

**Submission on behalf of the  
Department for Planning & Infrastructure**

**February 2009**

**Inquiry into the investment of Commonwealth and State funds in  
public passenger transport**

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| <p><b>c) As assessment of the benefits of public passenger transport, including integration with bicycle and pedestrian initiatives</b></p> |
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**Who Benefits from Public Transport?**

Quality public transport services provide benefit to the whole community. Public transport connects people with goods, services, places and other people, Public transport minimizes negative community and environmental impacts from mobility over reliant on the private car. Public transport is an essential public service which provides significant benefits to the entire community, not only direct users. International studies have shown that the provision of quality public transport services provide net economic benefits to the economy (Newman & Kenworthy, 1999)

Perth has a transport system that is heavily dependent on the private motor car to move people. While a car-reliant system has many positive outcomes such as demand responsiveness and flexibility, it also has negative impacts such as congestion and declining air quality/urban amenity.

While recognising that the private motor vehicle will, for the foreseeable future, be the dominant means of personal travel within the Perth Metropolitan Region, there is a need to balance car usage with greater use of alternative modes such as walking, cycling and travelling as passengers in cars, buses, trains and ferries. Such a balance will allow the best aspects of the different modes to contribute to enhancing the overall accessibility and amenity of the Perth metropolitan region.

Investment in public transport provides benefits for the whole community through improved access, opportunities and lifestyle choices. This particularly benefits those who choose not to drive or perhaps do not have ready access to a private vehicle, such as students, elderly or infirm people or people who may be socially/economically disadvantaged. Overall about 45% of Perth's population does not have ready access to a private car. This is because of a variety of reasons (e.g. financial, age or health). For

example, 27% of Perth residents do not have a driver licence, and more than 5% per cent of Perth households do not own a car. For these members of the community public transport is an important lifeline to daily needs (Perth & Regions Travel Survey, 2002-2004).

Similarly public transport is not just a means of getting from point A to point B. Public transport networks also constitute a social space where people can establish and maintain loose social networks, benefit from feelings of connectedness and gain independent access to social contact and activities that prevent social isolation.

Those who do not currently use public transport also benefit from the consequent reductions in externalities or 'social costs' arising from reduced traffic and congestion on the road system, and the option to use the public transport system if needed. For example, even entrenched car users may at some point in their life reach an age where they no longer wish to drive. Without investment in public transport such users would find themselves without a viable means of alternative transport.

Past experience within the Perth metropolitan region shows that where significant investment in public transport has taken place, such as the construction of the northern and southern rail lines or bus enhancements like the CAT in Central Perth within the more established areas of the region; the public transport network has contributed to the overall vitality and cohesion of the wider city. This has typically occurred through 'place making' or by reinforcing the role of existing activity centres and former strip developments.

From a social perspective proper investment in public transport is also crucial if Perth is to address issues of locational disadvantage. Whilst bringing with it a wide range of benefits, the general economic revitalisation of inner city suburbs and urban redevelopment, has meant that low-income groups have still continued to be pushed further towards the fringes of Perth in search of cheaper housing options. While purchasing property in these areas is often cheaper, subsequent costs, including travelling time and reductions in personal time, are much higher than for those who can afford to live closer to employment and other activities.

Typically the household budgets of families living in outer areas would most benefit from more competitive public transport services. For example it has been estimated that a family household can gain an extra \$750,000 in superannuation over a working life through one less car (cited in Kenworthy 2005). It should also be noted that the growing issues associated with locational disadvantage are likely to be magnified in coming years by the predicted increases in the price of oil and resulting impacts on travel and household expenditure.

There are few other areas of public investment which have the potential to provide as many long-term benefits and influence so many aspects of people's 'quality of life' as public transport. An effective public transport system is essential to enable Perth's

businesses, residents and visitors to take full advantage of the plethora of opportunities available within the city and to share in its evolution. Some of these benefits include:

- supporting increased urban densities around public transport nodes and along public transport corridors;
- providing access to community services and employment and social interaction;
- reducing commuter travel time, travel stress and loss of productive work time;
- improving environmental outcomes by reducing the number of private motor vehicle trips, and
- improving travel choices, particularly for people disadvantaged in their access to transport.

