West Street Cycleway

Traffic Impact Assessment

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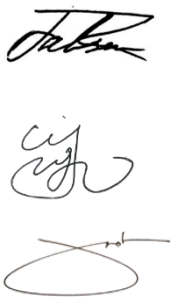
Contents

Appendices

Revision History

Revision Nº	Prepared By	Description	Date
A	Jackson Fankhauser	Draft	24 November 2023
B	Jackson Fankhauser	Draft	28 November 2023
C	Jackson Fankhauser	Final	4 December 2023

Document Acceptance

Action	Name	Signed	Date
Prepared by	Jackson Fankhauser Claire Jung Yrish Estoce		28 November 2023
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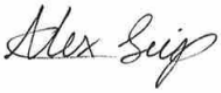
Approved by	Alex Seip		4 December 2023
	on behalf of	Beca Pty Ltd	

Executive Summary

Background and Project Overview

Beca has been commissioned to produce a Traffic Impact Assessment (TIA) for the development of a bi-directional cycleway within the existing road reserve on West Street in North Sydney. The purpose of the TIA is to assess the impact of this project on the transport network and to provide appropriate mitigation measures to minimise the identified impacts.

Existing Environment

The Project is located within a residential area that consists mostly of low-density housing with a few mixed-use, Special infrastructure and recreation zones. West Street is also part of Holtermann's Estate, an extended heritage area.

Peak hour traffic in the project's traffic influence area is observed to be between 8:00 and 9:00 in the morning and between 5:00 and 6:00 in the afternoon. Weekend peak hour is between 11:30 am and 12:30pm.

Active and public transport facilities are available in the area. There is also provision for on-street parking along the key roads – West Street, Ernest Street, and Falcon Street.

The review of the five-year crash statistics identifies that the predominant crash types along West Street are cross traffic and left turn sideswipe crashes at intersections which can be attributed to poor visibility and inadequate lighting at intersections or poor driver behaviour.

Traffic Impact Assessment

Road Network

SIDRA intersection modelling was used to assess the performance of the below intersections with and without the Project:

- Ernest Street and West Street
- Falcon Street and West Street

Modelling results show that:

- The project will have negligible impacts to the intersection performance of Ernest Street and West Street intersection. The intersection will still perform satisfactorily with stable flows and acceptable delays; and will still have spare capacity to accommodate future vehicle and cyclist demand. The pedestrian level of service will also be satisfactory as delays are minimal and the likelihood of risk-taking behaviour is low.
- The project will result to improved intersection performance at Falcon Street and West Street intersection compared to the existing layout. The level of service will still be at LoS D and the intersection will still operate near capacity with unstable vehicle flow and tolerable delays. Longer delays are also expected at the cycle lanes at the south approach. Pedestrian level of service will decrease due to noticeable delays, which increases the likelihood of risk-taking behaviours at the intersection.

Public Transport

The proposed project will not impact the existing operation of public transport services along West Street but the conversion of the existing bus stop to an in-lane stop along West Street can potentially slow down traffic flow.

Active Transport

The proposed project is expected to improve active transport provision along West Street and promote cycling as a safe, accessible, and sustainable mode of transport.

Parking

The proposed project will have negligible impacts with an overall loss of two parking spaces, 17 parking spaces being removed and 15 on-street parking spaces to be reinstated elsewhere along West Street.

Road Safety

The proposed project will improve the overall safety in the transport network as conflicts between cyclists and vehicles are reduced.

Conclusion and Recommendations

Overall, the project will have negligible impacts to the operational performance of the existing transport network. In fact, it will even improve the overall safety for all road users and can potentially increase the use of cycling as the preferred mode for short, everyday trips in the area.

Recommendations for further improvement include:

- Enhancing pedestrian signal phasing to provide good separation between travel modes.
- Exclusive cycle phases to promote cycle priority to minimise conflicts and optimise the overall safety at the intersections
- Conduct a stated preference survey to gauge the potential mode shift before the implementation of the proposed design as this has not been assessed in this TIA

1 Introduction

1.1 Overview

North Sydney Council, as part of the North Sydney Integrated Cycling Strategy, are implementing priority cycling routes across their network.

Sydney Harbour Bridge to Cammeray was identified as one of the priority routes to be developed for greater connections to the city. This development includes a separated bi-directional cycleway within the existing road reserve along this route on West Street (the Project)

1.2 Purpose of this report

Beca has been engaged to prepare a Traffic Impact Assessment (TIA) to assess the impact of the Project on the existing transport network and to provide appropriate mitigation measures to minimise the identified impacts.

This report documents the results of the TIA, including:

- A description of the existing traffic and transportation environment along the proposed Project and its surrounding area. This includes the review of recent traffic volumes, identification of existing active and public transport provision, and analysis of historic crash data.
- Review of the proposed cycleway design, including intersection treatments.
- High-level assessment of the intersection performance of West Street | Falcon Street and West Street | Ernest Street intersections with and without the proposed treatments.
- Summary of key findings and recommendations to minimise the identified impacts.

2 Existing Transport Context

2.1 Site Location

The Project will be located along West Street from the Ridge Street cycleway to Amherst Street. West Street runs through the suburbs of North Sydney, Crows Nest, and Cammeray, approximately 2kms north of the Sydney Harbour Bridge. The northern end of West Street is split by the Four Figs Park, and the southern end connects to the Pacific Highway. There are several side streets that connect to West Street, including Falcon Street, which is a regionally significant road.

The area surrounding West Street is predominately residential with areas of heritage status. There are also several schools, religious buildings, and parks nearby.

Other notable features include:

On West Street:

- Yemen Consulate
- North Sydney Police Station

Around West Street:

- Mater Hospital 350m to the west
- St Leonard's Park 250m to the east
- Crows Nest commercial area 500m to the west
- Warringah Freeway/M1 to the north and east of West Street

Figure 2-1 below shows the site and some of the identified features from above.

2.2 Site Access

West Street can be accessed via several local side streets as well as some significant regional and state roads, including:

- Pacific Highway which connects to the southern end of West Street leading to the Pacific Motorway 21kms away, which is Australia's primary motorway on the eastern edge of the country.
- Hazelbank Place shared path connection which connects to the Pacific Highway.
- Ernest Street which is a locally significant road and provides direct access from West Street to the Warringah Freeway.
- Falcon Street which is a regionally significant road providing connection from the Pacific Highway to Miller Street, Military Road (A8), and the Warringah Freeway.
- Brooke Street via the Cammeray on-ramp to the Warringah Freeway. The Warringah Freeway on-ramp from Brooke Street has an exit on to West Street.
- Ridge Street cycleway forming a section of Route 5. North Sydney to Cremorne cycleway, identified in the North Sydney Integrated Cycling Strategy.

Figure 2-1 West Street Area (Source: Open Street Maps modified by Beca)

2.3 Land Use

The Project is located within a residential area that consists mostly of low density housing on the west side of the street, with some mixed use areas on the south end of West Street and medium/high density housing on the east side (See Figure 2-2). There are also several Special Infrastructure areas and recreation zones that are within 800m radius. Additionally, West Street is part of Holtermann's Estate, an extended heritage area (See Figure 2-3).

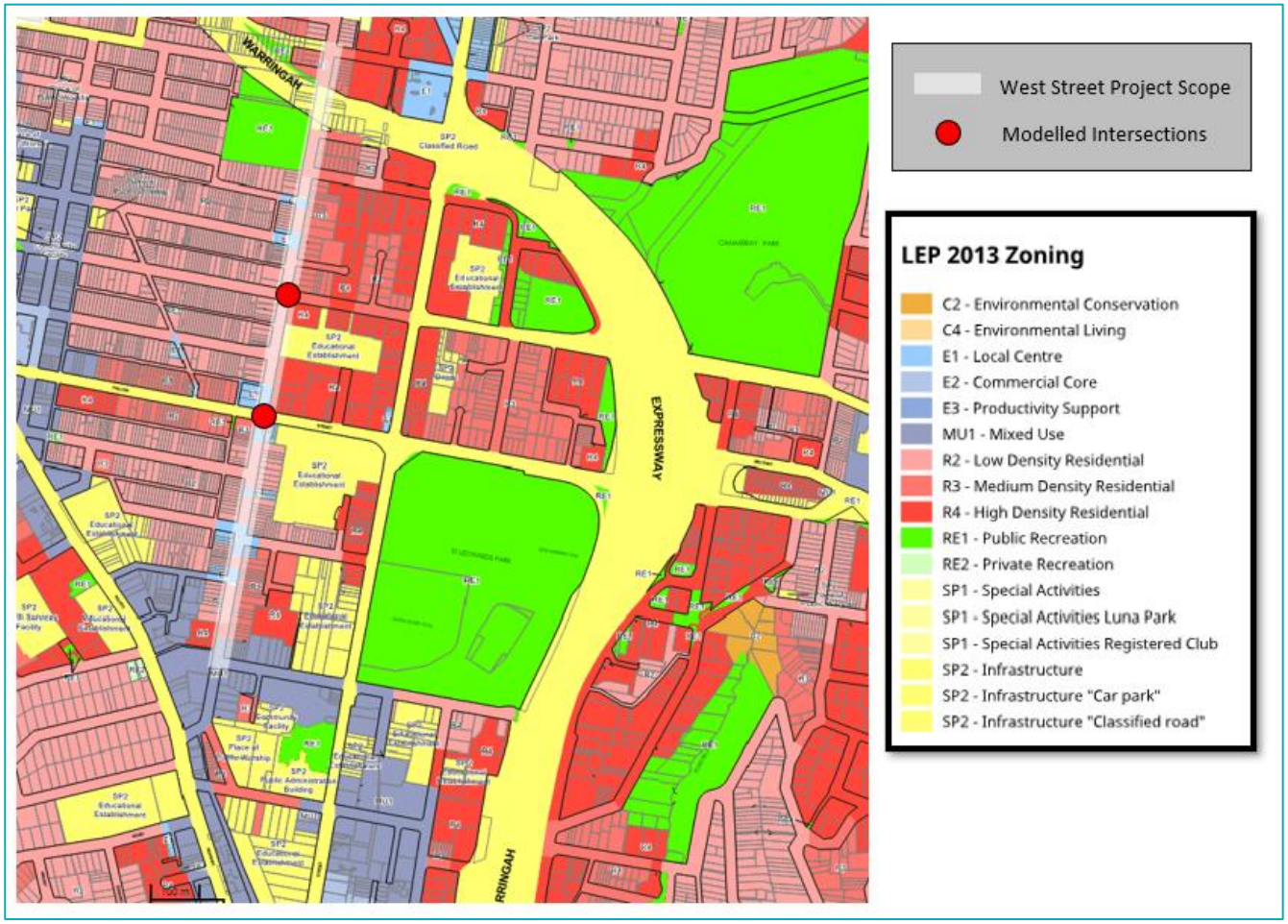


Figure 2-2 Planning Zones (Source: North Sydney Council Planning Maps modified by Beca)

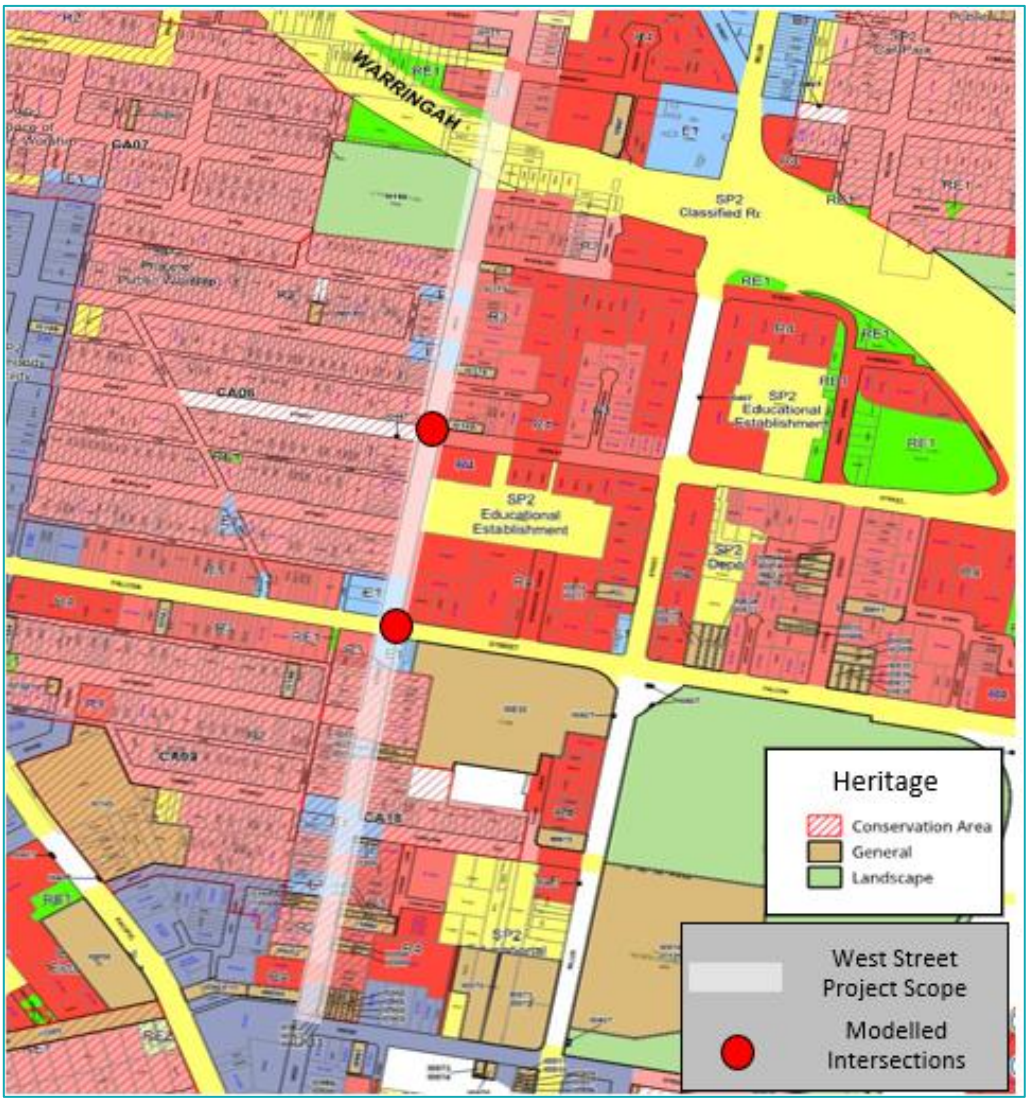


Figure 2-3 Heritage Areas Map (Source: North Sydney Council Planning Maps modified by Beca)

2.4 Road Network

2.4.1 Road Hierarchy

Roads within New South Wales (NSW) are categorised based on their classification and function as presented in Table 2-1 below.

Table 2-1 NSW Road Classification and Functional Hierarchy

Classification	Hierarchy	Function	Ownership /Management
State Roads	Freeways and Primary Arterials	Provide for vital or major movements of goods and services, people, and public transport to centres of regional economic or social significance	Transport for NSW (TfNSW)
Regional Roads	Secondary or Sub-arterials	Provide for medium level movements of people, goods and services and public transport to centres of local economic or social significance	Councils with substantial funding assistance from the State Government

Classification	Hierarchy	Function	Ownership /Management
Local Roads	Collector and Local Access Roads	Provide for local circulation and access to property and provide connection to the State and Regional Roads	Councils with limited funding assistance from the State Government

The classification and functional hierarchy of the Project's key roads are presented in Table 2-2 and shown in Figure 2-4.

Table 2-2 Road Classification and Functional Hierarchy of key roads

Road	Classification	Functional Hierarchy
West Street	Local	Collector
Ernest Street	Regional/Local	Sub-Arterial
Falcon Street	Regional	Sub Arterial

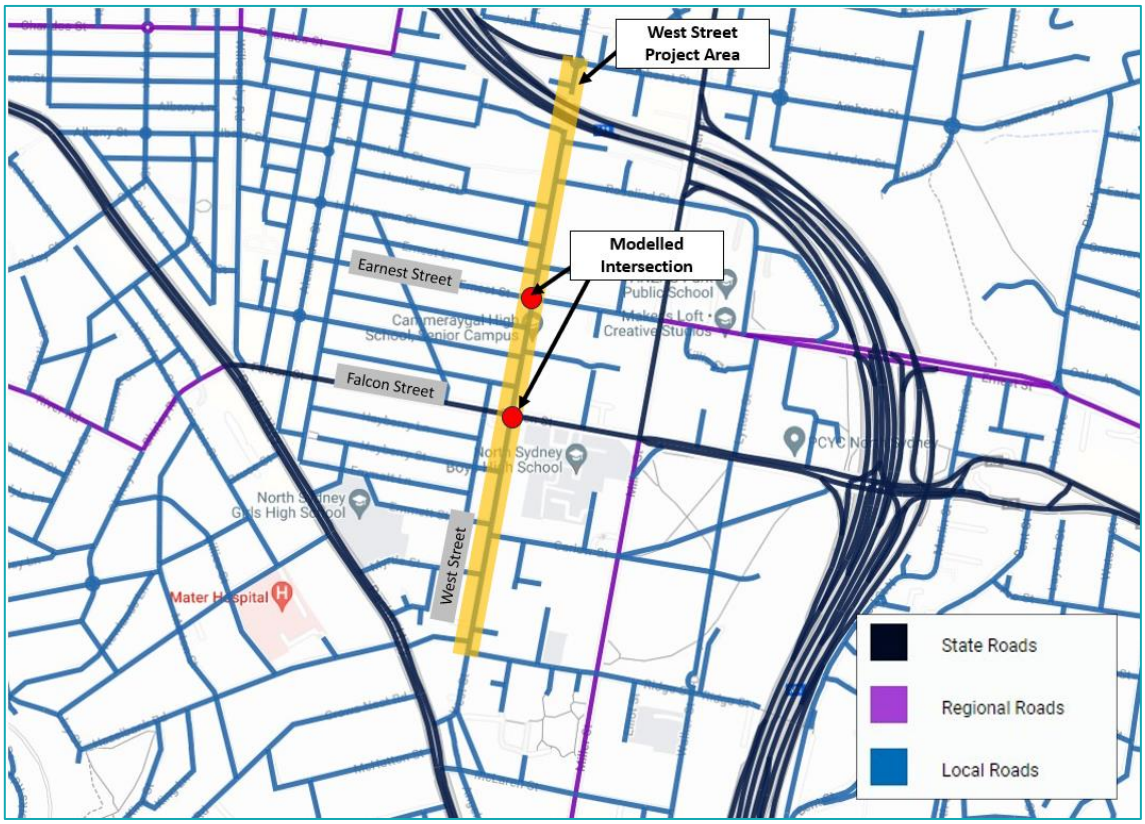


Figure 2-4 Road classification around West Street (Source: TfNSW Road Classification map modified by Beca)

2.4.2 Road characteristics

2.4.2.1 West Street

West Street (shown in Figure 2-5) is a local road which connects Four Figs Park to the Pacific Highway. It runs in a north to south alignment and forms signalised intersections with Ernest Street and Falcon Street.

Figure 2-5 West Street, viewed southwards towards Pacific Highway (Image Source: Google Street View)

The key features of West Street are detailed in Table 2-3.

Table 2-3 Key Features of West Street

Key Features	Description
Classification	Local Road
Carriageway	• Dual carriageway with a single lane • 12m wide
Posted Speed limit	50 kph with 40kph school zones
Active Transport	Footpaths are provided on both sides. There is provision for cycling on the shoulder which also allows for on-street parking.
Public Transport	One bus stop is located on West Street with bus route 263, 267, 690W operating at this stop.
Parking	Kerbside parking permitted on both sides of the road with AM/PM Peak clearways leading up to the Falcon Steet intersection

2.4.2.2 Ernest Street

Ernest Street (shown in Figure 2-6) is a local road with split classification. It runs in an east to west alignment from Ben Boyd Road to Alexander Street. From the intersection with Miller Street, it becomes a regional road, providing connection to the eastern suburbs of the North Sydney area.

Figure 2-6 Ernest Street, viewed westwards towards West Street (Image Source: Google Street View)

The key features of Ernest Street are detailed in Table 2-4.

Table 2-4 Key Features of Ernest Street

Key Features	Description
Classification	Regional/Local
Carriageway	• Dual carriageway with a single lane • 12m wide
Posted Speed limit	50 kph with 40kpm School zones
Active Transport	Footpaths are provided on both sides.
Public Transport	There are two bus stops is located on Ernest Street. One by the intersection with West Street, and the other by the intersection with Miller Street. West Street bus stop routes: 263, 267, 690w Miller Street bus stop routes:263, 267
Parking	Kerbside parking permitted on both sides of the road

2.4.2.3 Falcon Street

Falcon Street is a regional road running in an east to west alignment between the Pacific Highway and the Warringah Freeway.

Figure 2-7 Falcon Street, viewed westwards towards West Street (Image Source: Google Street View)

The key features of Falcon Street are detailed in Table 2-5.

Table 2-5 Key Features of Falcon Street

Key Features	Description
Classification	Regional
Carriageway	• Dual carriageway with two lanes • 12m wide
Posted Speed limit	60 kph with 40kpm School zones
Active Transport	Footpaths are provided on both sides.
Public Transport	There are eight bus stops along this road, three of which are by the intersection with West Street servicing the following routes: 114,144, 688w
Parking	Kerbside parking permitted on both sides of the road from 7pm to 6am Monday to Friday and from 6.30pm to 8:30am on Saturday and Sunday when the clearway is not being enforced

2.4.3 Traffic Volumes

Matrix Traffic and Transport Data Pty Ltd was engaged to undertake pedestrian and traffic turning movement counts on Thursday 19th of October and Saturday 21st of October 2023 over a 12-hour period.

