Hampden Rd Master Plan and Hampden/Broughton intersection papers

comment by Peter Egan [redacted]

I have lived on Hampden Lane for 18 years. First at a Francis Rd address and now at the above address. I have accessed the Village shops and station at least 300 days a year over those 18 years. I have walked the length of Hampden Rd for exercise at least 200 days per year. I know Hampden-Herbert intimately.

Document – Artarmon Local Centre Public Domain Master Plan – comment follows that on the intersection document

Document – Hampden Road/ Broughton Road Intersection - Willoughby Council Intersection Options Assessment and Feasibility Study by GTA

As a civil engineer, I am disappointed by Council and utility maintenance, the paltry effort put into plans, such as these for Hampden Rd, by Council and its consultants. The outcome is low value plans.

The GTA Commission

The Commission is poorly formulated – at once high level and detailed regarding one intersection while being blind to other options.

Council has commissioned GTA Consultants (GTA) to:

--- undertake a high-level review of pedestrian accessibility and safety on the western side of Artarmon Station, in particular, Hampden Road between Francis Road and Barton Road.

--- determine the feasibility of the signalisation of the Hampden Road/ Broughton Road intersection and removal of the existing signalised pedestrian crossing further north.

This arrangement is to improve the place-making ability of Artarmon Local Centre and to consolidate the current informal and formal pedestrian crossings on Hampden Road outside Artarmon Station into one formal signalised crossing.

--- identify the implications of such arrangement and the flow on effects throughout Artarmon Local Centre, with the objective to respond to relevant issues and recommendations.

--- 3.1. Site Context (GTA Figure 3.1 – see page 10 of this submission)

The main focus is investigating the feasibility of changing current pedestrian crossing arrangements along Hampden Road from the station to the Artarmon Local Centre and any transport associated impacts.

This assessment reviews the feasibility of removing the existing signalised pedestrian crossing and incorporating pedestrians into a proposed signalised intersection at Hampden Road/ Broughton Road.

Documents used to inform the commission

In carrying out the study, GTA has referenced development control plans from 2006 and 2012, the RTA 2009 signal design manual, Matrix traffic and transport data, SIDRA computer modelling but not Councils local centres strategy or a myriad of other relevant Council documents.

GTA refences the “30-minute city” of the Future Transport 2056 and “A Metropolis of three Cities – Greater Sydney Region Plan”, the North District plan which do not have a level of detail to inform the study.

In section 2.3. Council Strategic Plans, GTA references but does not use ‘Our Future Willoughby Community Strategic Plan 2028’ with a focus on principles:
--- improving health and wellbeing by providing connected walking and cycle paths.
--- The principle of increasing mobility improving integration between modes and managing traffic congestion.
--- The principle of Sustainable economic activity to be achieved in part from a sustainable and efficient transport network.

In section 2.4. Planned Transport Initiatives, GTA covers Sydney Metro which does not directly serve Artarmon.

Existing conditions

In 3.2. Road Network, 3.2.1. Road Hierarchy, 3.2.2. Surrounding Road Network, GTA describes Hampden Road as a ‘Sub-Arterial’ road.

In the Sydway Directory, which has AUSTROADS style classification information for all Sydney Roads, Hampden Rd is classified as a ‘Major Local Road’ which correlates to a classification of ‘Collector’ road, a level below ‘Sub-Arterial’ on the 4-level AUSTROADs hierarchy.

GTA commissioned traffic counts at the locations in Report Figure 3.1 and presented in Table 3.1 for the 7 days in November 2019 for seven days.

Due to traffic volumes reported (see tables below), it is important to understand the hierarchy of classification, and compare traffic volumes to other roads (the numbers are those given by GTA):

--- Arterial Roads – between regional centres.
--- Sub-Arterial Roads – 10,000 and 20,000 vehicles per day, between Arterial and collector roads.
--- Collector Roads – 2,000 and 10,000 vehicles per day, between local and sub-arterial roads.
--- Local Roads – 500 and 4,000 vehicles per day, between properties and collector roads.

Artarmon is a rare example of a significant North Shore CBD not on an arterial road. Pacific Hwy traffic restrictions force traffic southbound on Hampden Rd that would prefer to use the Highway. Pacific Hwy/Mowbray is the only intersection not upgraded to maintain traffic flow with all needed right turns. Significant economic damage is being done to Artarmon Village as road capacity is devoted to traffic that does not want to be on Hampden Rd. Council has restricted shopper parking on Hampden Rd to cater for the diverted Pacific Hwy traffic.

Hampden Rd has traffic volumes at the top end of that associated with Sub-Arterial Roads despite being one lane each way and suffering significant congestion in the PM peak.

The traffic volume at Garage Lane is 86% of that at the Strathallen Ave bridge over Flatrock Creek (a one-lane each way sub-arterial road which is an extension of the two-lanes each way Eastern Valley Way (which has 30% more traffic)).

Comparing with RMS data in Table C, per lane traffic on Hampden Rd at Garage Lane is on a par with some arterial roads. North of Garage Lane, the traffic is split between Hampden and Brand/Elizabeth, but not differentiated in the data.

It is extremely unfortunate that the traffic survey was not more extensive to determine sources of traffic on Hampden Rd, and that the data in Appendices B and C was not presented in a more usable form.

In section 4, the Hampden-Broughton intersection option is selected based on small differentials in traffic volumes. The traffic excluded from the Pacific Hwy at the Mowbray Rd intersection, that is forced to use Hampden Rd, completely changes the recommended option.

Other options are ruled out as the TfNSW 'Warrant' process does not allow for significant diversions of traffic to other routes.

Sources of traffic of interest for infrastructure provision are:

--- Mowbray Road West traffic wishing to turn south onto the Pacific Hwy to access the Motorway, Artarmon industrial areas and other parts of Sydney south of the M2-M1 motorway.
Presently, this traffic must use Hampden Rd southbound. There is no similar restriction northbound so the traffic volume on Hampden Rd is likely far greater southbound than northbound on a daily basis.
--- Artarmon Public School.
The school morning peak coincides with the general traffic peak. Its PM peak is before the general PM peak but can cause congestion of Hampden Rd. Traffic signals at McMillan Rd may reduce Hampden Rd congestion.
--- The Reserve Rd motorway junction.
The junction is often congested due to poor signal phasing for right turn traffic. The junction layout and poor phasing are major drivers for the junction widening in the RMS Gore Hill Motorway plan.
--- Brand St traffic to and from East Artarmon, Willoughby, Chatswood, etc to cross the railway and access Artarmon Village and School.
--- Brand St traffic to and from East Artarmon, Willoughby, Chatswood, etc to cross the railway and access the industrial area, motorway and areas to their south.
In normal circumstances, much of this traffic would use Mowbray Rd and the Pacific Hwy to reach their destination, but the missing right turns at this junction has caused congestion and traffic avoids it.
--- West Artarmon traffic to the Village, School, Industrial Area, Motorway, and destinations east of the railway.

Table A – GTA Table 3.1: Automatic traffic tube count results

Tube Count Location	Weekday Daily Average Volume (Both Directions)	Seven Day Daily Average Volume (Both Directions)
A – Hampden Rd betw Garage L and Francis Rd	19,867	18,948
B – Hampden Rd betw Jersey Rd and McMillan Rd	13,549	12,966
C – Hampden Rd south of Cleland Rd	12,259	11,533
D – Broughton Rd betw Hampden L & Hampden Rd	3,953	3,711

Table B – RMS Traffic volume viewer - Flat Rock Creek screenline Average Daily Traffic counts

https://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/aadt-map/index.html#/?z=14&lat=-33.867917023987054&lon=151.22176445410156

Year	Willoughby Rd	Flat Rock Drive near Brook St	Strathallen Ave	Eastern Valley Way (EVW)	Difference EVW-Strat Diverted to Alpha & Mowbray
10-year growth	3.7%	Insufficient data	-11.8%	-15.1%	
2019	34,285	30,375**	23,153	29,960	6,807
2018	34,348		---	31,259	---
2017	34,885		24,215	34,040	9,825
2016	34,002		24,528	35,767	11,239
2015	33,812		24,716	36,423	11,707
2014	32,787		24,855	36,633	11778
2013	27,827		25,529	36,077	10,548
2012	15,003 N		25,684	35,540	9,856
2011	---		---	34,926	---
2010	26,752		23,940	37,094	13,154
2009	33,051		26,237	35,299	9,062
2008	33,232	31,641	26,332	---	---
2007	34,229		27,512	---	---
2006	36,702		29,186	---	---
Share of total for 3 roads					
** based on average volume change of other two roads in screenline.					
2008	36.5%	34.7%	28.9%	of 91,295	
2019 est	~39.0%	~34.6%%	~26.4%	of ~87,800	
More than 10,800 EVW vehicles divert to Alpha or Mowbray Roads.					

Table C – RMS Traffic volume viewer - key roads Average Daily Traffic counts

https://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/aadt-map/index.html#/?z=14&lat=-33.867917023987054&lon=151.22176445410156

Year	SHB ~47.5% south 5 Sth, 3 Nth in AM peak	Western Distrib ~46.5% rising 6-lane	Cahill CQ 53.3% south 4-lane	SHT ~46.5% south decline 4-lane	ANZAC Bridge 8-lane	Glades-ville Br ~53.5% south rising 3-lane N 4-lane S	Figtree Bridge 4-lane	Victoia Rd Huntley Point 4-Gen 2 Bus	M2 + Epp Rd Lane Cove Rr 4-lane E 5-laneW	Concord Rd (A3) 3-lane N 4-lane S	Silver-water Rd (A6) 4-lane	James Ruse Drive 6-lane
10-yr grwth	Insuffici ent data	2.8% to 2017	1.6%	4%	-0.15%	3.8% to 2016	2.2%	-2.9% E	2.2%	6.45%	13.7% to 2018	9.3% 2008-2013
Veh/ lane	19,360 2016	13,564 2017	9,616 2019	**22,210 2019**	16,990 2019	11,761 2016	10,450 2019	12,855 2019	11,535 2019	14,124 2019	16,940 2018	11,806 2013
2019	---	---	38,463	88,842	135,924	---	41,806	51,418	103,823	98,871	---	---
2018	---	40,477 North	20,802 South	88,033	135,860	---	36,670	28,207 E	100,132	98,995	67,766	----
2017	---	81.382	21,496 South	89,902	136,837	---	43,028	29,684 E	53,246 Epp Rd	97,071	65,742	---
2016	154,876	80,330	36,175	89,878	---	82,327	42,273	28,868 E	52,715 Epp Rd	99.003	55,172	---
2015	152,433	83,719	39,253	89,380	132,707	81,950	41,130	---	120,728	98,402	57,523	---
2014	152,865	76,702	38,797	88,137	132,007	82,118	40,228	---	115,182	96,157	59,416	---
2013	157,945	79,469	38,536	88,731	135,818	84,030	40,699	---	111,372	97,556	59,757	70,837
2012	158,275	78,719	37,838	88,128	135,103	83,338	39,330	---	107,810	96,202	57,856	70,280
2011	152,952	79,581	38,167	87,955	136,540	43,650 South	40,010	---	108,485	95,036	57,881	69,126
2010	149,652	79,606	37,764	87,870	136,885	82,934	40,489	22,222 E	107,810	95,171	57,891	68,108
2009	---	78,159	37,868	85,403	136,116	78,838	40,915	28,062 E	104,164	92,879	60,344	65,840
2008	---	79,000	40,408	83,296	134,839	83,139	39,684	29,044 E	98,222	---	59,611	64,799
2007	---	79,187	41,187	84,429	134,969	78,835	40,428	---	52,839 Epp Rd	---	59,108	---
2006	---	77,317	41,827	80,757	132,624	79,323	40,899	---	---	---	58,135	---
1987-1992	180,000											

Table D – GTA data and estimates

Hampden Rd GTA sub-arterial	Upto 20,000 vehicles/day (at Garage L near Brand St) and 12,000 south of Cleland Rd). Based on automatic traffic tube counts undertaken by GTA and Matrix in November 2019.
Hampden Lane GTA local laneway	No usable vehicle and pedestrian traffic data given.
Francis Rd GTA Local	~3,000 vehicles/day – Based on the peak hour traffic counts undertaken by GTA in November 2019 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads
Broughton Rd GTA Collector	~4,000 vehicles per day – Based on automatic traffic tube counts undertaken by GTA in November 2019
Jersey Rd GTA Collector	~6,000 vehicles/day – Based on automatic traffic tube counts undertaken by GTA in November 2019 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads
McMillan Rd	No usable information given.
Barton Rd GTA Local	4,000 vehicles/day – Based on the peak hour traffic counts undertaken by GTA in November 2019 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads

The Francis, Jersey and Barton vehicle volumes of Table D appear not to have a data basis.

The Francis, Broughton, Jersey and Barton volumes add to 17,000 vehicles/day, 10,000/day more than the reported drop in Hampden Rd traffic between brand and Cleland – casting serious doubt on the assumptions behind the figures.

Existing conditions of roads in study area

Hampden Road (up to 20,000 vehicles/day (at Garage lane near Brand St) and 12,000 south of Cleland).

GTA says in part:

> It is understood that Council is currently looking into the implementation of a dedicated bike path on the eastern side of Hampden Road connecting Chatswood and St. Leonards.

GTA is being deceptive – it has produced a report to Council on the subject which has been released to the community at the same time. GTA is, perhaps, recognising the conflict of interest in it authoring Council's Cycle plan, the cycle path study between Chatswood and St Leonards and the Hampden Rd plan.

GTA has placed a higher priority on achieving TfNSW metropolitan wide objectives than community objectives.

Hampden Rd development controls should encourage block scale development to allow a developer to reduce the height difference between the property boundary and kerb to that suitable for a standard 3% crossfall between property boundary and kerb.

Hampden Lane (no vehicle and pedestrian traffic data given)

GTA says in part:

> Hampden Lane functions as a local laneway with an alternating one-way traffic flow and one-lane in each direction. The road to the north of Francis Road is two-way (no through road) while between Francis Road and Broughton Road it operates as one-way northbound and to the south is one-way southbound.
>
> The western side of the laneway is generally marked with 90-degree angled parking spaces with the eastern side of the laneway providing rear lane access for off-street carparking for properties on Hampden Road.

Anecdotally, pedestrian traffic in Hampden Lane is on a par with Hampden Rd. Volumes vary block by block as the lane provides access to the school, shops, parks, station and apartments.

As noted above, Hampden Lane works as part of a road group.

Hampden Lane is far more complex than this and should be documented accordingly.

Between Jersey and Brand, Hampden Lane is subject to an 8-metre wide land resumption on both sides for angled parking and a footpath when development takes place. The compulsory land resumption has severely discouraged even minor upgrading of buildings along Hampden Lane.

Between Barton Rd and McMillan St, Hampden Lane has been designated a 10 km/h shared path. However, the road improvements funded by the school do not comply with RMS guidelines for shared paths. Council has built full traffic lane infrastructure in the lane which forces pedestrians onto a 0.4 metre 'path' when vehicles pass. Mills Lane West in Chatswood is an example of a lane converted to a shared path in accordance with RMS guidelines and was designed and funded by the developer of the adjacent property.

