

Submission on EIS for CBD & South East Light Rail

Department of Planning and Infrastructure
Transport for NSW

Dear Sir,

The brochure Sydney City Centre Access Strategy released on 11 September 2013 contained a map showing the numbers of passengers currently entering the city centre 8:00am to 9:00am, presumably the peak hour for arrivals. The number of arrivals by ferry at Circular Quay was 4000. Most of these would be from Manly and since Manly and the bus routes that feed into it have no proximity to a rail station, most would seek to board a train service. Transport for NSW would have data on the number of passengers transferring from ferry to rail and may have data on the number of passengers that transfer to the various bus services at Circular Quay. If it does not, the Oyster (aka Opal) Card will be providing origin/destination data on a daily basis and there is no pressing need for a tram service to the southeastern suburbs. Why not wait for sound data on which to make decisions about transport infrastructure.

Clearly however there is no conceivable need for a light rail service that can, we are told, deliver 9000 passengers an hour in each direction and there never will be. The SCCAS brochure states: "construction of a new ferry hub at Barrangaroo will also provide greater capacity for customers to access the western and mid-town parts of the city centre by ferry".

It is also clear that congestion in the bus lanes in George Street north of Martin Place for short periods of weekdays are not the result of hordes of passengers trying to reach Circular Quay. The buses are largely empty at this stage. The buses continue on to Circular Quay because it is a dead end and buses have the space to turn around and layover and maintain scheduled departures. The congestion in bus lanes at certain times of the day is a scheduling problem that is easy to resolve with the advent of the Oyster (aka Opal) Card.

Bus services, and the older tram services, to and from the Eastern Suburbs including the South-Eastern suburbs, from before the end of the nineteenth century have always run separate services to Circular Quay and to Central Station and Railway Square. This minimised the number of vehicles passing through the congestion point between the St James Building and the Old Supreme Court Building.

This rational strategy was not possible with the Broadway bus services since there was no way of dissuading passengers from catching a Circular Quay bus service, getting off at Railway Square and traipsing to the rail platforms through the Devonshire Tunnel. Broadway bus services then continued to Circular Quay largely emptied.

This has all changed with the advent of the Oyster (aka Opal) Card. I wrote to the Minister of Transport pointing this out on 16th April, the day after the Community Forum at Sydney High School, but she has chosen to ignore this advice. I will expand on what I said in the letter in greater detail.

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There are remarkably few places in the CBD and surrounding areas where buses can turn around without creating delays in the flow of traffic. There is of course Circular Quay, which has been the main terminus for public transport from the founding of the colony. There is also the forecourt of the Domain Car Park and there is Randle Street that was a major terminus when Sydney hosted the Olympic Games in 2000 and is used for event transportation.

The Oyster (aka Opal) Card makes it easy to change destinations regardless of the destination on the front of the bus when it winds through your local roads. Residents of Bondi and Bronte have been switching destinations for their buses at Bondi Junction for generations. With the Oyster Card you can switch destinations at any bus stop. Just get off the bus and catch the next bus with the correct destination.

Here's how it works for Parramatta Road and City Road bus services. Parramatta Road bus services have three destinations: Circular Quay, Domain Car Park and Randle Street. City Road bus services have only the first two destinations since transfers to heavy rail can be made at Newtown Station. There is a point where you have to have made the switch to your preferred destination or pay the price. This would probably be after the stop at the juncture of Broadway with City Road – the Broadway Shopping Centre stop.

When pass this point in a bus with Domain on the front you pay for one extra section regardless of where you get off. With Circular Quay on the front you pay for two extra sections regardless of where you get off. This achieves the maximum utilisation of the available road space.

I talked about this with a tech guy from TfNSW at the Surry Hills “information session” and he commented “the power of pricing” and encouraged me to make this submission. It is more than pricing though. The Domain route allows around the corner transfers from a Park Street stop to the Eastern Suburbs bus services in Elizabeth Street and the Randle Street route would have a stop in Eddy Avenue in front of Central Electric and allow easy transfers to Elizabeth Street bus services – no more traipsing through the Devonshire Street Tunnel.

