

Our Ref: 20337

31 August 2021

Sydney Catholic Schools c/o Carmichael Tomkins Property Group Pty Ltd Suite 14.04, Aurora Place 88 Phillip Street Sydney, NSW, 2000

Attention: Mr Brodie McHutchison

Dear Brodie,

RE: NORTH SYDNEY MARIST COLLEGE MASTERPLAN
RESPONSE TO SUBMISSIONS – TRAFFIC AND PARKING

A State Significant Development Application (SSDA) has been submitted, for the North Sydney Marist College Masterplan.

In response to the application, submissions have been received from authorities (TfNSW and North Sydney Council) and the community providing commentary on the traffic and parking assessment prepared by TTPP. The following responds to each of the traffic and parking related matters provided.

As part of the response, consultation with Transport for NSW has been undertaken to discuss their comments (as provided in a letter 22 March 2021), including:

- a meeting held on 19 May 2021 and
- a meeting held on 2 June 2021.

Based on the outcomes of the meetings with TfNSW, The Transport Planning Partnership (TTPP) has responded to TfNSW comments in the following.



TfNSW Comments

Comment 1

 The traffic model does not include the pedestrianisation of Miller Street between Pacific Highway and Berry Street. With the changes proposed by North Sydney Council in their Public Domain Strategy, there would be a significant changes / shift in vehicle movements. The model should incorporate these changes along with the impact of Western Harbour Tunnel.

TTPP Response

Consultation with Transport for NSW has been undertaken since receiving their comments dated 22 March 2021. This consultation concluded that TfNSW has since agreed the Miller Street pedestrianisation does not need to be considered, noting that the pedestrianisation of Miller Street (known as Miller Place) is North Sydney Council's desire and as yet has no commitment from either Council or TfNSW on, if or when this would occur.

In relation to the Western Harbour Tunnel, we reviewed the EIS for both the Western Harbour Tunnel and Beaches Links and incorporated road upgrades in line with those documents. Traffic forecasts included the Western Harbour Tunnel and Beaches Link as was provided by TfNSW.

Comment 2

 Page 39 - 7.2 - The 'evening peak (2:30pm-4:30pm)' used in the Base Model appears unusual. Around the same time in 2019, it appears to show later PM peak times (please see attachments).

TTPP Response

A 2.30pm-4.30pm peak is usual for an area around a school and is supported by the traffic survey data. A copy of the survey data is provided in **Attachment One**. In addition, there is very little school traffic during the 'typical' road network peak hours (4pm-6pm), therefore, it is more conservative to assess the development impact during these hours. After 4pm, the development impact is expected to be minimal, if any.

Sydney Catholic Schools (SCS) has provided TTPP with supporting documentation detailing the existing/historical (pre-COVID-19 pandemic) after school activities. A number of after-hours activities occur at the school where students from other schools may come to Marist Catholic College for these events. After-hour activities are generally scheduled on Tuesday or Friday and conclude at 6pm or 8pm. Table 1 provides a summary of the after-hour school activities.



Table 1: After-hours School Activities

Activity	Existing Student Capacity	Frequency Held During Term	Operating Hours
Cadets	140 students	Tuesdays throughout the year during school term	Immediately after school until 8pm
Debating	80 students & adults	Friday afternoon (3-4 timers per term)	Immediately after school until 8pm
Chess	70 students	Friday afternoons ad hoc (Term 2 only)	Immediately after school until 6pm
Public Speaking	20 students	Friday afternoons ad hoc (Term 1 only)	Immediately after school until 6pm
Childcare	50 students	Daily during school term	Immediately after school until 6pm

Based on the above, three activities may generate traffic during the 'typical' road network peak (4pm-6pm) including chess, public speaking and the childcare. However, chess and public speaking do not operate at the same term/semester. Cadets have the most number of students but finishing times for cadets occurs after the road network peak (runs until 8pm).

Therefore, the maximum number of students that could be anticipated to leave the site during 'typical' road network peak hours would be up to 120 students. This would occur on Fridays when Chess activities (up to 70 students) are scheduled and concurrently when parents are picking up children from childcare (up to 50 students). However, it is noted that Chess activities are provided on an ad hoc basis in Term 2 only. As such, the maximum peak would not occur on a regular basis.

The mode share data presented in the TIA indicates that 66% of primary students and 13% of secondary students depart the school by car. Allowing an average car mode share of 50%, it can be assumed that the 120 students may generate up 48 cars, with the remaining students would travel home by bus, train or walking.

Comparatively, the TIA provides a summary of traffic surveys undertaken by TTPP for the existing site which demonstrates the site traffic generated during school pick up period (2:30pm-4:30pm), is up to 214 vehicles per hour. It indicates that the 'typical' road network peak is minor in comparison to the evening peak assessed (2:30pm-4:30pm) in the TIA.

Furthermore, it is understood that after school activities are not expected to drastically change/ increase as a result of the development. Notably, any potential new activities are to be allocated to a free weeknight, to avoid multiple activities running on the same weeknight.



350 300 250 Vehicles per Hour 200 150 100 50 0 7:15 7:00 7:30 7:45 8:00 8:15 8:30 14:30 14:45 15:00 15:15 15:30 Starting Hour ■Inbound ■Outbound

Figure 1: Existing Site Traffic

Comment 3

 Page 46 - 7.6.2 - Based on historical observations of traffic flow in the North Sydney area, the '2020 Base' case, Level of Service (LoS) at each signalised intersection is considered generous, which may have an effect to the travel times suggested on page 48 - 7.6.3.

TTPP Response

The above comment has been clarified in a follow up meeting with TfNSW. TTPP has been requested to confirm the traffic count data used for the modelling, with consideration for the impact from COVID-19 pandemic.

TTPP had compared the October survey data with historical survey data of Falcon Street from 2017. A comparison of traffic volumes along Falcon Street from these two data sets is provided in Table 2, with the raw survey data provided in **Attachment Two**.

Table 2: Comparison of Survey Data along Falcon Street

Falcon Street	A	AM Peak (7:30-8:	30)	PM	Peak (16:00-17:0	0)
Direction	2017	2020	Difference	2017	2020	Difference
Eastbound	754	642	-112	800	792	-8
Westbound	913	916	+3	889	938	+39
Two-Way Total	1,667	1,558	-109	1,689	1,730	+41

Table 2 indicates that there is an approximate difference of 40-100 vehicles between the 2017 and 2020 survey data of Falcon Street. Based on experience, this level of difference is



minor and within the general variability of day to day traffic for a road with around 1,600 vehicles per hour.

Further historical survey data has been obtained for Carlow Street, in the form of an automatic tube counter near West Street between 11 May 2018 and 18 May 2018. A comparison of the data is provided in Table 3.

Table 3: Comparison of Survey Data along Carlow Street

Falcon Street		AM Peak			PM Peak	
Direction	2018 [1]	2020	Difference	2018[1]	2020	Difference
Eastbound	171	187	+16	127	144	+17
Westbound	144	210	+66	105	167	+62
Two-Way Total	297	397	+100	249	311	+62

^[1] Weekday average of the automatic tube count data

The data in Table 3 indicates that the traffic has marginally increased on Carlow Street since 2018. The raw data is provided in **Attachment Two**.

On the above basis, the 2020 survey data is considered to be reliable.

Comment 4

 Page 45 - 7.5.2 suggests "the removal of on street parking in both directions on Miller Street will be required and has been applied to the year 2036 models".

Furthermore, it is stated that the planned future upgrade of the Miller Street/Falcon Street intersection have been applied to the "2036 Do Minimum and 2036 Do Minimum + School Demand scenarios".

TfNSW requests the intersections should also be analysed for current situation (i.e. without planned upgrades) and for both "with and without" proposed development and submitted for review.

Comment 5

It is noted the area road network has been modelled in AIMSUN. TfNSW requests all identified intersections should be modelled in SIDRA NETWORK and the SIDRA outputs should be incorporated in the traffic report and submitted for review.

TTPP Response

TTPP has undertaken SIDRA network modelling as requested by TfNSW. The SIDRA modelling included future 2026 and 2036 scenarios, with and without planned upgrades and with and without the Miller Street parking restrictions.

The SIDRA modelling, discussion and results have been provided in the updated TIA report.



Comment 6

Future Transport 2056 emphasises the importance of walking and cycling for short trips and reinforces the importance of walking and cycling to increase the catchment of public transport as part of the whole customer journey.

Building Momentum - State Infrastructure Strategy 2018-2038 includes recommendations related to walking and cycling, including integrating transport with land use; managing travel demand; unlocking capacity in existing assets; and improving population health outcomes through more active transport.

The Transport and Accessibility Impact Assessment (TAIA) proposes 72 bicycle parking spaces for high school students (5% of proposed high school students) and 10 spaces for staff (5% of all proposed staff). Bicycle parking for primary students is not provided, however, cycle represents 3% mode share for existing primary school students. Additionally, there is no mention of end-of-trip facilities. The NSW Planning Guidelines for Walking and Cycling has been superseded by Cycling Aspects of Austroads Guides, 2017, which recommends that bicycle parking for all-day use on a regular basis should be expected to be combined with end-of-trip facilities such as showers, lockers etc.