Clearly if Perth is to remain attractive to business, socially responsible and improve its air quality, then investment in public transport is not only warranted, but essential.

### **What Are the Benefits?**

Public transport has important economic, social and environmental benefits. It is generally regarded as playing a role in relieving reliance on cars and associated congestion, air pollution, noise and accidents. In particular circumstances such as travelling to work to locations in the CBD, it has clear advantages over other forms of transport and is the preferred mode. More generally, for those with limited or no access to a car, it enables active participation in community life.

#### Economic

Good public transport is critical to Perth's future economic health. Perth faces the dual imperatives of remaining competitive in an increasingly globalised world, and satisfying the needs of an increasingly demanding population for a highly livable urban environment. Although Perth is currently recognised for its high livability and relative ease of movement, investment in public transport will be a key ingredient in retaining these qualities by limiting congestion, enhancing connectivity and supporting livability.

Proximity to public transport has become a critical factor in where businesses locate. Not only does it make it easy for customers to access business premises, public transport makes it easy for workers to gain quick, reliable access. Travel to and from work accounts for 34% of all weekday car driver trips and 50% of car kilometres travelled on weekdays in the metropolitan area. (Perth & Regions Travel Surveys, 2002-2004).

Traffic congestion during peak periods in Perth will continue to increase as Perth's population grows. Public transport plays an important role in offering an alternative to car use, and is particularly important in relieving road congestion in the inner areas, thus contributing to the efficiency of freight and passenger movements on roads. International experience has shown that any transport strategy that relies on road building alone to solve traffic congestion problems in fast growing urban areas will fail. At the very least, public transport can help to ensure that the congestion problem does not worsen, and in the right conditions can play an active role in reducing traffic volume and speeding up

journey times. While managing urban congestion is generally not the sole focus, public transport initiatives are regarded as one of the tools available to respond to this growing problem and lessen its economic impact.

In particular, the important role of public transport in helping to manage congestion at key times (such as the commuter peaks) and key locations (such as Central Business Districts, regional centres and on key corridors) is recognised. Although actual data is somewhat limited, available evidence indicates that the impact of public transport initiatives on congestion management is greatest when part of an integrated package, which might include measures such as:

- supportive land use policies;
- restraints on car use;
- traffic management measures;
- simplified fares and integrated ticketing;
- high levels of reliability; and
- tax incentives.

It has been estimated that a 'public transport orientated' Perth could save \$1.7 billion annually in passenger transport costs and gains in productivity in comparison to car dependent model. Increasing the proportion of commuters using public transport instead of cars will be critical to maintaining and increasing the efficiency of Perth (cited in Kenworthy, 2005).

Public transport also has a major economic role to play in leading the way to improved transport energy security. In a world where fossil fuels are becoming increasingly scarce, the need of Governments to ensure future transport energy supplies that are local and secure, as well as sustainable, is extremely important. Public transport fleets can provide a useful stimulus and market for a local solution.

### Social

Investment in public transport produces significant social benefits, including public health improvements. While the impacts of rising oil prices are being felt across Perth and Western Australia, the greatest negative impacts fall disproportionately on the lower socio-economic suburban groups living in outer suburban areas. These groups are already the most economically and socially vulnerable in our society and run the risk of being placed at a further disadvantage. Often they are already living and working in locations poorly served by public transport.

Improved quality and quantity of public transport has the potential to redress this impact immediately, efficiently and effectively. Public transport also contributes significantly to public health improvements. It not only benefits the economically disadvantaged but also people with disabilities, who as systems become more accessible, are able to lead more independent lives.

Lack of physical activity has been identified as the second leading modifiable factor contributing to death and disease in Australia; second only to tobacco (cited in Kenworthy, 2005). Public transport plays a role in addressing this as most public transport journeys also involve walking or cycling to the train station, bus stop or ferry stop. Research undertaken on the travel behaviour of residents in a typical middle suburban municipality (City of Melville) for the WA TravelSmart program indicates that the average time spent walking to and from the bus stop is 13 minutes. This indicates that one public transport journey (one trip there and one trip back) can potentially achieve the minimum recommended daily dose of 30 minutes physical activity. In contrast, the average car trip involves people walking for only two minutes to and from the car park.

