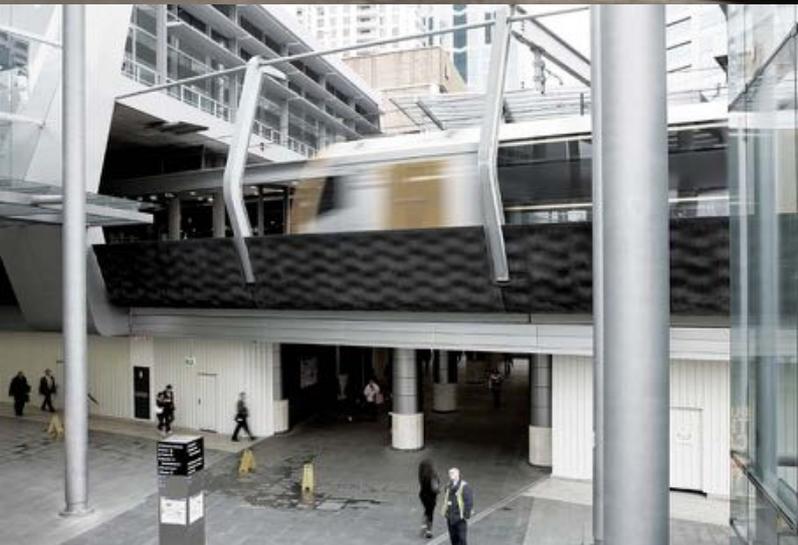


SUBMISSION TO THE NSW LONG TERM TRANSPORT MASTER PLAN



Tourism & Transport Forum

Tourism & Transport Forum (TTF) represents the public policy interests of more than 200 of Australia's leading organisations in the tourism, aviation, transport and infrastructure sectors as well as related consultancies and government agencies.

TTF's Passenger Transport Panel is Australia's only multi-modal policy think tank, providing oversight of TTF's transport research and advocacy.

This submission details the key priorities of TTF's membership for consideration in the NSW Long Term Master Plan.

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Introduction

Tourism & Transport Forum (TTF) welcomes the opportunity to contribute to the NSW Long Term Transport Master Plan. TTF represents the public policy interests of Australia's leading transport, tourism, aviation and infrastructure organisations as well as associated consultancies and stakeholders.

The O'Farrell government is to be commended for the progress made in transport since coming to office in 2011. The establishment of Transport for NSW (TfNSW) has brought a truly integrated approach to the delivery of public transport, roads and major projects. The creation of dedicated transport services and customer experience divisions within TfNSW, in particular, will deliver tangible changes to the quality and cost efficiency of public transport services.

Centralised policy and planning between all modes and service delivery arms of TfNSW will be invaluable in enacting a long term transport plan for the state, ensuring all operators and agencies are working towards a common goal. This has not always been the case, with modes working in isolation, and often in competition with each other to the detriment of service standards.

Similarly, Infrastructure NSW (INSW) will play a vital role in bringing an evidence-based approach to decisions on major infrastructure. It is hoped that the Master Plan and INSW's state infrastructure plan will complement one another, with the latter evaluating and prioritising the transport projects outlined in the former.

The backlog of transport infrastructure projects facing the state is well documented, and perhaps poses the greatest challenge for the government to overcome. However, with the progress made to date, and the development of the Master Plan, sentiment within the business community with regards to the future of transport in NSW, particularly Sydney, is decidedly optimistic.

Simply addressing the current backlog will not suffice, given transport demand is expected to grow substantially over the 20 year timeframe of the Master Plan. Major projects, both public transport and roads, must consider the needs of generations beyond 20 years, in a similar vein to the Bradfield Plan that delivered the Sydney Harbour Bridge and the foundations of the current CityRail network. After years of stagnation in the expansion of the state's transport infrastructure, TTF believes there is a strong appetite for similar visionary planning for transport infrastructure in NSW. It is time for a new Bradfield Plan.

1. Transport in NSW

Sydney's transport network is typified by high car use and infrastructure bottlenecks. Congestion will cost Sydney \$5.3 billion in 2012, a figure that is forecast to rise to \$7.76 billion by 2020 - representing a cumulative cost of approximately \$60 billion to the NSW economy over the period.¹ Urban sprawl, particularly in the city's west, north-west and south-west, combined with limited public transport access in these areas, is compounding the problem.

This has economic, social and environmental (triple bottom line) impacts - reducing business productivity, increasing travel times, increasing greenhouse gas emissions and re-enforcing car dependence.

¹ Bureau of Transport and Regional Economics, Estimating urban traffic and congestion cost trends for Australian cities – working paper 71, 2007 p109.

The population of Sydney is forecast to increase by 1.7 million people by 2036² and recent projections suggest a city in excess of seven million by the middle of the century. It is vital the capacity and scope of the transport network keeps pace with this growth which will require 700,000 new homes and more than 700,000 new jobs by 2036.³

The Sydney CBD is under the greatest pressure facing significant capacity issues on rail and road network that will become exacerbated in the future. Each working day, there are approximately 400,000 trips both to and from the CBD and 440,000 trips within the CBD. With increasing office occupancy and large scale developments such as Barangaroo, this is forecasted to rise 35 per cent by 2036. Residential population is expected to rise even faster, with the current population expected to jump 60 per cent by 2031. Without proper investment, rising congestion will affect the productivity of the country's most important economic hub.

Western Sydney also faces the challenge of accommodating a rapidly growing population and workforce. By the middle of the century, the population of Greater Western Sydney is expected to reach 4 million. Parramatta is at the epicentre of this growth with 27,000 new jobs over the next 20 years, in the process becoming the city's second CBD. In part, Parramatta has been able to achieve this growth due to investment in public transport. The opening of the Liverpool to Parramatta (2003) and the North West Transitways (2007), and the Parramatta Transport Interchange (2006) have all proved pivotal in driving economic activity. Despite this success, significant challenges still lie ahead for Western Sydney.

NSW's other major cities are rapidly expanding and will also see a growth in transport demand. Due to lower population densities, regional cities such as Newcastle and Wollongong will inevitably have a far higher car mode-share than metropolitan Sydney. Public transport will continue to play a vital role in fostering sustainable growth in these centres.

In recent years, economic growth in regional NSW has boomed, accounting for 17.6 per cent of national GDP growth between 2009-10 and 2010-11. Upgrades to regional road infrastructure, regional rail services and enabling more freight to be transported by rail are the key priorities for improving the safety and efficiency of the state's regional transport network.

2. Objectives of the Master Plan

a. Setting targets to meet growth in NSW

In addition to setting out the priorities for transport infrastructure in NSW, the Master Plan must also set targets and benchmarks to work towards over the expected 20 year life of the plan. With growth projections available for population, housing demand and employment over the next 20 years, it would be remiss for the Master Plan not to set aspirational targets in order for the transport network to mirror these key demand drivers.

While the discussion paper rightly identifies the issues facing the state's transport network and calls for projects and strategies to address these, TTF believes the government must set itself goals to aspire to in areas including but not limited to:

- Transport mode share;
- Growth in public transport capacity and frequency;
- Geographic coverage of the public transport network;

² Metropolitan Transport Plan 2010, p11.

³ *ibid.*

- Average commute times; and
- Proportion of new development with adequate access to public transport.

Targets should be set in five year increments, and be flexible to adapt to changes in growth projections that may arise due to unforeseen circumstances. TTF believes these targets should be ambitious but also realistic.

Recommendation: In order to meet the objectives of the Master Plan, set targets for the NSW transport network to accommodate forecast growth.

b. Working with the Commonwealth government

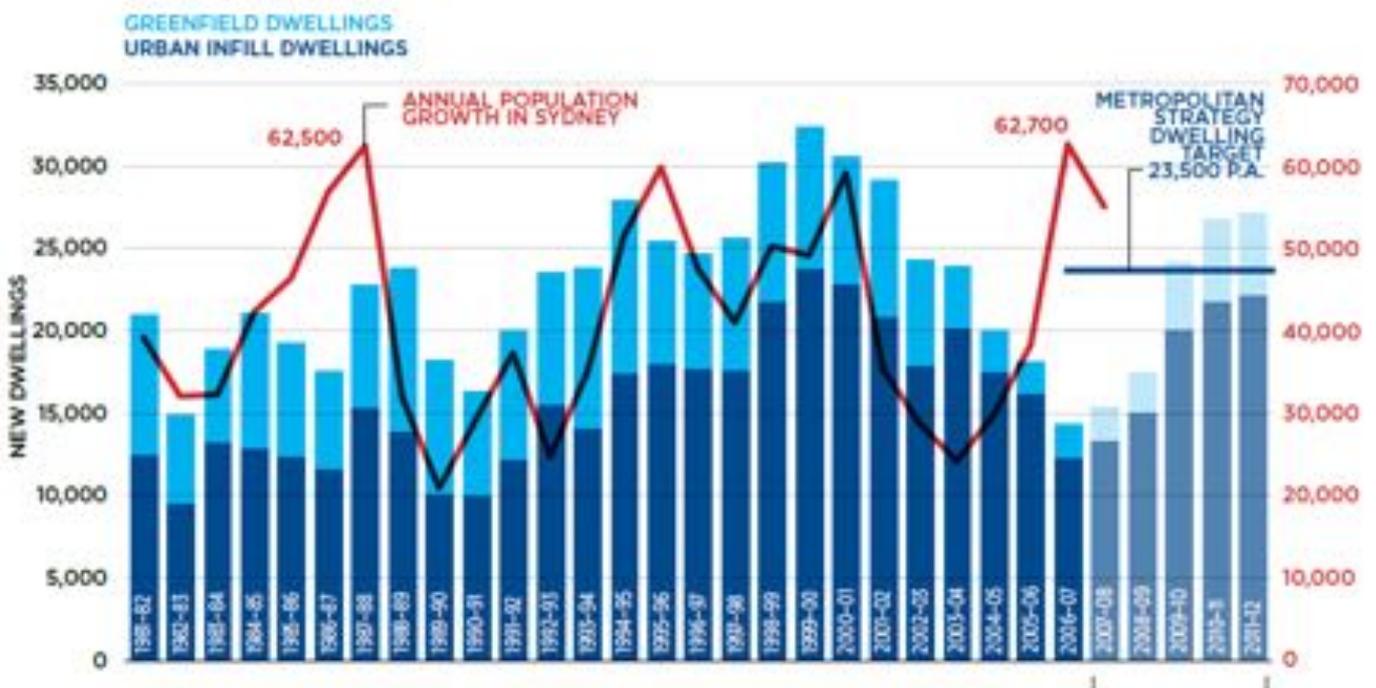
The Master Plan must also recognise the increasing role of the Commonwealth in infrastructure development and urban policy. With the development and implementation of the National Urban Policy, It is likely that future rounds of federal funding for transport and associated urban renewal projects will be tied to the ability of state and local governments to meet targets in areas such as the aforementioned categories.

Recommendation: Work collaboratively with the Commonwealth government to achieve the goals set out in the National Urban Policy.

c. A sustainable approach to urban growth

The funding and delivery of critical transport infrastructure, particularly in Sydney, may therefore depend on state and federal government working towards common goals in areas such as sustainable urban growth. TTF believes increasing greenfield development, as has recently been flagged, would not only be counter-productive to sustainability, but would defy clear trends in market demand, illustrated below.

ANNUAL POPULATION GROWTH IN SYDNEY, GREENFIELD HOUSING CONSTRUCTION RATES 1981-2007⁴



⁴ Source: Metropolitan Transport Plan, NSW Government 2010, page 18.

Demand for residential development shows a natural preference for medium and high density residential development, making the task of building public transport mode share and reducing average commute times considerably easier. Ensuring that a stipulated proportion of infill development occurs around high capacity, high frequency transport corridors will be essential over the 20 year scope of the Master Plan. TTF believes the Master Plan should feed into the objectives and targets of state planning strategies (and vice versa) to foster a trend towards transit oriented development.

