Australian Institute of Landscape Architects
WA Chapter
Position Statement

Perth Light Rail Network
Metro Area Express (MAX)
May 2015
Introduction
AILA is the professional body for Landscape Architects in Australia and leads the profession in its mission to sustain people and place. Our professional code of conduct requires members to recognise and protect the cultural, ecological and historical values when working on any design or planning proposal for built and natural landscapes. Our vision statement is for ‘resilient, engaging and healthy urban, regional and rural environments, designed in balance with nature and cultural systems.’ This paper outlines the Institute’s evaluation and review of the proposed Metro Area Express (MAX) Light Rail system in accordance with the aforementioned values. It also uses the Institute’s policies, namely ‘Transport Infrastructure’, ‘Integrated Design’, ‘Green Infrastructure’, ‘Sustainable Settlements’ and ‘Drivers for Change: Climate Change and the AILA’ to support this response.

The proposed Perth Metro Area Express (MAX) Light Rail system is a transformational project which seeks to install 22km of light rail network into the inner northern suburbs from Polytechnic West in Balga to the CBD via Edith Curtin University in Mount Lawley, before splitting into two west-east lines to service QEI and Hollywood Hospital (in close proximity to UWA) and the Victoria Park Transfer Station. There is potential to extend the network to UWA and Curtin University, connecting major educational and health locations in Perth’s Northern Central corridor and inner East and West suburbs. The estimated cost of $2.5 billion to fund the construction of the light rail network has been cited as the main issue for deferring the construction of Perth’s light rail system in preference for a rapid bus transport network, which is anticipated to cost around $1.2 billion.

The focus of this paper is to discuss the benefits in pursuing the proposed MAX light rail system to;

1. City renewal and development;
2. Social and community benefits;
3. Environmental benefits; and
4. Economic efficiencies.

Project Overview
Perth is one of the fastest growing cities in Australia, and our population is expected to reach 3.5 million people by 2050. Traffic congestion in Perth will become more severe with population increase unless strong direction by the Government is taken to combat congestion and make public transport more reliable, attractive and accessible to passengers. More immediately, with our population expected to hit 2.62 million by 2031, Perth will need an extra 391,000 dwellings for housing, plus jobs, education centres, health services, recreational spaces and a world class transport network that is up to the task of transporting residents around the city safely and reliably.

MAX was introduced to provide a new public transport service in Perth with a reliable, frequent, high capacity light rail network servicing the Northern central corridor and inner East and West suburbs. Intended to act as a catalyst for urban renewal in Perth’s inner suburbs, MAX was proposed to support the necessary changes in land use development with its major objective being one of activating urban centers and corridors along the proposed light rail route through increasing residential density. Furthermore, the proposed MAX Light Rail system is an effective measure to combat rapidly worsening traffic congestion and its knock-on effects, such as air pollution, noise pollution and lost productivity which is projected to cost businesses $2.1 billion annually by 2020.

2 In this instance ‘the institute’ is used to represent the Australian Institute of Landscape Architects (AILA) Western Australia (WA) Chapter.
5 Directions 2031 and Beyond, metropolitan planning beyond the horizon (August 2010)
6 Directions 2031 and Beyond, metropolitan planning beyond the horizon (August 2010)
Map: Proposed MAX Light Rail Network

The AILA believes that the MAX Light Rail project has the potential to provide multiple major benefits for Perth. Further, these benefits are essential for a city facing rapid population projections and the subsequent impacts of housing affordability, social equity.

**Benefit 1: City renewal and development**

**Urban infill**

Population growth for Perth is expected to rise to 3.5 million people by 2050. The housing of 47% of this additional growth is projected to occur as in-fill projects. If we were to take a ‘business as usual’ approach to planning for the future of Perth these figures will not be met. Without infill, the current issues of sprawling suburbs and congested roads connecting the city fringes to places of work, education and leisure will increase exponentially with the forecast population figures. By committing to urban renewal projects to meet our targets alongside permanent transport routes such as light rail, the opportunity to provide more diversity in housing affordability without sacrificing proximity to the CBD becomes apparent.

Light rail is an urban catalyst for city development and renewal, as the permanency afforded by dedicated infrastructure provides a framework which attracts investment in residential development and commercial, retail and civic facilities. This has been proven in the success of recent light rail projects implemented in the inner northern core of Adelaide and the Gold Coast in Queensland. Residential infill along a reliable transit route provides a number of affordable housing options close to the CBD, and reduces the urban sprawl at the city fringes, preserving our bushland and prime agricultural areas. The northern corridor section of the proposed MAX light rail system has the potential to revitalise and integrate this area of the city with mixed density housing and the associated increase in local amenities to service the local resident population.

