

INQUIRY INTO IMPACT OF THE WESTCONNEX PROJECT

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SUBMISSION FOR NSW LONG TERM TRANSPORT MASTER PLAN

1 WHY TRANSPORT MATTERS

1.1 Making public transport an attractive option.

Planning policies favouring automobile solutions to traffic congestion have gradually eroded public confidence in the public transport system.

1.2 Transport now and into the future

Currently we are predominantly employed in service sectors such as finance, insurance, retail, health, government, education, biotechnology, engineering, design and transport. However, in the future more products could again be manufactured locally. This would significantly effect transport and land use planning, especially freight and the volume of imports arriving at the ports

1.3 Transport and the economy

Funding infrastructure should be directed to build mass transit systems in metropolitan areas and maintain road connections between regional towns and major cities such as Sydney, Wollongong and Newcastle. Ideally, these regional areas will become mixed-use self sufficient communities if we improve their links to each other and to future growth areas.

1.4 Transport and our cities and centres

Concentrating some of Sydney's future development in Liverpool, Penrith and Parramatta will ease the pressure on the transport system in the Sydney City Centre. This strategy also applies to the proposed centres at Macquarie Park, Sydney Airport and the Norwest Business Park.

1.5 Regional NSW – improving connectivity and accessibility

Regional areas require heavy rail links for transporting freight to sea ports and major cities and to reduce the dependency on road transport. Road funds can then be spent on the more important task of upgrading bridges and road maintenance in regional areas.

1.6 Transport and freight – an alternative to Westconnex

The long term freight strategy is for long haul containers to move onto heavy rail not larger road transport vehicles. New freight interchanges located at motorway and rail intersections would allow containers transported on heavy rail from regional areas to be transferred onto smaller single container road freight.

1.7 Transport and the environment

If people use public transport instead of private vehicles it will help to reduce the environmental impact of transport. Communities based primarily on walking, cycling and public transport, particularly for short local trips, will be healthier sustainable urban environments.

1.8 Transport and strong communities

Communities which provide equal access to public transport for all its members function more sustainably. It will involve being optimistic about our ability to modify the excesses in our current system

1.9 Transport and land use planning

Integration of land use and transport is only part of a successful strategy. Transport corridors are one location for testing innovative ideas which imagine multi-modal solutions. The existing motorway transport corridors were not designed for public transport only motor vehicles. This strategy was probably incorrect and short-sighted. It's time to see whether these corridors can provide space for public transport and integrated with residential land use.

2 CUSTOMER-FOCUSED INTEGRATED TRANSPORT PLANNING

The customer's relationship with the people who manage the transport system has to be based on mutual respect. In a culture increasingly based upon the right to individual choice this becomes an enormous challenge. Integrated transport planning must focus on a customer's ability to move smoothly and safely through the system to connect to their destinations.

The rail station should provide customers with a friendly face at the ticket box or station gate. If the customer leaves the system at an exit point occupied by a government employee it provides a feeling of safety and encourages return business. All sounds simplistic but these are opinions based upon using the train and bus systems over the past five years. The entry and exit points must be occupied by people not machines. Keep the customer informed and interested in their transport system by displaying interesting information at rail stations about how and when they will benefit from any proposed improvements.

The corridor map (Figure 2.3). is an illustration of this point because it explains how key demand corridors can be identified from land use forecasts, with customers' demands for mobility between activity centres. Similarly Fig 2.5 presents a picture of how the system will change. Projected completion dates should be added to this picture and regularly updated.

In a regional context diagrams such as Fig 2.9 should be put on a public notice board in rail station waiting rooms in every country town because it informs the public about how the system is managed. It encourages feed-back and makes people feel part of the planning process.

3 INTEGRATING MODES TO MEET CUSTOMER NEEDS

3.1 Matching the world on electronic ticketing

The Opal is a worthwhile long term investment but not indispensable. As an interim measure, the existing paper ticket system similar to the pensioner excursion card can be adapted as an improvement on the existing segregated ticketing system.

3.2 Creating modern, integrated and user-friendly interchanges

Interchanges offering a variety of facilities and journey information satisfy the most important design requirements for any customer. It would be preferable for all transport modes to be integrated under one management. Historically NSW has operated separate transport modes; nevertheless, it should remain an essential goal.