People making a casual trip to the city may be prepared to pay the price to stay on their bus, but with regular commuters the cost would mount up. Statistically you are ahead. The Oyster (aka Opal) Card can also impose penalties.

Of course to achieve this you need to retain the exclusive right turn for buses from George Street into Park Street. The City of Sydney has bought the Woolworths building in front of the Town Hall and adjacent buildings in Park Street with ratepayer funds and the Lord Mayor has fantasies of haranguing the masses from the steps of the Town Hall. She needs to be told that George Street can never be pedestrianized. George Street has been the main city thoroughfare for traffic to the south and to the west from the foundation of the colony.

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The Deputy Director General Transport for NSW, Chris Lock, told the burghers of Randwick in April that on some mornings bus traffic in York Street banked back to the Harbour Bridge. His only solution was to redirect some buses across the Cahill expressway, but this has been aborted as far as anyone can gather. I will explain how the Oyster (aka Opal) Card can relieve congestion in bus services from the Harbour Bridge. Again there are three, at least, destinations: Wynyard, Druitt Street and Railway Square. You know the rest. The return trip from Railway Square can avoid the bottleneck in George Street between Liverpool Street and Bathurst Street and a right-hand turn in Druitt Street by accessing Kent Street from Liverpool Street.

The route from York Street into George Street to Railway Square provides bus services to Barrangaroo as well as services from the Harbour Bridge. Terminating Parramatta Road and City Road bus services to force public bus passengers onto trams to travel one section in order to get buses to Barrangaroo and across the Harbour Bridge destinations is not politically viable.

Pedestrianizing the section of George Street in front of the Town Hall and forcing all bus services from the Harbour Bridge and Barrangaroo to make right-hand turns from the two westbound lanes of Druitt Street into Clarence or Kent Street will always be a problem and it can never be alleviated. The car park under York Street was built as part of a deal with City Council to redevelop the Queen Victoria Building and there would be agreements that allow it to exit into Druitt Street. The turn from Druitt Street into Clarence Street is the only effective route from William Street into the CBD west of George Street. Plugging Druitt Street to general traffic west of Clarence Street just forces traffic to dogleg into Market Street. It makes the problems a whole lot worse.

The tram route along George Street, chosen on the whim of the Premier, obliterates most of the “real estate” (to use Chris Locks term) at Circular Quay that has been needed for centuries to physically turn buses around and allow them to layover and leave on schedule. Forced transfers from buses to trams at Rawson Place do not achieve any of these criteria, and they cannot conceivably work.

The indicative plan of the Rawson Place stop does not show bus stops in Pitt Street that are necessary for around the corner transfers – they are so far south they have been cropped. No bus passenger would catch a terminating Rawson Place service to transfer to rail at Central when the Circular Quay services have a stop in Eddy Avenue adjacent to the crossing to Central Electric.

The Oyster (aka Opal) Card works against this system. TfNSW thinks that it will decide which services will be terminated, but commuters can switch destinations at any stop. You cannot impose penalties for travelling one more stop, particularly when commuters need to transfer to Elizabeth Street bus services.

So you have the double whammy: Circular Quay buses travelling on empty through the single bus lane between the St James Building and the Old Supreme Court building, and George Street trams running on empty. And it will be forever thus. The

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trams, which do not need space to turn, not only obliterate most of the bus terminuses at Circular Quay they obliterate the Randle Street terminus.

The trams in George Street do not, of course, “remove” bus congestion in George Street; they transfer congestion to Elizabeth Street northbound, which is much less able to deal with it. Trams along George Street make this congestion in bus lanes intractable – it will never be possible to deal with it.

The light rail to Randwick and Kingsford and the route for a tram service through the CBD are two completely separate issues. They have been linked as a marketing exercise. I pointed this out in my letter to the Minister on 16th April 2013, and asked her to consider an alternative route through Surry Hills and the CBD that had not been considered by the various “Round Tables”.