The count locations are shown in Figure 2-8.

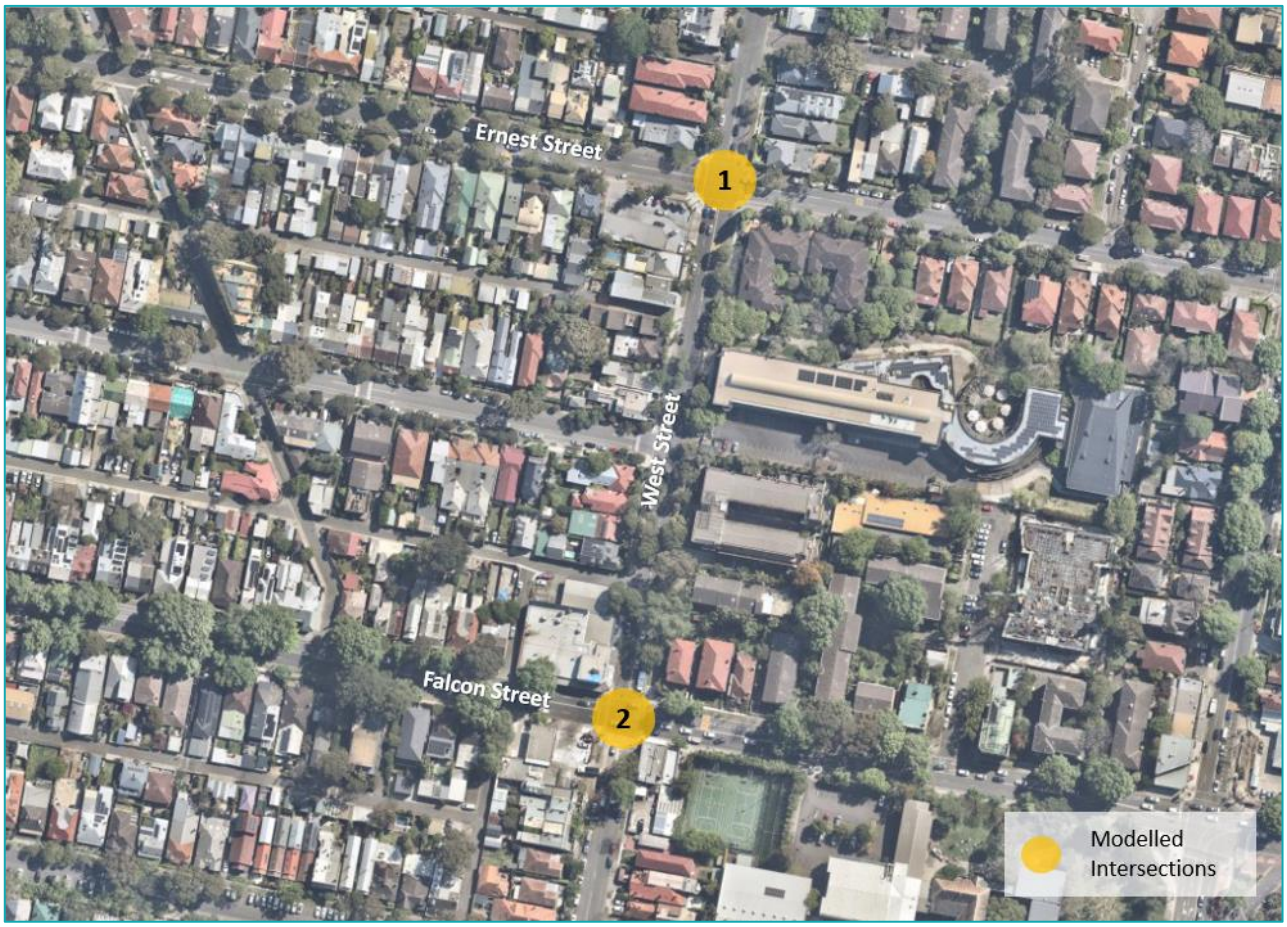


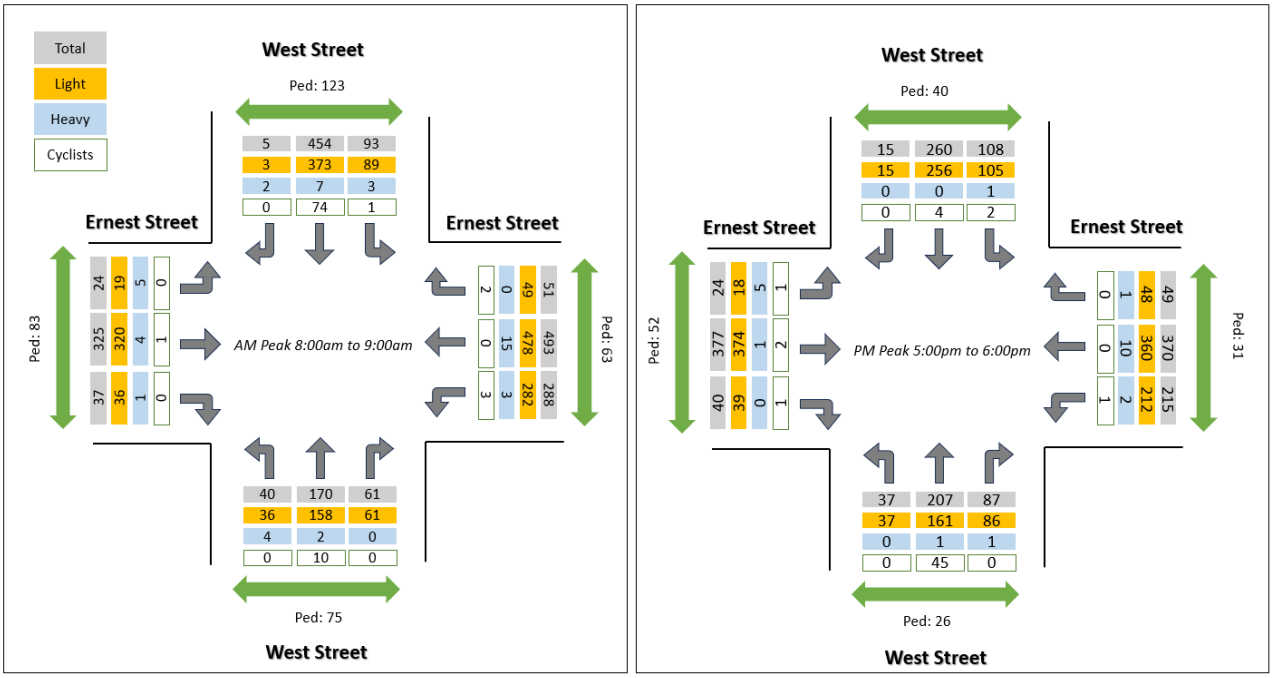
Figure 2-8. Traffic Counts Locations (Source: Nearmap modified by Beca)

A summary of the surveys undertaken and observed peak hours are presented in Table 2-6.

Table 2-6. Traffic Survey Summary

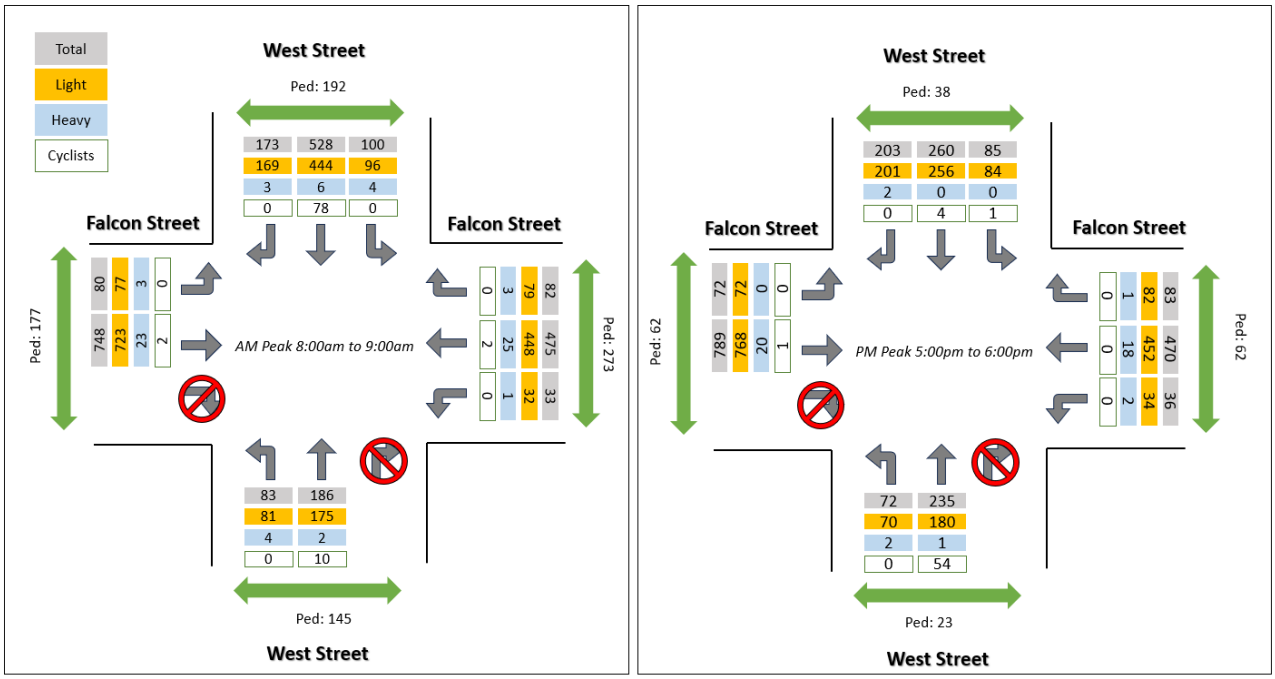
Reference	Count Type	Location	Weekday		Weekend
			AM Peak	PM Peak	
1	Turning Movements and Pedestrian Count	Ernest Street/ West Street	8:00-9:00AM	5:00-6:00PM	11:30-12:30PM
2	Turning Movements and Pedestrian Count	Falcon Street/ West Street	8:00-9:00AM	5:00-6:00PM	11:30-12:30PM

A summary of the surveyed Weekday AM and PM and Weekend peak hour traffic volumes at the key intersections are presented in Figure 2-9, Figure 2-10, and Figure 2-11 below. The full set of traffic count data is attached in ***Appendix A*** – *Traffic Survey Results.*



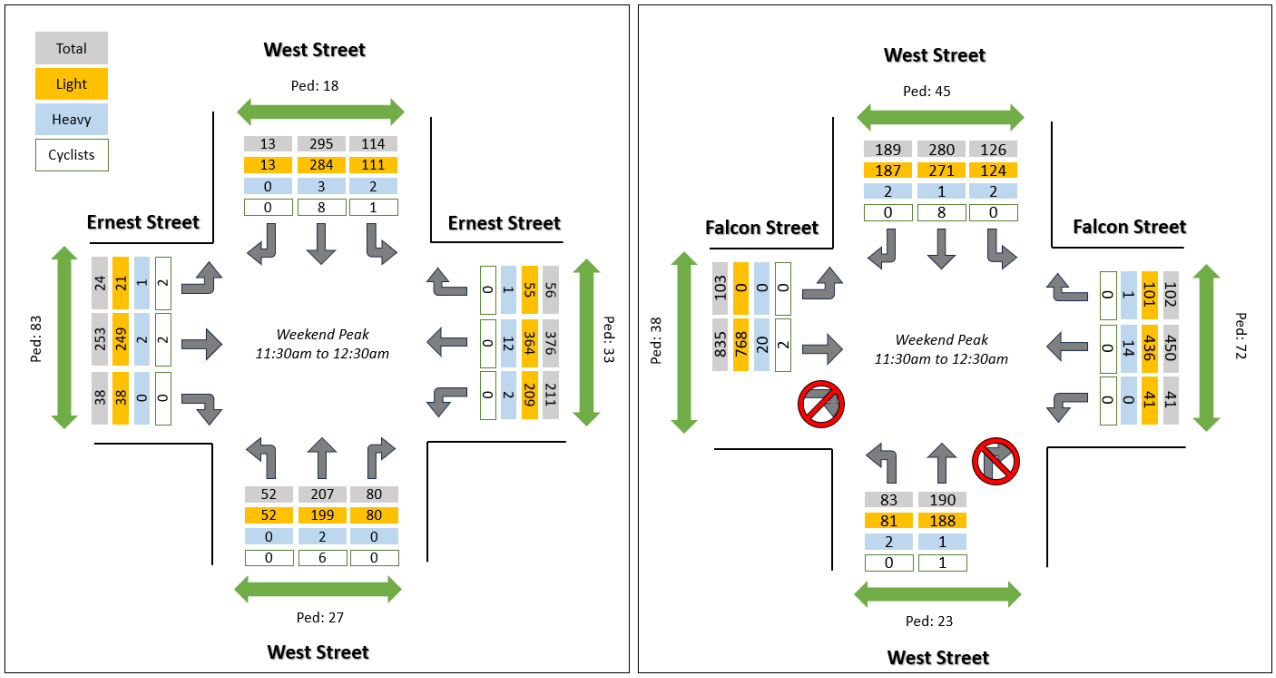
Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Figure 2-9. Weekday Traffic Counts of Ernest Street and West Street Intersection



Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Figure 2-10. Weekday Traffic Counts of Falcon Street and West Street Intersection



Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Figure 2-11 Weekday Traffic Counts of Two Intersections

2.5 Active Transport

Active transport facilities in proximity to the project study area are footpaths along Ernest Street and Falcon Street and on-road shared road shoulder along West Street. West Street is a part of the strategic cycling route in North Sydney. It connects with the bi-directional cycle lanes on Ridge Street providing access to open spaces such as the North Sydney Oval in St Leonards Park

Other cycling features in the area are shown in Figure 2-12, including:

- Non-separated cycle lane on the one-way Huntington Street.
- Bike paths on Warringah Freeway that connect to the north of West Street
- Hazelbank Place share path connecting Pacific Highway to West Street.
- Ridge Street Cycleway, forming a section of Route 5 North Sydney to Cremorne identified in the North Sydney Integrated Cycling Strategy

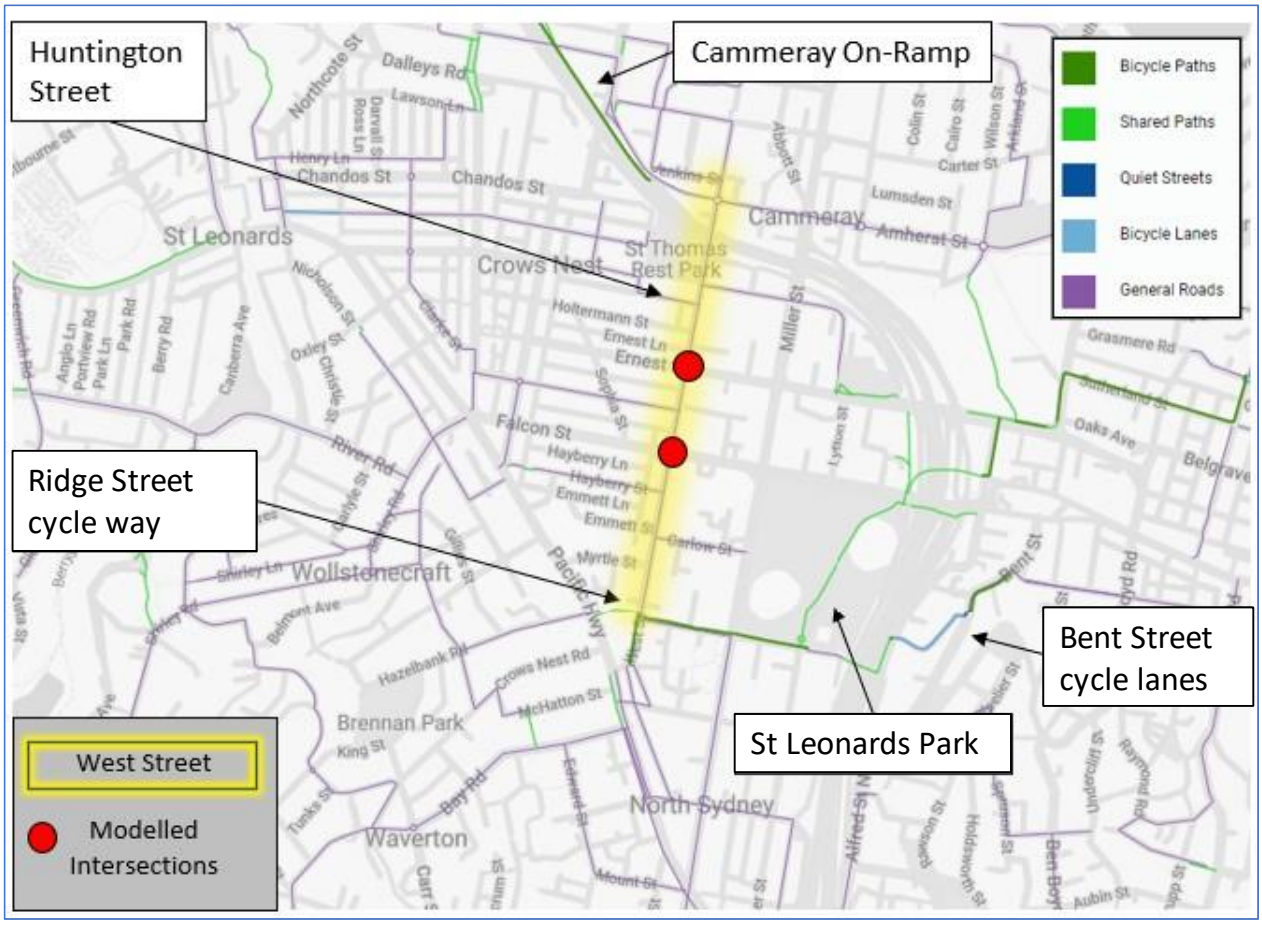


Figure 2-12 Wider North Sydney cycling paths (Source: NSW Cycleway Finder modified by Beca)

2.6 Public Transport

Public transport along and around West Street is accessible with several bus stops within a 300m catchment on West Street and its surrounding streets. There are 4 train stations within a 25-minute walk, or a 20-minute bus ride. The three routes that use the bus stop on West Street situated just before Huntington Street are:

- 263 City Gresham Street/Crows Nest – This bus route travels from Crows Nest and turns onto West Street at Ernest Street and circles around south to the Harbour Bridge and into the city at Gresham Street. This service runs every 30 minutes during peak times and then every 45 minutes on non-peak times (10am-3pm)
- 267 Chatswood – This bus route has the same origin point as the 263 but travels north to Chatswood. This service runs every 30 minutes during peak times, and every hour in non-peak times (10am-3pm)
- 690w East Willoughby – A school bus that operates only in the afternoons on weekdays with two buses leaving shortly after each other along the same route.

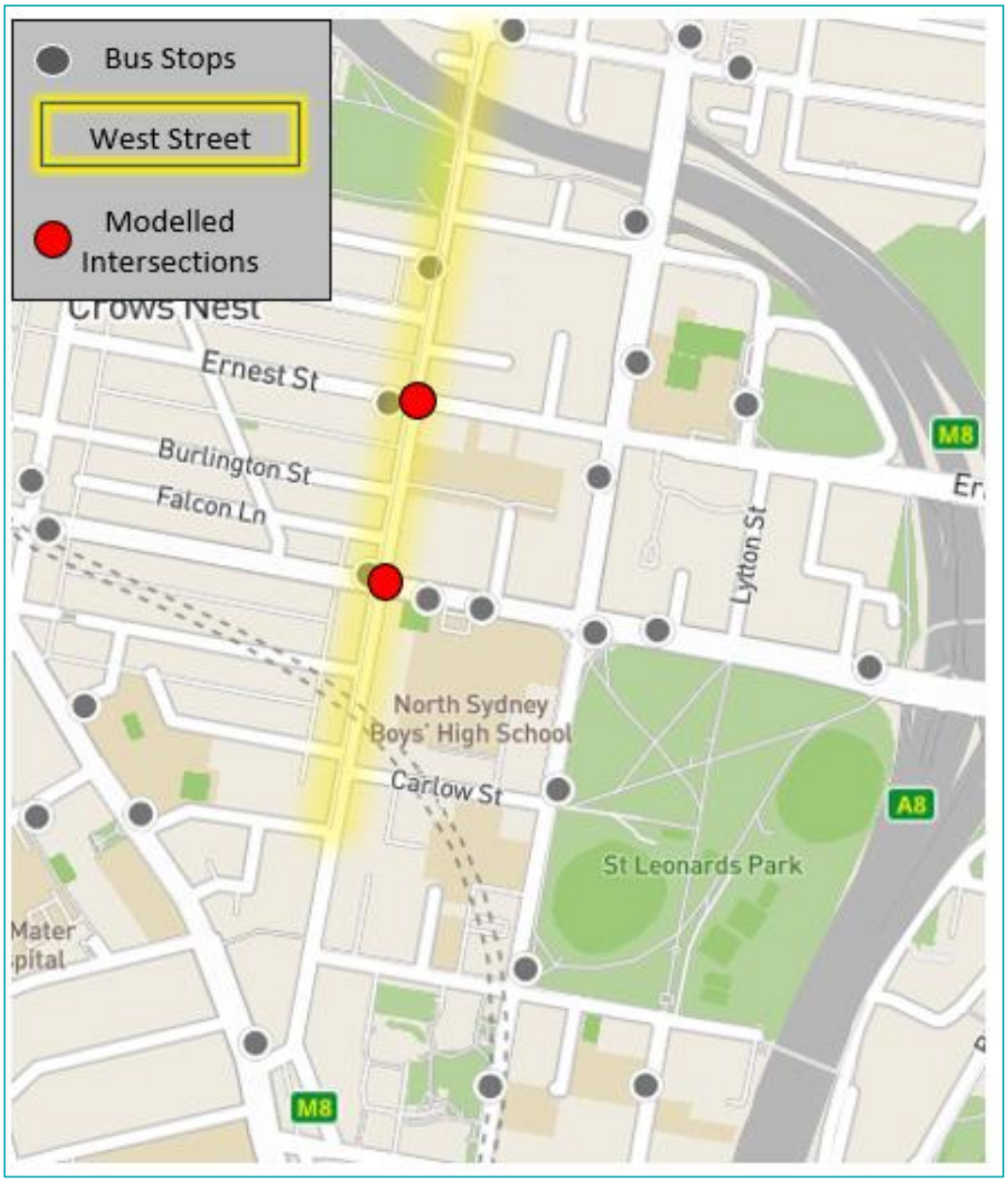


Figure 2-13 Bus Stops on and around West Street. (Source NSW Transport Trip Planner Modified by Beca)

2.7 Parking

2.7.1 West Street

Timed on-street parking is implemented along West Street. Some timed on-street parking zones have specific duration during which the restrictions are enforced e.g., half hour or one hour parking between 8:30am and 6pm, Monday to Friday. The on-street parking areas are currently shared by parked vehicles and cyclists.