**Mixed density potential**

The Fitzgerald and Alexander Street corridor to Mirrabooka, one of the proposed light rail transit routes, has been identified as an area with 133 hectares of land available for infill development, which translates to 13,350 - 16,020 homes at medium to high density. The potential for a greater assortment of different housing types and affordability so close to the CBD is key in attracting a mixed demographic in infill areas, which in turn builds dynamic, inclusive communities. Increased residential density allows the organic process of revitalising a precinct through increased pedestrian traffic and local residents to support more schools, health services, shops, cafes and restaurants.

**People led design**

Program Manager, City Design and Transport for Adelaide City Council and AILA National Vice President, Daniel Bennett, proposes a people first approach to public transport. Planning for people (community, commerce, activity) instead of the usual transport projects which are delivered with 'project objectives' (based on vehicles, travel time savings, improvements to freight movement efficiency) has a tangible benefit to communities that far outweigh the costs of a project. In his eyes bus stops, tram stops, train stations and transport interchanges need to be recognised as places. They are places where people live, congregate, arrive, depart and change modes (walking/cycling/driving onto public transport), and they are places which can grow.

A light rail network generally attracts around 30% more people to access its services than a rapid bus system. Shifting to pedestrian centered design principles in our urban and suburban areas assists residents and visitors in getting to and from train stops and other feed-in transport networks such as buses and cycle paths in a safe and convenient way. Considerate design with strong community involvement to reimagine our building facades, public transport stops and outside spaces creates attractive urban places adding to the local appeal. The benefits...
of shady street trees and providing safe, inviting places to sit and linger should not be underestimated in creating a desirable environment in which to live. Designing a beautiful city with improved accessibility for pedestrians is not hard, it just takes a little vision on behalf of communities and decision-makers.

**Inter-network connection**

Light rail provides another network layer which benefits the city. Connecting with cycle routes, feed-in bus networks and other systems, the entire network could connect places of interest, such as tourist sites within Perth, recreation facilities or healthcare services. Improved accessibility connecting people to place across a range of networks of which light rail is just one has the opportunity to raise Perth to the level of a highly livable international city, such as Melbourne, Vancouver or Vienna.13

**Benefit 2: Social and community**

**Community Benefits**

The proposed light rail carriages are designed to be inclusive of all passengers, with floors flush with the ground level and plenty of spaces for wheelchairs and prams. Light rail will become an essential component of the transport system that provides access for all, particularly with the projected population increases for an ageing population and families looking for affordable housing alternatives in the middle ring suburbs. Further, light rail, in comparison to buses, provides an all-round better passenger experience with a smoother ride, improved accessibility to stations, reduced interval between services and less traffic congestion issues. Finally, once the full extent of the proposed MAX Light Rail is built it will connect key education institutes beginning with Polytechnic West TAFE and Edith Cowan University (ECU) in the North, and Curtin University of Technology and the University of Western Australia East and West of the Central Business District.

**Health Benefits**

Light rail reduces congestion on the roads, and provides opportunities for healthy living through increased mobility. With an estimated 70% of Australian adults falling in the overweight or obese category by 202514, a sustainable transit system that encourages walking to the station and leaving cars at the home should be encouraged. Health costs resulting from obesity already runs into the tens of billions of dollars15 and is something that could be curbed by considerate design of public space and transport infrastructure.

**Social Division in North-East Suburban Perth**

The proposed MAX Light Rail network will provide more benefits to the community than merely a public transport route to the Perth CBD, particularly when looking at the social division of various sectors of our community. The North/East link of the light rail section in particular will help reduce the social division evident in the Nollamara and Balga/Mirrabooka suburban statistical areas who currently experience unemployment rates of 6.4% and 8.5% respectively.16

In their paper titled Research into the current and emerging drivers for social cohesion, social division and conflict in multicultural Australia17, Dr Justine Dandy and Associate Professor Rogelia Pe-Pua have discovered evidence of the impacts that a decline in access to community resources has on social cohesion in a community. These include decreased life chances in terms of employment, income and health, social isolation and discrimination. Concerns about the equitable distribution of resources, especially public housing, contribute to inter-ethnic tensions in some of our communities.

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13 Although Perth was rated number nine in The Economist Intelligence Unit’s (EUI) 2014 liveability survey, the top eight most liveable cities all had light rail networks as part of their integrated transport structure.