This route does not rely on crippling public bus services to be economically viable – it provides capacity additional to the existing bus services - and allows the Oyster (aka Opal) Card to resolve scheduling problems at any time of the day. It does not make bus congestion in the CBD intractable and does not seriously impede the vital traffic arteries from the south and west to the Eastern Suburbs. It does not have the crushing social impacts on Surry Hills that the George Street route will have.

I will describe this route in greater detail than in my letter to the Minister to make you aware that there is a better tramway that has not been considered. You can factor this in when considering whether to recommend proceeding with this catastrophically flawed Project.

The outward-bound rail extends from the western end of the tram colonnade along Hay Street to cross Elizabeth Street. Tram tracks headed in the same direction need to be separate but not separated. After crossing Elizabeth Street the rail passes through the site of the “Golf House” building and the building behind it. The rail passes up an incline when passing through these properties and meets Foster Street substantially above the present level. Foster Street to the north of Blackburn Street and south of Campbell Street is closed to all traffic except for the tram rail and is regraded for the rail. The rail runs alongside the inbound rail in the centre of Campbell Street up to the intersection with Hunt Street.

At the intersection with Hunt Street the rails cross over to the northern lanes of Campbell Street. Left turns from Campbell Street into Riley Street and Crown Street are redundant, as all traffic needing to make these turns would have travelled along Goulburn Street.

The rails do not obey the travel on the left rule but this is of no matter as they are separate from other traffic when passing through Surry Hills. The outbound rails would travel along Bourke Street and the stops would be at the Campbell Street and Albion Street ends for the same reason as the stops are in Wansey Road. There would be no outbound stops in Albion Street or Flinders Street. The only other outbound stop would be at Elizabeth Street on the site of the Golf House.

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Inbound rails along Flinders Street to Campbell Street could have stops and there would be stops at Taylor Square and, say, west of Riley Street - the advantage of not obeying the travel on the left rule.

Outbound bus routes would travel along Goulburn Street to Crown Street, which would presumably be one-way to Crown Street. Inbound bus routes would be along Campbell Street as at present but would turn into Hunt Street to make the right-hand turn into Elizabeth Street.

The inbound rail along Campbell Street would cross Elizabeth Street and have a binary choice: turn left into Castlereagh Street and proceed to the Central colonnade, or turn right into Pitt Street and proceed to Circular Quay via the Pitt Street Mall. Note this route conforms to the principals that have applied to traffic planning since well before the end of the nineteenth century – there are separate services to Central Station and Circular Quay. Trams do not run on empty after depositing passengers at Central.

There is space for a second rail in the Colonnade so there is the possibility for an alternate destination to the stop at Central, a stop at Railway Square, which, trust me, would allow extension of the tracks. Chris Lock has conceded that the George Street tracks could not be extended along Broadway as there is no where for buses to transfer passengers, and TfNSW have not been able to develop a tram system to Barrangaroo.

The southbound rail along Castlereagh Street is the route used when the colonnade at Central was built although I believe that the directions have been reversed. Castlereagh Street would carry bus routes as well as the trams, but trams can work the other side of the road, as the saying goes.

It only remains to raise objections to the socially nastier and more absurd aspects of the EIS. The Project Manager, Jeff Goodling, told the Community Meeting that any “inadvertent” discrepancies in the EIS should be brought to their attention in a submission, but there are so many.

I raised, in my letter to the Minister on 16 April 2013, an objection to running the trams, with priority signalling, past children’s playing areas in Ward Park. This became more of a concern a few days later when Chris Lock told a Randwick Business Breakfast that coupled LRVs, which would not stop in Surry Hills, would run in conjunction with regular services. The indicative plan of the Surry Hills stop shown in the EIS would indicate that this concern has been completely ignored. Children, dogs and adults are shown frolicking in Ward Park and on the footpath just a step down, within touching distance of a LRV. The rails are just the edge of the footpath.