2.7.2 Falcon Street

There is a dedicated clearway, marked with yellow dashed lines on the kerb lane, that is implemented on Falcon Street to the east of West Street between 8am-10am and 2pm-7pm, Monday to Friday. A no parking zone is also implemented from the bus stop to the intersection with West Street. On the western side of the

intersection, a no stopping zone and a 50m bus zone are implemented. There is also a dedicated clearway that is implemented between 6am and10am and between 3pm and 7pm, Monday to Friday.

2.7.3 Ernest Street

There is a no stopping zone 50m before the intersection on Ernest Street to the east of West Street, which is implemented at all times. A 20m extension of this zone is being implemented between 6am and 10am, Monday to Friday. On the west side of the intersection, there is a 35m bus zone and timed on-street parking areas which are actively monitored between 8am and 6pm.

2.8 Road Safety

2.8.1 Crash history

Road crash information from 2018 to 2022 in the below locations (See Table 2-7) was collected from road crash statistics published by NSW Centre for Road Safety. There have been 13 crashes recorded along West Street from 2018 to 2022. Six of these crashes have occurred at the intersections of West Street with Ernest Street (3) and Falcon Street (3). One fatal crash occurred in 2022 between Rosalind Street and Huntington Street which was caused by running off the road into an object. Seven crashes were recorded in 2018 alone, three of which resulted to serious injuries.

Table 2-7 Crash Summary (2018-2022)

Location	Number of Crashes	Fatal	Serious	Moderate	Minor	Non-Injury
West Street	7	1	2	2	1	1
Falcon Street Intersection	3	0	1	1	0	1
Ernest Street Intersection	3	0	1	1	0	1

The predominant crash types are cross traffic and left turn sideswipe crashes at intersections. Of the 13 crashes recorded, 10 occurred at intersections, with one being on the roundabout at Amherst/West Street. Of these 10 crashes, half of them happened in the dark,

These can be attributed to poor visibility and inadequate lighting at intersections or poor driver behaviour such as speeding and running red lights.

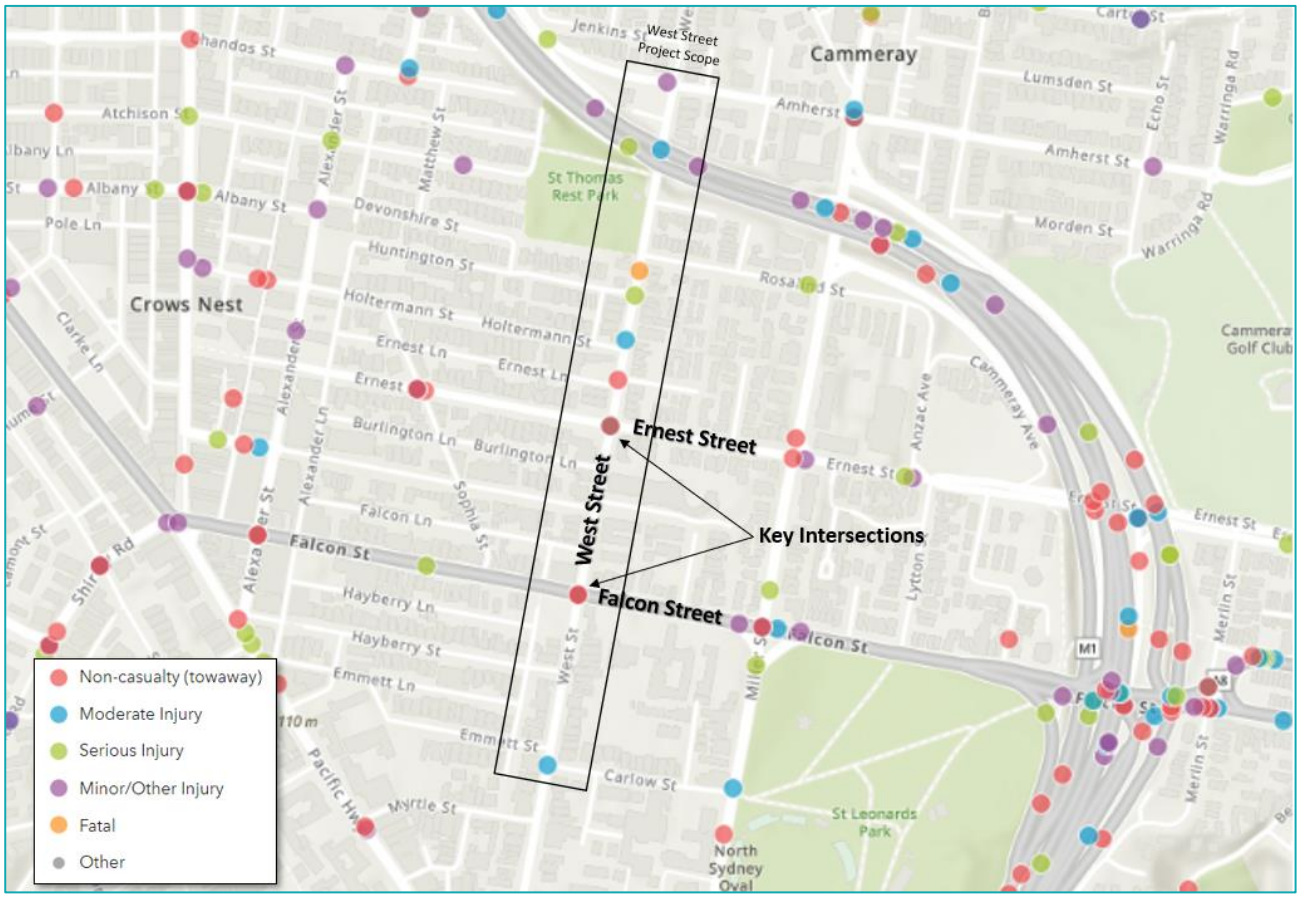


Figure 2-14 Crash History (Source: LGA View-Crashes Map modified by Beca)

3 Proposed Development

3.1 West Street Bi-directional Cycle Way

North Sydney Council, as part of their Integrated Cycling Strategy, is planning to install a bi-directional cycleway on the western side of West Street along with a number of safety improvements and upgrades to the current road layout. The Project will provide a dedicated cycleway, along a major cycle route that connects existing cycleways together with a cycleway separator.

3.1.1 Ernest Street and West Street intersection

The proposed plan for the Ernest Street and West Street intersection is presented in Figure 3-1 which includes the following:

- 2.4m Bi-directional cycleway along the west side of West Street
- New right-turn ban with reduction on the number of lanes on the North approach of West Street
- Adjustment of lane width through reduction of entry and exit lanes on West Street

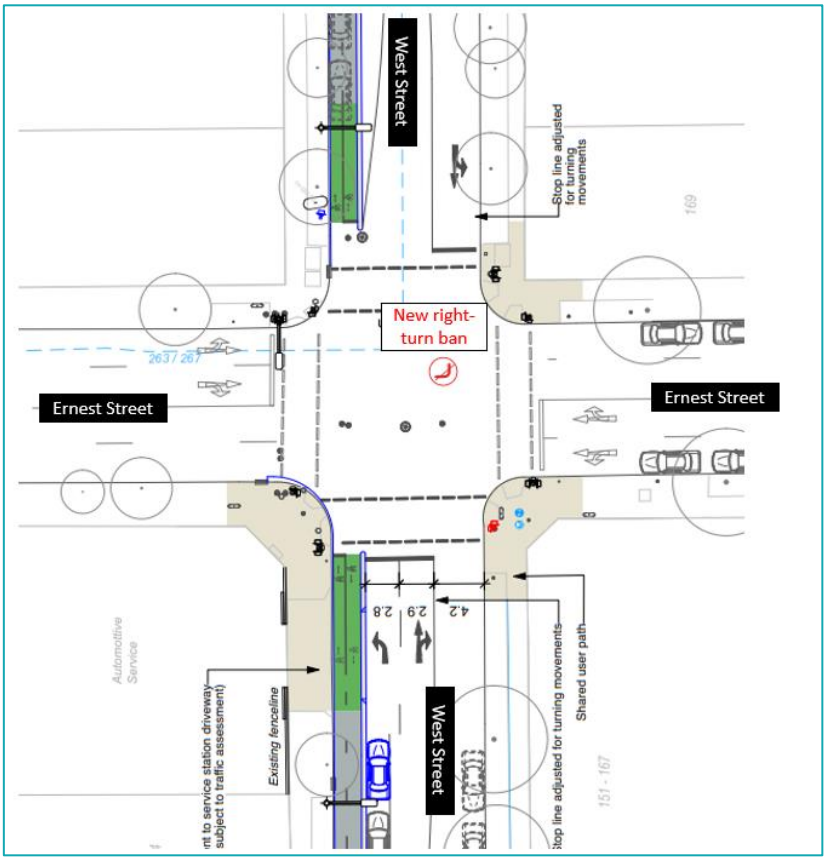


Figure 3-1 Proposed plan of Ernest and West Street Intersection

3.1.2 Falcon Street and West Street intersection

The proposed plan for the Ernest Street and West Street intersection is presented in Figure 3-2 and includes the following:

- 2.4m bi-directional cycleway along the west side of West Street
- Adjustment of lane width through reduction to one entry and one exit lane on the south approach leg of West Street

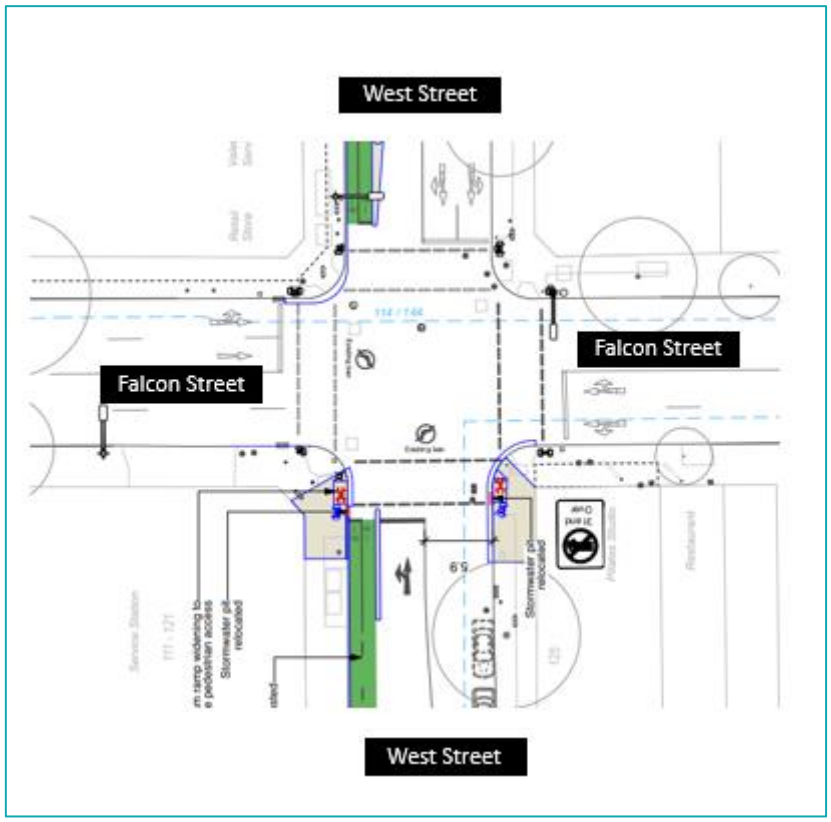


Figure 3-2. Proposed plan of Falcon and West Street Intersection

3.1.3 Parking

The project includes removal of 17 on-street car park spaces along West Street with 15 being reinstated along the developed area.

Two on-street car park spaces will be removed on the North approaches of the Ernest Street and West Street intersection and Falcon Street and West Street intersection due to the proposed lane reductions as shown in Figure 3-3 and , respectively. This will allow better manoeuvrability for turning vehicles and help improve traffic flow at the intersections.

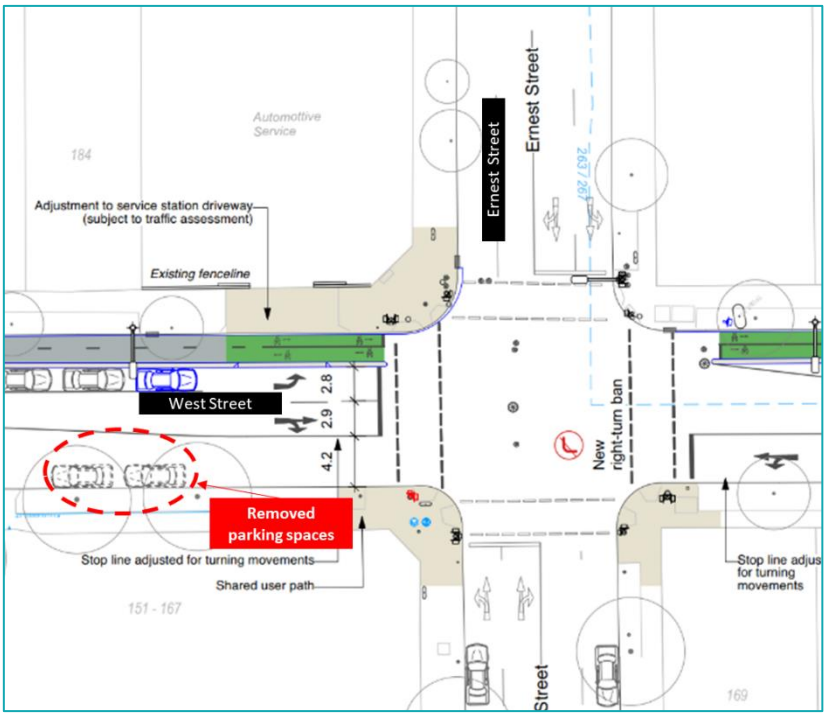


Figure 3-3 Removed parking spaces near Ernest Street intersection.

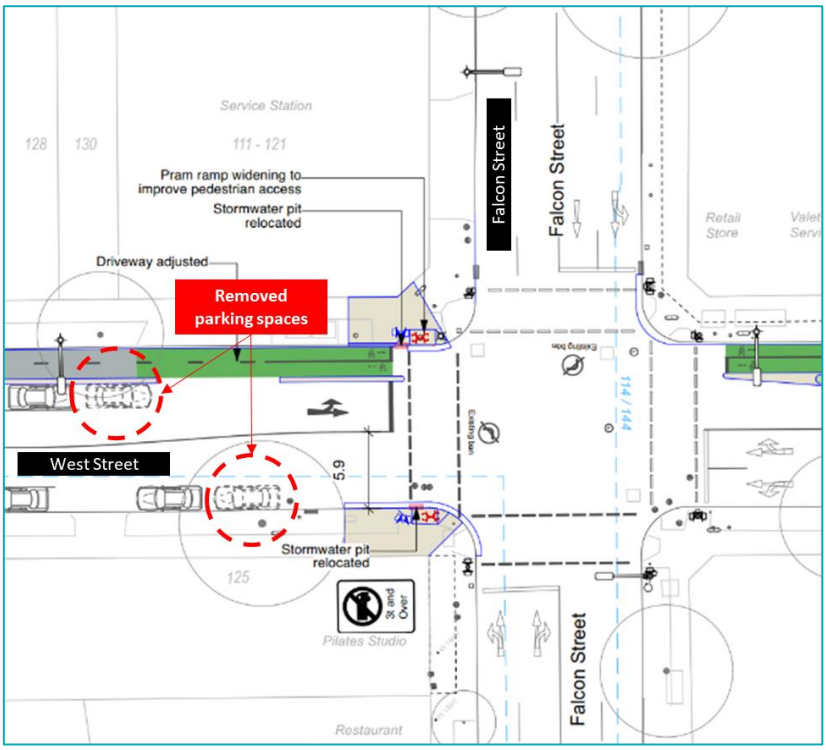


Figure 3-4 Removed parking spaces near Falcon Street intersection.

4 Traffic Impact Assessment

4.1 Road Network

SIDRA intersection modelling was used to assess the performance of the below intersections with and without the proposed plans:

- Ernest Street and West Street
- Falcon Street and West Street

The performance measures adopted for this assessment are:

- **Degree of Saturation (DoS):** is the ratio of arrival (demand) flow rate to capacity during a given flow period. A value of above 0.90 indicates the intersection is reaching capacity, a value of above 0.90 for a critical movement is common for a significant number of suburban intersections.
- **Level of Service (LoS):** is primarily used as a limit control for proposed scenario to ensure that the scenario represents a practical proposal. As a performance measure, the minimum requirement is LoS D for intersections in project scenarios for the future design year.
- **Average delay:** The delay in seconds that can be expected for all vehicles undertaking a particular movement.
- **95th Percentile Queue Length:** The maximum queue length in metres that can be expected in 95% of observed queue lengths in the peak hour

The following assumptions were made in modelling the intersections:

- No traffic forecasting has been undertaken for this assessment. Surveyed traffic volumes were used as model inputs for both ‘existing’ and ‘proposed’ scenarios.
- Generally, default SIDRA values have been used.
- Due to the relatively high number of pedestrians at the intersections, walk time extension to pedestrian timing has been applied.

The existing and proposed configurations for the above intersections are shown in Figure 4-1 and Figure 4-2 below.