3.3 Aligning timetables to better suit our customers

Will probably continue to have problems unless all public transport modes are under one management

3.4 Providing real-time information for customers

There are several examples of how best to provide this information. The mass transit systems in Shanghai and Tokyo provide more than enough information with electronic screens within each rail carriage. Similar screens are required at platforms and interchanges. The present rail system seems to be headed in this direction. Phone apps etc can be the an aspiration but should not be an expensive priority

3.5 Increasing the number of car parks and bicycle spaces at interchanges

It would be preferable to provide light rail and buses to carry customers to transport interchanges. Car parks take up valuable land and encourage car dependency. Bicycle sheds should be provided in suburban stations instead of more car parking spaces.

3.6 Modernising the public transport fleet

Upgrading existing stock should be determined by current funding levels and concentrate on the most sustainable transport mode, heavy rail. Preferably light rail will be designed and built by local manufacturers to encourage innovation and provide valuable experience for the workforce.

3.7 Information and ticketing

See 3.1 and 3.4 comments above

3.8 Seamless interchanging – Integrated interchanges

Upgrade existing interchanges and building new interchanges will be easier if they become multi-use facilities similar to the better examples in the Tokyo rail system. Our cities have been shaped by motorways and overpasses rather than rail tracks and tunnels and are generally have lower densities than Tokyo. However the model is there for consideration and could be adapted to local conditions. (refer to chapter 7 in Taras Grescoe's book Straphanger)

3.9 Investing in a modern public transport fleet

See 3.6 comments above in relation to heavy rail. The future planning for the bus system should be aimed at increasing the use of renewable energy powered vehicles. It should also introduce smaller buses on short trips in off peak periods. This type of bus system was popular and successful in Melbourne suburbs in the 1950's. Rapid transit bus systems in outer suburbs in dedicated corridors should be an interim solution until there is funding for light rail.

4 GETTING SYDNEY MOVING AGAIN

Sydney transport challenges – alternative strategies

Inner urban motorways were thought to be the solution to road congestion because they offered more rapid access to and from the city centre, but the traffic volume always grew to take up the enlarged road space so the congestion was never resolved.

4.1 Accommodating land use, growth and urban renewal by using existing road infrastructures.

4.1.1 M2 - light rail to Harbour Bridge and Cahill Expressway

This option provides two opportunities to save proposed infrastructure expenditure.

Firstly, using motorway lanes in the M2 corridor for light rail transport saves the proposed rail line to the North Western suburbs.

Secondly, using the two original tram lane corridors on the harbour bridge for light rail avoids the harbour rail tunnel expenditure.

This light rail line can access the city centre by using either the western city centre streets or the Cahill expressway.

The two central lanes on the M2 motorway could be converted to light rail lines to provide the North West Rail Link. At the Lane Cove tunnel the light rail could continue under the Pacific Highway and onto Epping Road re-entering the M2 at North Ryde. Substantial cost savings are achieved because the rails in both examples would be supported on the existing road infrastructure.

Multi use interchanges can be developed where the M2 intersects with heavy rail lines and arterial roads. The interchanges can be built over the motorway corridor and be extended onto the land adjacent to the intersections at the following locations:-

Rail and light rail interchanges at heavy rail lines	Circular Quay station linked to top level Cahill Expressway light rail Northern line at Reserve Road Artarmon Strathfield-Hornsby line where the M2 intersects north of Epping station
Bus and light rail interchanges at arterial roads	Ryde/Lane Cove Pennant Hills Old Windsor

4.1.2 City centre car spaces

Motor vehicle movements in the City Centre make it difficult to increase the space for cycling and walking. The deletion of a small number of on street parking spaces each year would increase the public space for bicycles and pedestrians. Loading zones can be maintained for commercial vehicle access and deliveries where required.

4.1.3 North Sydney motorway land

On the northern side of the harbour Neutral Bay-Kirribilli and North Sydney have been bisected by the motorway corridor approach to the bridge and tunnel. These communities could be reconnected by building over the submerged sections of the motorway and providing land for multi use structures above the corridor. The revenue from selling this airspace to private developers for high density redevelopment could then be used to fund light and heavy rail infrastructure

4.1.4 M5 and access to Port Botany

Construct a road freight terminal at Liverpool and isolate one lane of the M5 in either direction for road freight to reach Port Botany as described in section 1.6 above.

4.1.5 Long term remedial work - Western distributor

The elevated road structures of the Western distributor from the Harbour Bridge to Ultimo-Pyrmont disconnect the city from Darling Harbour and bisect Ultimo-Pyrmont. A long term planning strategy can examine its removal.