Bicycle parking for staff should be increased to 10% of proposed staff population to encourage non-car mode share for travel to and from the site, with adequate end of trip facilities also provided. Bicycle parking for primary school students should be provided to support primary school student cycle mode share (3% existing) for the proposed primary school student population

Recommendation

It is requested that prior to the issue of the Construction Certificate, the applicant be conditioned to provide bicycle parking and end of trip facilities for staff and students in accordance with Australian Standard AS1742.9:2018 Manual of Uniform Traffic

Control Devices - Bicycle Facilities, and Cycling Aspects of Austroads Guides including:

 89 bicycle parking spaces for students and 20 bicycle spaces for staff. Locate bicycle parking and storage facilities in secure, convenient, accessible areas close to the main entries incorporating adequate lighting and passive surveillance and in accordance with Austroads guidelines.

TTPP Response

It is proposed to comply with TfNSW's suggestion with a proposed provision of 109 bike spaces, instead of 82 spaces.

In addition, the revised GTP has included two sets of mode share targets:

- short term 'realistic' targets (that have been adopted by the TIA for modelling purposes)
- long term 'aspirational' targets (these are targets that GTP will aim to achieve, with each future update of the GTP coming closer to achieving these goals).

The long term targets, include a bicycle parking mode share of 10% for staff as recommended by TfNSW.



Comment 7

The following routes have changed since this report was prepared. Need to update the route lists in:

Transport and Accessibility Impact Assessment (TAIA)

- Tables 2.1 & 2.2
 - o 154X now only operates to Dee Why;
 - o 168, 173 and 188 are discontinued;
 - o Route 200 only operates to Gore Hill;
 - o 343 is cancelled and replaced with 115 which only operates to Bridge St;
 - School specials 660W & 661W have been renumbered to 793n & 794n respectively; and
- Missing 150X Manly to Milsons Point (Express Service)

Green Travel Plan (GTP)

- Tables 2.2 & 2.3
 - 154X now only operates to Dee Why;
 - o 168, 173 and 188 are discontinued;
 - o Route 200 only operates to Gore Hill;
 - 343 is cancelled and replaced with 115 which only operates to Bridge St;
 - School specials 660W & 661W have been renumbered to 793n & 794n respectively; and
- · Missing 150X Manly to Milsons Point (Express Service)

Recommendation

The TAIA and GTP need to be updated to reflect current bus route information.

TTPP Response

The TIA and GTP has been updated as requested.

Comment 8

8. The proposed Carlow Street car park would provide 50 spaces proposed for staff, compared to 44 existing spaces. Proposed parking spaces for staff should remain at the existing 44 spaces to discourage car use and increase non-car mode share for travel to and from the site. The provision of 44 parking spaces for staff parking aligns with Educational SEPP. Measures to discourage staff form using St Mary's Church / Parish Office parking (41 spaces) should be included in the updated Green Travel Plan (GTP).

Recommendation - Carlow Street Car Park

The development be conditioned to provide a maximum of 44 parking spaces for staff in the proposed Carlow Street car park.

TTPP Response

The TIA indicates that there are 63 spaces regularly used by staff currently, including 44 formal spaces and 19 informal spaces, as per extract below.



The existing site accommodates 101 car spaces including 57 car spaces dedicated to St Mary's Church and the Parish Office (i.e. Ron Dyer Centre). The remaining 44 spaces are believed to be occupied by school staff. Based on the parking survey data, an additional 19 informal spaces are used for parking, indicating an on-site parking demand of 63 spaces from the schools.

The 19 informal spaces are considered permanent spaces used by staff and not replacing them would cause further strain on on-street supply. The informal parking is shown in Figure 2.





A comparative summary of the existing and proposed provisions is detailed in Table 4.

Table 4: Parking Provision Comparison

Type of Parking	Existing	Proposed
Ridge Lane Accessible Spaces	6	6
Unreserved Spaces	38 [1]	50 [2]
Informal Spaces	19	0
Sub-Total	63	56
Reserved At Grade Spaces	1 7 🖽	0
Ron Dyer Centre	40	37
Childcare Centre Drop Off	On-Street [3]	9
Senior Drop Off	On-Street [3]	12
Total (Staff + Drop Off + Parish)	120	114

^[1] Existing at-grade parking, to be removed

^[2] Proposed Carlow Street Car Park which is to replace all existing at-grade car parking spaces, except the Ridge Lane accessible spaces which are to be retained.

^[3] Carlow Street has P10 restrictions for about 4-5 car spaces, from 8:30am to 10am and 4pm to 6pm, which are believed to used by parents to drop off and pick up.



As per Table 4, the parking spaces available to staff currently equates to 63 spaces. In the future, staff will have 56 spaces available for use. Staff parking provision has therefore reduced.

Comment 9

Comment no 9 relates to a requirement to update the GTP prior to the Occupation Certificate and obtain endorsement from Sydney Coordination Office. This will be a consent condition. Nothing required for this at this stage.

Comment 10

Construction Traffic Management Plan (CTMP)

10. The driveway on Ridge Street must be restricted to left-in and left-out movement to reduce conflicts and avoid vehicle queue back to the intersection of Miller Street/ Ridge Street. Turn paths for the largest vehicle to access the site are required for this left in / left out movement. Truck routes should be updated.

TTPP Response

Construction vehicles will not be accessing the site via Ridge Street.

Comment 11-12

- 11. The turn paths provided at the intersection of Pacific Highway / McLaren Street are tracking over the concrete central median, this is a safety concern and amended turn paths are required to verify the safety of this movement.
- 12. The 12.5m HV turn path indicates that trucks will be turning right from West Street into Falcon Street from the southbound approach. This is not supported as there is a full time 'No right turn' restriction for this movement. Truck routes should be updated.

TTPP Response

The swept paths in Appendix A have been revised accordingly.



Comment 12

13. No construction vehicle movements are to occur during school drop-off (8.00am to 9.30am) and pick up (2.30pm to 4.00pm) times on school days as the proposed truck route contains school zones. This should be reflected in the CTMP.

TTPP Response

This restriction is already noted in Section 3.3 (Work Hours). However, the PM time period has been revised to match the above hours (from 2-4pm to 2.30-4pm). \

Comment 15

15. School zones must be installed along all roads with a direct access point (either pedestrian or vehicular) from the school. School Zones must not to be provided along roads adjacent to the school without a direct access point.

TTPP Response

School zones are currently present along Ridge Street, Carlow Street and Miller Street. No changes are proposed to these existing zones.

North Sydney Council Comments

Comment 1

The modelling assumes a future road connection from Ridge Street to the Western Harbour Tunnel. There is no such connection proposed as part of the Warringah Freeway/Western Harbour Tunnel project that Council is aware of. This assumption is of concern as it impacts much of the modelling outcomes, and it is stated that the traffic data was supplied by TfNSW. The accuracy of this data and assumptions should be clarified before any determination is made. Clarification of this issue will also be sought from TfNSW. (North Sydney council)

TTPP Response

Traffic forecasts have been based on TfNSW forecast strategic models (STFM). These models include the latest and most up to date future road infrastructure. Prior to the preparation of the traffic assessment, TfNSW was queried on the proposed connection to the Western Harbour Tunnel, who instructed TTPP that model is relevant and should be used as our base. As we have relied on the TfNSW model for our forecasting we are unable to change this assumption.



Comment 2

Bus occupancy data – the data suggests that most bus services analysed are below 40% occupied. Buses travelling between North Sydney Station and Marist College are often seated and standing capacity with a majority of passengers being school students from local schools including Marist College – particularly between 8am and 9am. It would be prudent to gauge occupancy of the buses departing North Sydney Station Blue Street interchange in the AM; and departing North Sydney Oval – Miller Street in the PM.

TTPP Response

In response to the above, further analysis of bus occupancy has been undertaken for the following stops:

- North Sydney Station Blue Street Stand A, B, C, D and F (, Stop IDs: 206011, 206012, 206092, 206014, 206015) for the AM peak
- North Sydney Oval Miller Street (Stop ID 206018) for the PM peak.

The data is presented in Table 5.

Table 5: Bus Occupancy (February 2020)

Time		Public Buses			School Buses	
nme	0-20%	21-40%	41-60%	0-20%	21-40%	41-60%
North Sydney Station Blue	Stret					
07:00 to 07:59	97%	3%	0%	100%	0%	0%
08:00 to 08:59	88%	13%	0%	100%	0%	0%
North Sydney Oval						
15:00 to 15:59	58%	33%	8%	60%	40%	0%
16:00 to 16:59	87%	13%	0%	0%	0%	0%
17:00 to 17:59	87%	13%	0%	0%	0%	0%

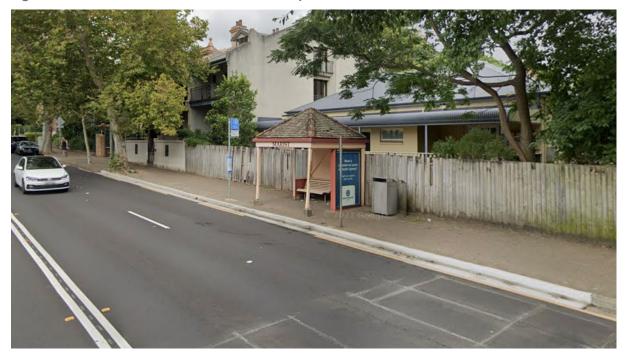
TfNSW data on bus occupancy indicates that buses are generally between 0-40% occupied at the above stops. However, at 3pm-4pm (during school ending period), buses notably increase in occupancy however, only to 41-60%. No buses are noted to be above 60% occupancy.