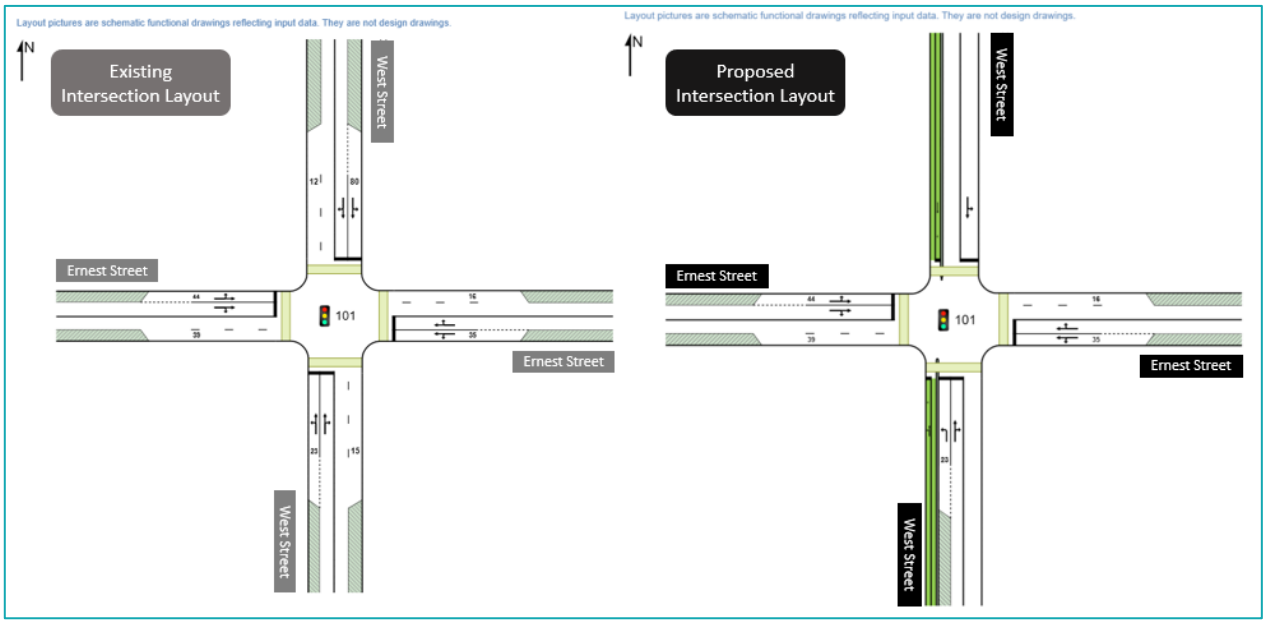


Figure 4-1 Existing and Proposed Layouts of the Ernest-West Street Intersection

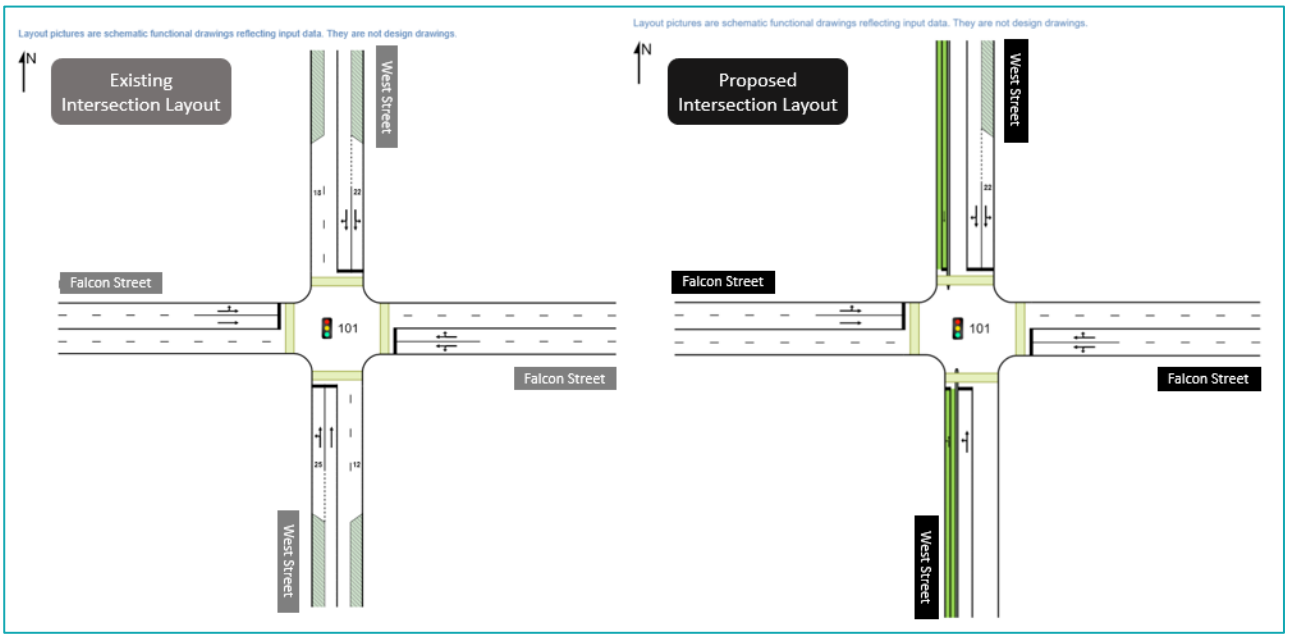


Figure 4-2. Existing and Proposed Layouts of the Falcon-West Street Intersection

4.2 Vehicle Movements

A comparison of vehicle movement modelling results during the weekday and weekend peak periods between the existing (base case) and the proposed layouts are shown in Table 4-1 (AM Peak), Table 4-2 (PM Peak), and Table 4-3 (Weekend Peak) below. Outputs from the SIDRA intersection modelling are provided in full in ***Appendix B*** *– SIDRA Modelling Results*.

Table 4-1. Modelling Results of AM Peak hour (Weekday)

AM Peak									
Intersection	Approach	Base Case				Proposed Layout			
		DoS	Average Delay (sec)	LoS	95% Back of Queue (m)	DoS	Average Delay (sec)	LoS	95% Back of Queue (m)
West Street and Ernest Street	South Approach	0.714	27.4	C	45.7	0.805*	29.9*	C*	53.9*
	East Approach	0.834	19.1	B	118.8	0.873	22.7	C	133.1
	North Approach	0.767	24.6	C	90.9	0.804*	26.6*	C*	108.8*
	West Approach	0.445	14.2	B	49.0	0.464	15.0	B	50.2
	All Vehicle	0.834	20.8	C	118.8	0.873	22.9	C	133.1
West Street and Falcon Street	South Approach	0.978	82.4	F	104.5	0.865*	45.3*	D*	87.4*
	East Approach	0.776	47.2	D	190.3	0.627	27.0	C	104.2
	North Approach	0.968	57.3	E	309.0	0.963*	69.9*	E*	156.6*
	West Approach	0.959	77.9	E	241.8	0.927	50.3	D	160.3
	All Vehicle	0.978	64.5	E	309.0	0.963	39.5	D	160.3

* The scenario with the proposed layout is only shown in vehicle lane summary only on West Street (South-North Approach), excluding the results of cycle lanes

- Intersection of West Street and Ernest Street

  The SIDRA modelling results **during the AM peak** indicate that the implementation of the proposed layout will result to a slight increase in flow rate, average delay, and queuing at the intersection due to the reduced capacity at the approaches. The level of service, however, will still be at Los C which means that the intersection will still perform satisfactorily with stable vehicle flows and acceptable delays; and will still have capacity to accommodate future vehicle demand.

- Intersection of West Street and Falcon Street

  The SIDRA modelling results **during the AM peak** indicate that the implementation of the proposed layout will result to improved flow rate, average delay, and queuing at the intersection. The level of service will also improve from LoS E (at capacity) to LoS D (near capacity). Since the intersection

will still operate near capacity, vehicle flow is expected to become unstable with tolerable delays. Drivers may have to wait through more than one red light at the intersection and queuing may form behind turning vehicles occasionally.

Table 4-2. Modelling Results of PM Peak hour (Weekday)

PM Peak								
Intersection	Approach	Base Case				Proposed Layout			
		DoS	Average Delay (sec)	LoS	95% Back of Queue (m)	DoS	Average Delay (sec)	LoS	95% Back of Queue (m)
West Street and Ernest Street	South Approach	0.569	22.4	C	39.1	0.618*	25.3*	C*	42.2*
	East Approach	0.606	13.9	B	69.8	0.658	15.3	B	74.1
	North Approach	0.499	20.5	C	49.1	0.576*	20.4*	C*	66.1*
	West Approach	0.488	14.4	B	56.6	0.513	15.2	B	58.1
	All Vehicle	0.606	16.9	B	69.8	0.658	17.6	B	74.1
West Street and Falcon Street	South Approach	0.927	54.8	D	79.7	0.932*	55.3*	D*	94.7*
	East Approach	0.654	30.8	C	123.9	0.588	25.6	C	99.5
	North Approach	0.933	44.2	D	154.5	0.945*	62.9*	E*	77.6*
	West Approach	0.938	57.2	E	187.8	0.914	46.8	D	160.0
	All Vehicle	0.938	47.1	D	187.8	0.945	38.9	D	160.0

* The scenario with the proposed layout is only shown in vehicle lane summary only on West Street (South-North Approach), excluding the results of cycle lanes

- Intersection of West Street and Ernest Street

  The SIDRA modelling results **during the PM peak** indicate that the implementation of the proposed layout will result to a slight increase in flow rate, average delay, and queuing at the intersection due to the reduced capacity at the approaches. The level of service, however, will still be at LoS B which means that the intersection will still perform well with stable flows and slight delays; and will still have spare capacity to accommodate future vehicle demand.

- Intersection of West Street and Falcon Street

  The SIDRA modelling results **during the PM peak** indicate that the implementation of the proposed layout will result to improved delays and queuing at the intersection. The level of service will still be at LoS D and the intersection will still operate near capacity. As such, vehicle flow is expected to become unstable with tolerable delays similar to the AM peak. Drivers may have to wait through more than one red light at the intersection and queuing may form behind turning vehicles occasionally.

Table 4-3 Modelling Results of Weekend Peak hour

PM Peak									
Intersection	Approach	Base Case				Proposed Layout			
		DoS	Average Delay (sec)	LoS	95% Back of Queue (m)	DoS	Average Delay (sec)	LoS	95% Back of Queue (m)
West Street and Ernest Street	South Approach	0.733	14.8	B	32.2	0.715*	24.9*	C*	60.2*
	East Approach	0.809	14.2	B	56.5	0.732	17.7	B	85.0
	North Approach	0.652	14.1	B	33.0	0.581*	19.0*	B*	71.6*
	West Approach	0.504	11.6	B	24.3	0.418	16.6	B	41.2
	All Vehicle	0.809	13.6	B	56.5	0.732	18.9	B	85.0
West Street and Falcon Street	South Approach	0.897	64.7	E	92.9	0.916*	61.7*	E*	119.9*
	East Approach	0.689	39.6	D	175.5	0.644	32.1	C	138.6
	North Approach	0.919	47.9	D	201.8	0.909*	62.0*	E*	96.1*
	West Approach	0.894	56.6	E	232.8	0.899	50.5	D	202.0
	All Vehicle	0.919	51.2	D	232.8	0.916	43.0	D	202.0

* The scenario with the proposed layout is only shown in vehicle lane summary only on West Street (South-North Approach), excluding the results of cycle lanes

- Intersection of West Street and Ernest Street

  Similar with the PM Peak, SIDRA modelling results **during the Weekend peak** indicate that the implementation of the proposed layout will result to a slight increase in flow rate, average delay, and queuing at the intersection due to the reduced capacity at the approaches. The level of service will still be at LoS B which means that the intersection will still perform well with stable flows and slight delays; and will still have spare capacity to accommodate future vehicle demand.

- Intersection of West Street and Falcon Street

  Similar with the PM Peak, SIDRA modelling results **during the Weekend peak** indicate that the implementation of the proposed layout will result to improved delays and queuing at the intersection. The level of service will still be at LoS D and the intersection will still operate near capacity. As such, vehicle flow is expected to become unstable with tolerable delays like during the AM peak. Drivers may have to wait through more than one red light at the intersection and queuing may form behind turning vehicles occasionally.

4.3 Active Modes

4.3.1 Cycling movements

The performance of the proposed cycle lanes at the intersections during the weekday and weekend peak periods are shown in Table 4-4.

Table 4-4. Cycling movement summary

Scenarios	Intersection	Approach lane	DoS	Average Delay (sec)	LoS	95% Back of Queue (m)
Weekday (AM Peak)	West Street and Ernest Street	South Approach	0.005	14.6	B	0.5
		North Approach	0.040	16.1	B	4.1
	West Street and Falcon Street	South Approach	0.007	27.5	C	0.7
		North Approach	0.029	12.7	B	4.6
Weekday (PM Peak)	West Street and Ernest Street	South Approach	0.023	14.0	B	2.4
		North Approach	0.002	15.0	B	0.2
	West Street and Falcon Street	South Approach	0.056	29.8	C	5.0
		North Approach	0.002	13.0	B	0.2
Weekend Peak	West Street and Ernest Street	South Approach	0.003	12.4	B	0.3
		North Approach	0.004	13.7	B	0.4
	West Street and Falcon Street	South Approach	0.001	35.5	D	0.1
		North Approach	0.003	14.4	B	0.6

As shown above, cycleway at the Ernest Street and West Street intersection are anticipated to operate with stable flows with slight delays during the peak periods. At Falcon Street and West Street intersection, on the other hand, the north approach will have stable flows while longer delays are expected at the south approach especially during the weekend peak period which can be attributed to higher volume of recreational cyclists during the weekends.

4.3.2 Pedestrian movements

The comparison of pedestrian level of service and delay per person between the existing and proposed layouts are presented in Figure 4-3 and Figure 4-4.

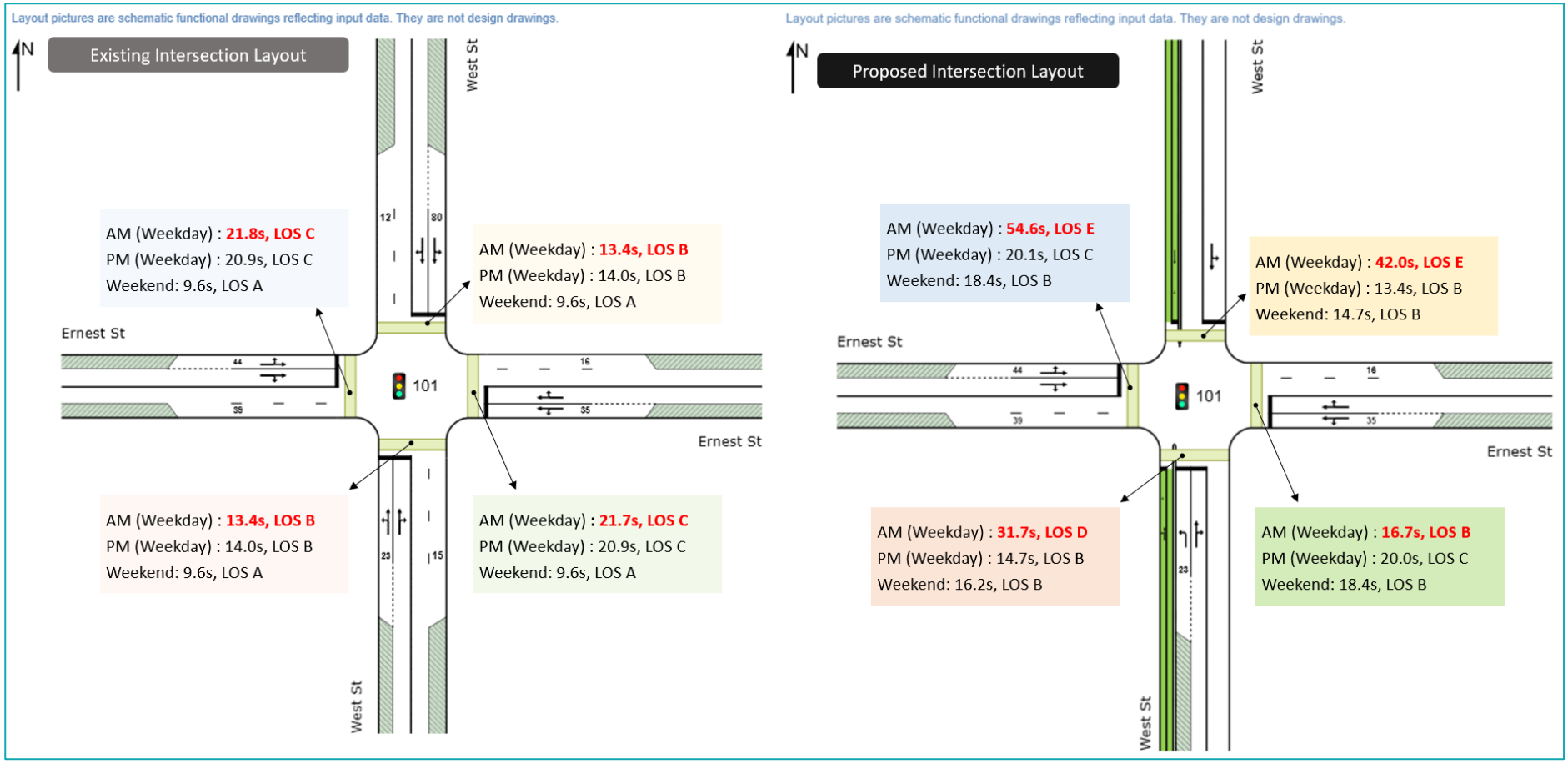


Figure 4-3. Pedestrian Movement Comparison - Ernest and West Street Intersection (the results significantly impacted were indicated in red)

- Intersection of Ernest Street and West Street

The existing level of service for pedestrian movement at this intersection ranges from LoS B to LoS C during the weekday peak periods. This means that there may be occasional and noticeable delays to pedestrians crossing the intersection. However, these delays are still not considered as inconvenient, and the likelihood of risk-taking behaviours is low. The existing level of service during the weekend is LoS A which means that delays are minimal as there is usually no conflicting traffic, so the likelihood of risk-taking behaviour is very low at these times.

On the other hand, the implementation of the proposed layout will result to decrease in the level of service especially during the weekday AM peak. This means that during this peak period, delays are already noticeable and approaching tolerance levels which increase the likelihood of risk-taking behaviours at the intersection.

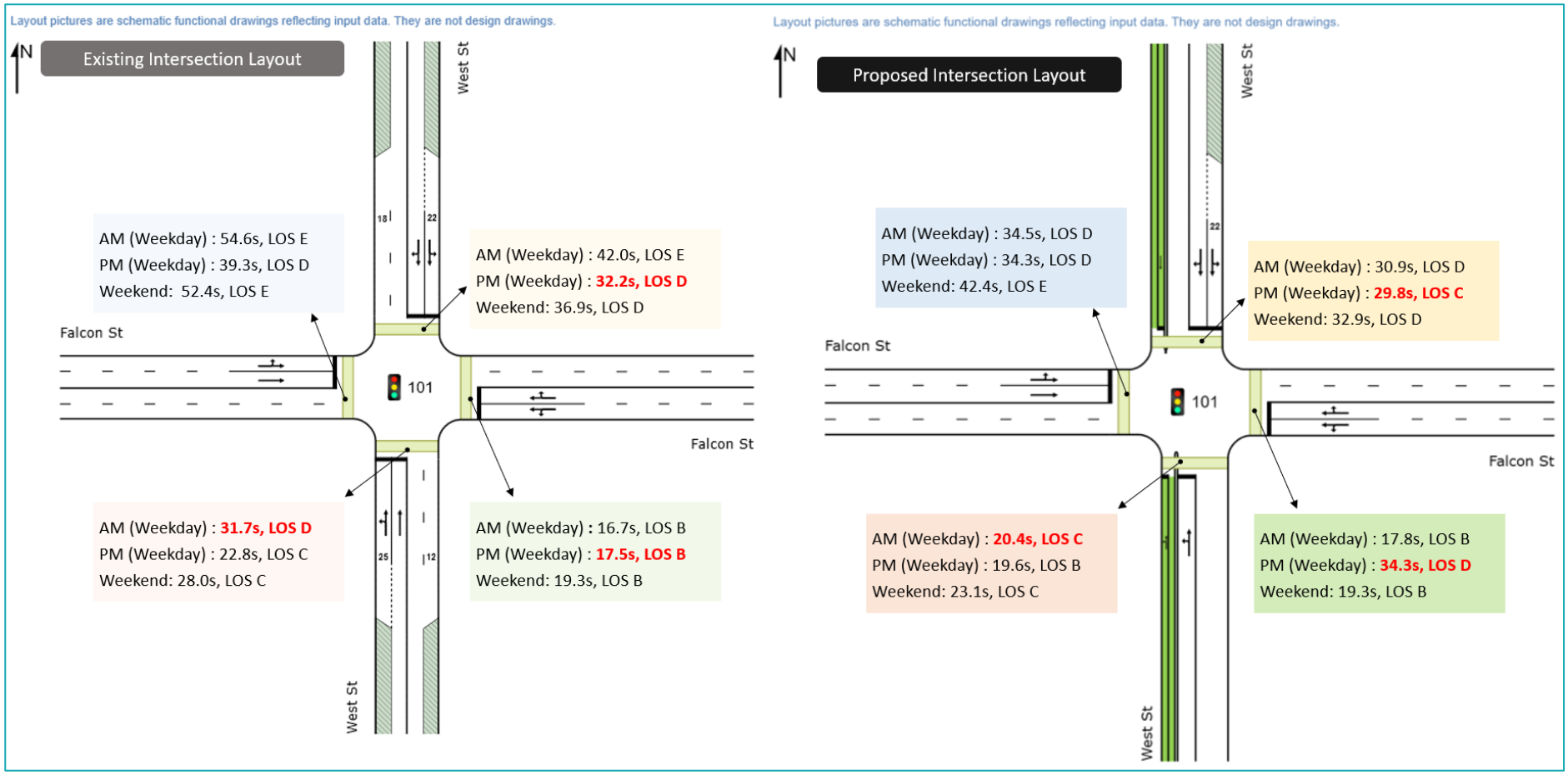


Figure 4-4 Pedestrian Movement Comparison - Falcon and West Street Intersection (the results significantly impacted were indicated in red)

- Intersection of Falcon and West Street Intersection

Contrary to the Ernest Street and West Street intersection, the proposed layout will improve the level of service for pedestrians at the Falcon Street and West Street intersection as shown above. Delays are still noticeable and irritating, and the likelihood of risk-taking behaviours is still high.

4.4 Public Transport

The proposed project will not impact the existing operation of public transport services along West Street. However, the conversion of the existing bus stop to an in-lane stop along West Street will have an impact on the traffic flow as buses stopping and starting within the traffic lane can slow down other vehicles.

4.5 Active Transport

The proposed project is expected to improve active transport provision along West Street and promote cycling as a safe, accessible, and sustainable mode of transport. This can potentially increase cycling mode share and reduce private vehicle use.

4.6 Parking

As previously discussed in Section 3.1.3, the project will involve removal of 17 on-streetcar park spaces along West Street with 15 being reinstated along the developed area. Hence, impact to the provision of on-street parking is negligible. Additionally, the removal of a few parking spaces near the key intersections will allow better manoeuvrability for turning vehicles and help improve traffic flow at these intersections. It will also enhance safety for pedestrians and cyclists through increased visibility. Additionally, parking removal discourages private vehicle use and can help promote more sustainable transport modes.