As Hampden Lane links five streets, the efficient pattern of access is from the end and middle streets (Barton, Jersey, Francis).

However, the desire to restrict locals residents to their homes north of Broughton (at the Broughton/Buller roundabout), meant Broughton became the lane access points for the two blocks between Jersey and Francis. The outcome has been a death and injuries at the Hampden/Broughton intersection as both vehicle and pedestrian traffic is concentrated at this intersection.

Two pedestrian lanes (Barham Lane between Francis and Brand, and an unnamed (and unusable) lane between Jersey and Broughton) extend west of the Hampden Lane.

Francis Road (~3,000 vehicles/day)

GTA says in part:

> Francis Road functions as a local road. The road is classified as an on-road bike route within the Willoughby Bike Plan, connecting Artarmon Local Centre with Pacific Highway.

GTA has failed to note its use for access to the motorway, industrial area, Village and school, and that it is part of a road group.

Broughton Road (~4,000 vehicles per day)

GTA says in part:

> Broughton Road functions as a collector road and within the study area is the main east-west road connection for Artarmon west of the train station providing connections between the local centre and Pacific Highway (via Rimmington Street).

In fact, Francis, Broughton (east of Buller), Jersey, Buller (south of Francis), Hampden Road and Hampden Lane, work as a group to service the high-rise apartments and village shops.

Broughton West of Buller is the western extension of this road group.

It is important for consultants and Council to understand the structure of neighbourhoods and communities, and not just assume that the only structure of relevance is that described by the government classification and the AUSTROADS hierarchy.

The northbound restriction on traffic at the Broughton-Buller roundabout was a response to the RMS forcing traffic from Mowbray Rd West turning south onto the Pacific Hwy and needing to use Hampden Rd instead. Local residents were not satisfied with the peak hour restrictions on Hampden Rd southbound at Palmer St.

Due to congestion at the Reserve Rd motorway junction and Mowbray Rd, very little traffic would be seeking to access the Pacific Hwy from the Reserve Rd motorway junction.

The northbound restriction on traffic at the Broughton-Buller roundabout has the effect of forcing West Artarmon residents to rat-run via Buller, Broughton, Hampden Lane/Hampden Rd and Francis to reach Robert, Benton, Eric and Palmer. This restriction hurts the people it seeks to help.

Jersey Road (~6,000 vehicles/day)

GTA says in part:

> Jersey Road functions as a collector road. The road provides connections to Artarmon Public School as well as serving as a key connection between Artarmon Local Centre and Chatswood to the north and Gore Hill Freeway (M1 and M2) access (via Reserve Road) and Artarmon industrial area to the south.

GTA has failed to note it is part of a road group.

McMillan Rd

GTA give no information.

This is an important road for school access. It is one-way west of Hampden Lane. As traffic can access the one-way portion from Jersey, Barton and McMillan, it is usual for peak-hour traffic to grind to a stop on Hampden Rd and the traffic merges in the one-way portion.

Barton Road (4,000 vehicles/day)

GTA says in part:

> Barton Road functions as a local road. The road provides access to Artarmon Public School as well as forming a secondary connection between Artarmon Local Centre and Chatswood to the north and Warringah Freeway access (via Reserve Road) and Artarmon industrial area to the south.

GTA has failed to note that while Hampden, Francis, Broughton, Jersey and McMillan are 12 metre wide roads in a 20.1 metre street, Barton is 7.3 metres at its east end, and 12 metres at its west end in the 20.1 metre street. An important function of Barton Rd is access to Hampden Lane and Thomson Ave (Cleland Park and unit access).

Report section 3.2.4. Intersection Operation – SIDRA modelling

GTA advises:

> Table 3.3 presents a summary of the existing operation of the intersection, with full results presented in Appendix C of this report.
>
> As outlined in Table 3.3, it is clear that most intersections within the study area currently operate well with minimal queues and delays on all approaches.

Table 3.3, which covers many of the intersections in the study area, appears based mainly on assumptions about traffic volumes, rather than actual traffic volumes, as traffic data was only collected on Hampden and Broughton Roads.

Hampden/McMillan is rated level of service (LOS) A, when it often suffers long delays during school and general traffic peak hours. The anecdotal LOS is less than for Hampden/Barton rated LOS A.

Report section 3.3.2. Bus Services

The report has failed to note the western stop for the N90/N91 and train replacement services is 150 metres south of the station entrance at 44 Hampden Rd for DDA compliance and due to poor parking allocation in Hampden Rd.

The nearest pacific Hwy bus stop is 600 metres, not 700 metres, from the station entrance at the Palmer/Pacific Hwy intersection.

The M20 bus service to the Industrial Area was lost in a service restructure earlier this year.

Council funded bus services operate in the LGA. They are not covered by the report.

Report section 3.3.1. Rail Services

GTA advises station patronage in Table 3.4 (below).

Table 3.4: Artarmon Station Patronage, 2018

Time period	Entries	Exits	Total Movements
06:00 – 10:00	3,600	910	4,510
10:00 – 15:00	1,060	910	1,970
15:00 – 19:00	1,330	2,880	4,210
19:00 – 06:00	390	1,250	1,640
24 hours	6,380	5,950	12,330

Source: Transport for NSW opendata (last accessed 28 November 2019)

Report section 3.4.1. Pedestrian Volume

GTA advises:

> Pedestrian surveys were undertaken Thursday 22 November 2019 and Saturday 24 November 2019. The pedestrian volumes during peak hour traffic is shown in Figure 3.15 (below), with full results contained in Appendix B.

Again, the data has not been presented in a usable format. Pedestrian data also appears in Appendix C (SIDRA modelling).

The data in Figure 3.15 has not been related to that in Table 3.4.

Many people visit the shops (particularly the food shops) before and after work. Broughton Rd pedestrian crossings include people shopping and accessing the station on weekdays.

The high pedestrian numbers crossing Broughton Rd on weekends reflects more people having time to visit more shops. GTA is wrong in saying the desire line across Broughton Rd is independent of weekday commuting.

Report section 3.4.2. Pedestrian Desire Lines

GTA advise:

> Based on site observations made on Wednesday 20 November 2019, the key pedestrian desire lines to and from the station is presented in Figure 3.16.
>
> Of note is the vast offering of shops, and local amenities located on the western side of Hampden Road as well as the high concentration of medium to high density residences west of the rail line, where in the AM peak many pedestrians walking across the various formal and informal pedestrian crossings on Hampden Road to reach the pedestrian tunnel entry to the station platform.
>
> In the PM, this movement was reversed with pedestrians exiting the station and crossing Hampden Road. A notable volume of pedestrians made use of the signalised pedestrian crossing on Hampden Road though a minority was also observed to have informally crossed Hampden Road along its length.

The advice accords with local experience. The pedestrian flows presented in Figure 3.16 (over page) appear representative of those observed by local residents. As it is legal to cross a road at any time when more that 20 metres from a signalised crossing. Many people cross Hampden Rd during gaps in traffic.

Figure 3.15:Pedestrian crossing volumes during AM/ PM and Saturday traffic peak

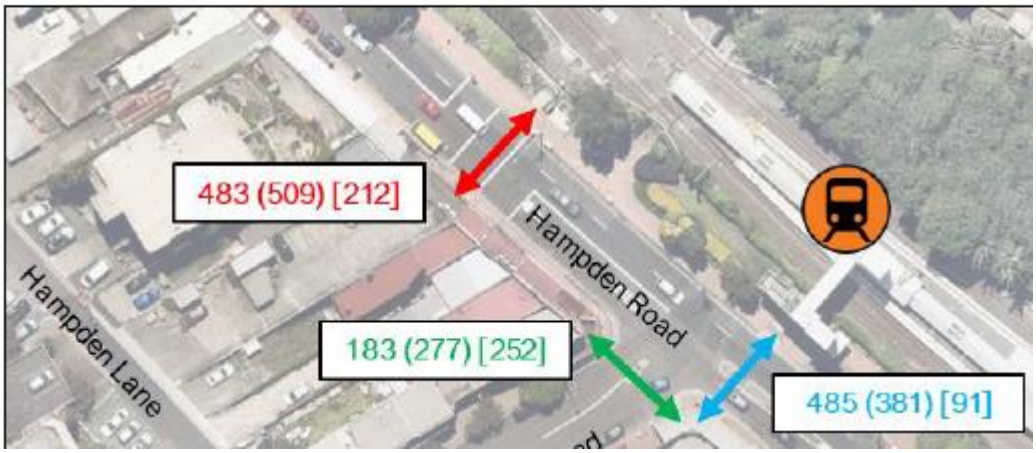


Figure 3.16: Existing Pedestrian Desire Lines

Report section 3.5. Cycling Network

GTA presents part of the Willoughby LGA bike plan as at 29/11/2019 drafted by them. The plan includes many proposals not yet implanted. It includes a number of on-road cycle paths regarded as unsafe by residents. On the whole, the cycle plan is a failure.

Report section 3.6. Crash History

The crash history only goes back five years, thus failing to capture data before contentious changes were made to the Hampden/Broughton intersection.

The data is unlikely to capture single vehicle accidents where the pedestrian refuge on Hampden at Broughton was hit by vehicles. The 'U' bars at the refuge have been flattened on at least one occasion in 2020.

Report section 3.7. Roads and Maritime Warrants Assessment

GTA advise:

> Intersection signalisation – Roads and Maritime guidelines (Traffic Signal Design - Section 2 Warrants) indicate that a signalised intersection may be considered for pedestrian safety where in each of four one-hour periods of an average day:
> • pedestrian flow crossing the major road exceeds 150 persons per hour
> • the major road flow exceeds 600 vehicles/ hour in each direction.

GTA advise the Hampden/Broughton intersection meets the criteria:

> Currently, the Hampden Road/ Broughton Road intersection has around 500 pedestrians crossing Hampden Road and 250 pedestrians crossing Broughton Road per hour during AM and PM peak hours, and the signalised mid-block pedestrian crossing also has around 500 pedestrians crossing per hour during the peak.
>
> Given the existing high pedestrian volumes at the Hampden Road/ Broughton Road intersection, noticeable vehicle traffic volume on Broughton Road, and the proximity to existing signalised pedestrian crossing, the relocation of the existing signalised mid-block pedestrian crossing to a signalisation intersection at Hampden Road/ Broughton Road to accommodate all pedestrian movements has been assessed.

The problem with the warrant approach to provision of traffic infrastructure is that it only allows for reinforcing current traffic arrangements. Warrants only consider the past, not proposals. An intersection can't be eliminated and its traffic redistributed for safety and traffic flow improvements if a non-signalised intersection requires signalisation as a result.

By warrant regulation, TfNSW has eliminated the option that best suits the principles of Council's "Our Future Willoughby Community Strategic Plan 2028".

A better option would eliminate a vehicle intersection at Hampden/Broughton in favour of a mid-block pedestrian crossing at Broughton as Illustrated in Figures A, B and C (two pages over).

Report section 4. INTERSECTION DESIGN OPTIONS 4.2 to 4.5

The GTA options are:

> 4.2. Option 1 – Scramble Crossing Existing Road Geometry (has pedestrian only phase)
> 4.3. Option 2 – Standard Crossing Existing Road Geometry
> 4.5. Option 4 - Pedestrian Focused Standard Crossing
> 4.4. Option 3 - Pedestrian Focused Scrambled Crossing (has pedestrian only phase)

GTA recommend their Option 4. as it "closely aligns with the objectives of pedestrian amenities improvement and place-making in Artarmon while catering to existing traffic conditions". However, this statement is wrong. The selected option has major changes to West Artarmon traffic.

GTA advice in relation to Option 3 is included below to illustrate issues of concern.

> 4.4. Option 3 - Pedestrian Focused Scrambled Crossing (has pedestrian only phase)
>
> INTERSECTION DESIGN OPTIONS Table 4.3 indicates that a road network design around Artarmon Local Centre with a focus on the prioritisation of pedestrians would result in Hampden Road operating over capacity with significant delays and queues, particularly the intersection of Hampden Road and Jersey Road with degree of saturation reaching 2.0 and more than 10 minutes of delays. It is evident that based on existing traffic volumes, a prioritised pedestrian road network with a scramble crossing at the intersection of Hampden Road and Broughton Road would not be feasible with the current traffic volumes being experienced on Hampden Road.
>
> One main requirement is the need for a 15-20 percent through traffic reduction on Hampden Road, such volume would need to be distributed elsewhere and preferably on major arterial roads such as Pacific Highway, this would need further review and assessment into the feasibility to achieve such a desirable outcome.

Such a vehicle traffic reduction is easily achieved with the removal of the NO RIGHT TURN forcing Mowbray Rd West traffic to use Hampden Rd instead of the Pacific Hwy. See Figure D (below) for an example of a Pacific Hwy/Mowbray Rd intersection design to remove the no right turn.

Another requirement for this layout is the banning of the right turn movements from Hampden Road into Broughton Road as well as from Broughton Road onto Hampden Road.

The removal of such movement currently up to 100 vehicles per hour during any peak, would require redistribution within the Artarmon Local Centre, most likely using the permissible right turns at the intersection with Francis Road or Jersey Road.

To encourage such redistribution, road/ laneways configurations would need to be adjusted, particularly Hampden Lane and Buller Road.

To achieve the driver desire line of reaching Broughton Road from Hampden Road to the north, the traffic direction of Hampden Lane between Francis Road and Broughton Road would need to be reversed (to southbound traffic) to allow for a direct route to Broughton Road.

If such reversal of traffic on Hampden Lane were not implemented, drivers would be required to go around the local centre via Buller Road before looping back to Broughton Road and as such would make the right turn at Francis Road the less desirable option.