It is expected that the proposed new Metro Station may also further reduce bus patronage with students and the general public expected to shift modes.

Further to the above, it is noted that the development includes improved pedestrian capacity at the key bus stop servicing the site. The bus stop fronting the site along Miller Street (i.e., Miller Street at Carlow Street, Stop ID 206049) currently sees significant pedestrian congestion, generally caused by students leaving the school during the 3pm-3.15pm rush for the bus. The stop is shown in Figure 3.



Figure 3: Miller Street at Carlow Street Bus Stop



The proposed development aims to reduce congestion by providing additional footpath space on school property, behind the bus stop which is currently blocked by fencing. Pedestrian access to the school will also be provided in close proximity which may allow students to wait near the school access rather on the narrow footpath at the bus stop.

Public Comments

Comment 1 (Owners Corporation Committee)

The traffic surveys undertaken to-date appear to have been done over too small an area, and not to have included traffic flows in streets such as <u>Hayberry</u>, <u>West</u>, <u>Myrtle</u>, <u>Burlington</u>, <u>Ernest Sts etc which feed into and are impacted by school traffic flows</u>. Nor have they made convincing reference to understanding traffic flows from <u>Tucker St into and out of Carlow St</u> with students of North Sydney Boys High ...directly opposite the proposed entry to the parking building for the expanded precinct.

TTPP Response

The traffic survey and modelling scope has been undertaken in accordance with the Secretary's Environmental Assessment Requirements (SEARs) which has listed the intersections that are required for assessment.

Based on site observations, Miller Street is the key street in the local road network which is coordinated with the wider arterial road network. Therefore, an increase in traffic to Miller



Street will have an effect on the wider road network. Assessing the impact on this road is considered critical.

The side streets off West Street (e.g., Hayberry, West, Myrtle, Burlington) are low traffic generating given they are used primarily for local access. It is understood that these roads are at times, used for rat running however, there is no evident reason why they should be a significant destination for school traffic.

In relation to the impact to Tucker Street, it is noted that:

- There is an existing drop off area (P10 parking) on Carlow Street that is likely used by parents to drop off students to Marist College. The parents that drop off on-street will now be moved from on-street to on-site noting the substantial queueing area available within the new car park. This will ultimately assist with congestion along Carlow Street.
- The new site access has been designed to permit clear two-way flows for large vehicles (vans, Utes etc). Therefore, delays to turning movements are reduced by ensuring that the site driveway and site traffic is operating efficiently. This will effectively reduce the likelihood of queueing issues from the site access along Carlow Street.

In relation to traffic along West Street, the proposed new traffic to the school and redistribution of existing traffic on to West Street is shown in Figure 4 and Figure 5.

FOOD THRILLS

FALCON LODGE
NOMINEES PTY
LIMITED

North Sydney
Boys High School

Formmett St

Marist College
North Shore
North Sydney
North Sydney
North Sydney
North Sydney
No 2 Oval

North Sydney
North Sydney
No 2 Oval

North Sydney Oval

Legend

Outbound Flows
Inbound Flows
Inboun

Figure 4: AM Peak Distribution



Figure 5: PM Peak Distribution

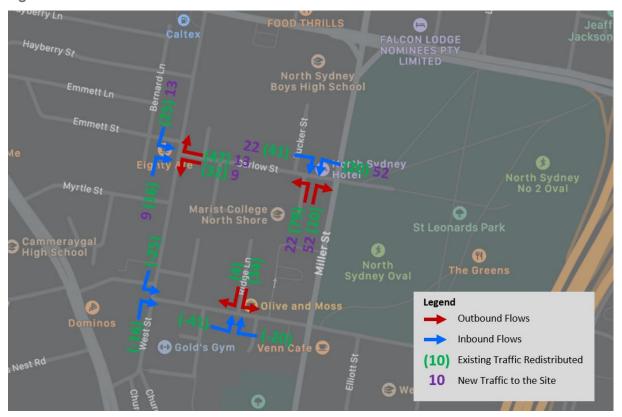


Figure 4 and Figure 5 indicate that traffic into Ridge Street from West Street will reduce. This is as a result of some of the existing school traffic redistributing to Carlow Steet.

The site access at Ridge Street is currently entry only and will be two-way post development, as such some traffic that is currently exiting on to Miller Street will redistribute to Ridge Street as well as Carlow Street.

As a result of the redistribution of existing traffic, there would be an associated reduction in other traffic movements along West Street, which is expected to balance out the traffic impact.

New traffic from the proposed increase in student numbers will result in an increase of traffic to West Street by 44-108 vehicles per hour. This equates to a total increase of one to two vehicles every minute to the intersection distributed over each turning movement. Notwithstanding this increase to Carlow Street, there is an associated reduction at Ridge Street. The wider distribution of site traffic to the surrounding road network is considered to be a positive impact as it allows the wider network/road to flow more efficiently and effectively provides more capacity to each individual intersection.

Additionally, the traffic modelling does not anticipate the impact of the new drop off areas. The development will include an increase to the capacity of drop off areas, which is expected to enable more traffic to be accommodated on-site and as a result reduce on-



street parking demand and reduce the number of people who may be circulating the roads looking for a suitable space to stop and drop off their child.

Comment 2 (Owners Corporation Committee)

Reference was made by the traffic consultants in our December meeting to situations overseas where Green Traffic Plans for similar developments have been accompanied by measurable milestones to quantify the degree to which the traffic and parking plans are being realised. No such milestones are included in the current Development Application. Why not?

TTPP Response

The latest version of the GTP (dated 2 August 2021) has been prepared with short term and long term mode share targets, which is the key measure to assess the effects of GTP initiatives.

Notably, the GTP is a working document that is regularly monitored and adjusted throughout operation. The GTP would be updated early after occupation of the proposed development. This includes the appointment of a Travel Plan Coordinator (TPC), who would be appointed to ensure the monitoring and update of the GTP to ensure that the targets are being met, with an aim to eventually reach the long term mode share targets.

It is expected that initially the GTP would be updated at least yearly, with initiatives provided with timelines and appointed personnel to champion or lead the initiative. At this stage, the GTP is a preliminary plan and it is too early to appoint a TPC or specific personnel to tasks. However, the targets have been set as an overarching goal for the plan.

Comment 3 (Owners Corporation Committee)

Indications from our discussions are that no consideration is being given to alternative traffic and parking options or any variations to the current plans. Consistent reference is made to the State Government and North Sydney Council being firm on not allowing additional traffic to enter or exit onto Miller and Ridge Sts, leaving Carlow as the only option; and to the current church car park not being available for any parking for the expanded precinct as it has to be used for a public precinct. Yet no reference exists in the proposals to the expanded use of roundabouts (e.g., at the intersection of West and Carlow Sts etc.) to help traffic flows or to the option of using some or all of the current church car park to accommodate the increased parking and traffic flows caused by the expanded precinct as opposed to trying to serve a "nice-to-have" public interest.



TTPP Response

To confirm, TfNSW does not permit new access points off State or Regional Roads (i.e. Miller Street which is a State Road) or continued use of existing driveways for any proposed development, if practicable access can be achieved from a lesser order road. This is a statutory requirement as part of the State Environmental Planning Policy for Infrastructure, which states that the "consent authority must not grant consent to development on land that has a frontage to a classified road unless it is satisfied that (a) where practicable and safe, vehicular access to the land is provided by a road other than the classified road...".

While this may be the key reason for why the access off Miller Street was removed, there are other safety issues that have been mitigated as a result of removing this access. The existing egress has sight distance issues at two points, firstly to pedestrians and then to traffic along Miller Street itself. The pedestrian sight issues are mitigated by design, however, sight lines to traffic are affected by kerbside parking and roadside trees. Given the significance of Miller Street as a State Road, an access along this road is not ideal in terms of road safety. Additionally, given there are higher traffic volumes along Miller Street, delays to site traffic are expected to be higher as exiting vehicles are required to give-way to a higher volume of traffic than on the adjoining lower order roads i.e., Carlow Street and Ridge Street.

Furthermore, the provision of two site access points will enable site traffic to be distributed over two roads (instead of one as is currently the case) and the two new drop off areas that accommodate long free flowing vehicle queues on-site will allow a more efficient traffic operation on-site. The increase in queueing area on-site is expected to enable more traffic to be accommodated on-site and as a result reduce on-street parking demand and reduce the number of people who may be circulating the roads looking for a suitable space to stop and drop off their child.