4.7 Road Safety

Based on the crash analysis described in Section 2.8, the predominant crash types are cross traffic and left turn sideswipe crashes at intersections. Providing bi-directional cycle lanes can increase the overall safety in the transport network as cyclists are directly in the line of sight of drivers. Additionally, marked bi-directional cycle lanes would also allow drivers to predict cyclist movements. As such, conflicts between cyclists and vehicles are reduced

5 Conclusion and Recommendations

The key findings of this TIA are summarised below:

- Analysis of the traffic survey conducted by Matrix Traffic and Transport Data Pty Ltd identified the following peak hours:
    - AM Peak: 8:00-9:00am
    - PM Peak: 5:00-6:00pm
    - Weekend Peak: 11:30am -12:30pm
- Provision for active and public transport are available along the project area (West Street)
- The review of the five-year crash statistics identifies that the predominant crash types are cross traffic and left turn sideswipe crashes at intersections which can be attributed to poor visibility and inadequate lighting at intersections or poor driver behaviour.
- SIDRA modelling indicates that the project will have negligible impacts to the intersection performance of Ernest Street and West Street intersection during the identified peak periods. The intersection, including the cycle lanes, will still perform satisfactorily with stable flows and acceptable delays; and will still have spare capacity to accommodate future vehicle and cyclist demand. The pedestrian level of service will also be satisfactory as delays are minimal and the likelihood of risk-taking behaviour is low.
- For Falcon Street and West Street intersection, on the other hand, SIDRA modelling indicates that the project will result to improved intersection performance compared to the existing layout. The level of service will still be at LoS D and the intersection will still operate near capacity with unstable vehicle flow and tolerable delays. Longer delays are also expected at the cycle lanes at the south approach especially during the weekend peak period. The project will also result to decrease in pedestrian level of service which increases the likelihood of risk-taking behaviours at the intersection.
- The proposed project will also have negligible impacts on public transport and on-street parking provision.
- The proposed project is expected to improve active transport provision along West Street and promote cycling as a safe, accessible, and sustainable mode of transport.

Overall, the project will have negligible impacts to the operational performance of the existing transport network. It should be noted, however, that this is expected to be the worst-case scenario as the assessment did not consider the potential mode shift to active modes after the implementation of the proposed design. The provision of the bi-directional cycleways may potentially influence travel behaviours through the promotion of alternative and more sustainable transport choices, resulting to reduced private vehicle use and improved intersection and network performance.

It should also be noted that the proposed lane widths to accommodate buses along West Street are between 3.1m and 3.9m. Based on the NSW Design Elements for buses and Guidelines for Public Transport Capable Infrastructure in Greenfield Sites (July 2018), the required lane width for streets that buses travel on should be at least 3.2m on roads that are signposted for speeds up to and including 50km/h. Hence, lane widths below 3.2m should be widened to comply with the required minimum standard or concession should be sought.

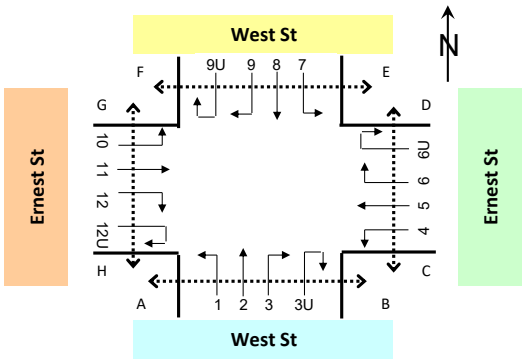
Additionally, though the implementation of the bi-directional cycle lanes will have positive effects at signalised intersections, they can still intersect with pedestrian crosswalks. As such, measures and treatments such as clear markings, dedicated crossing times, and proper signage should be implemented to minimise potential conflicts and optimise safety for all road users.

A

Appendix A – Traffic Survey Results

Job No. : AUNSW7838
Client : North Sydney Council
Suburb : Neutral Bay
Location : 6. West St & Ernest St

Day/Date : Thu, 19 Oct 2023
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

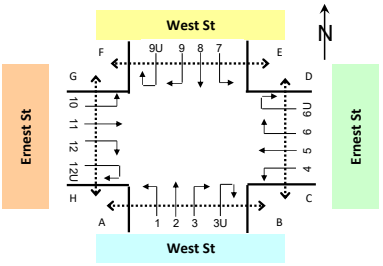


	Approach	West St				Ernest St				West St				Ernest St				Grand Total
	Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
AM	8:00 to 9:00	255	6	10	**261**	809	18	5	**827**	465	12	75	**477**	375	10	1	**385**	**1,950**
PM	16:45 to 17:45	280	1	40	**281**	591	16	1	**607**	389	2	8	**391**	452	7	4	**459**	**1,738**

Approach	West St				Ernest St				West St				Ernest St				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
6:00 to 7:00	108	4	3	**112**	303	16	2	**319**	135	5	12	**140**	101	6	0	**107**	**678**
6:15 to 7:15	123	4	3	**127**	359	21	3	**380**	175	5	14	**180**	136	7	0	**143**	**830**
6:30 to 7:30	142	5	6	**147**	431	21	5	**452**	213	7	24	**220**	168	6	1	**174**	**993**
6:45 to 7:45	139	5	7	**144**	516	17	6	**533**	251	9	35	**260**	207	7	1	**214**	**1,151**
7:00 to 8:00	146	4	8	**150**	567	18	8	**585**	295	9	43	**304**	262	6	1	**268**	**1,307**
7:15 to 8:15	160	5	10	**165**	678	17	9	**695**	364	14	57	**378**	295	7	1	**302**	**1,540**
7:30 to 8:30	181	5	11	**186**	743	11	5	**754**	436	12	72	**448**	331	9	0	**340**	**1,728**
7:45 to 8:45	231	5	12	**236**	776	17	6	**793**	467	11	76	**478**	339	7	1	**346**	**1,853**
8:00 to 9:00	255	6	10	**261**	809	18	5	**827**	465	12	75	**477**	375	10	1	**385**	**1,950**
8:15 to 9:15	258	4	9	**262**	805	22	4	**827**	408	8	59	**416**	360	9	1	**369**	**1,874**
8:30 to 9:30	253	4	9	**257**	769	27	6	**796**	350	11	39	**361**	305	11	1	**316**	**1,730**
8:45 to 9:45	207	3	6	**210**	695	24	4	**719**	313	12	24	**325**	279	9	0	**288**	**1,542**
9:00 to 10:00	186	2	6	**188**	629	24	3	**653**	274	11	17	**285**	212	9	0	**221**	**1,347**
AM Totals	**695**	**16**	**27**	**711**	**2,308**	**76**	**18**	**2,384**	**1,169**	**37**	**147**	**1,206**	**950**	**31**	**2**	**981**	**5,282**
15:00 to 16:00	319	4	6	**323**	623	18	0	**641**	305	13	6	**318**	295	10	0	**305**	**1,587**
15:15 to 16:15	300	3	10	**303**	635	17	0	**652**	284	8	6	**292**	267	8	0	**275**	**1,522**
15:30 to 16:30	293	2	12	**295**	607	11	0	**618**	294	2	4	**296**	278	7	0	**285**	**1,494**
15:45 to 16:45	260	2	17	**262**	615	14	2	**629**	287	1	4	**288**	290	7	0	**297**	**1,476**
16:00 to 17:00	257	0	20	**257**	597	13	2	**610**	311	2	7	**313**	337	8	0	**345**	**1,525**
16:15 to 17:15	274	0	28	**274**	595	16	2	**611**	324	3	7	**327**	395	9	0	**404**	**1,616**
16:30 to 17:30	272	1	34	**273**	624	18	2	**642**	348	3	10	**351**	423	8	1	**431**	**1,697**
16:45 to 17:45	280	1	40	**281**	591	16	1	**607**	389	2	8	**391**	452	7	4	**459**	**1,738**
17:00 to 18:00	284	2	45	**286**	620	13	1	**633**	376	1	6	**377**	431	6	4	**437**	**1,733**
17:15 to 18:15	283	2	51	**285**	613	12	1	**625**	375	0	8	**375**	378	5	4	**383**	**1,668**
17:30 to 18:30	272	2	54	**274**	587	11	2	**598**	368	0	7	**368**	346	6	3	**352**	**1,592**
17:45 to 18:45	265	2	51	**267**	590	9	2	**599**	344	0	8	**344**	312	5	2	**317**	**1,527**
18:00 to 19:00	242	1	43	**243**	533	9	3	**542**	297	0	9	**297**	274	5	3	**279**	**1,361**
PM Totals	**1,102**	**7**	**114**	**1,109**	**2,373**	**53**	**6**	**2,426**	**1,289**	**16**	**28**	**1,305**	**1,337**	**29**	**7**	**1,366**	**6,206**

Job No. : AUNSW7838
Client : North Sydney Council
Suburb : Neutral Bay
Location : 6. West St & Ernest St

Day/Date : Thu, 19 Oct 2023
Weather : Fine
Description : Classified Intersection Count
: Pedestrian Data

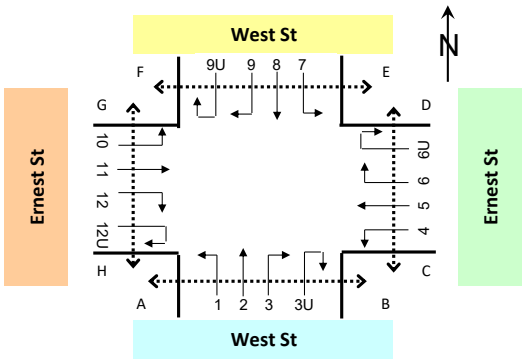


MATRIX Traffic and Transport Data

Direction	Crossing Pedestrians																							
	B to A			A to B			D to C			C to D			F to E			E to F			H to G			G to H		
Time Period	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total
6:00 to 6:15	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	1	0	**1**
6:15 to 6:30	0	0	**0**	1	0	**1**	1	0	**1**	1	0	**1**	0	0	**0**	1	0	**1**	4	0	**4**	3	0	**3**
6:30 to 6:45	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	1	0	**1**	0	0	**0**
6:45 to 7:00	3	0	**3**	0	0	**0**	2	0	**2**	0	0	**0**	1	0	**1**	1	0	**1**	0	0	**0**	1	0	**1**
7:00 to 7:15	2	0	**2**	0	0	**0**	4	0	**4**	3	0	**3**	2	0	**2**	3	0	**3**	2	0	**2**	2	0	**2**
7:15 to 7:30	0	0	**0**	3	0	**3**	1	0	**1**	2	0	**2**	1	0	**1**	1	0	**1**	3	0	**3**	6	0	**6**
7:30 to 7:45	0	0	**0**	1	0	**1**	0	0	**0**	2	0	**2**	3	0	**3**	2	0	**2**	5	0	**5**	4	0	**4**
7:45 to 8:00	2	0	**2**	6	0	**6**	10	0	**10**	4	0	**4**	1	0	**1**	1	0	**1**	5	0	**5**	11	0	**11**
8:00 to 8:15	2	0	**2**	3	0	**3**	11	0	**11**	4	0	**4**	0	0	**0**	4	0	**4**	2	0	**2**	8	0	**8**
8:15 to 8:30	1	0	**1**	4	2	**6**	15	0	**15**	1	1	**2**	30	2	**32**	3	0	**3**	6	0	**6**	21	2	**23**
8:30 to 8:45	3	0	**3**	19	0	**19**	17	0	**17**	4	0	**4**	38	0	**38**	4	0	**4**	14	0	**14**	10	0	**10**
8:45 to 9:00	9	0	**9**	32	0	**32**	8	0	**8**	2	0	**2**	28	0	**28**	14	0	**14**	11	0	**11**	9	0	**9**
9:00 to 9:15	2	0	**2**	7	0	**7**	12	0	**12**	4	0	**4**	4	0	**4**	6	0	**6**	1	0	**1**	3	0	**3**
9:15 to 9:30	3	0	**3**	11	0	**11**	7	0	**7**	1	0	**1**	4	0	**4**	4	0	**4**	0	0	**0**	7	0	**7**
9:30 to 9:45	1	0	**1**	3	0	**3**	10	0	**10**	3	0	**3**	2	0	**2**	1	0	**1**	1	0	**1**	4	0	**4**
9:45 to 10:00	3	0	**3**	4	0	**4**	2	0	**2**	3	0	**3**	0	0	**0**	5	0	**5**	5	0	**5**	6	0	**6**
AM Totals	**31**	**0**	**31**	**94**	**2**	**96**	**100**	**0**	**100**	**34**	**1**	**35**	**114**	**2**	**116**	**54**	**0**	**54**	**61**	**0**	**61**	**96**	**2**	**98**
15:00 to 15:15	53	0	**53**	2	0	**2**	2	0	**2**	29	0	**29**	6	0	**6**	29	0	**29**	15	1	**16**	3	0	**3**
15:15 to 15:30	35	0	**35**	4	0	**4**	7	0	**7**	3	0	**3**	5	0	**5**	76	0	**76**	18	0	**18**	7	0	**7**
15:30 to 15:45	4	0	**4**	2	0	**2**	2	0	**2**	13	0	**13**	3	0	**3**	4	0	**4**	3	0	**3**	0	0	**0**
15:45 to 16:00	3	0	**3**	1	0	**1**	1	0	**1**	3	0	**3**	0	0	**0**	2	0	**2**	2	0	**2**	0	0	**0**
16:00 to 16:15	0	0	**0**	1	0	**1**	1	0	**1**	2	0	**2**	0	0	**0**	3	0	**3**	3	0	**3**	5	0	**5**
16:15 to 16:30	6	0	**6**	2	0	**2**	0	1	**1**	4	0	**4**	2	0	**2**	2	0	**2**	5	0	**5**	3	0	**3**
16:30 to 16:45	3	0	**3**	4	0	**4**	3	0	**3**	6	0	**6**	1	0	**1**	7	0	**7**	5	0	**5**	4	0	**4**
16:45 to 17:00	7	0	**7**	4	0	**4**	6	0	**6**	2	0	**2**	7	0	**7**	5	0	**5**	5	0	**5**	2	0	**2**
17:00 to 17:15	4	0	**4**	8	0	**8**	2	0	**2**	2	0	**2**	0	0	**0**	0	0	**0**	4	0	**4**	6	0	**6**
17:15 to 17:30	4	0	**4**	3	0	**3**	5	0	**5**	1	0	**1**	6	0	**6**	8	0	**8**	12	0	**12**	6	0	**6**
17:30 to 17:45	1	1	**2**	2	0	**2**	4	0	**4**	11	0	**11**	3	0	**3**	5	0	**5**	8	0	**8**	6	0	**6**
17:45 to 18:00	1	0	**1**	2	0	**2**	1	0	**1**	5	0	**5**	10	0	**10**	8	0	**8**	8	0	**8**	2	0	**2**
18:00 to 18:15	3	0	**3**	3	0	**3**	4	0	**4**	4	0	**4**	1	0	**1**	6	0	**6**	1	0	**1**	4	0	**4**
18:15 to 18:30	5	0	**5**	2	0	**2**	3	0	**3**	3	0	**3**	0	0	**0**	3	0	**3**	4	0	**4**	3	0	**3**
18:30 to 18:45	1	0	**1**	4	0	**4**	3	0	**3**	4	0	**4**	1	0	**1**	2	0	**2**	5	0	**5**	4	0	**4**
18:45 to 19:00	4	0	**4**	1	0	**1**	3	0	**3**	3	0	**3**	7	0	**7**	4	0	**4**	3	0	**3**	1	0	**1**
PM Totals	**134**	**1**	**135**	**45**	**0**	**45**	**47**	**1**	**48**	**95**	**0**	**95**	**52**	**0**	**52**	**164**	**0**	**164**	**101**	**1**	**102**	**56**	**0**	**56**

Job No. : AUNSW7838
Client : North Sydney Council
Suburb : Neutral Bay
Location : 6. West St & Ernest St

Day/Date : Sat, 21 Oct 2023
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

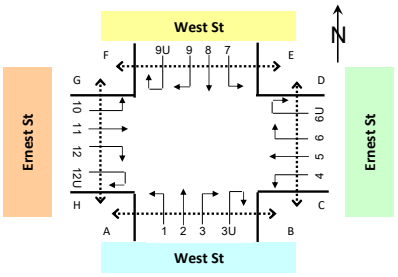


	Approach	West St				Ernest St				West St				Ernest St				Grand Total
	Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
AM	11:00 to 12:00	320	3	12	**323**	645	13	1	**658**	347	2	12	**349**	280	5	1	**285**	1,615
PM	12:00 to 13:00	308	1	9	**309**	634	9	1	**643**	387	5	7	**392**	329	3	4	**332**	1,676

Approach	West St				Ernest St				West St				Ernest St				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
9:00 to 10:00	295	0	11	**295**	618	10	3	**628**	270	7	14	**277**	187	3	1	**190**	1,390
9:15 to 10:15	309	4	9	**313**	612	10	4	**622**	278	6	14	**284**	226	3	0	**229**	1,448
9:30 to 10:30	310	4	10	**314**	613	9	5	**622**	291	6	16	**297**	232	2	1	**234**	1,467
9:45 to 10:45	312	5	6	**317**	611	8	7	**619**	297	2	14	**299**	250	4	1	**254**	1,489
10:00 to 11:00	302	6	11	**308**	574	7	7	**581**	305	3	15	**308**	249	4	1	**253**	1,450
10:15 to 11:15	295	2	13	**297**	603	7	6	**610**	289	2	12	**291**	240	6	1	**246**	1,444
10:30 to 11:30	300	3	14	**303**	624	7	5	**631**	291	2	10	**293**	259	6	0	**265**	1,492
10:45 to 11:45	304	3	18	**307**	644	7	2	**651**	316	2	9	**318**	278	5	0	**283**	1,559
11:00 to 12:00	320	3	12	**323**	645	13	1	**658**	347	2	12	**349**	280	5	1	**285**	1,615
11:15 to 12:15	327	3	8	**330**	645	12	0	**657**	378	3	9	**381**	292	4	3	**296**	1,664
11:30 to 12:30	331	2	6	**333**	628	15	0	**643**	408	5	9	**413**	308	3	4	**311**	1,700
11:45 to 12:45	320	1	5	**321**	616	15	0	**631**	408	5	11	**413**	316	3	4	**319**	1,684
12:00 to 13:00	308	1	9	**309**	634	9	1	**643**	387	5	7	**392**	329	3	4	**332**	1,676
12:15 to 13:15	288	1	8	**289**	633	10	1	**643**	353	4	10	**357**	332	3	2	**335**	1,624
12:30 to 13:30	263	1	9	**264**	642	6	2	**648**	335	2	9	**337**	301	4	1	**305**	1,554
12:45 to 13:45	266	1	6	**267**	644	8	3	**652**	303	2	8	**305**	267	3	1	**270**	1,494
13:00 to 14:00	277	0	2	**277**	621	9	2	**630**	312	1	8	**313**	259	4	0	**263**	1,483
13:15 to 14:15	279	0	4	**279**	604	7	2	**611**	292	1	7	**293**	237	3	0	**240**	1,423
13:30 to 14:30	280	0	2	**280**	584	7	1	**591**	257	0	8	**257**	230	3	0	**233**	1,361
13:45 to 14:45	260	0	5	**260**	587	5	0	**592**	269	0	6	**269**	234	3	0	**237**	1,358
14:00 to 15:00	234	1	9	**235**	551	4	0	**555**	239	0	7	**239**	232	2	2	**234**	1,263
14:15 to 15:15	235	2	8	**237**	543	3	0	**546**	245	0	5	**245**	224	2	2	**226**	1,254
14:30 to 15:30	232	3	10	**235**	558	4	0	**562**	240	0	4	**240**	235	4	2	**239**	1,276
14:45 to 15:45	239	3	9	**242**	540	5	0	**545**	230	0	3	**230**	225	4	2	**229**	1,246
15:00 to 16:00	220	3	6	**223**	532	5	1	**537**	236	1	2	**237**	211	4	0	**215**	1,212
15:15 to 16:15	195	2	6	**197**	528	6	2	**534**	233	2	5	**235**	209	5	0	**214**	1,180
15:30 to 16:30	188	1	8	**189**	522	8	2	**530**	240	2	6	**242**	213	3	0	**216**	1,177
15:45 to 16:45	175	1	7	**176**	505	7	2	**512**	228	3	7	**231**	205	3	1	**208**	1,127
16:00 to 17:00	189	0	6	**189**	545	7	1	**552**	214	2	7	**216**	224	3	1	**227**	1,184
Totals	**2,145**	**14**	**66**	**2,159**	**4,720**	**64**	**16**	**4,784**	**2,310**	**21**	**72**	**2,331**	**1,971**	**28**	**10**	**1,999**	**11,273**

Job No. : AUNSW7838
Client : North Sydney Council
Suburb : Neutral Bay
Location : 6. West St & Ernest St

Day/Date : Sat, 21 Oct 2023
Weather : Fine
Description : Classified Intersection Count
: Pedestrian Data