From a public health perspective it is widely recognised that public transport is one of the safest ways to travel. Without public transport it is estimated that society would pay an additional \$1 billion in health costs through increased road fatalities alone. In 2002 Western Australia's fatality rate of 9.3 deaths per 100,000 population was 7% higher than the national average. In 2002 there were 67 fatal crashes (71 people died) within the metropolitan area of Perth, with an additional 6,391 incidents requiring hospitalisation or medical attention and 23,436 incidents of property damage. In total the Road Safety Council of Western Australia estimates that these 29,894 traffic crashes cost the Western Australian community approximately \$1,125.7 million (Road Safety Council WA 2005, p. 8).

#### Environmental

Quality public transport services have a major role to play in contributing to an improved local and global environment and providing wider sustainability benefits such as long term minimisation of energy use and reduced vulnerability to future fuel price increases.

Environmental gains particularly include greenhouse gas emission reductions and consequent improved air quality. In Australia road based transport is known to contribute to approximately 89% of the transport sectors total greenhouse gas emissions, with private cars accounting for more than half of the emissions (CSIRO 2001b, p. 63).

In a study analysing the projected benefits and costs of the new South West Metropolitan Railway project, the Planning and Transport Research Centre 2004 (PATREC) assigned a monetary value on the contribution of car travel to air and water pollution of 4.94 cents per kilometre travelled. Given that the average annual travel distance per capita in Perth by private car is approximately 12,029km and growing, the cost towards air and water pollution could be roughly calculated to \$600 per person annually, or around \$832 million for the population of Perth alone. (Curtis, C. 2001, *Future Perth – Transport Issues and Options – Discussion Paper*, WAPC, Perth, Western Australia).

Whilst bus journeys incur some of the same costs as car journeys due to their reliance on the road network, effective use of bus services ensures that resources are used more efficiently. This is a result of the accumulated savings from having a large number of

people travelling in one vehicle. Such benefits are critical when considering issues such as priority for public transport over other road users.

## **The role of Public Transport**

Our public transport system must attract and retain passengers if a balance between the private car and other elements of the transport system is to be created and maintained. Creation of this balance justifies the investment of public funds in capital works and support of the public transport operating deficit. Growth in passenger numbers on public transport can only be achieved where the system offers a mix of service types that are accessible, legible, comprehensible, efficient, and reliable and safe.

### Integration for Pedestrians

Every public transport passenger will walk for part of their journey. Optimising pedestrian paths within and to the public transport system is critical to ensuring that the individual's journey is completed smoothly, that the system works efficiently to enable the maximum passenger capacity, and to attract and retain new passengers to the system. A distance of approximately 400 metres to the nearest bus stop and 800 (10 minute walk) metres to a train station is considered to be the 'walkable catchment' of the public transport network. Critical issues to maximize pedestrian access include:

- Pedestrian route legibility and directness;
- Pedestrian safety including lighting and other appropriate measures;
- Accessibility and;
- Priority for pedestrians/cyclists where appropriate.

### Integration for Cyclists

Integration with public transport helps make the use of bicycles for longer journeys more practical for many individuals. There are also associated benefits for the broader community through reductions in traffic congestion, parking shortages and long term savings for the health system. Cycling can increase the distance that an individual is prepared to travel to public transport to up to more than 3 kilometres. This greatly increases the catchment area of public transport services and relieves pressure on park and ride car parking spaces at stations, potentially freeing up land for more sustainable transit oriented development land uses.

Once at the station, commuters need to be able to secure their bike and attachments or take their bike on to the train. Greater capacity to transport bikes on trains (and even inside or outside of buses) may encourage more people to commute using public transport in a 'cycle - train (bus) – cycle' configuration.

Increased capacity of regional trains to carry bikes will contribute to the steady increase in cycle tourism in regional Australia and contribute to employment opportunities in the service industry.

The advent of bike rails and cages on Perth's suburban railway network is a key recent initiative in encouraging people to cycle to the train.

**d) measures by which the Commonwealth Government could facilitate improvement in public passenger transport services**

The whole community benefits from increased public transport services and the whole community suffers from increased private car dependency. Securing Commonwealth support, coordination, and funding is key to effective long term public transport planning and development within our cities.