Comment 4 (Other)

Lack of consideration for the existing 20 parks during construction (interim).

TTPP Response

It's not clear which 20 parks this comment is referring to, however, the following sections of the Construction Traffic and Pedestrian Management Plan (dated 12 July 2021) discuss the parking arrangements during construction works:

- Section 3.2 Duration and Staging of Works identifies that the Carlow Street car park will be built before demolishing the existing car parks
- Section 3.8 and Section 5.5. Construction Work Parking discusses the parking arrangements for construction workers
- Section 4.7 Car Parking discusses the temporary impact to existing parking.



During operation the displaced parking is to be accommodated within the new Carlow Street car park as summarised in Section 5.1.6 of the Transport and Accessibility Assessment (dated 12 July 2021).

Comment 5 (Other)

Likely traffic bottleneck to occur on Carlow Street as cars try to turn right and be blocked by cars wishing to enter the school.

TTPP Response

It's not clear which right turn this comment is referring to: - however, it is assumed that the comment is referring to traffic in and out of the site access on Carlow Street. On this basis, we note that the site access has been designed to ensure efficient traffic flows including:

- the driveway has been designed to permit clear two-way flows
- the underground drop off area promotes a one-way continuous flow which minimises conflict and queuing, and thereby reduces delay to movements in and out of the sit.

Comment 6 (Other)

Lack of information on the impact on the Tucker Street and Carlow Street intersection.

As per TTPP's response under Comment 3.

Comment 7 (Other)

Lack of consideration for the impact on street parking by the St Leonards Park users.

TTPP Response

The development is including additional drop off areas on-site which will effectively reduce on-street parking demand. Additionally, events that are held at St Leonards Park and North Sydney Oval are generally held outside of traffic school traffic peaks and therefore, the peak parking demand for these parks will not coincide with the school traffic and parking peak.



Comment 8 (Other)

The proposal that the parking building for the first stage 5-level building will have an extra 71 parking spots, but none for the second stage, (which includes a 1500 seat amphitheatre) seriously understates the parking required for the expanded complex . Without for more parking than is being proposed ,it serves to highlight that the proposed precinct represents a serious over development for what is a residential area , and one which will fundamentally inconvenience and diminish the exiting amenity for residents and local businesses .. and for visitors to St Leonards Park and North Sydney Oval, which are regularly used for events during the week as well as at weekends. Not enough parking provided to support increased capacity of the development including the proposed amphitheatre.

TTPP Response

There appears to be some wording inconsistencies "Amphitheatre" and "Auditorium" are the one and the same. An auditorium is a typical inclusion in a school to enable school assemblies, activities and ceremonies.

The community may use the auditorium however, this would be outside of school operating periods. The term '1500 seat' refers to the size of the hall and not the typical use of it. Therefore, the likelihood of non-school period events that accommodate this level of patronage is unlikely.

If one is to occur, it is anticipated that the event would be subject to an event management plan that includes traffic and parking management measures, including promoting the use of public transport as per the Green Travel Plan.



We trust the above is to your satisfaction. Should you have any queries regarding the above or require further information, please do not hesitate to contact the undersigned on 8437 7800.

Yours sincerely,

Ken Hollyoak

Director

Encl. Attachment One – Year 2020 Survey Data Attachment Two – Year 2017 and 2018 Survey Data



Attachment One

Year 2020 Survey Data

Suburb : North Sydney

Location : 1. McLaren St / Miller St

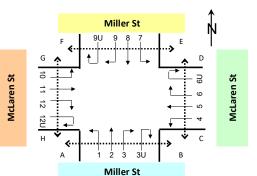
Day/Date : Thursday, 17th September 2020

Weather : Fine

AM

Description : Classified Intersection Count

: Peak Hour Summary





	Approacl	h			Miller S	t			N	1cLaren :	St				Miller St	:			N	/lcLaren	St		-Ea
	Time Perio	od	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Tot
۱ [7:45 to	8:45	499	7	0	22	528	195	2	0	0	197	713	14	0	60	787	234	1	0	0	235	1,747
١	14:45 to	15:45	450	19	0	59	528	157	5	0	0	162	329	7	0	23	359	143	3	0	0	146	1,195

Approach			Miller St				N	1cLaren	St				Miller St				N	/lcLaren	St		ia.
Time Period	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Total
7:00 to 8:00	316	15	0	12	343	102	2	0	0	104	477	20	0	48	545	127	0	0	0	127	1,119
7:15 to 8:15	400	16	0	19	435	145	3	0	0	148	595	19	0	58	672	175	1	0	0	176	1,431
7:30 to 8:30	472	12	0	22	506	177	3	0	0	180	684	13	0	58	755	214	1	0	0	215	1,656
7:45 to 8:45	499	7	0	22	528	195	2	0	0	197	713	14	0	60	787	234	1	0	0	235	1,747
8:00 to 9:00	442	7	0	28	477	193	2	0	0	195	695	14	0	51	760	215	1	0	0	216	1,648
8:15 to 9:15	395	7	0	22	424	159	2	0	0	161	600	12	0	43	655	170	0	0	0	170	1,410
8:30 to 9:30	323	9	0	21	353	135	3	0	0	138	474	13	0	37	524	121	0	0	0	121	1,136
AM Totals	919	29	0	48	996	350	6	0	0	356	1,343	36	0	112	1,491	387	1	0	0	388	3,231
14:30 to 15:30	455	18	0	27	500	141	6	0	0	147	313	8	0	17	338	133	3	0	0	136	1,121
14:45 to 15:45	450	19	0	59	528	157	5	0	0	162	329	7	0	23	359	143	3	0	0	146	1,195
15:00 to 16:00	430	17	0	65	512	150	7	0	0	157	312	5	0	23	340	136	2	0	0	138	1,147
15:15 to 16:15	424	7	0	62	493	134	7	0	0	141	295	2	0	24	321	137	2	0	0	139	1,094
15:30 to 16:30	370	2	0	52	424	126	6	0	0	132	295	4	0	21	320	111	1	0	0	112	988
15:45 to 16:45	411	4	0	27	442	123	4	0	0	127	323	5	0	20	348	113	2	0	0	115	1,032
16:00 to 17:00	422	3	0	28	453	135	1	0	0	136	348	5	0	18	371	128	2	0	0	130	1,090
PM Totals	1,048	23	0	97	1,168	338	12	0	0	350	800	15	0	47	862	310	5	0	0	315	2,695

Suburb : North Sydney

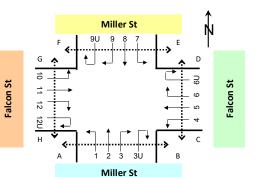
Location : 2. Falcon St / Miller St

Day/Date : Thursday, 17th September 2020

Weather : Fine

Description : Classified Intersection Count

: Peak Hour Summary





	Ap	proa	ch			Miller St	t			ı	Falcon S	t				Miller St					Falcon S	t		Te.
	Tim	e Pei	·iod	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Tot
ı	7:45	to	8:45	798	6	0	25	829	1,311	25	2	57	1,395	790	10	0	23	823	598	27	0	13	638	3,685
١	16:00	to	17:00	555	4	0	28	587	1,267	16	0	24	1,307	335	5	0	12	352	770	5	0	17	792	3,038

Ap	proa	ich			Miller St					Falcon St	i				Miller St					Falcon S	t		<u>ië</u>
Tim	e Pe	riod	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Total
7:00	to	8:00	310	8	0	13	331	1,072	43	1	59	1,175	514	7	0	13	534	621	24	0	13	658	2,698
7:15	to	8:15	477	7	0	19	503	1,173	41	1	59	1,274	664	4	0	20	688	618	23	0	13	654	3,119
7:30	to	8:30	658	8	0	21	687	1,291	27	1	62	1,381	750	4	0	22	776	600	28	0	14	642	3,486
7:45	to	8:45	798	6	0	25	829	1,311	25	2	57	1,395	790	10	0	23	823	598	27	0	13	638	3,685
8:00	to	9:00	787	5	0	31	823	1,308	29	1	48	1,386	747	9	0	21	777	592	26	0	18	636	3,622
8:15	to	9:15	651	7	0	26	684	1,267	28	1	43	1,339	614	9	0	15	638	591	24	0	21	636	3,297
8:30	to	9:30	494	9	0	26	529	1,140	34	1	37	1,212	500	11	0	11	522	638	28	0	20	686	2,949
ΑN	/I Tot	als	1,264	21	0	52	1,337	2,897	89	2	123	3,111	1,443	20	0	39	1,502	1,539	65	0	38	1,642	7,592
14:30	to	15:30	639	16	0	28	683	976	22	0	22	1,020	398	8	0	9	415	731	22	1	10	764	2,882
14:45	to	15:45	654	17	0	54	725	1,025	23	0	23	1,071	399	7	0	12	418	774	14	1	11	800	3,014
15:00	to	16:00	628	16	0	65	709	1,003	21	0	20	1,044	359	5	0	12	376	741	12	1	11	765	2,894
15:15	to	16:15	604	9	0	63	676	1,057	15	0	24	1,096	339	4	0	11	354	751	10	0	15	776	2,902
15:30	to	16:30	561	3	0	52	616	1,132	13	0	23	1,168	326	4	0	12	342	742	7	0	16	765	2,891
15:45	to	16:45	550	5	0	30	585	1,153	15	0	24	1,192	315	3	0	12	330	740	6	0	16	762	2,869
16:00	to	17:00	555	4	0	28	587	1,267	16	0	24	1,307	335	5	0	12	352	770	5	0	17	792	3,038
PN	/I Tot	als	1,476	23	0	98	1,597	2,754	46	0	57	2,857	898	15	0	27	940	1,868	30	1	33	1,932	7,326

