5.1. Young Street and Grosvenor Street, Neutral Bay - Cycling and Walking Upgrades

AUTHOR: Max White, Sustainable Transport Project Coordinator

ENDORSED BY: Gary Parsons, Director Open Space, and Infrastructure

ATTACHMENTS:
1. Attachment A Original Concept Design [**5.1.1** - 1 page]
2. Attachment B Revised Concept Design [**5.1.2** - 1 page]
3. Attachemnt C Consultation Materials [**5.1.3** - 2 pages]
4. Attachment D Traffic Impact Assessment [**5.1.4** - 39 pages]
5. Attachment E Community Engagement Strategy [**5.1.5** - 6 pages]
6. Attachment F Submissions [**5.1.6** - 22 pages]

PURPOSE:

The Young Street and Grosvenor Street, Neutral Bay Intersection - Cycling and Walking Upgrades will complete the Young Street Cycleway Extension to Neutral Bay town centre. This extension has been publicly exhibited to the community, and consultation outcomes provided within this report.

EXECUTIVE SUMMARY:

- On 21 April 2023, the Committee unanimously endorsed the proposal for a 2.4m separated cycleway on Young Street, Neutral Bay between Sutherland Street and Grosvenor Street.
- At the meeting, TfNSW requested consideration of additional safety considerations to the south of the proposed cycleway which would see an increase in use by bike riders.
- Council consulted on a proposal for streetscape upgrades including the removal of the roundabout and the provision of a priority-controlled intersection, an additional raised pedestrian and cycle crossing on the western side of the intersection and streetscape upgrades.
- There were 83 community submissions received, 36 submissions (43%) opposed the project, 35 submissions (42%) indicated support for the project, 6 submission (7%) were neutral, and 6 submissions (7%) were mixed.
- To address the responses to the consultation, the design was revised to further improve pedestrian accessibility for pedestrians crossing Young Street by providing a priority controlled raised intersection with two additional pedestrian and cyclist crossings, and 30 metres of additional cycleway.

FINANCIAL IMPLICATIONS:

The costs associated with the installation of the cycling and walking upgrades of the intersection of Young Street and Grosvenor Street, Neutral Bay shall be borne by a grant from Transport for NSW for $608,000.00. Council will contribute an additional $40,000.00 for construction from the Active Transport Facilities Budget.

RECOMMENDATION:

1. **THAT** the Committee endorse the following changes in Neutral Bay:
   a. The provision of a four-way raised threshold intersection with associated kerb extensions at Young Street and Grosvenor Street, Neutral Bay.
   b. The provision of a raised pedestrian and cycle crossing across Grosvenor Street, just west of Young Street.
   c. The provision of a raised pedestrian and cycle crossing across Young Street, just south of Grosvenor Street.
   d. The reallocation of parking on the eastern side of Young Street, between 12.9m and 22.8m (1 car space) south of Grosvenor Street, as “No Stopping”.
   e. The reallocation of parking on the eastern side of Young Street, between 25.0m and 32.5m (5 spaces) south of Grosvenor Street, as “1/2P 8.30am-6pm Mon-Fri, 8.30am-13.30pm Sat” and “60º Angle Rear to Kerb Only, Vehicles Under 6m Only”.
   f. The reallocation of parking on the southern side of Grosvenor Street, between the points 9.0m and 11.5m west of Young Street, as “Mail Zone, 90º Angle Parking Rear to Kerb”.

LINK TO COMMUNITY STRATEGIC PLAN

The relationship with the Community Strategic Plan is as follows:

2. Our Built Infrastructure
2.2 Vibrant public domains and villages
2.3 Prioritise sustainable and active transport
2.4 Efficient traffic mobility and parking

BACKGROUND

At the 28 March 2022 Council Meeting, the Young Street Walking, Cycling and Streetscape Upgrades (between Sutherland Street and Grosvenor Street) consultation outcomes were reviewed and approved by Council.

On 21 April 2023, the Committee unanimously endorsed the proposal for Young Street Cycling, Walking and Streetscape Upgrades between Sutherland Street and Grosvenor Street. At the meeting, TfNSW requested consideration of the interaction between drivers and bike riders to the south of the proposed cycleway. Particularly with reference to visibility between drivers and bike riders when reversing from the angle parking spaces. As part of this design review, it is proposed to upgrade the intersection of Young Street and Grosvenor Street to improve safety and amenity of bike riders and walkers.

The Young and Grosvenor Street Intersection Cycling and Walking Upgrades will complete the Young Street Cycleway to Neutral Bay town centre.

The Young Street and Grosvenor Intersection is planned for construction to coincide with or begin immediately after construction of the Young Street Cycleway (between Sutherland Street and Grosvenor Street). This will ensure that pedestrians and cyclist can safely access the town centre.

CONSULTATION REQUIREMENTS

Community engagement has occurred in accordance with Council's Community Engagement Protocol. The detail of this report provides the outcomes from the engagement for Council to consider prior to adoption.

The main themes from the submissions were:

Roundabout removal: Submissions opposed the removal of the roundabout stating safety concerns for vehicles and traffic congestion. A Traffic Impact Assessment was conducted to identify the impact on congestion, which found there would be no change to the level of service at the intersection and queuing would be minimal. A Road Safety Audit was also conducted, which identified safety concerns to be addressed. Council has addressed and responded to the safety concerns reported.

Additional pedestrian crossings: Submissions requested an additional raised crossing at the intersection to improve pedestrian safety and allow southbound cyclists to safely transition onto the road. A raised threshold was not originally proposed due to flooding concerns; however further stormwater designs have been developed to accommodate a fully raised intersection and an additional pedestrian crossing point. This has come at an additional cost which has been included in the updated financial forecast.

See Detail section for consultation activities, submission themes and outcomes.

Standard or Guideline Used:

- Transport for NSW Cycleway Design Toolbox
- AS 2876 – Concrete kerbs and channels (gutters)
- AS 1428 – Design for access and mobility
- AS 1657 – Fixed Platforms, walkways, stairways and ladders
- AS 1742 – Traffic Control Devices
- AS 1743 – Road Signs
- AS 3500.3 – Plumbing and drainage – Stormwater Drainage
- RMS Supplements to the Australian Standards and Austroads guidelines
- RMS Delineation
- RMS Traffic Sign Database
- RMS Technical Directions
- TDT 2002/12C Stopping and Parking Restrictions at Intersections and Crossings
- North Sydney Council Infrastructure Specifications
- North Sydney Council Public Domain Style Manual and Design Codes
- Guide to Road Design Part 6A: Paths for Walking and Cycling

Signs & Lines Priority: The proposed lines and signs diagram is provided in Attachment A Revised Concept Design. The lines and signs for the original concept design is provided in Attachment B Original Concept Design
Precinct and Ward: Brightmore Precinct, Park Precinct, St Leonards Ward
Impact on Bicycles: will result in an improved cycling environment. The separated cycleway, and two bike priority crossings, provide a direct and safe connection to Neutral Bay town centre.
Impact on Pedestrians: will result in an improved walking environment for pedestrians with the addition of a raised threshold to slow traffic, and two additional pedestrian crossings.
Impact on Parking: loss 2 spaces

DETAIL

1. **Project Scope**

The Young and Grosvenor Street Intersection includes the area immediately north, east, and west of the roundabout, and the area approximately 50 metres south of the roundabout (see image 1 for project site). The project area includes:

- Roundabout with four entrances/exits.
- Five front to kerb, 60-degree angled parking spaces on the southern side of the intersection.
- A Mail Zone on the southern side of the intersection.
- A crepe Myrtle tree in the centre of the roundabout.
- Four pedestrian refuges.

Image 1. The project site (red section) is the final link of the Young Street Extensions (yellow line)

The original proposed design that was publicly exhibited to the community, includes the following elements:

- 30 metres of cycleway along Young Street connecting to the Neutral Bay town centre.
- One additional pedestrian crossing, kerb extensions and pram ramps.
- Enhancement of existing verges and streetscape with new garden beds.
- Replacement of the existing roundabout with a four way, raised intersection.
- Reorientation of five parking to be rear to kerb to improve sightlines.
- Relocation/removal of the Crepe Myrtle located in the existing roundabout.

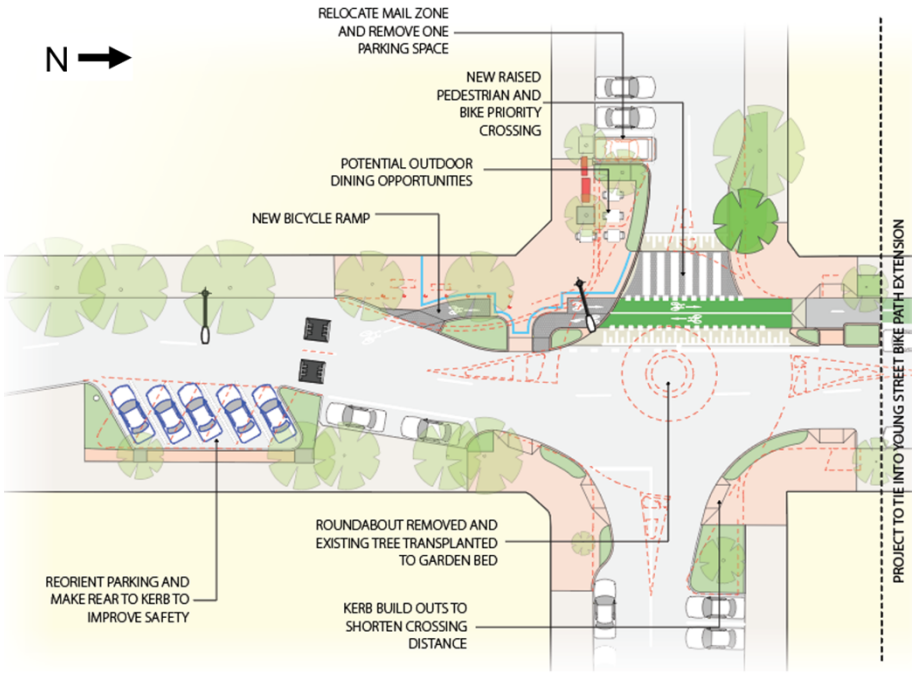


Image 2. Young and Grosvenor Street Intersection original proposed design.

In response to community submissions, the following changes are proposed to the design:

- An additional pedestrian/cyclist crossing on the south side of the intersection.
- The entire intersection will be raised, slowing traffic on all approaches to the intersection.
- A loss of one additional parking space to accommodate the additional crossing.

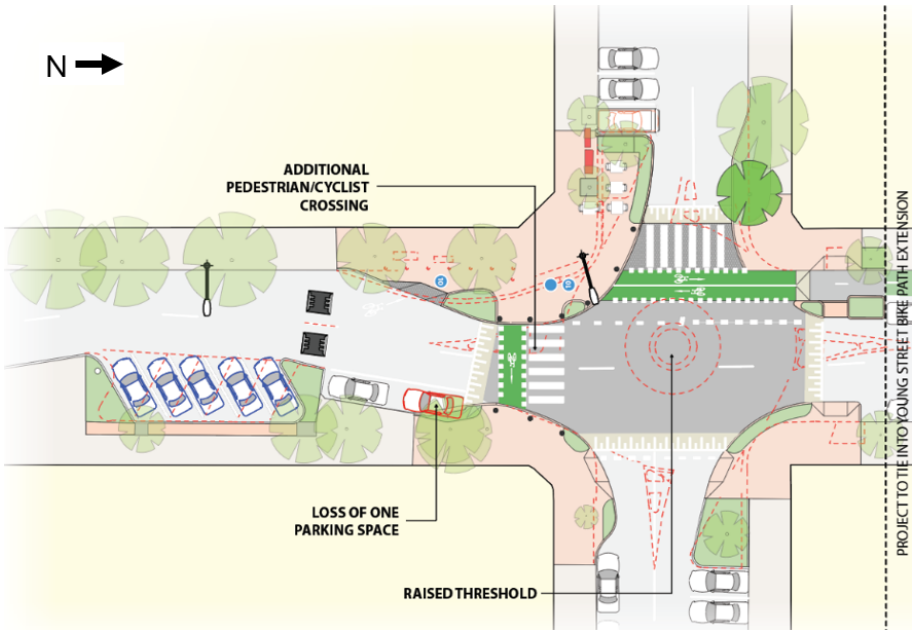


Image 3. Updated design in response to community submissions

See Attachment A for Revised Concept Design, Attachment B for Original Concept Design and Attachment C for Consultation Materials.

2. Review and Assessment

2.1 Intersection Review

A review of the existing intersection identified issues related to pedestrian/cyclist safety, inconsistency with current road design standards and overall roundabout features, including:

- Pedestrian refuges not meeting current standard of 2 metres width at crossing as per Technical Direction TS 05422 (TDT 2011/01a) Pedestrian Refuges (Transport for NSW 2011).
- Mail Zone is not sufficient width to fully contain a mail van. A van currently impedes the roadway on the southern entrance to the roundabout.
- 60-degree angled parking on southern side of intersection is front to kerb, reducing sightlines for exiting vehicles and increasing the potential for collisions with vehicles and bicycles.
- Roundabout is not a ''best practice'' design that considers safety for pedestrian and cyclist safety (see image 4).

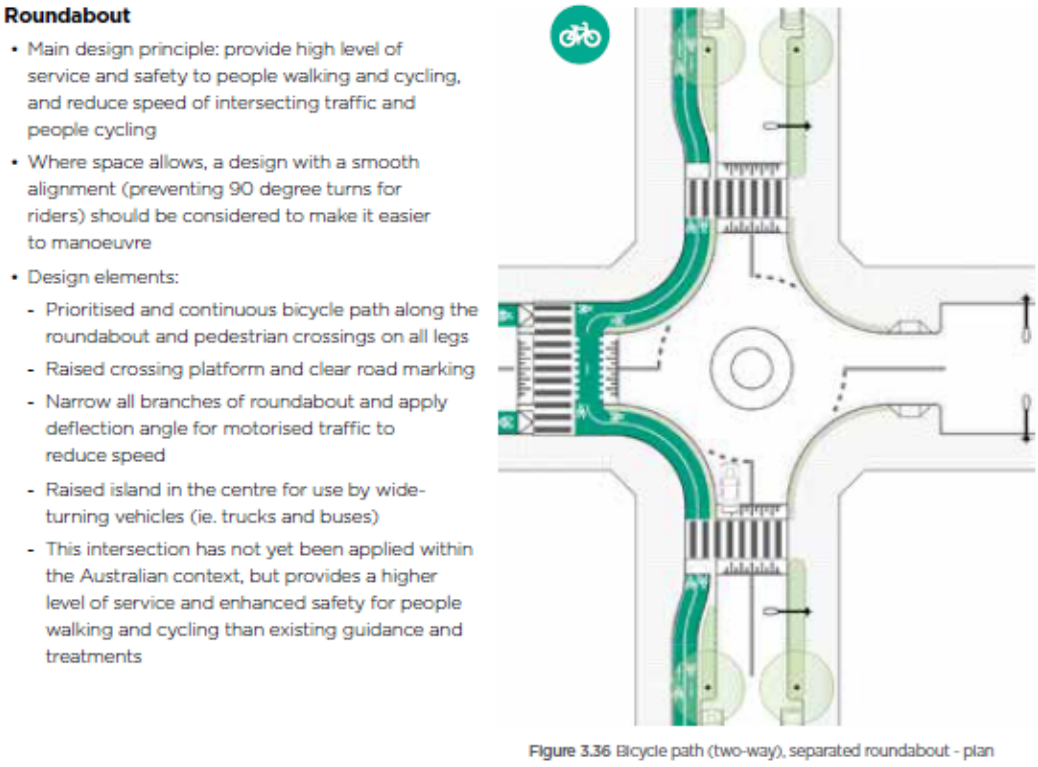


Image 4. Roundabout design with pedestrian and cyclist crossings[1] (Cycleway Design Toolbox p. 37)

Upgrading the roundabout to existing standards is not possible without removing parking, footpath space, reducing sight lines and increase cyclist, vehicle, and pedestrian conflicts. As a result, a decision was made to upgrade the roundabout to a four-way intersection with pedestrian/cyclist crossings.

- ***Traffic Impact Assessment***

A Traffic Impact Assessment (TIA) was prepared for the proposed Young and Grosvenor Street Intersection design. The TIA considered:

- Intersection performance for existing and proposed conditions.
- Performance at a 10- and 20-year projection.
- Three opening scenarios for the Young Street Pop-Up, including one-way southbound, one-way northbound and two-way reopening.

Traffic Impact Assessment Conclusions

Overall, the TIA supports the proposed Young and Grosvenor Street Intersection design from a traffic and transport perspective. Specifically, the assessment found:

- The loss of one parking space can be accommodated by the surrounding on and off-street parking, which currently have some spare capacity.
- The proposed design is generally consistent with Australian design standards.
- 10- and 20- year future modelling indicates the intersection will continue to operate at Level of Service (LOS) A for all three Young Street Pop-up reopening scenarios.
- There will be minimal impacts on delay and queuing at the intersections.
- The assessment does not identify any adverse impacts on the performance or operation of the surrounding road network.
- the proposed design will deliver positive benefits for cyclists/ pedestrians in the town centre including improved accessibility and safety.

See Attachment D for Traffic Impact Assessment.

3. Consultation

The 42-day public exhibition period was held from Tuesday 4 July to Monday 14 August 2023. The consultation period was promoted to raise awareness and encourage submissions from the community and stakeholder.

A total of 83 community submissions were received.

See Attachment F Submissions for all community submissions made.

3.1 Consultation Activities

A Community Engagement Strategy (Attachment E) was developed to identify key messages and stakeholders, and engagement activities. Activities included:

- Precinct memorandum sent to Brightmore and Parks Precinct
- Council staff attended the Brightmore Precinct meeting to answer community questions.

- Dedicated Your Say Page with submission survey and online map to provide feedback on specific locations.
- Written materials - Overview flyer, onsite signage, and footpath decals.
- Drop-in information stall to provide the opportunity to view the concept plan and ask questions of Council staff. Stall locations and times include:
    - Northside Markets - 8am to 12pm, Saturday 15 July & 5 August.
    - Corner of Ernest and Park Avenue, Neutral Bay - 8am to 10pm, Tuesday 25 July & 3:30pm to 5:30pm, Thursday 3 August.
    - Grosvenor Lane Car Park - 11am to 2pm, Monday 7 August.
- Onsite Walkthrough to provide the opportunity to meet Council staff for an overview of the proposal with the opportunity to ask questions.
- Online Information Session to provide a project overview and an opportunity for stakeholders to ask questions.

There were 2 Facebook post and 2 Instagram post promoting the consultation. Summary of social media post Table 1.

Date	Social Media	Boosted	Reach	Likes/Comments
14 July 2023	Facebook	Yes	Impressions: 20,513 Reach: 13,087 Engagements: 2,017 Link clicks: 432	Comments: 35 Likes: 41 Shared: 7
	Instagram	Yes	Impressions: 1,773 Reach: 1,632 Engagements: 48	Comments: 1 Likes: 40
4 August 2023	Facebook	No	Impressions: 2625 Reach: 2392 Engagements: 180 Link clicks: 19	Comments: 3 Likes: 6 Shared: 2
	Instagram	No	Impressions: 834 Reach: 757 Engagements: 13	Comments: 0 Likes: 9
Table 1. Summary of social media posts				

3.2 Consultation Sentiment & Themes

There was a total of 83 submissions including 51 Your Say surveys, 18 written (pop-up stalls), 13 email submissions and 2 mail submissions.

Of these, 36 submissions (43%) opposed the project, 35 submissions (42%) indicated support for the project, 6 submission (7%) were neutral, and 6 submissions (7%) were mixed. (NOTE: percentage does not add to 100% due to rounding to the nearest whole percentage)

Of the submissions that expressed support for the designs, key themes included:

- Removal of the roundabout to improve pedestrian and cyclist safety.
- Installation of a cycleway connecting to Neutral Bay town centre.

- Prioritisation and encouragement of walking and cycling.
- Outdoor dining opportunities to improve vibrancy and business development.
- Kerb buildouts, road narrowing and streetscapes to improve amenity and slow traffic.

See Attachment F Submissions for all community submissions made.

Summary of key themes and council responses provided in table 2.

Theme	Description	Council Response/Action
Low cyclist numbers: *28 submissions*	Submissions sighted low cyclist numbers at the intersection and other nearby cycleways (on Sutherland Street)	The purpose of improving facilities for active transport is to encourage people to walk and cycle. Lack of safe cycling infrastructure has been identified as the top barrier for people to ride bikes. The proposed design will improve safety at the roundabout and provide separated cycling infrastructure and reduce this barrier.[2] The proposed design and development of a connected cycleway network will address this concern and encourage greater uptake of cycling.
Roundabout Removal: *37 Submissions*	Submissions opposed the removal of the roundabout and suggested amending the roundabout design to improve pedestrian and cyclists safety.	Council's initial assessment identified safety issues for pedestrians and cyclists with the existing roundabout. A literature review assessing roundabout design found that, in the Australian context, roundabouts are less safe for cyclists, and a Canadian study found that small roundabouts on urban streets were less safe than four-way intersections.[3] Initial designs for the intersection sought to maintain the roundabout, whilst improving safety for pedestrians and cyclists. These options were unsatisfactory and caused additional issues with sightlines and conflicts. As a result, a decision was made to upgrade the roundabout to a four-way intersection with a raised pedestrian/cyclist crossing.
Road Narrowing: *11 Submissions*	Submissions opposed the reduction of road width due to cycleway and kerb build outs.	Road narrowing is shown to reduce vehicle speeds. A recent study assessed the impact of lane width on traffic safety found there was no negative impact of narrowing lanes on safety and vehicles crashes. Narrowing lanes for vehicles allow for improved walking and cycling infrastructure.[4] The turning path analysis catered for the Woolworths 14m truck (refer C101 for turning

		path) and 8.8m service vehicles (ie. garbage truck) in all other directions
Safety: *15 Submissions*	Submissions raised concerns regarding safety for pedestrians, cyclists and vehicles.	Council has conducted a design review of the intersection, including an assessment of flooding and drainage issues. Additional drainage designs will allow for the entire intersection to be raised and an additional pedestrian/cyclist crossing to be installed on the southern side of the intersection. This will further slow traffic, and prioritise walking and cycling
Queuing & Congestion: *27 Submissions*	Submissions suggested that there would be vehicle queuing across the pedestrian / cyclist crossing.	A Traffic Impact Assessment (TIA) was prepared for the design to assess the impact on queuing (Attachment D). The TIA found the proposed intersection will continue to operate at a Level of Service A until 2044, regardless of the reopening of the Young Street Plaza. For the 20-year projection, queuing is expected to double for the eastern side of the intersection, however this will be approximately three vehicles at most. This assessment is based on a 'worst case' scenario, and vehicle queuing is generally caused by increased pedestrian and cycling activity.
Cost: *4 Submissions*	Submissions raised objections to rate payer funds used for the project	The project is predominantly funded by State Government grants that are specifically dedicated to active transport and not rate payer funds. The remaining council funding is contributed by section 7.11 developer contributions.
Truck Access: *2 Submissions*	Submissions raised concerns that large trucks would not be able to access supermarket	Turn path analysis has been conducted on the proposed design and large vehicles can safely turn and access the supermarket. The turning paths for an 8.8m service vehicle has been maintained.
Tree Removal: *1 Submission*	Submission raised objections to the removal of the Crepe Myrtle currently located in the centre of the roundabout.	If construction is approved, further assessment will be conducted to assess the suitability of relocating the Crepe Myrtle. If this is not possible, the tree will be replaced at a nearby location.
Parking: *1 Submission*	Submission raised concern about the loss of one parking space.	The Traffic Impact Assessment for the design conducted a high-level assessment of parking capacity in the area. The assessment concluded that there is available capacity, and the loss of parking would not impact this capacity.
Table 2. Key themes and council response		

3.3 Precinct Motions

As part of consultation, memos were sent to Brightmore and Parks Precinct. The Sustainable Transport Project Coordinator and the Traffic and Transport Operations Manager attended the Brightmore Precinct meeting on 9 August 2023 to provide an overview of the design and answer questions.

Precinct motions and council response provided in Table 3.

Precinct	Motion	Council Response/Action
Brightmore *(9 August 2023 meeting)*	Objects to the removal of the roundabout at Young Street and Grosvenor Street.	See Table 2, Roundabout Removal
	Requests that Council investigate a pedestrian crossing on the eastern side of Young Street and Grosvenor Street	Council investigated further treatments to enhance pedestrian and cyclist safety. An additional pedestrian crossing on the eastern side was investigated, however this would have resulted in a loss of three additional parking spaces. This was deemed out of step with community expectations. In response this the precinct and other requests from the community for improved safety, the entire intersection has been raised and an additional pedestrian crossing added on the southern side of the intersection. This results in a loss of one parking space which is deemed acceptable considering the considerable additional safety improvements.
Parks *(16 August meeting)*	North Sydney Council delays any action on the cycleway extension until the Young St reopening is reconfigured and traffic impacts have been assessed and incorporates traffic modelling from the upcoming Grosvenor Lane carpark Development Proposal expected from Coles	A Traffic Impact Assessment has been conducted for the proposed design and has considered three reopening scenarios for the Young Street reopening. The reopening scenarios are one-way in, one-way out and two-way reopening. In all three scenarios the intersection continues to function at a Level of Service A with minimal queuing. The 'Coles Development' proposal is still in Planning Proposal stage and will require considerable assessments and approvals before proceeding. In the event the development proceeds, it is considered beneficial to have walking and cycling infrastructure in place to encourage sustainable transport for future residents.