While it is appropriate and important that the user pays a fair share, and the private sector contributes to the costs that they impose, the fundamental benefits from public transport are shared to all members of the community. So whilst it is acknowledged that much of the base level funding and jurisdictional responsibilities will reside with the State Government, it is appropriate that this be supplemented from the Commonwealth.. There are many ways in which the Commonwealth Government might give some future certainty in recognition that urban transport systems contribute significantly to broader policy issues of transport safety, air quality and greenhouse gas emissions such as:

1. Mandate the new Major Cities Unit to improve land use planning and transport integration, including the scoping and development of a national sustainable communities program to benefit urban and regional Australia.

Greater integration of transport and land use planning has the potential to significantly reduce the size of the transport task (with corresponding reductions in energy consumption and related emissions), through:

- maximising investment in expensive infrastructure through the development of efficient urban form that concentrates passenger demand within public transport corridors;
- concentrating employment, public services and cultural and recreational facilities in centres well serviced by public transport to increase accessibility and patronage;
- supporting self containment via the reduction in the length (and need) for trips and the increase in two-way trips in peak hours. This will be achieved through more mixed use developments where there is easy access to a whole range of facilities and services and consolidation of residential development around centres of activity and employment;

Close involvement with peak planning bodies and local government will be essential. Potential policy levers for achieving change in this area centre around strategic land use and transport planning and improved co-ordination.

Benefits from better planning and transport integration may take some time to be realised due to difficulties in retrofitting policies to existing urban form and infrastructure, but will increase and become substantial over time and will be long lasting. The opportunity cost of not taking very early action will be very high. New growth areas provide a significant opportunity for improved transport and infrastructure coordination and delivery.

2. The development and implementation of a national public transport infrastructure investment program as part of Infrastructure Australia's responsibilities.

The determination of long term public transport infrastructure strategies and new funding arrangements which include the Commonwealth Government will be essential to achieve the level of expansion that will be needed to respond effectively to climate change

Passenger cars accounted for 43.7mT of GHG emissions, or some 54% of total transport sector emissions in 2005. This was a 25% increase from 1990-2005. Despite the shift in consumer preference towards smaller 4 cylinder vehicles in recent years, the increase in the number of vehicles being registered and the GHG increase in the last 15 years highlight the level of car dependency in Australia.

Over this time, most urban public transport systems have struggled to significantly increase mode share despite large investments in transit systems and a very high level of utilisation of trains and buses in key radial corridors linking major centres during the congested peak periods. Simply put, our cities would not cope without current public transport systems even though public transport mode share is generally less than 10% of all trips.

The policy recommendations in "*Travel to work in Australian capital cities, 1976-2006: an analysis of census data*" (GAMUT, 2007) concluded that: "...treating traffic problems by building more roads is an ineffective response. The main result has been to shift travellers out of environmentally friendly modes and into cars. By contrast, the performance of public transport and walking can be improved more cheaply and would produce superior environmental outcomes."

The challenge is to find ways to increase the use of public transport. The combined forces of higher crude oil prices and worsening levels of peak hour congestion will naturally assist this outcome. However, public transport will need to be significantly improved to attract people from cars, with a range of measures:

- new investment in high capacity public transport to link major urban centres, supported by park and ride facilities;
- policy incentives to focus new road capacity on high frequency bus rapid transit or light rail, similar to the focus of the AusLink program on improving the efficiency and effectiveness of export freight activity;
- establishing a grant system for Local Governments which favours proposals which respond to urban congestion management outcomes, through either tackling



jurisdictional problems, or facilitating new road space so that buses have priority in traffic congestion

It should be noted that the slowing of road traffic speeds isn't necessarily an indicator of transport failure; it can be an indicator that people have traded off the benefits of living in a City against the cost such as increased traffic congestion, noise and pollution. However as congestion levels increase and traffic speeds decrease, bus travel times will continue to rise. Bus services caught in traffic congestion will not be capable of attracting high levels of patronage, and balancing the negative consequences of congested road networks. By providing priority to buses in traffic, the relative attractiveness of bus travel to congested destinations will significantly improve.