Sussex, Kent, Clarence and York Streets could carry traffic as two way thoroughfares. Motor vehicles from the northern side of the harbour bridge heading south and east would remain in the cross harbour tunnel. The west bound traffic would use Sussex Street, William Henry Drive, Harris Street and Broadway to Parramatta Road. Traffic going to the Anzac bridge would ideally use a new tunnel from the harbour bridge south to the eastern side of the Anzac bridge at Bank Street; similarly the cross city tunnel can be extended west to Bank Street. However given limited funds the alternative is via William Henry Drive, Darling Drive and Pyrmont Bridge Road. Harris and Wattle Streets are converted to two way thoroughfares.

4.2 Connecting Sydney's strategic centres – keeping our major corridors moving

The transport corridors on figure 4.6 are presented as roadways but the growth centres could be connected by a light or heavy rail network:-

Liverpool to Sydney Airport

The M5 junction with the M7 at Prestons becomes the location for a 24 hour road-rail freight interchange.

Freight destined for Port Botany will initially be transported in a dedicated off-peak (midnight to 5am) night lane on the M5 corridor. A new tunnel from the M5, at the airport exit to Port Botany, completes the connection and isolates the transport from the general suburban traffic.

Mona Vale to Sydney

Mona Vale and the northern beaches are low density communities. Light rail and water transport could ease current road congestion. A light rail line from Mona Vale to Manly can connect with an upgraded ferry service to Circular Quay and a branch line along Warringah Road could connect to a new transport interchange terminal at Roseville Bridge. A River Cat service could complete the journey to Circular Quay and Barangaroo

If a submerged transport tunnel were constructed in Middle Harbour at Spit Bridge crossing, water transport, cars, bikes and pedestrians (separate) could continue, uninterrupted by bridge openings, to the City Centre. A new water transport interchange at Spit Bridge could connect to the Roseville Bridge River Cat service.

Parramatta to Sydney via Top Ryde

Light rail from Parramatta along Victoria Road with access to heavy rail at West Ryde

Parramatta to Sydney via Strathfield

Light rail from Parramatta along Parramatta Road to new rail interchange station at North Strathfield where Hornsby line passes overhead.

Rouse Hill to Macquarie Park

Light rail along Windsor Road from Rouse Hill to M2 light rail interchange

Sydney Airport to Sydney City

Take over privately run airport rail service and delete the airport fee. Martin Place station can be modified to become an interchange connection with the circle line. Provide a dedicated line stopping at Central and the city circle line stations on route to Martin Place

4.3 Congestion

4.3.1 Heavy and light rail

Providing new light and heavy rail lines will ease congestion. The problem of course is the time frame. What do you do about it now while the new rail systems are being built? In section 4.2 this question was addressed by proposing to accelerate the light rail expansion by using the existing road infrastructure. Heavy rail is longer term and depends upon the number of people carried by light rail

London inner city area has been able to achieve about a 15% reduction in car use with a congestion tax.

4.3.2 Bus

All buses to be powered by renewable energy to reduce air pollution. Gradually reduce their number in the city centre as light and heavy rail take up the numbers. Focus on moving their present routes to the perimeter of the city centre. Use Kent Street for buses going to north shore across the bridge. The Cross Harbour road tunnel for Divert some of the buses coming from the north to enter from the cross harbour tunnel and exit at Bridge for city north, exit at William for city south. For their return trip to the north shore continue along William to Kent St. Buses coming from east west and south remain on present routes until rail transport significantly reduces numbers.

4.3.3 Road network city centre

Globally about 1.2 million people per annum die from car accidents; a further twenty million sustain injuries. In addition the damaging consequences to public health of air pollution from exhaust emissions should encourage us to re-examine the negative side affects of car dependency. This is the biggest challenge of the planning document. There are several adjustments to the road and parking structure which could improve our experience of walking in the city centre. Remove all one way streets. We have already experienced the benefits of this strategy in Crown and Bourke Streets in Darlinghurst. Reduce the number of car spaces each year as the rail network increases the capacity of the public transport network. The aim is to restore the city centre to its original function as a people friendly space not a noisy thoroughfare for motor vehicles

4.3.4 Motorway network

Inner urban motorways change the character of large cities from people oriented to motor vehicle dependent spaces. The problem is compounded by the priority given to motor vehicles on arterial roads such as Victoria Road from Parramatta to the city centre. The congestion in the Sydney suburban areas would decrease if the motorways were restricted. We should avoid repeating the mistakes of the transport strategies of the past 50 years which sort to resolve population growth by designing car dependent cities.