Neutral *(9 August meeting)*	The Precinct objects to the removal of the Grosvenor/Young Streets roundabout and recommends the end of the cycle way and proposed bike racks be located to the north of the intersection	See Table 2, Roundabout Removal
Table 3. Precinct motions and council response		

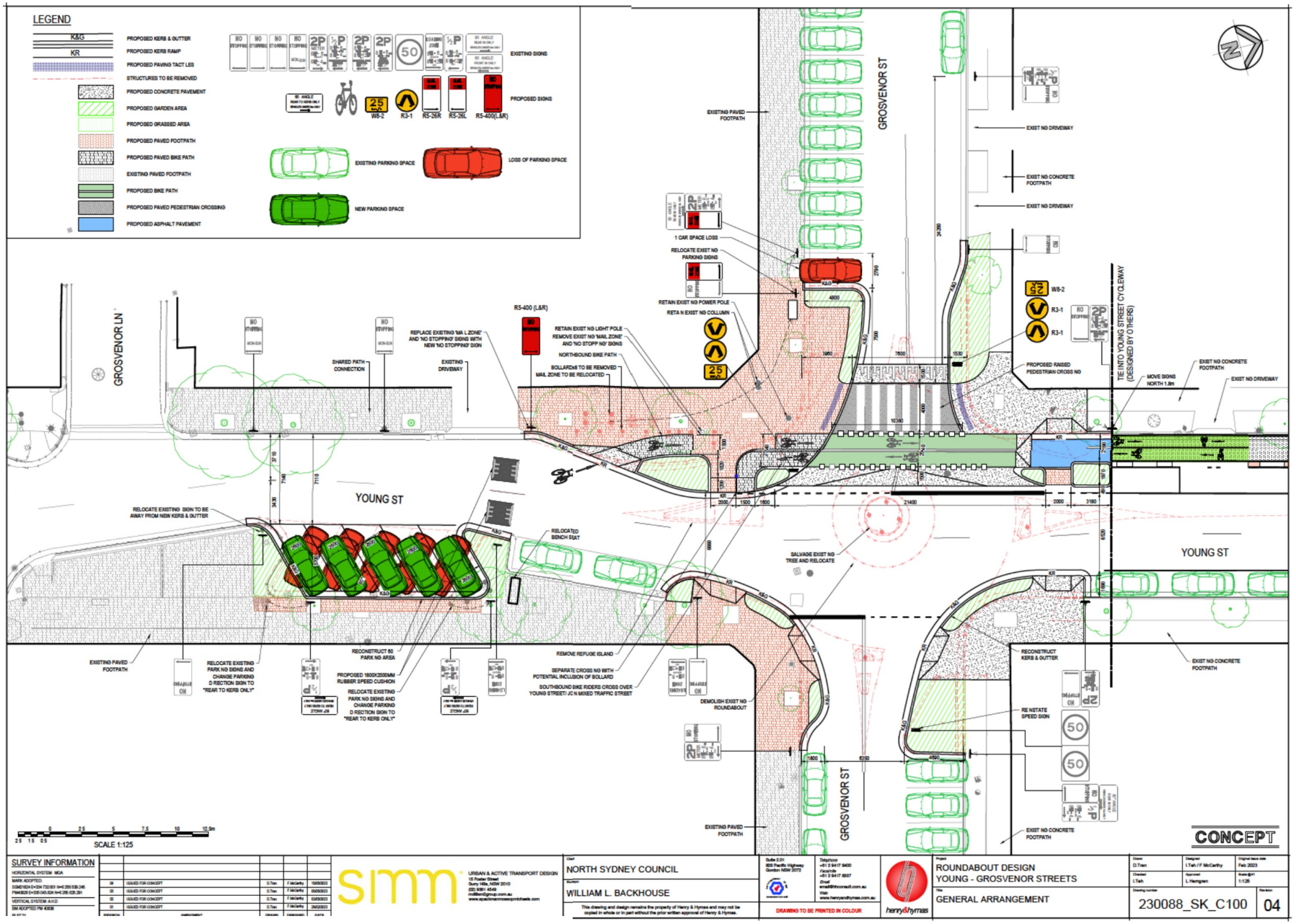
4. References

[1] Transport for NSW, Cycleway Design Toolbox

[2] Pearson, L., Berkovic, D., Reeder, S., Gabbe, B., & Beck, B. (2023). Adults' self-reported barriers and enablers to riding a bike for transport: A systematic review. *Transport reviews*, *43*(3), 356-384.

[3] Nabavi Niaki, M., Wijlhuizen, G.J., & Dijkstra, A. (2021). Safety enhancing features of cycling infrastructure: Review of evidence from Dutch and international literature*. SWOV - Institute for Road Safety Research.*

[4] Hamidi, S. (2023) A national investigation on the impacts of lane width on traffic safety. *John Hopkins Bloomberg School of Public Health.*


LEGEND
PROPOSED KERB & GUTTER
PROPOSED KERB RAMP
PROPOSED PAVING TACT LES
STRUCTURES TO BE REMOVED
PROPOSED CONCRETE PAVEMENT
PROPOSED GARDEN AREA
PROPOSED GRASSED AREA
PROPOSED PAVED FOOTPATH
PROPOSED PAVED BIKE PATH
EXISTING PAVED FOOTPATH
PROPOSED BIKE PATH
PROPOSED PAVED PEDESTRIAN CROSSING
PROPOSED ASPHALT PAVEMENT
EXISTING SIGNS
PROPOSED SIGNS
EXISTING PARKING SPACE
LOSS OF PARKING SPACE
NEW PARKING SPACE
GROSVENOR ST
GROSVENOR LN
YOUNG ST
EXISTING PAVED FOOTPATH
EXIST NO DRIVEWAY
EXIST NO CONCRETE FOOTPATH
1 CAR SPACE LOSS
RELOCATE EXIST NO PARKING SIGNS
RETAIN EXIST NO POWER POLE
RETAIN EXIST NO COLUMN
R5-400 (L&R)
RETAIN EXIST NO LIGHT POLE
REMOVE EXIST NO 'MAIL ZONE' AND 'NO STOPPING' SIGNS
NORTHBOUND BIKE PATH
BOLLARDS TO BE REMOVED
MAIL ZONE TO BE RELOCATED
REPLACE EXISTING 'MAIL ZONE' AND 'NO STOPPING' SIGNS WITH NEW 'NO STOPPING' SIGN
SHARED PATH CONNECTION
EXISTING DRIVEWAY
PROPOSED RAISED PEDESTRIAN CROSS NG
TIE INTO YOUNG STREET CYCLEWAY (DESIGNED BY OTHERS)
MOVE SIGNS NORTH 1.8m
RELOCATE EXISTING SIGN TO BE AWAY FROM NEW KERB & GUTTER
RELOCATED BENCH SEAT
SALVAGE EXIST NO TREE AND RELOCATE
RECONSTRUCT 60 PARK NO AREA
PROPOSED 1800X2000MM RUBBER SPEED CUSHION
RELOCATE EXISTING PARK NO SIGNS AND CHANGE PARKING D RECTION SIGN TO "REAR TO KERB ONLY"
REMOVE REFUGE ISLAND
SEPARATE CROSS NG WITH POTENTIAL INCLUSION OF BOLLARD
SOUTHBOUND BIKE RIDERS CROSS OVER YOUNG STREET/ JC N MIXED TRAFFIC STREET
DEMOLISH EXIST NO ROUNDABOUT
RECONSTRUCT KERB & GUTTER
RE INSTATE SPEED SIGN
SCALE 1:125
CONCEPT
SURVEY INFORMATION
NORTH SYDNEY COUNCIL
WILLIAM L. BACKHOUSE
ROUNDABOUT DESIGN
YOUNG - GROSVENOR STREETS
GENERAL ARRANGEMENT
230088_SK_C100
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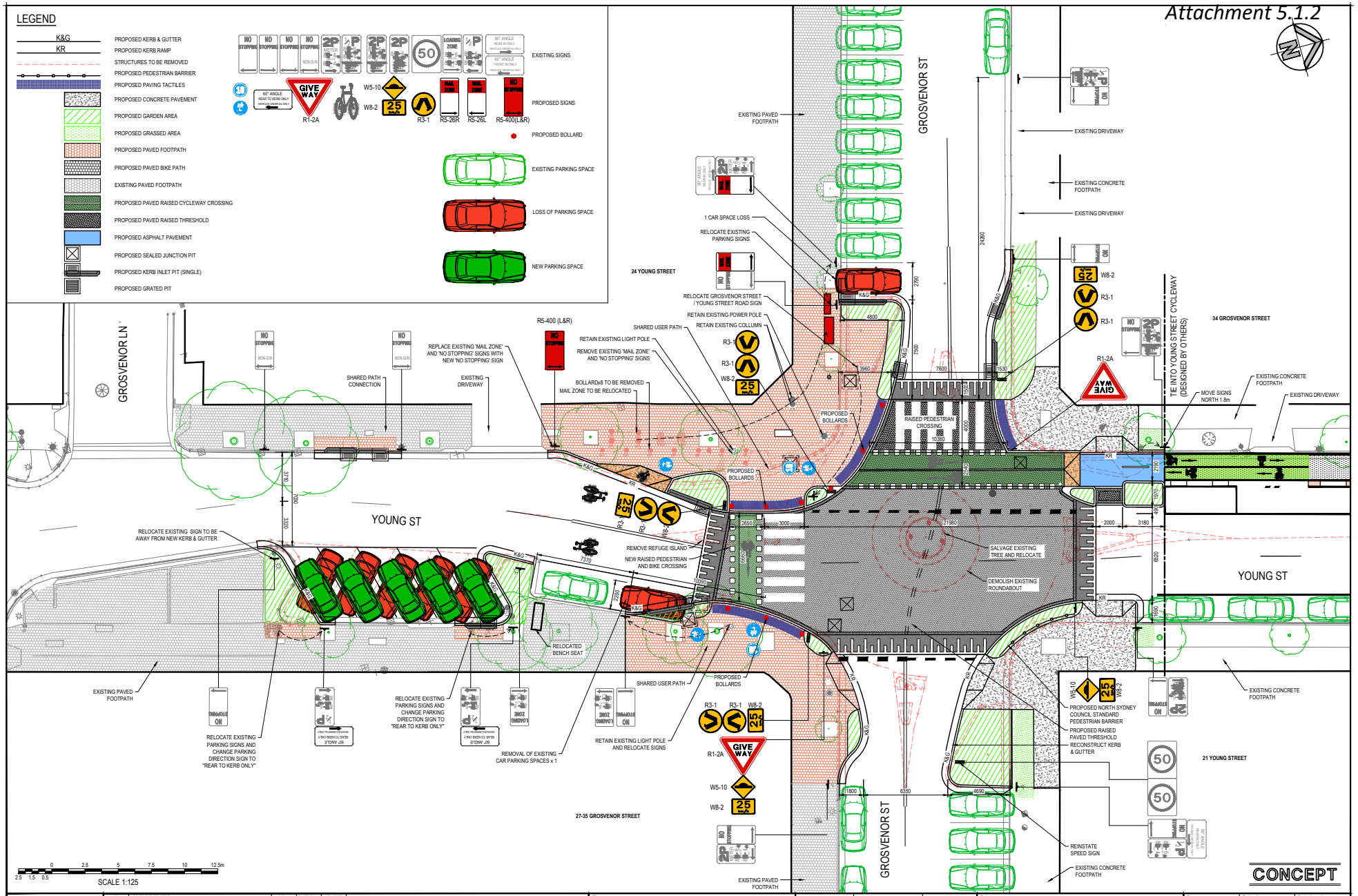

SURVEY INFORMATION					
HORIZONTAL SYSTEM MGA	07	ISSUED FOR CONCEPT	D.Tran	Teh / F.McCarthy	22/11/2023
MARK ADOPTED:	06	ISSUED FOR APPROVAL	D.Tran	Teh / F.McCarthy	25/08/2023
SSM21824 E=334 732.601 N=6 255 539.245	05	ISSUED FOR CONCEPT	D.Tran	F.McCarthy	04/08/2023
PM40826 E=335 043.824 N=6 255 625.291	04	ISSUED FOR CONCEPT	D.Tran	F.McCarthy	15/05/2023
VERTICAL SYSTEM AHD	03	ISSUED FOR CONCEPT	D.Tran	F.McCarthy	05/05/2023
BM ADOPTED RL 57.21	02	ISSUED FOR CONCEPT	D.Tran	F.McCarthy	03/05/2023
	01	ISSUED FOR CONCEPT	D.Tran	F.McCarthy	20/04/2023

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

Project: ROUNDABOUT DESIGN
YOUNG - GROSVENOR STREETS

Title: GENERAL ARRANGEMENT
RAISED THRESHOLD OPTION

Drawn	Designed	Original issue date
D.Tran	I.Teh / F.McCarthy	Feb 2023
Checked	Approved	Scale @A1
I.Teh	L.Hemgren	1:125

Drawing number: 230088_SK_C100
Revision: 07

YOUNG STREET CYCLING & WALKING UPGRADES

Young Street and Grosvenor Street Intersection

PROJECT BACKGROUND

Council is consulting on the final concept design for Young Street and Grosvenor Street Cycling & Walking Upgrades and seeking feedback from the community. The designs include new raised pedestrian and bicycle crossing, tree relocation and the conversion of the roundabout at Young Street and Grosvenor Street to a four-way intersection. Feedback received from the community will inform the final concept design.

To accommodate various needs and time constraints, we have provided the following opportunities for the community to find out more and have their say on the proposed upgrades

Drop-in information stalls - to provide the opportunity to view the concept plan and ask questions of Council staff.

- Northside Markets - Saturday 15 July & Saturday 5 August
- Corner of Ernest and Park Avenue, Neutral Bay - 8am to 10pm on Tuesday 25 July & 3:30pm to 5:30pm Thursday 3 August
- Grosvenor Lane Car Park - 11am to 2pm Wednesday 7 August

Onsite Walkthrough - to provide the opportunity to meet Council staff to walkthrough the proposal with the opportunity to ask questions and raise any issues.

- Young and Grosvenor Street Intersection - Wednesday 12 July

Online Information Session- to provide a project overview and an opportunity for stakeholders to ask questions.

- Online - Thursday 13 July

Dates, times and bookings are available on the Have Your Say webpage.

PROPOSED IMPROVEMENTS

Young Street Cycling & Walking Upgrades will include the following work:

- cycleway extension along Young Street connecting to the Neutral Bay town centre
- improved pedestrian amenity with new pedestrian crossing, kerb extensions and pram ramps
- enhancement of existing verges and streetscape with new garden beds
- replacement of the existing roundabout with four way intersection

HOW TO PROVIDE FEEDBACK

Feedback on the Young Street Cycling & Walking Upgrades can be provided in the following ways:

1. via the online submission form
2. via the online map (drop a pin to leave a comment)
3. email yoursay@northsydney.nsw.gov.au
4. post submissions to North Sydney Council, PO Box 12, North Sydney NSW 2059

Please note, all submission must be made through the above format. We cannot accept verbal submission unless a specific request is made to accommodate a need (for example, a disability).

Consultation is open for 42 days, from Tuesday 4 July to Monday 14 August

The Your Say webpage can be accessed via:

Webpage: https://yoursay.northsydney.nsw.gov.au/west-street

OR scan the QR code

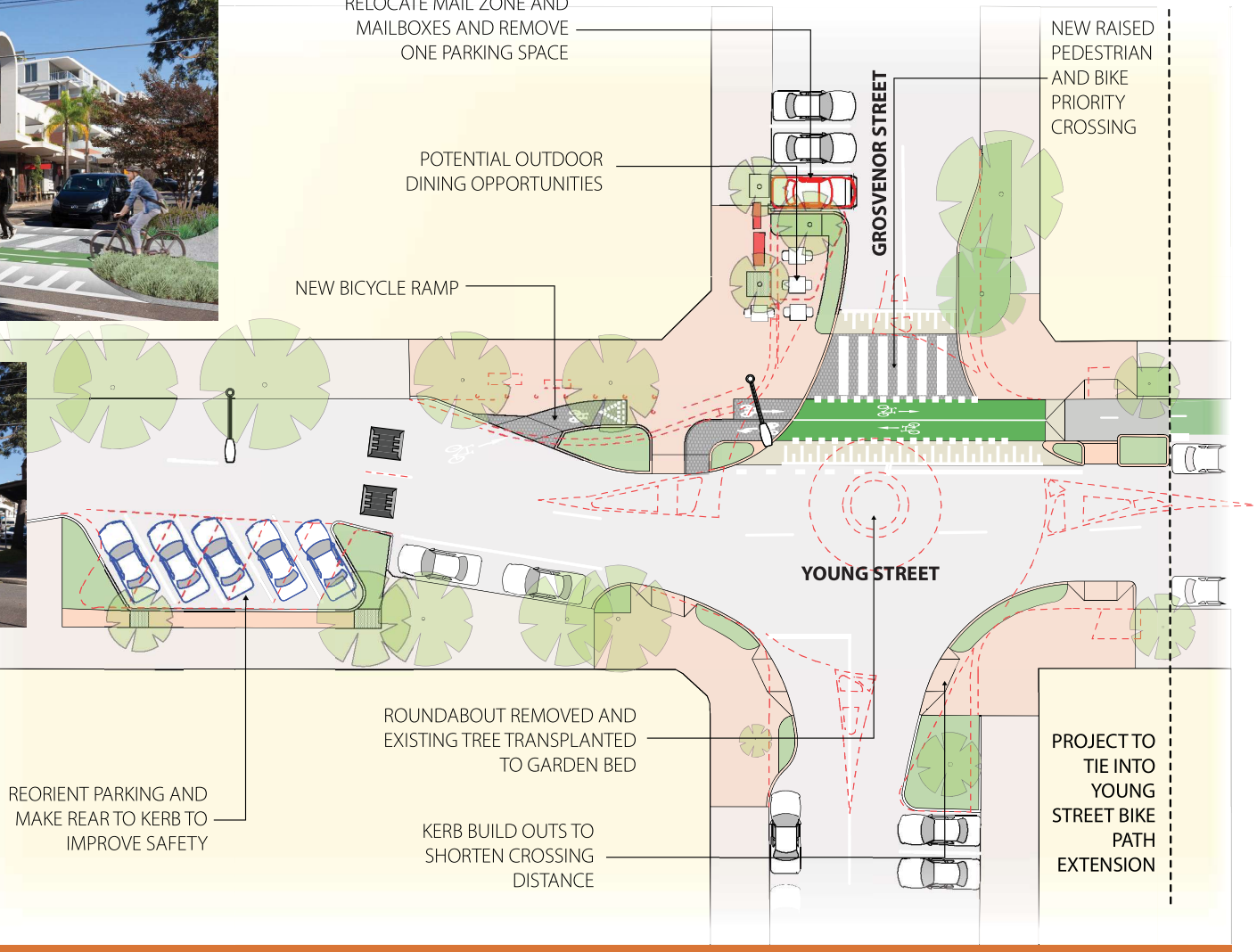
Context Map: Young Street Cycling & Walking Upgrades

YOUNG STREET CYCLING & WALKING UPGRADES

Young Street and Grosvenor Street Intersection

PROPOSED CONDITIONS LOOKING SOUTH WEST AT THE INTERSECTION

EXISTING CONDITIONS LOOKING SOUTH WEST AT THE INTERSECTION



PARKING

LOSS	GAIN	TOTAL
-1	0	-1

TREE COVERAGE

LOSS	GAIN	TOTAL
-1	1	0

Young Street / Grosvenor Street Upgrade

Transport Impact Assessment

Final Report

Prepared for: North Sydney Council

Date: 24 November 2023

Ref: 300305017

Stantec Australia Pty Ltd
Level 9, The Forum, 203 Pacific Highway, St Leonards NSW 2065

Stantec

Revision

Revision	Date	Comment	Prepared By	Approved By
A-Dr	21 September 2023	Draft	Bernadette Chuan & Connor Hoang	Steve Manton
A	24 November 2023	Final	Bernadette Chuan & Connor Hoang	Steve Manton 

Steve Manton

For and on behalf of

Stantec Australia Pty Ltd

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Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

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CONTENTS

TRANSPORT IMPACT ASSESSMENT

Young Street / Grosvenor Street Upgrade

Appendices

1. Introduction

1.1 Background

North Sydney Council (Council) is proposing to convert the Young Street/ Grosvenor Street roundabout located within Neutral Bay town centre to a priority-controlled intersection. The new layout will include a pedestrian crossing and bi-directional cycleway on the western approach (Grosvenor Street leg), which is planned to connect to the Route 2 North Sydney to Mosman cycleway via the Young Street (Cycleway) Extension project that was identified in the *North Sydney Integrated Cycling Strategy* 2014 to provide a direct connection to the Neutral Bay town centre.

In addition, Council has resolved to open the Young Street plaza to vehicular traffic between Grosvenor Lane and Military Road (about 70 metres south of the Young Street/ Grosvenor Street roundabout), which was previously closed and converted to a pedestrian plaza in December 2020 as part of Council's streetscape upgrade works along Military Road. Stantec has previously conducted extensive traffic assessments investigating the traffic redistribution impacts of reopening this road section under various scenarios on the surrounding road network. The previous assessments completed by Stantec are outlined below:

- *Young Street Temporary Closure and Trial Plaza (Post-Implementation) Transport Impact Assessment* (Stantec, 2021) – following the closure Stantec (formerly GTA Consultants) confirmed the impacts of the road closure and trial pedestrian plaza on the local road network (i.e. post-closure assessment).
- *Young Street, Neutral Bay Reopening Traffic Impact Assessment* (Stantec, 2022) – Stantec investigated the potential impact of reopening the subject section of Young Street to traffic under a two-way operating scenario.
- *Young Street Reopening – Examination of Alternative One-Way Scenarios* (Stantec, 2023) – Stantec investigated the potential impact of reopening the subject section of Young Street to traffic under separate one-way northbound and one-way southbound operating scenarios.

Stantec was commissioned by North Sydney Council in June 2023 to undertake a transport impact assessment for the proposed conversion of the Young Street/ Grosvenor Street roundabout to a priority-controlled intersection. Consideration has also been given to the changes in traffic volumes through the intersection under the various Young Street reopening scenarios (two way, one-way northbound, and one-way southbound). It is noted that this commission does not include direct consideration of the Young Street Extension project.

The location of the Young Street/ Grosvenor Street intersection and surrounding environs is shown in Figure 1.

Figure 1: Subject site and surrounding environs

Base image source: Nearmap

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed changes at the Young Street and Grosvenor Street intersection, including consideration of the following:

- existing traffic and parking conditions surrounding the site
- compliance of the proposed intersection layout with relevant Australian Standards
- pedestrian and bicycle requirements
- future operation of the proposed intersection.

1.3 References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds
- North Sydney Council Development Control Plan (DCP) 2013
- Australian/New Zealand Standard, Parking Facilities (AS 2890 series)
- traffic and car parking surveys commissioned by Stantec and North Sydney Council
- plans for the proposed development prepared by SMM Urban & Active Transport Design, date 15 May 2023
- other documents and data as referenced in this report.

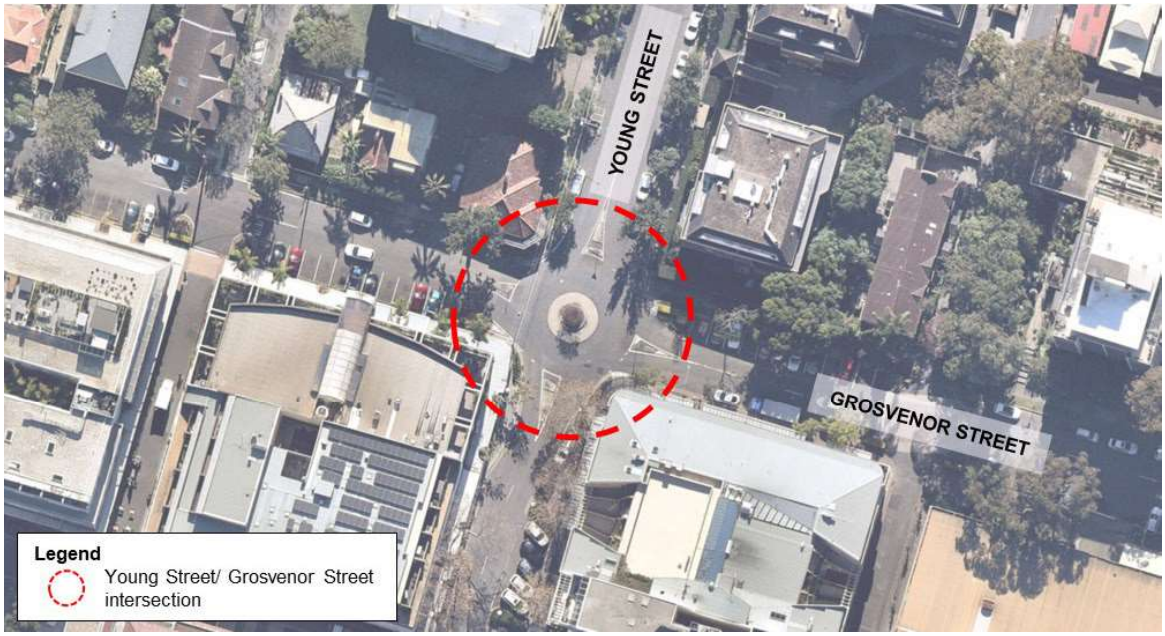
2. Existing Conditions

2.1 Location

The Young Street/ Grosvenor Street roundabout is located within Neutral Bay. The intersection predominantly services vehicles accessing the town centre given its location between residential land uses to the north and retail/ commercial properties to the south. The local road network within the town centre is observed to be set out in a general grid pattern with vehicles accessing the area doing so predominantly via Belgrave Street (to the north) or Military Road (to the south), as shown in Figure 1. Further details of key roads within the study area are provided in Section 2.2.

Figure 2 outlines the intersection analysed as part of this study.

Figure 2: Young Street/ Grosvenor Street intersection



Source: Nearmap

2.2 Road Network

2.2.1 Adjoining Roads

Young Street

Young Street functions as a local road and in the vicinity of the site is aligned in a north-south direction. It is a two-way road configured with one lane in each direction, set within an approximately 20-metre-wide road reserve.

The road is subject to 50 kilometres per hour speed zoning. Kerbside parking is permitted, subject to time restrictions and is ticketed in some sections. Residents' permits allow for unrestricted parking.

Young Street is shown in Figure 3 and Figure 4 (as observed from the Young Street / Grosvenor Street roundabout), and carries approximately 3,500 to 4,500 vehicles per day.