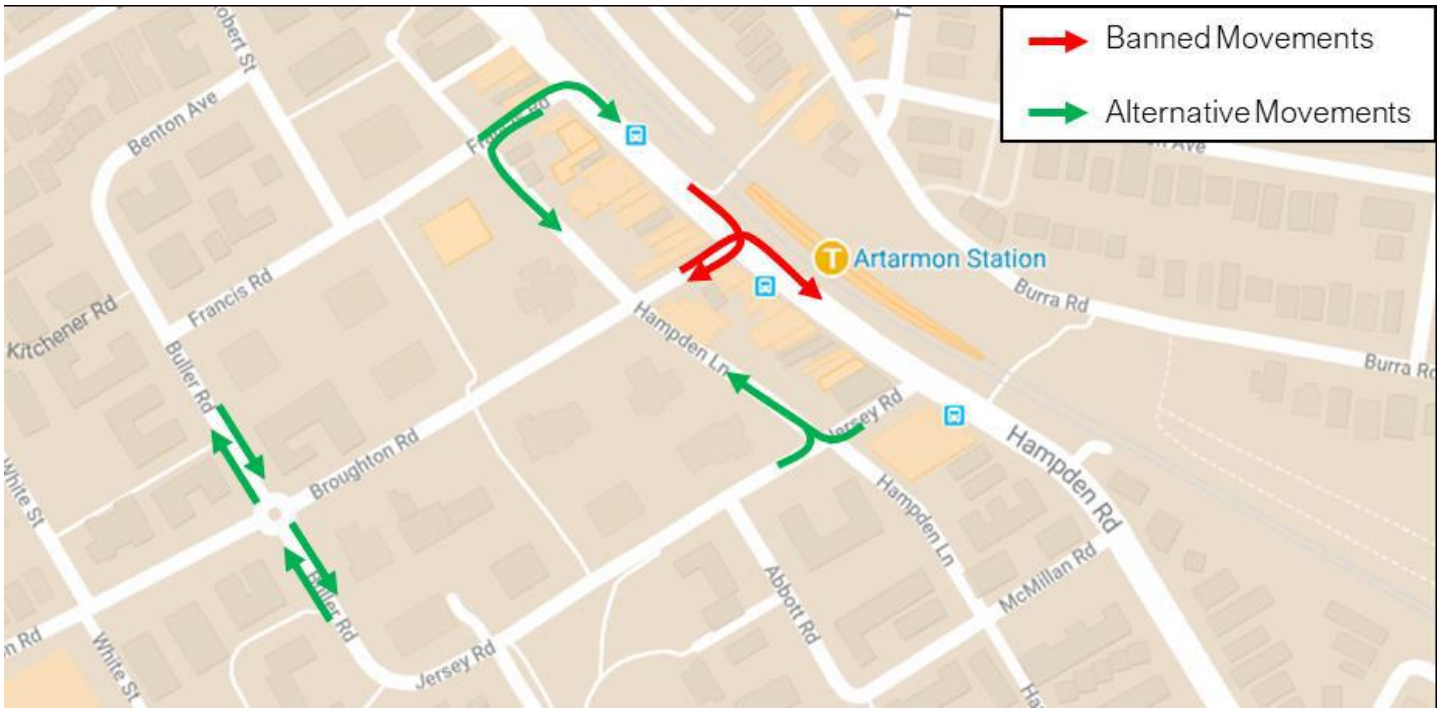
The reversal of traffic directions on Hampden Lane to southbound only between Francis Road and Broughton Road shouldn't be implemented in isolation and this would create a parallel southbound route on Hampden Lane and therefore encourage the use of this alternative route which is not suitable to accommodate additional traffic.

The section of Hampden Lane between Broughton Road and Jersey Road would also need to be reversed and Buller Road opened to be two way at the intersection of Broughton Road as this would result in being an alternative route.

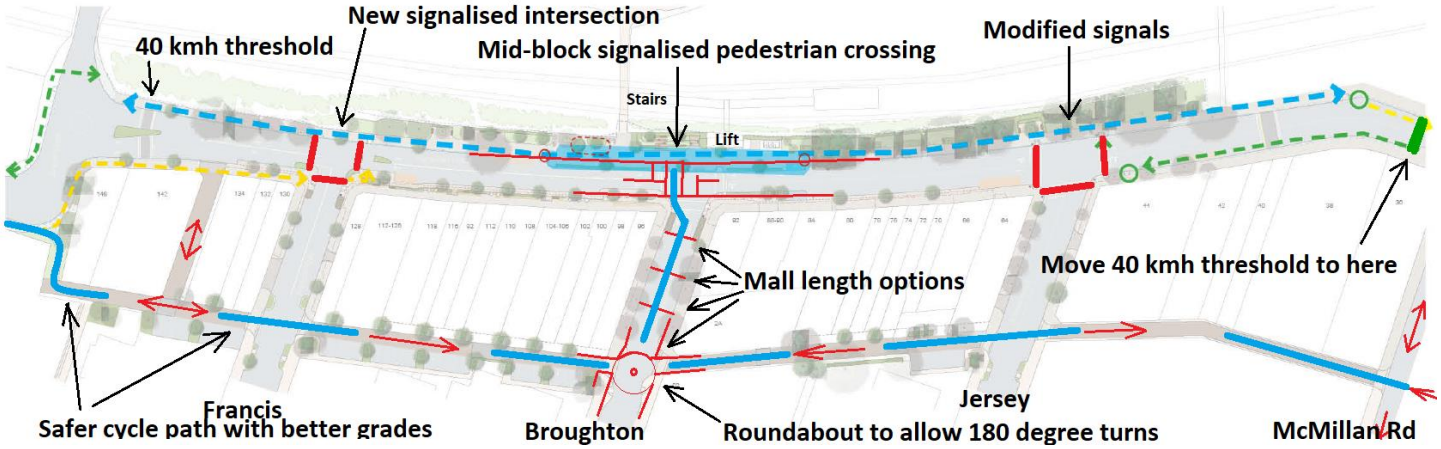
The road network within the Artarmon Local Centre area is predominately local roads with Hampden Road being the designated through road.

To reduce traffic volumes on Hampden Road further understanding of the per cent of vehicles that are not accessing the local centre and therefore should be utilising the wider state road network needs to be investigated.

As outlined in Section 3.2.3 additional investigations are required to determine the existing percentage of vehicles not actually accessing the local centre area to assess the likelihood of being able to reduce the through traffic on Hampden Road to achieve the desired outcome for pedestrians and the local centre amenity.



Report Figure 4.2: Redistribution of traffic within Artarmon Local Centre for option 3

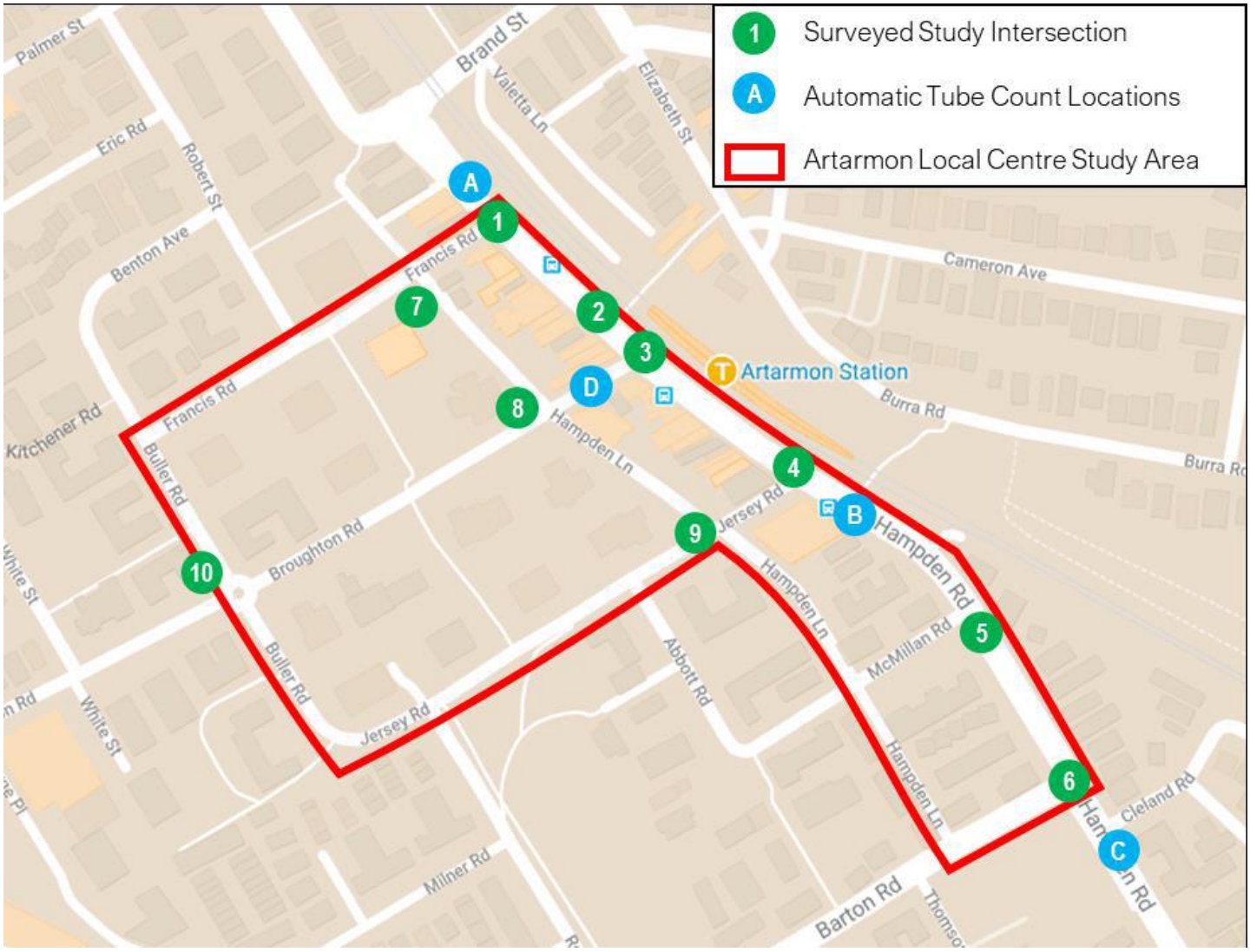


Indicative mall options in Broughton Rd with a 'mid-block' signalised pedestrian crossing. See figures B and C for further examples of the mall with resulting parking and public transport improvements.

Figure A – Hampden Road pedestrian priority option ruled out by TfNSW 'Warrant' requirements that do not permit significant traffic changes to benefit the community.

Figure B - example

Figure C - example



Report Figure 3.1: Study area and surveyed locations

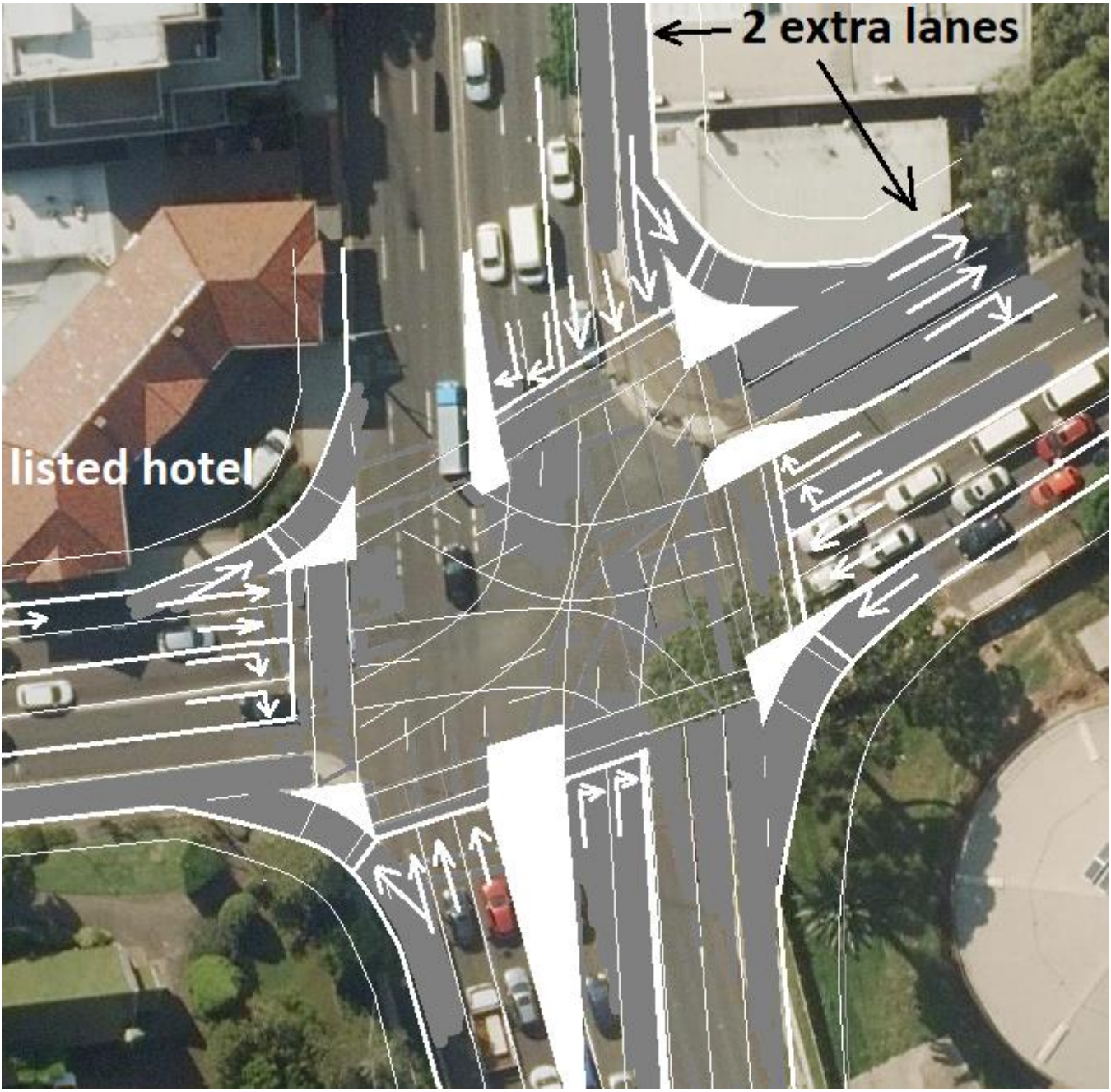


Figure D – Example of Pacific Hwy/Mowbray Rd intersection upgrade to permit Mowbray Rd West traffic to turn right onto Pacific Hwy southbound and thus avoid the need for the traffic to use Hampden Rd as at present.

Document – Artarmon Local Centre Public Domain Master Plan

Section 1.2 notes the "Artarmon Streetscape Masterplan" by Scott Carver that was not shown to the community. This should be published by Council for the information of the community.

The project background does not acknowledge:
--- The Artarmon east side residential parking plan
--- The Artarmon west side residential parking plan
--- Decisions of Council implementing parking allocations in the Village commercial areas.
--- Decisions of Council implementing traffic infrastructure and restrictions in West Artarmon.

Council's "Traffic and Transport Plan" is one of principles, it is not a plan as such. It is not used by GTA.

The "Chatswood to St Leonards Principle Bike Network: Study Route Planning Study and preliminary designs" (GTA) is a very poor document. Criticism of it is appended as Appendix 1 as it impacts the Village.

The summarised community feedback from the "Draft Local Centres Strategy" ignores the need to improve the public domain on the eastern side of Hampden Rd – the Village Green. The Green is in poor condition due to ad hoc placement of ill-considered infrastructure north of the station entrance, and poor management of the trees south of the station entrance. A new vegetation plan on the east side is required between Brand St and McMillan Rd. At present, Council and GTA display considerable disrespect towards the Artarmon Mosque. If the Islamic community was engaged regarding Council's plans, they would be outraged.

For Artarmon, the community desire was to maintain a two-storey street frontage, not to maintain fine grain shop fronts.

There was not support for a "small café pavilion" on the east side of Hampden Rd. Commercial development of the Village Green was heavily opposed by the community.

There was no support for a small plaza and play space next to a pavilion as there was no support for a pavilion on the east side of Hampden Rd.

There is demand for a small plaza and play space on the west side of Hampden Rd associated with cafes.

There is no support for kerb blisters separated by a drain from the footpath.

The demand for additional at-grade parking is for Hampden Rd.

There was not a demand for access to basement parking from Hampden Lane. There is demand for basement parking associated with block scale development with access away from Hampden Rd.

The Hampden/Broughton intersection proposal is based on TfNSW 'Warrants' that prevent traffic being diverted to other routes, such as Francis and Jersey Roads, as Warrants only consider existing traffic at and intersection, not traffic proposed to be diverted from another intersection.