### 3. Investment Support for Travel Smart

The potential for behaviour change initiatives such as the TravelSmart program to influence public transport patronage is well documented. In Western Australia, on average, each TravelSmart program results in a 13% decrease in car trips and an 18% increase in public transport trips.

Recent evaluation of WA TravelSmart programs implemented to coincide with the opening of the Mandurah Rail Line (at the end of 2007) show that TravelSmart outcomes are almost equal to the impacts of the new rail services alone (as described below), thus demonstrating the power of combining sophisticated information campaigns with high quality public transport service provision.

In 2007/08 the WA TravelSmart program was delivered to residents in the catchments of the Joondalup, Murdoch and Rockingham rail stations. Following analysis of a control group around Mandurah station, the evaluation demonstrated that TravelSmart achieved car trip reductions of 12% in Joondalup, 9% in Murdoch and 5% in Rockingham. These car trips were replaced (for each of Joondalup, Murdoch and Rockingham) by increases in walking of 41%, 15% and 4% respectively, cycling increases of 100%, 25% and 13% and public transport patronage increases of 16%, 32% and 37%. In each case the estimated changes to more healthy and sustainable transport modes are additional to the impact of new rail services. International experience with the individualised marketing voluntary behaviour change technique (the technique used by the WA TravelSmart program) supports these recent WA findings.

These findings indicate that significant additional public transport patronage can be achieved by integrating TravelSmart marketing interventions with the development of public transport infrastructure, at a marginal additional cost to government investment in the new public transport infrastructure. It is recommended that any federal funding (including contributory state based funding) allocated for public transport infrastructure should include provisions for intensive behaviour change interventions such as TravelSmart. Integrating behaviour change components into public transport infrastructure development will provide a far greater return on capital investment and provide significant strategic asset management benefits.

**e) the role of the Commonwealth Government legislation, taxation, subsidies, policies and other mechanisms that discourage or encourage public passenger transport**

### **Reform of Transport Taxes and Charges**

Inclusion of the Transport Sector in an Emissions Trading Scheme will ensure that a 'cost of carbon' is included in transport costs. Studies indicate that such a cost is likely to be insignificant in relation to other fuel related costs (at least in the early years of an ETS) and hence unlikely to produce significant changes in travel behaviour.

Current FBT arrangements which favour the provision of car benefits to employees over other forms of transport provision (e.g. public transport and cycling) will, however, continue to distort the price signals received by a significant segment of the community, acting as a disincentive to use public transport. It is noted that this has been identified in large number of submissions to the current Review of Australia's Future Tax System (the Henry Review).

A recent report, prepared by Ernst and Young for the NSW Ministry of Transport (on behalf of SCOT) concluded that:

- a bias exists in the current Australian tax system which, in certain circumstances, favours private over public transport and encourages commuters to drive; and
- of the alternative forms of public transport tax incentives available to help redress this bias (e.g. tax deductions, FBT exemptions and tax rebates), an FBT exemption for employer sponsored programs appears to have the greatest merit and warrants further consideration and detailed analysis.

### **Fringe Benefits Tax**

The Ralph Review of Business Taxation<sup>1</sup> concluded that:

“The current statutory rules applying to FBT on cars are clearly concessional and there is a case for rules which provide a closer approximation to the value of the fringe benefit involved while still constraining compliance and administration costs.”

The review also noted that: “the effective tax rate becomes even lower as the kilometres travelled rise.” Such perverse incentives have resulted in the phenomena known as ‘March madness’, where owners of salary packaged cars drive long distances (with consequent increased greenhouse gas emission) for the sole purpose of getting their vehicle kilometres for the FBT tax year (which ends 31 March) into a higher bracket, the tax benefits more than offsetting any additional fuel costs.

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<sup>1</sup> <http://www.rbt.treasury.gov.au/publications/paper3/download/Ch38.PDF>

The Bracks' review of the Automotive Industry, 2008, which reports on current and expected distribution of vehicle kilometres travelled has also highlighted the excess travel that can be generated by the current FBT arrangements (or the March madness phenomenon).

Current FBT policy actually encourages and rewards unnecessary travel, and the associated carbon emissions, clearly making it inconsistent with climate change objectives.