I asked the tech guy from TfNSW to confirm Chris Lock’s comment and to confirm that the LRVs and coupled LRVs would be passing through Surry Hills at the speed limit, that is 50 kph. Since the traffic lights through Surry Hills are to be co-ordinated to give priority to LRVs and coupled LRVs in particular these speed limits are voluntary and would be difficult to enforce.

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I object strongly, and ask for the speed limit to be reduced to the speed limit in pedestrianized segments. The only difference between the section in Surry Hills and a pedestrianized section in George Street is there is one lane of vehicular traffic on the side that has the least pedestrian movements. Indeed the width of pavement available to pedestrians in Devonshire Street is much more constrained than that which would be available in George Street, and Devonshire Street is proclaimed in the EIS as a major pedestrian artery. The Northcott apartment towers have footpaths leading onto Devonshire Street at a number of locations. It also houses large numbers of people with disabilities.

I asked the tech guy from TfNSW how far laterally from the side of a LRV would a person standing at the rear of the LRV have to be to see a LRV approaching in the other lane. Chris Lock said repeatedly at the Community Forum in April that he could not give any details on the stops, as surveyors would be working on alignments – “you may see them”. But with the release of the EIS this work would presumably have been done. The rails predictably enough bend into Ward Park and the indicative plan for the stop indicates how much of a problem this would be. But apparently no work has been done on this issue. The tech guy was unable to enlighten me. He conceded this would be a problem and said TfNSW would have to develop a “safety plan” for the stop. It is preposterous that TfNSW could exhibit an EIS, in the expectation it would be approved, when it lacks any concern for people’s safety. This EIS must not be approved until plans for pedestrian and commuter safety have been exhibited and subject to review by the public.

The tech guy conceded that a planting strip as shown in the indicative plan would not induce people to cross the tracks only at signal-controlled crossings. This is the same issue as the previous paragraph.

The 13 December 2012 brochure showed a notorious artist impression of the Shakespeare Hotel at Steel Street with two trams passing it in different directions. The line across the road is the artist’s standard way of depicting a pedestrian crossing – we know this from other impressions. This crossing is currently a zebra crossing. This intersection has been cropped from the figures shown in the EIS so we have no idea what the current thinking at TfNSW is. I mentioned how most of the revellers at this pub and the other pub to the west would live across the road and would be crossing late at night. The tech guy from TfNSW asked how this would differ from rubber tyre vehicles. I said that vehicles in Devonshire Street at this time of night are few and far between, but it is a peak period for trams in the cinema and nightclub strip in George Street. Trams would be running at peak frequency to take passengers two stops to Rawson Place, then the trams have to pass through Surry Hills, running on empty, to turn around at Randwick or Kingsford. There would be a tram passing through Surry Hills on average, we are told, every one and a half minutes.

I object to this strongly. If the Project is approved there must be a curfew on how late trams can operate. This would not be a problem at the Randwick and Kingsford ends, as every bus that passes through the terminuses must continue on their usual

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route as the tram tracks make it impossible them to turn around. But clearly there would be a problem in George Street.

I would point out that this problem does not arise with the Pitt/Castlereagh tram route. The trams circling between Circular Quay and Central turn round at the Colonnade as a matter of course. Services to Randwick and Kingsford are on a demand basis.

I asked the tech guy at the TfNSW information session whether the trams would have emergency braking as well as standard braking and what form of braking would be used. He assured me there would be separate emergency brakes, but did not have a clue as to what type of brakes would be used. He said this would be decided by the PPP (Private Public Partner) when carriages were ordered from overseas manufacturers. He was unable to say the length it would take for a LRV to come to a stop after applying emergency braking from the speed limit for the same reason. He insisted that the stopping distances needed for a LRV to stop would be comparable or better than for a rubber tyre vehicle. I pointed out this is of course not physically possible.