The Hampden/Broughton intersection is Artarmon's most heavily trafficked intersection for both vehicles and pedestrians. A sensible proposal would seek to separate vehicle and pedestrian traffic. As pedestrian desire lines cannot be moved, vehicles should be moved.

Figure: Changes to local traffic is not option 4 as recommended in the intersection options document. As shown in Option 4, the No right turn requires the opening of the Broughton/Buller intersection to the north otherwise Hampden Rd is the only option for traffic on Broughton Rd and south to head north – causing a significant increase of traffic on Hampden Rd.

Section 2.2 "Artarmon Junction"

> --- Point 5 – The "Railway Edge" is actually the 'Artarmon Village Green'. It has a 90-year history since its planting by local residents. It has been in the care and control of Council since the start of WW2 due to the manpower shortage created by the war. While work on the trees requires co-ordination with the Sydney Trains, vegetation changes don't require Sydney Trains approval.
>
> --- Point 7 – Mid-block traffic features Hampden Rd would be just 50 metres from intersections and serve no real purpose apart from traffic disruption and noise generation.

Section 2.3.1 Design Principles

> --- The principles fail to consider that Hampden Lane is a heavily trafficked by pedestrians. Hampden Road and Lane, and Francis, Broughton and Jersey work together to serve the Village residents and businesses.

Section 3.1 Existing Parking

The figure fails to note the off-street public parking on the property on the corner of Broughton and Hampden Lane.

The figure only notes part of the parking available on Hampden south of Jersey.

The figure fails to note the location of the school and Mosque 50 metres from the southern edge of the drawing.

Section 3.2 proposed parking

This drawing eliminates a number of parking spaces on Hampden Rd for artistic reasons.

It eliminates time-based restrictions in the Village.

It creates parking on Hampden Rd previously eliminated by Council for traffic movement reasons.

Section 3.3 Cycle provision

See above comment on the Intersection document and the appended comment on the Hampden Rd cycle path.

Section Staging Plan

Stage 1 Traffic calming devices

The Staging plan includes road works in Elizabeth St that were not part of the Wilkes Ave Plan.

The Elizabeth St plans have failed to consider garbage pick-up and street drainage.

An east side traffic study is required before the proposed works are carried out. It should cover vehicle and pedestrian traffic with a focus on the Elizabeth, Cameron, Tindale intersection. The present roundabout is critical to station access.

From a safety perspective, it is better to close the pedestrian path behind the old library and improve the Elizabeth St footpath.

Stage 1 should be the Wilkes Ave Plan works.

Stage 2 Traffic Signal Works

Traffic signal works do not cover traffic signs. The changes to traffic restrictions (in the form of signs and other non-signal infrastructure) requires approval of the Willoughby Traffic Committee of TfNSW and the full Council.

Stage 3 – Future Local Centre Upgrades

No works are listed under this heading.

The Cycle Path is not mentioned.

Appendix 1 – Chatswood to St Leonards Cycle Route –

submission by Peter Egan 14/26 Hampden Rd, Artarmon 2064, peteregan2001@gmail.com

Documents for community review:

--- Chatswood to St Leonards Proposed cycle route, by GTA Consultants 13 May 2020

--- Chatswood to St Leonards Principal Bike Network Study, Route Planning Report, by GTA Consultants, 19 May 2020, (Initial version - Final Route Analysis and MCA 6 May 2019, Additional Rail Corridor Considerations 28 June 2019)

Figure in this submission follow the text. The submission also includes the separate Excel file.

Comments

Summary

I do not support the current proposal due to the issues outlined below.

Key issues not addressed by the GTA report include:
--- the intended users (experienced, inexperienced, regional, local, less able, cyclists only),
--- traffic and parking impacts,
--- safety issues,
--- whether Willoughby LGA will have a few, or many cycle paths,
--- the proposed path through Artarmon Village will not be released till next month,
--- grade diagrams and other key metrics provided in the Castle Cove to High Street Chatswood cycle-route report.
--- alternate cycle paths of greater relevance than those studied,

The GTA proposal was based on a "saddle survey" by experienced cyclists with the intent of implementing the TfNSW Tier1 route of the Future Transport 2056 plan between St Leonards and Chatswood. The intended customers appear to be people cycling long distances.

The Jacobs study for the Castle Cove to High St Chatswood route presented information more relevant to other street users and inexperienced cyclists. In the absence of this information from GTA, I have produced grade information for 9 routes (Excel attachment and Table 1 on the last page of this document).

Hampden-Herbert is a busy street in terms of the number of activities supported. In this it is far more complex than the Pacific Hwy, and one of the most complex streets in the metropolitan area. As such, it needs an integrated land use and all-modes traffic and parking study to inform infrastructure provision.

Cycle paths are for a limited range of cyclists - not the fit, experienced cycled who prefer the wide road lanes, or the inexperienced riders who are an obstacle to more experienced cyclists. Of course, cyclists are the only people allowed in a cycle lane.

A 2.5 metre shared path can be used by all, including the less able, people in wheelchairs, and parents with prams, without someone needing to leave the path to pass another person.

A shared path can be implemented on any street except along busy retail strips. They have far greater value to our society that exclusive cycle paths. Being on-street, but off-road, they don't require traffic and parking studies. If money is tight, an existing path can be widened, rather than rebuilt (the method often used by Council.

The low cost of a shared path means they can be implemented on many streets, reducing the density of cyclists on a particular shared path and the risk of incidents between cyclists and other path users. Cyclists are the street users are greatest risk in any incident as bikes are not statically stable, only dynamically stable. Cyclists are the street users taking the most care in avoiding incidents.

A 2.5 metre shared path is open to all. Considering many of our footpaths are 1.5 metres to 1.8 metres wide, an increase to 2.5 metres is not a big thing, yet it caters to all but fit experienced cyclists who prefer road lanes anyway.

What we need is many shared paths rather than a few cycle-only paths.

Kerbs are a hazard for cyclists. Figure 23 shows an on-road cycle path implemented in Italy with heavy paint markings rather than kerbs

I recommend:
--- all Willoughby LGA footpaths, except along retail strips, be made shared paths to reflect current use.
--- all paths in the Willoughby LGA be a minimum 1.5 metres wide to enable two people to walk side-by-side, and for wheel-chairs and prams to pass another 'vehicle' or person without one leaving the path (as is the case for 1.2 metre paths). See Figure 2
--- 2.5-metre shared paths be implemented on all 'busy' streets in the LGA. See Figure 1.

--- The Tier 1 path be a shared path along the Pacific Hwy from St Leonards to Boundary St, and extend down Boundary St to Archer St to link with the cycle path in Ku-ring-gai. This path with link to cycle path to Lane Cove at Longueville Rd.
--- Due to safety and grade concerns at Brand St, a Hampden Road 2.5-metre shared path be as illustrated in Figures 15 to 22):
    --- along the western side of Hampden Rd between Mowbray Rd and Brand St,
    --- along Hampden Lane to Barton Rd,
    --- preferable through Cleland Park to Hampden Rd, alternatively via Barton Rd north footpath to Hampden Rd,
    --- cross Hampden Rd at the current pedestrian refuge adjacent to Cleland Park with the crossing converted to a 'zebra' crossing.
    --- continue along the eastern side footpath Hampden-Herbert to the Pacific Hwy.
    --- Artarmon Station accessed via a mall next to Hampden Rd and a relocated signalised crossing
    --- I note Council has already made Hampden Lane between Barton Rd and McMillan Rd a shared path.
    --- I note Hampden Lane will be a safe cycle route to the local public school.
--- If the path is fully on the east side of Hampden Rd, that Brand St be addressed as shown in Figure 14.
--- Council work with residents to ensure paths are kept fully clear of vegetation to a height of 2.5 metres.

Safe Cycling

A distinction should be made between adults and children who are:
--- fit, experienced riders,
--- riding for recreation,
--- learning to ride
--- would like to cycle to work, school and jobs.

Fitness and experience greatly influence a cyclist's view of what is safe, and a parent's view of what is safe for their child.

Bicycle design that places a cyclist between a traffic and parking lane can be hazardous for cycling.

Austroads Guide to Road Design (AGRD) 6A and the NSW Bicycle Guidelines (NSWBG) advises: A shared path should be a minimum of 2.5 metres across, and be free from hazards within (and preferably for 0.5 metres outside) of the corridor. Higher volume paths may justify widths of 3-4 metres.

For vehicle passengers, a kerb-side bike-only lane is as much as hazard as a bike lane in the metre space on the other side of the vehicle. Kerb-side is a far less expected location for fast moving objects. Kerb side is where children and people with disabilities, and people with baggage access and alight from a vehicle. Downhill from Mowbray Rd, we should expect cyclists to exceed 50 km/h in the bike-lane on a regular basis.

Many fit, experienced cyclists love cycling in the traffic lane southbound on Hampden Rd from Mowbray Rd. They can easily exceed the speed limit before braking for the sharp corner at Brand St. The traffic lane has been widened at the corner allowing cyclists a wide path to negotiate the corner. A lesser challenge is the roundabout. Northbound, experienced cyclists tend to use other routes with shallower grades.

Few other cyclists use Hampden Rd due to grades exceeding 10% and the 22-metre height difference between Brand St and Mowbray Rd.

Cycling Hampden-Herbert will only become popular when electrically-assisted bikes are available reasonable price to inexperienced riders.

The intent of the GTA report and Artarmon cycle plan is to cater for fit, experienced cyclists riding long distanced to work – thus their preferred path in the rail corridor.

The Willoughby Cycle Path network is largely for fit, experienced cyclists.

I note that few people cycle in Artarmon, and that most cycling takes place on footpaths as they are seen as a safe convenient place. Yet it is illegal to ride on a footpath not designated a shared-path.

Many children and adults cycle along Artarmon footpaths as they are seen as the only safe place to ride.

Many parents in Artarmon teach their young children to ride on the footpath outside their home.

A 3.0 metre to 3.5 metre uni-directional traffic lane is preferred by fit, experienced cyclists over a shared path, or a narrow cycle path (1.2 metre lane) – see Figure 3.

In providing a shared path, or an exclusive on-road cycle path 1.2 metres wide, we are not catering for fit, experienced cyclists.

Of the current cycle network, the sections that are the metre-wide strip next to parked cars are the least safe.

On low traffic roads, a designated cycle path shares the traffic lanes with automobiles – adequately safe except for the least experienced riders.

Cycling will be safer when our vehicle fleet is converted to battery electric power and riders no longer breathe in vehicle exhaust. With its heavily trafficked major roads on two sides of the residential area, Artarmon has relatively high air pollution.

Some residents prefer on-road cycle-only routes, while others prefer a mix where experienced cyclists continue to cycle in traffic lanes, while less experienced and fit people cycle on shared paths.

Cycling suppressed by regulatory measures

Cycling was common in Australia until the rise of the automobile and road congestion in the 20th century made cycling on busier roads unsafe. As a safety measure for pedestrians, cycling was banned on our narrow walking paths (generally 1.22 metres). Laws requiring the wearing of helmets, and their strict enforcement by the police, further ostracized cycling.

I note media reports that in Western Sydney police use cycling law infringements as a basis for investigating the wider behaviour of youths.

A key community aim should be to lift legal limits and penalties on cycling while maintaining safe riding recommendations – the strategy followed in most of the rest of the world.

It is legal to ride on all roads except motorways. Arterial roads are preferred by many fit, experienced riders due to their generally benign grades often allowing them to keep pace with automobiles.

The need for cycle paths exists for all busy non-motorway roads. Few cyclists are a sign that present cycling infrastructure and rules are not a safe a system for cycling.

Utility infrastructure in footpaths

Of the utility infrastructure in our streets, telecom infrastructure is the worst implemented. Occasionally, electricity poles have been planted in the middle of Artarmon footpaths as an easy means of avoiding other utilities.

Artarmon has metropolitan scale water, electrical and telecom infrastructure under its streets. Hampden-Herbert contains major electrical and telecom infrastructure – the later in the footpaths, particularly the eastern footpath.

Australia's telecom duct and pit network has been poorly installed and maintained for the last 50 years. It has been in the control of the former Commonwealth entities Post Master General's (PMG) Department, then Telecom Australia which was privatised as Telstra, since federation.

Many telecom pits in the Willoughby LGA are both a cycling and walking hazard – particularly in Hampden-Herbert. However, they can be made safe as illustrated in Figure 7 – a large Telstra pit with a high friction, rigid surface lids, and with the new path graded to the pit edges.

A coherent strategy for footpaths

With the closure of Frank Channon Walk, Council designated Orchard Road's western footpath as a shared path. This experience indicates pedestrians and cyclists can happily share narrower paths. Making a path illegal for pedestrians, or cyclists, leads to anger if people feel a path is being illegally used.

Council should provide places to cycle that cater for the majority of the population. A network on which adults and children can learn to ride and gain fitness and experience in relatively safety.

The off-road cycle path along Flat Rock Creek, from Chatswood and East Artarmon towards Naremburn and the City, is popular with many cyclists. However, for Chatswood riders this route contains a 215-metre section of Tindale Road with a 7.5% grade (16 metre elevation change) – making it an uphill route for fit cyclists.

The present Willoughby cycle network, as drawn by GTA Consultants, is intended for fit experienced cyclists. Council should consult the community on a broader list of cycle routes partially illustrated in Figure 1. Generally, we need a shared pedestrian-cycle path along all busy roads, and other roads subject to circumstances. A key focus for consultation is the side of the road to get the shared path.

In balancing the benefits to the community of cycling, and risks to pedestrians and cyclists, I support all Willoughby LGA footpaths being designated shared paths. Shared paths narrower than 1.9 metres, should be restricted to an advisory limit of 15 km/h – easily reached by a 5-year old cyclist. For wider shared paths, an advisory limit of 25 km/h should apply.

Concrete and tiled footpaths in Willoughby range from 1.2 metres (4 feet) to full footpath width. The width being dependent of changing requirements over the last century. Due to poor vegetation management, the walking path width is often reduced by 0.3 metres and occasionally by 0.6 metres.

To provide some coherence, and to provide a safe place to cycle, all concrete/tiled paths in Willoughby streets should be at least 1.5 metres wide, and 2.5 metres when part of a cycle route.

Council should trim vegetation along footpaths, or provide guidance for local residents to do same.

Figure 2 illustrates various footpath layouts. Where few people are expected to ride, a 1.5 metre path to layout 'E' is preferred. However, circumstances may demand 'D' or 'F'. A footpath should be away from a property boundary to provide greater visibility between motorists entering/leaving properties and footpath users.

For 'Shared Paths', option 'A' is preferred for Arterial Roads to maximise the separation of road traffic and footpath users. Option 'A' is further illustrated in Figures 4 to 6. Option 'B' is preferred for lower hierarchy roads.

In retail centres, Option 'G', full footpath paving is preferred. However, where footpaths are very wide, they can contain garden elements – Figure 6.