Figure 3: Young Street (looking north)

Figure 4: Young Street (looking south)

Grosvenor Street

Grosvenor Street functions as a local road and in the vicinity of the site is aligned in an east-west direction. It is a two-way road configured with one lane in each direction, set within an approximately 18-metre-wide carriageway.

The road is subject to 50 kilometres per hour speed zoning. Kerbside parking is permitted, subject to time restrictions. A combination of right-angle parking and parallel parking is provided on-street.

Grosvenor Street is shown in Figure 5 and Figure 6 (as observed from the Young Street / Grosvenor Street roundabout), and carries approximately 4,500 vehicles per day.

Figure 5: Grosvenor Street (looking east)

Figure 6: Grosvenor Street (looking west)

2.3 Traffic Volumes

Stantec commissioned traffic movement counts on a typical weekday on key roads in the vicinity of the site in July 2022 during the following peak periods:

- 7:00am to 9:00am
- 4:15pm to 6:15pm.

The weekday AM and PM peak hour vehicular traffic volumes at the Young Street / Grosvenor Street intersection are summarised in Figure 7 and Figure 8 respectively.

Figure 7: AM Peak Hour Vehicle Traffic Volumes

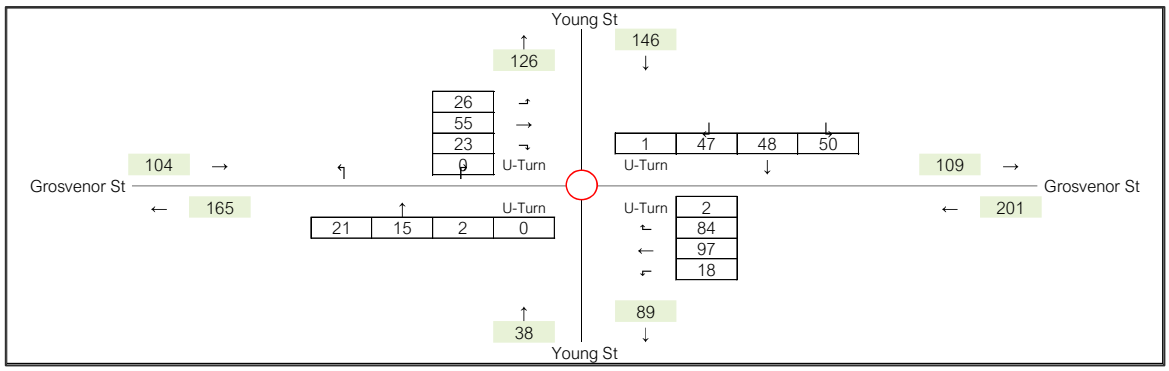
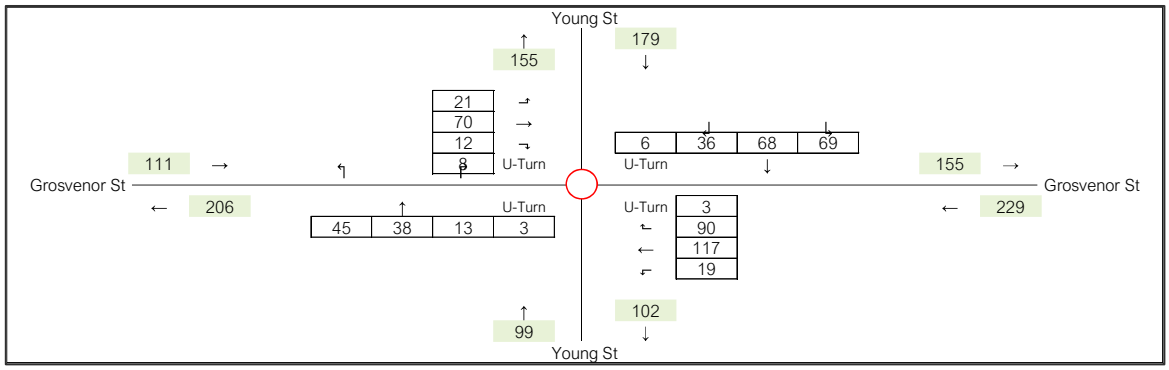


Figure 8: PM Peak Hour Vehicle Traffic Volumes



The AM and PM peak hours for the surveyed road network were found to occur from 7:30am to 8:30am and 4:45pm to 5:45pm respectively during the weekday.

In addition, North Sydney Council has provided pedestrian and cyclist count data from surveys conducted on a typical weekday in June 2023. The AM and PM peak hour volumes for pedestrian/ cyclist movements at the Young Street / Grosvenor Street intersection are summarised in Figure 9 and Figure 10.

Figure 9: AM Peak Hour Pedestrian & Cyclist Traffic Volumes

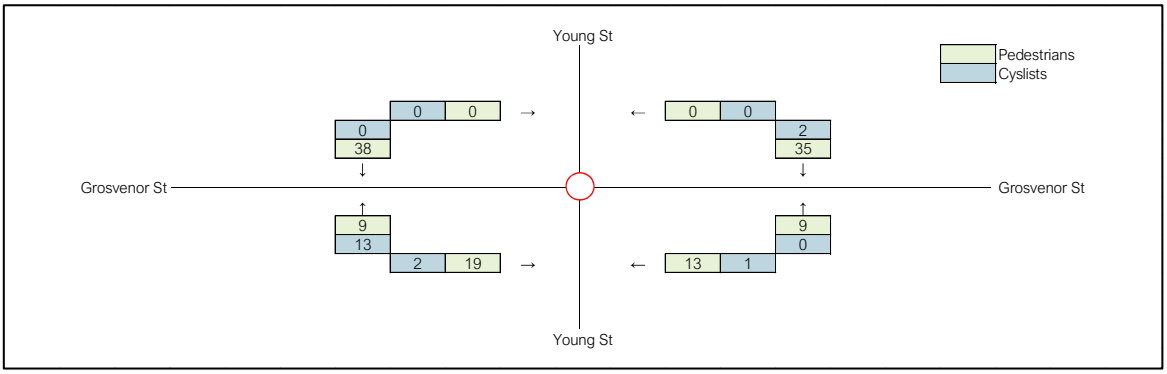
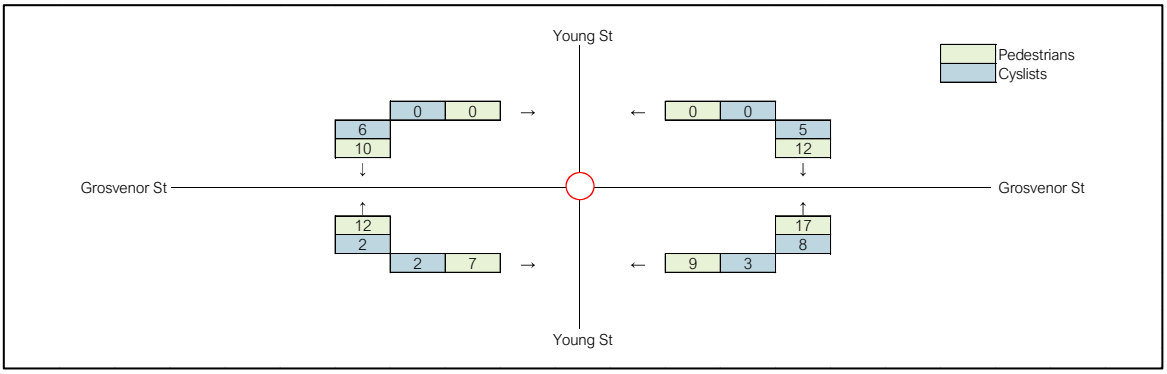


Figure 10: PM Peak Hour Pedestrian & Cyclist Traffic Volumes



Full survey data results are contained in Appendix A.

2.4 Intersection Operation

The existing operation of the Young Street / Grosvenor Street intersection has been assessed using SIDRA INTERSECTION[1], a modelling software package which calculates intersection performance.

The commonly used measure of intersection performance, as defined by TfNSW, is vehicle delay. SIDRA INTERSECTION determines the average delay that vehicles encounter and provides a measure of the level of service.

Table 1 shows the criteria that SIDRA INTERSECTION adopts in assessing the level of service.

Table 1: SIDRA INTERSECTION Level of Service Criteria

Level of Service (LOS)	Average Delay per vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but crash study required
D	43 to 56	Near capacity	Near capacity, crash study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays	At capacity, requires other control mode
F	Greater than 70	Extra capacity required	Extreme delay, major treatment required

Table 2 presents a summary of the existing operation of the Young Street/ Grosvenor Street intersection, with full results presented in Appendix B of this report.

[1] Program used under license from Akcelik & Associates Pty Ltd.

Table 2: Existing Operating Conditions – Young Street / Grosvenor Street roundabout

Peak	Leg	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
AM	South	0.04	11	1	LOS A
	East	0.19	10	7	LOS A
	North	0.13	10	5	LOS A
	West	0.10	10	4	LOS A
PM	South	0.11	11	4	LOS A
	East	0.21	10	8	LOS A
	North	0.16	10	6	LOS A
	West	0.11	10	4	LOS A

On the basis of the above assessment, it is clear that the intersection currently operates well with minimal queues and delays on all approaches.

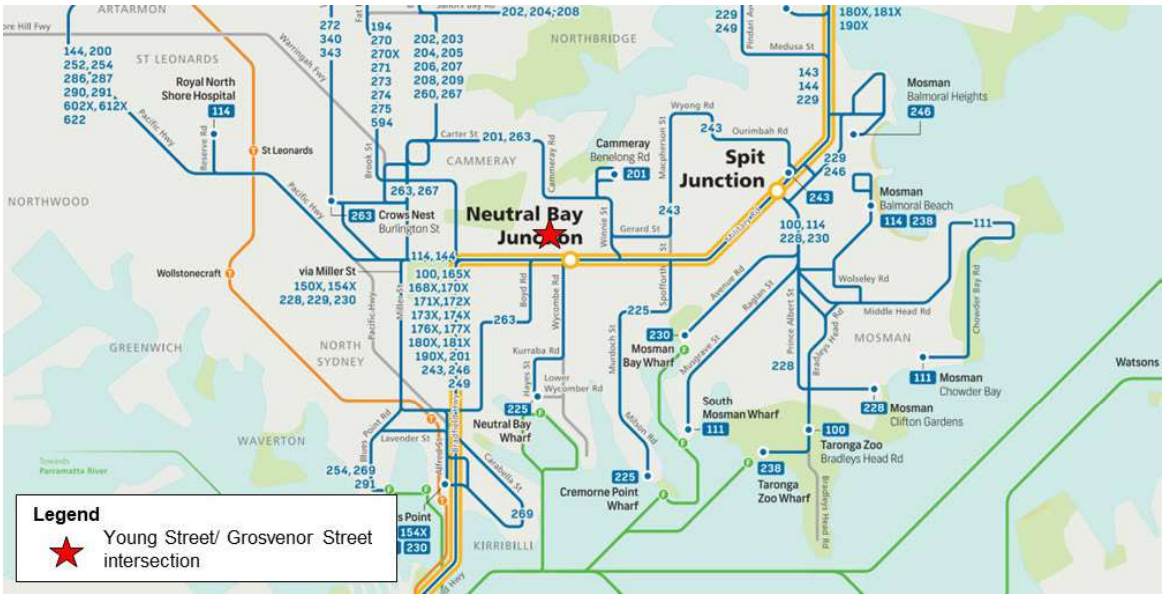
2.5 Public Transport

A review of the major bus routes available near the site at Neutral Bay Junction, Military Road is summarised in Table 3 and shown indicatively in Figure 11.

Table 3: Public Transport Provision

Service	Route number	Route description	Frequency on/ off-peak
Bus	B1	B-Line Mona Vale to City Wynyard	6-10 mins/ 15 mins
	100	Taronga Zoo to City QVB (Loop)	5 mins/ 10 mins
	114	Balmoral to RNS Hospital	10 mins/ 15 mins
	144	Manly to Chatswood	10 mins (on and off-peak)
	154X	Milsons Point to Dee Why	5 mins/ 10 mins
	168X	Balgowlah to City Wynyard via North Balgowlah	20 mins (on and off-peak)
	171X	City Wynyard to Balgowlah via Clontarf	30-40 mins (on and off-peak)
	180X	City Wynyard to Collaroy Plateau	5 mins/ 20 mins
	181X	Narrabeen to City Wynyard	10 mins (on and off peak)
	190X	City Wynyard to Avalon Beach	10 mins/ 20 mins
	225	Cremorne Point Wharf to Neutral Bay Wharf	20 mins/ 30 mins
	263	Crows Nest to city Bridge St via Cremorne	15 mins/ 30 mins
	228, 229, 230, 243, 246, 249	Military Road to City	Various

Figure 11: Surrounding Bus Network Map



Base image source: https://transportnsw.info/document/3953/buses-around-northern-beaches.pdf

2.6 Walking and Cycling Infrastructure

Young Street and Grosvenor Street provide footpaths on both sides of the road, and the existing roundabout provides pedestrian refuges on all approaches. There are currently no cycling paths on Young Street or Grosvenor Street itself.

In the broader context, footpaths are provided along Military Road and most local streets within the town centre, except some laneways where footpaths are narrow or disconnected. A shared zone is implemented along the full length of Grosvenor Lane between Ben Boyd Road and Waters Road, where the default speed limit is reduced to 10 kilometres per hour and vehicles are required to give way to pedestrians.

Signalised pedestrian crossings are provided on all legs of most intersections within the town centre. However, no pedestrian crossing is provided on the western leg of the Belgrave Street and Waters Road intersection. Pedestrians crossing at this location would need to utilise the crossing facilities on other legs and travel a longer distance.

At the Belgrave Street / Young Street intersection, signalised pedestrian crossings were installed on the north and south legs of the intersection in early 2023 to complement the crossings already provided on the other legs. This was delivered as part of a staged construction of the Young Street Cycleway, between Sutherland Street and Grosvenor Street.

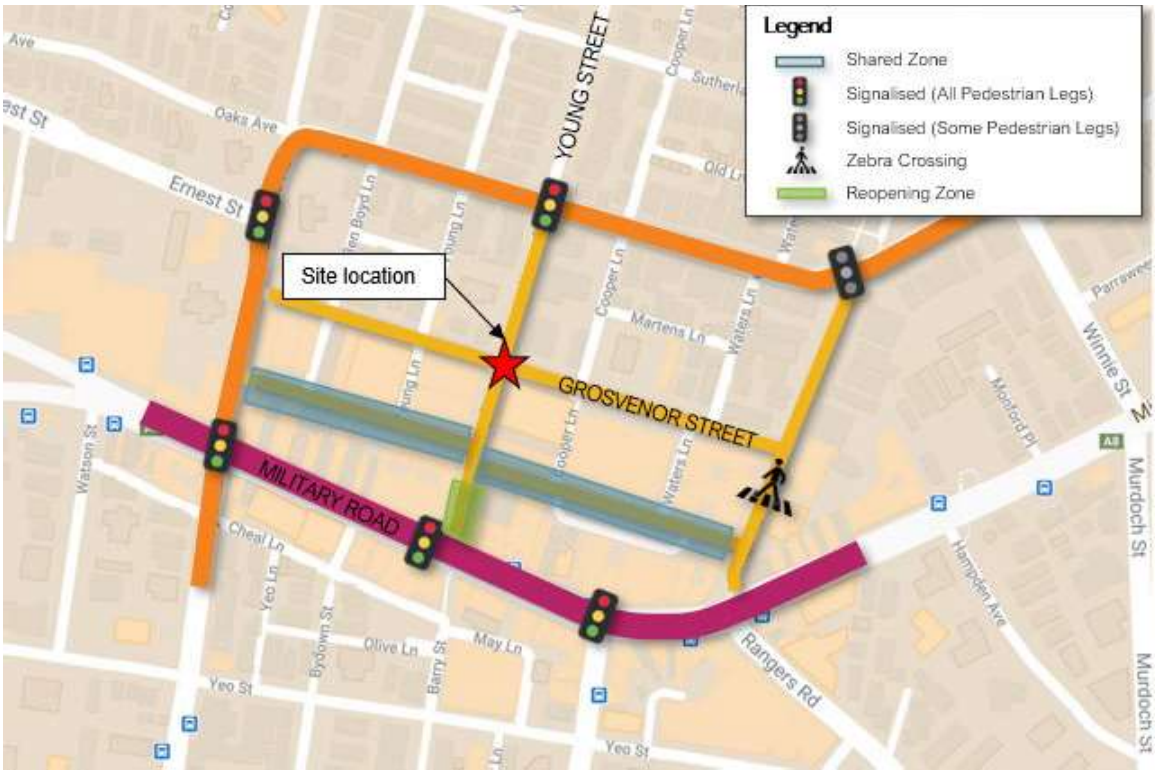
Other facilities within the study area include a pedestrian (zebra) crossing on Waters Road, south of Grosvenor Street. Ben Boyd Road, Young Street and Waters Road all provide north-south access for pedestrians within the study area connecting Military Road. There are also pedestrian laneways and through-building connections between the Grosvenor Lane car park and Military Road.

Young Street is centrally located within the Neutral Bay town centre and attracts the most pedestrian demand and activity amongst the three north-south links. Young Street also intersects with Grosvenor Lane and Grosvenor Street, where high pedestrian activities are already generated by the existing shared zone, on-street and off-street parking and nearby shops.

During both peaks, moderate pedestrian volumes were generally observed, concentrated in the core retail area on and surrounding the Grosvenor Lane car park.

Pedestrian facilities are shown in Figure 12.

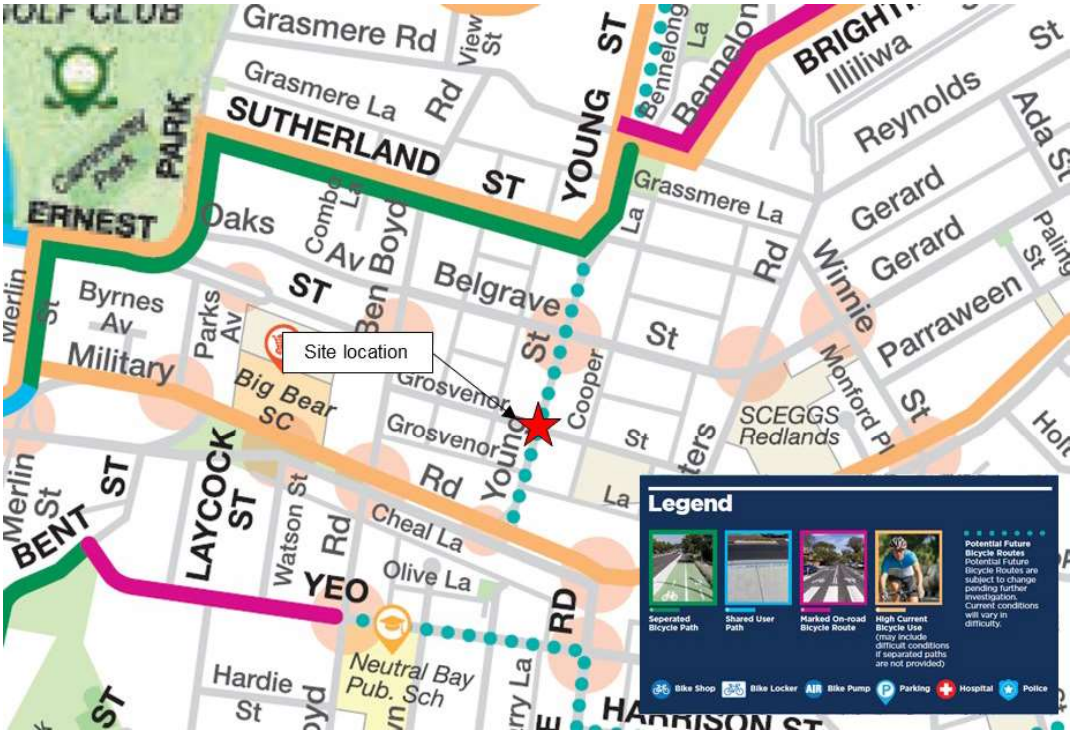
Figure 12: Surrounding Pedestrian Facilities



Base image source: Google Maps

High levels of cycling traffic were observed along Military Road, with only minimal volumes currently present along either Young Street or Grosvenor Street in the vicinity of the site. The surrounding cycling infrastructure is shown in Figure 13.

Figure 13: Surrounding Cycling Network



Source: Northern Sydney Cycling Map, North Sydney Council

3. Development Proposal

3.1 Intersection Layout

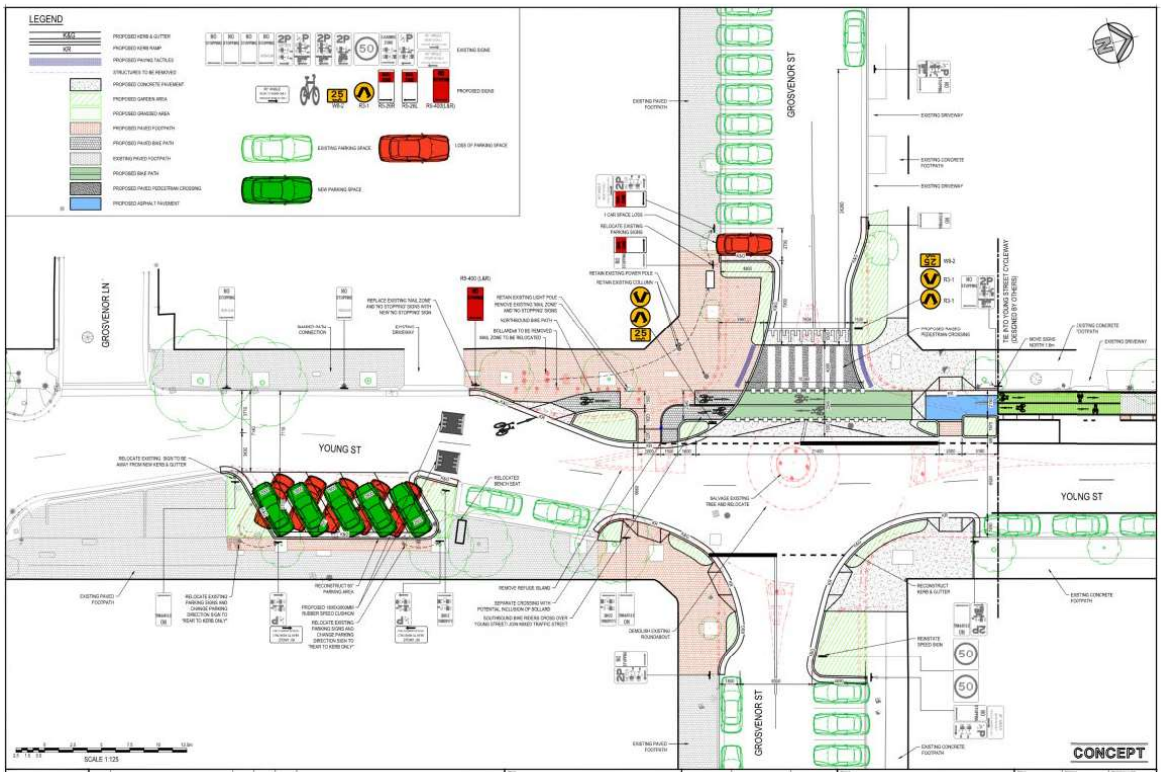
The proposed works involve the conversion of the existing roundabout to a stop-sign controlled intersection with priority given to north-south movements on Young Street. The project would also include construction of a pedestrian crossing and bi-directional cycleway on Grosvenor Street, on the west leg of the intersection.

To accommodate this new pedestrian and cycling infrastructure, the footpath will be widened requiring the relocation of a Mail Zone to Grosvenor Street. This results in the loss of one parking space on the Grosvenor Street western leg.

To improve sightlines, the 60-degree car parking on Young Street, south of the intersection, will also be reconfigured such that it supports rear-to-kerb car parking and 'left out' movements (with no net change to the number of parking spaces provided at this location). This was requested by Transport for NSW.

Figure 14 illustrates the proposed layout and reconfigured car parking.

Figure 14: Young Street / Grosvenor Street General Arrangement



Source: Spackman Mossop Michaels, date 15 May 2023

4. Parking Assessment

4.1 Existing Car Parking Demand

Site inspections conducted in August 2023 during the peak periods provided the opportunity to observe and gain a qualitative appreciation of the parking demand and supply within the commercial centre. Generally, on-street parking within the study area was shown to be well utilised but with some spare capacity, and it is expected that drivers would for the most part be able to find a parking space reasonably close to their desired destination. The public parking lot on Grosvenor Lane experiences high demand, however, with some capacity observed as with other on-street parking.

Due to the short-term nature of some on-street parking, many parking manoeuvres were observed within the study area, slowing traffic circulation for general traffic.

Approximately 10 short-term parking spaces were removed as a result of the Young Street closure, however, as indicated above there is still some spare on-street parking available on a typical weekday within the study area.

Figure 15: General parking restriction

Figure 16: General parking supply- Grosvenor Lane

4.2 Parking Impact

The proposed intersection upgrade ultimately results in the net loss of one parking space. As such, the impact on parking is very minimal and should be easily accommodated by other on-street and at-grade car parking within the town centre. Notwithstanding, additional parking will be available depending on the design of the Young Street reopening.

4.3 Intersection Layout Review

A high-level review of the intersection layout was carried out in accordance with the AS2890.5-2020 requirements. The assessment identified the following additional recommendations for consideration as part of the ongoing design development:

- Provide stop signs adjacent to stop (TF) linemarkings
- Provide speed hump warning signs for the proposed speed cushions south of the intersection on Young Street
- Review the dimensions of the 60-degree car parking area to ensure it complies with the AS2890.5-2020 requirements, namely parking bays to be three metres in width with the distance from the kerb line to the dividing line to be 9.9 metres with a 600mm kerb overhang (assuming that half-hour parking restrictions are maintained.)
- Ensure swept path assessments include appropriate allowance for clearances and a suitable manoeuvring speed for the relevant design vehicles.

The review indicates that the proposed intersection layout is expected to operate satisfactorily, subject to the adoption of the recommendations discussed above. The high-level design review is attached in Appendix C.

