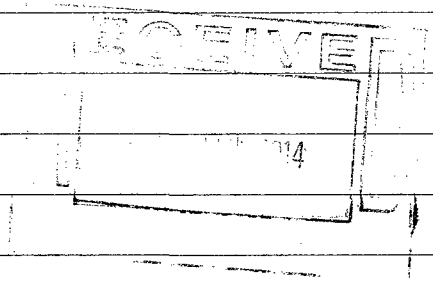


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Director General
Transport NSW
SYDNEY



ADDITIONAL SUBMISSION EIS ON CSELR

Dear Sir

I thank you for the additional time for submissions on the CSELR, and apologize for the handwriting, as I am away from home and have no access to a computer. I offer some additional comments further to my submission dated 16 December.

On environmental safety grounds I would urge that the track in George Street be constructed as a "trambaan". For a trambaan the rails are laid with the tops up to 150 mm above the adjoining road level. I believe that this was done for the recent light rail extension in King William Street, Adelaide. It means that in the transit mall section between Bathurst and Hunter Streets pedestrians will have to step up onto the trambaan when crossing the road. In the remainder of George Street it will assist in keeping the tracks clear of other vehicles, while a bevelled edge means easy access for emergency vehicles. As an added benefit the depth of excavation is reduced by the height of the trambaan, which may reduce

the number of utilities to be moved, and the cost of the project.

Within the transit mall area it should be considered whether there is any need for traffic lights. This should be considered in the light of the light rail vehicles' headway when the Parramatta Road bus services are converted to light rail. This will reduce the average headway to about one minute. Where stops are situated at intersections in this area, motorists crossing George Street will have a good view of any light rail vehicle just leaving or just approaching the stops. A simple "GIVE WAY TO LRVs" sign will be sufficient. It should be remembered that the "STOP" line at each intersection would be at the edge of the tram lane. Between LRVs (in either direction) there should be ample time for east-west traffic, probably more than currently exists.

Should it be decided that traffic lights are required in this area, all stops at intersections should, in general, be "FAR SIDE" stops. At these stops, a detector sited some 200 metres before the stop can adjust the traffic lights so that if the LRV were to get a 'red' the 'red' can be shortened and the 'green' brought forward, or the 'green' extended so that on arrival the LRV is shown a 'green' and is not delayed in reaching the stop on the far side of the intersection. This should be standard practice at all intersections with adjacent stops. This has environmental benefits in reducing the energy consumed by the LRVs in braking to a stop, and reduces delays. As passenger loadings can be variable it means unjustified delays

to other vehicles if an LRV is allowed a set time for the green, so they are held up waiting for the LRV to complete interchange of passengers, or the LRV is delayed if few, or no, passengers wish to use the stop.

Sydney City Council has requested "wine-free" operation in the pedestrianized area. In my previous submission I have shown why this is environmentally undesirable, unless the very expensive ALSTOM APS, or the old or (costly) or new (untried) Modern Conduit is used. It should be remembered that George Street had over-head wiring to power the earlier trams and to restore this would be returning to a 'heritage' arrangement. Indeed, in earlier days George Street had ornamental centre line poles, which were replaced by side poles to permit the wider "O" class trams to operate ($9\text{ ft } 0\text{ in} = 2743\text{ mm}$). Should 'wine-free' operation be eventually agreed, this should be on the basis that Sydney City Council is charged both the initial set-up costs, and the additional running and maintenance costs.

I mentioned above that the earlier "O" class trams were 2743 mm wide (over footboards), and this was the overall width of the later "P", "R", and "R1" trams. While the width of the new LRVs will be restricted at platform level to 2650 mm (as they will have to pass stops on the Inner West Light Rail to reach the workshops at Rozelle), it would be very desirable for the width at seat level to be increased to 2743 mm. This apparently small.

increase of 97 mm would, at a density of four persons per square metre, in a 10 metre long body section, provide additional standing space for four persons. More importantly, perhaps, it would make it easier for passengers to move inside the LRVs in crowded conditions. Making the LRVs more attractive to passengers is an environmental benefit.