Despite the above findings, the previous Commonwealth government refused to amend the FBT rules. Recent Federal Treasury estimates indicate that the value of FBT concessions for car use will exceed \$2 billion in 2009-10.

Should the FBT provision for car use remain unchanged, consideration should be given to providing FBT exemptions for employer sponsored programs designed to increase the use of public transport. This would help to correct the imbalance and promote sustainable transport use. While adjustments to the FBT may not completely remove the incentive to use private rather than public transport to travel to work, it would reduce the level of bias towards the former.

Similarly, there are a host of bicycle specific incentives that could be explored including:

- tax concessions for commuters who use a bicycle for a major component of their trip to work or place of study;
- assist States to purchase all future bus and rail carriages that can carry bicycles;
- tax concessions for small and medium businesses that install or retro-fit end of trip facilities for employees who walk or cycle to work as this will likely increase the use of public transport in their travel mix;
- assist states to provide secure bicycle parking at railway stations and major bus stops;
- Fringe Benefit Tax advantages for businesses purchasing a bicycle or supplying them to employees.

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| <b>f) best practice international examples of public passenger transport</b> |
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**Perth Central Area Transit (CAT) and Free Transit Zone (FTZ)**

In addition to conventional mass transit which runs between centres, the concept of providing high frequency, 'shuttle style' buses which run on a loop circuit, often with their own unique stops and livery, between key attractors and point of interests is an approach that is being introduced in many cities around the world. These are sometimes referred to as 'central area circulators'. Such systems are high quality public transport

services offering a frequent service (ideally under 5 minutes) linking origins and destinations with total journey time similar to a private car for the same journey.

The rationale behind the development of these is the need to address traffic congestion and improve accessibility within CBD's and Major Activity Centres. This is done by providing a high quality, frequent public transport service.

A very good example of such a system is the Perth Central Area (CAT) bus service. This service is based on a stylish, innovative, purpose-built city bus dedicated exclusively to three specific CAT routes within the Central Perth. The buses are complemented by their own set of easily identified stops. In addition to providing an effective alternative to car travel within Central Perth, the CAT system demonstrates to the general population the capabilities of a best practice 21st century city bus transit system, thereby raising the profile of public transport within the community generally.

Central Perth is rectangular shaped, approximately 4 by 2 kilometres, with an area of about 825 hectares. There is a resident population of about 11,000 and a workforce of about 123,000. The CAT moves 7.6 million passengers per year for a cost of about \$6.3 million dollars for all capital and operating costs.

This same area is also serviced by the Perth Free Transit Zone (FTZ). Within the FTZ any person who starts and completes their journey within the zone may travel free on scheduled public bus and train services. The Western Australian Public Transport Authority receives \$2.6 million from revenue raised via a parking tax to compensate it for the revenue foregone. The FTZ moves about 4.6 million passengers.

Many cities around the world have FTZ's - Seattle, Portland Calgary to name a few. However, the scale of the Perth FTZ is much greater in both geographically area and number of services available and passengers carried. These other cities typically have a single route, usually light rail where a small section of the line is free to travel on. Calgary FTZ is about 1 kilometre of the light rail system within the CBD; Seattle FTZ was a one mile long route associated with their bus tunnel that used to run through the Seattle CBD along one axis; and Portland's FTZ services a small part of the CBD. Perth FTZ has many routes that run the entire length and breadth of the FTZ and offers services on all scheduled rail and bus services. It offers a greater range and variety of services across a broader time of day to more people. As a consequence it is more heavily used than other FTZ's and has a greater impact.

The combined CAT and FTZ passenger total is about 12.2 million.

| <b>Year and passengers numbers in millions</b> |                 |             |             |              |
|--|-----------------|-------------|-------------|--------------|
|  | <b>1997</b>     | <b>2000</b> | <b>2004</b> | <b>2008#</b> |
| <b>CAT</b>                                     | 3.5             | 4.1         | 6.1         | 7.5          |
| <b>FTZ</b>                                     | 2.0 to 2.5 est. | 3.0         | 3.4         | 4.7          |
| <b>Total</b>                                   | 5.0 to 5.5 est. | <b>7.1</b>  | <b>9.5</b>  | <b>12.2</b>  |

Note - FTZ total is for all trips that originate and finish within the FTZ (Central Perth) and excludes trips that originate or finish outside the FTZ.

