

Renaissance of light rail in Sydney – Key environmental challenges, opportunities and solutions

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Paper:

Background

At its peak, in 1923 Sydney had a 291km tram network that was the largest in Australia and the second largest in the Commonwealth

(http://en.wikipedia.org/wiki/Trams_in_Sydney). By 1961 all tram lines in Sydney had been demolished and were largely replaced by buses.

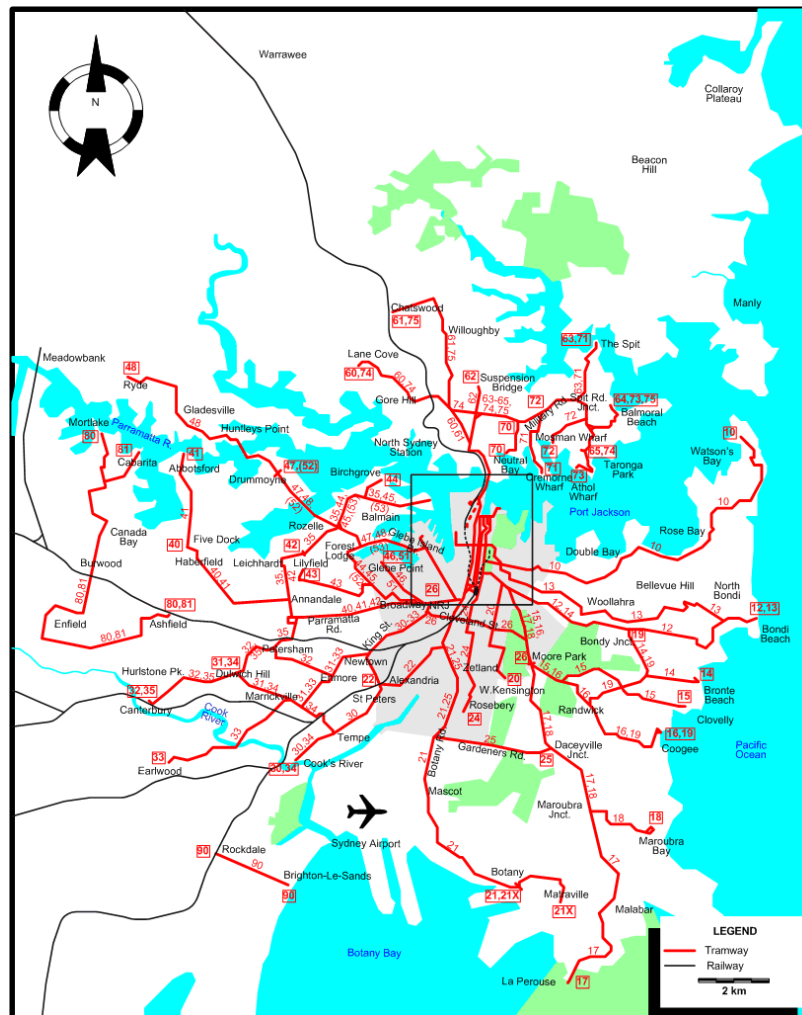


Figure 1 – Extent of Tramways in Sydney in 1947
(<http://www.tundria.com/trams/AUS/Sydney-1947.shtml>)

In 1997 light rail services began operations in Sydney again with a service between Central and Wentworth Park, extended to Lilyfield in 2000. Most of this line operates on a disused freight rail line.

The NSW Government released the 'Sydney's Light Rail Future' document in December 2012 (NSW Government, 2012) which details a renaissance of light rail projects in Sydney. The first new project detailed in this document was opened in March 2014 consisting of the 5.6km Inner West extension to the existing Lilyfield to Central Light Rail line (total length now 12.8km).

Planning approval has now been granted to construct the \$1.6 billion 12km long CBD and South East Light Rail (CSELR). In June 2014, the NSW Government committed \$400 million to the commencement of a Western Sydney Light Rail, centred on Parramatta. Light rail projects are also proposed in Newcastle and in Canberra.



Figure 2 - Current and Proposed Sydney Light Rail Network



Figure 3 – Potential Parramatta-based Light Rail Alignment Options
<http://www.dailytelegraph.com.au/newslocal/parramatta/extensive-light-rail-system-will-transform-transport-in-western-sydney/story-fngr8huy-1226958390644>

The light rail projects are promoted as providing improved reliability of service and capacity to the denser urban areas that they serve. They are also designed to reduce predicted increases in congestion caused by growth in numbers of buses entering the Sydney CBD. Other benefits include opportunities for urban renewal and improved urban amenity.

Inner West Extension

The Inner West extension was constructed on a disused freight rail line linking inner suburbs of Sydney. An environmental impact assessment was completed in 2010 and the project was approved in February 2011.