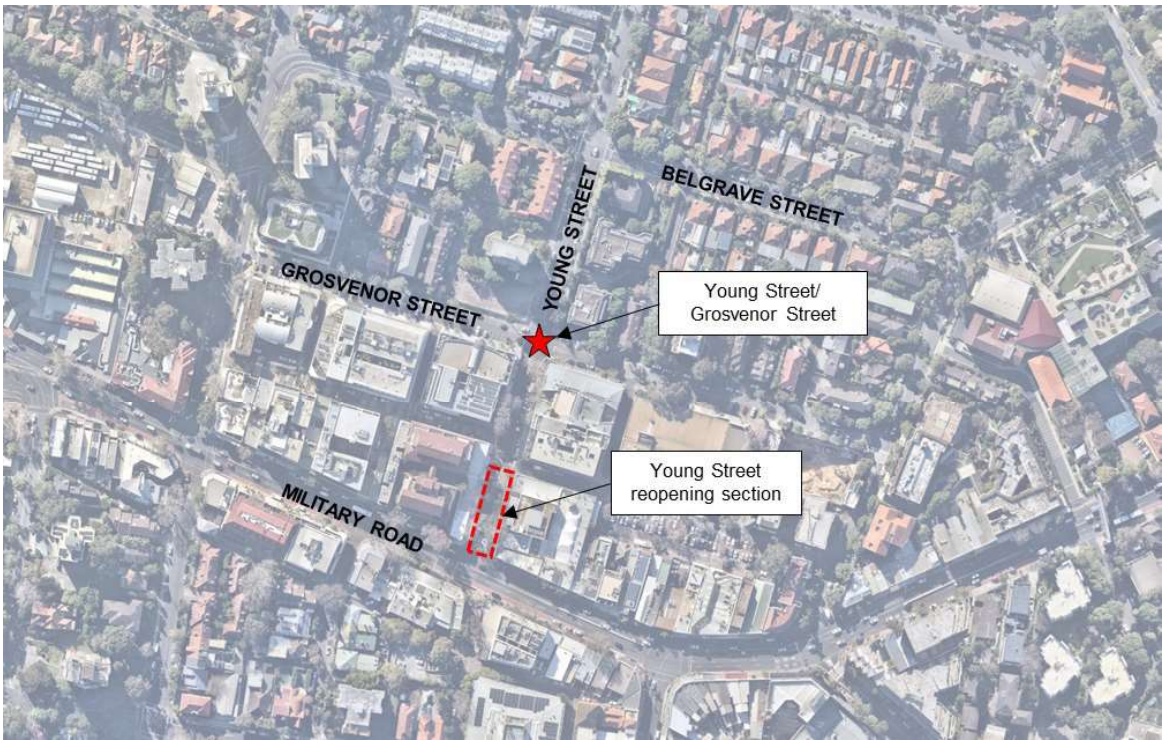
5. Traffic Impact Assessment

5.1 Traffic Redistribution

As noted earlier in this report, Council resolved to reopen a small segment of Young Street to vehicular traffic between Grosvenor Lane and Military Road (about 70 metres south of the Young Street/ Grosvenor Street roundabout), which was previously closed and converted to a pedestrian plaza in December 2020 as part of Council's streetscape upgrade works along Military Road. Stantec has previously conducted a number of traffic assessments investigating the traffic redistribution impacts of reopening this road section under various scenarios on the surrounding road network.

The future operation of the Young Street/ Grosvenor Street intersection is dependent on the Young Street reopening scenario selected by Council (two-way, one-way northbound, or one-way southbound). The location of the proposed segment of Young Street to be reopened relative to the subject site was previously shown in Figure 1 and has been reproduced below in Figure 17.

Figure 17: Young Street/ Grosvenor intersection and nearby Young Street reopening segment



Base image source: Nearmap

As discussed in Section 3.1.1 of the *Young Street, Neutral Bay Reopening Traffic Impact Assessment* (Stantec, 2022), WSP commissioned origin-destination surveys on Thursday 14 June and Saturday 16 June 2018 prior to the closure of Young Street. This data was used to identify the trip patterns in the town centre at that time and to predict the redistribution of traffic as a result of the road closure.

For the purposes of the Stantec 2022 assessment, it was assumed that the present-day origins and destinations were effectively the same as in 2018, since no disproportionate development had occurred in the study area between 2018 and 2022 (it is noted that no significant construction has occurred since 2022 either, and therefore redistributions are still accurate for the current scenarios). The redistributions estimated for the road closure can therefore be 'reverse-engineered' to calculate the redistribution of traffic back to Young Street as a result of its reopening.

The redistributed traffic volumes following reopening under each scenario (two-way, one-way northbound and one-way southbound) during the weekday AM and PM peak hours are shown in Figure 18 to Figure 23.

Figure 18: Young Street/ Grosvenor Street AM Peak (Two-Way)

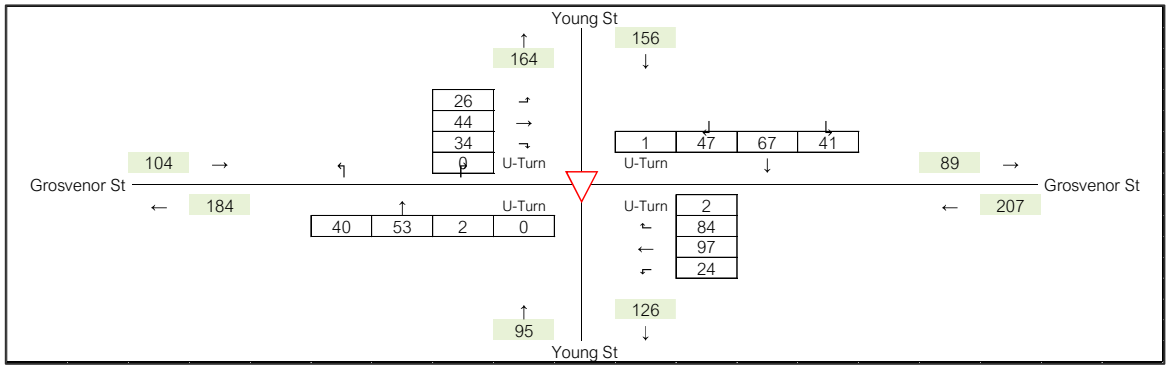


Figure 19: Young Street/ Grosvenor Street PM Peak (Two-Way)

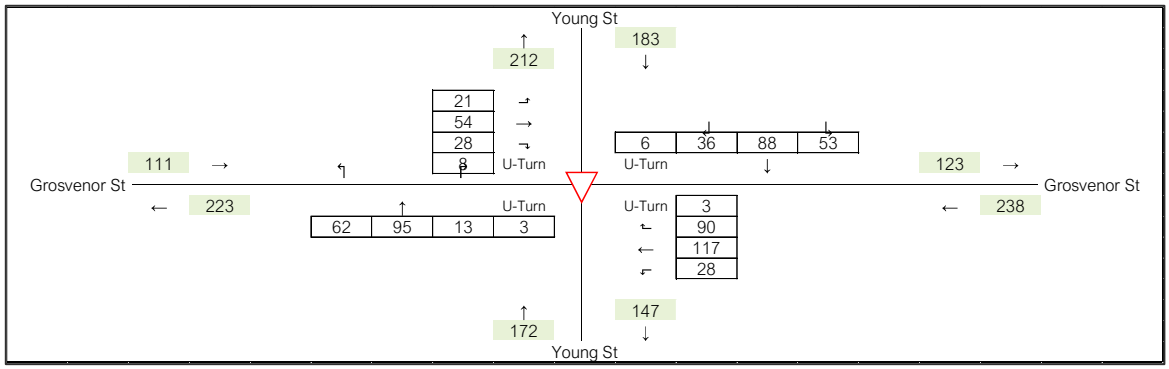


Figure 20: Young Street/ Grosvenor Street AM Peak (One-Way Northbound)

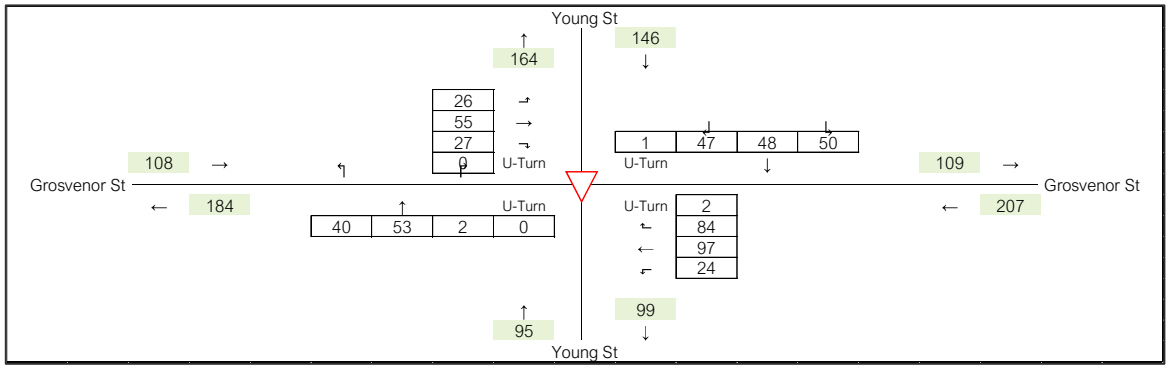


Figure 21: Young Street/ Grosvenor Street PM Peak (One-Way Northbound)

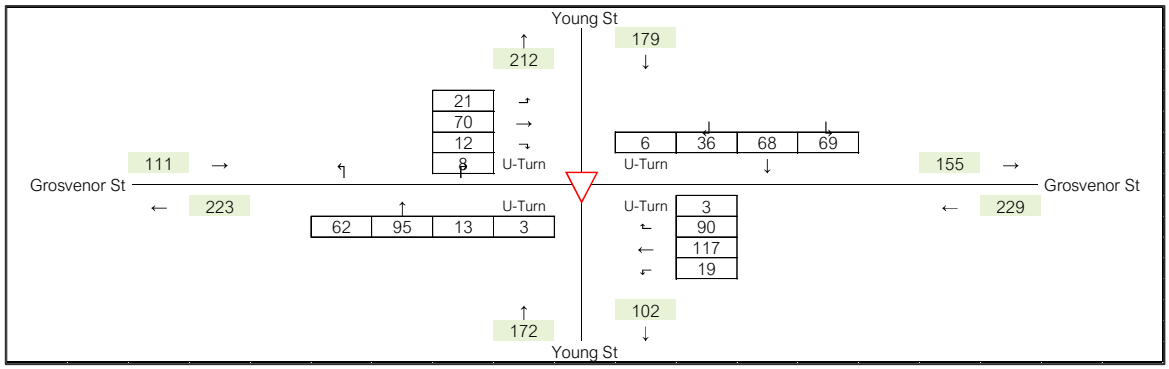


Figure 22: Young Street/ Grosvenor Street AM Peak (One-Way Southbound)

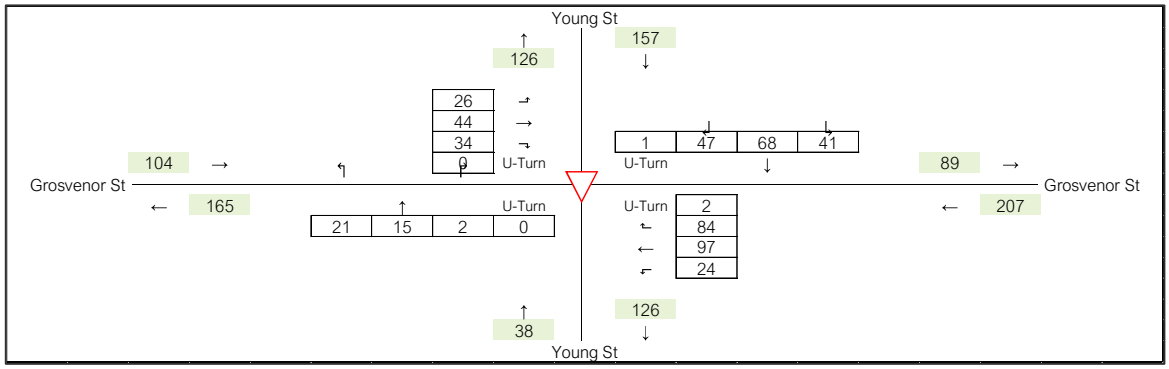
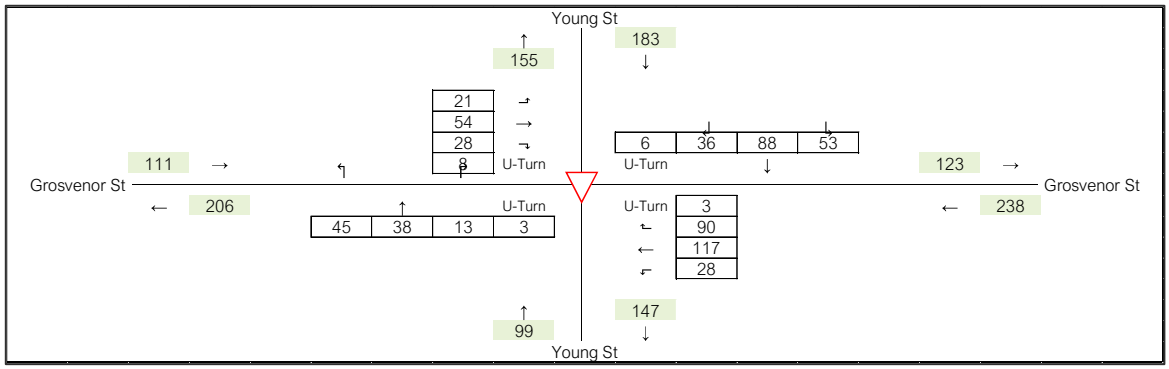


Figure 23: Young Street/ Grosvenor Street PM Peak (One-Way Southbound)



5.2 Background Traffic Growth

It is noted that the 2022 volumes in the town centre were generally observed to be lower than those previously surveyed in 2018 by WSP. As such, no background growth was adopted for the intersections as part of the previous traffic assessments conducted by Stantec in the study area. However, given the development involves conversion to a priority-controlled intersection from a roundabout (which typically can accommodate higher traffic volumes), a conservative background traffic growth rate of 1.5 per cent per annum has been adopted to ensure the design life of the new intersection layout is adequately considered.

5.3 Additional Assumptions

The *North Sydney Integrated Cycling Strategy* prepared by GTA Consultants for North Sydney Council (dated June 2014) found that newly constructed separated cycleways observed an increase in cyclist usage of 60 per cent and 48 per cent in the weekday AM and PM peak periods, respectively, along these routes one year after construction. As such, to account for increased usage of the cycleway following construction of the Young Street Cycleway Extension Project (as a worst case), these growth rates have been applied to the peak hour north-south cycle movements at the intersection.

To account for general background growth in the region, a 1.5 per cent background growth rate (as discussed in Section 5.2) has also been applied to estimate future pedestrian and cyclist volumes. Furthermore, a redistribution of pedestrians/ cyclists from the eastern leg of the intersection to the western leg was assumed, based on the expectation that commuters will utilise the new crossing facilities with their associated safety benefits once the intersection upgrade has been completed.

In addition, as a conservative assessment, the cyclist movements along the cycleway where it crosses the western leg of the intersection (i.e. Grosvenor Street) have been modelled as pedestrian movements within SIDRA INTERSECTION. This was necessary to address modelling limitations within the software, but is considered a worst-case assessment given the slower crossing speeds (and hence increased delays to vehicular movements) exhibited by pedestrians relative to cyclists.

5.4 Traffic Impact

Based on the information and assumptions presented in Sections 5.1 to 5.3 above, SIDRA INTERSECTION modelling has been completed at the Young Street / Grosvenor Street intersection to understand the performance of the proposed priority-controlled intersection layout and potential traffic impacts caused by background growth and the different Young Street reopening scenarios at the time of opening (assumed to be 2024), 10 years, and 20 years post opening.

Table 4 summarises the impacts of the different Young Street reopening scenarios following conversion of the roundabout to a priority-controlled intersection in 2024.

Table 4: Young Street/ Grosvenor Street Intersection 2024 Operating Conditions

Peak	Leg	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Young Street Reopening Scenario 1 – Two-Way					
AM	South	0.06	6	0	LOS A
	East	0.26	10	8	LOS A
	North	0.10	6	3	LOS A
	West	0.13	11	4	LOS A
PM	South	0.10	6	1	LOS A
	East	0.33	11	11	LOS A
	North	0.11	6	3	LOS A
	West	0.15	11	4	LOS A
Young Street Reopening Scenario 2 – One-Way Southbound					
AM	South	0.02	6	0	LOS A
	East	0.25	9	7	LOS A
	North	0.09	6	2	LOS A
	West	0.12	10	3	LOS A
PM	South	0.06	6	1	LOS A
	East	0.31	10	9	LOS A
	North	0.11	6	2	LOS A
	West	0.14	10	4	LOS A
Young Street Reopening Scenario 3 – One-Way Northbound					
AM	South	0.06	6	0	LOS A
	East	0.26	10	8	LOS A
	North	0.09	6	3	LOS A
	West	0.13	11	4	LOS A
PM	South	0.10	6	1	LOS A
	East	0.32	11	10	LOS A
	North	0.11	6	3	LOS A
	West	0.14	11	4	LOS A

On the basis of the above results all intersection legs perform well in 2024, with minimal delays and queues and LOS A predicted to occur across the AM and PM peak periods. It should be noted that the right turning movements at all legs are the worst performing movements, due to having longer queues and delay times compared to other movements.

It is also observed that the various reopening scenarios have negligible impact on the intersection operation at Young Street / Grosvenor Street, although the southbound one-way scenario performs slightly better than the other scenarios due to the lower incoming vehicle movements from Military Road travelling through the intersection.

The two-way reopening scenario is the worst performing scenario and accordingly has been adopted for the purpose of assessing the potential traffic impacts in the future assessment years. The predicted operating conditions for the 10-Year and 20-Year Design Horizons are shown in Table 5 and Table 6 respectively.

Table 5: 10-Year Design Horizon (Two-Way Young Street Reopening) 2034 Operating Conditions

Peak	Leg	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Young Street Reopening Scenario 1 – Two-Way					
AM	South	0.07	6	0	LOS A
	East	0.32	10	10	LOS A
	North	0.11	6	3	LOS A
	West	0.16	11	4	LOS A
PM	South	0.12	6	1	LOS A
	East	0.41	12	16	LOS A
	North	0.13	6	3	LOS A
	West	0.19	12	5	LOS A

Table 6: 20-Year Design Horizon (Two-Way Young Street Reopening) 2044 Operating Conditions

Peak	Leg	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Young Street Reopening Scenario 1 – Two-Way					
AM	South	0.08	6	0	LOS A
	East	0.40	12	15	LOS A
	North	0.13	6	4	LOS A
	West	0.20	12	6	LOS A
PM	South	0.14	6	2	LOS A
	East	0.51	14	23	LOS A
	North	0.15	6	4	LOS A
	West	0.24	13	7	LOS A

On the basis of the above, all intersection legs continue to operate at LOS A across the AM and PM peak hours with minimal queues and delays. Comparatively, there is increased queueing for right turning movements, particularly at the eastern leg on Grosvenor Street during the AM and PM peaks as queues double in length over the 20-year horizon (however still only expected to be up to three vehicles at most). These results are largely expected due to the increased vehicular, pedestrian and cyclist movements, caused by the background growth.

It is noted that the traffic assessment is considered a worst-case assessment due to the adopted background growth. Realistically, unless there is significant future development within the town centre, traffic volumes would not be expected to grow due to following reasons:

- The surrounding road network is currently highly congested (particularly on Military Road) and therefore any potential growth is limited.
- Council is likely to impose other measures to encourage modal shifts towards public or active transport means (such as the subject project).

As such, the intersection is expected to continue to operate well with the proposed pedestrian and cycling upgrades, with the change from a roundabout to a priority-controlled layout expected to have minimal traffic impact for the volumes predicted to occur at this intersection.

Furthermore, the upgraded intersection layout is expected to deliver positive benefits for cyclists/ pedestrians in the town centre including:

- improved accessibility and safety
- allowance for future connectivity to the Route 2 Cycleway Extension Project
- promotion of active transport methods to the town centre, with the potential benefit of reducing private vehicle usage.

6. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

- The proposal seeks to convert the Young Street/ Grosvenor Street roundabout located within Neutral Bay town centre to a priority-controlled intersection, which will incorporate a pedestrian crossing and bi-directional cycleway on the western approach.
- The traffic assessment and SIDRA modelling indicates that the existing roundabout currently operates well.
- The proposed intersection upgrade results in the net loss of one on-street parking space. This small reduction in parking is expected to be easily accommodated by the surrounding on-street and at-grade car parks within the town centre which currently have some spare capacity. Notwithstanding, additional on-street parking should be available once Young Street between Military Road and Grosvenor Lane reopens to traffic.
- The proposed intersection layout is generally consistent with the dimensional requirements as set out in the relevant Australian Standards (AS 2890 series).
- Upon completion of the proposed works, it is expected that pedestrian and cycle movements along Young Street will be more concentrated at the pedestrian crossing and cycleway on the western leg (Grosvenor Street).
- An annual background growth rate of 1.5 per cent was adopted as a conservative assessment for vehicular, pedestrian and cyclist movements to assess the operation and potential traffic impacts of the proposed intersection layout in future years. Allowance was also made for an increased uptake by commuters using the new cycleway infrastructure once the Young Street Cycleway Extension Project has been completed (as a worst case).
- The analysis considered the different traffic redistributions resulting from three alternative future reopening scenarios (two-way, one-way northbound and one-way southbound) for Young Street between Military Road and Grosvenor Lane. The future modelling assessment indicates that the intersection will continue to operate well at LOS A for all three reopening scenarios. It is apparent that the southbound one-way strategy performs best, however, there is minimal difference between all three scenarios.
- Based on the traffic assessments undertaken as part of this study, the proposed intersection upgrade is not expected to result in any adverse impacts on the performance or operation of the surrounding road network.
- Furthermore, the upgraded intersection layout will deliver positive benefits for cyclists/ pedestrians in the town centre including improved accessibility and safety, allowance for future connectivity to the Route 2 Cycleway Extension Project and the promotion of active transport methods to the town centre (with the potential benefit of reducing private vehicle usage).

As such, the proposal can be supported from a traffic and transport perspective.

Appendix A. Traffic Surveys

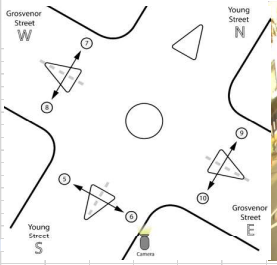
Row Labels	Sum of PEDESTRIAN	Sum of BICYCLE
Movement 05	794	10
Young St S-Out	794	10
17/06/2023	519	7
20/06/2023	275	3
Movement 06	671	6
Young St S-In	671	6
17/06/2023	421	6
20/06/2023	250	0
Movement 07	346	8
Grosvenor St W-Out	346	8
17/06/2023	175	1
20/06/2023	171	7
Movement 08	473	13
Grosvenor St W-In	473	13
17/06/2023	256	9
20/06/2023	217	4
Movement 09	496	8
Grosvenor St E-Out	496	8
17/06/2023	255	6
20/06/2023	241	2
Movement 10	467	6
Grosvenor St E-In	467	6
17/06/2023	259	5
20/06/2023	208	1
Grand Total	3247	51

The screenshot below is how these count lines or count shapes have been created in the AI Software to extract the relevant data. Each movement studied has a 'Movement Label'.

Each possible movement (movements between Movement Labels) have been translated into a 'Movement ID' and is displayed as a number in the graphic on the left.

The data is organised by Movement ID, date, time and then volume of each individual road user type.

*Pedestrian road crossings at Young St N were unable to be accurately detected by the AI at this site, and have been omitted from this data.



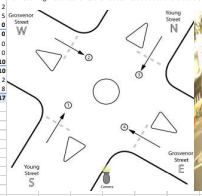
Row Labels	Sum of BICYCLE	Sum of MC	Sum of CAR	Sum of LGV	Sum of BUS	Sum of OGV1	Sum of OGV2
Movement 1	21	38	1408	67	0	12	0
Young St S-In	21	38	1408	67	0	12	0
17/06/2023	5	28	771	17	0	3	0
20/06/2023	16	10	637	50	0	9	0
Movement 2	6	60	2563	245	0	41	7
Grosvenor St W-In	6	60	2563	245	0	41	7
17/06/2023	3	26	1385	117	0	14	2
20/06/2023	3	34	1178	128	0	27	5
Movement 3	14	24	2247	632	0	18	0
Young St N-In	14	24	2247	632	0	18	0
17/06/2023	9	15	1270	309	0	2	0
20/06/2023	5	9	977	323	0	16	0
Movement 4	19	85	4108	283	1	31	10
Grosvenor St E-In	19	85	4108	283	1	31	10
17/06/2023	14	43	2178	120	0	4	2
20/06/2023	5	42	1930	163	1	27	8
Grand Total	60	207	10326	1227	1	102	17

The screenshot below is how these count lines or count shapes have been created in the AI Software to extract the relevant data. Each movement studied has a 'Movement Label'.

Each possible movement (movements between Movement Labels) have been translated into a 'Movement ID' and is displayed as a number in the graphic on the left.

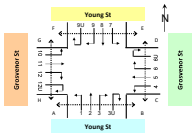
The data is organised by Movement ID, date, time and then volume of each individual road user type.

* Due to the tree cover at the centre of the roundabout, the AI is unable to track road users that pass behind it. For this reason we have used count lines to count road users as they enter the roundabout from each leg. Road user exits are not counted so as to avoid double-counting.