Principal Bike Network

The Principal Bike Network Study Executive Summary advises:

> *As part of the Transport for NSW Principle Bike Network within Greater Sydney, Chatswood to St Leonards has been identified as a Tier 1 route to connect the two strategic centres. In developing a concept design for this Tier 1 route, a route analysis was conducted between the two strategic centres, with a connection to Artarmon (which forms a logical mid-point between Chatswood and St Leonards). As such, the route analysis was conducted as two separate sections; Chatswood to Artarmon and Artarmon to St Leonards.*

GTA Figure 1.1 is based on TfNSW's Future transport Strategy 2056 (version from the 2056 Strategy in Figure 8 below). The figure indicates a Tier 1 path from St Leonards to Chatswood. It does not indicate whether the route also serves Lane Cove or Artarmon. GTA do not provide any analysis of a route via the Pacific Hwy which has a direct link to Lane Cove.

A Tier 1 route should be suitable for the vast majority of people wishing to cycle, rather the few whose fitness and skill levels allow them to cycle long distances on the North Shore.

I request a route selection report with information similar to the Castle Cove to High St Chatswood Bicycle Route Development report by Jacobs, dated 25 May 2019. This report provides some good information to inform bike route selection. Figure 2.14 from the report (Figure 9 below) is an example of the information required.

GTA's preferred Tier 1 route between Chatswood (Frank Channon Walk) and St Leonards is via the rail corridor due to the gentle grades of the rail tracks. Rail corridor space allocations make this route extremely difficult to achieve. The relative locations of the North Shore Line track and a parallel cycle path is illustrated in Figure 10 – the latter requires a 125-metre enclosed bridge over the Sydney Metro dive.

A cycle path, as proposed by GTA, from Nelson St that went under the Mowbray Rd rail overpass may save 2.5 metres of 22 metres of elevation change between Mowbray Rd and Brand St.

The rail corridor looks spacious to many people and capable of being used by both trains and cyclists with minimal works and expense. As it has not released any detailed rail corridor plans, for the benefit of the community I request Council ask TfNSW to explain its use of the corridor.

The utility to local residents of a bike path in the rail corridor is small compared to one on Hampden Rd due to poor accessibility. Essentially, a cycle path in the rail corridor comes at great expense and delivers less value.

In the absence of route grade diagrams, I produced Table 1 (last page) which shows routes via the Pacific Hwy are far more benign for cyclists. The Pacific Hwy, between St Leonards and Chatswood has only one short length over 4% grade – a section 71 metres long at 4.3%. Hampden-Herbert has grades over 10%. Table 1 is based on the MS Excel file appended.

((The Pacific Hwy was built on the ridge line between the Lane Cove and Middle Harbour valleys due to the benign grades of the ridge line.))

The Willoughby City Council 2020-21 Proposed Budget lists $1.6M for a Pacific Highway shared path. Based on the grades of the Pacific Hwy relative to those of Hampden-Herbert, I support the Pacific Hwy as the Tier 1 route.

Where a shared path crosses a signalised intersection, unless a bicycle lantern is provided, cyclists are legally required to dismount their bicycle and walk their bicycle across the road before remounting.

Where possible, infrastructure and rules should be organised such that cyclists can proceed slowly in congested areas and intersection rather than dismount, wait and walk.

Recommended Hampden-Herbert cycle route

Due to safety and grade concerns at Brand St, a Hampden Road 2.5-metre shared path be as illustrated in Figures 15 to 22):
--- along the western side of Hampden Rd between Mowbray Rd and Brand St,

--- along Hampden Lane to Barton Rd,
--- preferable through Cleland Park to Hampden Rd, alternatively via Barton Rd north footpath to Hampden Rd,
--- cross Hampden Rd at the current pedestrian refuge adjacent to Cleland Park with the crossing converted to a 'zebra' crossing.
--- continue along the eastern side footpath Hampden-Herbert to the Pacific Hwy.
--- Artarmon Station accessed via a mall next to Hampden Rd and a relocated signalised crossing.

Way finding

Design does not identify destination points, note existing bike parking, or comment on any proposal for additional facilities (at Artarmon shops, Artarmon station, RNSH, St Leonards station). This needs to be included in the design or addressed elsewhere.

GTA street space allocation

GTA propose retaining parking by narrowing the road lanes from 12.8 metres to just 10 metres to provide 2.8 metres of space for cycle lanes.

Or GTA may intend to narrow four kilometres of footpath to 2.2 and 3.0 metres widths as shown in Figure 11. The plan has dimensional conflicts and should be revised on this account alone.

GTA's Hampden-Herbert path is largely on-road except at key intersections and through Artarmon Village where Council has prepared separate plans for exhibition in August 2020. Where not on-road, the path is a shared-path.

The east side gutter along Hampden Rd and Herbert St, being a part of the bicycle path would be an obvious danger zone and deterrent for cyclists.

As an example of cycle path implementation in other countries, Figure 15 shows a cycle-only path implementation in Italy that does not require kerbs which are a hazard to pedestrians and cyclists, as well as a safety device.

GTA Hampden-Herbert bike path proposal

Hampden Rd land use

Hampden-Herbert is a district road linking St Leonards, Artarmon and Chatswood. The Hampden Rd portion passes through residential area of zone R3 apartment development and the village retail area.

Due to traffic diversions from the Pacific Hwy to Hampden Rd, Council has heavily restricted parking on the east side of Hampden Rd through the village.

Parking demand on Hampden-Herbert from residents, shoppers and workers far exceeds availability.

Council has recently introduced a residential parking scheme to Artarmon to address parking availability.

Parking and traffic studies

Any proposal for reduction in parking spaces in Hampden Rd in favour of cycle-only paths, should be subject to a joint study with the residential parking scheme.

If further traffic lights are added to Hampden Rd, the joint study should include traffic arrangements in Artarmon.

Some bus routes rely on a 180 degree turn at the roundabout to access the station. Eliminating the roundabout will require some people to do U-turns in the street or circle the block using congested Mowbray Rd.

However, some residents prefer traffic signals at the Hampden-Brand intersection to improve the safety of the intersection and provide cycle access between Hampden Lane and the east side of Hampden Rd north of Brand St.

There is a strong case for a cycle-path on the west side of Hampden Rd from Mowbray Rd to Brand/Hampden Lane, and then along Hampden Lane to Barton Rd. The village, school and station can be accessed via the roads crossing the lane. This option, not considered by GTA Consultants, needs close study.

For the on-road section of the cycle path, disembarking from parked cars (opening of car doors, crossing of the bike path, movement of children, prams and items from parked cars) would create dangers for both the pedestrians and the cyclists and would be a major safety concern. Parking spaces should be adjacent to the footpath without the need to cross and interfere with the bike path.

Some residents have expressed a preference for an all on-road cycle only path, or an all shared path for consistency of riding conditions. Changing from an on-road path to shared path on the downhill run to the Hampden-Brand intersection, is likely to catch some riders unaware on a steep corner falling away from them.

Some residents have expressed a preference that Hampden-Herbert not be used for cycling as it is busy enough with other traffic.

Cycle links to Frank Channon Walk

The Willoughby Council budget includes funding for a cycle-path along the Pacific Hwy. This path has been intermittently constructed for many years as part of development site restorations.

Very little meets current standards with the notable section along the Foxtel Studios boundary (4 Broadcast Way).

I support a Hampden-Herbert cycle path connecting to the planned extension of Frank Channon Walk through the Metro dive site to the Mowbray-Hampden intersection.

Despite the vehicle pollution, it is expected less experienced riders will prefer the gentle route along the Pacific Hwy to Mowbray Road and Frank Channon Walk rather than the hilly Hampden-Herbert.

115 Hampden Rd boundary and land use

The NSW government's Six.Maps property boundary webmap shows 115 Hampden Rd having the same property boundary alignment as neighbouring properties (Figure 12). However, the residents still have use of the 2.3 metre-wide strip excised from the property (Figure 13).

Even if the 2.3 metre-wide strip is not Crown land, Council should obtain the strip for community use – perhaps as a 'right of way'.

Hampden-Brand intersection

GTA has shown a small widening of the footpath for the shared path at this intersection along with signalisation.

Signalisation is preferred by a number of cyclists as road lanes are graded away from roundabouts for drainage purposes. This reduces the speed at which cyclists can safely 'corner' the roundabout. This is an issue for experienced cyclists in traffic lanes. It is not an issue for riders on a shared path.

Cyclists request a smooth transition between cycleway and slow zone at lights (e.g., advance lights for cyclists).

A roundabout can be retained at the intersection if the geometry of the intersection is further altered.

A two-part zebra crossing (Figure 14) with a wide median is much less disruptive to motorists, pedestrians and cyclists than traffic lights.

Lights would need to operate in phase unison with the other sets of Hampden Rd traffic lights, and could not be operated out-of-phase on an on-demand basis. An average wait of more than 30 seconds will be typical.

Signals would improve traffic flow for some motorists in peak hours, but otherwise delay traffic.

Hampden Road through the Village

While we wait to the see Council's plan for the Village, I note the underpass south of the station and its exit ramp to Hampden Rd are in poor repair and need improvement for safe access to Hampden Rd.

'Zebra' crossing at 28 Hampden Rd and removal of pedestrian refuge at Cleland Park

GTA propose a raised 'zebra' crossing of Hampden Rd at 28 Hampden Rd. Few people cross there as most prefer to cross nearby at Barton Rd or McMillan Rd to access the school. There are no issues with speeding traffic, except for a few cyclists trying to maintain speed in the traffic lanes.

The road bend near 38 Hampden Rd is a popular place to cross to and from the station and Elizabeth St.

GTA propose removal of the pedestrian refuge crossing on top of the hill near Cleland Park which is used by residents to access the park. The treatment of the refuge on the Park side is very poor. Visibility at the refuge location is good.

Some residents support the raised 'zebra' crossing at 29 Hampden, and the elimination of the pedestrian refuge near Cleland Park as:
--- the path through Cleland Park is compromised by the path being closed for "extended periods" due to risk from a bunya pine.
--- it is needed for pedestrian safety and access to the school.

It is more the practice that people choose to cross Hampden Rd during gaps in traffic than at a particular place.

There are no legal restrictions on pedestrians crossing a road anywhere, anytime accept at traffic lights.

Within 20 metres of traffic lights, pedestrians must cross at the designated point when the signals permit.

A raised ‘zebra’ crossing at 28 Hampden Rd will serve very few pedestrians, generate noise day and night, eliminate four parking spaces.

Herbert St

Shared path

The path along Herbert St, from the Motorway to the Pacific Hwy, should be a 2.5-metre-wide shared path including over the motorway overpass where the path widening will likely require removal of kerbside traffic.

Punch St

See Figure 22 – the connection to cycle path needs improvement to directly connect to the path beside the motorway. Clear directional signposting required here and throughout route.

‘Zebra’ crossing 30 metres south of Eileen St

The NSW Health Department is providing direct access from the St Leonards Station pedestrian overpass of Herbert St to the hospital grounds and front entrance of the Hospital.

The need for the raised ‘zebra’ crossing 30 metres south of Eileen Street should be examined. Is a crossing at Eileen St better? If retained, a treatment is required at major pedestrian crossing linking hospital and station (opposite Ventia building) but is not identified in design.

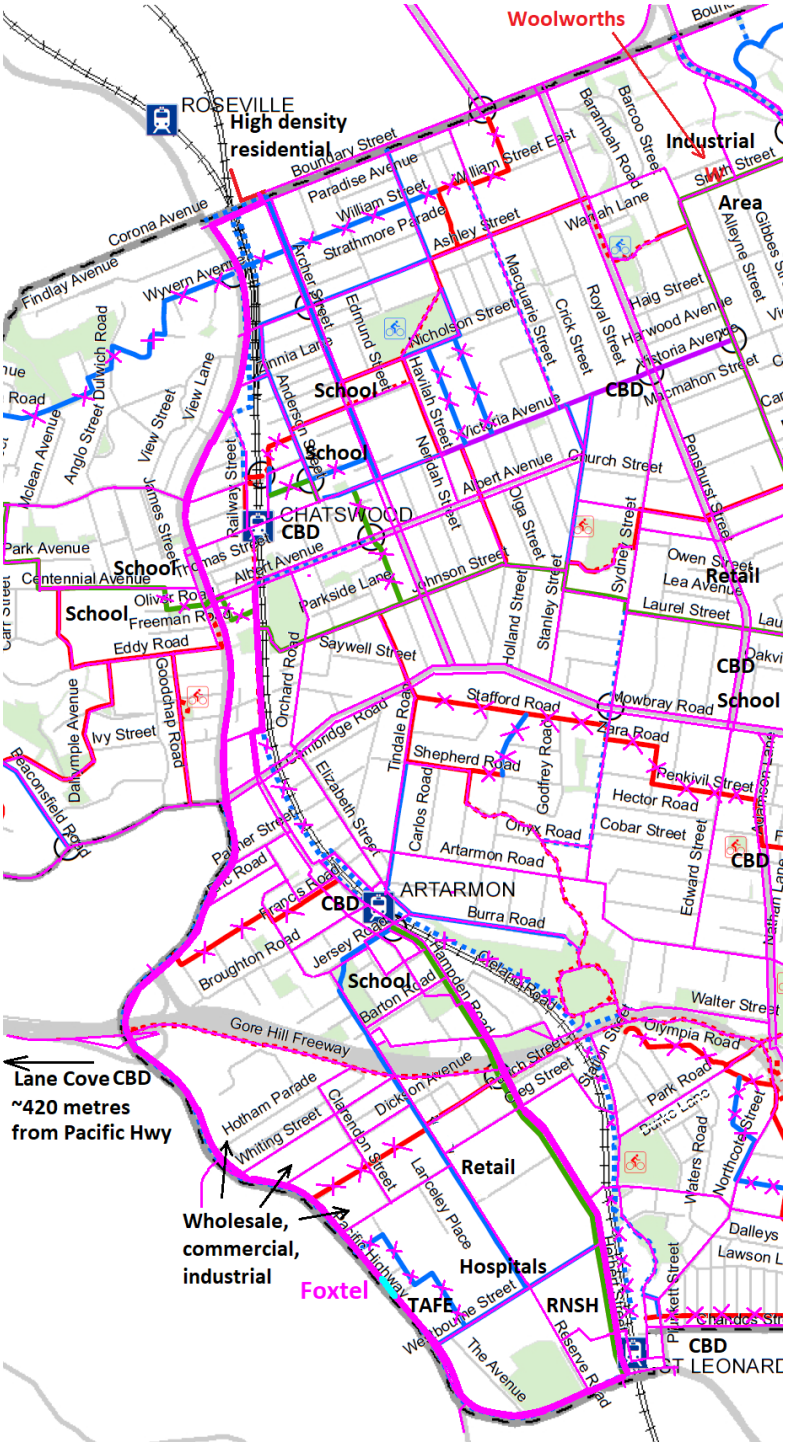
Pedestrian/cycle underpass of Pacific Hwy

I suggest investigation of cycle/pedestrian underpass of Pacific Hwy via existing rail tunnel on eastern side.

Pacific Hwy intersection

Design stops short of Pacific Hwy. Needs to link with proposed Pacific Hwy bicycle route.

Current landscaping at Pacific Hwy will need to be removed and re-designed to make space to and provide separate pedestrian and cycling paths and crossings. Telecom pit lids need improvement.