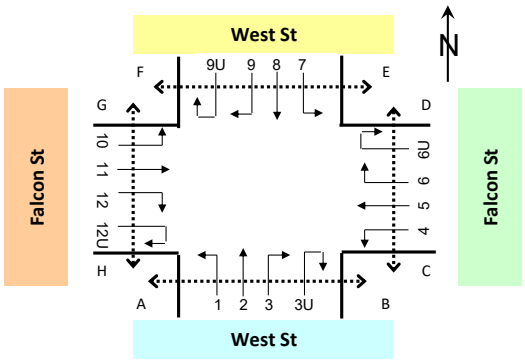


MATRIX Traffic and Transport Data

Direction	Crossing Pedestrians																							
	B to A			A to B			D to C			C to D			F to E			E to F			H to G			G to H		
Time Period	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total
9:00 to 9:15	3	0	**3**	5	0	**5**	11	0	**11**	3	0	**3**	6	0	**6**	5	0	**5**	4	0	**4**	6	0	**6**
9:15 to 9:30	5	0	**5**	4	0	**4**	5	0	**5**	9	0	**9**	0	0	**0**	2	0	**2**	3	0	**3**	1	0	**1**
9:30 to 9:45	2	0	**2**	2	0	**2**	8	0	**8**	1	0	**1**	4	0	**4**	5	0	**5**	7	0	**7**	10	0	**10**
9:45 to 10:00	4	0	**4**	0	0	**0**	3	0	**3**	4	0	**4**	2	0	**2**	8	0	**8**	10	0	**10**	1	0	**1**
10:00 to 10:15	6	0	**6**	2	0	**2**	4	0	**4**	4	0	**4**	9	0	**9**	2	0	**2**	9	0	**9**	5	0	**5**
10:15 to 10:30	4	0	**4**	2	0	**2**	2	0	**2**	8	0	**8**	2	0	**2**	10	0	**10**	5	0	**5**	3	0	**3**
10:30 to 10:45	2	1	**3**	8	0	**8**	1	0	**1**	6	2	**8**	1	0	**1**	3	0	**3**	2	0	**2**	11	0	**11**
10:45 to 11:00	3	0	**3**	7	0	**7**	3	0	**3**	5	0	**5**	1	2	**3**	1	0	**1**	2	0	**2**	9	2	**11**
11:00 to 11:15	1	0	**1**	2	0	**2**	6	1	**7**	0	0	**0**	4	0	**4**	0	0	**0**	5	0	**5**	11	0	**11**
11:15 to 11:30	1	0	**1**	3	0	**3**	5	0	**5**	4	0	**4**	5	0	**5**	3	0	**3**	5	0	**5**	2	0	**2**
11:30 to 11:45	5	0	**5**	3	1	**4**	2	0	**2**	6	0	**6**	0	0	**0**	0	0	**0**	2	0	**2**	4	0	**4**
11:45 to 12:00	5	0	**5**	1	0	**1**	0	0	**0**	2	0	**2**	0	0	**0**	4	0	**4**	2	0	**2**	3	0	**3**
12:00 to 12:15	2	0	**2**	5	0	**5**	7	0	**7**	2	0	**2**	3	0	**3**	4	0	**4**	0	0	**0**	0	0	**0**
12:15 to 12:30	2	0	**2**	3	0	**3**	4	0	**4**	10	0	**10**	4	0	**4**	3	0	**3**	2	0	**2**	0	0	**0**
12:30 to 12:45	0	0	**0**	1	0	**1**	3	0	**3**	2	0	**2**	3	0	**3**	1	0	**1**	1	0	**1**	1	0	**1**
12:45 to 13:00	3	0	**3**	4	0	**4**	6	0	**6**	1	1	**2**	3	0	**3**	1	0	**1**	2	0	**2**	2	0	**2**
13:00 to 13:15	0	0	**0**	2	0	**2**	1	0	**1**	1	0	**1**	2	0	**2**	3	0	**3**	6	0	**6**	0	0	**0**
13:15 to 13:30	0	0	**0**	0	0	**0**	3	0	**3**	2	0	**2**	1	0	**1**	0	0	**0**	0	0	**0**	2	0	**2**
13:30 to 13:45	0	0	**0**	0	1	**1**	0	0	**0**	1	0	**1**	0	0	**0**	0	0	**0**	7	0	**7**	1	0	**1**
13:45 to 14:00	1	1	**2**	1	1	**2**	3	0	**3**	0	0	**0**	1	0	**1**	1	0	**1**	2	0	**2**	1	0	**1**
14:00 to 14:15	1	0	**1**	1	1	**2**	1	0	**1**	1	0	**1**	1	0	**1**	3	0	**3**	0	0	**0**	5	0	**5**
14:15 to 14:30	0	0	**0**	1	0	**1**	0	0	**0**	1	0	**1**	3	0	**3**	1	0	**1**	1	0	**1**	1	0	**1**
14:30 to 14:45	0	0	**0**	0	0	**0**	0	2	**2**	1	0	**1**	1	2	**3**	0	2	**2**	1	0	**1**	1	0	**1**
14:45 to 15:00	0	0	**0**	3	0	**3**	1	0	**1**	1	0	**1**	3	2	**5**	3	0	**3**	5	0	**5**	1	0	**1**
15:00 to 15:15	1	0	**1**	1	0	**1**	4	0	**4**	3	0	**3**	3	0	**3**	0	0	**0**	2	1	**3**	0	0	**0**
15:15 to 15:30	3	0	**3**	0	0	**0**	3	0	**3**	1	0	**1**	4	0	**4**	3	0	**3**	6	0	**6**	1	0	**1**
15:30 to 15:45	1	0	**1**	1	0	**1**	1	0	**1**	1	0	**1**	2	0	**2**	2	0	**2**	6	0	**6**	0	1	**1**
15:45 to 16:00	1	0	**1**	1	0	**1**	5	2	**7**	0	0	**0**	3	0	**3**	2	0	**2**	5	0	**5**	5	0	**5**
16:00 to 16:15	1	0	**1**	2	0	**2**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	7	0	**7**	2	0	**2**
16:15 to 16:30	0	0	**0**	1	0	**1**	4	0	**4**	3	0	**3**	3	0	**3**	0	0	**0**	2	0	**2**	2	0	**2**
16:30 to 16:45	1	0	**1**	3	0	**3**	5	0	**5**	1	0	**1**	0	0	**0**	0	0	**0**	1	0	**1**	5	0	**5**
16:45 to 17:00	4	0	**4**	0	0	**0**	6	0	**6**	6	0	**6**	0	0	**0**	2	2	**4**	4	1	**5**	1	0	**1**
Totals	**62**	**2**	**64**	**69**	**4**	**73**	**107**	**5**	**112**	**90**	**3**	**93**	**74**	**6**	**80**	**72**	**4**	**76**	**116**	**2**	**118**	**97**	**3**	**100**

Job No. : AUNSW7838
Client : North Sydney Council
Suburb : Neutral Bay
Location : 5. West St & Falcon St

Day/Date : Thu, 19 Oct 2023
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

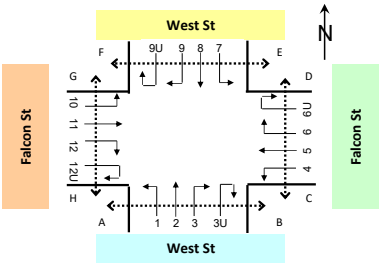


	Approach	West St				Falcon St				West St				Falcon St				Grand Total
	Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
AM	8:00 to 9:00	256	5	8	**261**	559	29	2	**588**	709	13	78	**722**	800	26	2	**826**	**2,397**
PM	17:15 to 18:15	248	2	57	**250**	569	20	0	**589**	557	3	9	**560**	847	19	2	**866**	**2,265**

Approach	West St				Falcon St				West St				Falcon St				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
6:00 to 7:00	64	3	4	**67**	305	10	7	**315**	259	14	12	**273**	513	40	12	**553**	**1,208**
6:15 to 7:15	85	4	3	**89**	338	14	13	**352**	310	18	18	**328**	601	45	2	**646**	**1,415**
6:30 to 7:30	96	3	4	**99**	393	18	18	**411**	347	19	30	**366**	662	48	4	**710**	**1,586**
6:45 to 7:45	116	3	4	**119**	431	22	16	**453**	434	20	41	**454**	672	43	4	**715**	**1,741**
7:00 to 8:00	118	3	4	**121**	429	26	12	**455**	459	18	50	**477**	741	43	5	**784**	**1,837**
7:15 to 8:15	145	2	5	**147**	455	31	6	**486**	589	18	63	**607**	768	41	5	**809**	**2,049**
7:30 to 8:30	185	2	7	**187**	514	31	1	**545**	671	13	78	**684**	794	36	2	**830**	**2,246**
7:45 to 8:45	224	6	10	**230**	534	31	2	**565**	699	10	81	**709**	822	34	2	**856**	**2,360**
8:00 to 9:00	256	5	8	**261**	559	29	2	**588**	709	13	78	**722**	800	26	2	**826**	**2,397**
8:15 to 9:15	261	6	9	**267**	552	24	3	**576**	605	14	64	**619**	783	31	2	**814**	**2,276**
8:30 to 9:30	229	6	10	**235**	509	28	3	**537**	555	17	39	**572**	736	40	1	**776**	**2,120**
8:45 to 9:45	181	2	7	**183**	488	24	2	**512**	484	18	26	**502**	695	42	1	**737**	**1,934**
9:00 to 10:00	167	2	6	**169**	458	28	3	**486**	433	15	18	**448**	637	47	0	**684**	**1,787**
AM Totals	**605**	**13**	**22**	**618**	**1,751**	**93**	**24**	**1,844**	**1,860**	**60**	**158**	**1,920**	**2,691**	**156**	**19**	**2,847**	**7,229**
15:00 to 16:00	285	3	8	**288**	640	39	0	**679**	481	20	8	**501**	632	25	0	**657**	**2,125**
15:15 to 16:15	263	4	11	**267**	639	37	0	**676**	478	17	6	**495**	666	30	0	**696**	**2,134**
15:30 to 16:30	242	3	14	**245**	605	29	0	**634**	471	8	4	**479**	664	25	0	**689**	**2,047**
15:45 to 16:45	213	2	18	**215**	584	25	1	**609**	486	4	3	**490**	698	23	0	**721**	**2,035**
16:00 to 17:00	222	1	20	**223**	550	22	1	**572**	499	5	7	**504**	695	22	1	**717**	**2,016**
16:15 to 17:15	238	1	30	**239**	540	19	1	**559**	506	5	7	**511**	712	15	1	**727**	**2,036**
16:30 to 17:30	245	1	35	**246**	572	24	1	**596**	535	3	8	**538**	747	14	1	**761**	**2,141**
16:45 to 17:45	265	2	45	**267**	548	22	0	**570**	551	4	7	**555**	797	19	1	**816**	**2,208**
17:00 to 18:00	252	3	54	**255**	568	21	0	**589**	541	2	5	**543**	840	20	1	**860**	**2,247**
17:15 to 18:15	248	2	57	**250**	569	20	0	**589**	557	3	9	**560**	847	19	2	**866**	**2,265**
17:30 to 18:30	220	3	60	**223**	513	19	1	**532**	554	3	10	**557**	835	19	3	**854**	**2,166**
17:45 to 18:45	204	2	57	**206**	513	18	1	**531**	518	2	11	**520**	785	15	3	**800**	**2,057**
18:00 to 19:00	202	1	46	**203**	489	17	2	**506**	481	2	14	**483**	730	12	3	**742**	**1,934**
PM Totals	**961**	**8**	**128**	**969**	**2,247**	**99**	**3**	**2,346**	**2,002**	**29**	**34**	**2,031**	**2,897**	**79**	**5**	**2,976**	**8,322**

Job No. : AUNSW7838
Client : North Sydney Council
Suburb : Neutral Bay
Location : 5. West St & Falcon St

Day/Date : Thu, 19 Oct 2023
Weather : Fine
Description : Classified Intersection Count
: Pedestrian Data

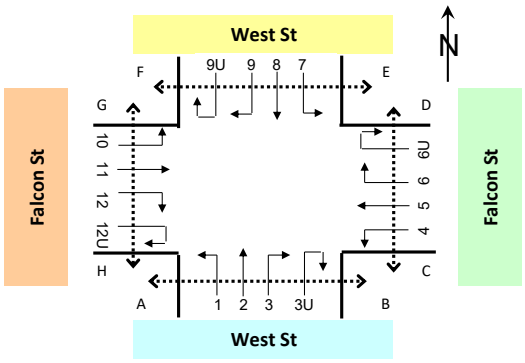


MATRIX Traffic and Transport Data

Direction	Crossing Pedestrians																							
	B to A			A to B			D to C			C to D			F to E			E to F			H to G			G to H		
Time Period	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total
6:00 to 6:15	0	0	**0**	1	0	**1**	2	0	**2**	1	0	**1**	1	0	**1**	2	0	**2**	2	0	**2**	2	0	**2**
6:15 to 6:30	0	0	**0**	2	0	**2**	3	0	**3**	1	0	**1**	2	0	**2**	1	0	**1**	1	0	**1**	3	0	**3**
6:30 to 6:45	1	0	**1**	0	0	**0**	2	0	**2**	1	0	**1**	0	0	**0**	2	0	**2**	2	0	**2**	3	0	**3**
6:45 to 7:00	1	0	**1**	0	0	**0**	4	0	**4**	3	0	**3**	1	0	**1**	2	0	**2**	0	0	**0**	1	0	**1**
7:00 to 7:15	1	0	**1**	2	0	**2**	4	0	**4**	8	0	**8**	0	0	**0**	1	0	**1**	2	0	**2**	3	0	**3**
7:15 to 7:30	1	0	**1**	7	0	**7**	5	0	**5**	4	0	**4**	1	0	**1**	0	0	**0**	3	0	**3**	12	0	**12**
7:30 to 7:45	1	0	**1**	1	0	**1**	13	1	**14**	5	0	**5**	7	0	**7**	1	0	**1**	9	0	**9**	13	0	**13**
7:45 to 8:00	4	0	**4**	20	0	**20**	11	0	**11**	7	0	**7**	11	0	**11**	7	0	**7**	4	0	**4**	25	0	**25**
8:00 to 8:15	0	0	**0**	8	0	**8**	44	0	**44**	7	0	**7**	16	0	**16**	2	0	**2**	5	0	**5**	13	0	**13**
8:15 to 8:30	3	0	**3**	15	0	**15**	42	0	**42**	9	0	**9**	34	0	**34**	5	0	**5**	8	0	**8**	42	0	**42**
8:30 to 8:45	6	0	**6**	61	0	**61**	77	0	**77**	10	0	**10**	67	0	**67**	9	0	**9**	9	0	**9**	72	0	**72**
8:45 to 9:00	5	0	**5**	47	0	**47**	55	0	**55**	29	0	**29**	55	0	**55**	4	0	**4**	8	0	**8**	20	0	**20**
9:00 to 9:15	5	0	**5**	2	0	**2**	15	0	**15**	7	0	**7**	13	0	**13**	4	0	**4**	7	0	**7**	10	0	**10**
9:15 to 9:30	2	0	**2**	8	0	**8**	7	0	**7**	19	0	**19**	11	0	**11**	8	0	**8**	6	0	**6**	8	0	**8**
9:30 to 9:45	0	0	**0**	1	0	**1**	8	0	**8**	9	0	**9**	8	0	**8**	3	0	**3**	4	0	**4**	9	0	**9**
9:45 to 10:00	0	0	**0**	4	0	**4**	6	0	**6**	7	0	**7**	2	0	**2**	3	0	**3**	10	0	**10**	8	0	**8**
AM Totals	**30**	**0**	**30**	**179**	**0**	**179**	**298**	**1**	**299**	**127**	**0**	**127**	**229**	**0**	**229**	**54**	**0**	**54**	**80**	**0**	**80**	**244**	**0**	**244**
15:00 to 15:15	2	0	**2**	4	0	**4**	70	0	**70**	14	0	**14**	9	0	**9**	24	0	**24**	26	0	**26**	15	0	**15**
15:15 to 15:30	37	0	**37**	5	0	**5**	18	0	**18**	73	0	**73**	4	0	**4**	51	0	**51**	36	0	**36**	6	0	**6**
15:30 to 15:45	6	0	**6**	1	0	**1**	5	0	**5**	6	0	**6**	5	0	**5**	4	0	**4**	9	0	**9**	3	0	**3**
15:45 to 16:00	7	0	**7**	0	0	**0**	2	0	**2**	2	0	**2**	6	0	**6**	3	1	**4**	5	0	**5**	6	0	**6**
16:00 to 16:15	6	0	**6**	2	0	**2**	4	0	**4**	2	0	**2**	5	0	**5**	5	0	**5**	9	0	**9**	3	0	**3**
16:15 to 16:30	4	0	**4**	2	0	**2**	9	1	**10**	1	0	**1**	5	0	**5**	17	0	**17**	8	0	**8**	4	0	**4**
16:30 to 16:45	2	0	**2**	1	1	**2**	2	0	**2**	6	0	**6**	6	0	**6**	3	0	**3**	8	0	**8**	6	0	**6**
16:45 to 17:00	1	0	**1**	3	0	**3**	5	0	**5**	2	0	**2**	3	0	**3**	6	0	**6**	7	1	**8**	3	0	**3**
17:00 to 17:15	0	0	**0**	1	0	**1**	6	0	**6**	2	0	**2**	4	0	**4**	9	0	**9**	5	0	**5**	4	0	**4**
17:15 to 17:30	2	0	**2**	1	0	**1**	10	1	**11**	8	0	**8**	10	0	**10**	6	0	**6**	9	0	**9**	6	0	**6**
17:30 to 17:45	1	0	**1**	5	0	**5**	5	0	**5**	10	0	**10**	9	0	**9**	3	0	**3**	14	0	**14**	8	0	**8**
17:45 to 18:00	2	0	**2**	11	0	**11**	10	1	**11**	9	0	**9**	4	0	**4**	3	0	**3**	9	0	**9**	6	1	**7**
18:00 to 18:15	4	0	**4**	9	0	**9**	5	0	**5**	6	0	**6**	8	0	**8**	8	0	**8**	5	0	**5**	19	1	**20**
18:15 to 18:30	12	0	**12**	15	0	**15**	7	2	**9**	7	0	**7**	5	0	**5**	3	0	**3**	8	0	**8**	4	0	**4**
18:30 to 18:45	9	0	**9**	3	0	**3**	16	0	**16**	3	1	**4**	4	0	**4**	14	0	**14**	9	0	**9**	2	0	**2**
18:45 to 19:00	4	0	**4**	1	0	**1**	6	1	**7**	22	0	**22**	12	1	**13**	9	1	**10**	4	0	**4**	7	0	**7**
PM Totals	**99**	**0**	**99**	**64**	**1**	**65**	**180**	**6**	**186**	**173**	**1**	**174**	**99**	**1**	**100**	**168**	**2**	**170**	**171**	**1**	**172**	**102**	**2**	**104**

Job No. : AUNSW7838
Client : North Sydney Council
Suburb : Neutral Bay
Location : 5. West St & Falcon St

Day/Date : Sat, 21 Oct 2023
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary

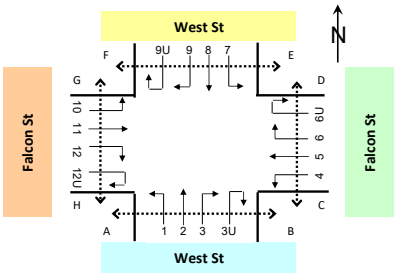


	Approach	West St				Falcon St				West St				Falcon St				Grand Total
	Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
AM	11:00 to 12:00	262	1	6	**263**	531	16	0	**547**	552	3	11	**555**	837	18	3	**855**	**2,220**
PM	12:00 to 13:00	227	3	6	**230**	566	12	0	**578**	547	4	5	**551**	937	20	0	**957**	**2,316**

Approach	West St				Falcon St				West St				Falcon St				Grand Total
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total	
9:00 to 10:00	247	2	5	**249**	494	16	1	**510**	423	4	14	**427**	687	15	4	**702**	**1,888**
9:15 to 10:15	261	1	6	**262**	507	16	4	**523**	438	5	12	**443**	720	16	4	**736**	**1,964**
9:30 to 10:30	266	1	6	**267**	507	15	4	**522**	462	7	18	**469**	742	17	3	**759**	**2,017**
9:45 to 10:45	273	2	6	**275**	532	17	7	**549**	485	6	14	**491**	735	20	4	**755**	**2,070**
10:00 to 11:00	270	3	13	**273**	547	14	6	**561**	487	7	15	**494**	773	18	2	**791**	**2,119**
10:15 to 11:15	282	2	13	**284**	515	12	3	**527**	495	5	14	**500**	748	18	2	**766**	**2,077**
10:30 to 11:30	259	2	13	**261**	528	13	3	**541**	505	4	10	**509**	776	18	2	**794**	**2,105**
10:45 to 11:45	264	2	12	**266**	516	13	0	**529**	524	2	10	**526**	816	17	1	**833**	**2,154**
11:00 to 12:00	262	1	6	**263**	531	16	0	**547**	552	3	11	**555**	837	18	3	**855**	**2,220**
11:15 to 12:15	246	2	3	**248**	554	16	0	**570**	569	3	9	**572**	883	21	2	**904**	**2,294**
11:30 to 12:30	269	3	1	**272**	578	15	0	**593**	582	5	8	**587**	918	18	2	**936**	**2,388**
11:45 to 12:45	244	2	5	**246**	576	14	0	**590**	587	5	7	**592**	928	21	2	**949**	**2,377**
12:00 to 13:00	227	3	6	**230**	566	12	0	**578**	547	4	5	**551**	937	20	0	**957**	**2,316**
12:15 to 13:15	210	3	6	**213**	572	13	1	**585**	518	4	7	**522**	917	18	1	**935**	**2,255**
12:30 to 13:30	188	2	8	**190**	542	12	1	**554**	502	3	6	**505**	857	17	1	**874**	**2,123**
12:45 to 13:45	200	2	4	**202**	579	12	1	**591**	477	4	5	**481**	812	11	3	**823**	**2,097**
13:00 to 14:00	210	1	6	**211**	555	13	1	**568**	505	4	6	**509**	732	12	3	**744**	**2,032**
13:15 to 14:15	208	0	7	**208**	570	14	0	**584**	478	4	5	**482**	690	10	2	**700**	**1,974**
13:30 to 14:30	213	0	5	**213**	555	15	0	**570**	452	2	6	**454**	655	12	2	**667**	**1,904**
13:45 to 14:45	191	1	9	**192**	543	13	1	**556**	452	2	8	**454**	662	13	0	**675**	**1,877**
14:00 to 15:00	178	1	10	**179**	583	12	2	**595**	414	1	9	**415**	690	13	0	**703**	**1,892**
14:15 to 15:15	181	1	11	**182**	583	10	2	**593**	422	1	7	**423**	723	19	0	**742**	**1,940**
14:30 to 15:30	178	1	13	**179**	642	11	2	**653**	426	1	6	**427**	721	19	0	**740**	**1,999**
14:45 to 15:45	171	0	9	**171**	658	14	2	**672**	410	0	4	**410**	691	19	0	**710**	**1,963**
15:00 to 16:00	151	0	5	**151**	651	14	1	**665**	417	1	3	**418**	654	19	0	**673**	**1,907**
15:15 to 16:15	127	0	5	**127**	661	17	1	**678**	406	3	6	**409**	606	15	0	**621**	**1,835**
15:30 to 16:30	110	0	8	**110**	631	15	1	**646**	408	4	6	**412**	612	15	0	**627**	**1,795**
15:45 to 16:45	119	0	9	**119**	594	13	0	**607**	403	6	8	**409**	624	13	0	**637**	**1,772**
16:00 to 17:00	135	0	8	**135**	577	13	0	**590**	403	5	8	**408**	627	15	0	**642**	**1,775**
Totals	**1,680**	**11**	**59**	**1,691**	**4,504**	**110**	**11**	**4,614**	**3,748**	**29**	**71**	**3,777**	**5,937**	**130**	**12**	**6,067**	**16,149**