Job No.	: AUNSW4228
Client	: Stantec Australia Pty Ltd
Suburb	: Neutral Bay
Location	: 10. Young Street / Grosvenor Street
Day/Date	: Wed, 20 July 2022
Weather	: Fine
Description	: Classified Intersection Count
	: 15 mins Data

Classifications	**Class 1**	**Class 2**
	Lights	Heavies



MATRIX Traffic and Transport Data

Approach	Young St												Grosvenor St											
Direction	Direction 1 (Left Turn)			Direction 2 (Through)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
7:00 to 7:15	3	0	**3**	7	0	**7**	0	0	**0**	0	0	**0**	0	0	**0**	16	0	**16**	4	0	**4**	1	0	**1**
7:15 to 7:30	6	0	**6**	3	0	**3**	0	0	**0**	1	0	**1**	3	0	**3**	20	0	**20**	17	1	**18**	1	0	**1**
7:30 to 7:45	4	0	**4**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	19	3	**22**	20	0	**20**	1	0	**1**
7:45 to 8:00	10	0	**10**	5	0	**5**	0	0	**0**	0	0	**0**	5	0	**5**	31	0	**31**	20	0	**20**	0	0	**0**
8:00 to 8:15	3	0	**3**	6	0	**6**	1	0	**1**	0	0	**0**	4	0	**4**	19	1	**20**	18	0	**18**	1	0	**1**
8:15 to 8:30	4	0	**4**	4	0	**4**	1	0	**1**	0	0	**0**	4	1	**5**	23	3	**26**	26	0	**26**	0	0	**0**
8:30 to 8:45	10	1	**11**	6	0	**6**	4	0	**4**	0	0	**0**	2	1	**3**	22	2	**24**	14	0	**14**	0	0	**0**
8:45 to 9:00	3	0	**3**	2	0	**2**	3	0	**3**	1	0	**1**	6	0	**6**	19	1	**20**	13	0	**13**	0	0	**0**
AM Totals	**43**	**1**	**44**	**33**	**0**	**33**	**9**	**0**	**9**	**2**	**0**	**2**	**28**	**2**	**30**	**169**	**8**	**177**	**132**	**1**	**133**	**4**	**0**	**4**
16:15 to 16:30	5	0	**5**	10	0	**10**	1	0	**1**	0	0	**0**	3	0	**3**	32	0	**32**	13	0	**13**	2	0	**2**
16:30 to 16:45	6	0	**6**	8	0	**8**	1	0	**1**	0	0	**0**	3	0	**3**	24	0	**24**	14	0	**14**	2	0	**2**
16:45 to 17:00	8	1	**9**	12	0	**12**	4	0	**4**	1	0	**1**	6	0	**6**	24	1	**25**	17	0	**17**	1	0	**1**
17:00 to 17:15	8	0	**8**	8	0	**8**	0	0	**0**	1	0	**1**	3	0	**3**	36	0	**36**	18	0	**18**	2	0	**2**
17:15 to 17:30	13	0	**13**	9	0	**9**	3	0	**3**	0	0	**0**	5	0	**5**	28	0	**28**	24	0	**24**	0	0	**0**
17:30 to 17:45	15	0	**15**	9	0	**9**	6	0	**6**	1	0	**1**	5	0	**5**	28	0	**28**	31	0	**31**	0	0	**0**
17:45 to 18:00	8	0	**8**	5	0	**5**	2	0	**2**	1	0	**1**	1	0	**1**	28	0	**28**	14	0	**14**	1	0	**1**
18:00 to 18:15	7	0	**7**	14	0	**14**	1	0	**1**	3	0	**3**	4	0	**4**	24	1	**25**	29	0	**29**	0	0	**0**
PM Totals	**70**	**1**	**71**	**75**	**0**	**75**	**18**	**0**	**18**	**7**	**0**	**7**	**30**	**0**	**30**	**224**	**2**	**226**	**160**	**0**	**160**	**8**	**0**	**8**

Approach	Young St												Grosvenor St												Crossing Pedestrians							
Direction	Direction 7 (Left Turn)			Direction 8 (Through)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)										
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	R to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H	Total
7:00 to 7:15	4	0	**4**	7	0	**7**	7	0	**7**	0	0	**0**	2	0	**2**	7	2	**9**	1	0	**1**	0	0	**0**	0	2	1	5	0	0	1	3	**12**
7:15 to 7:30	13	0	**13**	12	0	**12**	11	0	**11**	0	0	**0**	4	1	**5**	5	0	**5**	2	0	**2**	2	0	**2**	2	4	6	11	1	0	4	1	**29**
7:30 to 7:45	11	0	**11**	11	0	**11**	12	0	**12**	0	0	**0**	4	0	**4**	5	0	**5**	4	0	**4**	0	0	**0**	6	4	5	7	1	1	8	3	**35**
7:45 to 8:00	10	0	**10**	18	0	**18**	9	0	**9**	0	0	**0**	3	0	**3**	17	0	**17**	5	0	**5**	0	0	**0**	5	6	1	11	1	2	2	2	**31**
8:00 to 8:15	14	0	**14**	8	0	**8**	14	0	**14**	0	0	**0**	6	0	**6**	16	0	**16**	4	3	**7**	0	0	**0**	7	4	3	17	2	6	9	3	**51**
8:15 to 8:30	14	1	**15**	11	0	**11**	11	1	**12**	1	0	**1**	12	1	**13**	17	0	**17**	6	1	**7**	0	0	**0**	0	3	9	11	3	2	9	3	**40**
8:30 to 8:45	10	0	**10**	14	0	**14**	13	0	**13**	0	0	**0**	6	0	**6**	22	0	**22**	5	1	**6**	2	0	**2**	3	2	5	14	4	3	13	3	**47**
8:45 to 9:00	20	0	**20**	11	0	**11**	11	0	**11**	0	0	**0**	5	0	**5**	9	0	**9**	5	0	**5**	1	0	**1**	7	4	6	11	0	1	16	3	**53**
AM Totals	**96**	**1**	**97**	**92**	**0**	**92**	**88**	**1**	**89**	**1**	**0**	**1**	**62**	**2**	**64**	**98**	**2**	**100**	**32**	**5**	**37**	**5**	**0**	**5**	**30**	**29**	**36**	**87**	**18**	**15**	**63**	**20**	**298**
16:15 to 16:30	10	0	**10**	12	0	**12**	9	0	**9**	3	0	**3**	6	0	**6**	17	0	**17**	6	0	**6**	1	0	**1**	6	10	7	3	3	0	4	7	**40**
16:30 to 16:45	12	0	**12**	11	0	**11**	3	0	**3**	2	0	**2**	3	0	**3**	15	0	**15**	4	0	**4**	0	0	**0**	5	3	4	7	2	1	4	3	**29**
16:45 to 17:00	11	0	**11**	16	0	**16**	6	0	**6**	1	0	**1**	4	0	**4**	14	0	**14**	4	0	**4**	0	0	**0**	7	5	4	5	2	3	12	4	**42**
17:00 to 17:15	20	0	**20**	12	0	**12**	15	0	**15**	1	0	**1**	5	0	**5**	22	0	**22**	4	0	**4**	4	0	**4**	8	6	11	4	6	3	7	9	**54**
17:15 to 17:30	23	0	**23**	26	0	**26**	2	0	**2**	2	0	**2**	8	0	**8**	13	0	**13**	3	0	**3**	3	0	**3**	9	8	10	2	6	1	7	4	**47**
17:30 to 17:45	15	0	**15**	15	0	**15**	13	0	**13**	2	0	**2**	4	0	**4**	21	0	**21**	1	0	**1**	1	0	**1**	12	12	4	9	1	6	2	8	**54**
17:45 to 18:00	19	0	**19**	9	0	**9**	16	0	**16**	0	0	**0**	2	0	**2**	20	0	**20**	3	0	**3**	3	0	**3**	7	8	5	4	3	1	7	10	**45**
18:00 to 18:15	15	0	**15**	12	0	**12**	8	0	**8**	4	0	**4**	5	0	**5**	19	0	**19**	9	0	**9**	8	0	**8**	6	11	15	5	5	1	4	9	**56**
PM Totals	**125**	**0**	**125**	**112**	**0**	**112**	**72**	**0**	**72**	**15**	**0**	**15**	**37**	**0**	**37**	**141**	**0**	**141**	**34**	**0**	**34**	**20**	**0**	**20**	**60**	**63**	**60**	**39**	**28**	**16**	**47**	**54**	**367**

Appendix B. SIDRA Outputs

MOVEMENT SUMMARY

Site: 1 [existing_AM_young_st/grosvenor_st (Site Folder: existing)]

Site Category: -
Roundabout

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: Young Street (S)														
1	L2	21	0	22	0.0	0.040	5.3	LOS A	0.2	1.4	0.41	0.54	0.41	45.7
2	T1	15	0	16	0.0	0.040	5.0	LOS A	0.2	1.4	0.41	0.54	0.41	46.4
3	R2	2	0	2	0.0	0.040	7.9	LOS A	0.2	1.4	0.41	0.54	0.41	46.2
3u	U	1	0	1	0.0	0.040	10.5	LOS A	0.2	1.4	0.41	0.54	0.41	49.6
Approach		39	0	41	0.0	0.040	5.4	LOS A	0.2	1.4	0.41	0.54	0.41	46.1
East: Grosvenor Street (E)														
4	L2	18	1	19	5.6	0.186	4.8	LOS A	1.0	7.3	0.33	0.56	0.33	45.3
5	T1	97	5	102	5.2	0.186	4.6	LOS A	1.0	7.3	0.33	0.56	0.33	46.0
6	R2	84	0	88	0.0	0.186	7.4	LOS A	1.0	7.3	0.33	0.56	0.33	45.8
6u	U	2	0	2	0.0	0.186	10.0	LOS A	1.0	7.3	0.33	0.56	0.33	49.2
Approach		201	6	212	3.0	0.186	5.9	LOS A	1.0	7.3	0.33	0.56	0.33	45.9
North: Young Street (N)														
7	L2	50	1	53	2.0	0.129	4.5	LOS A	0.7	4.8	0.26	0.53	0.26	45.7
8	T1	48	0	51	0.0	0.129	4.2	LOS A	0.7	4.8	0.26	0.53	0.26	46.4
9	R2	47	1	49	2.1	0.129	7.2	LOS A	0.7	4.8	0.26	0.53	0.26	46.1
9u	U	1	0	1	0.0	0.129	9.7	LOS A	0.7	4.8	0.26	0.53	0.26	49.6
Approach		146	2	154	1.4	0.129	5.3	LOS A	0.7	4.8	0.26	0.53	0.26	46.1
West: Grosvenor Street (W)														
10	L2	26	1	27	3.8	0.099	4.7	LOS A	0.5	3.7	0.29	0.51	0.29	45.8
11	T1	55	0	58	0.0	0.099	4.4	LOS A	0.5	3.7	0.29	0.51	0.29	46.5
12	R2	23	4	24	17.4	0.099	7.5	LOS A	0.5	3.7	0.29	0.51	0.29	46.0
12u	U	1	0	1	0.0	0.099	9.9	LOS A	0.5	3.7	0.29	0.51	0.29	49.7
Approach		105	5	111	4.8	0.099	5.2	LOS A	0.5	3.7	0.29	0.51	0.29	46.2
All Vehicles		491	13	517	2.6	0.186	5.5	LOS A	1.0	7.3	0.30	0.54	0.30	46.0

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Roundabout Capacity Model: SIDRA Standard.
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.

MOVEMENT SUMMARY

Site: 1 [existing_PM_young_st/grosvenor_st (Site Folder: existing)]

Site Category: -
Roundabout

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: Young Street (S)														
1	L2	45	1	47	2.2	0.105	5.6	LOS A	0.5	3.8	0.45	0.58	0.45	45.5
2	T1	38	0	40	0.0	0.105	5.3	LOS A	0.5	3.8	0.45	0.58	0.45	46.2
3	R2	13	0	14	0.0	0.105	8.2	LOS A	0.5	3.8	0.45	0.58	0.45	45.9
3u	U	3	0	3	0.0	0.105	10.8	LOS A	0.5	3.8	0.45	0.58	0.45	49.4
Approach		99	1	104	1.0	0.105	6.0	LOS A	0.5	3.8	0.45	0.58	0.45	45.9
East: Grosvenor Street (E)														
4	L2	19	0	20	0.0	0.211	4.8	LOS A	1.2	8.3	0.35	0.56	0.35	45.4
5	T1	117	1	123	0.9	0.211	4.6	LOS A	1.2	8.3	0.35	0.56	0.35	46.1
6	R2	90	0	95	0.0	0.211	7.5	LOS A	1.2	8.3	0.35	0.56	0.35	45.8
6u	U	3	0	3	0.0	0.211	10.1	LOS A	1.2	8.3	0.35	0.56	0.35	49.2
Approach		229	1	241	0.4	0.211	5.8	LOS A	1.2	8.3	0.35	0.56	0.35	46.0
North: Young Street (N)														
7	L2	69	0	73	0.0	0.161	4.6	LOS A	0.9	6.1	0.30	0.53	0.30	45.8
8	T1	68	0	72	0.0	0.161	4.4	LOS A	0.9	6.1	0.30	0.53	0.30	46.4
9	R2	36	0	38	0.0	0.161	7.3	LOS A	0.9	6.1	0.30	0.53	0.30	46.2
9u	U	6	0	6	0.0	0.161	9.9	LOS A	0.9	6.1	0.30	0.53	0.30	49.7
Approach		179	0	188	0.0	0.161	5.3	LOS A	0.9	6.1	0.30	0.53	0.30	46.2
West: Grosvenor Street (W)														
10	L2	22	1	23	4.5	0.108	5.0	LOS A	0.5	3.9	0.34	0.53	0.34	45.8
11	T1	70	0	74	0.0	0.108	4.6	LOS A	0.5	3.9	0.34	0.53	0.34	46.5
12	R2	12	0	13	0.0	0.108	7.6	LOS A	0.5	3.9	0.34	0.53	0.34	46.3
12u	U	8	0	8	0.0	0.108	10.1	LOS A	0.5	3.9	0.34	0.53	0.34	49.7
Approach		112	1	118	0.9	0.108	5.4	LOS A	0.5	3.9	0.34	0.53	0.34	46.6
All Vehicles		619	3	652	0.5	0.211	5.6	LOS A	1.2	8.3	0.35	0.55	0.35	46.1

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Roundabout Capacity Model: SIDRA Standard.
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.

MOVEMENT SUMMARY

Site: 101 [two_way_AM_young_st/grosvenor_st (Site Folder: two_way)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	40	1	42	2.5	0.055	5.6	LOS A	0.0	0.1	0.01	0.26	0.01	56.0
2	T1	53	3	56	5.7	0.055	0.0	LOS A	0.0	0.1	0.01	0.26	0.01	57.6
3	R2	2	0	2	0.0	0.055	5.8	LOS A	0.0	0.1	0.01	0.26	0.01	55.4
Approach		95	4	100	4.2	0.055	2.5	NA	0.0	0.1	0.01	0.26	0.01	56.8
East: Grosvenor Street														
4	L2	24	1	25	4.2	0.253	8.5	LOS A	1.0	7.4	0.34	0.95	0.34	51.2
5	T1	97	5	102	5.2	0.253	9.5	LOS A	1.0	7.4	0.34	0.95	0.34	50.9
6	R2	86	0	91	0.0	0.253	9.5	LOS A	1.0	7.4	0.34	0.95	0.34	50.8
Approach		207	6	218	2.9	0.253	9.4	LOS A	1.0	7.4	0.34	0.95	0.34	50.8
North: Young Street														
7	L2	41	1	43	2.4	0.092	5.8	LOS A	0.3	2.5	0.16	0.31	0.16	55.0
8	T1	67	0	71	0.0	0.092	0.2	LOS A	0.3	2.5	0.16	0.31	0.16	56.5
9	R2	48	1	51	2.1	0.092	5.9	LOS A	0.3	2.5	0.16	0.31	0.16	54.3
Approach		156	2	164	1.3	0.092	3.4	NA	0.3	2.5	0.16	0.31	0.16	55.4
West: Grosvenor Street														
10	L2	26	1	27	3.8	0.125	8.4	LOS A	0.5	3.4	0.24	0.95	0.24	51.1
11	T1	44	0	46	0.0	0.125	9.0	LOS A	0.5	3.4	0.24	0.95	0.24	51.0
12	R2	34	4	36	11.8	0.125	10.5	LOS A	0.5	3.4	0.24	0.95	0.24	50.2
Approach		104	5	109	4.8	0.125	9.3	LOS A	0.5	3.4	0.24	0.95	0.24	50.8
All Vehicles		562	17	592	3.0	0.253	6.6	NA	1.0	7.4	0.22	0.66	0.22	53.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

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MOVEMENT SUMMARY

Site: 101 [two_way_PM_young_st/grosvenor_st (Site Folder: two_way)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	62	1	65	1.6	0.099	5.7	LOS A	0.2	1.1	0.07	0.25	0.07	55.8
2	T1	95	0	100	0.0	0.099	0.1	LOS A	0.2	1.1	0.07	0.25	0.07	57.4
3	R2	16	0	17	0.0	0.099	6.0	LOS A	0.2	1.1	0.07	0.25	0.07	55.2
Approach		173	1	182	0.6	0.099	2.6	NA	0.2	1.1	0.07	0.25	0.07	56.6
East: Grosvenor Street														
4	L2	28	0	29	0.0	0.316	8.6	LOS A	1.4	9.8	0.42	0.97	0.44	50.8
5	T1	117	1	123	0.9	0.316	10.2	LOS A	1.4	9.8	0.42	0.97	0.44	50.5
6	R2	93	0	98	0.0	0.316	10.6	LOS A	1.4	9.8	0.42	0.97	0.44	50.3
Approach		238	1	251	0.4	0.316	10.2	LOS A	1.4	9.8	0.42	0.97	0.44	50.5
North: Young Street														
7	L2	53	0	56	0.0	0.108	5.8	LOS A	0.4	2.5	0.17	0.28	0.17	55.2
8	T1	88	0	93	0.0	0.108	0.2	LOS A	0.4	2.5	0.17	0.28	0.17	56.7
9	R2	42	0	44	0.0	0.108	6.1	LOS A	0.4	2.5	0.17	0.28	0.17	54.6
Approach		183	0	193	0.0	0.108	3.2	NA	0.4	2.5	0.17	0.28	0.17	55.7
West: Grosvenor Street														
10	L2	21	0	22	0.0	0.146	8.4	LOS A	0.5	3.8	0.35	0.95	0.35	51.0
11	T1	54	0	57	0.0	0.146	9.7	LOS A	0.5	3.8	0.35	0.95	0.35	50.7
12	R2	36	0	38	0.0	0.146	10.7	LOS A	0.5	3.8	0.35	0.95	0.35	50.4
Approach		111	0	117	0.0	0.146	9.8	LOS A	0.5	3.8	0.35	0.95	0.35	50.7
All Vehicles		705	2	742	0.3	0.316	6.5	NA	1.4	9.8	0.26	0.61	0.27	53.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

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Project: \\au2019-ppfss01\shared_projects\300305017\technical\modelling\sid_230824_5017_youngst_roundabout_upgrade.sip9

MOVEMENT SUMMARY

Site: 101 [one_way_nb_AM_young_st/grosvenor_st (Site Folder: one_way_northbound)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	40	1	42	2.5	0.055	5.6	LOS A	0.0	0.1	0.01	0.26	0.01	56.0
2	T1	53	3	56	5.7	0.055	0.0	LOS A	0.0	0.1	0.01	0.26	0.01	57.6
3	R2	2	0	2	0.0	0.055	5.8	LOS A	0.0	0.1	0.01	0.26	0.01	55.4
Approach		95	4	100	4.2	0.055	2.5	NA	0.0	0.1	0.01	0.26	0.01	56.8
East: Grosvenor Street														
4	L2	24	1	25	4.2	0.250	8.4	LOS A	1.0	7.4	0.31	0.95	0.31	51.2
5	T1	97	5	102	5.2	0.250	9.4	LOS A	1.0	7.4	0.31	0.95	0.31	50.9
6	R2	86	0	91	0.0	0.250	9.5	LOS A	1.0	7.4	0.31	0.95	0.31	50.8
Approach		207	6	218	2.9	0.250	9.3	LOS A	1.0	7.4	0.31	0.95	0.31	50.9
North: Young Street														
7	L2	50	1	53	2.0	0.087	5.8	LOS A	0.3	2.4	0.16	0.36	0.16	54.5
8	T1	48	0	51	0.0	0.087	0.2	LOS A	0.3	2.4	0.16	0.36	0.16	56.0
9	R2	48	1	51	2.1	0.087	5.9	LOS A	0.3	2.4	0.16	0.36	0.16	53.9
Approach		146	2	154	1.4	0.087	4.0	NA	0.3	2.4	0.16	0.36	0.16	54.8
West: Grosvenor Street														
10	L2	26	1	27	3.8	0.125	8.4	LOS A	0.5	3.4	0.24	0.96	0.24	51.2
11	T1	55	0	58	0.0	0.125	8.9	LOS A	0.5	3.4	0.24	0.96	0.24	51.1
12	R2	27	4	28	14.8	0.125	10.5	LOS A	0.5	3.4	0.24	0.96	0.24	50.2
Approach		108	5	114	4.6	0.125	9.2	LOS A	0.5	3.4	0.24	0.96	0.24	50.9
All Vehicles		556	17	585	3.1	0.250	6.7	NA	1.0	7.4	0.21	0.68	0.21	52.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

Organisation: STANTEC NEW ZEALAND | Licence: NETWORK / Enterprise | Processed: Thursday, 23 November 2023 10:23:01 PM
Project: \\au2019-ppfss01\shared_projects\300305017\technical\modelling\sid_230824_5017_youngst_roundabout_upgrade.sip9

MOVEMENT SUMMARY

Site: 101 [one_way_nb_PM_young_st/grosvenor_st (Site Folder: one_way_northbound)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	62	1	65	1.6	0.099	5.7	LOS A	0.2	1.1	0.07	0.25	0.07	55.8
2	T1	95	0	100	0.0	0.099	0.1	LOS A	0.2	1.1	0.07	0.25	0.07	57.4
3	R2	16	0	17	0.0	0.099	5.9	LOS A	0.2	1.1	0.07	0.25	0.07	55.2
Approach		173	1	182	0.6	0.099	2.6	NA	0.2	1.1	0.07	0.25	0.07	56.6
East: Grosvenor Street														
4	L2	19	0	20	0.0	0.307	8.4	LOS A	1.3	9.3	0.41	0.97	0.42	50.8
5	T1	117	1	123	0.9	0.307	10.1	LOS A	1.3	9.3	0.41	0.97	0.42	50.5
6	R2	93	0	98	0.0	0.307	10.5	LOS A	1.3	9.3	0.41	0.97	0.42	50.3
Approach		229	1	241	0.4	0.307	10.1	LOS A	1.3	9.3	0.41	0.97	0.42	50.5
North: Young Street														
7	L2	69	0	73	0.0	0.106	5.8	LOS A	0.4	2.5	0.18	0.33	0.18	54.7
8	T1	68	0	72	0.0	0.106	0.3	LOS A	0.4	2.5	0.18	0.33	0.18	56.2
9	R2	42	0	44	0.0	0.106	6.1	LOS A	0.4	2.5	0.18	0.33	0.18	54.1
Approach		179	0	188	0.0	0.106	3.8	NA	0.4	2.5	0.18	0.33	0.18	55.1
West: Grosvenor Street														
10	L2	21	0	22	0.0	0.138	8.4	LOS A	0.5	3.6	0.34	0.95	0.34	51.2
11	T1	70	0	74	0.0	0.138	9.6	LOS A	0.5	3.6	0.34	0.95	0.34	50.9
12	R2	20	0	21	0.0	0.138	10.4	LOS A	0.5	3.6	0.34	0.95	0.34	50.6
Approach		111	0	117	0.0	0.138	9.5	LOS A	0.5	3.6	0.34	0.95	0.34	50.9
All Vehicles		692	2	728	0.3	0.307	6.5	NA	1.3	9.3	0.26	0.62	0.26	53.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

MOVEMENT SUMMARY

Site: 101 [one_way_sb_AM_young_st/grosvenor_st (Site Folder: one_way_southbound)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	21	1	22	4.8	0.023	5.6	LOS A	0.0	0.1	0.03	0.35	0.03	54.9
2	T1	15	3	16	20.0	0.023	0.0	LOS A	0.0	0.1	0.03	0.35	0.03	56.5
3	R2	2	0	2	0.0	0.023	5.8	LOS A	0.0	0.1	0.03	0.35	0.03	54.5
Approach		38	4	40	10.5	0.023	3.4	NA	0.0	0.1	0.03	0.35	0.03	55.5
East: Grosvenor Street														
4	L2	24	1	25	4.2	0.240	8.5	LOS A	1.0	7.1	0.32	0.94	0.32	51.4
5	T1	97	5	102	5.2	0.240	9.1	LOS A	1.0	7.1	0.32	0.94	0.32	51.1
6	R2	86	0	91	0.0	0.240	9.2	LOS A	1.0	7.1	0.32	0.94	0.32	51.0
Approach		207	6	218	2.9	0.240	9.1	LOS A	1.0	7.1	0.32	0.94	0.32	51.1
North: Young Street														
7	L2	41	1	43	2.4	0.091	5.6	LOS A	0.3	2.3	0.09	0.32	0.09	55.2
8	T1	68	0	72	0.0	0.091	0.1	LOS A	0.3	2.3	0.09	0.32	0.09	56.8
9	R2	47	1	49	2.1	0.091	5.7	LOS A	0.3	2.3	0.09	0.32	0.09	54.6
Approach		156	2	164	1.3	0.091	3.2	NA	0.3	2.3	0.09	0.32	0.09	55.7
West: Grosvenor Street														
10	L2	26	1	27	3.8	0.119	8.2	LOS A	0.4	3.2	0.11	1.00	0.11	51.1
11	T1	44	0	46	0.0	0.119	8.7	LOS A	0.4	3.2	0.11	1.00	0.11	51.0
12	R2	34	4	36	11.8	0.119	10.0	LOS A	0.4	3.2	0.11	1.00	0.11	50.2
Approach		104	5	109	4.8	0.119	9.0	LOS A	0.4	3.2	0.11	1.00	0.11	50.8
All Vehicles		505	17	532	3.4	0.240	6.8	NA	1.0	7.1	0.18	0.72	0.18	52.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