It is beyond belief that TfNSW could exhibit an EIS that did not contain any data on such an important subject for the general public and that these issues would be left for a PPP to decide after the EIS has been approved. This data must be disclosed before any approval is granted.

The only entry to Surry Hills south of Devonshire Street for traffic from the rest of Surry Hills, the Eastern Suburbs and from Eastern Australia from Kirribilli to Cape York will be from a right-hand turn from Crown Street into Lansdowne Street. This section of Crown Street is crucial for bus services, that would be seriously impacted. The ghettoization of this highly populated area in a futile attempt to make the tram system competitive with express bus services is not acceptable. I object strongly.

I would point out that the Campbell Street tram route does not ghettoize any part of Surry Hills. There is no reduction in access to any part of Surry Hills to what is currently available.

The only exit from Surry Hills south of Devonshire Street to the north is a right-hand turn from Marlborough Street into the single eastbound lane in Devonshire Street. The indicative plan of the Surry Hills stop shows a bus waiting to turn right. This bus could have only come from Lansdowne Street. I am assured by the tech guy that TfNSW has no intention for this stop to be a bus/tram transfer station and that this diagram is an inadvertent mistake. But it has been published in an EIS and could be cited as having been given approval. I object formally to buses being circled through the ghetto.

Figure 5-6 in Technical Paper 1 shows a large kerb blister on the corner occupied by the Madison Hotel. It is impossible to tell if it will be possible to make a right-hand turn from Chalmers Street. There is no explanation of what the mauve dotted lines represent. The text in the Parson Brinckerhoff report contradicts this figure, saying cryptically: "At the corner of Chalmers and Randle Street, the existing footpath would

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also be extended, as Randle Street would change to two-way traffic movements ...” Could the assessors resolve these contradictions. I am demanding that there be a right-hand turn into Devonshire Street from Chalmers Street if the EIS is approved.

The indicative plan of the Central Station stop by Parsons Brinckerhoff shows two platforms of Central Station but has been cropped to show only a glimpse of Elizabeth Street in the upper corner. There is only one northbound lane in Elizabeth Street and there are cars in the northbound lane in Chalmers Street at Foveaux Street. This information is contradicted by Booz & Company in Technical Report 1. The text says: “provision of two northbound lanes could be provided in Elizabeth Street with the loss of only one southbound lane through kerb and lane adjustments”. TfNSW has a history of making convenient assertions even when they can be shown to be physically impossible and this is clearly a desperate latter day assertion. Bearing in mind that one of the northbound lanes will need to accommodate buses and a stop when the coupled LRVs are operating, I am asking for these assertions to be properly assessed and for the effects on traffic flow in Elizabeth Street to be properly modelled.

Figure 5-6 in Technical Paper 1 shows a right-hand turn into Elizabeth Street from Randle Street. It would not be possible for rag trade traffic to turn into Cooper Street as ay present. TfNSW intends to force this traffic east along the single lane in Devonshire Street to Riley Street and to reopen the steep connection of Cooper Street with Riley Street. This is bizarre. There is a child’s care centre on this corner. Holt Street and Waterloo Street provide much more direct access to this area of Surry Hills but are to be closed simply to stop heavy vehicles from “encroaching on the light rail alignment” when turning. TfNSW insultingly describe the obliteration of Cooper Street Reserve as a measure to “mitigate the impacts to local access” for local residents. TfNSW are ghettoizing this area of Surry Hills making Cooper Street the only access point from the south. Their only concern is removing possible restrictions to the speed at which LRVs can travel when passing through Surry Hills. I object strongly. This section of Surry Hills has one of the highest densities of residents in the state and has important businesses such as News Limited and the rag trade. A tram system cannot be allowed to ride roughshod over it in a futile attempt to be competitive with express bus services.

The split carriageways of Clisdell Street do not reach the same level until the intersection with Devonshire Street. Figure 5-8 shows a wide pedestrian plaza in front of a blockage. There is no provision for traffic to turn around. Butt Street is one lane wide at Elizabeth Street, and the first-floor balcony of the adjacent apartment building has already been damaged by trucks. Staff at information sessions had not given any thought to this matter. Why should they care?