4.4 Supporting the Sydney City Centre

4.4.1 Securing success

Move people and goods between key hubs of economic activity and the city centre, the Airport and Port Botany in accordance with the strategies described in section 4.3 above

4.4.2 A focal point of demand

People travelling to the city centre for work, shopping, education, entertainment, events and tourism will require better access to public transport.

4.4.3 Better access for Public transport – enlargement of existing and building new rail stations

Circular Quay

Interchange upgraded to include light rail on upper level of the Cahill Expressway. Temporarily divert some of the northern harbour bridge rail network passengers around circle line to Central to permit separate reconstruction and enlargement of Wynyard and Town Hall stations.

Martin Place

Station upgraded to an interchange with the circle line which can carry passengers, not headed for Wynyard and Town Hall, directly to Central.

Barangaroo - King Street Wharf - Haymarket

Construct a branch line off the circle line tunnel, between Circular Quay and Wynyard, to new stations at Barangaroo, King Street Wharf and Haymarket, reconnecting with the existing line at Central Station. This line would relieve pressure on the Wynyard and Town Hall stations.

Wynyard

Upgrade the existing station and provide a branch line connection for a long term future underground rail link west to Pyrmont, White Bay, Balmain, Drummoyne, Gladesville, Ryde to an enlarged interchange at West Ryde greatly reducing the number of private motor vehicles and buses on Victoria Road.

Walking in the city centre

More people would walk on short trips in the city centre if the number of buses and cars were reduced on city streets. Re-connect Pyrmont and Glebe Island by re-using the existing bridge to provide pedestrian access to the future White Bay development and then Balmain residents could re-consider walking or cycling into the city centre. Similarly, re-connect the Domain with both the Botanic Gardens and Woolloomooloo by covering the Cahill Expressway between the State Library and William Street

Cycling in the city centre

Planning for bicycle commuting must recognise two distinct groups of cyclists – the sports cyclist and the upright commuters. One is travelling up to the speed of a motor vehicle the other at about 15KPH. There is a large difference between these two groups. The slower group needs to be physically separated from motor vehicles. We should be able to create conditions which permit families to commute safely. We cannot provide this type of commuting if we don't separate the speedsters and the uprights. The family cyclists will require a full width dedicated road lane. This can be done on major arterial roads such as William Street and New South Head Road.

One carriage on all suburban trains should be reserved for bicycle commuters and their bikes.

Ferries

Establish ferry service from Roseville Bridge to Circular Quay and eventually Barangaroo. Remove Spit Bridge and replace with submerged tunnel similar to cross harbour tunnel but include third chamber for pedestrians and bikes.

Increase frequency of River Cat services from new developments on Parramatta River to Barangaroo

Construct ferry interchange at new rail station at Barangaroo

4.5 Providing transport to a growing Sydney City Centre

This problem has been discussed in section 4.4. The growth centres in Fig. 4.39 will be connected by light rail.

4.6 Customers' travel needs are changing

4.6.1 Our growing demand for off-peak and weekend travel

Adjust timetable frequency of service to varying demands and consider the use of smaller more economical transport carriages for low off-peak demand periods

4.6.2 Cross-city trips are increasing

Develop direct links between Sydney's emerging employment centres which do not involve passing through the Sydney City Centre.

4.6.3 Jobs and services need to be more accessible

See 4.6.2

4.6.4 Walking is an important transport mode

A public campaign to encourage less car trips to and from schools will require support of government and the provision of safe light rail transport access to connecting buses.

4.6.5 Cycling is growing in popularity

Separate commuter bike lanes from motor vehicles

4.7 Meeting the increasing demand for Sydney's growing travel needs

See section 4.4 above

4.8 Expanding capacity on our most constrained corridors

See section 4.2 above. The aim is to reduce travel times along these corridors for both public transport and motor vehicles. The short term solution is to alleviate the present problem with mainly light rail solutions while the heavy rail, long term strategy, is constructed.