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MOVEMENT SUMMARY

Site: 101 [one_way_sb_PM_young_st/grosvenor_st (Site Folder: one_way_southbound)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	45	1	47	2.2	0.058	5.7	LOS A	0.1	1.0	0.12	0.33	0.12	54.9
2	T1	38	0	40	0.0	0.058	0.2	LOS A	0.1	1.0	0.12	0.33	0.12	56.4
3	R2	16	0	17	0.0	0.058	5.9	LOS A	0.1	1.0	0.12	0.33	0.12	54.4
Approach		99	1	104	1.0	0.058	3.6	NA	0.1	1.0	0.12	0.33	0.12	55.4
East: Grosvenor Street														
4	L2	28	0	29	0.0	0.293	8.5	LOS A	1.2	8.7	0.38	0.95	0.38	51.2
5	T1	117	1	123	0.9	0.293	9.5	LOS A	1.2	8.7	0.38	0.95	0.38	50.9
6	R2	93	0	98	0.0	0.293	9.9	LOS A	1.2	8.7	0.38	0.95	0.38	50.7
Approach		238	1	251	0.4	0.293	9.5	LOS A	1.2	8.7	0.38	0.95	0.38	50.9
North: Young Street														
7	L2	53	0	56	0.0	0.106	5.7	LOS A	0.3	2.3	0.12	0.29	0.12	55.4
8	T1	88	0	93	0.0	0.106	0.1	LOS A	0.3	2.3	0.12	0.29	0.12	56.9
9	R2	42	0	44	0.0	0.106	5.8	LOS A	0.3	2.3	0.12	0.29	0.12	54.7
Approach		183	0	193	0.0	0.106	3.0	NA	0.3	2.3	0.12	0.29	0.12	55.9
West: Grosvenor Street														
10	L2	21	0	22	0.0	0.135	8.2	LOS A	0.5	3.5	0.23	0.97	0.23	51.1
11	T1	54	0	57	0.0	0.135	9.2	LOS A	0.5	3.5	0.23	0.97	0.23	50.9
12	R2	36	0	38	0.0	0.135	10.1	LOS A	0.5	3.5	0.23	0.97	0.23	50.6
Approach		111	0	117	0.0	0.135	9.3	LOS A	0.5	3.5	0.23	0.97	0.23	50.8
All Vehicles		631	2	664	0.3	0.293	6.7	NA	1.2	8.7	0.24	0.66	0.24	52.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

Organisation: STANTEC NEW ZEALAND | Licence: NETWORK / Enterprise | Processed: Thursday, 23 November 2023 10:23:03 PM
Project: \\au2019-ppfss01\shared_projects\300305017\technical\modelling\sid_230824_5017_youngst_roundabout_upgrade.sip9

MOVEMENT SUMMARY

Site: 101 [two_way_AM_young_st/grosvenor_st_2034 (Site Folder: 2034_two_way)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	49	2	52	4.1	0.066	5.6	LOS A	0.0	0.1	0.01	0.26	0.01	55.9
2	T1	63	3	66	4.8	0.066	0.0	LOS A	0.0	0.1	0.01	0.26	0.01	57.6
3	R2	2	0	2	0.0	0.066	5.9	LOS A	0.0	0.1	0.01	0.26	0.01	55.4
Approach		114	5	120	4.4	0.066	2.5	NA	0.0	0.1	0.01	0.26	0.01	56.8
East: Grosvenor Street														
4	L2	29	1	31	3.4	0.319	8.6	LOS A	1.4	10.0	0.40	0.96	0.41	50.9
5	T1	116	6	122	5.2	0.319	10.1	LOS A	1.4	10.0	0.40	0.96	0.41	50.5
6	R2	102	0	107	0.0	0.319	10.3	LOS A	1.4	10.0	0.40	0.96	0.41	50.4
Approach		247	7	260	2.8	0.319	10.0	LOS A	1.4	10.0	0.40	0.96	0.41	50.5
North: Young Street														
7	L2	49	1	52	2.0	0.111	5.8	LOS A	0.4	3.0	0.18	0.31	0.18	54.9
8	T1	81	0	85	0.0	0.111	0.2	LOS A	0.4	3.0	0.18	0.31	0.18	56.5
9	R2	57	1	60	1.8	0.111	5.9	LOS A	0.4	3.0	0.18	0.31	0.18	54.3
Approach		187	2	197	1.1	0.111	3.4	NA	0.4	3.0	0.18	0.31	0.18	55.4
West: Grosvenor Street														
10	L2	31	1	33	3.2	0.159	8.4	LOS A	0.6	4.4	0.28	0.96	0.28	50.9
11	T1	52	0	55	0.0	0.159	9.4	LOS A	0.6	4.4	0.28	0.96	0.28	50.8
12	R2	41	5	43	12.2	0.159	11.3	LOS A	0.6	4.4	0.28	0.96	0.28	50.0
Approach		124	6	131	4.8	0.159	9.8	LOS A	0.6	4.4	0.28	0.96	0.28	50.5
All Vehicles		672	20	707	3.0	0.319	6.9	NA	1.4	10.0	0.25	0.66	0.25	52.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

MOVEMENT SUMMARY

Site: 101 [two_way_PM_young_st/grosvenor_st_2034 (Site Folder: 2034_two_way)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	74	2	78	2.7	0.119	5.7	LOS A	0.2	1.4	0.09	0.25	0.09	55.7
2	T1	113	0	119	0.0	0.119	0.1	LOS A	0.2	1.4	0.09	0.25	0.09	57.3
3	R2	20	0	21	0.0	0.119	6.1	LOS A	0.2	1.4	0.09	0.25	0.09	55.2
Approach		207	2	218	1.0	0.119	2.7	NA	0.2	1.4	0.09	0.25	0.09	56.5
East: Grosvenor Street														
4	L2	34	0	36	0.0	0.411	9.3	LOS A	2.3	15.9	0.49	1.04	0.62	49.9
5	T1	140	1	147	0.7	0.411	11.7	LOS A	2.3	15.9	0.49	1.04	0.62	49.6
6	R2	112	0	118	0.0	0.411	12.2	LOS A	2.3	15.9	0.49	1.04	0.62	49.4
Approach		286	1	301	0.3	0.411	11.6	LOS A	2.3	15.9	0.49	1.04	0.62	49.6
North: Young Street														
7	L2	64	0	67	0.0	0.130	5.9	LOS A	0.4	3.1	0.20	0.28	0.20	55.1
8	T1	105	0	111	0.0	0.130	0.3	LOS A	0.4	3.1	0.20	0.28	0.20	56.6
9	R2	50	0	53	0.0	0.130	6.2	LOS A	0.4	3.1	0.20	0.28	0.20	54.5
Approach		219	0	231	0.0	0.130	3.3	NA	0.4	3.1	0.20	0.28	0.20	55.7
West: Grosvenor Street														
10	L2	25	0	26	0.0	0.191	8.5	LOS A	0.7	5.1	0.40	0.97	0.40	50.6
11	T1	65	0	68	0.0	0.191	10.3	LOS A	0.7	5.1	0.40	0.97	0.40	50.4
12	R2	43	0	45	0.0	0.191	11.8	LOS A	0.7	5.1	0.40	0.97	0.40	50.1
Approach		133	0	140	0.0	0.191	10.4	LOS A	0.7	5.1	0.40	0.97	0.40	50.3
All Vehicles		845	3	889	0.4	0.411	7.1	NA	2.3	15.9	0.30	0.64	0.35	52.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

Organisation: STANTEC NEW ZEALAND | Licence: NETWORK / Enterprise | Processed: Thursday, 23 November 2023 10:26:13 PM
Project: \\au2019-ppfss01\shared_projects\300305017\technical\modelling\sid_230824_5017_youngst_roundabout_upgrade.sip9

MOVEMENT SUMMARY

Site: 101 [two_way_AM_young_st/grosvenor_st_2044 (Site Folder: 2044_two_way)]

New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	56	2	59	3.6	0.077	5.6	LOS A	0.0	0.2	0.02	0.26	0.02	55.9
2	T1	74	4	78	5.4	0.077	0.0	LOS A	0.0	0.2	0.02	0.26	0.02	57.6
3	R2	3	0	3	0.0	0.077	6.0	LOS A	0.0	0.2	0.02	0.26	0.02	55.4
Approach		133	6	140	4.5	0.077	2.5	NA	0.0	0.2	0.02	0.26	0.02	56.8
East: Grosvenor Street														
4	L2	33	1	35	3.0	0.395	9.2	LOS A	2.1	15.3	0.46	1.01	0.55	50.2
5	T1	135	7	142	5.2	0.395	11.1	LOS A	2.1	15.3	0.46	1.01	0.55	49.9
6	R2	120	0	126	0.0	0.395	11.5	LOS A	2.1	15.3	0.46	1.01	0.55	49.8
Approach		288	8	303	2.8	0.395	11.1	LOS A	2.1	15.3	0.46	1.01	0.55	49.9
North: Young Street														
7	L2	57	1	60	1.8	0.129	5.9	LOS A	0.5	3.6	0.20	0.31	0.20	54.9
8	T1	93	0	98	0.0	0.129	0.3	LOS A	0.5	3.6	0.20	0.31	0.20	56.4
9	R2	66	1	69	1.5	0.129	6.0	LOS A	0.5	3.6	0.20	0.31	0.20	54.2
Approach		216	2	227	0.9	0.129	3.5	NA	0.5	3.6	0.20	0.31	0.20	55.3
West: Grosvenor Street														
10	L2	36	1	38	2.8	0.199	8.5	LOS A	0.8	5.6	0.32	0.96	0.32	50.6
11	T1	61	0	64	0.0	0.199	9.8	LOS A	0.8	5.6	0.32	0.96	0.32	50.5
12	R2	48	6	51	12.5	0.199	12.2	LOS A	0.8	5.6	0.32	0.96	0.32	49.7
Approach		145	7	153	4.8	0.199	10.3	LOS A	0.8	5.6	0.32	0.96	0.32	50.2
All Vehicles		782	23	823	2.9	0.395	7.4	NA	2.1	15.3	0.29	0.68	0.32	52.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

MOVEMENT SUMMARY

Site: 101 [two_way_PM_young_st/grosvenor_st_2044 (Site Folder: 2044_two_way)]

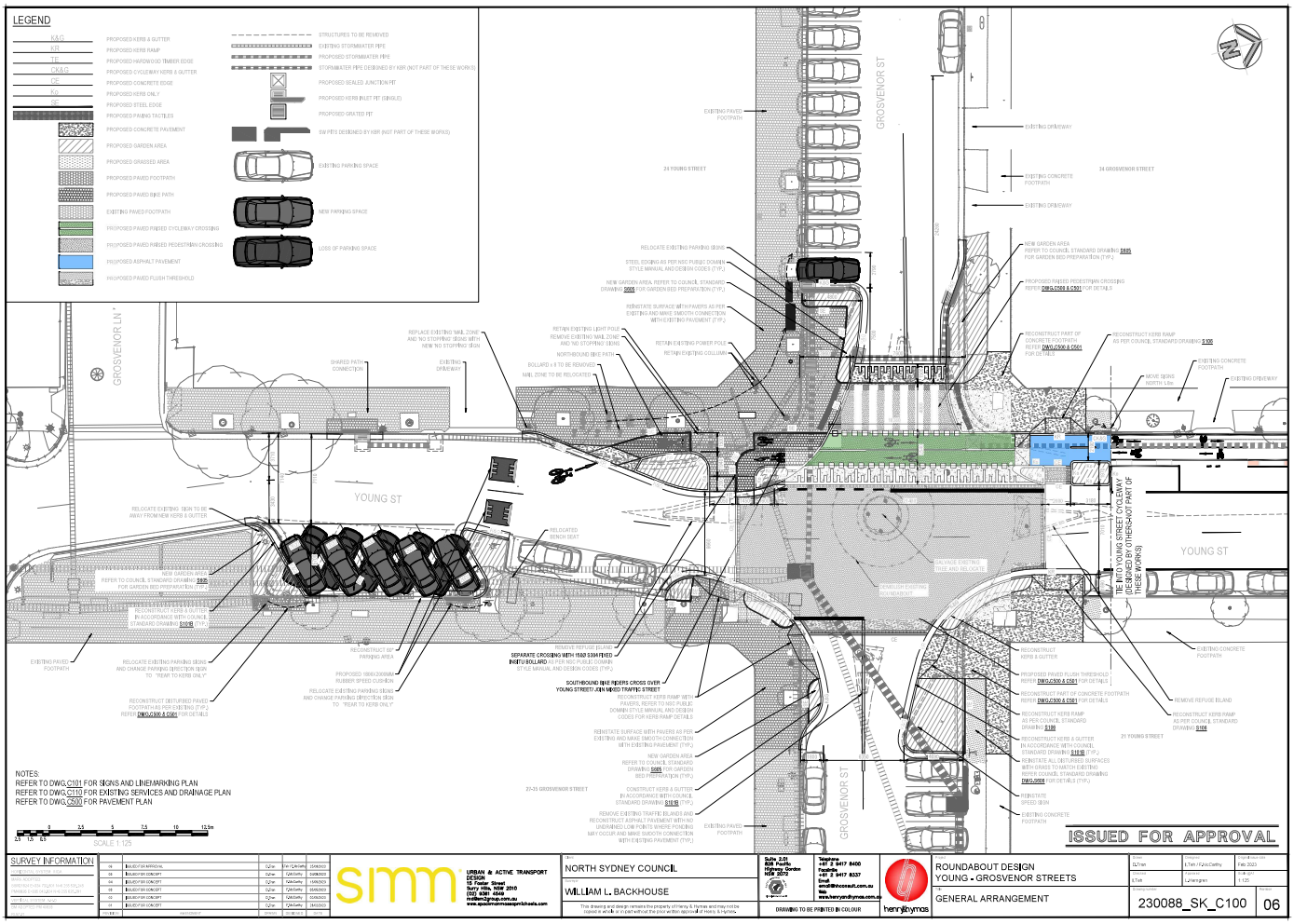
New Site
Site Category: (None)
Stop (Two-Way)

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: Young Street														
1	L2	86	2	91	2.3	0.138	5.7	LOS A	0.2	1.6	0.09	0.25	0.09	55.7
2	T1	131	0	138	0.0	0.138	0.1	LOS A	0.2	1.6	0.09	0.25	0.09	57.3
3	R2	22	0	23	0.0	0.138	6.2	LOS A	0.2	1.6	0.09	0.25	0.09	55.2
Approach		239	2	252	0.8	0.138	2.7	NA	0.2	1.6	0.09	0.25	0.09	56.5
East: Grosvenor Street														
4	L2	39	0	41	0.0	0.514	10.2	LOS A	3.3	23.4	0.56	1.09	0.84	48.8
5	T1	162	1	171	0.6	0.514	13.4	LOS A	3.3	23.4	0.56	1.09	0.84	48.6
6	R2	129	0	136	0.0	0.514	14.2	LOS A	3.3	23.4	0.56	1.09	0.84	48.3
Approach		330	1	347	0.3	0.514	13.4	LOS A	3.3	23.4	0.56	1.09	0.84	48.5
North: Young Street														
7	L2	74	0	78	0.0	0.152	6.0	LOS A	0.5	3.8	0.22	0.28	0.22	55.0
8	T1	122	0	128	0.0	0.152	0.4	LOS A	0.5	3.8	0.22	0.28	0.22	56.5
9	R2	58	0	61	0.0	0.152	6.4	LOS A	0.5	3.8	0.22	0.28	0.22	54.4
Approach		254	0	267	0.0	0.152	3.4	NA	0.5	3.8	0.22	0.28	0.22	55.6
West: Grosvenor Street														
10	L2	29	0	31	0.0	0.241	8.6	LOS A	0.9	6.5	0.45	0.98	0.45	50.2
11	T1	75	0	79	0.0	0.241	10.9	LOS A	0.9	6.5	0.45	0.98	0.45	49.9
12	R2	50	0	53	0.0	0.241	12.9	LOS A	0.9	6.5	0.45	0.98	0.45	49.6
Approach		154	0	162	0.0	0.241	11.1	LOS A	0.9	6.5	0.45	0.98	0.45	49.9
All Vehicles		977	3	1028	0.3	0.514	7.8	NA	3.3	23.4	0.34	0.66	0.44	52.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

Appendix C. Intersection Design Review


LEGEND
GROSVENOR ST
YOUNG ST
GROSVENOR LN
NOTES:
REFER TO DWG.C101 FOR SIGNS AND LINEMARKING PLAN
REFER TO DWG.C110 FOR EXISTING SERVICES AND DRAINAGE PLAN
REFER TO DWG.C500 FOR PAVEMENT PLAN
SCALE 1:125
ISSUED FOR APPROVAL
SURVEY INFORMATION
URBAN & ACTIVE TRANSPORT DESIGN
NORTH SYDNEY COUNCIL
WILLIAM L. BACKHOUSE
ROUNDABOUT DESIGN
YOUNG - GROSVENOR STREETS
GENERAL ARRANGEMENT
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COMMUNITY ENGAGEMENT STRATEGY

Young Street Cycling & Walking Upgrades (Young Street and Grosvenor Street Intersection, Neutral Bay)

Prepared 14 February 2023

Councils are required under the *Local Government Act 1993* to inform the community of particular issues that potentially affect their way of life. North Sydney Council is committed both in principle and in practice, to engaging on matters affecting the North Sydney community. Community engagement opportunities will be provided across a range of 'engagement' levels.

1. Introduction

This Community Engagement Strategy outlines the steps Council will take to engage the community on the concept design for Young Street Cycling & Walking Upgrades (Young Street and Grosvenor Street Intersection, Neutral Bay).

1.1. Council's Community Engagement Protocol

This strategy has been prepared in accordance with Council's *Community Engagement Protocol.* The Protocol is used to determine the level of 'level(s) of impact' applicable to this project/decision (proposal). This proposal has been determined as:

LEVEL OF IMPACT	LEVEL OF ENGAGEMENT
High/Local	Inform/Consult

Council used the framework shown below in Table 1.1 to select the most appropriate 'level(s) of engagement' for this proposal to ensure an appropriate range of engagement 'levels' and methods were offered:

LEVEL	DESCRIPTION
Inform	Providing balanced and objective information to help the community understand problems, alternatives, opportunities and/or solutions
Consult	Obtain public feedback on alternatives and/or decisions
Involve	Work directly with the community throughout the process to ensure that public concerns and aspirations are consistently understood and considered
Collaborate	Partner with the public in each aspect of the decision including the development of alternatives and identification of the preferred solution

Table 1.1 Derived from the IAP2 Public Participation Spectrum

2. Background

Young Street Cycling & Walking Upgrades (Young Street and Grosvenor Street Intersection) forms an extension of Route 2 North Sydney to Mosman cycleway outlined in the Council's *North Sydney Integrated Cycling Strategy 2014*, which was constructed in 2017.

The Young Street Extension (Image 1. dashed red line) has been publicly exhibited to the community, consultation outcomes taken to Council and approved for construction. The Young Street and Grosvenor Intersection (Image 1. red circle) is planned for construction to coincide with or begin immediately after construction of the Young Street extension.

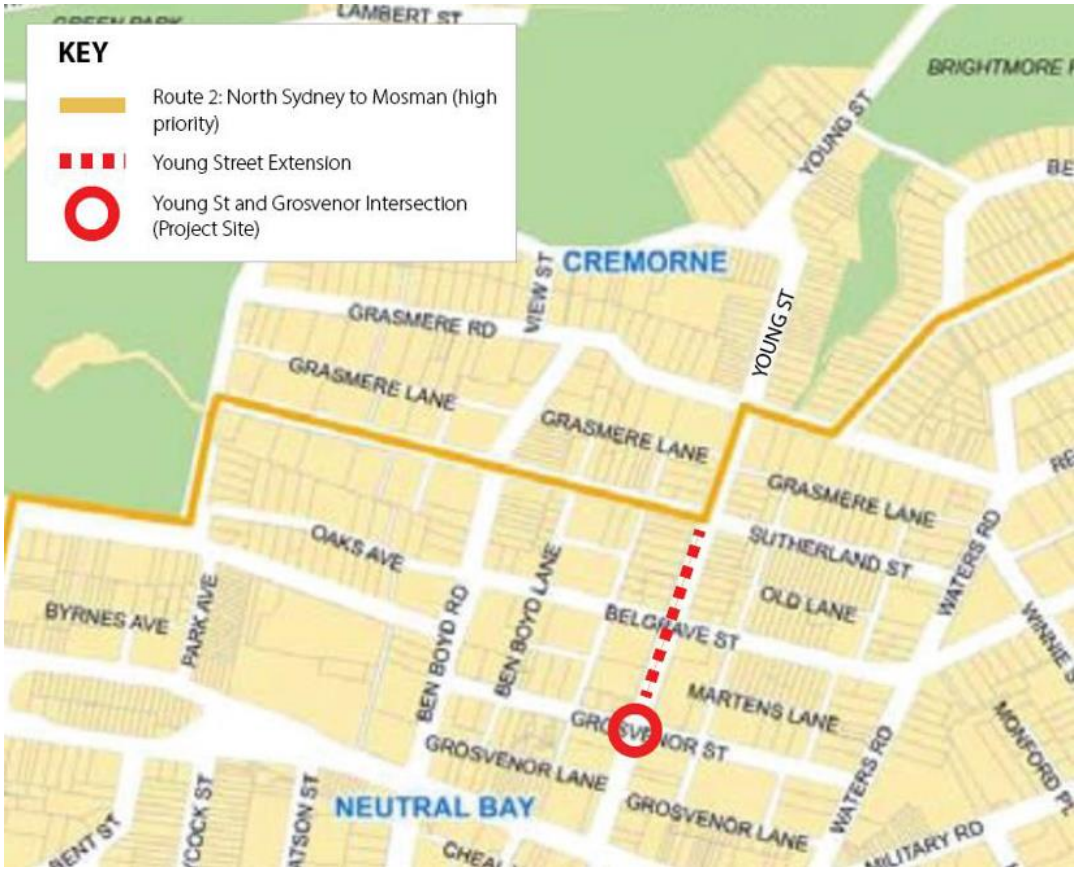

Image 1. Context map Young Street Cycling and Walking Upgrades

3. Community Engagement Strategy

3.1. Who are our community stakeholders?

The Engagement Strategy identifies the following groups to engage within the local community:

- Government agencies - TfNSW, Road and Maritime Services, Sydney Buses, Sydney Water
- Advocacy groups - Bicycle NSW, Bike North, Bike Sydney, North Shore Bicycle Group
- Precinct Committees - Brightmore and Parks
- Residents
- Businesses - within Neutral Bay commercial centre
- Australia Post

3.2. Key Communication Messages

- Council is seeking feedback on a final concept design for the Young Street Cycling & Walking Upgrades. The design includes new plantings, pavement upgrades, separated pedestrian and cyclist crossing, and the extension of the Young Street bi-directional cycleway.
- A protected cycleway and pedestrian crossing through the Young Street and Grosvenor Street intersection will replace the current roundabout, and will significantly improve cyclist and pedestrian safety, as well as accessibility to the Neutral Bay town centre.
- The proposed cycleway is an extension of Route 2 North Sydney to Mosman cycleway which was constructed in 2017 and listed in Council's *Integrated Cycling Strategy* (2014). Young Street is a key connection to the Neutral Bay town centre.
- The community can provide feedback on the concept design through the online feedback form or map (drop a pin), or by email.
- Consultation will close on Monday 14 August. All feedback received will be collated and analysed, and where possible, incorporated into the final design. The designs will be reviewed by the North Sydney Traffic Committee before being reported to Council for adoption. Stakeholders will be kept up to date with progress. Sign up via the Your Say North Sydney webpage to receive updates on upcoming key dates and milestones.
- If approved by Council, construction is due to start in late-2023.

3.3. Timetable

Community and stakeholder engagement will occur at various times during the 42-day consultation period. The key project development phases are outlined in the following table:

PHASE	TIMING
1a. Design consultation (public exhibition)	Tuesday 4 July to Monday 14 August, 2023
1b. Final Design (incorporating feedback)	August, 2023
2. North Sydney Traffic Committee review and endorsement	September, 2023
3. Post Exhibition Report to North Sydney Council and planned adoption	Late September early October, 2023
4. Construction	October, 2023

Note: In accordance with Council's Community Engagement Framework described on page 1, the 'level of engagement' per engagement method is indicated.

3.3.1 Phase 1 - Design Consultation

Between Tuesday 4 July to Monday 14 August, 2023 Council will offer various methods by which community and stakeholders can participate in Phase 1, including face-to-face and online, allowing the community to participate at times that best suit their needs and commitments.

Not listed in priority order:

Method	Target Stakeholders	Engagement Level	Purpose
Website (includes Your Say web page)	All	Inform	Provide information about the project and direct people to how they can have a say e.g. consultation opportunities.
Flyer (overview of the project)			
Signage onsite	Residents		
Social Media: Facebook, Twitter, Instagram and LinkedIn	Existing followers and local groups with social media accounts		
eNews	Subscribers of Council, Precincts and Business eNews		
Letterbox Drop	In the vicinity of the proposed project and surrounding areas		
Direct emails/letter to key stakeholders	Bicycle Advocacy Groups, Australia Post, Transport for NSW	Inform	
Online Information Session (x1)	All	Inform	Providing project overview and an opportunity for stakeholders to ask questions.
Onsite Walkthrough (x1)	All	Inform	Walkthrough of the project site providing stakeholders the opportunity to ask questions
Drop-in information stall	All	Inform	Council staff to host 3 X pop-up stalls across the LGA to promote the project and provide opportunity to ask questions. This will include a stall at the Northside Produce Markets and locations around the project area
Precinct System	Brightmore and Parks Precinct	Inform/Consult	Encourage Precinct Committees to promote consultation opportunity to their members and/or to make a submission

Method	Target Stakeholders	Engagement Level	Purpose
Online Map	All	Consult	Provide location specific feedback via the online map
Submissions	All	Consult	Free form feedback accepted by email or posted letter as well as via online form (series of questions).

Note: In accordance with Council's Community Engagement Framework described on page 1, the 'level of engagement' per engagement method is indicated.