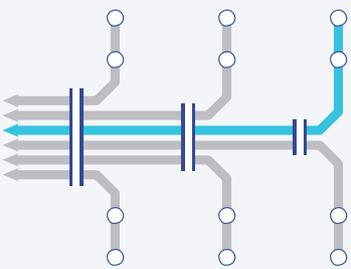
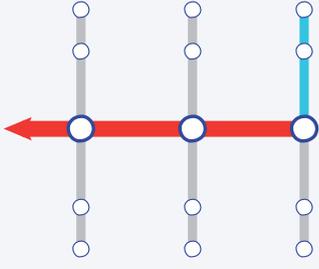
Recommendation: Preserve the integration of land use and transport planning to foster sustainable urban growth in NSW.

d. A multi-modal approach to transport planning

Sydney’s transport network is still suffering the consequences of generations of transport modes planning and operating in competition with one another. The ‘mode wars’ appear to have ceased with the creation of TfNSW and the Master Plan offers further opportunities to ensure the transport is planned in an holistic manner.

Understanding the role of each mode is fundamental to establishing a multi-modal transport network that gets people from A to B as fast as possible, regardless of whether they need to switch modes or not. Heavy rail must do the heavy lifting in any major city transport network, and serve as a reference point for the planning and operation of other modes. Light rail can provide dedicated high capacity public transport corridors in inner urban areas with greater comparative efficiency than buses for short journeys. Light rail can also help foster density growth around public transport corridors, playing an important role in meeting sustainable growth targets of all levels of government.

ALTERNATIVE PUBLIC TRANSPORT NETWORK DESIGNS: TRADITIONAL VS TRUNK AND FEEDER NETWORK

Traditional network design	Trunk and feeder network design
	
<ul style="list-style-type: none"> • Many routes • Service duplication • Lower-frequency services • Fewer transfers between services required • Poor network legibility • Higher average wait times 	<ul style="list-style-type: none"> • Fewer routes • Same area of service as without Urbanlink • Higher-frequency services • More transfers between services possible • High network legibility • Lower average wait times

Source: Connecting SEQ 2031 – An Integrated Regional Transport Plan for South East Queensland, 2011

Buses are the most flexible and adaptable mode of transport, and will continue to play a substantial role in Sydney's transport task. If, as proposed, light rail is expanded to major inner city corridors and George Street in the Sydney CBD, the adaptability of the bus network will be critical in facilitating a growing number of interchange journeys. TTF supports a transition to a 'trunk and feeder' network design noting that the elimination of interchange penalties – in terms of fares, time and amenity – is a vital precursor and must be addressed in the short term.

Ferries play a small, albeit important role in Sydney's transport task. TTF believes much more can be done to integrate ferry and bus services in order to expand the patronage of ferry wharves beyond those residential areas within walking distance.

Private vehicles are responsible for the overwhelming majority of the urban transport task, and will continue to do so. Furthermore, much of regional NSW relies exclusively on private vehicle use. The versatility and convenience of private vehicle use is unlikely to ever be surpassed, making road network improvements of the utmost importance for the Master Plan. There are a number of critical road projects needed to get NSW moving to its full potential. These are detailed throughout the submission.

There are indications that growth in car use – at least in terms of vehicle kilometres travelled – is declining. However, travel times on the NSW road network, particularly Sydney, are getting longer and congestion is worsening. In addition to major infrastructure improvements, TTF believes better demand management, through information, parking supply and rationalised pricing is required to overcome road congestion in NSW.

Improvements to the road network must not be viewed in isolation from the public transport network. An integrated approach would dictate that expanding the capacity of the former allows for greater efficiency in the latter – in particular for buses and light rail operating on existing road space. The M4 East, for example, will be necessary to funnel traffic away from Parramatta Road and Broadway, where the establishment of light rail is proposed.

3. Delivering the Master Plan

The government's comprehensive program of consultation will ensure, as far as possible, that the views of all affected stakeholders and communities are heard and represented in the Master Plan. TTF expects that a vast array of proposed projects and policies will emanate from this process, making project prioritisation complicated.

Prioritising project delivery: the triple bottom line

For too long, the narrow focus of treasury and finance officials has dominated decision making and often obstructed the delivery of major projects to meet short term budget objectives. While some major projects will be obvious priorities, such as the North West Rail Link, others will need to be assessed and placed in a pipeline for delivery over the 20 lifespan of the plan. TTF believes each proposed project must stand up to an assessment based on triple bottom line benefits (economic, social, environmental). There is an overwhelming appetite within stakeholder groups and the community generally for evidence based decision making on major infrastructure projects.

Recommendation: Conduct a triple bottom line assessment of proposed projects to establish a 20 year project priority pipeline.

Acting in the interests of NSW

The Master Plan will set out an ambitious program of projects and policies, many of which will face opposition from some sections of the community. Invariably, politically mobilised local interest groups will seek to influence policy outcomes, despite the economic, social and environmental benefits of a particular project for broader NSW and Australia. To overcome this 'NIMBYism' it is important that the Master Plan receives bipartisan support – the comprehensive programme of consultation undertaken is an important first step.

Clearly communicating the triple bottom line benefits of infrastructure and policy proposals is critical in overcoming NIMBYism and ensuring outcomes are delivered that are in the best interests of the whole of NSW.

Supportive legislation

An innovative approach to transport infrastructure delivery has been taken in Victoria, where legislation was enacted to enshrine the state's long term transport plan and, more importantly, the process of project evaluation. A similar approach should be considered for NSW to ensure the right projects are delivered at the right time for the right reason. TTF believes legislation is an effective way to gain bipartisan support for long term planning and ensure the longevity of the Master Plan, and deliver certainty for prospective investments from the Commonwealth and the private sector.

Recommendation: Enact legislation to ensure the Master Plan is delivered and lasts the full 20 years.

Funding the Master Plan

All avenues and options must be explored to meet the vast capital investment requirements of the Master Plan. Some of these are outlined later in this submission. TTF believes the Master Plan must include preliminary estimations of the cost of each major project and a target for total capital investment over each five year period of the plan. The approach taken under the Metropolitan Transport Plan to establish a 10 year funding guarantee for nominated projects should be considered with consecutive five year funding plans to provide certainty to the community and potential investors.

Recommendation: Deliver major projects under a series of five year funding cycles.

Summary of recommendations

DELIVERING THE MASTER PLAN

In order to meet the objectives of the Master Plan, set targets for the NSW transport network to accommodate forecast growth.

Work collaboratively with the Commonwealth government to achieve the goals set out in the National Urban Policy.

Preserve the integration of land use and transport planning to foster sustainable urban growth in NSW.

Conduct a triple bottom line assessment of proposed projects to establish a 20 year project priority pipeline.

Enact legislation to ensure the Master Plan is delivered and lasts the full 20 years.

Deliver major projects under a series of five year funding cycles.

SYDNEY TRANSPORT

Rail

Evaluate options for a second harbour rail crossing and commence construction within the next seven years.

Provide built-in capacity in the second harbour crossing for future expansions to the rail network.

Examine the extent to which metro-style rail services can underpin urban consolidation along the Bankstown and Inner West lines.

Upgrade Town Hall and Wynyard Stations to increase service capacity, improve concourse amenity and surface access.

Establish a new train station on the Eastern Suburbs Line at Woolloomooloo.

Extend the Eastern Suburbs rail line to Bondi Beach.

Expedite the upgrade of rail signalling on the CityRail network.

Complete the Parramatta to Epping Rail Link.

Preserve a corridor for a future Outer Western Rail Link.

Commence preserving a corridor for high speed rail through eastern NSW.

Commence planning for a high speed rail link between Sydney, the Central Coast and Newcastle.

Bus

Adapt the disused Harbour Bridge tram tunnels for use as a dedicated bus corridor and interchange at Wynyard.

Establish an additional set down kerb on York Street to expand bus capacity at Wynyard during the AM peak.

Establish a high capacity bus interchange to cordon turn Anzac bridge buses at Town Hall Station. Increase through-running bus routes from the Anzac Bridge bus corridor.

Examine options to re-route peak buses to use alternative CBD approaches.

Consider proposals to establish bus interchanges on the Cahill Expressway and Cross City Tunnel.

Roll out real-time information at bus stops within a 10 kilometre radius of the CBD to support 'turn up and go' bus services.

Expand CBD shuttle bus services as George Street bus routes are altered or removed to make way for light rail.

Expand the Metrobus network to alleviate CBD bus congestion and aide in the transition to a trunk and feeder network design.

Examine options for a Northern Beaches rapid transit system.

Conduct a cost-benefit analysis for the franchising of STA bus services.

Consider a trunk and feeder network design for bus services to complement the heavy and light rail networks; and remove bus terminals from Circular Quay.

Light Rail

Develop a comprehensive traffic management plan to minimise the impact of light rail construction in the Sydney CBD.

Extend the CBD light rail network south from Barangaroo to Haymarket.

Pursue the proposed Devonshire Street alignment for the South Eastern light rail link.

Pursue the proposed Parramatta Road alignment for the Western light rail link.

Examine options for a Parramatta light rail network.

Provide seamless bus-light rail interchanges.

Consider options for future light rail network expansions.

Consider a build and operate PPP model for the delivery of CBD light rail expansions.

Ferry

Establish a second major CBD ferry hub at Barangaroo.

Provide longer terms for short term operating contracts for new ferry routes; and provide closer scrutiny of proposed new routes to ensure optimal use of limited wharf access allocations.

Undertake a review of wharf access across Sydney Harbour to improve the utilisation of maritime assets and improve outcomes for customers.

Provide free or discounted wharf access for non-subsidised privately operated commuter ferry services.

Establish regular passenger ferry services between the Central Coast and Sydney Harbour.

Roads

Seek Commonwealth funding to deliver the M5 East project within the next five years.

Expedite project feasibility studies for the M4 East Motorway; and deliver the project in conjunction with the

Parramatta Road light rail extension.

Include the F3 M2 Link in the Pacific Highway Upgrade project.

Deliver the proposed Western Sydney Ring Road to improve traffic flows around and within Parramatta.

Prioritise the delivery of the next generation of Sydney's missing link road projects.

Greater flexibility and harmonisation of road tolling, moving towards a single road toll structure for the Sydney network. Encourage tax incentives for employers offering flexible work hours.

Expand park and ride spaces across the transport network.

Establish a high capacity park and ride facility at Rosehill Station.

Use the Opal Card system for integrated park and ride payments, with discounts for frequent users.

Continue the roll out of dedicated spaces for secure taxi ranks across NSW.

Active Transport

Increase investment in cycleways and associated infrastructure such as lock up and end-of-journey facilities.

Corridor preservation

Identify and preserve future transport corridors in conjunction with any planning decisions for rezoning and release of land for urban expansion, particularly on greenfield sites.

REGIONAL TRANSPORT

Complete the duplication of the Pacific Highway.

Continue to invest in the upgrade of regional highways to improve safety, reduce travel times and enhance the efficiency of freight movements.

Provide discounted access charges for long distance passenger rail services.

Create marketing partnerships with local businesses to promote CountryLink services; and consider franchising CountryLink as an option to improve service delivery.

THE CUSTOMER EXPERIENCE

Provide Next Bus service information to customers via smartphone apps, and online.

TfNSW must work in partnership with business and local government to provide real-time information displays on-street in areas of high passenger demand.

Examine low cost options such as QR code links to provide access to real-time transport information at low demand transport hubs.

Roll out estimated travel time displays across more major NSW road corridors and online.

Provide data feeds to third parties to develop a wide range of products and services for customers to access transport information.

Enable open source payments for the Opal system as soon as practicable.

Expand the Opal system to incorporate a range of functions including parking fees, taxi fares and small retail payments.

Roll out Opal system on Sydney’s private ferry operations.

Integrate customer payments and account management for public transport, toll roads and parking fees.

Develop best practice guidelines for transport interchanges in NSW.