Job No. : AUNSW7838
Client : North Sydney Council
Suburb : Neutral Bay
Location : 5. West St & Falcon St

Day/Date : Sat, 21 Oct 2023
Weather : Fine
Description : Classified Intersection Count
: Pedestrian Data



MATRIX Traffic and Transport Data

Direction	Crossing Pedestrians																							
	B to A			A to B			D to C			C to D			F to E			E to F			H to G			G to H		
Time Period	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total	Peds	Cyclists	Total
9:00 to 9:15	10	0	**10**	4	0	**4**	9	0	**9**	1	0	**1**	4	0	**4**	8	0	**8**	9	0	**9**	10	0	**10**
9:15 to 9:30	2	0	**2**	5	0	**5**	7	0	**7**	8	0	**8**	2	0	**2**	3	0	**3**	3	0	**3**	6	0	**6**
9:30 to 9:45	1	0	**1**	2	0	**2**	7	0	**7**	3	0	**3**	4	0	**4**	4	0	**4**	7	0	**7**	3	0	**3**
9:45 to 10:00	2	0	**2**	8	0	**8**	18	0	**18**	8	0	**8**	13	0	**13**	2	0	**2**	10	0	**10**	13	0	**13**
10:00 to 10:15	3	0	**3**	5	0	**5**	6	0	**6**	10	0	**10**	4	0	**4**	5	0	**5**	13	0	**13**	10	0	**10**
10:15 to 10:30	5	0	**5**	4	0	**4**	4	0	**4**	7	0	**7**	1	0	**1**	6	1	**7**	9	0	**9**	10	0	**10**
10:30 to 10:45	3	0	**3**	5	0	**5**	10	0	**10**	11	0	**11**	6	0	**6**	5	0	**5**	6	0	**6**	15	0	**15**
10:45 to 11:00	2	0	**2**	5	0	**5**	4	0	**4**	8	0	**8**	4	0	**4**	13	0	**13**	4	0	**4**	12	0	**12**
11:00 to 11:15	3	0	**3**	1	0	**1**	2	0	**2**	2	0	**2**	6	0	**6**	4	0	**4**	21	0	**21**	8	0	**8**
11:15 to 11:30	4	0	**4**	4	0	**4**	9	0	**9**	5	0	**5**	8	0	**8**	2	0	**2**	5	0	**5**	4	1	**5**
11:30 to 11:45	0	0	**0**	6	0	**6**	5	0	**5**	8	0	**8**	3	0	**3**	2	0	**2**	4	0	**4**	12	0	**12**
11:45 to 12:00	1	0	**1**	7	0	**7**	8	0	**8**	6	0	**6**	9	0	**9**	3	0	**3**	5	0	**5**	2	0	**2**
12:00 to 12:15	2	2	**4**	0	0	**0**	17	0	**17**	9	0	**9**	9	0	**9**	10	0	**10**	7	3	**10**	0	0	**0**
12:15 to 12:30	7	0	**7**	1	0	**1**	7	0	**7**	12	0	**12**	4	0	**4**	5	0	**5**	4	0	**4**	1	0	**1**
12:30 to 12:45	6	0	**6**	5	1	**6**	16	1	**17**	12	0	**12**	16	1	**17**	9	0	**9**	6	0	**6**	4	0	**4**
12:45 to 13:00	6	0	**6**	6	0	**6**	4	0	**4**	5	0	**5**	2	0	**2**	6	2	**8**	5	1	**6**	5	0	**5**
13:00 to 13:15	10	0	**10**	0	2	**2**	9	0	**9**	3	0	**3**	10	0	**10**	10	0	**10**	14	0	**14**	6	0	**6**
13:15 to 13:30	6	0	**6**	2	0	**2**	7	0	**7**	3	0	**3**	1	0	**1**	6	0	**6**	6	0	**6**	4	0	**4**
13:30 to 13:45	3	0	**3**	6	0	**6**	2	0	**2**	8	0	**8**	6	0	**6**	3	0	**3**	17	0	**17**	4	0	**4**
13:45 to 14:00	3	0	**3**	9	0	**9**	4	0	**4**	4	1	**5**	5	0	**5**	7	1	**8**	4	1	**5**	10	0	**10**
14:00 to 14:15	7	0	**7**	6	0	**6**	7	0	**7**	5	0	**5**	4	0	**4**	7	0	**7**	5	0	**5**	11	0	**11**
14:15 to 14:30	6	0	**6**	0	0	**0**	3	0	**3**	2	0	**2**	4	0	**4**	2	0	**2**	1	0	**1**	1	0	**1**
14:30 to 14:45	0	0	**0**	3	0	**3**	2	0	**2**	2	0	**2**	8	0	**8**	5	0	**5**	1	0	**1**	8	0	**8**
14:45 to 15:00	0	0	**0**	1	0	**1**	3	1	**4**	2	0	**2**	6	0	**6**	4	0	**4**	1	0	**1**	2	0	**2**
15:00 to 15:15	2	1	**3**	2	0	**2**	5	0	**5**	12	0	**12**	12	0	**12**	4	0	**4**	6	1	**7**	6	0	**6**
15:15 to 15:30	3	0	**3**	3	0	**3**	4	0	**4**	2	0	**2**	5	0	**5**	2	0	**2**	5	0	**5**	1	0	**1**
15:30 to 15:45	0	0	**0**	7	0	**7**	1	0	**1**	4	0	**4**	2	0	**2**	2	1	**3**	2	0	**2**	8	1	**9**
15:45 to 16:00	1	0	**1**	2	0	**2**	6	0	**6**	0	0	**0**	5	0	**5**	7	0	**7**	5	0	**5**	5	0	**5**
16:00 to 16:15	5	0	**5**	2	0	**2**	3	1	**4**	3	0	**3**	6	0	**6**	0	0	**0**	8	0	**8**	3	1	**4**
16:15 to 16:30	2	0	**2**	6	0	**6**	2	0	**2**	5	0	**5**	3	0	**3**	4	0	**4**	1	0	**1**	1	0	**1**
16:30 to 16:45	8	0	**8**	7	0	**7**	0	0	**0**	2	0	**2**	3	0	**3**	3	0	**3**	6	0	**6**	9	0	**9**
16:45 to 17:00	1	0	**1**	5	0	**5**	6	0	**6**	4	0	**4**	1	0	**1**	3	0	**3**	7	0	**7**	5	0	**5**
Totals	**114**	**3**	**117**	**129**	**3**	**132**	**197**	**3**	**200**	**176**	**1**	**177**	**176**	**1**	**177**	**156**	**5**	**161**	**207**	**6**	**213**	**199**	**3**	**202**

B

Appendix B – SIDRA Modelling Results

MOVEMENT SUMMARY

Site: 101 [Ex_Weekday_AM (West St and Ernest St) (Site Folder: Existing)]

West St and Ernest St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	40	4	42	10.0	0.143	22.1	LOS C	1.5	11.3	0.80	0.67	0.80	28.3
2	T1	170	2	179	1.2	0.714	27.0	LOS C	6.7	45.7	0.97	0.88	1.10	24.9
3	R2	61	0	64	0.0	0.714	31.9	LOS C	6.7	45.7	1.00	0.91	1.15	22.9
Approach		271	6	285	2.2	0.714	27.4	LOS C	6.7	45.7	0.95	0.86	1.07	24.9
East: Ernest St														
4	L2	288	3	303	1.0	0.361	14.7	LOS B	5.8	40.4	0.68	0.73	0.68	30.9
5	T1	493	15	519	3.0	0.834	21.1	LOS C	16.6	118.8	0.84	0.93	1.07	29.0
6	R2	51	0	54	0.0	* 0.834	24.5	LOS C	16.6	118.8	0.84	0.93	1.07	27.3
Approach		832	18	876	2.2	0.834	19.1	LOS B	16.6	118.8	0.79	0.86	0.94	29.5
North: West St														
7	L2	93	3	98	3.2	0.201	23.5	LOS C	2.3	16.3	0.81	0.74	0.81	27.1
8	T1	454	7	478	1.5	0.767	24.8	LOS C	14.1	90.9	0.97	0.93	1.09	26.1
9	R2	5	2	5	40.0	* 0.767	28.3	LOS C	14.1	90.9	0.97	0.93	1.09	27.9
Approach		552	12	581	2.2	0.767	24.6	LOS C	14.1	90.9	0.94	0.90	1.04	26.3
West: Ernest St														
10	L2	24	5	25	20.8	0.091	13.8	LOS B	1.2	8.9	0.57	0.59	0.57	36.4
11	T1	325	4	342	1.2	0.445	13.8	LOS B	6.9	49.0	0.72	0.69	0.72	32.6
12	R2	37	1	39	2.7	0.445	17.8	LOS B	6.9	49.0	0.75	0.71	0.75	32.2
Approach		386	10	406	2.6	0.445	14.2	LOS B	6.9	49.0	0.71	0.68	0.71	32.8
All Vehicles		2041	46	2148	2.3	0.834	20.8	LOS C	16.6	118.8	0.84	0.83	0.94	28.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	75	79	13.4	LOS B	0.1	0.1	0.67	0.67	178.6	214.8	1.20
East: Ernest St												
P2	Full	63	66	21.7	LOS C	0.1	0.1	0.85	0.85	186.4	214.0	1.15

North: West St											
P3 Full	123	129	13.4	LOS B	0.1	0.1	0.67	0.67	178.8	215.0	1.20
West: Ernest St											
P4 Full	83	87	21.8	LOS C	0.1	0.1	0.85	0.85	186.2	213.8	1.15
All Pedestrians	344	362	16.9	LOS B	0.1	0.1	0.75	0.75	181.9	214.5	1.18

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

MOVEMENT SUMMARY

Site: 101 [Ex_Weekday_AM (West St and Falcon St) (Site Folder: Existing)]

West St and Falcon St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	81	2	85	2.5	0.570	64.6	LOS E	5.1	36.2	1.00	0.78	1.01	18.8
2	T1	186	3	196	1.6	*0.978	90.2	LOS F	15.1	104.5	1.00	1.21	1.67	12.2
Approach		267	5	281	1.9	0.978	82.4	LOS F	15.1	104.5	1.00	1.08	1.47	14.2
East: Falcon St														
4	L2	33	1	35	3.0	0.776	44.3	LOS D	26.1	190.3	0.96	0.88	0.99	21.0
5	T1	475	25	500	5.3	0.776	43.5	LOS D	26.1	190.3	0.97	0.90	1.01	23.6
6	R2	82	3	86	3.7	*0.776	69.9	LOS E	8.5	61.7	1.00	1.05	1.20	15.6
Approach		590	29	621	4.9	0.776	47.2	LOS D	26.1	190.3	0.97	0.92	1.04	22.3
North: West St														
7	L2	100	4	105	4.0	0.194	17.4	LOS B	5.5	37.8	0.51	0.57	0.51	33.3
8	T1	528	6	556	1.1	0.968	59.5	LOS E	46.7	309.0	0.85	1.02	1.18	16.2
9	R2	172	3	181	1.7	0.968	73.9	LOS E	46.7	309.0	0.92	1.11	1.32	18.2
Approach		800	13	842	1.6	0.968	57.3	LOS E	46.7	309.0	0.82	0.98	1.12	17.9
West: Falcon St														
10	L2	80	3	84	3.8	*0.959	81.0	LOS F	32.7	234.6	1.00	1.20	1.44	17.0
11	T1	748	23	787	3.1	0.959	77.5	LOS E	33.7	241.8	1.00	1.21	1.44	17.5
Approach		828	26	872	3.1	0.959	77.9	LOS E	33.7	241.8	1.00	1.21	1.44	17.5
All Vehicles		2485	73	2616	2.9	0.978	64.5	LOS E	46.7	309.0	0.93	1.05	1.25	18.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	145	153	31.7	LOS D	0.4	0.4	0.73	0.73	196.3	213.9	1.09
East: Falcon St												
P2	Full	273	287	16.7	LOS B	0.5	0.5	0.53	0.53	181.4	214.1	1.18
North: West St												
P3	Full	192	202	42.0	LOS E	0.6	0.6	0.84	0.84	206.9	214.3	1.04

West: Falcon St											
P4 Full	177	186	54.6	LOS E	0.6	0.6	0.96	0.96	219.1	213.9	0.98
All Pedestrians	787	828	34.2	LOS D	0.6	0.6	0.74	0.74	198.8	214.1	1.08

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

MOVEMENT SUMMARY

Site: 101 [Ex_Weekday_PM (West St and Ernest St) (Site Folder: Existing)]

West St and Ernest St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	37	0	39	0.0	0.114	20.1	LOS C	1.5	9.5	0.76	0.65	0.76	29.4
2	T1	161	1	169	0.6	0.569	21.2	LOS C	6.2	39.1	0.90	0.76	0.90	27.3
3	R2	86	1	91	1.2	* 0.569	25.6	LOS C	6.2	39.1	0.92	0.78	0.92	25.1
Approach		284	2	299	0.7	0.569	22.4	LOS C	6.2	39.1	0.89	0.75	0.89	26.9
East: Ernest St														
4	L2	215	2	226	0.9	0.270	14.1	LOS B	4.1	28.7	0.65	0.70	0.65	31.2
5	T1	370	10	389	2.7	0.606	13.4	LOS B	9.7	69.8	0.79	0.70	0.79	33.3
6	R2	49	1	52	2.0	* 0.606	16.9	LOS B	9.7	69.8	0.79	0.70	0.79	31.4
Approach		634	13	667	2.1	0.606	13.9	LOS B	9.7	69.8	0.74	0.70	0.74	32.4
North: West St														
7	L2	108	1	114	0.9	0.203	21.9	LOS C	2.5	17.7	0.78	0.74	0.78	27.8
8	T1	260	0	274	0.0	0.499	19.7	LOS B	7.1	49.1	0.86	0.76	0.86	28.4
9	R2	15	0	16	0.0	0.499	23.0	LOS C	7.1	49.1	0.86	0.76	0.86	30.9
Approach		383	1	403	0.3	0.499	20.5	LOS C	7.1	49.1	0.84	0.75	0.84	28.4
West: Ernest St														
10	L2	24	5	25	20.8	0.100	13.9	LOS B	1.4	10.0	0.57	0.59	0.57	36.5
11	T1	377	1	397	0.3	0.488	14.1	LOS B	8.1	56.6	0.74	0.70	0.74	32.5
12	R2	40	0	42	0.0	0.488	18.0	LOS B	8.1	56.6	0.77	0.72	0.77	32.1
Approach		441	6	464	1.4	0.488	14.4	LOS B	8.1	56.6	0.73	0.70	0.73	32.6
All Vehicles		1742	22	1834	1.3	0.606	16.9	LOS B	9.7	69.8	0.78	0.72	0.78	30.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	26	27	14.0	LOS B	0.0	0.0	0.68	0.68	179.3	214.8	1.20
East: Ernest St												
P2	Full	31	33	20.9	LOS C	0.0	0.0	0.83	0.83	185.5	214.0	1.15

North: West St											
P3 Full	40	42	14.0	LOS B	0.0	0.0	0.68	0.68	179.4	215.0	1.20
West: Ernest St											
P4 Full	52	55	20.9	LOS C	0.1	0.1	0.84	0.84	185.3	213.8	1.15
All Pedestrians	149	157	17.8	LOS B	0.1	0.1	0.77	0.77	182.7	214.3	1.17

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

MOVEMENT SUMMARY

Site: 101 [Ex_Weekday_PM (West St and Falcon St) (Site Folder: Existing)]

West St and Falcon St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	72	2	76	2.8	0.423	47.9	LOS D	3.3	23.7	0.98	0.76	0.98	22.0
2	T1	235	1	247	0.4	* 0.927	56.9	LOS E	13.2	79.7	1.00	1.13	1.55	17.0
Approach		307	3	323	1.0	0.927	54.8	LOS D	13.2	79.7	1.00	1.04	1.42	18.3
East: Falcon St														
4	L2	36	2	38	5.6	0.654	29.0	LOS C	17.1	123.9	0.88	0.80	0.88	26.5
5	T1	470	18	495	3.8	0.654	27.9	LOS C	17.1	123.9	0.89	0.82	0.90	28.1
6	R2	83	1	87	1.2	* 0.654	48.0	LOS D	6.5	46.1	0.99	0.94	1.07	20.0
Approach		589	21	620	3.6	0.654	30.8	LOS C	17.1	123.9	0.91	0.83	0.92	26.9
North: West St														
7	L2	85	0	89	0.0	0.187	17.2	LOS B	4.1	28.5	0.57	0.60	0.57	33.5
8	T1	260	0	274	0.0	0.933	41.5	LOS D	22.1	154.5	0.83	0.97	1.17	20.0
9	R2	203	2	214	1.0	0.933	59.0	LOS E	22.1	154.5	0.95	1.14	1.45	20.5
Approach		548	2	577	0.4	0.933	44.2	LOS D	22.1	154.5	0.84	0.97	1.18	21.5
West: Falcon St														
10	L2	72	0	76	0.0	* 0.938	60.4	LOS E	25.6	182.6	1.00	1.22	1.47	20.2
11	T1	789	20	831	2.5	0.938	56.9	LOS E	26.3	187.8	1.00	1.23	1.47	20.8
Approach		861	20	906	2.3	0.938	57.2	LOS E	26.3	187.8	1.00	1.23	1.47	20.8
All Vehicles		2305	46	2426	2.0	0.938	47.1	LOS D	26.3	187.8	0.94	1.04	1.25	21.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	23	24	22.8	LOS C	0.0	0.0	0.71	0.71	187.3	213.9	1.14
East: Falcon St												
P2	Full	62	65	17.5	LOS B	0.1	0.1	0.62	0.62	182.2	214.1	1.18
North: West St												
P3	Full	48	51	32.2	LOS D	0.1	0.1	0.85	0.85	197.0	214.3	1.09

West: Falcon St											
P4 Full	62	65	39.3	LOS D	0.2	0.2	0.94	0.94	203.8	213.9	1.05
All Pedestrians	195	205	28.7	LOS C	0.2	0.2	0.79	0.79	193.3	214.1	1.11

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

MOVEMENT SUMMARY

Site: 101 [Ex_Weekend (West St and Ernest St) (Site Folder: Existing)]

