Transport and Infrastructure

Investigation into Public Transport in Regional NSW

Youth Parliament 2022

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Committee Investigating Transport & Infrastructure

Investigation into Public Transport in Regional NSW

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Terms of Reference

The Committee on Transport & Infrastructure have enquired into and refer to:

1. Introducing electric vehicles as public transport in regional New South Wales;
2. Increasing public transport reach and frequency in regional New South Wales;
3. High speed rail connecting hubs in regional New South Wales; and
4. The expansion of the Opal System into regional New South Wales.

Table of Contents

Chairperson’s Foreword

The Chairperson of the Committee Investigating Transport & Infrastructure has regrettably withdrawn from the program, resulting in the lack of a Chairperson’s Foreword.

We, the Committee, recommend this Report to the House for consideration.

Committee Investigating Transport & Infrastructure

Introduction

The essential principles of transport are that it be accessible, affordable, and effective. With an ever-increasing population and burgeoning emphasis on low carbon emission modes of travel, the development of electric and efficient public transport systems is being observed. Improving these factors result in lessened environmental impact[1], reduced traffic congestion, and encouragement of tourism among other benefits.

However, these advancements have been focused on growth in metropolitan areas, with the nine regions of New South Wales (NSW) including Hunter, Illawarra - Shoalhaven, Central Coast, South East, and Tablelands, North Coast, Central West, and Orana, Riverina and Murray, New England North West, and Far West, being neglected in the past.[2] This is an unfair disadvantage for those who reside in regional communities and makes travel less convenient, occasionally reducing the quality of life. This is in addition to the already poor state of roads in regional NSW.

The Transport and Infrastructure Committee believes that the issues of public transport and road quality in regional NSW require investigation that will provide direction for reform. We aim to examine the problems associated with the current state and trajectory of transport in the regions, the factors hindering the improvement of these concerns, and suggest pathways for amendments to legislation moving forward. We intend for the implementation of such to result in a more environmentally friendly, accessible, and affordable network of public transport throughout regional NSW.

[1]Rodrigue, J. (n.d.). *Transportation and the Environment*. The Geography of Transport Systems. Accessed June 24, 2022. Available at: https://transportgeography.org/contents/chapter4/transportation-and-environment/

[2]*Regional and Outer Metropolitan Network.* (n.d.). Future Transport 2056. Accessed June 24, 2022. Available at: https://future.transport.nsw.gov.au/future-transport-strategy/regional-and-outer-metropolitan-network/regions-of-nsw

Background

Individual vehicles on roads are inefficient modes of transport and are contributing to increasing congestion. Their volume outweighs the number of people they move, and they monopolise precious land when idle, encroaching on farms and native habitats. The absence of sufficient public transportation in regional NSW drives approximately 50% of people to own at least two cars per household[3] to manage daily commutes and responsibilities. Having more widespread Electric Vehicle (EV) public transport systems allows citizens to choose a mode of transport that is up to four times cheaper than cars[4], therefore also reducing poverty.

Introducing Electric Vehicle Public Transport in Regional Areas

Electric Vehicles (EVs) mark the beginning of Australia's transition from fossil fuel-powered vehicles to a cleaner, greener way of driving. Replacing traditional Internal Combustion Engine Vehicles (ICEVs) with EVs powered by self-contained batteries offers a significant improvement in energy efficiency, running costs, and air and noise pollution, and produces, depending upon electricity generation, from 28 - 72% fewer greenhouse gas emissions[5], assisting Australia in achieving its net zero emissions target. They are also a catalyst for economic opportunity including jobs, research, development, analysis, and infrastructure. In recent years, NSW has been leading the uptake of EVs within the public transport sector in Australia. However, this project has not been extended to communities outside of metropolitan areas.

Underdeveloped public transport, as is found in regional NSW, creates several challenges. A growing body of research indicates that current trends are unsustainable across environmental, economic, and social considerations. Poorly distributed networks are catalysts for underutilisation at times, wasting resources, and overcrowding at others, discouraging use. Each of these scenarios, in one way or another, leads to increased pollution and loss of economic productivity.[6]

Increasing Efficacy of Public Transport in Regional Areas

Public transport is a vitally important service for residents and visitors in regional NSW and is essential for the health of economies and the tourism industry. The standards of public transport in metropolitan NSW should apply throughout the state, forming a comprehensive

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[3] *Australia: Number of Cars Per Household*. (n.d.). Informed Decisions Demographic Resources. Accessed June 22, 2022. Available at: https://profile.id.com.au/australia/car-ownership

[4] *Benefits of Public Transport.* (n.d.). Translink. Accessed June 21, 2022. Available at: https://translink.com.au/travel-with-us/benefits-of-public-transport