Transport infrastructure priorities

Short term (1-5 years)	Medium term (5-10 years)	Long term (10-20 years)
Public Transport		
Wynyard and Town Hall station upgrades	Second harbour rail crossing	High Speed Rail – Sydney to Newcastle via Central Coast
Complete Rail Clearways	Woolloomooloo Station and TOD	Outer Western Rail Link
Upgrade rail signalling technology	Bondi Beach rail extension	Cross City Tunnel bus interchange
High speed rail corridor preservation	Light rail: Barangaroo to Haymarket via Darling Harbour	Parramatta to Epping Rail Link
CBD light rail: George Street, Parramatta Road, Devonshire Street, Anzac Parade	Parramatta light rail network	Northern Beaches rapid transit
Wynyard Station underground bus interchange	Cahill Expressway bus interchange	
Barangaroo ferry hub		
Rosehill park and ride		
North West Rail Link (underway)		
South West Rail Link (underway)		
Roads		
M5 East	M4 East	M4 East to M5 East
Pacific Highway duplication	F3-M2 Link	F6 Loftus to Sydney
Western Sydney Ring Road	Princes Highway upgrade	Military Road tunnel
		Outer Orbital Ring Road

Sydney Transport

1. Heavy Rail

The heavy rail network must continue to do the heavy lifting in Sydney's public transport task. Rail is the ideal mode of transport for moving large numbers of people in an urban environment. A typical two-track passenger railway can carry up to 25,000 passengers an hour in each direction, the equivalent of more than 20 lanes of freeway.

The decision in 2009 to abandon plans for a Sydney Metro network and instead focus of enhancing the role and capacity of the existing rail network reinforces the importance of the CityRail network in sustaining economic growth in Greater Sydney. The network as it exists today, however, should not limit thinking on how it may look at the end of the 20 year scope of the Master Plan and beyond.

With the North West Rail Link and South West Rail Link now underway and the Rail Clearways program nearing completion, attention must turn to expanding capacity at the core of the network in Sydney's CBD. Other measures to optimise the productive use of existing rolling stock and infrastructure should also be explored, but ultimately should not be viewed as an alternative to new infrastructure. The Master Plan should set out a comprehensive blueprint for rail network development over the next 20 years, including a preferred option for a new CBD rail corridor and harbour crossing.

a. CBD rail capacity

Sydney is fast approaching a crunch point in CBD rail capacity. The primary constraint on network growth is the absence of a second harbour rail crossing, which will become critical once services commence on the North West Rail Link (NWRL). This challenge is not unique to Sydney, with both Melbourne and Brisbane set to undertake major projects for new CBD rail corridors over the next decade.

While it is understood that the Metropolitan Rail Expansion Plan (MREP) has been under consideration for some time, many transport industry and business leaders see this project as critical to the future of Sydney, and would like to see open and transparent debate around the second harbour crossing. The Master Plan must include the alignment options under consideration, project lead times and costs to ensure debate is well informed and the optimal outcome is achieved. TTF believes a second harbour rail crossing and CBD rail corridor should be a central component of the Long Term Master Plan.

Recommendation: Evaluate options for a second harbour rail crossing and commence construction within the next seven years.

One of the primary lessons learned from the original Bradfield Plan was the multi-generational benefits of over engineering major infrastructure to cater for demand growth up to 100 years into the future. Undertaking a project such as a second harbour crossing allows the government to shape Sydney's future transport network, and deliver enabling works for projects that may be beyond the 20 year scope of the Master Plan.

To this end, some key considerations include:

- Will the second harbour crossing be tunnelled or use space on the bridge;
- Is there a case for reallocating space on the harbour bridge to rail and tunnelling additional road capacity;

- Will a future high speed rail line be likely to use the harbour crossing; and
- Should the project pre-empt the need for future duplication. For example, to accommodate high speed rail or a Northern Beaches metro line.

Recommendation: Provide built-in capacity in the second harbour crossing for future expansions to the rail network.

b. Sectorisation

Rail Clearways was an integral project in simplifying the complex interdependence of the CityRail network. With the Rail Clearways project now almost complete, attention must turn to the practical measures needed to enable individual CityRail lines to operate completely independently of one another. Proper sectorisation will allow operations to be streamlined to suit demand along each of the five independent lines created by Rail Clearways.

Proposals to convert parts of the CityRail network to metro-style frequencies and rolling stock also depend upon effective division of the five sectors. While much debate has centred on using metro-style services to run more services across the Harbour Bridge, TTF believes the faster and more frequent metro services will be best suited to the Inner West and Bankstown lines, where significant urban consolidation opportunities exist. To this end, sectorisation can also serve state government objectives to absorb urban growth within the catchment of rail corridors.

Recommendation: Examine the extent to which metro-style rail services can underpin urban consolidation along the Bankstown and Inner West lines.

c. Town Hall and Wynyard improvements

Town Hall and Wynyard Stations are already operating near full capacity, and with CBD rail capacity enhancements likely only in the long term, upgrades to the CBD's two most important transport hubs will be necessary in the short to medium term. Upgrades should increase service capacity, expanding the physical space on platforms for passengers waiting to board and improving access between platforms to improve interchange. Concourse areas at these stations should also be redesigned to provide a more seamless transition from platform to surface.

Any upgrades to CBD stations should take into account future transport projects, such as the alignment of a second harbour crossing and CBD rail corridor and how station concourses can be integrated with new CBD stations. Another important consideration for surface access is the proposed pedestrianisation of CBD streets and how best to integrate the concourses of Town Hall and Wynyard with the CBD light rail network.

Recommendation: Upgrade Town Hall and Wynyard Stations to increase service capacity, improve concourse amenity and surface access.

d. Enhancing capacity on the Eastern Suburbs Line

TTF believes there are opportunities to leverage the high residential and commercial densities along the Eastern Suburbs Line by establishing a new station, and extending the line to Bondi Beach as originally planned.

Woolloomooloo station and transit oriented development

Despite its proximity to Sydney's CBD, public transport mode share in Woolloomooloo is relatively low. Proposals to establish a new train station along the existing viaduct corridor running through the suburb should be seriously considered. In addition to improving transport access to the area for residents and visitors, the new station would provide an ideal site for high density transit oriented development, which if managed properly could provide a substantial ongoing revenue stream for government.

Recommendation: Establish a new train station on the Eastern Suburbs Line at Woolloomooloo.

Bondi Beach extension

TTF believes the Master Plan must revisit discarded plans to extend the Eastern Suburbs line to Bondi Beach. Connecting Bondi Beach, one of Australia's most iconic tourist destinations, with the CityRail network should be prioritised. A Bondi Beach rail link would deliver a steady stream of patrons throughout the day – peak commuter journeys and off-peak tourist and leisure journeys – making the business case for this project more favourable than many other projects. Decreasing the reliance on cars and buses to access the precinct would also considerably enhance the amenity, and the liveability of the surrounding Eastern Suburbs. TTF maintains that a Bondi rail extension would be mutually beneficial for tourists, businesses and residents of the eastern suburbs and should be considered for delivery within the 20 year scope of the Master Plan.

Recommendation: Extend the Eastern Suburbs rail line to Bondi Beach.

e. Rail signalling

Upgrading rail signalling technology is vital to maximise the productivity and safety of the CityRail network. More importantly, upgrading to automatic train protection (ATP) signalling was one of the key recommendations of the Waterfall train disaster inquiry. Modern automated train protection and control systems allow for optimal speeds and service headways, maximising the utility of existing rail infrastructure and rolling stock.

TTF notes the government has committed to the installation of European Train Control System (ETCS) Level 1 technology on approximately one third of the CityRail network, and a trial of ETCS Level 2 technology on the Cronulla line. ETCS 1 is scheduled to go online from 2013, with a complete roll out by 2021.⁵ With many parts of the rail network fast reaching, or already at maximum capacity, TTF believes there is a strong case to expedite the roll out of these upgrades across the entire CityRail network.

Recommendation: Expedite the upgrade of rail signalling on the CityRail network.

f. Future expansion

The need to extend the geographic coverage of the metropolitan rail network has largely been addressed by the NWRL and SWRL projects. However, within the next 20 years further extensions will be needed to ensure the reach of the network keeps pace with population growth. Rail network planning must also support broader planning objectives for polycentric development, by providing direct mass transit connectivity between major centres such as Parramatta, Liverpool and Penrith.

⁵ NSW Minister for Transport, media release (15/9/2010): *Tender announced for stage one of Automatic Train Protection roll-out.*

Parramatta to Epping Rail Link

TTF supports the decision to defer the delivery of the Parramatta to Epping Rail Link (PERL) in order to prioritise the North West Rail Link. PERL will, however, need to be delivered within the 20 year scope of the Master Plan. TTF believes the project will deliver more widespread benefits by directly linking the 1.8 million residents of Western Sydney with the jobs-rich Global Economic Arc. In 40 years Western Sydney is expected to house 4 million residents⁶, making Parramatta – the CBD of Western Sydney – increasingly important on a regional, state and national basis.

Recommendation: Complete the Parramatta to Epping Rail Link.

Outer Western Rail Link

TTF supports the future extension of the NWRL from Rouse Hill to connect with the Richmond Line and the Main Western Line. This project will underpin economic development in Sydney's West and support the favoured polycentric development model. As much of this corridor is currently greenfield, corridor preservation should be prioritised in the short-to-medium term with construction on the project to commence within 10-15 years.

Recommendation: Preserve a corridor for a future Outer Western Rail Link.

g. High speed rail

TTF believes high speed rail (HSR) will play a significant role in connecting the eastern states of Australia in the future. Air routes between the eastern capitals already rank among the busiest in the world, and the capacity constraints of Sydney Airport are well documented. In addition to supplementing aviation capacity, HSR will open up new opportunities for regional development and decentralisation – easing growth pressure on the Sydney Metropolitan area.

Interest in establishing a HSR link between the eastern states has been constant over the last 25 years, however cost-benefit analyses have not yet justified the vast capital investment required. A recent proposal from the ACT Government, had an estimated cost of \$59 billion.⁷ The estimated cost-benefit ratio of an east coast HSR line proposed in 2001 was between 0.12 and 0.25,⁸ which is considerably low, and not sufficient to justify the heavy public investment needed. Growing economic and social interdependence between major cities, coupled with the prospect of a carbon-constrained transport industry is likely to see the cost-benefit ratio of HSR increase over time.

Research conducted by Infrastructure Partnerships Australia suggests that preserving a preferred eastern seaboard HSR corridor in the short term can avoid significant costs in the longer term, with the value of affected property increasing as the need for HSR becomes more immediate. Acquiring land for a corridor between Melbourne and the Sunshine Coast would have cost around \$13.7 billion in 2010. By 2030, this cost will have risen to \$57 billion.⁹

Recommendation: Commence preserving a corridor for high speed rail through eastern NSW.

⁶ Dr Ken Henry, The Shape of Things to Come: Long Run Forces Affecting the Australian Economy in Coming Decades, 22 October 2009.

⁷ CRC for Rail Innovation (2010): *High-speed Rail: Strategic information for the Australian context*, p22.

⁸ *Ibid.*

⁹ Infrastructure Partnerships Australia (2010): *High Capacity Infrastructure Corridors*, p10.

TTF believes HSR between Sydney and Newcastle will be the first step in the creation of an expanded network across the eastern seaboard. With forecast growth in the Hunter over the next 25 years, the link between the two largest urban centres in NSW will become increasingly important for freight and passenger movements and the broader economic and social well-being of the state.

Recommendation: Commence planning for a high speed rail link between Sydney, the Central Coast and Newcastle.

2. Bus

While recent discussion and debate has centred on heavy rail and light rail expansions, the role of buses in Sydney's transport task cannot be overlooked. As stated in the Master Plan discussion paper, bus trips account for around 48 per cent of the daily public transport task in Sydney.

Buses in Sydney pose a serious challenge to transport planning as they have become a major source of CBD congestion. Unlike Melbourne's orbital road network, Sydney's major arterial roads do not complement the city's radial rail system, with many heavily populated areas not serviced by rail at all. While buses are relied upon for almost one million journeys every day, CBD centric route design has proven unsustainable with queues of buses overloading the city's major road corridors during peak periods.

Buses offer the cheapest and most flexible public transport option and are typically the most responsive mode to fluctuations in demand. Sydney's bus network must leverage these capabilities both by complementing the rail and light rail networks and servicing areas without access to rail-based modes.

a. CBD capacity

The expansion of light rail in the CBD will also demand a serious rethink of bus route configuration in the CBD. However, TTF believes this challenge will also present an opportunity to establish dedicated bus infrastructure in the Sydney CBD designed to maximise the efficiency of bus movements, particularly for services from areas without access to heavy rail or the proposed light rail network.