AM

Suburb : North Sydney

Location : 3. Carlow St / Miller St / Fig Tree La

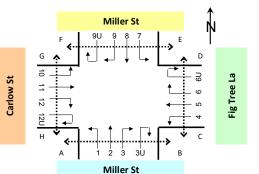
Day/Date : Thursday, 17th September 2020

Weather : Fine

AM

Description : Classified Intersection Count

: Peak Hour Summary





	Approach			Miller S	t			F	ig Tree L	.a				Miller S	:			(Carlow S	t		ral
	Time Period	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Tot
۱ [7:45 to 8:4	689	6	0	26	721	8	2	0	0	10	1,127	11	0	58	1,196	185	2	0	0	187	2,114
1	14:45 to 15:4	5 613	15	0	51	679	4	5	0	0	9	498	7	0	20	525	139	5	0	3	147	1,360

Ap	proa	ach			Miller St				F	ig Tree L	.a				Miller St					Carlow S	t		ia.
Tim	e Pe	riod	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Total
7:00	to	8:00	279	10	0	13	302	7	5	0	0	12	755	19	0	47	821	84	1	0	0	85	1,220
7:15	to	8:15	409	11	0	19	439	6	4	0	0	10	950	13	0	57	1,020	119	1	0	0	120	1,589
7:30	to	8:30	579	11	0	22	612	5	4	0	0	9	1,105	9	0	58	1,172	161	2	0	0	163	1,956
7:45	to	8:45	689	6	0	26	721	8	2	0	0	10	1,127	11	0	58	1,196	185	2	0	0	187	2,114
8:00	to	9:00	657	6	0	33	696	6	2	0	0	8	1,063	13	0	50	1,126	210	3	0	0	213	2,043
8:15	to	9:15	545	7	0	27	579	7	2	0	0	9	888	12	0	43	943	183	2	0	0	185	1,716
8:30	to	9:30	382	7	0	26	415	6	1	0	0	7	684	16	0	35	735	148	2	0	0	150	1,307
ΑN	1 Tot	als	1,061	22	0	53	1,136	15	7	0	0	22	2,066	37	0	111	2,214	333	5	0	0	338	3,710
14:30	to	15:30	612	14	0	26	652	6	5	0	0	11	526	8	0	17	551	132	4	0	1	137	1,351
14:45	to	15:45	613	15	0	51	679	4	5	0	0	9	498	7	0	20	525	139	5	0	3	147	1,360
15:00	to	16:00	545	16	0	62	623	9	4	0	0	13	452	4	0	18	474	144	2	0	3	149	1,259
15:15	to	16:15	525	10	0	61	596	8	2	0	0	10	430	4	0	18	452	138	1	0	2	141	1,199
15:30	to	16:30	493	5	0	50	548	8	0	0	0	8	415	4	0	16	435	110	1	0	2	113	1,104
15:45	to	16:45	503	8	0	31	542	8	0	0	0	8	419	4	0	18	441	101	0	0	0	101	1,092
16:00	to	17:00	510	5	0	28	543	1	0	0	0	1	449	5	0	21	475	99	1	0	0	100	1,119
PIV	1 Tot	als	1,353	24	0	94	1,471	14	5	0	0	19	1,167	15	0	45	1,227	296	6	0	3	305	3,022

Suburb : North Sydney

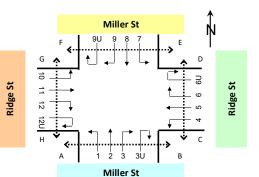
Location : 4. Ridge St / Miller St

Day/Date : Thursday, 17 September 2020

Weather : Fine

Description : Classified Intersection Count

: Peak Hour Summary





	Appro	ach			Miller S	t				Ridge St					Miller St	ŧ				Ridge St			ral
	Time Pe	eriod	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Tot
ı	7:45 to	8:45	473	7	0	22	502	215	3	0	0	218	1,035	14	0	58	1,107	199	1	0	5	205	2,032
ı	14:45 to	15:45	369	16	0	51	436	177	2	0	4	183	452	7	0	21	480	157	0	0	1	158	1,257

Approach			Miller St					Ridge St					Miller St					Ridge St			lei E
Time Period	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Total
7:00 to 8:00	254	10	0	12	276	116	3	0	0	119	676	18	0	47	741	105	0	0	5	110	1,246
7:15 to 8:15	336	14	0	18	368	165	4	0	0	169	866	18	0	55	939	136	1	0	6	143	1,619
7:30 to 8:30	438	11	0	22	471	196	4	0	0	200	1,028	13	0	57	1,098	170	1	0	6	177	1,946
7:45 to 8:45	473	7	0	22	502	215	3	0	0	218	1,035	14	0	58	1,107	199	1	0	5	205	2,032
8:00 to 9:00	422	7	0	28	457	195	2	0	2	199	967	15	0	50	1,032	179	1	0	2	182	1,870
8:15 to 9:15	344	6	0	23	373	161	1	0	2	164	808	12	0	44	864	161	0	0	1	162	1,563
8:30 to 9:30	254	7	0	21	282	111	1	0	2	114	602	12	0	36	650	127	0	0	1	128	1,174
AM Totals	788	23	0	48	859	354	5	0	2	361	1,865	35	0	111	2,011	326	1	0	7	334	3,565
14:30 to 15:30	368	15	0	25	408	180	4	0	0	184	473	7	0	18	498	154	0	0	1	155	1,245
14:45 to 15:45	369	16	0	51	436	177	2	0	4	183	452	7	0	21	480	157	0	0	1	158	1,257
15:00 to 16:00	347	14	0	61	422	169	2	1	5	177	419	4	0	18	441	150	1	0	1	152	1,192
15:15 to 16:15	343	7	0	59	409	180	1	1	5	187	385	1	0	18	404	152	1	0	1	154	1,154
15:30 to 16:30	306	2	0	50	358	175	1	1	5	182	374	3	0	16	393	148	1	0	0	149	1,082
15:45 to 16:45	325	4	0	30	359	187	2	1	1	191	382	4	0	18	404	146	2	0	0	148	1,102
16:00 to 17:00	339	3	0	28	370	196	2	0	0	198	392	5	0	21	418	145	1	0	0	146	1,132
PM Totals	850	20	0	93	963	443	7	1	5	456	1,043	13	0	46	1,102	365	2	0	1	368	2,889

AM

Suburb : North Sydney

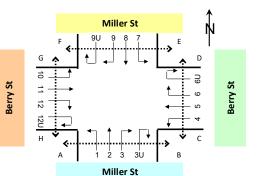
Location : 5. Berry St / Miller St

Day/Date : Thursday, 17th September 2020

Weather : Fine

Description : Classified Intersection Count

: Peak Hour Summary





	Approach			Miller St	t				Berry St					Miller S					Berry St			tal
	Time Period	Lights	Rigid Trucks	Articulated Trucks	Articulate Trucks Buses Total Lights Rigid Trucl Articulate Trucks Buses					nse	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Tot
1	7:45 to 8:4	563	17	0	24	604	0	0	0	0	0	535	13	0	58	606	1,106	18	0	34	1,158	2,368
١	14:45 to 15:4	5 534	19	0	57	610	0	0	0	0	0	314	8	0	18	340	799	10	0	34	843	1,793