The location of 'wheelchair' spaces within the LRVs should be carefully considered. Most arrangements appear to distribute them along LRVs, often one space per vehicle section. This, however, means that wheelchair passengers must be reasonably distributed along the platforms, but it is plausible that at several stops in succession wheelchair passengers will attempt to board the same section, resulting in congestion, and possibly delays if a passenger has to back out and go to another section. I suggest that only the first and last sections (which should be 1 and 6) have wheelchair spaces, while sections 2 to 5 are for seated and standing passengers only. This means that wheelchairs do not have to be manoeuvred along the length of a platform. It follows that each end of a platform must have a suitable ramp from ground level to platform height. Again, improving conditions for passengers is an environmental benefit.

Apart from the narrow, northern end of Wansley Road, that road is four lanes wide - two through traffic lanes, and two parking lanes. The proposal is

that the tracks will be laid on the western edge, partly built and over the race course grounds - an expensive proposition. I suggest that after the northern section, the up and down tracks cross, to give right hand running in the rest of Waverley Road. This would allow the north-bound LRVs to be in the normal north-bound traffic lane, while the southbound LRVs occupy what is currently the western parking lane. Plausibly the eastern parking, and south bound traffic lanes could be reduced to the legal minimum, and a fifth-~~th~~ lane inserted in the centre for cars waiting to turn into driveways. One would question, though, how often an LRV heading north would be delayed by a car in the same lane waiting to turn. At the southern end the tracks should cross on the turn into High Street. Here, southbound LRVs would be well placed to sight an on-coming LRV at the VNSW High Street kerb stop.

Sydney has extremes of weather, including drenching rain, golf-ball sized hailstones, and burning sunshine. It is therefore essential that the canopies at every light rail stop cover the full length of the platforms. They should cover not only the platform, but also a part of the roof of the LRVs so that passengers are fully protected from weather when boarding or alighting. It is desirable that they be thin and let some light through so it is suggested the canopies comprise sheets of safety-glass (containing internal wire mesh) and the upper surface be covered with a reflective film (50% to 95% to be determined by final). Side protection screens are also desirable, should be

of safety glass for visibility (safety for persons on the platform) but should, especially in the pedestrian mall, where persons can access the platforms from any directions, not cover more than 50% of the length of the platforms.

In concluding, the introduction of the light rail to George Street and South East Sydney will be of such environmental benefit that it should occur as soon as possible. Where there are ~~not~~ no areas in dispute engineering drawings should be prepared now so that as soon as the EIS is approved the first request for tenders can be published for the civil works and for purchase of the new light rail vehicles. While construction of these locally would be desirable, most firms capable of supplying them within two years are overseas, and these should not be neglected. If "wire-free" is adopted in the pedestrian area, APS should be considered against Modern Conduit - the various tramway museums (of which I am not a member) might be called upon to provide experimental lengths of track, and one or more vehicles to which the necessary equipment could be fitted.

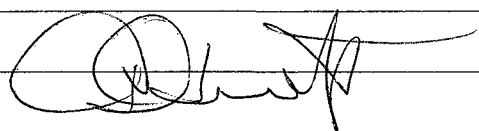
I enclose two drawings, based on maps from "The Tramways of Sydney" by David Keenan, showing my suggestions for the new light rail routes, including the suggested line via Diners Avenue, Greens