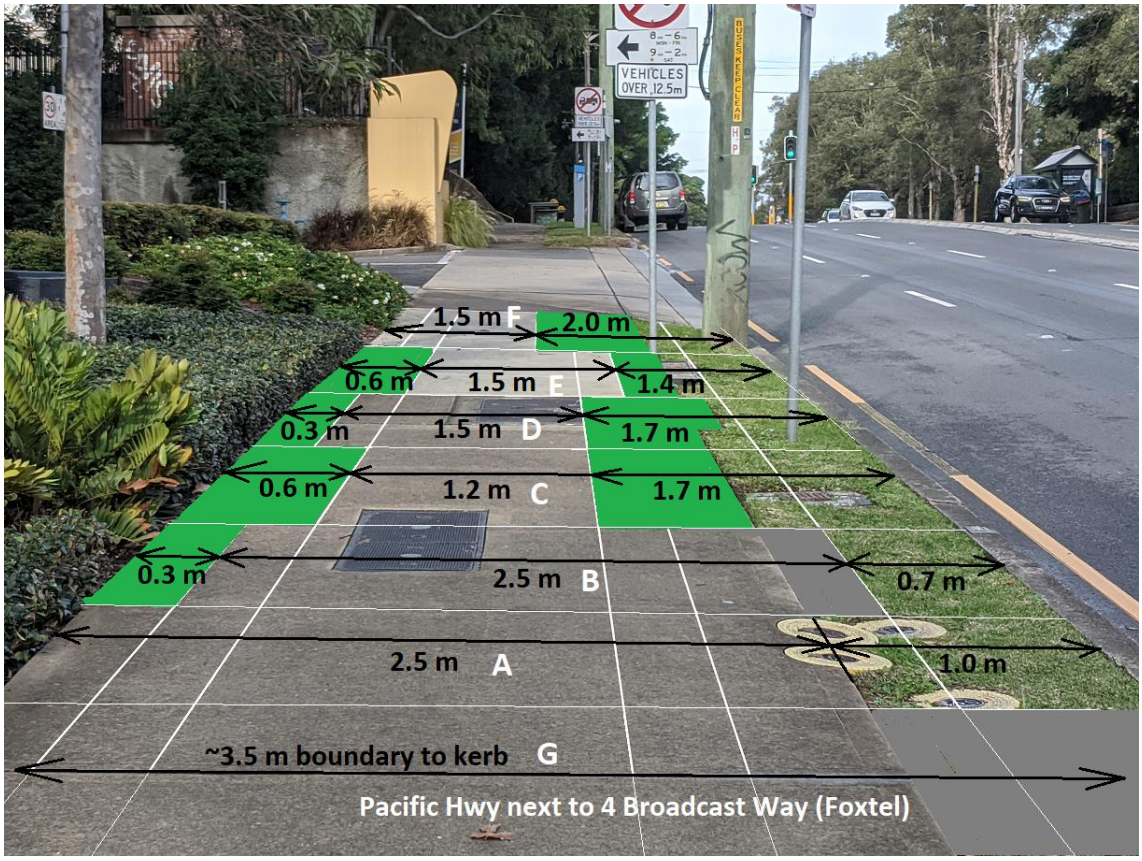


--- The Pacific Hwy (heavy pink line) east side shared path should be implemented due its benign grades and link to the cycle path to Lane Cove.

--- A Herbert St shared path (heavy pink line) should be implemented on the east side to link to the shared path beside the motorway at Punch St

--- All other streets in the LGA should be studied for a shared path on one footpath based on traffic volumes (and indicator of demand and on-road safety), the appropriate side of street based on many factors, coverage of neighbourhoods with shared paths.

Figure 1 – Cycle routes for community consultation



This footpath is on the Pacific Hwy outside the Foxtel studios (4 Broadcast Way).
'A' is the 2.5 metre shared path as implemented. 'A' should apply to all Arterial Roads for safety.
'B' is the preferred shared path for all other roads.
'E' is the preferred for paths 1.5 metres to 2.0 metres
Existing vegetation and other infrastructure influence path location

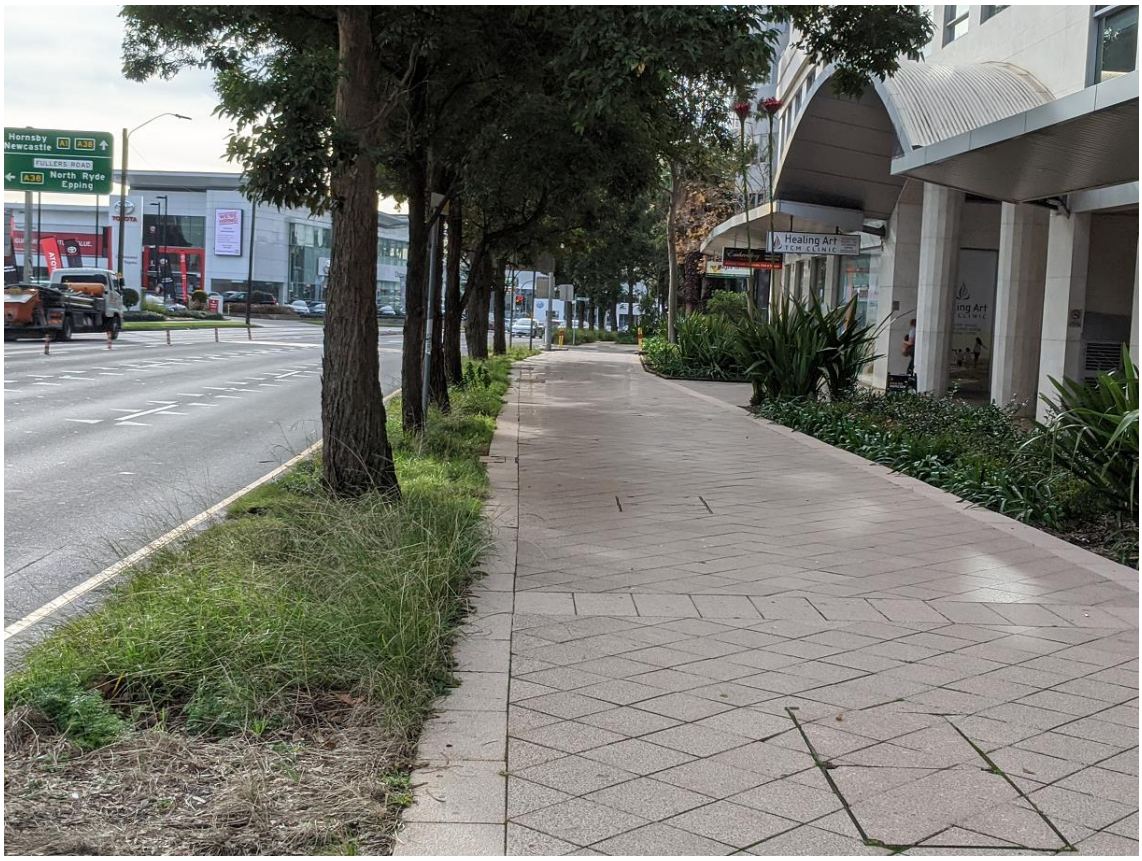
Figure 2 – Illustration of footpath layouts

Note cyclists and grass verge separator

Figure 3 – Cycling on the Pacific Hwy roadway and footpath

Note and grass verge with trees separator

Figure 4 – Cycling on the Pacific Hwy roadway and footpath



Note grass verge with trees separator

Figure 5 – Cycling on the Pacific Hwy roadway and footpath

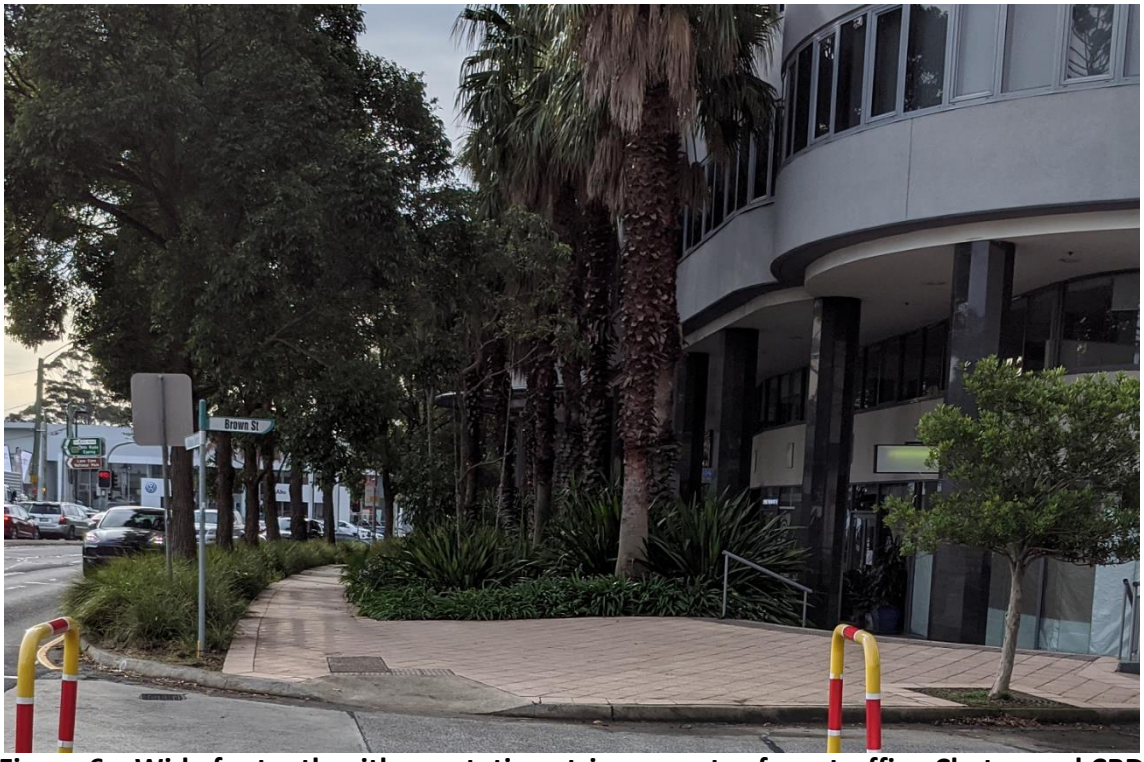


Figure 6 – Wide footpath with vegetation strip separator from traffic - Chatswood CBD

Figure 7 – Large Telstra telecom pit at the north west corner of the Longueville Rd intersection made safe for pedestrians and cyclists by Connector Motorways

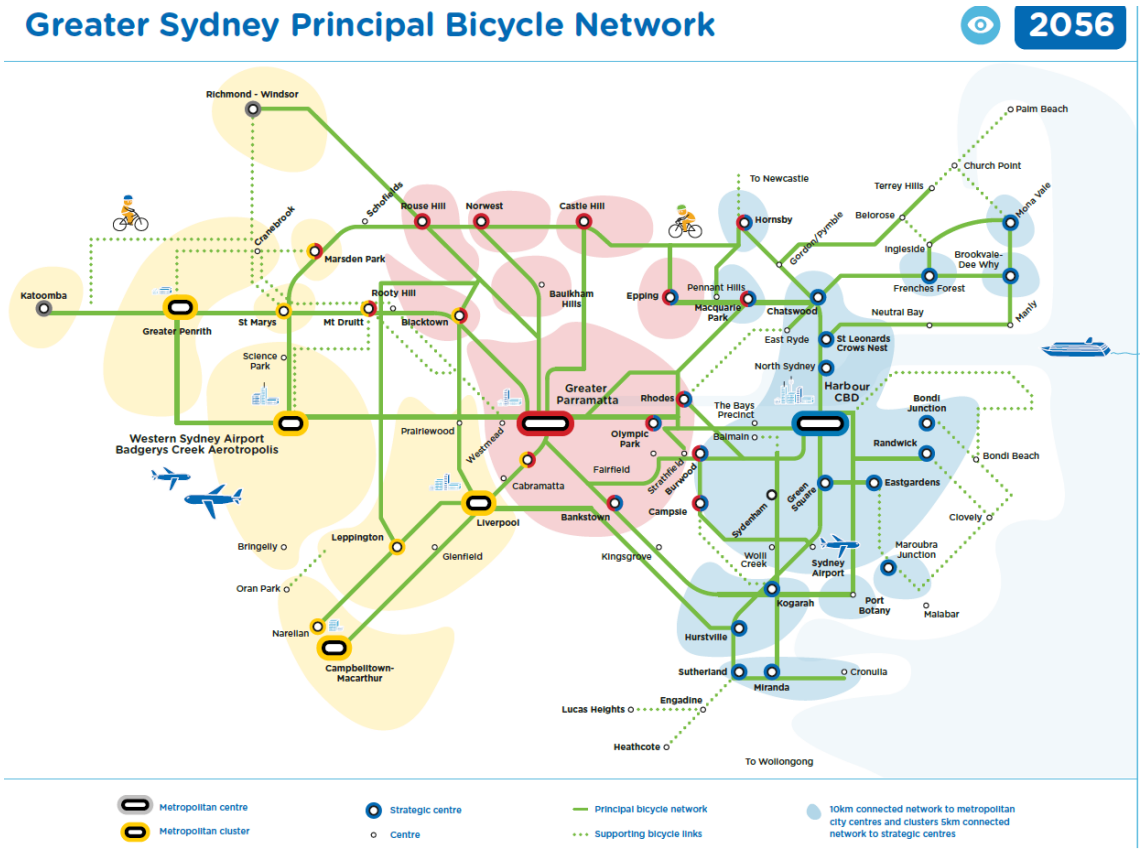


Figure 8 – Greater Sydney Principal Bicycle Network

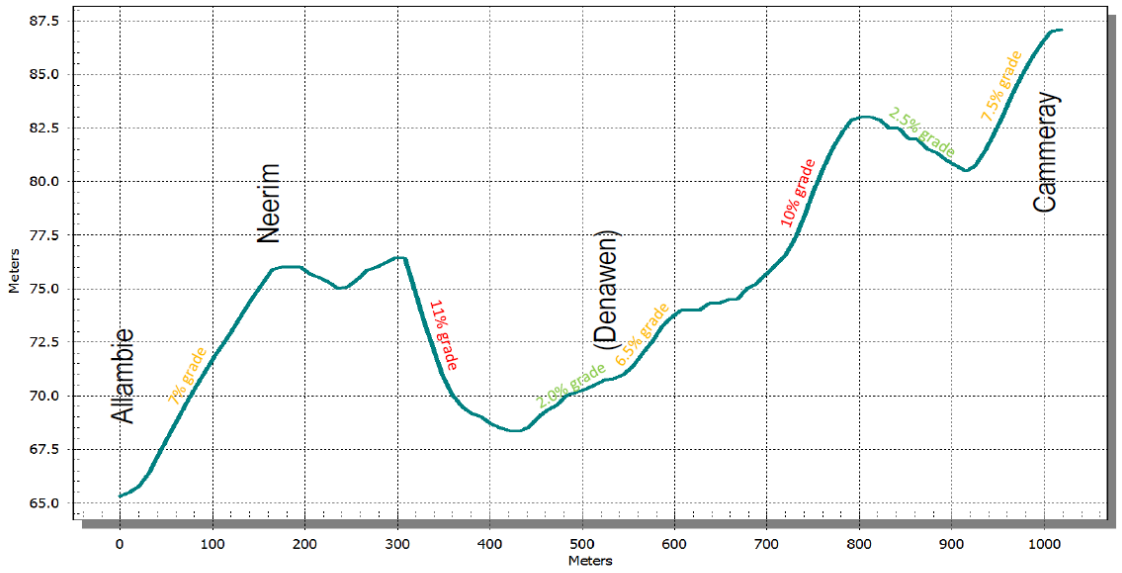


Figure 2.14: Grades along Deepwater Road/Denawen Ave and Neerim Road (from Allambie to Cammeray)