3.3.2 Phase 2 - Post Exhibition Report to Traffic Committee/Council

All feedback received will be collated and analysed, and an outcomes report prepared. This will be submitted to the North Sydney Traffic Committee for review in September 2023. A copy of the consultation report will be included for review.

The post-exhibition report will be submitted to a Council Meeting in late September early October 2023 presenting the collated feedback received during the exhibition period, together with the final design and the Traffic Committee's recommendation for review and endorsement. Submitters will be informed of the outcomes.

3.3.3 Phase 3 - Construction

Council officers will prepare procurement documentation for construction of Young Street Cycling & Walking Upgrades. Assuming Council endorsement, construction is due to commence late-2023. Residents and businesses will be notified of construction and signage installed on site.

4. Opportunity Cost/Rationale

Engaging the community in this proposal may entail financial costs to Council to achieve a high-quality engagement process. If the process is robust, community ownership of the decisions made will ensure efficient outcomes. Insufficient or poor-quality engagement can result in poor long-term decisions requiring further resources to rectify. The aim of a high-quality community engagement process is to make sustainable decisions. The engagement process will help Council staff and/or Councillors to understand the related recommendations rationale.

5. Further Information

For further information please contact Max White, Sustainable Transport Project Coordinator, Traffic and Transport Operations Department:

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Attachment F: Submissions

Name	Submission	Sentiment
		Support /Oppose /Mixed /Neutral (1 /0 /M /N)
Don	I am horrified by the planned changes to Young Street. I can see no gains. The information on the Council website seems to suggest that the removal of the roundabout at the Young St - Grosvenor St intersection is a gain. It is not. There is no problem at the intersection. Removal of the roundabout would create problems (narrowing of Grosvenor Street, confusion about right-of-way). The removal of the one at the intersection of Young St and Grasmere Rd. has made that intersection dangerous. There does not appear to be any demand for extension of the cycle track. I have never seen a cyclist on that part of Young Street. This entire project should be dropped.	0
Irene	Cyclists must comply with the same road rules as vehicles In NSW, a bicycle is considered a vehicle and riders must comply with same road rules as other vehicles so there is no need to disrupt our small neighbourhoods which already have limited road space for vehicles, verge and footpaths which are used by our pedestrians, pets, and children who actually live in the area. Cycle Ways in Cremorne and Neutral Bay are seldom used by Cyclists In the areas of Neutral Bay and Cremorne, the Council built narrow Cycle Ways which took away already limited parking spaces for our local community, visitors to our homes and business who rely on customers. The very few confident cyclists who in most cases only ride on the weekends and public holidays continue to ride on the roads and the more nervous cyclists continue to ride on the footpaths. Our community has suffered through the Council's bad decisions and wasting millions of dollars of rate payers' money on achieving nothing more than narrow unused Cycle Ways and angering the community for not understanding the disruption you have caused by doing this. The Council has made ill-informed decisions for the few, rather than the many. Cycleways have narrowed the amount of road space for vehicles and reduced visibility for motorists entering and exiting driveways and has limited pedestrian and animal walking spaces giving priority to cyclists who ride through the area on their way out of it. NSW Bicycle Rules clearly state that when a bicycle lane is marked on the road and has bicycle lane signs, bicycle riders must use it unless it is impracticable to do so.	0

	The Cycle Ways you have wasted our money on in our area are IMPRACTICABLE TO USE therefore in the majority the bicycle riders DO NOT USE THEM. BRING BACK OUR ROUNDABOUTS Reinstate the Young Street and Grasmere Road Roundabout and do not remove any others as you propose. Has the Council actually asked the residents what they would like to see in their local area? Removing the Roundabout from the intersection of Young Street and Grasmere Roads is a failed and dangerous disaster. It has become the most frustrating intersection in our local area. The Council replaced a perfectly functioning roundabout to install STOP SIGNS on Young Street and SPEED HUMPS before the intersection at Young Street on Grasmere Road. The result has been near misses, accidents, pedestrians nearly being run over and so much confusion as to who has right of way that it is dangerous. There is an ongoing sound of car and truck horns blowing because of the conflict and confusion between drivers, making it dangerous for everyone and disrupting a usually quiet neighbourhood. The Council did investigate at one point but did nothing to fix the problem they created. Why? Many drivers go around the block to avoid the Young Street and Grasmere Road intersection and many drivers stopped at the Young Street Stop Signs give way to drivers on the opposite side of the intersection because the traffic has banked up for so long they give them right of way. So no one knows who is stopping, who is turning, who is giving way and who should proceed through the intersections. Total CONFUSION. Bus Safety Due to the Grasmere Road roundabout being removed to make room for the unused Cycle Way, the local buses on this route (which carry passengers) now have to bounce on the speed humps before turning and negotiate a very tight turning circle into Young Street. Where is the logic and safety here? Cyclist and Driver Integration The Cyclists use the roads and footpaths to ride on because the Cycle Way is TOO NARROW. How do you not see nor understand this. When they do ride, they like to ride two abreast and that will never happen in a narrow, dedicated, residential area Cycle Way. Cycle Ways which are part of the road structure should be integrated into the infrastructure of new road systems and should be sharing existing roads with motorists. Particularly in suburban streets and neighbourhoods. Our Small Businesses are Closing Down Residents and businesses have advocated and opposed the development of Cycle Ways, particularly at the top of Young Street because it prevents access to cafes, services and restaurants. Please inspect the vacancy rate due to the lack of parking and access. We live in our neighbourhood every day of the year. We have pay the rates for our neighbourhood not the transient cyclists	

	who DO NOT RIDE IN THE CYCLE LANES anyway but taken up our beautiful and usable community spaces making it for us an impractical and incongruous environment for us to enjoy.	
Melinda	Hi, I live in the local area, ride a bike to work and have young children (so use pedestrian access alot as well). I remember well the removal of the roundabout at Young and Grasmere in order to do a bikepath instillation there and I categorically DO NOT support making the same change at young and grosvenor. The issues are: • there are significant safety risks for both cars and pedestrians (still - after 2 years) at the intersection on young and grasmere. This is despite much lower volumes of both cars and pedestrians. Cars still struggle to anticipate who is taking right of way and I still see near miss accidents all the time. This will be repeated in the design you have for young and grosvenor, only in greater volume and with greater consequence (given the larger number of pedestrians who stand to be injured). • the bike path is very unlikely to be used given its so short and doesn't align with any routes that are currently being used by cyclists. • The design with a pedestrian crossing on grosvenor will create absolute havoc with busy-day's traffic (such as on the weekend). Pedestrians are likely to stream across the crossing with no regard to how many cars are banked up in either direction. Its an extremely poor way of introducing additional pedestrian safety when the existing roundabout with refuge islands works perfectly well. • Please don't make the same mistake you made further down young street. Just leave the access as it is. Cyclists do perfectly well with the existing pathways and using the road on grosvenor street (given cars travel so slowly on that street anyway). If you really want to do something meaningful, just block a whole lane off military road up to the spit bridge.	0
Grahame	I am registering my objection to the removal of the roundabout at the intersection of Grosvenor Street and Young Street Neutral Bay. What exists is an efficient and safe way to distribute traffic during busy times, which isn't always peak hour and in particular relates to the time between 6pm and 7.30pm when people are trying to locate parks for their dining choices. During this time, the congestion can be frustrating. Adding a 4 way stop sign intersection will only further impact that frustration and misguided challenges to people's rights of way. Bicycles are infrequent users of this area, presumably as a result of the traffic from the Woolworths car park and trucks servicing the Woolworths supermarket, including the property development challenges that have been ongoing for a number of years. The proposal doesn't appear to have been supported by any specific site research, or other relevant traffic reports. This proposal appears to be a costly exercise that isn't promoting traffic or pedestrian safety, doesn't take on board site specifics and is not a benefit to local businesses, or the community.	0
Jane	I would like to register my concerns about the possibility of the above roundabout being removed.	0

	• A roundabout such as this is an excellent traffic calming measure. • It allows cars to slowly and safely enter and exit both streets. • It alleviates any need for a car to attempt a three-point turn if they want to return the way they came. Please don't take away another roundabout on Young Street.	
Marilyn	The roundabout with its beautiful Crepe Myrtle softens the corner of Young and Grosvenor Streets in Neutral Bay. Removing the roundabout would be a downgrade so please oh please don't do that! My residence overlooks the Bourke Street Bakery where cyclist happily grab coffee and sweets on Sundays. Removing the roundabout would not effect their Sunday rituals. Our restaurants say they do not need wider outdoor dining sidewalks. All that said please do not remove the Young and Grosvenor Streets roundabout and its Crepe Myrtle! How about installing "Yield" signs for car drivers instead.	0
Jan	Thank you for the information and the opportunity to comment on this proposal. It is my belief that 1. The replacement of the Young street roundabout, with a 4 way intersection is a backward step in traffic flow. This already busy intersection will become a driving navigation nightmare as drivers contend with constant give way concerns. 2. This proposed project should only be considered within the total plan for the Young Street precinct . Council have previously considered re opening Young Street back into Military Road for traffic. I believe this should be a total plan, not just a piecemeal project that may need to be redesigned should the re-opening of this intersection go ahead. 3. Large delivery trucks currently use this intersection for deliveries into the Woolworths car park. Rather than assist with traffic flow, the propose 4-way intersection for traffic will be slowed as these vehicles navigate the intersection. 4. Whilst the inclusion of garden beds is attractive, this will only narrow the traffic lanes in this already busy area. 5. Bike riders are a minority in this area. I find it difficult to believe that Council wishes to spend such a large amount of money to prioritise the needs of bike riders . 6. It is motorists that pay the licence fees, car registration fees etc, thus contributing to the coffers of the NSW government. These are the people that should be prioritised. 7. Improved pedestrian crossings can be incorporated around this area without new bicycle ramps and widened kerb build outs. These build outs may shorten crossing distance, however this will be to the detriment of the traffic flow.	0
Su	I strongly object to the upgrade. I am working at the young street and come/go everyday here in Neutral Bay. Please see below for some reasons that I disagree with the proposal.	0

	• This proposal prioritises bicycles over cars and trucks (especially ,delivery trucks) to service to the town centre. • Proposal is dangerous as it proposes changing an established roundabout to a 4 way stop sign, which may cause car accidents due to the fact that people do not know the rules for. • Prioritizing bicycles is ridiculous as hardly any bicycles use this route. • Roads are slow and quiet in the area and roads are wide it is ok for bicycles and cars to share the road as we do now. Hope these points are clear to understand.	
Philip	I am an office worker in Young St. I object to the proposed upgrade on the following grounds: • The community has not been provided with a traffic plan dealing with the precinct as a whole, in particular the long-term plan for the entire block from Young St to Bay St. • The roundabout functions well, the measures proposed will create more congestion. A four-way intersection is a retrograde initiative. • Grosvenor St is already too narrow, any further reduction is not warranted. Please reject the proposed upgrade.	0
Margaret	I would like to make some comments about the proposal for the Young and Grosvenor Street intersection. I currently live at ## Young Street, so drive or walk through this intersection almost on a daily basis. 1. Which road will have right of way, Young Street or Grosvenor Street? The current roundabout allows for fairly free flowing traffic and I will be sorry to see it removed. 2. I think the pedestrian crossing is on the wrong side of the Grosvenor Rd and Young St intersection. From my many visits to this intersection, most people cross Grosvenor Street at this intersection on the eastern side of Young Street as if they are coming from Woolworths area etc, rather than crossing on the western side of Young St. 3. I have rarely seen cyclists near this intersection so I am struggling to understand why there is a need to extend the cycle path. 4. Please don't plant any tall trees etc close to the intersection as all the vegetation does is block your view of pedestrians, cyclists etc when driving. Why not use very low shrubs instead? When the current cycle path in Young Street was created and the roundabout removed from the intersection of Young St and Grasmere Rd, I noticed that most cyclists still use the road and not the cycle path. When returning from the North Sydney Product Markets on Saturday 15th July there were 5 cyclists in a group travelling down Young Street in a northerly direction and turning right into Grasmere Rd. Not one of those cyclists used the cycle path and this is very common for cyclists turning right into Grasmere Rd. I have concerns that this same situation will occur at the Young St and Grosvenor Rd intersection. So if cyclists are travelling in a southerly direction on Young St and want to turn left into Grosvenor St they will travel on the road	0

	and not use the cycle path. As an aside – is there any proposal to change the Stop Signs currently at the intersection of Young St and Grasmere Rd? On removal of the roundabout and placement of Stop Signs on Young Street at this intersection, the traffic flow has been interrupted. There is a lot of traffic which travels in a southerly direction up Young St and turns left into Grasmere Rd. The Stop Sign on the northern end of Young Street is mostly ignored by this traffic. Despite the changes to this intersection occurring some time ago, some drivers travelling in a westerly direction down Grasmere Rd still stop at the intersection despite having right of way. I am aware that Council has reviewed this intersection and was wondering what has happened as a result of that review. Can the roundabout be put back please!	
Rowan	I'm a resident of Young Street and I am extremely concerned about the over-development of the Young Street & Grosvenor Street intersection. The increased height of the proposed development will reduce the sense of space & light in the area. This is currently a 3-storey area & high-rises will cast the area into shadow. It is disgraceful that the council would grant "owner's consent" to Coles to incorporate the council car park & surrounding lanes in a future development application, prior to receiving the results of the Neutral Bay Planning Study. This appears to be serving the needs of big business without waiting for resident consultation. Taking 3-4 years for any such development to be complete would be detrimental to the surrounding shop keepers & community alike. One only has to look at the hardships faced by shop owners affected by the light rail construction in the city. Underground parking suits Coles but reduces access to existing businesses, also making it difficult for people with mobility issues. The parking area in Grosvenor Lane, can park up to 60 cars, it is a level walk to the shops & is safe & well lit. People are more inclined to use this area instead of an underground car park that is dark, requires a lift to gain access to the shops and a long walk. Opening Young St to traffic would be a disaster. It is currently a well-used area throughout the day, from residents walking dogs early in the morning & late at night, & children using the playground. It offers great amenity to the local community & businesses. Creating a safe pedestrian area. Since Covid the area has changed with more people working from home & more people are utilising this area. Many people say that this is one of their favourite spots, with outdoor dining areas such as outside Against the Grind. Again, this seems to be to suit big business (Coles) & not the needs of local residents & small business. Military Rd is a clearway, traffic is moving quickly making it unsafe for vehicles to turn into Young Street & causing more traffic to back up on Military Rd. They can turn left safely at Ben Boyd with lights or Waters Rd. Replacing the Roundabout with a four-way junction will mean the street parking is reduced. It will make turning right difficult & hinder traffic flow causing traffic to back up in busy periods. The proposed Cycle path is dangerous, cyclists move very quickly with little regard for pedestrians & don't slow down or ring their bell, I'm in my 80's & have had a near miss on recently walking down to Cammeray Golf Club. I am firmly against this Development Proposal.	0

Gerhard	I do not agree to removing the roundabout. I use it everyday and foresee more traffic issues if it is removed.	0
Robert	I'm against any extension to the cycleway at Young and Grosvenor Streets. The suburb is already overwhelmed with traffic restrictions. Look at Sutherland Street - it's a disaster. It's now so narrow that it's dangerous to use it. It's rare to see a bike using the bike lane. Service vehicles, e.g. garbage, completely dominate the street prohibiting vehicles passing. If you want to enhance Young Street, remove that eye-sore that blocks it off from Military Road (I can't even begin to describe what that wasted space is) and re-open access to Military Road. Wasn't it part of your election campaign to remove that impediment installed by your predecessor?	0
Maureen	This new intersection is dangerous and unsuitable. You'll have cars stopping on the cycle path to try and enter the intersection. Cars will also have to stop on the pedestrian cross to enter the intersection. This won't work and is very dangerous.	0
Catherine	No changes should be made to the Young /Grosvenor St intersection until plans for the reopening of Young St at Military Rd and traffic studies for the Coles redevelopment are available. Removal of the roundabout and replacement with a pedestrian crossing will further promote the use of Grosvenor Lane as a faster shortcut from Ben Boyd Rd to Young St and the current Council carpark and Woolworths carpark .	0
Name witheld	The existing bike lanes in the Young St vicinity eg Sutherland St, Young St, Park Avenue and Ernest Streets are hardly used and have ruined the streetscape for local residents. The local residents are the people that matter and whose views should be listened to.....not idealistic Council planners on a bike lane "cause" who do not live in the area!!!!!!!!!! There is no need to make another local suburban street narrower. To think people are going to ride up a hill to go to the supermarket to do their grocery shopping is fanciful and WRONG. Very few people have bikes in the area and will drive or walk to the shops up Young Street.....They will not ride and balance their groceries on their pushbike no matter what Council planners wish. Bike lanes make the streets unsightly and narrower which is more dangerous or all that the status quo. Pedestrians are often happy to walk to the shops up Young Street (they have a footpath already) but bike riders will not use this new proposed bike lane in any volume. Bike lanes and pedestrians walking to the shops are different modes of getting to the shops but Council surveys often incorrectly group them together when considering whether people want to ride bikes or walk to the shops rather than drive a car. Please save Council's/OUR money and do not ruin more of OUR local streets for your CAUSE. North Cremorne is a hilly area and the local residents never wanted bike lanes to ruin the area (which most of the existing bike lanes have done)	0

	Council imposed the bike lanes on us in what were once wide streets which were already safe for bike riders should they chose to ride in the local streets. Please do NOT proceed with this project and listen to the residents	
Name witheld	The roundabout should stay. It provides traffic calming and provides equal opportunity for all road users to circulate . In removing it, cyclists riding up Young Street on the roadway would have to sit in the middle of the busy main thoroughfare waiting for traffice to clear in order to turn right into Grosvenor. Cyclists approaching from Grosvenor, will have to start from a standing stop to 'go' at full pelt to get across the large intersection. I suggest instead that there be one pedestrian crossing on Grosvenor on the upside of the road (sorry dont know east / west / north / south) for safe pedestrian crossing but that is all. no cyclist is going to use the area of 'shared pathway' for such a short distance when it then plonks them directly into oncoming traffic. why would a cyclist do that when s/he could just ride straight up young street on the left hand side of the road, with the traffic and travel in a straight line. council officers said at the walk through that this was to assist families. well families with children under 16 can already use the footpath so there is no need to make any changes for them. especially as the final outcome of the closure of young street at military road is not yet known, it seems very premature and wasteful of council's time and money to be considering this upgrade at this time.	0
Robyn	I object to the roundabout being removed. My suggestion is to extend the cycle way up hill from Sutherland st along Young street to the Grosvenor st intersection and terminate it there. This would save Council a substantial portion of the funds allocated to this project and avoid a major disruption to motor vehicles traffic in this sensitive area.	0
Penelope	The removal of the roundabout is unwise as it is a very busy intersection, and a 4-way system is likely to lead to accidents. Make more evident the pedestrian crossing / cycleway routes but leave the roundabout there	0
Philip	I travel through this intersection as both a pedestrian and motorist numerous times a day. Whilst I don't object to the creation of safer bike paths for cyclists in general terms, I do object to these specific upgrade works. Frankly, the removal of the Roundabout from this intersection will be a safety disaster. The roundabout is well established, familiar to the local community, and by far the safest way for traffic to navigate this extremely busy junction. Locating a stop sign at the Young St / Grosvenor St junction with a Bike Path and Pedestrian Crossing located BEFORE the unbroken line (as you travel eastward down Grosvenor St) will create a major safety hazard for pedestrians, cyclists and motorists alike. Motorists will have to wait across the Bike Path and Pedestrian Crossing to be able to see whether it is safe to cross the intersection. Given the significant number of cars that travers this intersection, this proposal creates a major hazard whereas the current roundabout remains the most prudent way to manage traffic flow.	0

	Furthermore, the narrowing of Young St, which serves semi-trucks making deliveries to Woolworths (Loading Dock on Grosvenor Ln) will only add to creating a less safe environment. Not only will this narrow already tight access ways, but it will hold up traffic, causing delay and potentially causing greater hazards to pedestrians and cyclists as motorists seek to traverse this intersection and Young St. In summary, I strongly object to this proposal on the grounds of community safety and urge that Council reconsider.	
Name witheld	The proposed redesign of the Young st intersection seems based on improving the Cycle safety and traffic flow with the intent to increase these numbers. After observing this intersection for a considerable number of weeks, I have seen zero bicycles trying to negotiate the intersection so the addition of 1 would seem to justify a 100% increase and the considerable cost of the redevelopment? And once the expected flood of traffic eventuates (5 or 6? No numbers re expectations provided), where are they to park/store their steeds while shopping and eating? I am assuming that there have been requests from persons wanting to travel by bike to this area but the design is quiet on what this number is. And how many would it have to be to justify the expense? The traffic flow will not be improved (as stated). Roundabouts are added to achieve this end, not removed. Traffic coming down Grosvenor st will not be able to see whether it is safe to proceed across the intersection from the position indicated for the stop sign and will therefore queue across the intersection, and the cycleway, and the pedestrian crossing. Hardly beneficial to any involved. My objection is not to the provision of a cycleway. It is where this is proposed, it is what is the justification for the expense and disruption that will be caused and what is the overall benefit, to locals, cyclists and motorists.	0
Name witheld	I disagree with the plan to redesign the intersection to include a cycleway because the stated concept to improve traffic flow cannot be met with the design published. Traffic along Young st may be improved but at considerable cost to the predominant traffic flowing along Grosvenor, feeding and supporting shops and restaurants in the area. Traffic moving East on Grosvenor will end up across the proposed Pedestrian crossing and cycleway as they will not be able to see traffic coming up Young st from their left. The Cycleway may be justified for the future but it would seem that providing access via Waters rd, passing the school to encourage students to cycle, would be easier, cheaper and more effective. Traffic around Grosvener st, including traffic into and out of the commercial areas, is already challenged. Removing the roundabout will eventually require the installation of traffic control lights just to get anything through there, surely not the optimum solution envisaged.	0
Deborah	To remove the roundabout, is both dangerous and shortsighted. It is a major shopping hub for local residents and the roundabout allows for a good and safe traffic flow. A pedestrian crossing at a four point intersection makes no sense. I would question why the bike path needs to run that way, making it even more difficult for pedestrians.	0

Marisa	Please do not remove roundabout. Please provide safety assessment. I think this is a big mistake way worse than Young and Grasmere which is terrible. Reorientation of the 5 car spaces is good. Where are the bikes going once they cross Grosvenor?	0
Simon	I can not believe that the council is considering such an irresponsible and dangerous change. My issues are: 1. Bike path finishes straight on to young st. 2. Young st to be opened from Military Road creating a "rat run" from Military Road to Belgrave St with no need to slow down until the lights. 3. Grosvenor St, will slow down and bank up, will drive more traffic down Grosvenor Lane. 4. Drivers stuck in Grosvenor St will have to "push" through Young St, will have to wait on pedestrian crossing or bike path to get around. 5. Pedestrians will have to wait for no traffic in both directions to cross Young st, once opened to Military Rd this will be even harder. 6. Bikes have no where to go ride, once they come up Young st then stuck waiting for Young st to be free of traffic, this is a danger especially for younger riders. 7. Where are bikes to be stored/parked. 8. Based on the level of bikes using the roads instead of the existing pathways can't see the value. 9. Statement that current pedestrian islands not big enough, fix that size not remove roundabout. 10. Speed is more dangerous to pedestrians than roundabouts this proposal will increase the speed in Young st not reduce. I walk around NB several times a week, this will be less safe and I would bring my car rather than walk. Can not believe that the council is considering such a dangerous change to traffic conditions in a high pedestrian area.	0
Deanne	Why do we need another cycle way. I regularly travel along Sutherland Street and have yet to see a cyclist using the cycle way. The road is narrow and if a large truck is coming the opposite direction, it is difficult to negotiate. Round abouts are great and I do not see the need to remove the Grosvenor Street one. Leave as is and upgrade Young Street near Military Road.	0
Louis	I am a pedestrian, motorist and cyclist. I frequently use the facilities of the area, probably most often on my bicycle. I agree to the cycleway being extended along Young Street uphill from Sutherland Street to Grosvenor Street and terminated there. Cyclists should then join the normal flow of traffic on the roundabout. There should be no changes to the existing Young/Grosvenor roundabout at all, certainly not as outlined in your project, which I strongly oppose in its current form. My proposal is cost effective. The existing over engineered proposal will be viewed widely as a wanton waste of ratepayer resources lavished on un-deserving cyclists. As a cyclist, I don't want it in the first place and even less want to be blamed for it. Keep the roundabout unchanged.	0
Nicole	No removal of the roundabout at this stage. Any changes to the road facilities at this location should be considered in conjunction with the future of Young Street between Grosvenor Street and Military road.	0

	No use to start building "bits and pieces" without any flow-through and harmony, which will have to be removed and replaced at ratepayers' expense by something else later on. Think it through properly from start to finish before the first shovel goes in.	
Sharon	I am objecting to this cycleway. The Sutherland Street cycleway is very, very rarely used (complete waste of money). The intersection that replaced the roundabout at Young Street/Sutherland Street is extremely dangerous. The roundabout should NOT be removed for this proposed cycleway (Young Street/Grosvenor Street). Roundabouts are safe and prove to work for traffic flow. This is all about "Climate Change" and getting people riding bikes and out of their cars. A short piece of cycleway here is a complete waste of money. What do motorists do driving up Young Street towards Military Road? Stop and wait for cyclists? Bikes/scooters/skateboards use the footpaths. Fix that issue and make the footpaths safer for pedestrians.	0
John	I object to the extension of the cycleways in Young Street and in particular the proposed removal of the existing "roundabout". As a regular walker around this area, I believe that removing the roundabout will likely result in increase accidents for both motorists and pedestrians.	0
Patricia	This proposal is another 'idea bubble' to improve Neutral Bay Town Centre - I think not! We DO NOT need a cycleway at this end of Young Street and we certainly DO need to retain the roundabout at this intersection. Losing more road space to a cycleway that will possibly never be used the same as the rest of Young Street - I have yet to see a cyclist use the designated lane, rather they are always on the road. Please do not try and 'improve' OUR Neutral Bay with yet another unwelcone proposal!	0
Catherine	Thank you for the opportunity to comment on the above project. The Young Street Cycling & Walking Upgrades are to include the following work: • cycleway extension along Young Street connecting to the Neutral Bay town centre • improved pedestrian amenity with new pedestrian crossing, kerb extensions and pram ramps • enhancement of existing verges and streetscape with new garden beds • replacement of the existing roundabout with four way intersection It is this last point, the removal of the existing roundabout, which is of concern.	0