[5] Tornekar, K. N., June 2020. *Why Electric Vehicles are Important*. Electric Vehicles. Accessed June 19, 2022. Available at: https://electricvehicles.in/why-electric-vehicles-are-important/

[6] De Barros, A., Kattan, L., Miller, P., Wirasinghe, S.C., April 2016. *Public transportation and sustainability: A review.* KSCE Journal of Civil Engineering. Accessed June 22, 2022. Available at: https://www.researchgate.net/publication/297741118_Public_transportation_and_sustainability_A_review

network of frequent, affordable, and well-coordinated services. Projects in metropolitan areas such as the Sydney Metro expansion have seen a disproportionately high rate of resource allocation, whilst much-needed initiatives for rural and regional NSW have been neglected - for many country towns in NSW, the only public transport routes are school bus services, which are overcrowded and operate only twice each day.

Additionally, critical gaps in data collation and delivery are observable in the NSW Transport website[7]. The average NSW citizen faces significant barriers to accessibility of information on this forum, as data on travel is not available for routes outside of Greater Sydney. This is indicative of inconclusive research that overlooks regional areas, resulting in policy-makers missing essential information on most of the state's transport networks - and issues cannot be resolved if legislators are not aware of them.

As seen in Victoria, a network of regular bus services connecting with trains is needed to deliver passengers to rail services, provide services to smaller towns, and make more direct connections between regional cities. Current schedules are not designed to suit consumers, with some forced to wait for hours for transport. Particularly in high-pressure situations, including work and healthcare (this is especially relevant considering the trend towards centralised healthcare), the inconvenient lack of services can become a threat to employment and wellbeing[8]. Timetabling alterations should minimise the wait between connecting services, with bus networks ideally matching train frequency, serving most regional towns at least every two hours. All but the smallest and most isolated of settlements should be on bus routes served once, twice, or three times daily.[9]

High-Speed Rail Connecting Hubs

Rail services can provide faster and more comfortable long-distance travel than coaches and cars in major transport corridors[10]. Whilst there are current plans for the replacement of regional train fleets, including the Express Passenger Train (XPT)[11], there is potential for better services that provide more benefits for users. Indicative of the slow progression of the Australian rail system, for example, in Japan in the late 1980s, a new station was constructed in Kakegawa, a medium-sized city, which previously had been isolated from the shinkansen aka 'bullet trains' network, that had a 'Great effect on the economy, lifestyle and

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[7] *Travel Insights.* (n.d.) Transport for NSW. Accessed June 20, 2022. Available at: https://www.transport.nsw.gov.au/

[8] Bragg, R., Reedy, L. (n.d.). *Transport to Access Health Services in Rural and Remote NSW: a Community Perspective.* NRHA. Accessed June 24, 2022. Available at: https://www.ruralhealth.org.au/papers/6_D_3_3.pdf

[9] Develop Regional Victoria. (n.d.) Infrastructure Victoria. Accessed June 21, 2022. Available at: https://www.infrastructurevictoria.com.au/report/chapter-4-develop-regional-victoria/

[10] *Auditor-General's Report on the Annual Financial Report of the State of Victoria, 2011–12*, November 2012. Victorian Auditor-General's Office. Accessed June 22, 2022. Available at: https://www.audit.vic.gov.au/report/auditor-generals-report-annual-financial-report-state-victoria-2011-12?section=30713

[11] *Regional Rail*, June 2022. Transport for NSW. Accessed June 19, 2022. Available at: https://www.transport.nsw.gov.au/projects/current-projects/regional-rail

culture of Kakegawa city'[12], causing great economic growth and general improvement to the quality of life within the city. In Japan, 'Everything the shinkansen touches becomes a city, and regions that are off the beaten track benefit from the economic jumpstart brought by the train[13].

Fig. 1.1, demonstrating a comparison of energy consumption

	Shinkansen	Automobile	Aeroplane
Index	100	547	631

Fig. 1.2, demonstrating a comparison of emissions of CO_2 per capita

	Shinkansen	Automobile	Aeroplane
Energy consumption (kcal/100 million passenger-km)	136	631	714
Ratio	100	464	525

This is indisputable evidence of the economic and environmental benefits of high-speed rail. Whilst there have been claims that these kinds of systems would not work in Australia, the primary reasons listed, namely climate and lack of demand, are likely negligible. Engineers can overcome the Japanese climate (colder winters, coasts, tunnels, seismic activity etc.[14]) which is far less forgiving than that of Australia, therefore, it is achievable project. High-speed rail has also been implemented in many other countries such as China and France.