Considering the footprint of the existing heavy rail network and future footprint of the light rail network, it is clear that a high volume of buses will continue to enter the Sydney CBD from the Harbour Bridge and the Victoria Road-Anzac Bridge Corridor. Currently, these corridors (namely York Street at Wynyard and Druiitt Street at Town Hall) are also the key chokepoints in peak times. Infrastructure enhancements will be needed to facilitate a growing concentration of buses using these corridors to access the city.

Wynyard interchange

One option to expand bus capacity at Wynyard and minimise the impact on surface roads involves the adaptation of the disused tram tunnels connecting the Harbour Bridge with Wynyard Platforms 1 and 2 for use as a bus corridor and modal interchange. Diverting a large proportion of morning peak services away from York Street, this option would alleviate peak capacity constraints that currently cause the infamous 'Congo line' of buses on the bridge during the morning peak. Passengers would have direct access to the Wynyard concourse and a short distance from the George Street light rail corridor. A horseshoe-shaped tunnel could be built with an exit on Clarence Street so buses could start their run back across the Bridge.

Recommendation: Adapt the disused Harbour Bridge tram tunnels for use as a dedicated bus corridor and interchange at Wynyard.

An expansion in the set down area for buses on York Street above Wynyard Station should be considered to improve bus capacity during the AM peak. The establishment of an additional kerb island for passenger set down would effectively double the number of buses able to unload at the same time.

Recommendation: Establish an additional set down kerb on York Street to expand bus capacity at Wynyard during the AM peak.

Town Hall interchange

As a medium to long term measure, TTF believes a dedicated high capacity cordon turn point should be considered to provide seamless interchange for rail and light rail services to other parts of the CBD. A grade separated or underground interchange between Bathurst, Druiitt and Market Streets is recommended. Tunnelling this infrastructure is preferred, so as to minimise the need to resume surface road capacity.

Recommendation: Establish a high capacity bus interchange to cordon turn Anzac bridge buses at Town Hall Station.

Measures to improve the throughput of buses from the Anzac Bridge, Druiitt and Park Streets must be implemented as a short term priority. TTF recommends expanding the number of through-running buses running from this corridor through to eastern suburbs such as Paddington, Darlinghurst and Bondi Junction. This should be coupled with enhanced bus priority and the removal of interchange penalties for customers.

Recommendation: Increase through-running bus routes from the Anzac Bridge bus corridor.

Alternative CBD approaches for peak buses

The growing number of buses using York Street in the AM peak is unsustainable. TTF supports the use of alternative approaches to the Sydney CBD such as the Cahill Expressway and Western Distributor-Bathurst Street for selected bus routes in order to improve CBD access for buses in the morning peak. There is sufficient counter-peak capacity on a number of CBD corridors to warrant the consideration of re-routing options.

Recommendation: Examine options to re-route peak buses to use alternative CBD approaches.

Adapting motorways for bus rapid transit

TTF believes proposals to utilise existing road infrastructure for bus rapid transit may warrant serious consideration in the future. The idea of a major bus interchange on the Cahill Expressway at Circular Quay, for example, may become more feasible if alternate road capacity is available to absorb flow-on traffic impacts. TTF also believes the proposal to establish an underground bus interchange beneath Town Hall using the Cross City Tunnel is worthy of examination.

Recommendation: Consider proposals to establish bus interchanges on the Cahill Expressway and Cross City Tunnel.

Turn up & go

Due to variable and often heavy traffic conditions, buses on Sydney's major corridors into the city such as Parramatta Road, Military Road, Victoria Road, Oxford Street and Anzac Parade struggle to run to timetable. They do, however, run at sufficient frequencies to support a 'turn up and go' system supported by real-time information at major bus stops within a 10 kilometre radius of the CBD. Frequency based bus services will be further supported by high capacity cordon turning infrastructure and other bus priority measures.

Recommendation: Roll out real-time information at bus stops within a 10 kilometre radius of the CBD to support 'turn up and go' bus services.

CBD shuttle buses

The roll out of free CBD shuttle bus services in Sydney's major centres as well as in Wollongong and Newcastle have proven highly successful in enhancing mobility in CBD areas and providing easy access to major train stations. TTF supports the continuation of these services.

For the Sydney CBD, free shuttle services will become increasingly important in supporting the reconfiguration of bus routes necessary for the introduction of light rail. Buses currently using the George Street corridor will invariably need to be cordon turned or through-routed to make way for the light rail corridor, leaving a substantial gap in CBD mobility. TTF believes CBD shuttle buses will be necessary to play the role of the George Street light rail link between Central and Circular Quay during the project's construction, and in the short term can play a role in introducing customers forced interchange trips – vital to the success of a future trunk and feeder network design.

Recommendation: Expand CBD shuttle bus services as George Street bus routes are altered or removed to make way for light rail.

b. Metrobus

Metrobus stands as one of the recent success stories of transport planning in NSW. TTF supports the continual expansion of the Metrobus network, targeting the strategic transport corridors as identified in the discussion paper. The principle of through-routing bus services can help to alleviate CBD bus congestion, by reducing the number of bus routes starting and finishing around Circular Quay, Wynyard and Town Hall. As such, future Metrobus routes must provide access to key CBD interchanges without adding to congestion around bus lay-overs.

If combined with the removal of interchange penalties for bus fares, an expansion in the frequency of Metrobus services can aid in the transition to a trunk and feeder network design, thus minimising the number of bus routes converging on the CBD and other major congestion points throughout Sydney. It is important to note that the proposed CBD light rail network will require a functional and efficient trunk and feeder bus network – in this regard, Metrobus must play a central role in encouraging the shift in commuter behaviour in the short term.

Recommendation: Expand the Metrobus network to alleviate CBD bus congestion and aid in the transition to a trunk and feeder network design.

c. Northern beaches rapid transit

Sydney's Northern Beaches has long been underserved by fast, reliable public transport options. Currently, more than one million trips are made to, from and within the Northern Beaches every weekday. TTF notes that a feasibility study is currently under way into a bus rapid transit (BRT) system for the region. Notwithstanding the outcomes of this study, TTF believes there is an imminent long term need for a mass rapid transit link between Sydney's CBD and the Northern Beaches.

Previously abandoned plans for the Sydney Metro network recognised this, and included long term plans to extend the network to Dee Why via the Lower North Shore. TTF supports a comprehensive study into mass transit options for the Northern Beaches including BRT, heavy rail and light rail. Delivery of a preferred option is a longer term priority, but must be considered within the 20 year scope of the Master Plan.

Recommendation: Examine options for a Northern Beaches rapid transit system.

d. Operations

Franchising

Substantial budget savings can be realised through contracting State Transit Authority bus services to the private sector. Market driven service contracts are capable of delivering high quality public transport without compromising service standards, branding or fares. Anticipating the success of the franchising of Sydney Ferries, the government must commence planning for franchising State Transit Authority buses. TTF will be releasing detailed research on public transport franchising, including the Sydney bus network, in mid-2012.

Recommendation: Conduct a cost-benefit analysis for the franchising of STA bus services.

Network design

The expansion of light rail in inner Sydney, particularly on existing major bus corridors, will require a redesign of bus routes that currently use George Street, Parramatta Road, Broadway and Anzac Parade. TTF believes any new or altered bus routes must be established under the premise of an interchange-based network design, with all interchange penalties (fares, wait times and amenity) eliminated from the customer experience. A trunk and feeder network design – as outlined on page 8 of this submission – should be adopted for all future alterations of the bus network.

For the Sydney CBD, a bus network redesign must be geared toward reducing the number of buses laying over in Circular Quay. As the gateway to our most visited city, Circular Quay is one of the most important tourism precincts in Australia, however the location of two major bus terminals in the area has made it uninviting and often unsafe for pedestrians. From a tourism perspective, TTF believes there is a strong case for the complete removal of the Circular Quay bus terminals.

Recommendation: Consider a trunk and feeder network design for bus services to complement the heavy and light rail networks; and remove bus terminals from Circular Quay.

3. Light Rail

TTF is a long-standing advocate of an increased role for light rail in Sydney. Light rail can fill the gap between bus services and heavy rail, making it a valuable part of the public transport mix. Light rail services can provide an alternative to bus travel on busy CBD road corridors and increase public transport choice for journeys between inner suburban areas and city centres. Light rail should be regarded as complementary to other modes of transport rather than opposition to them. Not all corridors will be appropriate for light rail, but it is a better option than buses and trains in certain cases.

Light rail is a sound option to increase CBD mobility and choice for commuters. It is an efficient, high-capacity mode that can effectively co-exist with other forms of public transport. From a city-branding perspective, light rail is attractive to residents, commuters and visitors. From a development perspective, light rail is conducive to urban regeneration projects, providing permanent infrastructure and attracting a high ratio of associated investment. Light rail is also one of the most sustainable transport modes, at a time when responding to climate change is a major government priority and public concern.

Good light rail systems have an 'iconic' value that is attractive to tourists as well as commuters and residents. Whereas bus routes can be difficult for domestic and international visitors to negotiate, light rail networks are often perceived to be simpler and more reliable, largely owing to the fact that routes are permanent and highly visible. Transport is a key element in the visitor experience and an efficient public transport system can significantly enhance a city's reputation among travellers. In addition, a strong light rail brand can be incorporated into tourism marketing campaigns and information material. Melbourne's world-class tram system is integral to its image as a sophisticated, 'liveable' destination; it is one of the city's tourism signatures.

a. Network options

George Street

TTF supports the proposed George Street spine for the Inner Sydney light rail network. Currently, buses are clogging up the CBD's main north-south corridors, particularly in peak periods. Light rail offers the most viable long term solution to the CBD's bus capacity issues and will create a high frequency mass transit corridor linking the major hubs of Central, Town Hall, Wynyard and Circular Quay.

TTF believes the NSW government's Light Rail Strategic Plan should incorporate a comprehensive strategy to manage the expected impact on traffic during the construction of the proposed corridors, particularly George Street. George Street is currently the busiest north-south road corridor in the CBD, and while this demand will be a key driver of the project, it also means that large amounts of traffic will be displaced during construction and in the early stages of operation. Options to manage bus flows are discussed on page 19 of this submission.

Recommendation: Develop a comprehensive traffic management plan to minimise the impact of light rail construction in the Sydney CBD.

Barangaroo

With indicative plans to link the George Street corridor through the Rocks and Walsh Bay to Barangaroo, TTF is concerned by the proposed termination of the line at Barangaroo. TTF understands that the Barangaroo light rail link will not be aimed at a commuter market, but rather will service tourist and off-peak demand between George Street, The Rocks, Walsh Bay and Barangaroo. The viability of the Barangaroo link would be further enhanced by

extending it to service tourist demand to the south at King Street Wharf, Darling Harbour East, Chinatown and the redeveloped Convention, Exhibition and Entertainment precinct at Haymarket.

Noting the engineering limitations of running the line down Sussex Street as originally planned, alternative alignments to extend light rail south on the Eastern side of Darling Harbour should be explored. Furthermore, this extension would enhance commuter service integration options for Sydney's second major ferry hub at Barangaroo.

Recommendation: Extend the CBD light rail network south from Barangaroo to Haymarket.

South East

TTF favours the Devonshire Street alignment for the Surry Hills and Moore Park extension of the CBD light rail network. With more direct access to Central Station, this route offers faster travel times from Moore Park, Randwick and the University of NSW – the key demand drivers for this corridor. This corridor should also draw considerable patronage from the high density residential area stretching from eastern Surry Hills, south to Green Square. The Devonshire Street alignment also avoids the significant displacement of traffic – particularly buses – likely to occur with the Oxford Street route.

Recommendation: Pursue the proposed Devonshire Street alignment for the South Eastern light rail link.

West

Parramatta Road is the most prospective option for the extension of light rail from George Street and Broadway. Parramatta Road is one of Sydney's highest demand bus corridors, servicing a sizeable catchment of medium and high density residential areas without adequate access to the heavy rail network. TTF believes the alternative City Road alignment would not distribute mass transit capacity as effectively, as it runs too close to the existing Inner West rail line.