The on-ramp from South Dowling Street to the Eastern Distributor was placed so that traffic from the Cleveland Street intersection could get up to speed before merging with the through traffic on the expressway. The safety of people in the tunnels under Darlinghurst is more important than the journey times of tram commuters. The traffic lights at the at-grade crossing of the tram rails need to be co-ordinated with the Cleveland intersection, not to give priority to trams.

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The southeast suburbs of Sydney have the best public bus services in NSW. People such as myself had to fight to achieve this. I became involved more than 30 years ago when I casually went in to look at plans for the Eastern Distributor released by Brereton that would have exited traffic into the middle of Flinders Street. A junior officer with the RTA at the exhibition implored me to write to the Minister. I felt obliged to join community groups and made a submission to the Stephenson inquiry. When the EIS for the Eastern Distributor finally eventuated it was proposed to close down the exclusive bus roadway through Moore Park. I ended up making about eight objections that were all upheld. It is sad now to see these bus services degraded and made to look ridiculous.

There is a large difference in the stopping distances needed for a 45 metre LRV in emergency braking and a rubber tyre vehicle, regardless of what TfNSW engineers may be saying. This cannot be quantified, as TfNSW does not know what brakes the LRVs will be using. Having buses queue in a bus only lane and enter the tram lane at largely random intervals to cross Nine Ways, one of the busiest intersections in Sydney is completely irresponsible. Then there is the return journey into the congestion at the Strachan Street stop.

The Figures 5-15 and 5-16 used by TfNSW in its modelling of the intersection show the bus only entry lane from Bunnerong Road to the current priority bus lane in Anzac Parade and its bus stop, is retained. The preferred option for the interchange drawn up by Parsons Brinckerhoff eliminates the lane. TfNSW is asking for approval of multiple choices. I object to the removal of this lane.

The proposal to force non-express bus services make a right-hand turn from Bunnerong Road and a hairpin turn into Anzac Parade – no bendy buses for Bunnerong Road bus services – seriously degrades these services and is totally objectionable. Any passenger silly enough to transfer from a public bus to a privately operated tram would face a long trek to catch a bus on the return journey. The most southerly bus stop in Anzac Parade north of Gardeners Road is so far north of Strachan Street it has been cropped from the plans. Bunnerong Road bus passengers could transfer far more conveniently to a tram, if they wanted to, at the UNSW stop.

Every bus that passes through the Kingsford interchange must continue along Anzac Parade. Not one bus is “removed” from Anzac Parade. Buses occupy both of the lanes that pass the Strachan Street stop. This sets the capacity of Anzac Parade. Motorists caught in the delay will see empty buses (if the PPPs are correct) causing the delays. This will be a daily reminder of the incompetence of the Liberal Party for the *next* 30 years.

How far north the buses will be forced to go in order to turn around has not been disclosed. Table 4-1 in Technical Paper 1 lists bus routes that will terminate at Todman Avenue. There is no indication of where or how the buses will physically turn around. Since the Todman Avenue tram stop has been relocated to the north of Todman Avenue passengers will be dumped in the middle of nowhere. The tech guy insisted that the EIS and the relocation of bus services were regarded as separate issues and would not discuss them, but this data has been published in an EIS and we can formally call for

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these plans to be professionally assessed and exhibited to the public before approval is given to this EIS.

Figure 4-2 in Technical Paper 1 shows bus services making a right-hand turn from Flinders Street into Oxford Street at Taylor Square. Such turns have been prohibited in the entire history of Sydney – they are so disruptive to traffic flow. An alternative route would take buses along South Dowling Street, Paddington for the first time. Both routes would be very disruptive to bus services and traffic flow in Oxford Street. I object to bus services being routed to Edgecliff station simply because the trams have obliterated most of the places in the CBD where it is physically possible for buses to turn around.

