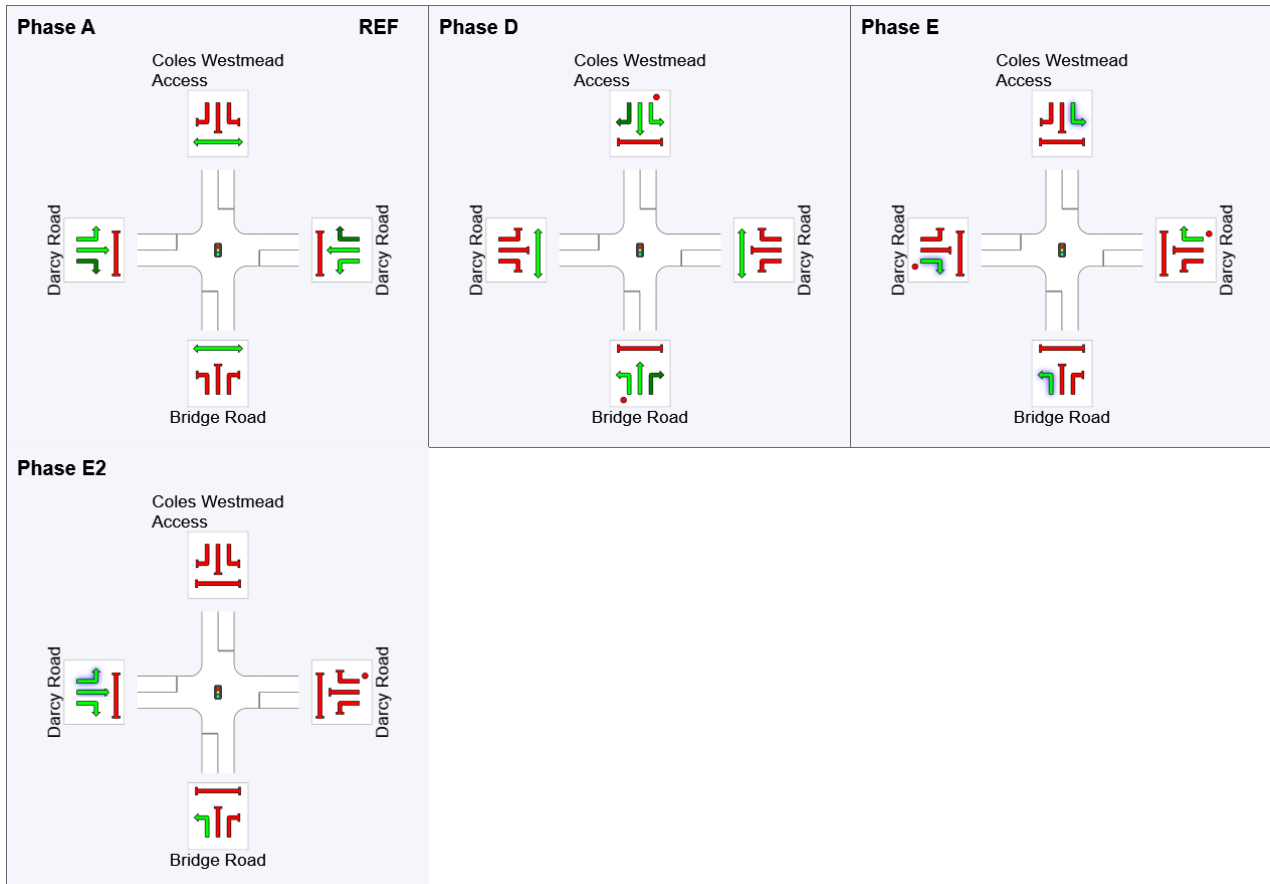
Output Phase Sequence: A, D, E, E2

Phase Timing Summary

| Phase | A | D | E | E2 |
|-------------------------|-----|-----|-----|-----|
| Phase Change Time (sec) | 14 | 96 | 129 | 140 |
| Green Time (sec) | 75 | 26 | 5 | 8 |
| Phase Time (sec) | 82 | 32 | 11 | 15 |
| Phase Split | 59% | 23% | 8% | 11% |

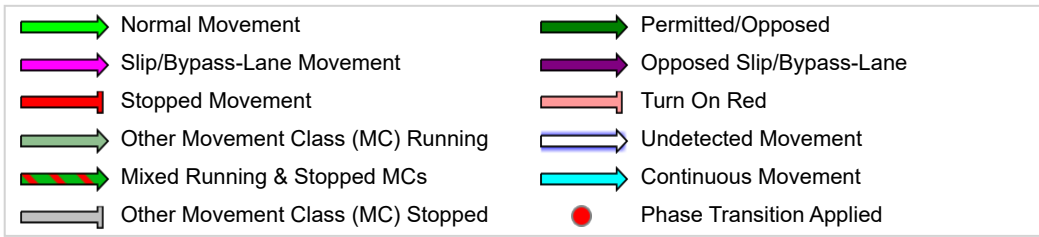
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 111 [Bridge Road / Alexandra Avenue (Site Folder: 2033 Sensitivity Analysis (70%) PM Peak)]

Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|-------|--------------------|-------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | DEMAND FLOWS | | ARRIVAL FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV % | [Total veh/h | HV % | | | | [Veh. veh | Dist] m | | | | |
| South: Bridge Road | | | | | | | | | | | | | | |
| 2 | T1 | 463 | 2.4 | 463 | 2.4 | 0.651 | 5.4 | LOS A | 6.9 | 49.1 | 0.70 | 0.62 | 0.70 | 22.7 |
| 3 | R2 | 172 | 0.6 | 172 | 0.6 | 0.651 | 8.5 | LOS A | 6.9 | 49.1 | 0.70 | 0.62 | 0.70 | 22.7 |
| 3u | U | 1 | 100.0 | 1 | 100.0 | 0.651 | 11.6 | LOS A | 6.9 | 49.1 | 0.70 | 0.62 | 0.70 | 24.0 |
| Approach | | 636 | 2.0 | 636 | 2.0 | 0.651 | 6.2 | LOS A | 6.9 | 49.1 | 0.70 | 0.62 | 0.70 | 22.7 |
| East: Alexandra Avenue | | | | | | | | | | | | | | |
| 4 | L2 | 253 | 0.4 | 242 | 0.4 | 0.816 | 24.2 | LOS B | 9.1 | 63.9 | 0.90 | 1.23 | 1.53 | 32.7 |
| 6 | R2 | 152 | 0.0 | 145 | 0.0 | 0.816 | 26.7 | LOS B | 9.1 | 63.9 | 0.90 | 1.23 | 1.53 | 32.5 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.816 | 28.0 | LOS B | 9.1 | 63.9 | 0.90 | 1.23 | 1.53 | 32.5 |
| Approach | | 406 | 0.2 | 388 ^{N1} | 0.3 | 0.816 | 25.1 | LOS B | 9.1 | 63.9 | 0.90 | 1.23 | 1.53 | 32.6 |
| North: Bridge Road | | | | | | | | | | | | | | |
| 7 | L2 | 101 | 0.0 | 96 | 0.0 | 0.836 | 10.8 | LOS A | 14.1 | 100.8 | 0.90 | 0.79 | 1.05 | 37.9 |
| 8 | T1 | 720 | 2.6 | 681 | 2.7 | 0.836 | 10.5 | LOS A | 14.1 | 100.8 | 0.90 | 0.79 | 1.05 | 37.9 |
| 9u | U | 1 | 0.0 | 1 | 0.0 | 0.836 | 14.6 | LOS B | 14.1 | 100.8 | 0.90 | 0.79 | 1.05 | 37.9 |
| Approach | | 822 | 2.3 | 778 ^{N1} | 2.4 | 0.836 | 10.6 | LOS A | 14.1 | 100.8 | 0.90 | 0.79 | 1.05 | 37.9 |
| All Vehicles | | 1864 | 1.8 | 1802 ^{N1} | 1.8 | 0.836 | 12.2 | LOS A | 14.1 | 100.8 | 0.83 | 0.82 | 1.03 | 34.2 |

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.

Roundabout Capacity Model: SIDRA Standard.

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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SIGNAL OFFSETS

■ Network: N101 [PM Peak (Network Folder: 2033 Sensitivity Analysis (70%))]

1500 - 1600

Network Category: (None)

Network Cycle Time = 140 seconds (Network User-Given Cycle Time)

SIGNAL OFFSETS

Offset Definition: Green Start

Reference Site / CCG: CCG1 [Hawkesbury Road / Alexandra Avenue / Railway Parade (TCS 1571)]¹

| Site ID | 106 | 104 | 109 | 101 ¹ | 102 ¹ | 103 | 110 | 108 |
|------------------------|-----|-----|-----|------------------|------------------|-----|-----|-----|
| CCG ID (if applicable) | NA | NA | NA | CCG1 | CCG1 | NA | NA | NA |
| Offset (sec) | -31 | -17 | -5 | 0 | 0 | 0 | 15 | 28 |
| Program / User | U | U | U | U | U | U | U | U |
| Reference Phase | A | A | A | A | A | C | A | A |
| Route ID | - | - | - | - | - | - | - | - |

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

ROUTE OFFSET RESULTS

No results are given since the Network does not have any Routes.

¹ Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab.

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