West St and Ernest St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 30 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	52	0	55	0.0	0.147	13.1	LOS B	0.8	5.9	0.80	0.68	0.80	33.1
2	T1	207	2	218	1.0	0.733	14.0	LOS B	4.6	32.2	0.96	0.95	1.24	31.5
3	R2	80	0	84	0.0	* 0.733	17.9	LOS B	4.6	32.2	0.98	0.97	1.27	28.8
Approach		339	2	357	0.6	0.733	14.8	LOS B	4.6	32.2	0.94	0.91	1.18	31.0
East: Ernest St														
4	L2	211	2	222	0.9	0.373	12.2	LOS B	2.6	18.6	0.80	0.75	0.80	32.5
5	T1	376	12	396	3.2	0.809	14.7	LOS B	7.9	56.5	0.97	1.09	1.37	32.4
6	R2	56	1	59	1.8	* 0.809	18.2	LOS B	7.9	56.5	0.97	1.09	1.37	30.6
Approach		643	15	677	2.3	0.809	14.2	LOS B	7.9	56.5	0.92	0.97	1.19	32.3
North: West St														
7	L2	114	2	120	1.8	0.279	15.6	LOS B	1.6	11.0	0.86	0.75	0.86	31.3
8	T1	295	3	311	1.0	0.652	13.4	LOS B	4.8	33.0	0.94	0.86	1.06	32.2
9	R2	13	0	14	0.0	0.652	16.7	LOS B	4.8	33.0	0.94	0.86	1.06	35.0
Approach		422	5	444	1.2	0.652	14.1	LOS B	4.8	33.0	0.92	0.83	1.01	32.0
West: Ernest St														
10	L2	24	1	25	4.2	0.103	12.4	LOS B	0.7	4.7	0.72	0.64	0.72	37.5
11	T1	253	2	266	0.8	0.504	11.0	LOS B	3.5	24.3	0.85	0.74	0.85	34.4
12	R2	38	0	40	0.0	0.504	14.6	LOS B	3.5	24.3	0.87	0.76	0.87	34.2
Approach		315	3	332	1.0	0.504	11.6	LOS B	3.5	24.3	0.84	0.73	0.84	34.6
All Vehicles		1719	25	1809	1.5	0.809	13.8	LOS B	7.9	56.5	0.91	0.88	1.08	32.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	27	28	9.6	LOS A	0.0	0.0	0.80	0.80	174.8	214.8	1.23
East: Ernest St												
P2	Full	33	35	9.6	LOS A	0.0	0.0	0.80	0.80	174.2	214.0	1.23

North: West St											
P3 Full	18	19	9.6	LOS A	0.0	0.0	0.80	0.80	175.0	215.0	1.23
West: Ernest St											
P4 Full	13	14	9.6	LOS A	0.0	0.0	0.80	0.80	174.1	213.8	1.23
All Pedestrians	91	96	9.6	LOS A	0.0	0.0	0.80	0.80	174.5	214.4	1.23

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

MOVEMENT SUMMARY

Site: 101 [Ex_Weekend (West St and Falcon St) (Site Folder: Existing)]

West St and Falcon St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	83	2	87	2.4	0.389	58.1	LOS E	4.8	34.6	0.96	0.77	0.96	19.9
2	T1	190	1	200	0.5	0.897	67.6	LOS E	13.2	92.9	1.00	1.06	1.40	15.1
Approach		273	3	287	1.1	0.897	64.7	LOS E	13.2	92.9	0.99	0.98	1.26	16.7
East: Falcon St														
4	L2	41	0	43	0.0	0.689	37.2	LOS D	24.5	175.5	0.89	0.82	0.89	23.3
5	T1	450	14	474	3.1	0.689	34.5	LOS C	24.5	175.5	0.90	0.82	0.90	26.0
6	R2	102	1	107	1.0	* 0.689	63.1	LOS E	7.1	50.5	1.00	0.93	1.10	16.6
Approach		593	15	624	2.5	0.689	39.6	LOS D	24.5	175.5	0.91	0.84	0.93	24.1
North: West St														
7	L2	126	2	133	1.6	0.184	18.8	LOS B	5.3	37.0	0.53	0.63	0.53	31.7
8	T1	280	1	295	0.4	* 0.919	50.8	LOS D	28.9	201.8	0.86	0.96	1.12	17.8
9	R2	189	2	199	1.1	0.919	62.9	LOS E	28.9	201.8	0.92	1.03	1.24	19.9
Approach		595	5	626	0.8	0.919	47.9	LOS D	28.9	201.8	0.81	0.91	1.03	20.4
West: Falcon St														
10	L2	103	0	108	0.0	0.894	59.6	LOS E	31.8	225.6	1.00	1.04	1.22	20.3
11	T1	835	18	879	2.2	* 0.894	56.2	LOS E	32.7	232.8	1.00	1.05	1.22	20.9
Approach		938	18	987	1.9	0.894	56.6	LOS E	32.7	232.8	1.00	1.05	1.22	20.9
All Vehicles		2399	41	2525	1.7	0.919	51.2	LOS D	32.7	232.8	0.93	0.95	1.11	21.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	26	27	28.0	LOS C	0.1	0.1	0.68	0.68	192.6	213.9	1.11
East: Falcon St												
P2	Full	73	77	19.3	LOS B	0.1	0.1	0.57	0.57	184.0	214.1	1.16
North: West St												
P3	Full	45	47	36.9	LOS D	0.1	0.1	0.78	0.78	201.7	214.3	1.06

West: Falcon St											
P4 Full	38	40	52.4	LOS E	0.1	0.1	0.93	0.93	216.9	213.9	0.99
All Pedestrians	182	192	31.8	LOS D	0.1	0.1	0.72	0.72	196.5	214.1	1.09

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

MOVEMENT SUMMARY

Site: 101 [Pro_Weekday_AM (West St and Ernest St) (Site Folder: Proposed Layout)]

West St and Ernest St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	40	4	42	10.0	0.094	21.7	LOS C	0.9	7.2	0.78	0.69	0.78	27.8
2	T1	170	2	179	1.2	0.805	30.1	LOS C	7.6	53.9	0.98	1.00	1.29	23.9
3	R2	61	0	64	0.0	* 0.805	34.6	LOS C	7.6	53.9	1.00	1.03	1.33	22.1
Approach		271	6	285	2.2	0.805	29.9	LOS C	7.6	53.9	0.96	0.96	1.23	23.9
East: Ernest St														
4	L2	288	3	303	1.0	0.374	15.3	LOS B	6.0	41.8	0.70	0.73	0.70	30.5
5	T1	493	15	519	3.0	0.873	26.3	LOS C	18.6	133.1	0.87	1.03	1.21	26.7
6	R2	51	0	54	0.0	* 0.873	29.8	LOS C	18.6	133.1	0.87	1.03	1.21	25.1
Approach		832	18	876	2.2	0.873	22.7	LOS C	18.6	133.1	0.81	0.93	1.03	27.7
North: West St														
7	L2	92	3	97	3.3	0.804	29.4	LOS C	15.3	108.8	0.98	0.99	1.16	25.6
8	T1	454	7	478	1.5	0.804	24.4	LOS C	15.3	108.8	0.94	0.92	1.09	26.2
Approach		546	10	575	1.8	0.804	25.2	LOS C	15.3	108.8	0.94	0.93	1.10	26.0
West: Ernest St														
10	L2	24	5	25	20.8	0.097	14.4	LOS B	1.3	9.5	0.59	0.60	0.59	36.0
11	T1	325	4	342	1.2	0.464	14.6	LOS B	7.1	50.2	0.74	0.70	0.74	32.2
12	R2	37	1	39	2.7	0.464	18.5	LOS B	7.1	50.2	0.77	0.72	0.77	32.0
Approach		386	10	406	2.6	0.464	15.0	LOS B	7.1	50.2	0.73	0.70	0.73	32.4
All Vehicles		2035	44	2142	2.2	0.873	22.9	LOS C	18.6	133.1	0.85	0.89	1.02	27.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	75	79	14.1	LOS B	0.1	0.1	0.69	0.69	179.2	214.7	1.20
East: Ernest St												
P2	Full	63	66	20.9	LOS C	0.1	0.1	0.84	0.84	185.5	214.0	1.15
North: West St												

P3	Full	123	129	12.7	LOS B	0.1	0.1	0.65	0.65	176.6	213.0	1.21
West: Ernest St												
P4	Full	83	87	20.9	LOS C	0.1	0.1	0.84	0.84	185.4	213.8	1.15
All Pedestrians		344	362	16.5	LOS B	0.1	0.1	0.74	0.74	180.9	213.7	1.18

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

MOVEMENT SUMMARY

Site: 101 [Pro_Weekday_AM (West St and Falcon St) (Site Folder: Proposed Layout)]

West St and Falcon St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	81	2	85	2.5	0.865	48.5	LOS D	12.3	87.4	1.00	1.06	1.37	22.6
2	T1	186	3	196	1.6	* 0.865	43.2	LOS D	12.3	87.4	0.99	1.04	1.34	19.9
Approach		267	5	281	1.9	0.865	44.8	LOS D	12.3	87.4	1.00	1.04	1.35	20.8
East: Falcon St														
4	L2	33	1	35	3.0	0.627	25.5	LOS C	14.3	104.2	0.86	0.79	0.86	28.4
5	T1	475	25	500	5.3	0.627	24.7	LOS C	14.3	104.2	0.88	0.81	0.88	29.3
6	R2	82	3	86	3.7	* 0.627	40.8	LOS D	6.4	46.2	0.98	0.91	1.02	22.2
Approach		590	29	621	4.9	0.627	27.0	LOS C	14.3	104.2	0.89	0.82	0.90	28.3
North: West St														
7	L2	100	4	105	4.0	0.853	32.2	LOS C	22.0	156.6	0.84	0.91	1.05	26.1
8	T1	528	6	556	1.1	0.853	25.4	LOS C	22.0	156.6	0.81	0.84	0.98	26.8
9	R2	172	3	181	1.7	* 0.963	69.9	LOS E	9.8	69.7	0.95	1.21	1.88	18.3
Approach		800	13	842	1.6	0.963	35.8	LOS D	22.0	156.6	0.84	0.93	1.18	23.4
West: Falcon St														
10	L2	80	3	84	3.8	0.927	53.4	LOS D	21.7	155.5	1.00	1.23	1.49	21.6
11	T1	748	23	787	3.1	* 0.927	50.0	LOS D	22.4	160.3	1.00	1.24	1.48	22.3
Approach		828	26	872	3.1	0.927	50.3	LOS D	22.4	160.3	1.00	1.24	1.48	22.2
All Vehicles		2485	73	2616	2.9	0.963	39.5	LOS D	22.4	160.3	0.92	1.02	1.23	23.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	145	153	20.4	LOS C	0.2	0.2	0.72	0.72	185.1	214.0	1.16
East: Falcon St												
P2	Full	273	287	17.8	LOS B	0.4	0.4	0.67	0.67	182.5	214.1	1.17
North: West St												
P3	Full	192	202	30.9	LOS D	0.4	0.4	0.88	0.88	196.2	214.9	1.10

West: Falcon St											
P4	Full	177	186	34.5	LOS D	0.4	0.4	0.93	0.93	199.0	213.9	1.07
All Pedestrians		787	828	25.2	LOS C	0.4	0.4	0.79	0.79	190.0	214.2	1.13

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

MOVEMENT SUMMARY

Site: 101 [Pro_Weekday_PM (West St and Ernest St) (Site Folder: Proposed Layout)]

West St and Ernest St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	37	0	39	0.0	0.072	19.8	LOS B	0.8	5.8	0.74	0.67	0.74	28.8
2	T1	161	1	169	0.6	0.618	21.1	LOS C	6.0	42.2	0.88	0.74	0.91	27.8
3	R2	86	1	91	1.2	* 0.618	27.3	LOS C	6.0	42.2	0.95	0.83	0.99	24.5
Approach		284	2	299	0.7	0.618	22.8	LOS C	6.0	42.2	0.88	0.75	0.91	26.7
East: Ernest St														
4	L2	215	2	226	0.9	0.280	14.7	LOS B	4.2	29.7	0.67	0.71	0.67	30.8
5	T1	370	10	389	2.7	0.658	15.2	LOS B	10.4	74.1	0.83	0.74	0.84	32.3
6	R2	49	1	52	2.0	* 0.658	18.6	LOS B	10.4	74.1	0.83	0.74	0.84	30.3
Approach		634	13	667	2.1	0.658	15.3	LOS B	10.4	74.1	0.78	0.73	0.78	31.6
North: West St														
7	L2	106	1	112	0.9	0.576	22.9	LOS C	9.4	66.1	0.88	0.79	0.88	28.5
8	T1	260	0	274	0.0	0.576	19.4	LOS B	9.4	66.1	0.87	0.78	0.87	28.2
Approach		366	1	385	0.3	0.576	20.4	LOS C	9.4	66.1	0.88	0.79	0.88	28.3
West: Ernest St														
10	L2	24	5	25	20.8	0.107	14.4	LOS B	1.5	10.7	0.59	0.59	0.59	36.1
11	T1	377	1	397	0.3	0.513	14.9	LOS B	8.3	58.1	0.76	0.71	0.76	32.0
12	R2	40	0	42	0.0	0.513	18.8	LOS B	8.3	58.1	0.79	0.74	0.79	31.8
Approach		441	6	464	1.4	0.513	15.2	LOS B	8.3	58.1	0.75	0.71	0.75	32.2
All Vehicles		1725	22	1816	1.3	0.658	17.6	LOS B	10.4	74.1	0.81	0.74	0.82	30.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	26	27	14.7	LOS B	0.0	0.0	0.70	0.70	179.9	214.7	1.19
East: Ernest St												
P2	Full	31	33	20.0	LOS C	0.0	0.0	0.82	0.82	184.7	214.0	1.16
North: West St												

P3	Full	40	42	13.4	LOS B	0.0	0.0	0.67	0.67	177.2	213.0	1.20
West: Ernest St												
P4	Full	52	55	20.1	LOS C	0.1	0.1	0.82	0.82	184.5	213.8	1.16
All Pedestrians		149	157	17.3	LOS B	0.1	0.1	0.76	0.76	181.8	213.8	1.18

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

MOVEMENT SUMMARY

Site: 101 [Pro_Weekday_PM (West St and Falcon St) (Site Folder: Proposed Layout)]

West St and Falcon St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	72	2	76	2.8	0.932	58.6	LOS E	13.4	94.7	1.00	1.19	1.62	20.4
2	T1	235	1	247	0.4	* 0.932	48.4	LOS D	13.4	94.7	0.97	1.06	1.45	19.0
Approach		307	3	323	1.0	0.932	50.8	LOS D	13.4	94.7	0.98	1.09	1.49	19.1
East: Falcon St														
4	L2	36	2	38	5.6	0.588	24.4	LOS C	13.7	99.5	0.83	0.77	0.83	28.9
5	T1	470	18	495	3.8	0.588	23.4	LOS C	13.7	99.5	0.85	0.78	0.85	29.8
6	R2	83	1	87	1.2	* 0.588	38.5	LOS D	6.3	44.8	0.97	0.86	0.98	22.9
Approach		589	21	620	3.6	0.588	25.6	LOS C	13.7	99.5	0.87	0.79	0.87	28.8
North: West St														
7	L2	84	0	88	0.0	0.581	20.7	LOS C	9.5	66.8	0.73	0.66	0.73	31.9
8	T1	260	0	274	0.0	0.581	16.1	LOS B	9.5	66.8	0.72	0.66	0.72	31.5
9	R2	203	2	214	1.0	* 0.945	62.9	LOS E	11.0	77.6	0.96	1.16	1.73	19.4
Approach		547	2	576	0.4	0.945	34.2	LOS C	11.0	77.6	0.81	0.84	1.10	24.4
West: Falcon St														
10	L2	72	0	76	0.0	0.914	49.9	LOS D	21.8	155.5	1.00	1.18	1.42	22.3
11	T1	789	20	831	2.5	* 0.914	46.5	LOS D	22.4	160.0	1.00	1.19	1.42	23.1
Approach		861	20	906	2.3	0.914	46.8	LOS D	22.4	160.0	1.00	1.19	1.42	23.0
All Vehicles		2304	46	2425	2.0	0.945	38.9	LOS D	22.4	160.0	0.92	0.99	1.21	24.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	23	24	19.6	LOS B	0.0	0.0	0.70	0.70	184.2	214.0	1.16
East: Falcon St												
P2	Full	62	65	34.3	LOS D	0.1	0.1	0.93	0.93	199.0	214.1	1.08
North: West St												
P3	Full	48	51	29.8	LOS C	0.1	0.1	0.86	0.86	195.1	214.9	1.10

West: Falcon St											
P4	Full	62	65	34.3	LOS D	0.1	0.1	0.93	0.93	198.9	213.9	1.08
All Pedestrians		195	205	31.5	LOS D	0.1	0.1	0.89	0.89	196.3	214.2	1.09

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

MOVEMENT SUMMARY

Site: 101 [Pro_Weekend (West St and Ernest St) (Site Folder: Proposed Layout)]

West St and Ernest St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	52	0	55	0.0	0.083	16.9	LOS B	1.1	7.4	0.68	0.67	0.68	30.3
2	T1	207	2	218	1.0	0.715	23.6	LOS C	8.6	60.2	0.94	0.88	1.06	26.5
3	R2	80	0	84	0.0	* 0.715	27.4	LOS C	8.6	60.2	0.95	0.90	1.07	24.6
Approach		339	2	357	0.6	0.715	23.5	LOS C	8.6	60.2	0.90	0.85	1.01	26.5
East: Ernest St														
4	L2	211	2	222	0.9	0.298	16.1	LOS B	4.4	31.0	0.71	0.72	0.71	30.0
5	T1	376	12	396	3.2	0.732	18.0	LOS B	11.8	85.0	0.87	0.83	0.96	30.6
6	R2	56	1	59	1.8	* 0.732	21.5	LOS C	11.8	85.0	0.87	0.83	0.96	28.7
Approach		643	15	677	2.3	0.732	17.7	LOS B	11.8	85.0	0.82	0.80	0.87	30.2
North: West St														
7	L2	113	2	119	1.8	0.581	21.4	LOS C	10.1	71.6	0.86	0.78	0.86	29.3
8	T1	295	3	311	1.0	0.581	17.9	LOS B	10.1	71.6	0.85	0.78	0.85	29.0
Approach		408	5	429	1.2	0.581	18.9	LOS B	10.1	71.6	0.85	0.78	0.85	29.0
West: Ernest St														
10	L2	24	1	25	4.2	0.087	15.4	LOS B	1.2	8.4	0.62	0.61	0.62	35.2
11	T1	253	2	266	0.8	0.418	16.2	LOS B	5.9	41.2	0.76	0.71	0.76	31.1
12	R2	38	0	40	0.0	0.418	20.2	LOS C	5.9	41.2	0.79	0.72	0.79	30.9
Approach		315	3	332	1.0	0.418	16.6	LOS B	5.9	41.2	0.76	0.70	0.76	31.4
All Vehicles		1705	25	1795	1.5	0.732	18.9	LOS B	11.8	85.0	0.83	0.79	0.87	29.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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).
Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	27	28	16.2	LOS B	0.0	0.0	0.73	0.73	181.3	214.7	1.18
East: Ernest St												
P2	Full	33	35	18.4	LOS B	0.0	0.0	0.78	0.78	183.1	214.0	1.17
North: West St												

P3 Full	18	19	14.7	LOS B	0.0	0.0	0.70	0.70	178.6	213.0	1.19
West: Ernest St											
P4 Full	13	14	18.4	LOS B	0.0	0.0	0.78	0.78	182.9	213.8	1.17
All Pedestrians	91	96	17.0	LOS B	0.0	0.0	0.75	0.75	181.6	214.0	1.18

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

MOVEMENT SUMMARY

Site: 101 [Pro_Weekend (West St and Falcon St) (Site Folder: Proposed Layout)]

West St and Falcon St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: West St														
1	L2	83	2	87	2.4	0.916	64.9	LOS E	17.0	119.9	1.00	1.14	1.44	19.3
2	T1	190	1	200	0.5	* 0.916	60.2	LOS E	17.0	119.9	1.00	1.13	1.44	16.1
Approach		273	3	287	1.1	0.916	61.6	LOS E	17.0	119.9	1.00	1.13	1.44	17.2
East: Falcon St														
4	L2	41	0	43	0.0	0.644	30.0	LOS C	19.3	138.6	0.86	0.79	0.86	26.2
5	T1	450	14	474	3.1	0.644	27.8	LOS C	19.3	138.6	0.87	0.80	0.87	28.2
6	R2	102	1	107	1.0	* 0.644	51.7	LOS D	6.3	44.6	1.00	0.90	1.06	19.0
Approach		593	15	624	2.5	0.644	32.1	LOS C	19.3	138.6	0.89	0.82	0.90	26.4
North: West St														
7	L2	126	2	133	1.6	0.632	23.2	LOS C	13.6	96.1	0.72	0.68	0.72	30.2
8	T1	280	1	295	0.4	0.632	18.5	LOS B	13.6	96.1	0.71	0.67	0.71	29.8
9	R2	189	2	199	1.1	* 0.909	62.0	LOS E	11.1	78.5	0.90	1.03	1.44	19.6
Approach		595	5	626	0.8	0.909	33.3	LOS C	13.6	96.1	0.77	0.79	0.95	24.6
West: Falcon St														
10	L2	103	0	108	0.0	0.899	53.5	LOS D	27.6	195.8	1.00	1.09	1.28	21.5
11	T1	835	18	879	2.2	* 0.899	50.1	LOS D	28.4	202.0	1.00	1.09	1.28	22.3
Approach		938	18	987	1.9	0.899	50.5	LOS D	28.4	202.0	1.00	1.09	1.28	22.2
All Vehicles		2399	41	2525	1.7	0.916	43.0	LOS D	28.4	202.0	0.92	0.95	1.12	23.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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Queue Model: SIDRA Standard.
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	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: West St												
P1	Full	26	27	23.1	LOS C	0.1	0.1	0.68	0.68	187.8	214.0	1.14
East: Falcon St												
P2	Full	73	77	19.3	LOS B	0.1	0.1	0.62	0.62	184.0	214.1	1.16
North: West St												
P3	Full	45	47	32.9	LOS D	0.1	0.1	0.81	0.81	198.2	214.9	1.08

West: Falcon St											
P4 Full	38	40	42.4	LOS E	0.1	0.1	0.92	0.92	206.9	213.9	1.03
All Pedestrians	182	192	28.0	LOS C	0.1	0.1	0.74	0.74	192.8	214.2	1.11

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.