4.9 Creating a vibrant, attractive Sydney City Centre – the heart of Global Sydney

4.9.1 to 4.9.5 A transit-friendly Sydney City Centre

People oriented rather than car dependent measures will produce the Sydney city centre described in the planning document

See section 4.4.3

5 SUSTAINING GROWTH IN GREATER SYDNEY

5.1 Improving public transport and cutting congestion

See section 4.2 above

5.2 Equipping Greater Sydney for jobs growth

Directing some of our future employment creating industries to where people live, say Liverpool, Penrith and Parramatta, will equip greater Sydney for a more evenly distribution in jobs growth. This strategy cannot succeed without a parallel reduction in car dependency.

5.2.1 to 5.2.5

See section 4

5.3 Connecting new growth centres

See section 4

5.4 Protecting critical strategic and growth corridor

Co-ordinate land use and transport planning to avoid dispersed population and employment patterns, car dependency and inadequate infrastructure.

5.4.1 and 5.4.2

See section 4.2

5.5 Improving public transport

5.5.1 and 5.5.2

See section 4.2

5.6 Congestion and pinch point management

See section 4.2

5.7 Supporting Greater Sydney's employment centres

5.7.1 and 5.7.3

See section 4

5.8 Providing essential green-field infrastructure for growth centres

See section 4

5.9 Protecting Greater Sydney's transport corridors

See section 4

6 PROVIDING ESSENTIAL ACCESS FOR REGIONAL NSW

In regional NSW most journeys to work are made by car and this will not change in the foreseeable future unless we re-open some of the 3,000 kilometres of disused rail lines and corridors across NSW to connect the regional towns by rail systems.

6.1 Growing regional cities

Transport industries which manufacture locally our rail carriages and associated accessories should be based in the regional centres of Wollongong and Newcastle. All the raw materials and technology are already in place. The industries can be developed to supply the materials for the new infrastructure. The benefits for local employment and training would be enough to establish permanent industries in these centres.

The construction of new rapid transit rail links and upgrading of existing airports would ease some of the problems created by a Sydney-centric tourism industry. Within their city centres public transport should take priority and capital city type facilities should be provided on a smaller scale to encourage more residents.

6.1.1 Newcastle

The most direct transport connection between Sydney and Newcastle is the M2 motorway corridor. Motor vehicles have exclusive use of the corridor. There is no plan to construct a new additional rail corridor and the present rail connection is too congested. Hornsby is probably the location to develop a new interchange for a new rail connection by using the M2 corridor, terminating at Banksmeadow with a light rail connection to Newcastle city centre. It should be part of a twenty to thirty year plan and consider transporting freight in "off-peak" periods on the new line

6.1.2 Wollongong

Wollongong and its suburbs need light rail along the major arterial roads. Port Kembla's freight needs a dedicated rail connection to relieve road congestion. The state government should become a larger local employer to reduce the number of workers commuting 90 minutes by rail to Sydney. Wollongong's heavy industries may not endure so the emphasis for future growth should be on more technology based industries.

6.1.3 Central Coast

Governments will need to encourage light industry to locate in the main population centres of Gosford, Wyong/Tuggerah, Woy Woy, Erina, The Entrance and Toukley. Upgrade the existing Newcastle-Sydney rail line and major stations and provide government bus services from the stations to reduce car dependency. Examine feasibility of water transport between low density residential areas. Encourage higher density developments in Gosford. Build dedicated cycle lanes in the low density coastal residential areas with bike storage facilities in the stations and at bus depots. Provide one carriage on each train for the exclusive use of cyclists and their bicycles.

6.2 to 6.9

Regional growth areas cannot be serviced without heavy rail for freight and commuters. Road maintenance and bridge replacement should be carried out by locally employed workers. Examine using Light planes for carrying some of the freight to regional airfields. Upgrade Newcastle airport to take International (Asian routes) as well as national flights

7 SUPPORTING EFFICIENT AND PRODUCTIVE FREIGHT

Integrate new NSW Freight and Ports Strategy with land-use planning and infrastructure. Abandon high productivity road vehicle proposal for Hume Highway. Construct metropolitan intermodal interchanges on motorways where they intersect the M7. Use M5 for Port Botany freight connection.

7.1 The freight customer

Encourage freight customer support for heavy rail strategy.