Approach			Miller St					Berry St					Miller St					Berry St			ia.
Time Period	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Total
7:00 to 8:0	0 417	15	0	16	448	0	0	0	0	0	353	11	1	40	405	817	30	0	30	877	1,730
7:15 to 8:1	5 479	17	0	23	519	0	0	0	0	0	430	12	1	50	493	1,012	28	0	31	1,071	2,083
7:30 to 8:3	0 536	17	0	24	577	0	0	0	0	0	492	8	1	54	555	1,117	19	0	36	1,172	2,304
7:45 to 8:4	5 563	17	0	24	604	0	0	0	0	0	535	13	0	58	606	1,106	18	0	34	1,158	2,368
8:00 to 9:0	0 518	15	0	29	562	0	0	0	0	0	551	14	0	53	618	1,061	14	0	36	1,111	2,291
8:15 to 9:1	5 499	19	0	24	542	0	0	0	0	0	496	14	0	47	557	936	14	0	35	985	2,084
8:30 to 9:3	0 443	20	0	24	487	0	0	0	0	0	417	16	0	40	473	803	17	0	31	851	1,811
AM Totals	1,154	43	0	55	1,252	0	0	0	0	0	1,064	29	1	107	1,201	2,230	53	0	82	2,365	4,818
14:30 to 15:	555	19	0	31	605	0	0	0	0	0	301	10	0	16	327	761	13	0	28	802	1,734
14:45 to 15:	534	19	0	57	610	0	0	0	0	0	314	8	0	18	340	799	10	0	34	843	1,793
15:00 to 16:	00 505	17	0	61	583	0	0	0	0	0	318	8	0	19	345	799	11	0	40	850	1,778
15:15 to 16:	15 456	9	0	56	521	0	0	0	0	0	305	5	0	19	329	796	9	0	33	838	1,688
15:30 to 16:	399	2	0	46	447	0	0	0	0	0	320	5	0	17	342	756	6	0	31	793	1,582
15:45 to 16:	15 439	5	0	28	472	0	0	0	0	0	340	5	0	19	364	757	8	0	25	790	1,626
16:00 to 17:	00 464	4	0	29	497	0	0	0	0	0	346	4	0	18	368	791	7	0	24	822	1,687
PM Totals	1,209	25	0	94	1,328	0	0	0	0	0	808	18	0	42	868	1,897	22	0	72	1,991	4,187

AM

Suburb : North Sydney

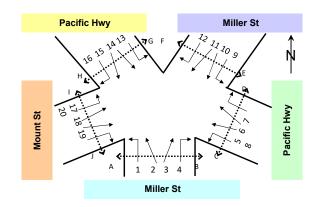
Location : 6. Pacific Hwy / Miller St / Mount St

Day/Date : Thursday, 17th September 2020

Weather : Fine

Description : Classified Intersection Count

: Peak Hour Summary





	Ap	pro	ach			Miller St	:			P	acific Hw	y				Miller St				P	acific Hw	/y			ا	Mount S	t		tal
	Tim	ie Pe	riod	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand To
AM	7:45	to	8:45	338	11	0	41	390	1,448	37	6	17	1,508	322	8	0	94	424	485	15	0	18	518	0	0	0	0	0	2,840
РМ	16:00	to	17:00	379	7	0	52	438	1,129	9	0	22	1,160	209	2	0	41	252	323	2	0	5	330	0	0	0	0	0	2,180

Approach			Miller St				Р	acific Hv	vy				Miller St	:			Р	acific Hw	ry				Mount S	t		tal
Time Period	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Total
7:00 to 8:00	220	7	0	32	259	1,193	32	5	11	1,241	250	7	0	75	332	320	8	0	12	340	0	0	0	0	0	2,172
7:15 to 8:15	275	8	0	39	322	1,286	33	5	17	1,341	291	6	0	86	383	380	9	0	16	405	0	0	0	0	0	2,451
7:30 to 8:30	327	9	0	39	375	1,351	30	7	16	1,404	326	4	0	92	422	445	10	0	18	473	0	0	0	0	0	2,674
7:45 to 8:45	338	11	0	41	390	1,448	37	6	17	1,508	322	8	0	94	424	485	15	0	18	518	0	0	0	0	0	2,840
8:00 to 9:00	335	10	0	46	391	1,381	36	6	21	1,444	326	7	0	88	421	451	20	0	17	488	0	0	0	0	0	2,744
8:15 to 9:15	315	13	0	41	369	1,334	38	4	19	1,395	291	8	0	78	377	413	19	1	15	448	0	0	0	0	0	2,589
8:30 to 9:30	280	18	0	44	342	1,216	38	2	18	1,274	242	11	0	72	325	370	17	1	12	400	0	0	0	0	0	2,341
AM Totals	693	29	0	98	820	3,108	85	11	39	3,243	678	19	0	193	890	946	33	1	34	1,014	0	0	0	0	0	5,967
14:30 to 15:30	456	18	0	49	523	990	19	3	27	1,039	178	7	0	34	219	286	7	0	6	299	0	0	0	0	0	2,080
14:45 to 15:45	421	15	0	76	512	995	9	2	29	1,035	176	5	0	36	217	282	5	0	8	295	0	0	0	0	0	2,059
15:00 to 16:00	393	15	0	80	488	937	10	2	30	979	171	5	0	40	216	266	6	0	6	278	0	0	0	0	0	1,961
15:15 to 16:15	338	13	0	77	428	982	13	1	29	1,025	146	4	0	40	190	262	4	0	7	273	0	0	0	0	0	1,916
15:30 to 16:30	314	7	0	70	391	969	10	0	21	1,000	177	3	0	40	220	282	2	0	3	287	0	0	0	0	0	1,898
15:45 to 16:45	350	9	0	52	411	1,035	11	0	22	1,068	187	2	0	39	228	300	3	0	5	308	0	0	0	0	0	2,015
16:00 to 17:00	379	7	0	52	438	1,129	9	0	22	1,160	209	2	0	41	252	323	2	0	5	330	0	0	0	0	0	2,180
PM Totals	967	28	0	146	1,141	2,566	31	3	58	2,658	469	12	0	95	576	726	10	0	13	749	0	0	0	0	0	5,124

Suburb : North Sydney

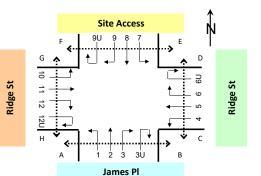
Location : 7. Ridge St / Site Access / James Pl

Day/Date : Thursday, 17th September 2020

Weather : Fine

Description : Classified Intersection Count

: Peak Hour Summary





	Арр	roac	h			James P	I				Ridge St				s	ite Acce	ss				Ridge St			-Ea
	Time	Peri	od	Lights	Rigid Trucks	Articulated Trucks	Buses	Total Light Rigid Artic Truck					Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Tot
۱ [7:45	to	8:45	13	0	0	0	13	283	2	0	0	285	0	0	0	0	0	304	2	0	5	311	609
١	14:30	to	15:30	38	0	0	0	38	160	4	0	0	164	1	0	0	0	1	211	0	0	1	212	415

Approach			James Pl	l				Ridge St				S	ite Acce	ss				Ridge St			le:
Time Period	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Lights	Rigid Trucks	Articulated Trucks	Buses	Total	Grand Total
7:00 to 8:00	1	1	0	0	2	156	1	0	0	157	0	0	0	0	0	157	2	0	5	164	323
7:15 to 8:15	3	0	0	0	3	200	3	0	0	203	0	0	0	0	0	225	2	0	6	233	439
7:30 to 8:30	6	0	0	0	6	260	3	0	0	263	0	0	0	0	0	287	2	0	6	295	564
7:45 to 8:45	13	0	0	0	13	283	2	0	0	285	0	0	0	0	0	304	2	0	5	311	609
8:00 to 9:00	16	0	0	0	16	271	2	0	0	273	0	0	0	0	0	282	1	0	2	285	574
8:15 to 9:15	16	0	0	0	16	234	0	0	0	234	0	0	0	0	0	227	0	0	1	228	478
8:30 to 9:30	18	0	0	0	18	162	0	0	0	162	0	0	0	0	0	148	0	0	1	149	329
AM Totals	24	1	0	0	25	482	3	0	0	485	0	0	0	0	0	484	3	0	7	494	1,004
14:30 to 15:30	38	0	0	0	38	160	4	0	0	164	1	0	0	0	1	211	0	0	1	212	415
14:45 to 15:45	37	0	0	0	37	154	4	0	0	158	0	0	0	0	0	192	0	0	1	193	388
15:00 to 16:00	43	0	0	0	43	119	2	0	0	121	0	0	0	0	0	149	1	0	1	151	315
15:15 to 16:15	43	0	0	0	43	112	1	0	0	113	0	0	0	0	0	138	1	0	1	140	296
15:30 to 16:30	42	0	0	0	42	98	0	0	0	98	1	0	0	0	1	124	1	0	0	125	266
15:45 to 16:45	52	0	0	0	52	100	0	0	0	100	1	0	0	0	1	116	2	0	0	118	271
16:00 to 17:00	43	0	0	0	43	110	0	0	0	110	1	0	0	0	1	127	1	0	0	128	282
PM Totals	103	0	0	0	103	315	4	0	0	319	2	0	0	0	2	390	2	0	1	393	817

AM

Suburb : North Sydney

Location : 8. Marist College access / Carlow St

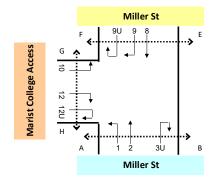
Day/Date : Thursday, 17th September 2020

Weather : Fine

AM

Description : Classified Intersection Count

: Peak Hour Summary





ρрι	r	oac	h			Miller S	1	
Tim	ne F	Perio	od	Lights	Rigid Trucks	Articulated Trucks	Buses	Total
	t	0	8:45	559	7	0	25	591
30	t	0	15:30	509	15	0	26	550