Additionally, demand has risen in recent years for better connectivity between cities and regions, and is projected to increase as tourism in the regions increases. A high-speed rail could also be used for industrial transportation of many goods from regional areas to urban ones and vice versa, such as agricultural goods and postage. Using high-speed rail for these tasks would increase the quality of goods through freshness and damage, as it is far smoother than regional roads, and through the speed of transportation with goods such as postage that are time reliant or goods with a short expiration date.

Equally important as the quality of the model is the frequency of services. Train services in more densely populated regional areas (e.g. Newcastle, Coffs Harbour) should run at regular intervals (i.e. hourly) seven days a week, such as the highly successful Swiss pulse-

[12] Okada, H. (n.d.). *Features and Economic and Social Effects of The Shinkansen.* Accessed June 23, 2022. Available at: https://www.ejrcf.or.jp/jrtr/jrtr03/pdf/f09_oka.pdf

[13] McKean, C. A., August 2014. *Japan's Bullet Train, the World's First (and Still Best) High-Speed Rail Network, Turns 50.* Next City. Accessed June 23, 2022. Available at: https://nextcity.org/urbanist-news/japans-bullet-train-the-worlds-first-and-still-best-high-speed-rail-network

[14] Jones, B., November 2019. *How Japan's Shinkansen bullet trains changed the world of rail travel.* CNN Travel. Accessed June 24, 2022. Available at: https://edition.cnn.com/travel/article/shinkansen-bullet-trains-japan/index.html

timetable system. Especially in major cities other than Sydney, where there are less frequent services, especially to and from regional areas, the train schedules must align with local public transport timetables both in arrival and departure to minimise inefficiencies.

The Expansion of the Opal System into Regional Areas

It is absolutely essential, for the wellbeing and livelihood of Australians, that all people have access to public transport. Considering that it has been decided that the Opal System is a necessary component of this, it is not appropriate to exclude regional areas. The Opal System makes for more convenient and affordable public transport, and statistics indicate that regional areas in NSW have lower socio-economic status overall, so need these concessions most. Fares should be competitive with the cost of driving; fares that range from being marginal to highly uncompetitive discourage the use of many public transport services. The introduction of the Opal System into regional NSW will provide much-needed relief on the cost of living. Aside from the obvious benefit of easing everyday expenditure from the cost of transport being lowered, however, there are countless other benefits; a better-connected transport system will directly increase tourism numbers for the regional tourism sector, and be able to help stimulate the small businesses across regional areas due to them being able to save money on transport fees.

Although people living in regional areas may have less access to purchasing and/or recharging an Opal card, this is not a large issue as the increased access to regional centres through the Opal system would make it much easier to do so. Previously, transport vehicles in rural and regional areas have also been older making them not have Opal readers. This symbolises the need for upgrading of regional public transport vehicles.

To implement the Opal system in regional areas, the vehicles and stations must be upgraded. This could be done through phasing out older vehicles slowly, but this would be detrimental in this case as then individuals would not be able to consistently tap on and off but would in some cases still have to buy tickets. Rather, the opal system should first be implemented in older vehicles through portable readers that could then be turned into permanent ones in new vehicles.

General Recommendations

The following recommendations, if implemented, will bring about these changes for the advancement of the nation:

1. The introduction of electric vehicles as public transport in regional New South Wales
2. The increase of public transport reach and frequency in regional New South Wales
3. High speed rail connecting hubs in regional New South Wales
4. The expansion of the Opal System into regional New South Wales

Electric Vehicle Consideration

- Government-sanctioned further research into the most efficient and cost-effective electric vehicle (EV) technology to date that is viable for use on a state level, prioritising EVs that do not require additional infrastructure i.e. trains that can run on current rails.

Electric Vehicle Implementation

- The production and delivering of resulting electric buses and trains to replace existing fleets, depot by depot. Depots will be prioritised based on average annual mileage per vehicle. Depots should also be, if possible, expanded to include renewable energy farms nearby or service routes with access to charging stations.

Assessment of Public Transport Use

- Government-conducted analysis/census of regional NSW public transport customer satisfaction to gauge where new routes and trips should be incorporated. Methods could include the following: Surveys on buses and trains/at stations, polls on social media platforms and community areas (message boards, etc.) For most rural and regional routes between A and B, at least four trips per day from A to B and vice versa - early morning (approx. 6am-8am), morning (9am-11am), afternoon (2pm-4pm) and evening (5pm-7pm) trips with additional increases based on the trip routes survey,

Implementation of Additional Routes and Trips

- The design and addition of new routes and trips to regional NSW public transport are in line with insights from previous data collection. Routes would be focused on connecting higher population settlements while also giving less dense areas equal access to nearby settlements.

Rail Research

- Analysis of and communication with existing high-speed rail lines that have been effective overseas, in addition to research into the best possible location for such in regional NSW based on population but also cargo shipping lines.