The Parramatta Road option will become more viable once the M4 East motorway is complete, which will funnel more road traffic onto the Sydney Orbital motorway network, giving way to opportunities for corridor renewal as the line is extended further west. The Parramatta Road light rail corridor should be extended as far as Leichhardt in order to fully leverage bus demand between the Inner West and George Street, and minimise the need for interchange journeys.

Recommendation: Pursue the proposed Parramatta Road alignment for the Western light rail link.

Parramatta light rail

TTF supports the examination of corridors for the introduction of light rail to the Parramatta CBD, such as those proposed by Parramatta City Council. Light rail will provide the ideal mode of intra-CBD transport to support the expected residential and commercial growth of the Parramatta CBD. Over the next 20 years, and without any specific intervention or assistance, the number of jobs in the Parramatta CBD will increase by 27,000.¹⁰ A light rail network will accelerate this growth and provide transport capacity for future urban intensification in Parramatta, as it increasingly becomes the CBD of Western Sydney.

¹⁰ NSW Department of Planning, *Metropolitan Strategy: draft Subregional Strategies - West Central*, December 2007, p26.

Proposed light rail corridors to the north and south of Parramatta should also be evaluated to improve connectivity with Parramatta City, the Western Rail line and future North West Rail Link at castle Hill.

Recommendation: Examine options for a Parramatta light rail network.

b. Interchange

The success of the Inner City light rail network will depend largely upon the ease with which commuters can interchange between buses or trains onto light rail to get to their destination. While forced interchange and limited bus access to the CBD will leave many commuters with little choice, many more will be deterred by a cumbersome modal interchange and may revert to private car use instead. It is critical therefore to make light rail interchanges as seamless as possible.¹¹

Central Station

Central Station poses the biggest challenge for heavy rail interchange, as many commuters will be expected to make rail-light rail journeys to access the Universities of Sydney and NSW via Central. The current bus interchanges for these customers are prohibitively inconvenient, at a considerable distance from Central's suburban platforms. Assuming the Devonshire light rail route is chosen, TTF believes options to enhance pedestrian access to Central Station's suburban platforms from Chalmers Street should be explored.

Buses

Based on the route options outlined in the discussion paper, there will be a number of major bus interchange points across the expanded light rail network. These will be both permanent, for example at Victoria Park, Broadway, and temporary, as the network expands in stages. Wherever passengers are required to switch from bus to light rail, the physical configuration of light rail platforms and kerb-side access for buses must be optimised to minimise the interchange penalty on customers.

Recommendations: Provide seamless bus-light rail interchanges.

c. Future extensions

Pending the success of the CBD, South East and Western light rail lines, future extensions must be considered, and may well be viable to deliver within the 20 year timeframe covered by the Master Plan. The most obvious of these are extensions along the Anzac Parade and Parramatta Road corridors, where substantial public transport demand already exists. Other possible future expansions could include the disused freight rail line from Rozelle Bay to White Bay and Balmain or a tunnel bypassing the Pyrmont loop and thus enhancing the viability of services from the existing Inner West corridor.

Recommendation: Consider options for future light rail network expansions.

d. Delivery model

Although the light rail strategic plan is in the early stages of development, TTF believes it is appropriate to consider potential delivery models, notably the role of each level of government and the private sector in funding, delivering and operating the inner city light rail network. TTF believes the project delivery model used by the Queensland Government in delivering the Gold Coast Rapid Transit light rail project is the best example of a

¹¹ Please refer to the customer experience section of this submission for TTF's priorities for interchange relating to ticketing and service information.

'construct and operate' public-private partnership to date in Australia, and should be considered for Sydney's expanded light rail network. Under this model, all levels of government contributed to funding the project, which will be built and operated by a consortium comprising local and global private sector expertise.

Recommendation: Consider a build and operate PPP model for the delivery of CBD light rail expansions.

4. Ferry

While it is often regarded as a geographic constraint for conventional transport planning, Sydney Harbour is the most underutilised transport asset in NSW. Ferries perform a relatively minor role in Sydney's peak transport task, but are vital to many harbour-side communities and an extremely popular mode of transport for leisure journeys in the off peak and on weekends.

A new private sector operator will bring a renewed customer focus to ferry services, at a substantially reduced cost to taxpayers. Unlike its predecessor, the Metropolitan Transport Plan (2010), the Master Plan must set a goal of increasing ferry patronage aligned with the operating contract terms, which are expected to provide patronage growth incentives.

Private sector competition on Manly ferry services have proven a highly successful initiative, with premium fast ferry services operating at virtually zero cost to government. TTF believes private operators have an important role to play on Sydney Harbour in providing a premium choice to customers, and sounding out new commuter markets where latent passenger demand exists. Ultimately more passengers on ferries means less cars on the road and less pressure on Sydney's train and bus networks.

a. A second CBD ferry hub

The redevelopment of the Barangaroo site will create a high density mixed use site on the Sydney Harbour waterfront and with it a second major ferry hub for the CBD. TTF believes the activation of the Barangaroo site will be the catalyst for a boom in ferry patronage for both commuter and leisure trips. TfNSW must investigate options for new direct ferry routes to Barangaroo to increase public transport mode share for visitors to the site and alleviate capacity pressures at Circular Quay.

Recommendation: Establish a second major CBD ferry hub at Barangaroo.

b. Encouraging private sector innovation

Competing private operators on the Manly to Circular Quay route has been hugely successful in enhancing choice for customers and bringing the best out of all operators through competitive pressure. TTF believes the issue of short term operating contracts was a positive step in allowing operators to seek out new markets. However, the three month term of the contracts is too short to allow operators to finance new assets required to make the routes viable and sustainable.

An adverse consequence of the short term contracts has been game-playing between competing operators, whereby unviable routes were nominated simply as a means of blocking wharf access for competitors.

Longer contract terms and closer scrutiny of proposed routes are needed to ensure short term operating contracts achieve the desired goal – growing ferry patronage and sounding out new markets for ferry services at zero cost to government.

Recommendation: Provide longer terms for short term operating contracts for new ferry routes; and provide closer scrutiny of proposed new routes to ensure optimal use of limited wharf access allocations.

Wharf access is a primary factor behind the under-utilisation of Sydney Harbour for passenger transport purposes. Over-prescriptive maritime regulations and a confusing division of responsibilities over the management of wharf-side land and facilities prevent private operators from servicing tourist and commuter demand as effectively as it might otherwise do. Furthermore, limited wharf space at Circular Quay is often consumed unnecessarily by Sydney Ferries vessels on layover, while other operators are often forced to load and unload passengers at the unsheltered Harbourmaster's Steps. TTF believes a full review of the utilisation of wharf space at Circular Quay and access to other wharves across Sydney Harbour for private operators should be conducted with the needs of customers – both commuter and tourist – as its primary point of reference.

Recommendation: Undertake a review of wharf access across Sydney Harbour to improve the utilisation of maritime assets and improve outcomes for customers.

In light of the public transport provided by private ferry operators with no government subsidy, TTF believes it is appropriate to consider incentives such as free or discounted wharf access for those operators who provide services that would otherwise require a substantial public subsidy. Free or discounted wharf access would encourage the expansion of alternate ferry operators, which ultimately benefits the commuting public and taxpayers.

Recommendation: Provide free or discounted wharf access for non-subsidised privately operated commuter ferry services.

c. Central Coast ferry services

Advancements in marine technology mean that ferry services between the Central Coast and Sydney Harbour can operate safely in 80 to 90 per cent of ocean swells at competitive travel times with rail or car commute times. TTF believes current proposals to re-establish regular passenger ferry services between Ettalong on the Central Coast and Sydney Harbour are worthy of consideration. In addition to expanding options for the growing number of Central Coast commuters, regular passenger ferry services would stimulate demand for tourism on the Central Coast.

Recommendation: Establish regular passenger ferry services between the Central Coast and Sydney Harbour.

5. Roads

Private vehicle journeys on the state's roads will continue to make up the vast majority of journeys made across NSW. In Sydney, completing the missing links in the Orbital Motorway network must be a priority. Consideration must be given to the way in which road use is priced, noting the substantial discrepancies in the method used across the existing network of toll roads.

a. Complete the missing links

M5 East

The importance of the M5 East Expansion to both Port Botany and Sydney Airport, and hence the entire national economy makes the project an ideal candidate for federal funding. TTF believes there is a compelling case for the Commonwealth to provide at least half of the total project cost (approximately \$2.5 billion). Additionally, this project should be considered in conjunction with the Moorebank intermodal freight terminal and the M4 East extension, previous plans for which have included a link through to the Botany area.

Recommendation: Seek Commonwealth funding to deliver the M5 East project within the next five years.

M4 East

Increasing traffic flows from Sydney's west, the impact of projected freight movements from Port Botany and increased traffic from Sydney Airport make the M4 East is vital to maintaining the efficiency of Sydney's road network. The M4 East provides not only the necessary connection to the CityWest Link, filtering CBD-bound traffic away from Parramatta Road, but proposed connections to the airport and Port Botany will divert traffic away from the CBD, allowing fast connections with Sydney's orbital network.

The M4 East is the most symbolic missing link in the Sydney motorway network. Funding must be allocated in the next budget cycle to update traffic modelling and determine an optimal alignment for the project. TTF believes the M4 East should be considered alongside the proposed CBD light rail line, in particular the impact it will have on traffic volumes along Parramatta Road and opportunities to leverage tax revenue from value capture along this corridor.

Recommendation: Expedite project feasibility studies for the M4 East Motorway; and deliver the project in conjunction with the Parramatta Road light rail extension.

F3 to M2 link

Linking one of Australia's busiest freeway corridors, the F3, to the Sydney orbital motorway network will dramatically improve traffic conditions throughout the catchment of the Pacific Highway through the city's North and Pennant Hills Road in the North West. The government should seek to complete the F3 to M2 link in conjunction with the Pacific Highway Upgrade with funding contributions from the federal government.

Recommendation: Include the F3 M2 Link in the Pacific Highway Upgrade project.

b. Western Sydney Ring Road

TTF supports proposals for the establishment of a Western Sydney Ring Road through a series of targeted road network enhancements on the periphery of the Parramatta local government area. Intersection upgrades along the M4, James Ruse Drive and Cumberland Highway will create a free flowing arterial road and allow traffic to

circumnavigate Parramatta and Westmead quickly and efficiently. TTF believes this project should be delivered as a short term priority for transport in Western Sydney.

Recommendation: Deliver the proposed Western Sydney Ring Road to improve traffic flows around and within Parramatta.

c. Longer term priorities

Beyond the urgent missing links in Sydney's motorway network, there are a number of road infrastructure projects that will become the next generation of missing links, some of which may need to be planned within the 20 year life of the Master Plan. TTF believes these projects must be assessed and prioritised to provide certainty to affected communities and businesses in the short and medium term.

F6 Loftus to Sydney

An extension of the F6 from Loftus through to Sydney via the airport is critical to support the growth of southern Sydney and NSW regional centres. This could be developed on the already reserved corridor. Public transport priority measures could also be incorporated to increase public transport share. Combined with an expansion of the M5 East, this project would improve traffic flow and reduce congestion in the southern suburbs.

Military Road tunnel

While TTF supports the latest investment by the Government in travel demand measures along the Spit Road and Military Road corridors, more road infrastructure is urgently needed to ease traffic congestion along the corridor. A toll road tunnel from the Spit to the Warringah Expressway at Cammeray should be considered. This would provide traffic relief on Military Road and allow faster public transport links – including bus priority measures for the surface road.

Sydney outer orbital ring road

As western Sydney continues to expand, road links between major outer western sub regional centres, such as Penrith, Campbelltown, and Richmond will become increasingly important. Road links are currently inadequate to cater for projected population, employment, and economic growth. An outer ring road will be critical for freight and passenger movement to ensure Western Sydney remains a key driver of the NSW economy in the long term.

Recommendation: Prioritise the delivery of the next generation of Sydney's missing link road projects.

d. Road pricing

Sydney's toll roads are an important part of an integrated transport system, removing traffic from local roads and allowing bus operators to deliver faster services to key areas of Sydney. Toll prices must not only take into account the motivations of commuters on a particular road, but also the impact of congestion on other commuters and society as a whole.