Figure 9 – Figure 2.14 from the Castle Cove to Chatswood report by Jacobs

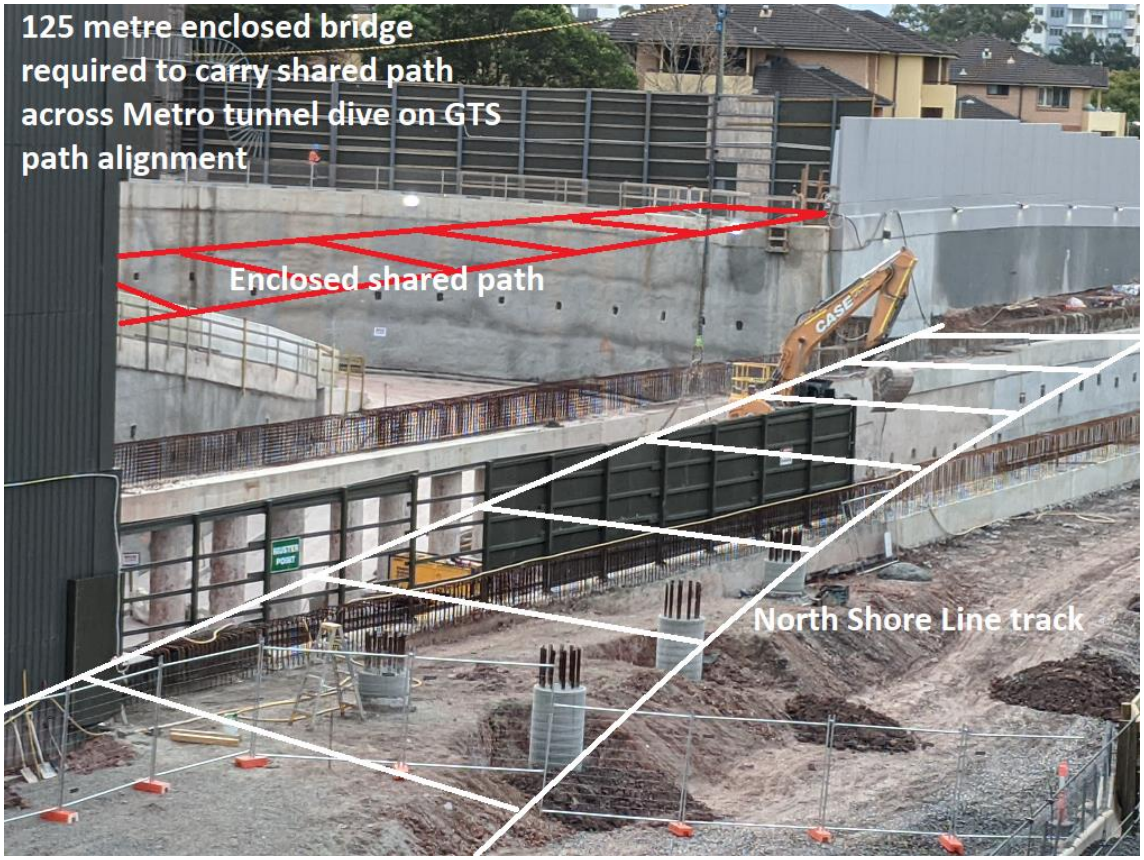


Figure 10 – relative locations of North Shore Line track and parallel cyclepath

Note: GTA has used an 18-metre road width for Hampden-Herbert when it is largely 20.1 metres between property boundaries.

Figure 11 – Hampden-Herbert 'Streetmix' by GTA Consultants

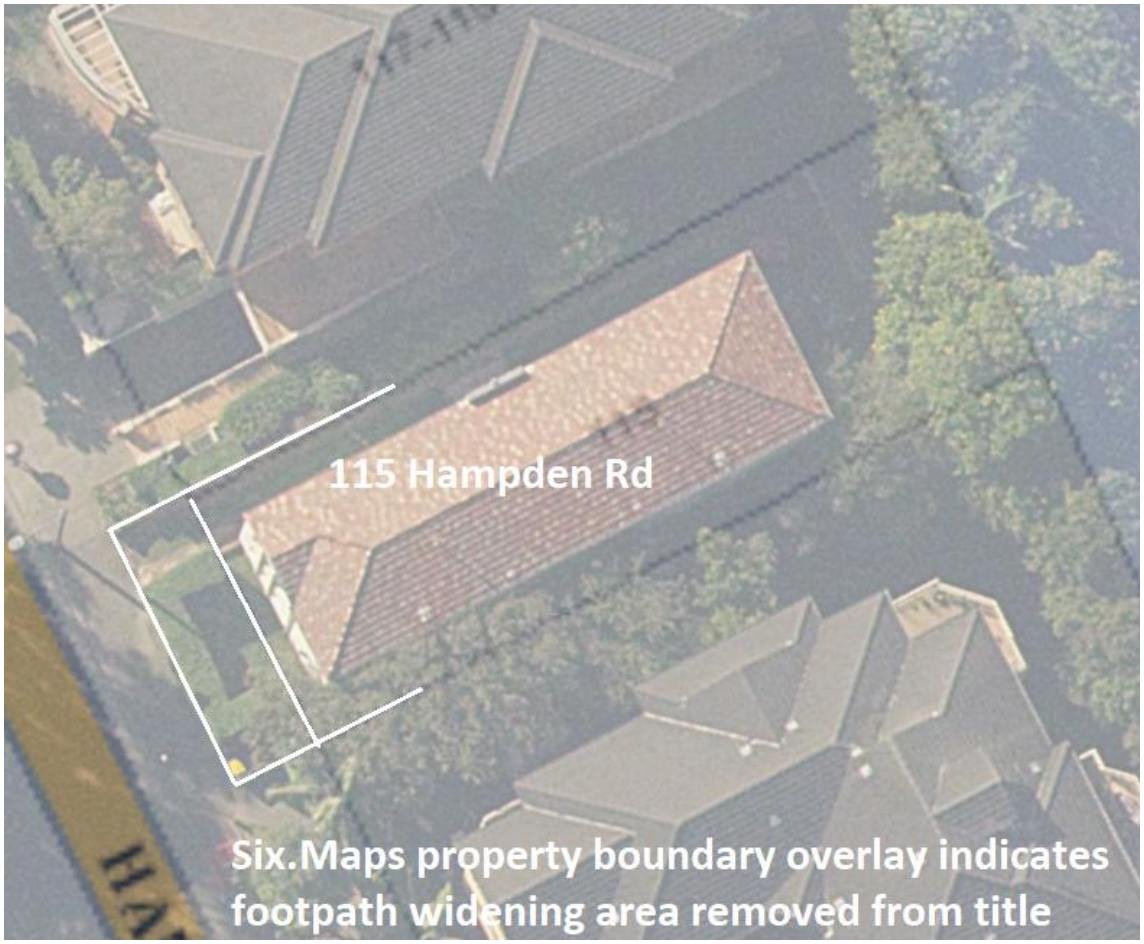
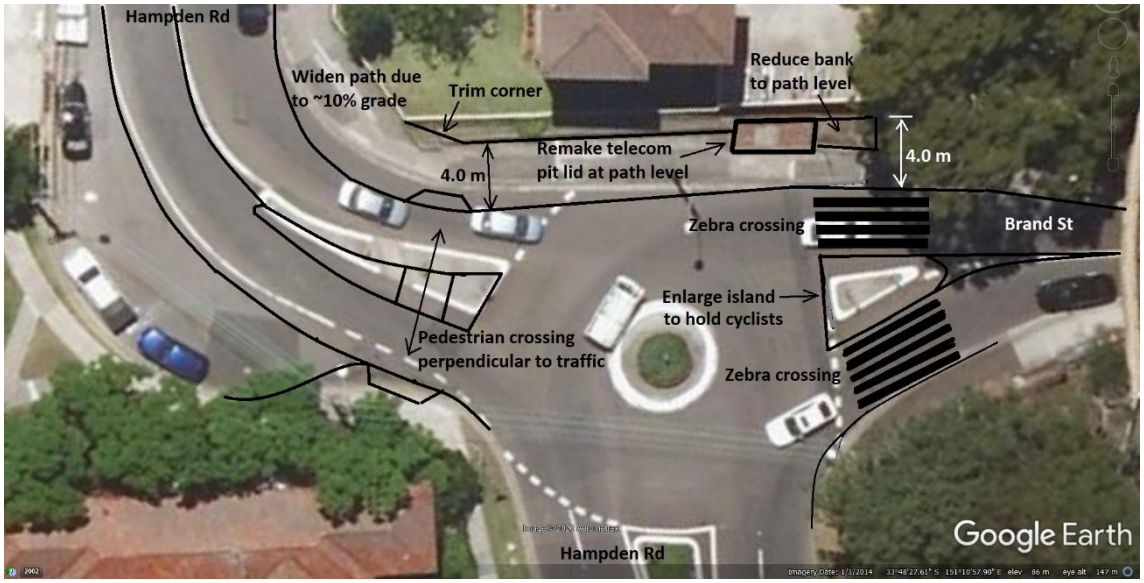


Figure 12 – 115 Hampden Rd property boundaries according to Six.Maps and the 2.3 metre frontage still utilised by residents.

Figure 13 – 115 Hampden Rd's 2.3 metre intrusion into the footpath space



A two-part zebra crossing with a wide median is much less disruptive to motorists, pedestrians and cyclists than traffic lights which would need to operate in unison with the other sets of Hampden Rd traffic lights, and could not be operated on an on-demand basis.

Figure 14 – proposed rearrangement of Brand St-Hampden Rd intersection

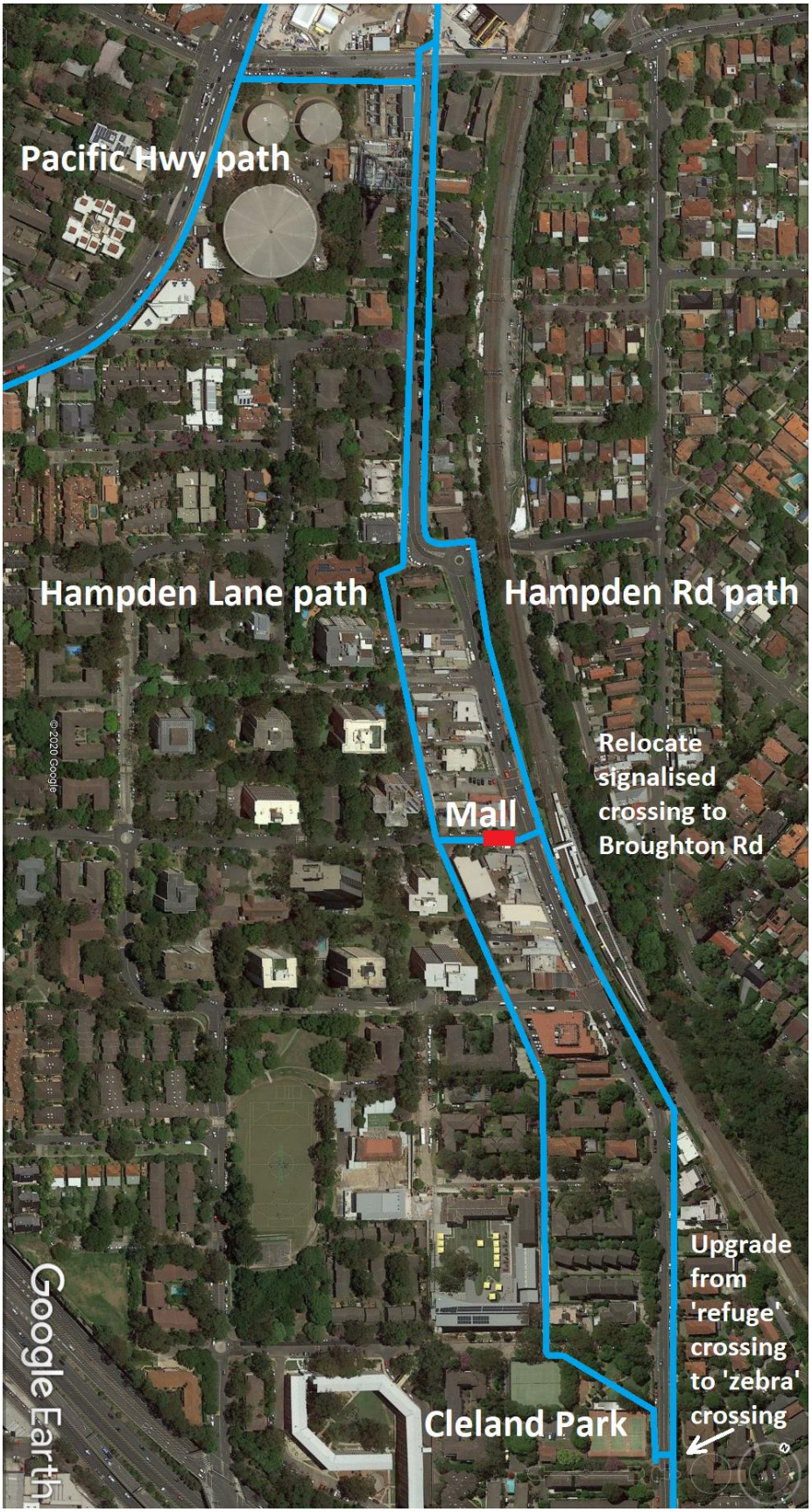


Figure 15 – Cycle path alternatives Hampden Rd corridor

Figure 16 – Mowbray Rd – Single road crossing to access Pacific Hwy and Hampden Rd