The key environmental challenges for the project were the impacts on regrowth corridor vegetation that provided habitat for threatened species such as the Long-nosed Bandicoot, existing contamination in the corridor, and impacts on non-Indigenous heritage. Other challenges included poor pedestrian connections to the stops and the need for streetscape improvements, and concerns about noise and light spill/privacy.

The Inner West extension involved the clearing of 1.1 hectares of corridor vegetation, some of which included habitat for the Long-nosed Bandicoot. To help to offset this impact the project funded a series of 'bush care' sites adjacent to the light rail corridor on Government-owned land. This work has been undertaken in conjunction with the three local councils and local bush care groups.

Extensive streetscape works have been included to improve safety and accessibility to and around the stop, and have included considerable landscaping and urban domain improvements.

Existing vegetation, landscaping and screening have been used to protect people's privacy from the light rail corridor which primarily sits on an embankment. Community funding was also provided to an adjacent local primary school (Dulwich Hill) to create a school garden and learning path.



Figure 4 - Dulwich Hill Public School Plant a Tree Day 2013 – Funded by Inner West Extension

A range of heritage items dating from the 19th and 20th centuries were identified either in or adjacent to the corridor, and most were not directly impacted by the project. Additionally a number of public art and heritage interpretation initiatives were created, many of which reflect the history of the freight line and local area. Local artists were engaged to assist with the sculptures and murals that have been installed along the alignment, close to several stops.

CBD and South East Light Rail (CSELR)

An environmental impact assessment was completed for the CSELR in 2013 and the project approved in June 2014. The environmental impact assessment divided the project into five precincts which allowed the assessment to be focussed on the local impacts. This approach was well received by the community and facilitated detailed discussions around the potential impacts.

Following approval, the CSELR commenced initial construction in September 2014 with initial service relocations and other works. The project is on track to be completed by 2019.

A number of environmental challenges have been identified across the construction and operational stages including competition for finite road space, service relocation and impact on existing traffic. Reduced access to public land and parks, significant tree removal and noise impacts are also key challenges.

The CSELR is seen as a catalyst for a comprehensive response to the transport and access arrangements in the Sydney CBD. The changes over the next 20 years in the CBD are to be completed in accordance with the Sydney City Centre Access Strategy (SCCAS) (Transport for NSW, December 2013).

The SCCAS includes the redesigning of bus routes through the CBD, new bus rail interchanges, new cycleways and, as a direct result of the CSELR project, a 1km section of George Street will be pedestrianised and the remaining section of George Street will have limited traffic flow. These measures are designed to improve accessibility and reduce congestion in the CBD and have been supported by CBD business groups.

The CSELR is being delivered as a partnership with key stakeholders including the two councils (City of Sydney and Randwick City) and other key stakeholders including the Centennial and Moore Park Trust, Australian Turf Club and the University of New South Wales. The development of the CSELR has also included a number of proactive stakeholder and community forums and inputs which have helped influence key design elements. This process will be expanded during the construction stage with the establishment of precinct-based community and business reference groups.

The CSELR is being built predominantly on existing roads and impacts on traffic both during construction and operation are inevitable. The construction works on arterial roads such as Alison Road and Anzac Parade means that there will be a considerable amount of work undertaken during quieter hours for traffic movements, typically overnight, with potentially high noise impacts to surrounding residential areas.

The project team is working with local councils and the State roads authority to minimise traffic disruption during construction and operation, and on replacement parking and local area traffic management around the Light Rail alignment. The TfNSW Construction Noise Strategy (Transport for NSW, 2011) will be applied to the works which includes options for temporarily offering alternative accommodation to severely affected residences during night time work. In the most noise sensitive areas in Surry Hills and around the light rail stabling facility at Kensington, the project is required to install operational noise mitigation before construction. This is designed to ensure noise mitigation benefits residents as early as practicable.

Where the project is to be constructed on the road verge or in the median of the road, a number of street trees will be removed. To offset this impact a vegetation package is being developed with some key stakeholders. For significant trees being removed there is an offset ratio of 8:1.

The project also includes a detailed sustainability strategy with a number of sustainability initiatives built into the design of the project. Commitments include achieving an Infrastructure Sustainability Council of Australia (ISCA) rating of at least 65 points and maximising the offsetting of carbon emissions during construction and operation.

Lessons Learned for Future Light Rail Projects

The key lessons learned from the experiences on the Inner West extension and CSELR projects are to:

- *Ensure early partnerships are formed with key stakeholders*
- *Engage early with the community and seek opportunities for creating positive legacies*
- *Take a precinct approach to assessment for long linear projects*
- *Embed urban domain and public art opportunities into the project early to encourage greater accessibility and safety*

References

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