Rail Design and Construction

- The design and construction of such high-speed railways where they are most required. One such line would be a coastal line from Kiama or Wollongong to Newcastle. If possible, these lines should be designed and constructed in conjunction with Queensland and Victoria and connect the entire east coast of Australia, with less frequent services crossing state borders.

Opal System Expansion

- The introduction of the Opal System into regional NSW across all modes of public transport effective immediately; fares will be based upon distance travelled- will include the full spectrum of passes including youth, seniors, and concession. For regional fares, a reduced maximum opal fee per day from $16.30 a day for adults to $12 in regional areas. Changing Opal fee calculation rates for rural and regional areas to be more generous with distance to price calculations.

Final recommendations

Electric Vehicle Implementation and Consideration

It is imperative to future-proof the NSW public transport industry. One of the key parts that are currently lacking is EV usage. EVs are less polluting and with the rise of renewables, could soon be non-polluting post-production. The implementation of EVs across NSW, including in regional areas, will possibly take more than a decade and for Australia to reach emission reduction goals, transport is key due to our economic reliance on regional areas which then rely on transport.

Additional Routes and Trips for Existing Transport

Under the status quo, there is a glaring lack of consistency, ease of use, and routing in regional public transport. More routes are certainly needed in regional areas, where there are inconsistent and inconvenient transport options. The implementation of additional routes would greatly increase the connectivity within regional areas. This would lead to regional areas having more access to goods and services and, selling their own goods and services, at a reduced cost. The routing of regional areas currently also discourages the usage of public transport as routes are often serpentine, or insufficient to truly interconnect areas. By increasing the quality of transport, more benefits would come such as less pollution and spending on transport.

High-Speed Rail Implementation

In many of the world's major economies and technological leaders, high-speed rail has been implemented. In most, if not every case these bullet trains have caused huge economic growth, interconnection, and reduced pollution. As NSW's urban sprawl expands and population growth in regional areas also increases, a high-speed rail would be a safe and effective method of interconnection. Not only this, but a high-speed rail would also allow for better connection to other major east coast states if it were designed in collaboration, the air corridor between Sydney and Melbourne currently being one of the busiest in the world. A high-speed rail is also highly environmentally beneficial because of this. The interconnection through a coastal line could also encourage economic growth in Canberra and other smaller cities, given high-speed rail usually has a speed of approximately 300km/h, which would shorten the three-hour drive or airport bureaucracy to a one-hour train trip. Furthermore, if

bullet trains in NSW were designed like Japanese ones to be comfortable, this would be a further benefit compared to the two more compact options in the status quo. Through this, one-hour trip, living in Canberra could be an interesting alternative to living in Sydney and vice versa. The commute time would be similar to a current commute during rush hour from the outer suburbs of Sydney.

Opal System Expansion

It is paramount that there is change to the regional Opal system, or rather the lack of it. In Sydney, public transport payment is simple, consistent, and cheap. In regional areas, the lack of Opal access makes public transport, that is already outdated, even more unappealing compared to driving. Implementing the Opal system would be difficult, but it is definitely necessary in regional areas. Additional cost reductions should also apply to these areas as they are, on average, lower SES areas and public transport in these areas would also be covering longer distances due to low population density.

Dissenting statements

Dissenting statement 1

Regional and rural New South Wales needs efficient and easy to access public transport. Electric Vehicles will not provide that service. Electric bus batteries have a lifespan of around 10 years, meaning that they can only be used effectively for 10 years before they need to be replaced, whereas a diesel bus engine can be used for much longer. Similarly, the charge on an electric bus is shorter than a full fuel tank on a bus, which means buses will need to spend longer inside the depot, rather than outside serving the people of New South Wales. Electric bus engines are also silent, which means those with vision impairments may be impacted if they cannot hear a bus arriving, or hear a bus while they are crossing the street leading to injury or fatality.

Dissenting statement 2

Regional and rural areas already have adequate access to public transport. There is a lack of population in these areas, and most people already travel by private vehicles therefore routes would not be profitable for the bus companies to operate these services. More routes are not needed, if more routes were needed they would already be in place.

Dissenting statement 3

High speed rail is simply not viable. High speed rail requires several new pieces of infrastructure to work effectively. Instead of using existing rail corridors which would not suit new and faster rollingstock, brand new railway lines would need to be constructed, ruining the natural beauty of New South Wales' wonderful landscape.

Dissenting statement 4

The current regional transport ticketing system is already working. Regional railways run at set times, with limited seats. It is not like being in Sydney where if you miss the next service there will be another in 10-15 minutes. Regional trains have a booking system because they need a booking system. Opal cards also run on a length-based system, meaning that the longer you travel, the more expensive your fare is so there would not be much difference in cost. However, the opal card system on regional buses would be viable as it would be a quick and effortless way to access regional buses.