7.2 Investment in infrastructure

Port Botany is a long way south from our major international suppliers and many of the ports used by the eastern states mining areas are a long way by sea from northern Australia. Before expanding these eastern seaboard ports we should look at moving more goods by land because heavy rail is more sustainable. Darwin should be the location for a large international container terminal. It can be connected to the eastern ports by a heavy freight rail line through the large mining areas. Eventually branch lines to the east and west to the other mining towns could provide a sustainable alternative to the long sea journey down the east coast. The freight trains should be solar powered from solar energy plants built alongside the track.

7.3 Increasing network efficiency

Develop a national network of freight lines controlled by the Federal government to reduce double-handling. Use innovative road carriers in regional areas to access the closest rail link to the market. Respect local authority differences as part of a national approach. Change the emphasis on large road train vehicles to new rail connections and small efficient road vehicles run on renewable energy. Long term plan must focus on heavy rail use in off-peak period say 10pm to 5am for metropolitan freight movements. Federal government control over the pricing structure will eliminate unfair pricing structure

7.4 Growing future freight network capacity

In order to maintain current rail freight mode share, the numbers of containers on rail will need to increase by around 50%. Metropolitan intermodal terminals are critical to increasing the share of container freight moved by rail. Heavy rail will transport bulk coal until alternative energy sources are developed and road transport nearly 90% of the remaining freight in NSW. These road items must be transferred to heavy rail as should freight to and from the ports of Newcastle and Port Kembla.

7.5 Managing community and environmental impacts

Transfer freight onto dedicated heavy rail lines and use renewable energy source to power the trains thereby minimising its impact on the environment. Develop transport interchanges on existing motorway corridors to avoid conflict with local traffic. Segregation of the rail system is the major initiative required to increase the safe transport of goods. Retraining programs for current employees and salary levels which reflect the difficulty of piloting large transport vehicles will ensure there is an adequate workforce in this industry

7.6 Improving network efficiency

Government planning will improve efficiency but only if the industry remains predominantly part of the governments responsibility. Examine impact of midnight to 5am metropolitan area rail movements on community

Federal and state governments must try to adopt a mutually acceptable national freight transport plan. Bridges for the Bush program will support more efficient freight movement, but we cannot alter productivity unless the heavy rail infrastructure is introduced as soon as possible

7.7 Growing future freight network capacity

Develop a metropolitan network of intermodal terminals at motorway junctions outlined in previous section. Build intermodal terminals in the regions in collaboration with councils and industry. Establish an infrastructure freight investment framework for freight infrastructure projects using state superannuation funds at 5% interest rate.

7.8 Managing community and environmental impacts

Integrate freight routes and land use planning

8 STATEWIDE ACTIONS

8.1 Reducing transport inequality

The Sydney public transport network can use heavy and light rail to focus on a reduction in car dependency. A separate solution is required for low density outer suburbs and will involve innovative use of smaller light rail networks and bus connections to rail stations. In regional NSW more frequent bus services and reintroduction of rail links between major towns are the priorities. Develop a state-wide policy which supports government funding for Community transport.

8.2 Making travel safer

Provide sufficient staff numbers on trains and at stations to re-establish the culture of community ownership of the public transport system. Segregate pedestrians and cyclists from motorists wherever possible by constructing dedicated routes. Provide sufficient staff numbers on trains and at stations to re-establish the culture of community ownership of the public transport system. A common sense Boating Safety Strategy will address safety on waterways.

8.3 Promoting sustainability and protecting the environment

New motorway transport corridors in inner metropolitan areas take up valuable space required for new buildings. If we adapt existing motorway corridors to accommodate more than one transport mode, there will be more land available for buildings. Renewable energy sources are fundamental to a sustainable system. Government planning strategy cannot afford to wait and see if the scientific evidence is suspect and must therefore plan for changes to existing climate patterns. Our transport infrastructure must be able to withstand the predicted impacts of a changing climate. Fossil fuel dependent motor vehicles create air pollution. Public transport run by renewable energy, electricity and in the future hydrogen is the solution. Short trips by walking or cycling will assist in improving the air quality. NSW 2021 document identifies a number of targets to help to reduce carbon emissions, including 'growing patronage on public transport by making it a more attractive choice'. This document should become the blueprint for public transport planning.

8.4 Maintaining our transport infrastructure

The public road network in NSW should be maintained by the State Ministry for Transport. The Transport Ministry should delegate the administration of the road system to each regional authority, but retain overall control including financial responsibility. Regional offices should take over design and construction of new infrastructure in accordance with master plans prepared by the Department. Funding should be based upon traffic loads. Replace rail assets with locally designed and constructed rail cars and infrastructure. Boat storage in large industrial buildings will prevent the increasing ugliness of marinas where boats occupy valuable water space, polluting the environment, physically and visually.