Pricing of toll roads should be reassessed to balance demand and the availability of road space as well as incorporating the true costs of congestion. Historically, the operation of toll roads has been geared towards achieving cost-recovery rather than targeting congestion. As a result, significant failures have emerged, leading to inefficient road use across the Sydney Orbital network. For example, the elimination of the tolls on the M4 in 2011 led to large increases in travel times without significant benefit to most Sydney commuters.

Equally, inconsistent fare structures for tolling mean there are different pricing incentives for commuters in different parts of the city. This does not lend itself to the application of city-wide transport strategies, and reinforces transport disadvantage in some areas.

To avoid these consequences, tolls need to be cohesive across the network. With the move to cashless tolling, the introduction of a single toll structure such as distance-based tolling, should be considered across the Sydney Orbital network. While the cost per-kilometre for the construction and maintenance of Sydney's toll roads differs greatly, the enormous differences in commuter costs on individual roads has created animosity between various regions in the metropolitan area and led to people not perceiving the Sydney Orbital as one road network. This has been compounded by the NSW Government's policy of subsidising motorists on some toll roads and not on others.

Shifting to better road tolling policy will not only help change how commuters travel but also when they travel. Differential pricing of public transport fares in off-peak and shoulder periods reduces congestion when it's at its worst. Key thoroughfares such as the Harbour Bridge and Tunnel have benefited from the introduction of these measures. However, significant opportunities exist to increase patronage on under-utilised roads during non-peak times through a more flexible approach to pricing.

To maximise the benefit of differential road toll pricing, a cultural shift in work practices is also required. The lack of flexibility in working hours poses a major obstacle to the take up of these discounts by commuters. Employers are given no incentive to offer workers flexible start and finish times and as a result have broadly failed to do so. In tandem with measures to drive a wider mode shift, further tax incentives must be offered to employers who encourage off-peak and contra-peak commuting.

Recommendation: Greater flexibility and harmonisation of road tolling, moving towards a single road toll structure for the Sydney network. Encourage tax incentives for employers offering flexible work hours.

e. Park and ride

The flexibility and comfort of private vehicles cannot be matched by public transport and, moreover, public transport services cannot reach every neighbourhood and home in every metropolitan suburb. The increasing prevalence of park and ride journeys reflects the fact that the ability to drive from the home to a public transport hub is a highly attractive option for those travelling to Sydney's key employment centres – particularly for journeys originating in the low-density outer suburbs.

Park and ride facilities should be expanded as a means of meeting public transport patronage targets – as proposed earlier in this submission. As services commence on the South West and North West Rail Links over the coming decade, providing adequate parking at stations be critical in making public transport appeal to surrounding communities, many of which have higher-than-average rates of car ownership.

Recommendation: Expand park and ride spaces across the transport network.

Rosehill park and ride

TTF believes a significant opportunity exists to establish a major park and ride facility at Rosehill Station on the Carlingford Line and adjacent to Rosehill Gardens Racecourse. With parking in the Parramatta CBD facing capacity constraints, a dedicated facility with shuttle bus connections to Parramatta and direct access to the CityRail

network would be well patronised for weekday commuter journeys as well as off peak journeys related to events held at the racecourse.

Recommendation: Establish a high capacity park and ride facility at Rosehill Station.

Park and ride payments

TTF believes the implementation of the Opal Card system will enable innovative ways of pricing park and ride spaces and providing discounted parking for frequent public transport users. Flexible pricing and price incentives will become a powerful demand stimulus for park and ride and should be prioritised as functions of the Opal system are expanded beyond transport ticketing.

Recommendation: Use the Opal Card system for integrated park and ride payments, with discounts for frequent users.

f. Taxis

TTF supports the introduction of designated set down areas for taxis on cross streets of Sydney's major corridors as a means of improving network efficiency and in preparation for the proposed CBD light rail network and George Street transformation. The continued roll out of secure taxi ranks is also encouraged to improve safety for late night journeys. More dedicated and secure taxi ranks will improve the attractiveness of the state's major late night economy precincts, including in regional cities such as Newcastle and Wollongong.

Recommendation: Continue the roll out of dedicated spaces for secure taxi ranks across NSW.

6. Active transport

Cycleways

A long term vision for NSW transport must include investment in cycleways. The allocation of \$158 million over 10 years contained in the previous government's Metropolitan Transport Plan was welcome, and should be retained in the Master Plan. Cycleways are an increasingly important part of the transport mix, offering competitive – and often superior – travel times for inner urban commuters. Cycling is ideal for short range journeys, adds to the amenity of public spaces, and dedicated cycleways remove the need for cyclists to ride on existing roadways which hampers the free flow of traffic and increases the risk of accidents.

However, more needs to be done to provide facilities for cyclists at major transport hubs. The busway network in Queensland provides lock up facilities and change rooms to encourage commuters to cycle to their nearest transport interchange before continuing their journey into the CBD. This can provide a good model to emulate in NSW.

Additionally, any investment must be coupled with a long term campaign to encourage increased use of the new infrastructure emphasising the health, lifestyle and economic benefits of cycling. More also needs to be done to partner with employers to ensure appropriate facilities are available for cyclists, walkers and joggers to store bicycles, shower and change at the end destination.

Recommendation: Increase investment in cycleways and associated infrastructure such as lock up and end-of-journey facilities.

7. Corridor preservation

Preserving land for future transport infrastructure projects is essential for NSW. Failing to preserve key corridors before urban expansion occurs has dire consequences – it increases the cost of land acquisition, creates opposition from affected communities when new projects eventually proceed, increases disruptions during construction and fails to provide residents with certainty over their futures.

Each year land is not acquired for necessary transport infrastructure will see the cost exponentially grow. The largest example in Australia is that of the Eastern Seaboard High Speed Rail Link. Urban expansion across the eastern states will make the project increasingly expensive, with projections indicating that acquiring the land for a corridor between Melbourne and the Sunshine Coast in 2010 would cost around \$13.7 billion. By 2030, this cost will have risen to \$57 billion.¹²

Transport Corridor Preservation also spurs private investment, providing a direct benefit to government. A strong positive correlation exists between public transport access and land prices. Providing strong indicators to developers that public transport infrastructure will boost income from surrounding land sales. This presents a substantial funding boost for Government as well as greater certainty for home-buyers.

Stronger alignment between land use and infrastructure planning will better position NSW to cope with growth. This will require a long-term focus that evaluates the opportunity cost of failing to preserve future transport corridors versus short term gains from rezoning decisions.

Recommendation: Identify and preserve future transport corridors in conjunction with any planning decisions for rezoning and release of land for urban expansion, particularly on greenfield sites.

¹² Infrastructure Partnerships Australia: East Coast High Capacity Infrastructure Corridors: a realistic pathway to very fast trains. September 2010.

Regional Transport

Regional NSW is vital to the state and national economy, contributing approximately 17.6 per cent to Australia's GDP growth between 2009-10 and 2010-11. Upgrades to the state's road and rail infrastructure over the life of the Master Plan will be critical to ensure the ongoing economic productivity of regional NSW.

Separate regional transport plans will provide the necessary focus for each region's transport challenges. These plans, and their implementation must recognise the growing integration of different regions, particularly neighbouring regions. For example, the economies and workforces of the Illawarra, Hunter and Greater Sydney regions are becoming increasingly inter-related. Transport plans for each of these should be therefore be complimentary and not developed and implemented in isolation of one another.

1. Connecting the regions

The vast distances between NSW's main centres and challenging topography demand large scale transport expenditure and ongoing maintenance. The magnitude of these investments has resulted in successive governments prioritising other investments over regional road upgrades. This has seen the road toll, travel times and the cost of freight increase across regional NSW.

Transport is an essential service for regional centres. Long term investment in transport infrastructure is critical to ensure regional NSW's ongoing economic viability, by providing links to other regional and urban centres and enabling travellers to reach regional tourism destinations.

a. Roads

Roads will continue to be the most important part of transport in regional NSW. Regional NSW has the highest private vehicle mode-share in the state. Further, the increase in freight on our roads will have a rising impact on road tolls, damage costs and travel times without proper investment.

The immediate national priority is to complete the duplication of the Pacific Highway to support the efficient movement of freight and passenger vehicles.

Recommendation: Complete the duplication of the Pacific Highway.

The expansion of the Pacific, Princes and Hume Highways are the key priorities for the state's regional road network. Duplication and lane extensions of these corridors is essential for the safety of motorists as well as increased traffic flows and better travel times for freight movements. Vehicle movement on these corridors is expected to increase annually by three per cent, creating additional stress on the current road and increasing the risk of serious accidents. It is imperative that the government provide the necessary investment in these projects. In order to achieve these outcomes, additional funding should be sought from the federal government's infrastructure budget.

Greater road freight capacity for inland NSW must also remain a priority. The Central West of NSW is currently the most economically productive region in Australia that still is not connected to the state capital via a modern, cost efficient transport corridor. National truck traffic is expected to double between 2010 and 2020 and a second Blue Mountains crossing will be essential to meet that demand. Currently parts of the Great Western Highway

cannot take B-doubles and B-triple trucks, forcing trucks to take less direct routes between Sydney and the state's Central West and giving rise to sub-optimal supply chain outcomes.

Recommendation: Continue to invest in the upgrade of regional highways to improve safety, reduce travel times and enhance the efficiency of freight movements.

b. Rail

Rail access charges for passenger rail services

TTF believes that the price of access for long distance passenger rail is actively undermining the viability of this component of the rail industry. Long distance services make a significant contribution to regional Australia, particularly regional tourism, and facilitate state and federal government objectives of promoting regional development.

Passenger services generate less revenue than freight per dollar paid in access charges.¹³ They therefore have a lower capacity to pay relative to freight trains. Yet access charges currently impose freight train prices on passenger trains. TTF believes that failure of rail infrastructure operators – in particular the Australian Rail Track Corporation (ARTC) – to differentiate between freight and passenger services in their pricing structures is a significant impediment to the viability of long distance passenger operations.

Recommendation: Provide discounted access charges for long distance passenger rail services.

Countrylink

CountryLink, NSW's regional rail service has seen a significant decline in patronage over the past decade. This is largely due to a lack of long term direct investment in rail lines and rolling stock. In the decade from 1998 to 2008 patronage rates have fallen by 38 per cent.

There are major opportunities to bolster CountryLink as a tourism asset. Innovative marketing partnerships with local businesses as well as integrated and discounted ticketing systems will go a long way to improving overall service quality. This must also be met with adequate funding for network infrastructure in order to increase speed, reliability and safety of CountryLink services.

Further, CountryLink's failure to substantially improve product offering suggests private sector involvement could be a worthwhile option. Private investment could help not only help fund rail and rolling stock projects but also improve customer satisfaction. Franchising has had strong success in NSW for creating a whole-of-journey experience for passengers, particularly in the tourist market. Manly Fast Ferries is a prime example, who through a determined focus on customer service now operates without government subsidy at almost double the capacity of its publicly run competitor.

NSW faces a broad range of transport challenges as major regional centres expand and Sydney faces a modal shift as to how its residents commute. To effectively deal with this growth, the Transport Master Plan's long-term focus will be vital in delivering the investment and policy outcomes necessary.

¹³ Great Southern Railway (2006) *Submission to the Productivity Commission Road and Rail Freight Infrastructure Pricing*, p21.

Recommendation: Create marketing partnerships with local businesses to promote CountryLink services; and consider franchising CountryLink as an option to improve service delivery.

High speed rail

TTF believes high speed rail will play a significant role in the development of regional NSW in the long term. Please refer to page 5 for TTF's priorities on high speed rail.

2. Case Study: Transport in Newcastle and the Hunter Region

Newcastle is the second largest urban centre in NSW and the sixth largest in Australia. The population of Greater Newcastle – incorporating the Lake Macquarie and Maitland areas – is set to reach over 650,000 in the next 20 years.¹⁴

Economically, the region is of national significance. Newcastle serves as a textbook case study of structural adjustment, having undergone a considerable transformation over the last 15 years after the closure of the city's steelworks. Unemployment in Newcastle is much lower than the national average, and has been as much as two per cent lower than neighbouring Sydney on recent statistics.¹⁵ Heavy industry still plays a prominent role in the region – it is the world's largest coal export hub – however the education, health and defence industries have become the most prominent employers in the region. While the city's economy is well equipped to grow in its own right over the next 20 years, the area will continue to play a role in alleviating pressure on Sydney's infrastructure and services, which have struggled to keep pace with growth in recent years.