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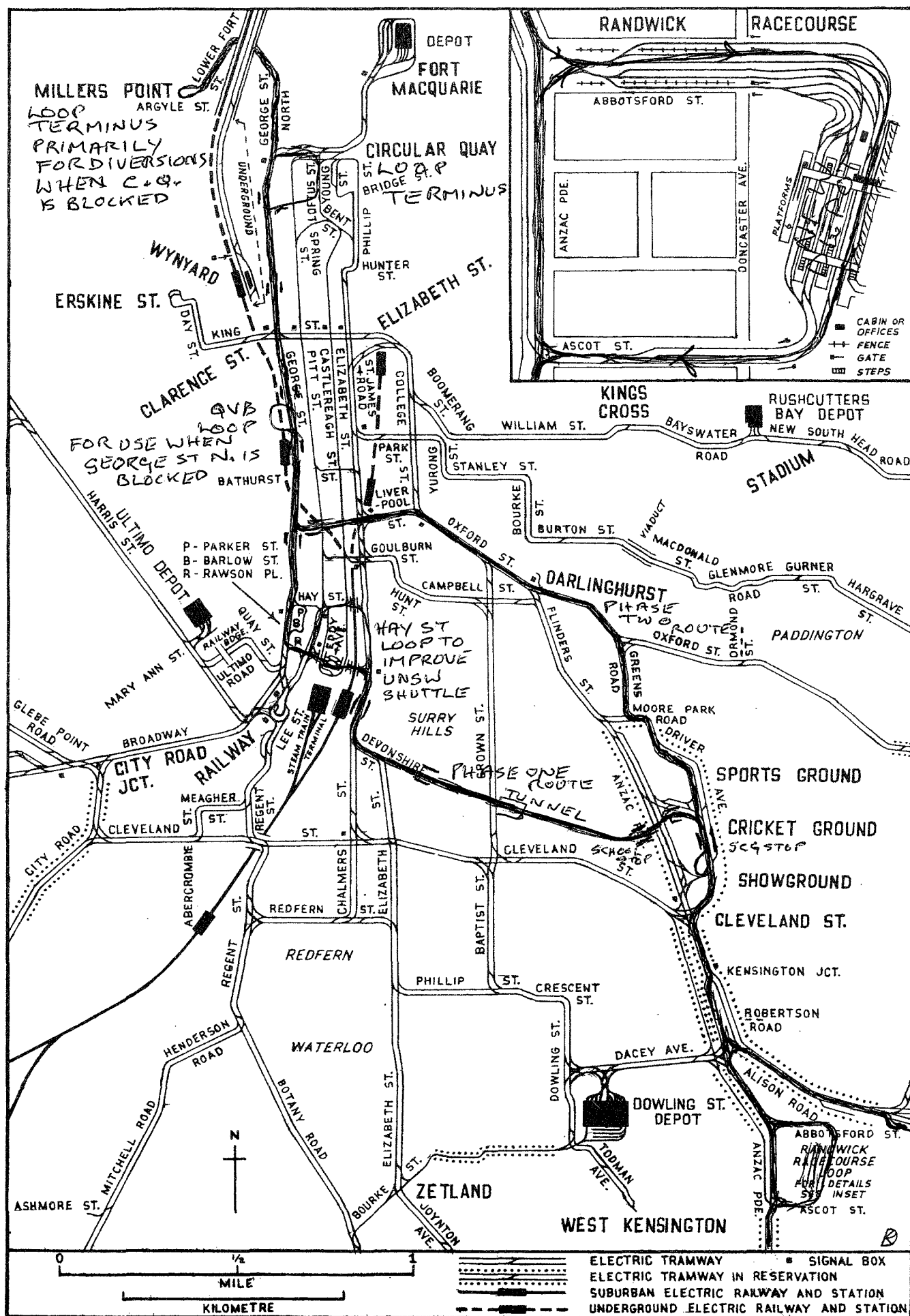
Road, Oxford Street and Liverpool Street as the additional route to access the northern CBD more quickly. They also show the proposed loop termini at Circular Quay via Loftus St and ~~Water~~ Bridge St, at Millers Point, primarily as a diversion route for times when Circular Quay is blocked by celebrations, etc, but also as a normal service (perhaps one in eight LRVs use this route), the Queen Victoria Building loop, for when George Street North is closed for parades, etc, a Hay Street loop, which would enable fast turnaround of LRVs for either a UNSW shuttle or Showground events shuttles, the loop at the Cricket Ground Stop, the Racecourse loop and stop, and the High Cross Park and Flemington Road loops at the outer termini.

If possible I will also forward a typed version of this letter with additional sketches to illustrate points, but this will be after I get home.

Yours faithfully,



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TRAMWAYS