14 Leung, J; Pe-Pua, R (2013), Social Cohesion, Social Division and Conflict in Mirrabooka and Balga (Western Australia), Sub-report of Research into the current and emerging drivers for social cohesion, social division and conflict in multicultural Australia, submitted to the Australian Department of Immigration and Citizenship, Canberra, Australia. Perth/Sydney, Australia: Edith Cowan University and the University of New South Wales.
In their 2009 discussion paper on the Balga/Nollamara/Westminster Local Area, the City of Stirling have identified a gap in the median weekly wage within the local area ($385) compared with the Greater Perth median weekly wage ($515). Once this MAX Light Rail route is in place the opportunity for alternative employment and social hubs is increased, with the potential to lift one of Perth’s poorer sectors into greater economic prosperity. The North/East corridor MAX Light Rail network will provide this Local Area access to an essential rail network, one that is already available in wealthier western suburbs, thereby removing a number of gaps in the socio-economic divide.

**Educational**
Western Australia is currently experiencing a downturn in the mining sector and the subsequent revenue stream this provides for the State. A light rail network that connects key educational campuses in Perth’s inner north supports recent discussions regarding the transformation of the local economy from one heavily reliant on mining and primary industries to one that is based on the knowledge and creative sectors. The proposed MAX Light Rail project would create, as Professor Peter Newman describes, a ‘Knowledge Arc’ connecting the University of Western Australia, Curtin University and Edith Cowan University.

**Benefit 3: Environmental Improvements**

**Local environment improvements**
There is a huge potential for an increase in the green canopy around light rail stations and connecting footpath and cycle ways. Jeff Kenworthy, a longstanding proponent of light rail, said in his most recent comments in the Fremantle Herald on March 14: ‘Streetscapes on light rail lines are usually improved with trees, landscaping and widened footpaths’. Improving the amenity of the local area will encourage local interaction with and patronage of the light rail network.

**Pollution**
Light rail is significantly less polluting than rapid bus transport and therefore sustainable for current and future generations. It also minimises the number of personal vehicles on the road, therefore total contribution to pollution from road traffic is significantly reduced. Removing rapid bus transport reduces the requirement for oversized bitumen lanes to accommodate them, reducing the aesthetic and environmental disharmony major roads create. The reduction in vehicular transport will also result in a reduction in noise pollution along the transit routes, encouraging people to live closer to the stations.

**Sustainable design best practice**
Light Rail stations, being a fixed, permanent structure enable opportunities for water collection and diversion in line with Water Sensitive Urban Design (WSUD) principles. These structures can also support solar power panels, supplying power for the station and possibly providing recharge stations for electric cars in the future. Increased housing density surrounding the stations can also contribute to both rain water harvesting and solar collection, feeding into the station. None of these benefits are possible along a bus transit route.

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18 City of Stirling; (2009), Balga/Nollamara/Westminster Local Area Discussion Paper.
19 Kenworthy, J; (2015), *It’s life rail, really*, The Herald, Saturday March 14, Pg. 5.
Benefit 4: Economic efficiencies

Personal/household savings
The availability of efficient and reliable light rail system has potential to reduce the need to have a personal car at all and the impact of associated costs on households, notably in the form of fuel, car registration, maintenance and service and parking fees can be dramatically reduced. Fast, efficient and effective public transport like light rail provides significant advantageous and alternatives to vehicular transport for low and middle income workers.

Initial cost outlay vs long term capital gains
The AILA is concerned that the main decision for delaying the MAX Light Rail project seems to be motivated by the expense of initial capital outlay when compared to a rapid bus transport service. This would appear short-sighted when the potential for restructuring our city to better benefit its residents and business becomes apparent when considering the medium and long term impact of light rail, as has been discussed in the points above. The biggest expense is in retrofitting underground services (water and electricity) and setting up new power infrastructure, such as power lines, underground cables and transformers. It should be noted that once these initial construction stages are finished, the latter stages are significantly cheaper.

Economy of numbers
Light rail carriages are capable of carrying up to three hundred people, which is more than three articulated buses are capable of carrying. The need for fewer staff to drive trains reduces the salary component of light rail costs by a significant amount.

Conclusion
Light Rail Delivers Better City Outcomes for Perth than More Buses
The costs of congestion in Australia continue to rise, and whilst using our own cars will remain the primary mode of transport for many of us, better and more integrated transport solutions are required to ensure that tangible medium and long term benefits to our communities, businesses and environment are delivered.

AILA strongly supports and endorses light rail as proposed in the MAX project. Australia is fast becoming a ‘light rail nation’ with projects being considered in all capital cities and many regional centres with the benefits being identified as far beyond providing just transport services. This includes sustainable and greener city outcomes, urban uplift and value capture opportunities, whole of life cost considerations amongst many other benefits. Most importantly light rail has very tangible city-shaping outcomes, and if we don’t start planning now for the integrated, seamless, enjoyable and efficient public transport we deserve, then we won’t have the city we deserve.

References:
References


Leung, Jason. 2014. "Obesity: A National Epidemic and it's Impact on Australia."


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