For a city of its size, transport infrastructure in Newcastle is well-developed, primarily owing to its proximity to Sydney and pre-eminence as one of Australia's oldest industrial port cities. However, recent years have seen a relative stagnation in the city's development. Novocastrians have suffered as a result of indecision and indifference – be it perceived or actual – on the major transport and development issues facing the city. The most notable of these is the Newcastle rail line.

At the departmental level, much work has been undertaken to explore options for Newcastle's future transport network. Whether through fear of controversy or political conservatism, none of these plans have come to fruition. TTF believes it would be remiss not address Newcastle's most pressing transport issues in the Transport Master Plan. The following recommendations should be considered in doing so.

Summary of recommendations

Terminate the Newcastle rail line at Wickham.

Preserve the Newcastle rail corridor as a shared-use corridor for pedestrians, cyclists and low-speed traffic.

Set a timeline for the delivery of the Fassifern to Hexham rail bypass.

Expedite the Glendale Transport Interchange project.

Re-position Kotara Station closer to be adjacent to the Kotara Commercial precinct.

Remove the Adamstown level crossing.

¹⁴ State of Australian Cities 2011, Department of Infrastructure and Transport, Major Cities Unit.

¹⁵ Ibid, page 83.

Consider a Newcastle CBD light rail network in the long term.

Improve bus priority measures and customer information on strategic bus routes across Newcastle.

Invest in local road upgrades for the Hunter valley wine region.

Deliver the F3 to Pacific Highway link project.

Deliver the F3 to M2 motorway link.

a. Public transport

With much commercial development occurring outside the Newcastle CBD over the last 20 years, travel patterns have trended away from the city's old CBD, however it remains a key employment hub and is experiencing strong medium and high density residential growth. The resurgence of the Newcastle CBD has opened up a multitude of options for urban renewal and precinct development, for which public transport and associated infrastructure must be a key consideration.

Table: Journey to work travel demand to Newcastle City Centre by mode¹⁶

	Daily	Peak period	Mode share % of peak period
Car	11,300	6,500	77.4%
Train	700	500	6.0%
Bus	800	600	7.1%
Ferry	100	100	1.2%
Cycle	100	100	1.2%
Walk	1,000	600	7.1%
Total	14,000	8,400	100%
Public transport sub-total	1,600	1,200	
Public transport mode share	11.8%	14.1%	

The two passenger rail lines servicing Newcastle and the Hunter region experience low patronage relative to the Sydney network, but nevertheless play an important role in the region's transport task. Buses, however, carry most public transport passengers across the Newcastle area (noting the above table is for journeys to the CBD only). Recent years have seen debate over the future of the CBD rail line, which has become a physical barrier between the historical city centre and the harbour waterfront, an emerging mixed-use precinct. The rail corridor itself occupies what is now highly sought after real estate, bringing about calls for its removal to enable new development to occur.

Newcastle rail line

The fate of the Newcastle CBD rail line is the single biggest transport issue facing the region, and it would be remiss of the Master Plan not to address this issue. TTF supports the proposed truncation of the Newcastle line at Wickham as per the Newcastle City Centre Renewal Transport Management and Accessibility Plan (TMAP). This would enable the development of land adjacent to the corridor, vital to integrate the Honeysuckle precinct with

¹⁶ Newcastle City Centre Renewal Transport Management and Accessibility Plan, 2010.

the rest of the city – a process which has stalled due to uncertainty under the previous state government, further exacerbating the shift in commercial activity from the CBD to suburban mega mall complexes.

A new Wickham transport interchange would also trigger a rejuvenation of the Newcastle West business district, remove the Stewart Avenue level crossing and open up a number of cross streets for direct access to Honeysuckle and the Newcastle Harbour foreshore.

A two-way CBD bus loop, to meet each arriving and departing train service would ensure public transport access to major trip-generators on the Honeysuckle, Hunter Street and King Street corridors. An enhancement of ferry services may also be feasible to link rail commuters from Wickham to the city centre and Stockton.

Recommendation: Terminate the Newcastle rail line at Wickham.

The rail corridor between Stewart Avenue and Newcastle station should be preserved as a shared-use corridor for pedestrians, cyclists and low-speed traffic. This would create an inviting public space and enable inward-facing commercial development, and the adaptive reuse of the historic Civic and Newcastle Station buildings.

Recommendation: Preserve the Newcastle rail corridor as a shared-use corridor for pedestrians, cyclists and low-speed traffic.

Fassifern to Hexham rail bypass

The NSW government must act to intervene in plans by the ARTC to establish freight train sidings at Hexham that may prohibit the future delivery of the much-needed Fassifern to Hexham rail bypass – a project which would dramatically reduce wait times at level crossings and enhance the efficiency of Newcastle’s passenger rail services by removing freight trains from the network. The Master Plan must set a clear timeline for the delivery of the Fassifern to Hexham bypass in order to provide certainty to the many Novocastrians regularly impacted by the unnecessary presence of freight trains at the city’s level crossings.

Recommendation: Set a timeline for the delivery of the Fassifern to Hexham rail bypass.

Glendale interchange

The proposed Glendale Transport Interchange must be prioritised by the NSW government. It is estimated that the \$60 million project, entailing a new train station at Glendale shopping centre and bus corridor directly linking the centre with the Cardiff industrial estate, will generate in the order of \$600 million worth of commercial, industrial and retail development. A new Glendale Station promises to be one of the areas busiest transport hubs, expanding public transport access to one of the region’s major commercial districts and providing enormous park and ride capacity for journeys both to the Newcastle CBD, and south to the Central Coast and Sydney.

Recommendation: Expedite the Glendale Transport Interchange project.

Kotara station realignment

Just as the Glendale Transport Interchange involves retrofitting existing rail infrastructure to capture demand from a key commercial precinct, the same concept can be applied further along the rail line at Kotara. Kotara Station is one of the least patronised on the entire CityRail network, with only 50 passengers using the station on

an average weekday.¹⁷ This does not accurately reflect transport demand in the area, with one of the Hunter Region's busiest commercial areas merely one kilometre away and adjacent to the train line. Re-positioning Kotara Station to be closer to the suburb's booming shopping precinct would see a substantial increase in rail patronage across the Newcastle area.

Recommendation: Re-position Kotara Station closer to be adjacent to the Kotara Commercial precinct.

Level crossing removal

Due to the high volume of freight trains on Newcastle's rail lines, wait times for motorists at level crossings are excessive. By far, the worst of the city's level crossings is at Adamstown Station, where lengthy traffic queues and waits of up to 10 minutes are commonplace. Recent studies on the crossing report that the gates can be closed for up to one quarter of the day during a 24 hour period. This is simply unacceptable, and has a considerable adverse impact on the surrounding communities of Adamstown, New Lambton and Broadmeadow. The recent decision not to deliver a freight rail bypass of Newcastle will result in a higher volume of freight trains over time, an invariably more frequent and longer waits for local motorists.

The NSW government must examine options for grade separation at Adamstown, fund and deliver the project well within the 20 year scope of the Master Plan.

Recommendation: Remove the Adamstown level crossing.

CBD Bus Loop

TTF supports the implementation of high frequency CBD shuttle services and fare free zone for regular bus services within the Newcastle CBD as a means of promoting public transport use. As stated previously, a two way CBD loop from a future Wickham rail terminus down Hunter Street, King Street and through Honeysuckle will be required with the removal of the CBD rail line. While the primary function of loop services will be to shuttle rail passengers to their destinations, there may be a case in the longer term to replace CBD loop buses with light rail.

Research undertaken by Transport for London in 2004 found that at capacity levels below 3,000-3,500 bus was generally the lower cost mode; however beyond 4,000 passengers per hour, light rail was the lowest cost mode.¹⁸ While factors such as urban amenity may influence the choice of light rail over bus, capacity must be taken into account from a commercial viability viewpoint. Currently, CBD public transport journeys across rail and bus does not exceed 2,000 passengers in peak periods¹⁹, however future peak demand, combined with off-peak leisure and tourist journeys may warrant more serious consideration of a CBD light rail – particularly for the Honeysuckle urban renewal area.

Recommendation: Consider a Newcastle CBD light rail network in the long term.

Strategic bus corridors

The most patronised bus corridors should be targeted for improved frequencies and customer service enhancements such as real time information and bus priority measures to reduce travel times. Buses carry the

¹⁷ Compendium of CityRail Statistics – Seventh Edition. June 2010.

¹⁸ Transport for London, *Board Papers: West London Tram Project*, in Agenda and Board Papers for the meeting of April 29 2004, p6.

¹⁹ Newcastle City Centre Renewal Transport Management and Accessibility Plan, October 2010.

majority of public transport passengers across Newcastle, and will play a leading role in meeting the target of 20 per cent of journeys into the city centre by made by public transport by 2016.

The NSW government should expand the use of its PTIPS bus priority system to the Newcastle bus network to reduce journey times and improve on-time running. TTF believes enhanced bus priority measures and customer information is the single most important initiative to increase public transport use in Newcastle.

Recommendation: Improve bus priority measures and customer information on strategic bus routes across Newcastle.

High speed rail

Please refer to page 18 for TTF's priorities on high speed rail in NSW.

b. Roads

Historic, demographic and geographic factors dictate that travel by private car will continue to dominate transport mode share across the Hunter Region. The following recommendations outline TTF's priorities to enhance the region's road infrastructure.

Hunter Valley wine region

The Hunter Valley wine region is one of the state's premier tourist destinations. Years of underinvestment in the region's roads by both state and local governments has adversely impacted the experience of visitors, most of whom drive between vineyards and major attractions. The Hunter Expressway will dramatically improve access to the area from both Newcastle and the F3 Freeway, however without ongoing targeted investment in local roads, the tourist experience in the Hunter Valley vineyards will continue to be sullied by unsatisfactory road quality. TTF recommends immediate investment in local road enhancements and maintenance in the Hunter Valley wine region.

Recommendation: Invest in local road upgrades for the Hunter valley wine region.

F3 to Raymond Terrace

As the Pacific highway upgrade is delivered over the coming years, improving traffic flows along the corridor, the bottleneck at the junction of the Pacific and New England Highways at Beresfield will be exacerbated, with significant impacts on local, freight and holiday traffic. The Proposed link from the end of the F3 to the Pacific Highway at Raymond Terrace should be delivered as a priority and considered as part of the broader Pacific Highway Duplication project.

Recommendation: Deliver the F3 to Pacific Highway link project.

F3 to M2

While it is outside of the Hunter Region, F3-M2 missing link has a profound impact on the accessibility of Greater Sydney for Hunter residents. As such, the implications of this project for regions outside of Sydney must be considered in weighing up its merits. Further details on this project can be found on page 28 of this submission.

Recommendation: Deliver the F3 to M2 motorway link.

The customer experience

The days of public goods and utilities being insulated from the competitive pressures driving innovation in other service industries are over, and the benefits of a strong customer focus are being realised in public transport. Users are increasingly being considered as customers, with legitimate needs and expectations. Politicians, policy makers and operators are realising that targeted investment and improvements to service delivery can increase a customer's propensity to use public transport and help to justify further investment in capacity.

The fundamental aspects of quality public transport services such as reliability, frequency and network coverage are understandably also the foremost concerns of customers, and the primary barriers to increased usage. While it is understood that significant ongoing investment in fundamental infrastructure is needed to serve these basic customer expectations, this is no longer enough to satisfy the needs of public transport customers. The expectation is not simply for more services, it is for better services, more information and higher levels of comfort and convenience.

The NSW Government is to be commended on the progress made in placing the customer at the centre of transport decision making since coming to office in 2011. The creation of a customer experience division within Transport for NSW (TfNSW) is indicative of a substantial cultural shift in the delivery of transport (both public transport and roads) in NSW.