The Edgecliff bus/rail transfer station was designed for buses that access it from the east. I object to it being used as a terminus for bus services from the southeast, and presumably from the Anzac Bridge. Buses making a right-hand turn from New South Head Road delay west bound traffic before it has a chance to enter the Cross City Tunnel. The Avoca Road bus services to Bondi Junction can be extended south. Anyone actually wanting to go to Edgecliff would get there a lot quicker on a bus to Bondi Junction and then the Eastern Suburbs railway.

I object to the ghettoization of Kingsford south of Gardeners Road by making a hook turn at Baker Street the only access from the north apart from tortuous rat runs through Kensington.

The 13 December 2012 brochure showed the World Square stop adjacent to World Square. In the EIS it has been moved north of Liverpool Street. It is so close to Town Hall Station it takes less than two minutes to walk between the stops. So, you have the choice, to walk, or wait three minutes, pay a fare and stand. If you walk you can avoid crossing Bathurst Street. The three stops, World Square, Town Hall and Queen Victoria are so close together they are effectively the same stop. None gives effective access to the bus services that terminate by making a right-hand turn in Druiitt Street.

Sydneysiders have been using the George Street bus services for generations to get around town. They will be forced to transfer to a tram service that cherry-picks the most profitable locations. The only stops apart from the stops at the rail stations will be China Town and at Bridge Street, which is where buses set down their passengers. I am objecting to the location of the George Street stops.

The 13 December 2012 brochure had a map of the proposed bus network with a green arrow pointing against the flow in Foveaux Street, which was odd. Bus services along the priority bus lanes in Foveaux and Albion Street are not congested at any time of the day and are well patronised. The services can be readily expanded and provide fast access from the southeast suburbs to Central Station. Too fast! In the EIS they are eliminated, simply because such services make the tramway look silly - even before trams start killing people and are slowed the pedestrian pace. This is so objectionable.

Sydney already has a world-class pedestrian zone. Trams can be observed now passing Paddy's Market on the short stretch from George Street to Darling Drive.

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Whatever the speed limit is, the trams do not travel at much more than pedestrian pace, dingding their bells the whole time. TfNSW should have measured the speeds actually achievable in pedestrian zones and based their speed limits on this.

Devonshire Street goes past high-rise apartment buildings that contain large numbers of families with young children, and large numbers of infirm residents. The constant ringing of bells to move pedestrians out of the way of trams will be a problem at most times of the day. Speed limits must be set to minimise the use of bells.

In Chapter 3.5.2 of the EIS it is stated baldly: “the CSELR proposal would attract customers from existing modes of travel, and generate a reduction in private vehicle use”. No figures are given but the CSELR Business Case Summary Released in November states “the light rail is also forecast to attract a significant number of car users (17 per cent)”. That is 17% of around 17,900 customers in 2021 growing to around 22,500 by 2036. This is implied to be daily figures of 3043 car users removed from the roads in 2021 and 3823 car users removed in 2036. According to the EIS this leads to reduced accident costs, reduced air and noise pollution, reduced greenhouse gas emissions, etc adding up to a total value of approximately \$4 billion. Fortunately there is a ridiculously simple way of testing these assertions.

TfNSW has number plate recognition software that is installed on most road patrol vehicles, so registration stickers are no longer required. If they lack the competence to do this work their consultants Sky High would be able to do it. By mounting a camera in George Street, say at Martin Place, and a camera in Anzac Parade they could count the number of cars that enter all day car parks in northern George Street from the “catchment area”. This is the maximum number of commuters who could possibly decide to leave their Maybach convertible in the garage and catch a bus then a tram. There is zero day parking in the vicinity of Central Station. Since day parking in the vicinity of northern George Street costs at least \$19,000 a year I suspect this number would be a lot less than 3,000. I am asking the assessors to do this work.

There would be some reduction in private cars on the road in the vicinity of the Surry Hills stop as all parking in Devonshire Street is obliterated.

Regards