8.5 Integrating land use and transport planning

Department of Planning and Infrastructure should co-ordinate all transport planning. The Metropolitan Strategy for Sydney and Regional Strategies, currently under development should be the master plans. Parramatta Road and other major arterial roads need reduced motor vehicle traffic to become community friendly corridors not motorways. Install light rail on all the arterial roads and develop transport interchanges at the designated growth centres. Build high density multi-use developments on transport corridors to reduce urban sprawl

8.6 Moving towards an accessible transport system

Re-engage the community's interest in their transport system by providing an organisation which promotes their product as an attractive alternative to the existing car dependency.

8.7 Improving the safety of our transport system

Reduce speed limits in metropolitan areas to 50KPH and 40KPH in high density inner suburban areas

Provide rail staff at public transport stations and on trains to supervise commuter trips. The customer must feel comfortable and confident in the operators of the system.

Provide drivers and conductors on new light rail services to interact with customers on more than route information.

Maintain infrastructure investment with a highly skilled locally sourced workforce

8.8 Protecting the environment

Long term planning document must be based upon the simple principles of sustainability. There is no choice. Build electric powered buses for short local trips. Stop importing buses. Use renewable energy powered trains and buses, designed and built locally to encourage technological research and employment. Restore the balance of access to pedestrians and cyclist by reversing the car dependent decisions of the past 50 years. Stop subsidising foreign owned car manufacturers and invest in an Australian designed and built electric powered car. Sustainable electric powered trains and vehicles are less noisy than our current vehicles. Research new materials for train and tram wheels and tracks to reduce impact noise levels

8.9 Maintaining our infrastructure

Directly employ a state owned workforce, despite the prevailing myths about the efficiency of private enterprise and out-sourcing. Reward performance by encouraging public ownership of the transport system. Local authorities should have delegated authority from State and be responsible for the finished product.

8.10 Managing demand and making better travel choices

Make public transport, walking and cycling the preferred alternative by creating an attractive public transport system and pedestrian friendly streets.

8.11 Using technology for better customer experiences

This isn't a big problem and should not be the recipient of large amounts of scarce resources. Paper tickets, for example, are not the problem. Build the infrastructure and provide a simple ticket for all transport modes. Develop a locally designed and manufactured card system in the future when the funds are available.

9 TIMETABLE FOR ACTION - SUMMARY

9.1 Public transport

Start by promoting public transport as the logical strategy for improving our transport system

9.2 Rail

Heavy Rail is the key to an efficient public transport system. But it is expensive. Start to build whatever is possible within the current funding projections. Forget private partnerships, they belong in the 20th Century. Concentrate on adaptive re-use of existing motorway corridors for a new mass transit system. Refrain from metropolitan motorway construction, it doesn't work.

Develop a heavy rail strategy to guide the development of NSW regional rail services over the next 20 years and a separate strategy for transferring road freight onto heavy rail. Construct metropolitan intermodal terminals for rail freight.

Use existing state employees to maintain and operate the system.

Co-operate with the Australian Government in the development of a national heavy rail freight network.

9.3 Light rail

9.3.1 M2 North West

Use one lane of the M2 for a light rail service to the North West growth centres and save projected expenditure on a separate rail corridor by adapting the existing transport corridor.

9.3.2 Airport to City Centre and Dulwich Hill extension

Extend the existing light rail system from Lilyfield to complete a circular route to Central station via the Airport and south-eastern inner suburbs. The route would connect the airport and the redeveloped inner southern and eastern suburbs and Moore Park to the city centre.

Extend the existing light rail from Lilyfield on to the heavy rail lines to Dulwich Hill. Use the Dulwich Hill line to connect to the Tempe goods line through Marrickville.

Create a new interchange where this goods line intersects the airport heavy rail line at O'Riordan Street and Joyce Drive.

At the interchange the light rail leaves the rail system and moves onto Joyce Drive heading east to Wentworth Avenue and then to Bunnerong Road.

Head north along Bunnerong Road to join Anzac Parade at the Rainbow St roundabout, continue north past the University of New South Wales, Randwick Racecourse and Moore Park stadiums.

Continue to the city centre via Flinders Street and Oxford Street, joining the new city service at the Elizabeth Street intersection.