,	ppro	ach			Miller St	t	
Tiı	ne Pe	eriod	Lights	Rigid Trucks	Articulated Trucks	Buses	Total
7:00	to	8:00	283	8	0	13	304
7:15	to	8:15	380	11	0	20	411
7:30	to	8:30	490	11	0	25	526
7:45	to	8:45	559	7	0	25	591
8:00	to	9:00	518	7	0	33	558
8:15	to	9:15	440	7	0	27	474
8:30	to	9:30	338	7	0	23	368
Α	М То	tals	930	21	0	53	1,004
14:30	to	15:30	509	15	0	26	550
14:45	to	15:45	504	15	0	51	570
15:00	to	16:00	485	16	0	62	563
15:15	to	16:15	486	9	0	60	555
15:30	to	16:30	441	4	0	50	495
15:45	to	16:45	458	8	0	31	497
16:00	to	17:00	460	5	0	28	493
Р	М То	tals	1,178	24	0	94	1,296



Attachment Two

Year 2017 and 2018 Survey Data

Automatic Tube Counter - Carlow Street, near West Street

 Start Time
 11/05/2018 13:26

 Finish Time
 18/05/2018 15:32

 Direction
 Eastbound

				Total V	ehicles				
Time	11th Fri	12th Sat	13th Sun	14th Mon	15th Tue	16th Wed	17th Thu	18th Fri	Ave Wkd
0000		5	3	1	1	4	1	3	
0100		3	5	0	2	3	2	1	2
0200		2	2	1	0	0	2	1	1
0300		0	5	0	2	2	0	0	
0400		1	0	4	4	2	3	2	
0500		6	5	11	11	19	13	19	
0600		13	5	32	29	37	44	36	36
0700		21	19	104	114	126	118	99	112
0800		48	46	194	167	162	169	163	171
0900		64	69	96	83	90	88	125	
1000		79	76	69	86	76	79	89	80
1100		71	85	65	71	66	77	94	75
1200		60	59	70	69	79	68	82	74
1300		62	49	54	79	66	70	102	74
1400	59	79	39	88	97	78	90	45	80
1500	145	45	43	126	117	117	129		127
1600	102	65	45	94	107	109	89		100
1700	116	57	58	95	158	118	155		128
1800	79	49	41	75	108	86	105		91
1900	57	21	25	50	42	34	50		47
2000	29	18	24	24	42	36	45		35
2100	18	8	9	30	25	24	29		25
2200	18	14	7	13	10	8	15		13
2300	11	23	5	2	5	7	6		6
00-00	634	814	724	1298	1429	1349	1447	861	1392

Automatic Tube Counter - Carlow Street, near West Street

 Start Time
 11/05/2018 13:26

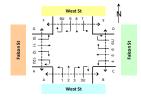
 Finish Time
 18/05/2018 15:32

 Direction
 Westbound

				Total V	ehicles				
Time	11th Fri	12th Sat	13th Sun	14th Mon	15th Tue	16th Wed	17th Thu	18th Fri	Ave Wkd
0000		6	4	0	1	0	0	4	1
0100		3	5	1	1	2	2	3	1.8
0200		2	1	0	1	0	0	1	0.4
0300		0	1	0	0	0	1	0	0.2
0400		1	2	1	0	2	1	4	1.6
0500		2	6	11	9	15	10	19	12.8
0600		13	10	44	41	41	48	38	42.4
0700		25	21	92	91	95	98	100	95.2
0800		54	35	138	142	144	155	143	144.4
0900		49	51	110	102	97	104	138	110.2
1000		64	65	62	68	64	55	80	65.8
1100		65	69	49	65	61	66	85	65.2
1200		65	54	60	78	51	69	77	67
1300		59	63	54	66	56	66	66	61.6
1400	49	56	45	81	81	66	90	51	73.8
1500	112	49	38	90	118	104	100		104.8
1600	79	50	44	73	76	75	64		73.4
1700	85	51	41	90	106	100	107		97.6
1800	52	41	54	68	80	63	84		69.4
1900	52	28	28	29	53	42	33		41.8
2000	29	18	24	34	44	27	36		34
2100	17	17	14	19	31	16	30		22.6
2200	16	15	5	21	10	15	9		14.2
2300	10	16	8	9	5	8	10		8.4
00-00	501	749	688	1136	1269	1144	1238	809	1209.6

Day/Date : Thu, 9th November 2017
Weather : Fine
Description : Classified Intersection Count

Description : Classified Intersection Count : Hourly Summary





Approach								We	st St															Falce	on St							
Direction		Direc (Left				Direc (Thro					tion 3 : Turn)			Direct (U 1	ion 3U lurn)				tion 4 Turn)			Direc (Thre				Direc (Right	tion 6 :Turn)			Direct (U 1	ion 6U 'urn)	
Time Period	lights	He avie s	Cydists	Total	üghts	Heavies	Cydists	Total	lights	Heavies	Cydists	Total	Ughts	Heavies	Cydists	Total	lights	He avie s	Cydists	Total	lights	Heavies	Cydists	Total	ughts	Heavies	Cydists	Total	üghts	Heavies	Cydists	Total
6:00 to 7:00	25	1	0	26	36	4	6	46	0	0	0	0	0	0	0	0	34	1	0	35	429	21	1	451	61	1	2	64	0	0	0	0
6:15 to 7:15	33	1	0	34	53	4	8	65	0	0	0	0	0	0	0	0	46	0	1	47	481	27	2	510	76	1	9	86	0	0	0	0
6:30 to 7:30	43	1	0	44	72	4	7	83	0	0	0	0	0	0	0	0	53	0	1	54	537	31	2	570	92	3	9	104	0	0	0	0
6:45 to 7:45	49	1	0	50	93	5	9	107	0	0	0	0	0	0	0	0	63	0	1	64	565	41	3	609	106	3	9	118	0	0	0	0
7:00 to 8:00	66	2	0	68	110	3	11	124	0	0	0	0	0	0	0	۰	77	0	1	78	603	36	2	641	105	3	8	116	0	0	0	0
7:15 to 8:15	72	2	0	74	126	4	14	144	0	0	0	0	0	0	0	۰	83	1	0	84	643	37	1	681	109	3	1	113	0	0	0	0
7:30 to 8:30	76	2	0	78	142	4	18	164	0	0	0	0	0	0	0	۰	99	2	0	101	640	38	2	680	131	1	0	132	0	0	0	0
7:45 to 8:45	80	3	0	83	168	4	16	188	0	0	0	0	0	0	0	0	107	3	0	110	627	38	2	667	154	2	0	156	0	0	0	0
8:00 to 9:00	82	2	0	84	184	3	11	198	0	0	0	0	0	0	0	0	96	3	0	99	593	44	2	639	191	3	0	194	0	0	0	0
AM Totals	173	5	0	178	330	10	28	368	0	0	0	0	0	0	0	0	207	4	1	212	1,625	101	5	1,731	357	7	10	374	0	0	0	0
15:00 to 16:00	89	1	0	90	214	0	5	219	0	0	0	0	0	0	0	۰	50	4	0	54	585	33	1	619	137	3	0	140	0	0	0	0
15:15 to 16:15	96	1	0	97	231	0	8	239	0	0	0	0	0	0	0	0	58	4	0	62	635	33	1	669	142	1	0	143	0	0	0	0
15:30 to 16:30	79	1	0	80	207	0	7	214	0	0	0	0	0	0	0	0	59	2	0	61	664	33	0	697	141	1	0	142	0	0	0	0
15:45 to 16:45	77	2	0	79	191	0	16	207	0	0	0	0	0	0	0	0	61	0	0	61	651	31	0	682	130	1	0	131	0	0	0	0
16:00 to 17:00	81	1	0	82	201	0	29	230	0	0	0	0	0	0	0	0	65	0	0	65	660	25	0	685	137	1	1	139	0	0	0	0
16:15 to 17:15	82	1	0	83	196	0	39	235	0	0	0	0	0	0	0	0	61	0	0	61	640	21	2	663	140	1	1	142	0	0	0	0
16:30 to 17:30	84	1	0	85	207	0	57	264	0	0	0	0	0	0	0	0	57	1	0	58	629	21	2	652	145	2	2	149	0	0	0	0
16:45 to 17:45	104	0	0	104	224	0	81	305	0	0	0	0	0	0	0	0	52	1	0	53	604	21	3	628	144	2	2	148	0	0	0	0
17:00 to 18:00	109	1	0	110	219	0	100	319	0	0	0	0	0	0	0	0	58	2	0	60	611	19	4	634	143	1	1	145	0	0	0	0
17:15 to 18:15	108	1	0	109	220	1	126	347	0	0	0	0	0	0	0	0	58	2	0	60	589	19	2	610	138	1	1	140	0	0	0	0
17:30 to 18:30	97	1	0	98	204	1	130	335	0	0	0	0	0	0	0	0	67	1	0	68	633	13	2	648	143	0	0	143	0	0	0	0
17:45 to 18:45	86	1	0	87	182	1	108	291	0	0	0	0	0	0	0	0	67	1	0	68	612	13	1	626	145	0	0	145	0	0	0	0
18:00 to 19:00	80	0	0	80	167	1	86	254	0	0	0	0	0	0	0	0	65	0	0	65	580	12	0	592	138	0	0	138	0	0	0	0
PM Totals	359	3	0	362	801	1	220	1,022	0	0	0	0	0	0	0	0	238	6	0	244	2,436	89	5	2,530	555	5	2	562	0	0	0	0