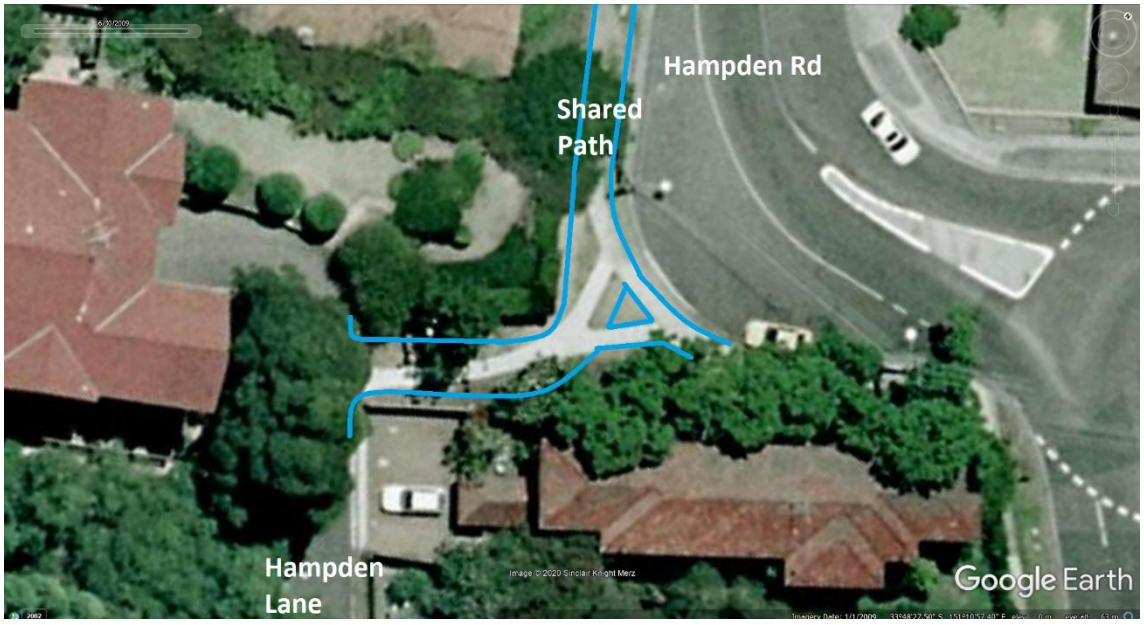
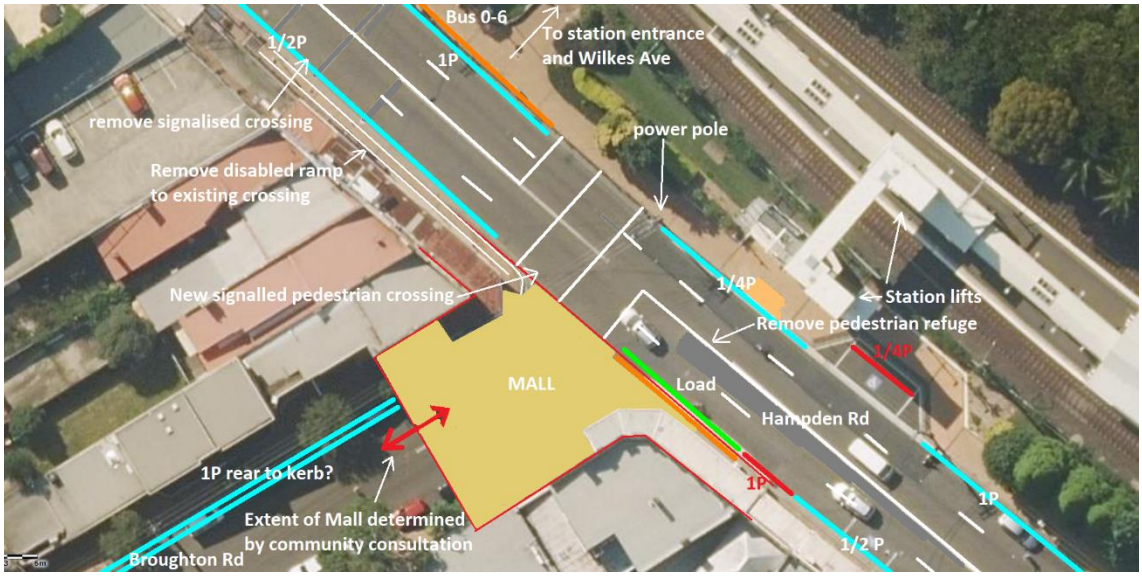
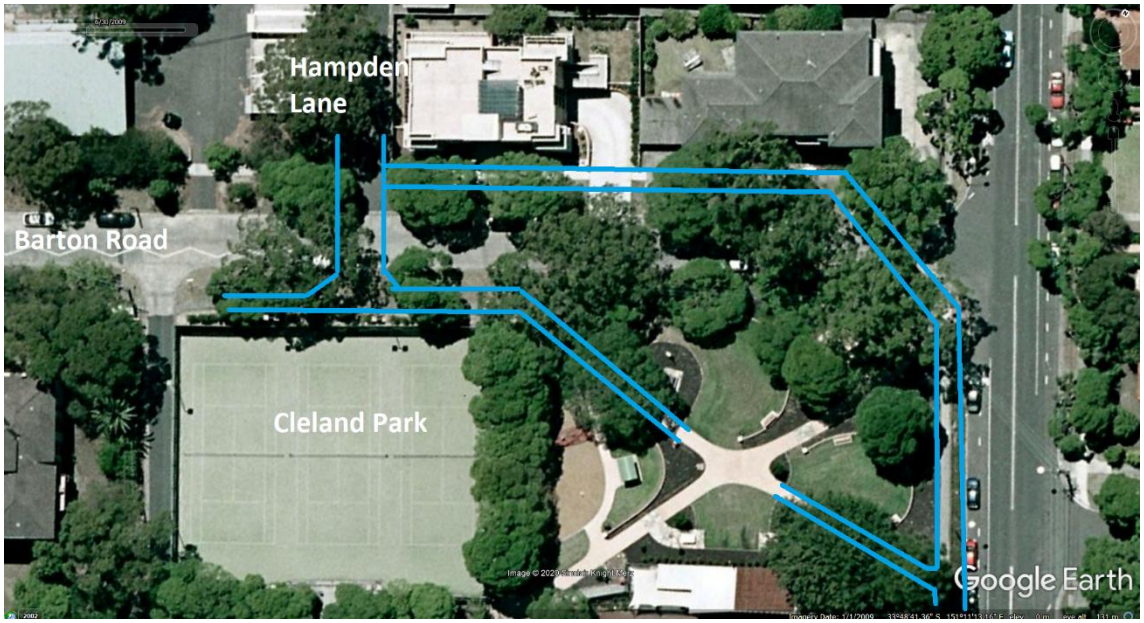


Figure 17 – Safe transition past Brand St Hampden Rd to Hampden Lane



Mall would include bicycle parking.

Figure 18 - Proposed Broughton Rd mall with relocated signalised crossing for pedestrians and cyclists



Across the park (4 metres up over 80 metres, 5%) saves 3 metres down over 35 metres and up 7 metres over 80 metres (both at about 8.5%)

Figure 19 – Shared paths options through and around Cleland Park

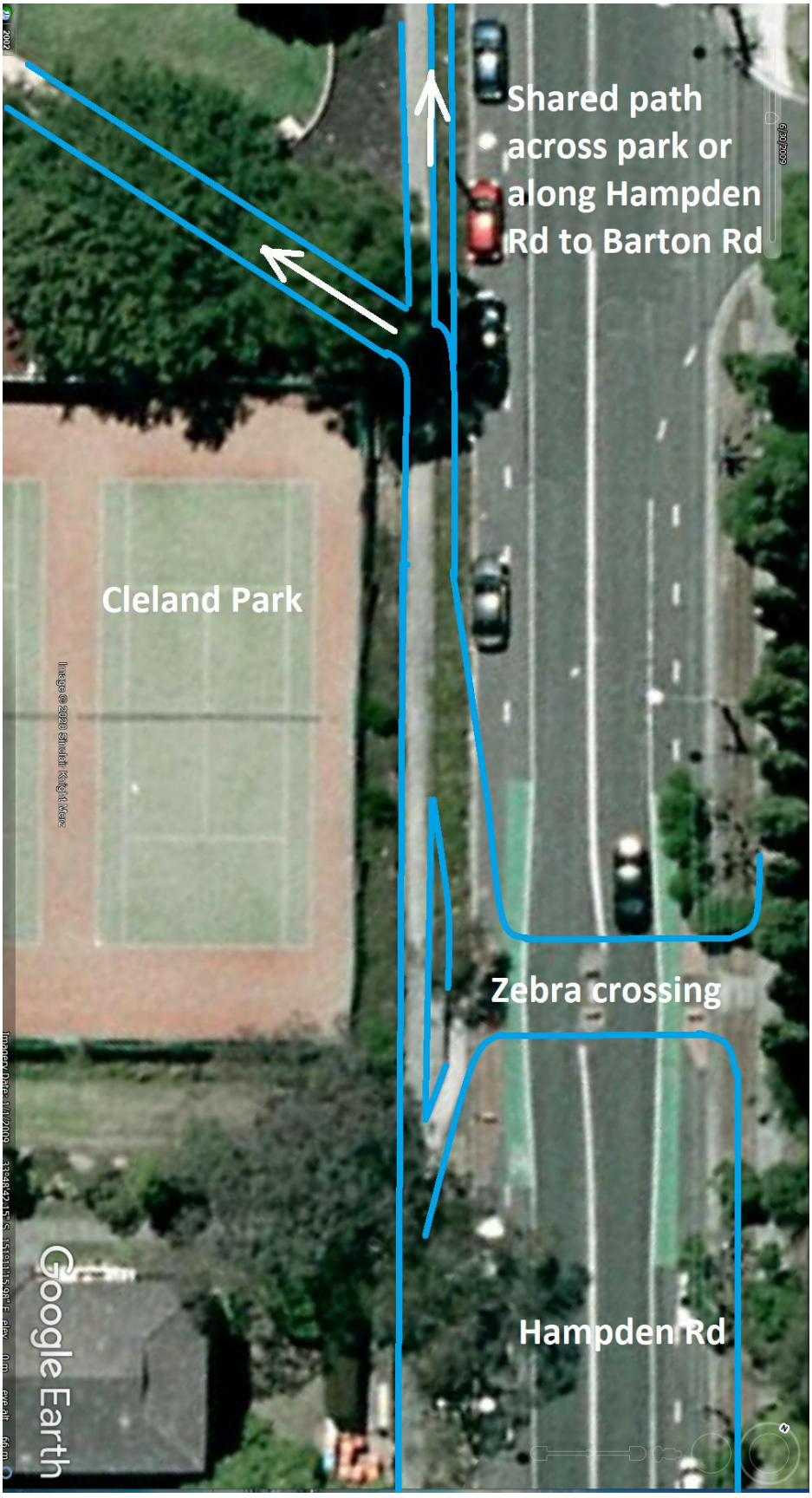


Figure 20 – Proposed 'zebra' crossing and access ramps to footpath along side Cleland Park

Fig 21-Parkes Rd

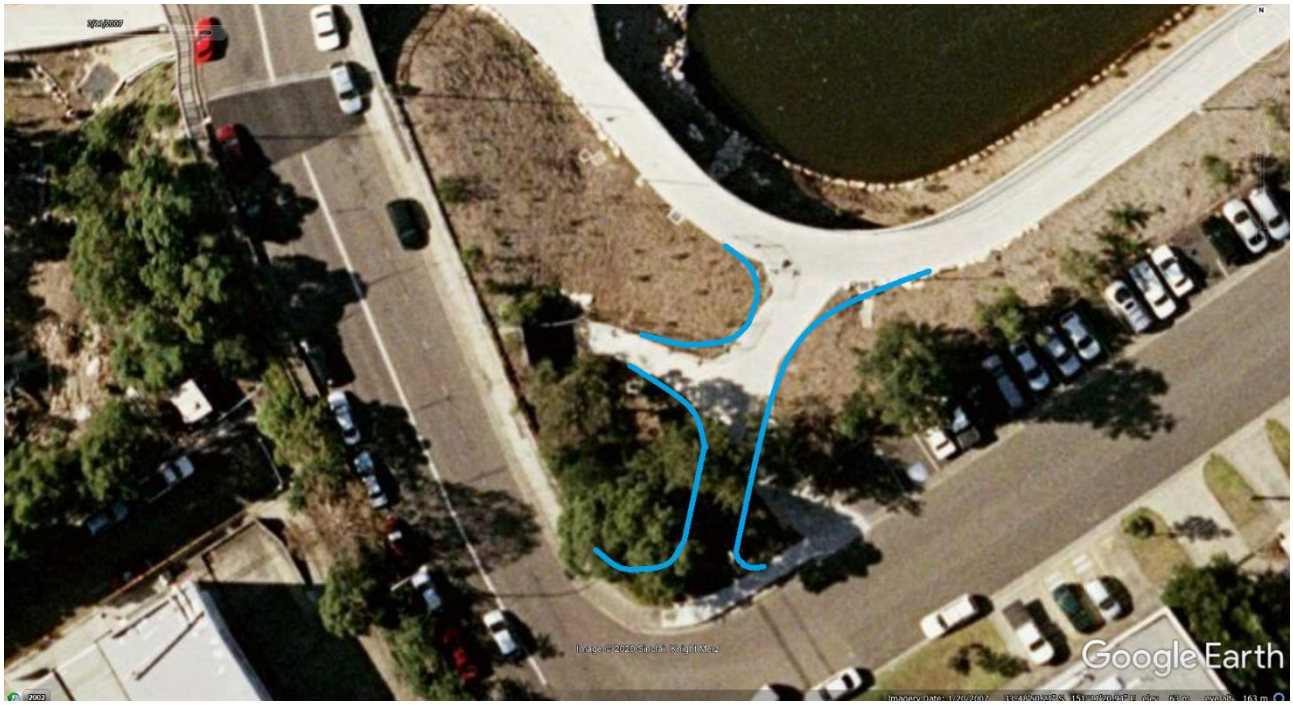


Figure 22 Herbert St – Punch St – cycle paths junction improvement

Figure 23 – On-road cycle-only path in Genoa Italy – without kerbs

Table 1 – Various bike paths linking St Leonards & Artarmon Stns, St Leonards & Chatswood Stns, St Leonards & Boundary St/Archer St

Northbound Route	Flat	Uphill - metres							Downhill - metres							Route total metres
	Grade 0%	Grade 0-2%	Grade 2-4%	Grade 4-6%	Grade 6-8%	Grade 8-10%	Grade 10-12%	Total	Grade 0-2%	Grade 2-4%	Grade 4-6%	Grade 6-8%	Grade 8-10	Grade 10-12%	Total	
St.Leonards Stn- Chatswood Stn via Herbert-Hampden-FCW	498	558	489	**370**	**68**	**126**	**105**	1716	93	886	41	**79**	**62**	**0**	1161	3375
St.Leonards Stn- Chatswood Stn via Pacific Hwy	159	1558	1052	0	0	0	0	2610	1339	188	71	0	0	0	1598	4367
St.Leonards Stn-FCW/Mowbray via Pacific Hwy	528	1310	872	0	0	0	0	2182	567	78	71	0	0	0	716	3426
St.Leonards Stn-Mowbray House via Hampden Rd-Herbert	404	462	346	**241**	**68**	**126**	**105**	1348	93	499	41	**79**	**37**	**0**	749	2501
St.Leoards Stn-Mowbray House via Hampden Lane-Herbert	379	319	465	**213**	**116**	**85**	**77**	1275	314	407	0	**170**	**0**	**0**	891	2545
St.Leonards Stn-Archer St via Pac Hwy	240	1997	1149	0	0	0	0	3146	1538	498	154	0	0	0	2190	5576
St.Leonards Stn-Artarmon Stn via Hampden-Herbert	346	462	245	**37**	**68**	**34**	**77**	923	0	499	41	**79**	**37**	**0**	656	1925
St.Leonards Stn-Artarmon Stn via Pacific Hwy and Eric Rd	417	1223	768	0	0	0	0	1991	747	78	226	**0**	**132**	**0**	1183	3591
St.Leonards Stn-Artarmon Stn via Pacific Hwy and Palmer St	198	1223	872	0	0	0	0	2095	747	211	226	**138**	**71**	**0**	1393	3686