TTF's 2011 research paper *Improving Your Commute* examined some of the major barriers to public transport use among less frequent and non-users of public transport as well as the factors that drive negative or unfavourable perceptions among frequent users. In all user groups, two key themes emerged from the research:

- A natural aversion to the unknown is at the heart of customer perceptions (negative or otherwise) of public transport; and
- There is an inherent relationship between the customer's experience of public transport and the perceived level of control over their environment.

TTF believes these principles should guide all decision making aimed at improving the customer experience on public transport. Overcoming barriers to public transport use requires a combination of enhancements to basic aspects such as information and ticketing as well as some innovative approaches, such as the recent introduction of quiet carriages.

1. Information

Both the quantity and quality of information available is vital in overcoming any reservations or negative perceptions of the transport network held by customers. Knowing exactly how far away the bus or train is provides immeasurable benefits for customers, allowing them to accurately time-manage and make confident and informed transport choices. Real-time information must be the top priority for improving the customer experience.

The government must carefully consider its role in delivering customer information, and the formats in which it is delivered. Research undertaken by Metlink suggests that 61.1 per cent of public transport users are now also accessing the internet via mobile devices, which has almost doubled since 2010.²⁰ Agencies in other states report similar trends in the use of mobile devices, and it is expected that within the next two to three years as much as

²⁰ Ibid.

80 per cent of access to information will happen on mobile devices. Therefore developing apps and mobile-formatted web content can no longer be considered a niche area in customer information.

a. Real-time information

Real-time information is fast becoming a basic expectation of transport customers, as standards of GPS tracking and data collection improve. Real-time information lets customers know exactly how far away their service is, and plan their journey with much greater certainty, eliminating the anxiety associated with unexpected waiting or services not running to timetables. TTF research suggests this aversion to the unknown is one of the major factors behind negative or unfavourable perceptions of public transport. Real-time information overcomes these concerns by empowering customers with a greater sense of control over their journey and dramatically enhancing their time management.²¹

Delivery to mobile devices

The delivery of real-time information to web-enabled devices is now a primary focus of transport operators. Yarra Trams' TramTRACKER® is the market leading real-time information product in Australia, providing information on exact arrival times for every stop on the Melbourne tram network. TramTRACKER® caters for all levels of technology – available on phone, SMS, online, for smartphones and widgets for computer desktops. Yarra Trams has also set the national benchmark in on-street real-time information, with other networks set to implement similar initiatives in the near future.

Sydney bus commuters can also access real-time service information via a GPS tracking system linked with the state's traffic management system. The 'Next Bus' SMS service delivers estimated arrival times for State Transit Authority (STA) buses in real-time. Despite the availability of real-time GPS data, SMS remains the only platform for delivery of 'next bus' information.

TTF believes the delivery of a 'Next Bus' website or smartphone app for Sydney Buses should be a priority in order to make best use of the GPS infrastructure already in place. This could be done on a cost-neutral basis by making the required data available to third party software developers. For example, Transport for London (TfL) has allowed its real-time bus data to be used for third party apps, resulting in the creation of a number of apps with features such as alarms to notify customers when they have arrived at their destination bus stop.

Recommendation: Provide Next Bus service information to customers via smartphone apps, and online.

On-street display

Real-time information displays at bus and tram stops and train stations must also be provided where the volume of passengers warrants the required investment. For example, Yarra Trams has installed passenger information displays (PIDs) for TramTRACKER® data feeds at the busiest tram stops across Melbourne, in public places and businesses adjacent to tram corridors. Similar information displays have also recently been introduced at Sydney ferry wharves under a project delivered by Thales. TTF supports the roll out of this technology for the bus network.

Most busy metropolitan rail stations feature real-time countdowns of train arrival times on platforms and station concourses. TTF believes there are opportunities – particularly in CDB locations – to display this information outside stations in an effort to better manage crowding. In areas with high pedestrian traffic, establishment and

²¹ PwC for TTF: Improving your commute: lifting customer service in public transport, August 2011. <http://ttf.org.au/Content/improvingcommute0711.aspx>
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operating costs could be offset by advertising revenue, or through partnerships with business and local government as Yarra Trams have with their real-time PIDs.

Recommendation: TfNSW must work in partnership with business and local government to provide real-time information displays on-street in areas of high passenger demand.

At stops with lower passenger demand, where it may be harder to justify the installation of a physical real-time display, there are opportunities to take advantage of the rapidly growing number of commuters carrying web-enabled smartphones. For example, displaying Quick Response (QR) Codes at stops or on-board services can directly link customers to real-time information feeds, or to download an app that provides this information. QR codes work in a similar fashion to barcodes, using a phone's camera to scan and then link to a website or other function on the device.

QR codes are already widely used in retail marketing and for applications such as digital customer loyalty cards. Public awareness of the codes' functionality is currently limited, but will undoubtedly increase as they applied to more non-marketing purposes such as transport information. By leveraging the capabilities of smartphones, the use of such technology offers a low-cost option of linking customers to real-time information, wherever they are on the network.

Recommendation: Examine low cost options such as QR code links to provide access to real-time transport information at low demand transport hubs.

b. Road network information

NSW Roads and Maritime Services (RMS) already has in place a robust real-time information system to alert motorists to road network disruptions and estimated travel times on major corridors. The successful trial of estimated travel time displays on selected motorways should be rolled out across the entire Sydney Orbital Motorway network, as well as major state highways. Providing this information online may also assist motorists in making more informed decisions as to when to leave and which route to choose before they leave home – i.e. it is better to know about traffic congestion before one becomes part of it.

Recommendation: Roll out estimated travel time displays across more major NSW road corridors and online.

c. Data collection and sharing

It is difficult to imagine how transport information will be delivered and consumed in 10 or 20 years from now, and history has shown that communication media will emerge and decline with developments in technology. Government faces an inherent risk, therefore, when committing resources to any IT-based public information service. TTF believes this risk can be circumvented by divesting (at least in part) the delivery of customer-facing information services to third parties who may be better equipped to adapt to changes in customer expectations and the platforms on which information is consumed.

The primary role of government in this area must be to collect robust base-level data and provide it for free or at cost to whomever is interested in developing and delivering a customer-facing product. Government agencies can develop their own products in-house, however must not disregard the benefits of providing a range of choices for

customers to access the same information on a variety of platforms. For example, Google now integrates public transport and traffic information on its popular maps service, which may provide the most user friendly means of journey planning for tourists unfamiliar with a local network.

Recommendation: Provide data feeds to third parties to develop a wide range of products and services for customers to access transport information.

2. Ticketing

The strong progress of the Opal Card project is an encouraging sign for the future of Sydney's public transport network. Integrated smartcard ticketing is long overdue, and will bring the network up to the standard expected of a modern global city. While recognising the need to get the fundamentals of the Opal system in place and operational, TTF believes it is important to consider how the full capabilities of the system can be activated to deliver optimal outcomes for customers.

It is true that there is a significant first mover disadvantage in implementing electronic ticketing systems, however by the time the Opal system is activated, NSW will have only just caught up with other Australian jurisdictions and will be well behind some other global cities, now moving into the next generation of electronic smartcard ticketing. Innovation and bold decision making will be required to get the most out of the Opal system.

a. Open source payments

The Opal system will be engineered to handle open source payments – i.e. 'tap and go' payments from any credit or debit card or device with an embedded NFC (near field communication) chip. The system will in effect be identical to the current generation of London's Oyster Card system, which is set to have open source payments activated for the upcoming 2012 Olympic Games, eliminating a considerable degree of uncertainty for visitors when using public transport to get to Olympic events.

Pending the successful roll out of open source payments in London, the NSW government should consider providing the same capability for the Opal system as soon as practicable. This could potentially avert the need for a dedicated ticketing product for tourists or occasional users, making public transport more accessible to those who may avoid using it if they do not have their own Opal Card.

Recommendation: Enable open source payments for the Opal system as soon as practicable.

b. Expanding Opal functionality

The increasing prevalence of 'tap and go' payments, driven by the major credit card companies, means that by the time the Opal system is rolled out and operational, customers' expectations of functionality will have changed substantially. Already, transport smartcards in other global cities are used for a range of purposes including small retail purchases, parking fees, taxi fares as well as identification and security functions. Singapore's EZ-Link card is used for e-tolling for private cars.²² Once the Opal system is operating across all public transport modes, the government should explore options to apply it to a wider range of payment, identification and security purposes.

²² EZ-Link Corporate Information: Company Profile. Retrieved 9/6/2010 from: http://www.ezlink.com.sg/corporate/corp_companyprofile.jsp

Recommendation: Expand the Opal system to incorporate a range of functions including parking fees, taxi fares and small retail payments.

c. Private ferry services

Sydney's private ferry operators play an important role in providing a premium option for commuters between Manly and the CBD and alleviating pressure on Sydney Ferries services – all at zero cost to government. Rolling out the Opal system to all private ferry operators will help drive growth in ferry patronage, and further encourage competition between operators on Sydney Harbour.

Recommendation: Roll out Opal system on Sydney's private ferry operations.

d. Integrated transport payments

Within the 20 year scope of the Master Plan, it is highly likely that transport pricing will have changed considerably. The price of private road transport will inevitably come to reflect triple bottom line impacts, and it is expected that all modes will move to a rationalised user pays system. In any event, electronic payments will play an important role in the lives of anyone using public transport or roads in NSW.

The advent of the Opal system will mean that all public transport users and the vast majority of motorists in NSW will have some kind of electronic transport payments account. Over time, duplication in these accounts will become increasingly evident, and there may be a case to integrate the two. TTF believes the government should consider, as a medium term priority, establishing a one stop shop for all transport payments and account management, including toll roads, public transport fares and parking fees.

A single transport account, combined with real-time traffic and public transport information would enable more informed transport choices for customers (on the basis of both travel time and price), and provide government with a more direct means of managing demand through accurate information and price incentives for different modes at different times. TTF believes the private sector is best placed to provide a customer-facing one stop shop for these purposes.

Recommendation: Integrate customer payments and account management for public transport, toll roads and parking fees.

3. Interchange

An increased focus on interchange will be necessary so that Sydney's radial transport network can cater for customers' increasingly decentralised and complex journey needs. Ease of interchange will not only need to be a focus within modes of public transport, but also across modes of transport. Successfully achieving this will be essential to increasing public transport usage in a cost effective manner. The expansion of light rail along inner city corridors, in particular will rely heavily upon

Currently interchanges are a significant barrier to increased public transport use, particularly for non-commuting trips. Operationally, interchange trips are often more efficient in terms of costs and reducing congestion. Australian research suggests that on average passengers are willing to undertake between 5 and 10 minutes of

additional travel time within a mode to avoid using an interchange.²³ This is confirmed by TTF research, which found that just over 50 per cent of customers would stay on the one service, even if it took longer to get to their destination. Encouraging customers to make interchange trips when it is quicker and more efficient must be a major focus of the Master Plan.

a. Best practice interchange guidelines

Interchange has been identified by Transport for London as a key issue for best-practice public transport provision. Transport for London has developed a *Design and Evaluation Framework* for interchange hubs in which four best-practice design themes are identified, those being:

- Efficiency – design should ensure that interchange facilities “provide a seamless experience for passengers as they move between public transport services”.
- Usability – a key barrier to interchange was identified in the usability of interchange facilities. The framework highlights the importance of interchanges which are safe, secure, and comfortable, and at which the fear of unpleasant experiences is minimised.
- Understanding – this design theme involves more than simply the provision of valuable information, but also how information is provided; it must involve clear and minimal signage and be easy to use.
- Quality - quality refers to the attractiveness of the design to users. An interchange may be a destination in and of itself due to the facilities it offers, or its design may create a sense of community and place.²⁴

Similar best practice guidelines for interchange in NSW should be established to support the introduction of light rail to inner Sydney and to encourage commuter behaviour more conducive to a trunk and feeder network design.

Recommendation: Develop best practice guidelines for transport interchanges in NSW.

²³ Australian Transport Council (2006) *National Guidelines for Transport System Management in Australia*, Volume 4: Urban Transport, Appendix A, p 75

²⁴ Transport for London, 2009. *Interchange Best Practice Guidelines*.