Approach		West St Falcon St														Crossing Pedestrians																																		
Direction		Direction 7 Direction 8 (Left Turn) (Through)			Direction 9 (Right Turn)			Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 11 (Through)			Direction 12 (Right Turn)				Direction 12U (U Turn)				А			В			с			,	E			F			G			н				
Time Period	Lights Heavies	Transies Ovelists	Total	Lights	He avies Cyclists	Total	Lights	Heavies	Oyclists	Total	Ughts	Heavies	Cyclists	Total	ughts	Transies Ovelists	Total	icht	Heavies	Cyclists	Total	Lights	Heavies	Oyclists	Total	Lights	He avie s	Oyclists	Total	Peds	Cyclists Total	Peds	Oyclists	Total	Peds	Oyclists	Total	Peds Ovclists	Total	Peds	Oyclists	Total	Peds	Oyclists	Total	Peds	Oyclists	Pe ds	Oyclists	Total
6:00 to 7:00	28 2	0	30	94	4 24	122	67	2	0	69	0	0	0	0 5	i3 1	1 2	56	53	6 32	1	569	0	0	0	0	0	0	0	0	4	0 4	5	0	5	15	0	15	4 0	4	13	1	14	14	0	14	10	0 10	0 22	. 0	22
6:15 to 7:15	32 1	. 0	33	120	2 39	161	87	2	0	89	0	0	0	0 6	51 1	. 2	64	57	3 29	0	602	0	0	0	0	0	0	0	0	5	0 5	5	0	5	18	0	18	10 0	10	14	1	15	14	0	14	19	0 19	9 23	. 0	23
6:30 to 7:30	49 0	0	49	151	3 68	222	111	2	0	113	0	0	0	0 :	15 2	2	79	60	1 34	1	636	1	0	0	1	0	0	0	0	7	0 7	8	0	8	22	0	22	11 0	11	16	1	17	15	0	15	22	0 23	2 22	. 0	22
6:45 to 7:45	55 0	0	55	194	2 94	290	129	1	0	130	0	0	0	0 :	76 2	2	80	61	6 37	2	655	1	0	0	1	0	0	0	0	11	0 11	19	0	19	23	0	23	15 0	15	22	0	22	19	0	19	25	0 25	5 36	. 0	36
7:00 to 8:00	49 0	0	49	264	2 109	375	127	2	0	129	0	0	0	0 8	90 2	1	83	63	0 53	2	685	1	0	0	1	0	0	0	0	11	0 11	22	0	22	41	0	41	19 1	. 20	37	0	37	23	1	24	20	0 20	0 36	. 0	36
7:15 to 8:15	59 1	. 0	60	342	2 115	459	130	3	0	133	0	0	0	0 8	90 2	0	82	63	4 55	2	691	1	0	0	1	0	0	0	0	11	0 11	23	0	23	65	0	65	16 1	17	54	0	54	24	1	25	15	0 1	5 70	. 0	70
7:30 to 8:30	54 1	. 0	55	401	0 93	494	116	3	0	119	0	0	0	0 8	32 1	. 0	83	64	2 56	1	699	0	0	0	0	0	0	0	0	11	0 11	58	0	58	77	0	77	14 2	16	65	0	65	26	1	27	19	0 19	9 99	. 0	99
7:45 to 8:45	57 1	. 0	58	426	1 72	499	100	3	0	103	0	0	0	0 :	77 1	. 0	78	60	2 58	1	661	0	0	0	0	0	0	0	0	10	0 10	140	0	140	114	0	114	14 2	16	94	0	94	27	1	28	18	0 18	8 185	5 1	186
8:00 to 9:00	65 1	. 0	66	416	2 56	474	97	2	0	99	0	0	0	0 8	80 0	0	80	56	8 50	1	619	0	0	0	0	0	0	0	0	12	0 12	227	0	227	106	0	106	12 1	13	85	0	85	25	0	25	25	0 2	5 245	5 1	246
AM Totals	142 3		145	774	8 189	971	291	6	0	297	0	0	0	0 2	13 3	3	219	1,7	34 135	4	1,873	1	0	0	1	0	0	0	0	27	0 27	254		254	162	0	162	35 2	37	135	1	136	62	1	63	55	0 5	5 303	3 1	304
15:00 to 16:00	69 4		73	195	16 4	215	145	4	0	149	0	0	0	0 :	76 3	0	79	73	9 32	0	771	0	1	0	1	0	0	0	0	57	0 57	19	0	19	12	0	12	44 1	45	16	0	16	33	1	34	19	0 19	9 21	. 0	21
15:15 to 16:15	72 3	0	75	185	14 5	204	146	2	0	148	0	0	0	0 8	32 2	0	84	72	8 36	0	764	0	0	0	0	0	0	0	0	60	0 60	19	0	19	13	0	13	43 1	44	12	0	12	39	1	40	22	0 22	2 26	. 0	26
15:30 to 16:30	69 3	0	72	190	5 4	199	139	3	0	142	0	0	0	0 8	88 2	0	90	76	3 34	0	797	0	0	0	0	0	0	0	0	23	0 23	18	0	18	14	0	14	29 1	. 30	12	0	12	22	1	23	17	0 17	2 27	0	27
15:45 to 16:45	71 1	. 0	72	194	3 5	202	142	1	0	143	0	0	0	0 8	31 1	. 0	82	74	1 32	1	774	0	0	0	0	0	0	0	0	23	1 24	14	0	14	17	0	17	25 0	25	9	0	9	18	0	18	25	1 26	6 24	1	25
16:00 to 17:00	74 0	0	74	210	1 10	221	147	1	1	149	0	0	0	0 :	75 (0	75	69	6 28	2	726	0	0	0	0	1	0	0	1	23	1 24	16	0	16	18	0	18	24 0	24	13	0	13	21	0	21	27	1 28	8 24	. 1	25
16:15 to 17:15	75 0	0	75	205	1 10	216	168	3	1	172	0	0	0	0 8	32 (0	82	72	8 26	2	756	0	0	0	0	1	0	0	1	19	1 20	16	0	16	15	0	15	25 0	25	14	0	14	17	0	17	27	1 28	8 20	1	21
16:30 to 17:30	81 0	0	81	222	0 15	237	171	2	1	174	0	0	0	0 8	33 (0	83	74	0 25	3	768	0	0	0	0	1	0	0	1	20	1 21	17	0	17	21	0	21	29 1	. 30	20	0	20	19	0	19	42	1 43	3 19	. 1	20
16:45 to 17:45	84 0) 1	85	224	1 16	241	167	3	1	171	0	0	0	0 9	91 (0	91	74	0 29	2	771	0	0	0	0	1	0	0	1	16	0 16	18	0	18	23	0	23	34 1	35	37	0	37	32	0	32	41	0 41	1 17	. 0	17
17:00 to 18:00	102 0) 2	104	225	1 15	241	158	3	0	161	0	0	0	0 9	18 (0	98	78	4 28	2	814	1	0	0	1	0	0	0	0	19	0 19	19	0	19	27	0	27	37 1	38	44	1	45	33	0	33	41	0 41	1 19	. 0	19
17:15 to 18:15	99 0) 2	101	255	1 16	272	140	1	0	141	0	0	0	0 9	95 (0	95	75	9 26	2	787	1	0	0	1	0	0	0	0	24	0 24	26	0	26	35	0	35	42 1	43	53	1	54	40	0	40	44	0 44	4 23	. 0	23
17:30 to 18:30	107 0) 2	109	243	2 11	256	121	1	0	122	0	0	0	0 9	96 (0	96	73	3 25	1	759	1	0	0	1	0	0	0	0	28	0 28	33	0	33	33	0	33	39 0	39	54	1	55	44	0	44	38	0 38	8 33	. 0	33
17:45 to 18:45	101 0) 1	102	231	1 9	241	114	0	0	114	0	0	0	0 9	94 (0	94	80	1 23	1	825	1	0	0	1	0	0	0	0	28	0 28	38	0	38	30	0	30	34 0	34	41	1	42	33	0	33	34	0 34	4 33	. 0	33
18:00 to 19:00	79 0	0	79	209	1 8	218	115	0	0	115	0	0	0	0 9	90 0	0	90	78	4 23	1	808	0	0	0	0	0	0	0	0	29	0 29	36	0	36	28	0	28	45 0	45	45	0	45	43	0	43	36	0 34	6 31	. 0	31
PM Totals	324 4	2	330	839	19 37	895	565	8	1	574	0	0	0	0 3	39 3		342	3,0	03 111	5	3,119	1	1	0	2	1	0	0	1	128	1 125	90	0	90	85	0	85 :	150 2	152	118	1	119	130	1	131	123	1 12	24 95	. 1	96