The Perth Parking Policy, Central Area Transit (CAT) and Free Transit Zone (FTZ) initiatives are all part of an integrated approach to managing urban congestion, access and mobility within Central Perth. Both the CAT bus network and the FTZ service the same general area but are complementary, not competitive. They provide a vital transport system that links the CBD to the immediately surrounding business, entertainment and residential precincts.

The CAT system has three peaks, the traditional morning and afternoon peaks plus a third two way peak between 11:30 and 2:00. During the midday lunch period, central city workers move out to the areas immediately surrounding the CBD and workers based on the city edge move into the CBD. Central city workers are moving out to access business, entertainment and residential precincts and workers and residents on the edge of Central Perth move into the CBD to access the services, facilities and high order shops located there.

The Perth CAT and FTZ are 'free' services in that users are not charged. They are both paid for by revenue raised via a parking licence fee or tax imposed on Central Perth parking. There are other links with parking: for example significant amounts of parking in the City of Perth had been required to support central city internal car journeys for which the free public transport services are an effective alternative and the free public transport services link city-edge parking facilities to employment, shopping and recreation destinations. Car users who travel to the city are therefore encouraged to park once and use either public transport or pedestrian links for journeys within the City.

Since 1999, the Parking Management Act has given the State Government the ability to influence central city parking and hence urban congestion outcomes. The Act creates powers to control the growth and location of new parking in Central Perth and powers to collect a tax or licence fee that is used to fund the CAT and FTZ. The Act creates an area called the Perth Parking Management Area (PPMA). The PPMA is the same area that is serviced by the CAT and FTZ. Within this area there is a requirement to licence all parking except private residential; and new developments must conform to 'Perth Parking Policy' a land use planning policy that controls the quantum and location of new parking.. Importantly the Act also requires revenue raised through the tax to only be spent within the PPMA on matters that give effect to the Policy. This is the funding source for the CAT and FTZ.

These initiatives, the Perth Parking Management Act, Perth Parking Policy and the use of the revenue to fund the CAT and FTZ collectively represent an example of a 'virtuous policy and service delivery cycle'. These have together clearly contributed to lower traffic volumes on city streets with lower levels of congestion than would have been the case without their influence.

## Results

In 10 years use of the CAT & FTZ have risen from about 5 million trips per year to over 12 million, and eliminate every weekday between 2000 & 4000 short car journeys within the Central Perth. These are the most polluting, cause congestion and clog parking. A 'park once and use public transport or walk' culture has been created, thereby reducing congestion within the City Centre.

### **Qualifications**

Although data is not readily available in a form which isolates the individual contribution of these measures as a part of broader set transport and planning policies, it is apparent that dependence on the private car for movement within the Central Perth has been reduced due to the CAT and FTZ.

Anecdotally, the Perth Parking Policy, FTZ and CAT have considerably reduced central city congestion, delays, and pollution. Further work is necessary to aid consistent monitoring and assessment of the policy, and to quantify the actual benefits of reduction of high levels of vehicular traffic that otherwise may have resulted, including benefits on noise, severance and road safety for pedestrians, cyclists and motorists.

Since the introduction of these measures, the economic performance of the city centre in terms of employment and retail has also been strong. The contribution of these mechanisms as an enabling force to supporting this economic growth requires further analysis.

### **Conclusions**

Perth's experience demonstrates the commonly held view that demand management measures (parking regulation and TravelSmart voluntary behaviour change interventions) are most successful when they are introduced as part of a complementary package of supply measures for alternative travel modes (e.g. free high quality public transport). This set of mutually supporting and reinforcing measures has profoundly changed the way people move around the Perth CBD and immediately adjacent areas.

The combination of the Act with the revenue stream that is hypothecated to support the Policy creates a powerful tool for not only parking management but also to fund delivery of public transport. These initiatives have brought about genuine modal shift of short trips that would otherwise have been made by car, leading to less demand for parking, and subsequently less congestion. Dependence on the private car for movement within central Perth has been reduced.