A separate long term plan would extend a light rail service in the existing heavy rail Sydenham-Botany goods corridor to service the eastern beach suburbs from La Perouse to Bondi Junction rail station via Beauchamp, Malabar, Arden and Bronte Road

9.3.3 Mona Vale to Manly

Build new rapid transit light rail networks to service the northern metropolitan coastal suburbs from Mona Vale to Manly.

9.3.4 Parramatta Road, Victoria Road, Pacific Highway, Lane Cove Road/Ryde Road

Provide light rail on the major arterial road networks to reduce car dependency

9.3.5 Harbour Bridge and Cahill Expressway

Restore light rail service on the harbour bridge and extend to Cahill expressway using the existing upper road level. Connect to 9.3.2 at Elizabeth Street and to City Centre light rail at Bridge Street.

9.3.6 City Centre

Extend the light rail service from Central Station to the extremities of the city centre area, connecting nearly all of Sydney's major tourist attractions, most major car parks, heavy rail stations and all major bus and ferry routes out of the city. The proposed route uses the following existing road systems and traffic free spaces.

- Central Station east ramp to Hay Street east to Elizabeth Street
- North along Elizabeth east to Macquarie Street via St James Road
- Macquarie Street north to Bent Street then to Circular Quay via Philip Street
- Circular Quay west via Alfred Street to George Street
- George Street north via The Rocks to Dawes Point and Hickson Road
- Hickson Road through Walsh Bay to Barangaroo
- Barangaroo south via Sussex Street to Haymarket at Hay St

9.4 Bus

Design and construct an Australian-made electric bus for replacing the existing imported vehicles. Use the bus network to carry passengers to both light and heavy rail interchanges to reduce congestion on the city centre. Provide smaller vehicles at regular intervals in low density areas and regional towns. Use the existing cross harbour and cross city tunnels for new dedicated bus lanes N-S and E-W. Concentrate city routes on the perimeter of the city centre to reduce congestion.

9.5 Ferries

Design and construct innovative new ferries for Sydney through the local industry under State control. Build new larger wharves with incorporate other boating services. Provide a Middle Harbour service to the Roseville Bridge. Consider a hovercraft service between Narrabeen and Barangaroo.

Link the ferry and train service at Circular Quay at the level of the rail platform.

9.6 Roads

Concentrate expenditure on regional road system and allocate all metropolitan area funds to road maintenance. Do not construct new urban motorways. Provide multi-modal interchanges at the M5-7-31 junction for freight distribution within Sydney metropolitan area. Do not construct Westconnex. Use one dedicated lane of the M5 from Liverpool interchange for off peak (midnight to 5am) freight transport via the airport branch line to connect to Port Botany.

9.7 Cycling

Separate commuter bike lanes from motor vehicles wherever possible. Provide separate carriages on trains for cyclists together with accessible storage facilities in city centre and North Sydney stations. Build cycling routes in regional centres.

9.8 Walking

Adjust inner city traffic light durations to give pedestrians more time at major cross roads. Increase the number of 40KPH zones in inner suburbs and all “high” streets. Remove more motor vehicles from the city and regional centres. Reduce car dependency. Refrain from constructing pedestrian sub-ways and bridges for connecting pedestrian locations in urban centres.

9.9 Non-government transport services

Assist local councils, industry associations and community and business groups to deliver these services

10 FUNDING

The State Superannuation Fund should be a source of funds for investment in major infrastructure. The state government could pay 5% interest to the super funds for the borrowings. Re-current annual funding amounts from government budgets will determine the rate of construction over the next 20 years

11 DELIVERING THE LONG TERM PLAN

Ensure that the Long Term Transport Master Plan is delivered as an integral part of the Ministry for Planning strategy for Sydney 2021. Provide an annual update, with a full review of the Master Plan every five years together with a commitment to extensive community engagement and customer consultation.

More detailed regional, precinct, modal and interchange delivery plans to be developed from the initial document. Continue community collaboration with Regional Organisations of Councils and other stakeholders to develop detailed area plans such as regional transport plans, city access plans and precinct plans, Liaise with the Australian Government on transport issues of national significance.

12 CUSTOMER INPUT

Continue community consultation and acceptance of public submissions.

Reference books:-

Straphanger by Taras Grescoe (ISBN 9780805091731).

Resilient Cities by Newman, Beatly and Boyer (ISBN 9781597264990)