	As someone who frequently turns right into Young Street from Grassmere Road and left into Grassmere Road from Young Street in a car, I can attest to the resulting interruption to the traffic flow at that intersection following the removal of the roundabout there to accommodate a cycleway. This disruption to the traffic flow is evidenced by the number of cars coming up Young Street, who are supposed to adhere to the stop sign but seldom do, while those coming down Young Street who are supposed to adhere to the stop sign often fail to give way to the traffic coming up Young Street. The removal of the roundabout at this intersection has made a once workable intersection dangerous because the stop signs and requirement to give way are frequently ignored. The intersection of Young Street and Grosvenor Street is a busy one and my concern is that the same problem will occur if the roundabout here is removed. Not only will the flow of busy traffic be interrupted causing backups but it highly likely the traffic rules will be ignored. I am aware that there were many complaints to Council following the removal of the roundabout at Young Street and Grassmere Road. It remains a bone of contention today. In the circumstances I am surprised that the council would even consider removing a successful and well used traffic device and create an unsatisfactory alternative as has happened at Young Street and Grassmere Road	
Name withheld	Strongly object to removal of roundabout, which works very well - we have been residents for 30 years and have a business in Grosvenor Street. The removal of the roundabout on the corner of Young St & Grasmere Road has resulted in many near accidents, long queues of traffic in all directions and is confusing and dangerous. Furthermore, we rarely see cyclists use the very costly bike lane which we pass on our daily walk or drive from Tobruk Avenue to Grosvenor Street office. Finally, the public space at the top of Young St near Military Road is a visual abomination and puts further traffic pressure on the north side of Ben Boyd Road as well as Waters Road.	0
Martin & Rebecca	We whole heartedly object to the Young and Grosvenor St intersection cycling and walking upgrades for the following reasons: 1. The existing round-about works well by slowing traffic in a very busy pedestrian intersection particularly with many families young and old actively using the intersection. Hence for pedestrian safety reasons a re-opening of the intersection would be a mistake. 2. Like the Cammeray bike paths they seem to hardly be used and seems to be a huge waste of rate payers funds. It would be good for Council to release bicycle traffic usage to justify (or not) the proposal as it seems only a very small cohort uses the bike paths. Note the very low and declining usage of bike paths in the Sydney Council, area (CBD). 3. Construction of cycle paths significantly reduces street capacity for the ever-increasing vehicle traffic and result in traffic jams. There is no evidence that building bicycle paths encourages drivers to switch to bicycle usage as an alternative transport method. 4. There are many projects that surely are of a higher priority for rate payers funds to be utilised that could be invested/spent on before this project, which seems to satisfy a very small cohort of users. Such examples would be greater concentration of the quality of roads, keeping community parks and playgrounds better maintained and cleaner, this benefits the broader community (families and grandparents alike) and additional planting of trees.	0

Lesley	I object to the proposed plans for the following reasons:
	• The removal of the roundabout.
	  o The roundabout slows vehicles down
	  o The roundabout gives all traffic entering the intersection a fair go and regulates traffic flow
	• The cycleway delivers cyclists to the intersection of Young and Grosvenor Street, and then dumps them onto the roadway, as follows:
	  o South-bound cyclists wanting to go east onto Grosvenor Street, leave the cycleway on the northern side of Grosvenor Street, and wait, obstructing the cycleway, at a Stop/Give Way/Yield line, and then cross Young Street
	  o South-bound cyclists wanting to go west onto Grosvenor Street, stop in the middle of the cycleway to let pedestrians across the raised pedestrian crossing, then turn right and continue on the roadway
	  o South-bound cyclists wanting to continue south on Young Street towards Military Road, cross Grosvenor Street. At the south-west corner of the intersection, the cycleway empties onto the roadway, and the cyclist crosses to the eastern side of Young Street and then continues south on the roadway
	  o North-bound cyclists south of Grosvenor Street are required to stop a couple of metres after joining the cycleway to give way to pedestrians crossing Young Street. Very few cyclists would bother using the cycleway on this short section but join it north of Grosvenor Street.
	• There is no plan for the cycleway from Grosvenor Street to Military Road. Surely this should be considered at this stage.
	• Location of the proposed Stop/Give Way/Yield line in Grosvenor Street East at Young Street
	  o With the removal of the roundabout, a vehicle stopped at the line will obstruct the crossing for pedestrians, making it less safe than currently.
	  o Grosvenor Street East will also have a large increase in traffic if the Coles' proposed development goes ahead in its current form, with not only the entry/exit to the much larger carpark in Grosvenor Street, but also the entry/exit to the loading dock. There is the potential for traffic to bank back significantly along Grosvenor Street East.
	• The timing of the project, to proceed before the following, which will all affect traffic movements at the intersection:
	  o before the proposed re-opening of Young Street at Military Road
	  o before Neutral Bay Town Centre Planning Study and Neutral Bay Alive consultations are concluded
	  o before the plans for a plaza on the Grosvenor Lane carpark are determined
	  o before the plans for the Coles' site are determined
	• The lack of a pedestrian crossing on the eastern side of Young Street
		0

	If a cycleway has to be built between Belgrave Street and Grosvenor Street, please consider: • Moving the cycleway to the eastern side of Young Street, which has NO driveways along its entire length. By comparison, the western side, where the new cycleway is planned (a distance of about 100 metres), there are 4 driveways, 3 servicing approximately 40 apartments and 1 driveway for the new development on the corner of Young & Grosvenor which will have 15 car spaces This would totally eliminate conflicts for cyclists with vehicles entering/exiting driveways. I hope you will take these points into consideration when making your decision.	
Name witheld	I object to North Sydney Council taking any action on this cycleway extension, removal of roundabout and pedestrian walkway until the Young St reopening and the impact of the Coles redevelopment can be assessed. I request that any action incorporates the assessment of the impact made after Young Street is reopened and when the Coles development has been finalised. There will be significant impact on pedestrians, cyclists and vehicles in the area.	0
Anita	Fantastic idea! Would love to see more bike paths in Sydney.	1
Maree	I fully support strategies to implement and improve cycling opportunities in North Sydney. The design and initiatives for Young Street project are the start (welcomed) of this greatly needed evolution	1
Fergus	I support initiatives to reduce car traffic and increase walking and bike riding. I like the design proposed for Young Street	1
Garth	As a bike rider I fully support the proposed cycling + walking upgrades. I will definitely be using the cycleway	1
Tim	I support bike lanes and the proposed change to Young Street	1
Alex	Anything to improve bike infrastructure and add bike facilities, I support	1
Luke	This is great, why wasn't it done years ago?	1
Ivan	Absolutely positive. The more we can calm these streets the better	1
Mikayla	I agree with the proposal.	1
Caroline	Yes, I agree. Great proposal	1

Kathryn	I think it's wonderful that the council is taking sustainable transport seriously. The changes to Young Street are a positive step - more cyclists and pedestrians will use the safer modes of transport if the infrastructure is there - property values will rise for those in the vicinity.	1
Sam	Just an obvious improvement to the area all round	1
Hannah	Great idea!! People already use it as a crosswalk	1
Thomas	I do support the proposed changes	1
Sarah	I 100% endorse this project. This is a really important upgrade to the intersection. I fully support the removal of the roundabout and the addition of a raised wombat crossing for bikes and pedestrians, as well as landscaped beds and kerb extensions. It would be even better if raised crossings were provided across all 4 legs of the intersection to support safe access from all directions. I commute through the area using the existing Young Street bike path and I would value easier access to the shops and Military Road.	1
Graham	I support the extension of the existing cycleway into the Neutral Bay shopping village. I have concerns about the proposed path termination point on the wrong side of Young Street and just up from an intersection that funnels cars towards the proposed termination point. Cyclists (and pedestrians) won't have any right of way to cross. This is an issue that needs to be fixed by continuing the cycleway and pedestrian crossing across Young Street.	1
Arthur	Safe movement of people can only happen when actions are taken to ensure people are safe. For pedestrians and cyclists, this is protected infrastructure. A connection between the bridge and west St would help too.	1
John	I write in my capacity as a stakeholder travelling through the North Sydney LGA by bicycle, private motor vehicle, and public transport user, and as a person who advocates for a more people-friendly urban environment. Besides being a board member at Bicycle NSW, at which I chair the Advocacy Committee, I am a founding member of the Better Streets movement in Sydney. I support the implementation of the plan as displayed. As living density increases we need to provide more room for alternatives to the motor private vehicle for mobility. Current motor vehicle usage rates are not sustainable if we wish to avoid crippling congestion as the population increases, and more space-efficient transport modes must be prioritized. By prioritized, I mean appropriate complete safe transport networks physically delivered. Partial networks, or those broken by critical missing links do not count. Concern about risk from collisions with motor vehicles is the biggest single inhibitor for the uptake of space-efficient active travel. This is evidenced by the heavy skewing of gender participation rates, where the current bicycle user population is overwhelmingly male, compared to other jurisdictions where bicycle user safety is given greater priority. This is because female users have lower risk tolerance. Urban planning and travel policies should not have such sexist outcomes.	1

	The inclusion of this new facility inclusive of pedestrian- and cyclist-priority intersection treatments is essential to development of the complete network. It is essential that we do not let short-sighted NIMBY objections derail the creation of the network or cause key sections to go missing or be compromised, throwing users back into motor traffic. Unless users can have a safe journey for the full length of the journey, they will be discouraged from undertaking the journey in the first place and will revert to other means such as their car, which we are seeking to avoid. It is interesting to note that the recent Streets as Shared Spaces changes to The Strand at Dee Why led to a 6% increase in retail turnover among establishments on that street, despite (or perhaps because of) traffic flow being restricted to one way, speed limits reduced to 30km/hr, and a dual lane protected cycleway being installed. Assertions of loss of business turnover from bicycle lane installation are nearly always unfounded. Typically, the opposite occurs. Concerns about the loss of private motor vehicle parking in public spaces should not be heeded. Streets are for moving people and goods, not for storing private assets. Why should the council continue to fund this privilege? Business owners typically overestimate customers arriving by motor vehicles by a multiple of 3. Homeowners typically experience a comparative lift in the value of their dwellings compared to those without a cycleway going past, due to the quieter street and the increased buffer space to passing motor traffic. This section should go ahead immediately, with the remaining sections to be implemented as soon as technically feasible. There have been far too many delays already.	
Nash	A great active transport project. Please implement more of these!	1
Jonathan	I support these improvements for cyclists and pedestrians alike. The North Sydney LGA is woefully behind with safe cycling measures. Time to improve.	1
Martin	Extremely good idea to finish this important piece of infrastructure.	1
Lucy	I welcome the change and look forward to it.	1
Carolyn	I support the proposal to remove the roundabout at Young and Grosvenor Street intersection and replace it with a pedestrian and bicycle crossing. Roundabouts are not suitable in areas like Neutral Bay village as they are designed to improve traffic flow rather than calming traffic, deprioritise pedestrians and are unsafe for bike riders. This project cannot though be considered the final stage as it does not provide support for the other legs of the intersection, and it leaves the bike rider stranded with no support on a car park access road. At the very least a crossing of Young Street is required on the southern side of the intersection. Ultimately, unless the southern section of Young street is converted to a low vehicular, quiet street, a bike path is required to continue to the road closure.	1

Pete	I very much support this project. Great to see Council doing more to protect our most vulnerable road users and increase the use of active transport! Or streets should be a place for everyone to enjoy, not just cars to get from a to b via. Intersections are typically the most dangerous part of any cyclists journey, having clear priority with this continuous footpath / cycle path treatment type is really great to see. Additional traffic calming measures to slow vehicles as they move towards the intersection could be considered e.g., flat top speed humps on approach to intersection, WOMBAT's on all 4 intersection legs, raise the entire intersection, or at the very least zebra crossings on each leg to facilitate priority pedestrian movement across Young St. Would a 30km/hr speed limit be adopted too? Love the kerb build outs to slow turning vehicles and plantings. Please ensure that there is an appropriate turning radii of the south-bound bike path as merges with Young Street - cargo bikes find it particularly hard to navigate narrow turning radius's. Please also consider safe crossing for bike users at this merge point with Young St - noting they will need to cross Young St to continue south bound. Could a WOMBAT with continuous bike path, or zebra with continuous bike path be placed here to assist this desire line? Very excited to see this project developed and hopefully delivered! As well as the extension to Young St bike path.	1
Jennifer	Great initiative to make the crossing designed for people rather than cars. This part of neutral bay could be really pleasant (off military road) if it was safe for pedestrians (and bike riders). I live a long walk or a short cycle away, and I would be MUCH more likely to come and shop or eat here if it wasn't such a car focused place. Please make sure this connects really well with the existing fabulous bike infrastructure in the area, to make it safer and easier for all.	1
David	As a general bike rider for the purposes of commuting, social activity and exercise, I encourage all progress on improving cycleways. Having lived and cycled around Stockholm and Canberra, I'm convinced that Australians can benefit mentally and physically by having safe and extensive cycleways as a serious option for transport. We have a long way to go with only a small existing network.	1
Blair	I fully support this project as proposed. I can't wait to use it when built.	1
Roberto	I support this project	1
Adam	I support the proposed plan. It will make it much easier & safer for cyclists & pedestrians to cross this street.	1
Phillip	Bike North strongly supports the extension of the existing Young Street cycleway southbound to connect the existing Cammeray-Cremorne-Spit cycling route to the Neutral Bay Shopping Village and wish to congratulate the council for demonstrating the courage to remove the existing roundabout at Grosvenor Street and Young Street and narrowing all the existing general traffic lanes. We have made a number of suggestions on how to improve the proposed design for people walking and cycling - in particular an additional prioritised crossing of Young Street.	1

Rob	North Sydney is a _pretty_ liveable area, but a lot more can be done to advance the quality of life of the area. As a father to a young 2 year old, I wish our streets were more active transport friendly. He's a joyful little one, and when he play runs on our walk from Harris Farm in Cammeray I wish I didn't have to fear his safety as we walk alongside a major road where cars are coming head on at >60 km/ph. And when we walk to Hamilton Reserve where we planted 7 trees, I wish I had the confidence to let him cycle there. We haven't yet turned right to go to Neutral Bay. And when we do, I look forward to see the great work that this upgrade will deliver to the area. I applaud all Max and the Sustainable Transport team does to improve our community's liveability. Also congratulations for helping advance the bike ramp in Milson's Point (ref: https://www.transport.nsw.gov.au/projects/current-projects/sydney-harbour-bridge-cycleway-access-program). It's a key barrier to cycle adoption for more everyday commutes. My friend couldn't lift her Lug & Carrie Tern bike up the current solution. So it limits access. Having cycled from the Boroughs of London, along the lakes of Toronto, and from Brooklyn to Manhattan... there's still a long way to go for Sydney. But congratulations on the wins along the way.	1
Name witheld	I support the Young Street pedestrian and cycleway upgrade proposal. It will allow me to safely drop in and visit the Neutral Bay village shops while using the existing CammerayCremorneMosman cycle route along Sutherland St and Ellalong Rd etc. It will also allow everyone that lives north of the Neutral Bay village (who all live a maximum of 1.5km away from the shops) to shift their shopping trips from car to ebike/ecargo bike. While Young Street north of Sutherland is supposed to be a cycle route, it is extremely dangerous - particularly going uphill - due to parked cars on both sides of the road and fast moving car lanes that are just wide enough to encourage illegal close passes from incompetent motorists. I'm a very experienced cyclist, I don't like it and I would never let my children ride up there. As a result, very few people feel comfortable to ride bicycles along there and everyone drives their car to the shops instead. The area is already choked with car congestion because of flow on effects from the WFU construction works so mode-shifting as many trips as possible away from cars is critical. Car parking is already a hassle at the village because of so few spaces and short time limits. Shifting some of those short, local car trips to ebikes and ecargo bikes also means more potential customers can visit the shops at once and stay longer too. That's a boon for struggling local businesses. When I was at the shops today, the bike rack on Waters Lane was completely full of ebikes and the other bicycle parking hoops at the edge of the car park was half full of ebikes so there is clearly already demand and that's only going to grow with this new path - provided it connects safely and conveniently into the village. I recommend the installation of further bicycle hoop parking be installed as part of this project to deal with the increase in ebike parking demand. Please use the hoops rather than the rack style on Waters Lane which you can't use a D-lock on unless on the outside of the rack. The cable locks required to use the inside of the rack are easily cut with bolt cutters. I strongly support the removal of the Young St/Grosvenor roundabout. This helps to prioritise movement of people outside of cars which is critical in a shopping village area. I also support the raised pedestrian and cycling crossing on the western side of the intersection. I do have big concerns with the termination point of the cycleway immediately south of the intersection and on the wrong side of the road though. This road is the funnel for all car traffic to head into the existing car parking area. It's also making it dangerous for inexperienced cyclists to try and jump across 2 lanes of traffic to get to the correct side of the road -	1

	particularly when some of the cars entering the street will be coming from behind the cyclist. The 2 speed cushions further up the road will do little to mitigate this danger. Any re-opening of the Young St plaza to Military Rd will also amplify this danger even more. I recommend a second crossing of Grosvenor Street to allow cyclists to get to the correct side of the road before the path terminates. Ideally the crossing would be on the south side but it could plausibly work on the north side too. I understand that there are flooding concerns with putting raised crossings on the south and eastern parts of the intersection and note the irony that global warming which makes these flooding events occur more frequently is being worsened by people using their cars to drive short distances to the shops - because it isn't safe to use micro-mobility. I also note that the 4 small pedestrian islands have been removed as part of this project with the western one being significantly upgraded. While I acknowledge that the road has been narrowed in all these sections, it is still arguably a downgrade for the sides that don't have a crossing installed. I would support full pedestrian crossings on all sides of this intersection - although this will likely lead to a small reduction in car parking spots. If the loss of a couple of car parking spaces is unacceptable then I recommend implementing a 30kmh speed limit along Young St (south of Belgrave St) and the whole of Grosvenor St which would align with the new NSW Speed Limit Guidelines released last month since this area is part of the Town Centre and has a high place function with high numbers of pedestrians and low traffic movement function. With North Sydney Council's population allocated to increase 500-600 people every year to 2036 and likely beyond, it's simply not possible to continue to have private cars dominate the mode share of local trips to shopping villages like Neutral Bay like they do now. The fact that not many people currently feel safe to cycle to Neutral Bay shopping village isn't a reason to not build the path. It's literally the main reason it needs to be built. Sustainable transport infrastructure like this project is critical to deal with the inevitable personal transport changes that will need to be made with the rapid population growth that we're already experiencing.	
Name witheld	I am ##. I am 2. I am nearly 3. I like riding with daddy because I can wave to [my friend] Louisa and see doggies and brush turkeys and go faster than the big bad wolf when he's chasing me. I like bikeways because cars are loud and scare me. I like going to the red slippery slide park [Grasmere Children's Playground]. I like the red slippery slide because mummy and daddy can slide with me. I like jumping on [the] mushrooms. I like [to eat] strawberries and blueberries at the park. I want ice-cream [from the Neutral Bay Village shops] but it's not safe. Can you build the bikeway to the ice-cream [shop]? [What's the magic word?] Pleeease. Then I can eat ice-cream. And see doggies and brush turkeys. [Context from parents - It is now possible to cycle from West Street to Grasmere Children's Playground entirely off road (Ridge St, St Leonards Park, Warringah Freeway overpass, Merlin St, Ernest St, Sutherland St, Young St) including past numerous other parks and playgrounds. Continuing the Young Street cycleway up the hill and into the Neutral Bay Village will open up the shopping village to more potential customers - including those looking for ice-cream - who don't need to worry about finding a car parking spot or how long they're allowed to park for. Alexandra hasn't actually eaten ice-cream yet but seems to have learnt about it from daycare.]	1
Martin	Designs look quite good. Only concerns are:	1

	• The queuing area seems smallish at the end of the cycleway where it merges back onto the road after crossing Grosvenor street and goes back on to young st. Is there room for a couple of bikes (like for a family). • What are the plans for young st plaza? Will the road reopen and if so pedestrian crossing options between military road and Grosvenor may need to be considered along with the potential for significantly increased vehicular traffic.	
Name witheld	I support this new pedestrian and cycling infrastructure which will make it possible for me to have a coffee after taking my child to the park. I can currently cycle from West Street to Cremorne along cycleways but I don't feel safe to continue up Young Street without a cycleway there. When my kids are a bit older, I would love for them to be able to ride to the shops to meet friends and meeting up after playing sport at Primrose Park as an example. I would really like to see bigger crossings on all sides Grosvenor and Young Street intersection - and not just the big new one on the western side. As a mum who has often walked with a pram or stroller, the easier it is to crossroads, the better. I'm also worried about where the new cycleway finishes on the wrong side of the road. I don't think I'd feel safe riding a bike with kids across a road like that. It would be much better to have another crossing to get you onto the correct side of the road.	1
Janine	Thank you for your letter - I received it yesterday and have been onto the North Sydney website for more information this morning. I am very happy with the bicycle track as this is needed. However removing a roundabout that works extremely well would be detrimental. I feel this does need to be addressed as Grosvenor Street has a bottle neck with the small amount of parking and at certain times of the day (evenings) this does cause problems. Luckily the roundabout means the traffic moves quickly and disperses. I feel your four way intersection would cause major traffic jams, backing up of cars esp with bicycles and people trying to cross there. It would then be effecting Ben Boyd Road too. I live on young street and myself and my family all use this roundabout every day, some of use it numerous times a day, and we were just remarking on how efficient it is in our area. So please rethink removing something that is not broken. It is the best solution here for now. I would be happy to come into council to discuss further, as I feel it's better to sort out these things rather than before then after as they have done in Curl Curl. Maybe you should set up a table outside woolies - Grosvenor side - and really asking people for their opinions.	M
Lindy	First - open the top end of Young Street then see what's feasibly-either a roundabout or a crossing.	M
Jay	We strongly support the council efforts to improve the area by increasing the footpath and outdoor dining. 1. We don't see the need for bicycle lane. We will soon be seeing deliveroo and menulog scooters zoom past at 100kmph on that bicycle lane. Can a speed limit for bicycle be applied to that path? 2. Please consider not doing a cheap or temporary job like the young street play / sit down area. That's so poorly done. Hope it's not final. 3. Please endeavour to keep the beautiful tree on Grosvenor Street or in Neutral Bay (please disclose the location).	M

	4. We fear that this pedestrian crossing might make the traffic on Grosvenor street very bad, would you consider banning trucks using west side of the Grosvenor street?	
Amy	Whilst the proposal prioritises pedestrians and cyclists which I favour, it appears to create a more dangerous environment for the intersection of cars. Cars traveling east on Grosvenor will likely need to pull up on the crossing blocking the pedestrian and cyclists in order to safely see the intersection. Cars traveling west along Grosvenor may also end up on the crossing after they proceeded into the intersection which is free of cars, only to have pedestrians or a cyclist come onto the crossing at the last minute. There is also a conflict for pedestrians needing to navigate the cyclists crossing their path on the south west corner. It seems to prioritise cyclists when it should prioritise pedestrians. It also prioritises Young Street and doesn't take into account the large volume of traffic on Grosvenor, (which appears to narrow) and is used to get back to Ben Boyd from the Town Centre. Evidence of why this is safer than a roundabout should be provided. Additionally, is there a masterplan of the wider precinct with proposals of the 'Coles' development that this integrates with? This should be considered wholistically and not constructed in isolation.	M
Catherine	I support a zebra crossing on any street including here but oppose the removal of the roundabout. It is a highly pedestrianised area and the roundabout helps to slow down the traffic. The removal of the roundabout on the corner of Young and Sutherland has increased the speed that cars can and do travel. I also query the need for this extension and suggest you do an audit of the use of the bike path on Young Street. We live on this street where the bike path currently is and it is rarely used by cyclists, most of whom much prefer to use the road.	M
Elaine	We live and work in ## young street and although we welcome the bike lanes, we definitely opposed removing the roundabout. There is a lot of traffic build up on young street, Grosvenor Street caused by the one way street on cooper lane and also the woolies truck backing into the tight loading bay causing a huge traffic jam on Grosvenor lane and Cooper lane. Everyone is heading for the free council parking. And our Carpark entrance into the building is on Cooper Lane. Very very bad traffic and numerous car accidents on Grosvenor Street with people parking REar in. Please consider traffic before removing round a bout. More people will be injured. Including my husband who rides in his bike daily.	M
N	Grave concerns re pedestrian safety crossing Grosvenor St on east side of Young/Grosvenor junction I walk daily up Young St and cross Grosvenor at and am deeply concerned re removal of crossing island on east side of this junction. The majority of pedestrians including a significant number of school children, walk up the east side of Young and hence will not benefit from the pedestrian crossing on west side of the junction. PLEASE PLEASE PLEASE can a painted pedestrian crossing be included for crossing Grosvenor on the east side of this junction. Cars currently tear around this corner and it is already hazardous to cross with the crossing island. I am worried for all the	N

	schoolchildren and mothers with prams who already battle crossing here. It is not fair to make them divert to the west side of the junction for the sake of the paltry number of cyclists who actually use the cycle way. Most cyclists just ride on the road….	
Joan	• prefer roundabout back • Cycle trails not used	N
Christina	Rangers Road and Yeo Street pedestrian crossing benefit from being a level crossing. Don't know if people ride their bikes. Car parking on Grosvenor Streety too small for big cars. Don't like small speed bumps/. Pedestrian crossing good.	N
Reyn	Support plaza at Grosvenor Car Park and Young Street pop-up	N
Sarah	We leave on young st with garage access onto young st and cycle way will pose a higher risk when exiting our garage park. Plus there is no point having the cycle way going to nowhere, it should only go head it in connects at both ends.	N
Barry	I would like to have a copy of the data that Max White indicated at the Brightmore Precinct meeting on Wednesday 09 August.2023 that was the basic of the that the proposed cycleway proposal so that I can provide a response.	N