

**From talk to tarmac:
Project Management lessons from the Perth Bicycle Network
Program, Australia**

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Summary:

This workshop is relevant to bicycle program managers, integrated transport planners, travel behaviour managers and anyone seeking to set up a doubling of bicycle use in a car dominated urban form.

The policy framework for Perth, western Australia will be discussed in relation to managing traffic and population growth in a city of 1.4 million people. The range of tools for obtaining a sustainable transport mix will be set out with a focus on the role of a strategic bicycle network.

The Perth Bicycle Network program is a 3 Stage, 12 year, 70 million Euro project to establish a strategic bicycle network for the urban area. The first Stage is now 70% completed through the delivery of on road and off-road cycle routes. The workshop will examine the project management issues that arose, including: land use; liability; stakeholder involvement; co-ordination across boundaries; and planning work.

The results of usage and user satisfaction monitoring will be presented to reveal increases in cycle use, the political benefits of the bicycle program and synergies with Perth's leading edge travel behaviour change project.

The TravelSmart travel behaviour program will be outlined to show that bicycle use can be doubled within a 6 month time period and in the context of a basic bicycle network system only. The benefits of the sustained 14% reduction in motor vehicle use will be discussed.

1. Perth policy context

Perth Western Australia is one of the most isolated cities in the world, a metropolitan population of 1.4 million lives in an area bounded by marginal desert on one side and the Indian Ocean on the other. Perth has low development density and high levels of road provision and yet it is similar to many European cities in having more than half of all trips are below 5km in length and more than one-third below 3km.

With 77% of all trips by private car, only 3% of trips by bicycle Perth and rapid population growth, Perth is facing potentially unacceptable environmental and traffic impacts. Responding to this situation a Metropolitan Transport Strategy (1) aims to limit traffic growth primarily to increased use of walking, cycling and public transport.

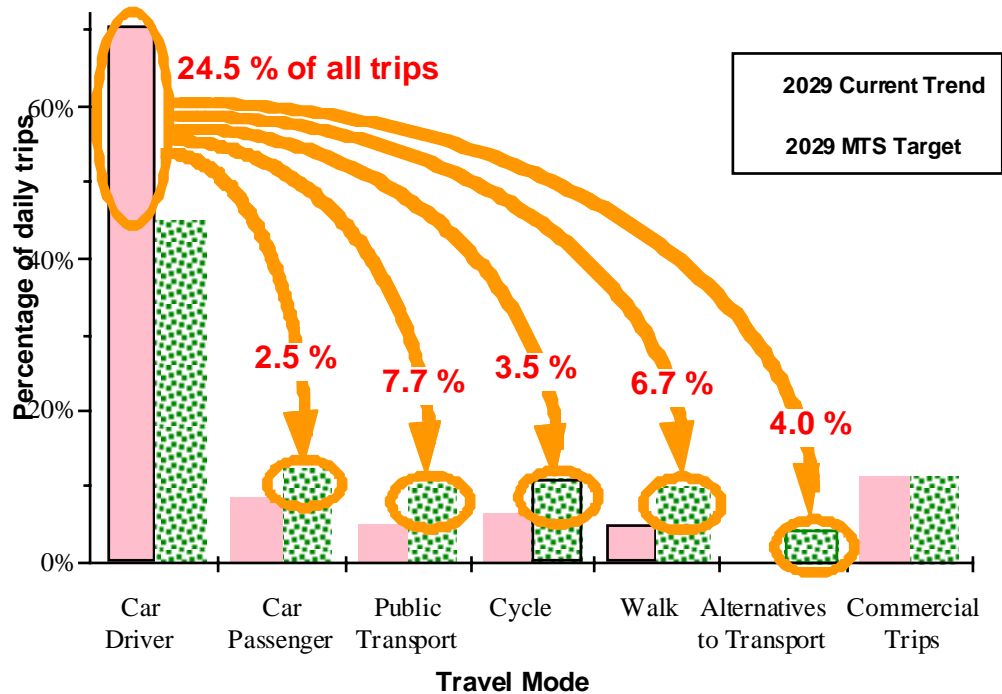


Figure 1 – MTS Mode Share Targets

2. Tools

To meet these MTS targets programs of investment in public transport and cycling have been put in place together with innovative community based information programs. The major parts of this toolkit are:

- The Perth Bicycle Network Program – a three stage, 12 year (70 million Euro) program to develop a strategic cycle network of 1400 km of off and on road routes (2).
- Individualised Marketing Program – a ten year (17 million Euro) program to offer households individually tailored information and motivation services to increase their use of alternative modes (3).
- TravelSmart community projects – an empowerment program to engage the community in forming local plans and actions to provide for cycling, walking and public transport in the local area.
- Travel surveys – diary based travel pattern surveys to form the basis of local TravelSmart action plans and to calculate the potential for mode shift.

- Perth Parking policy – a new local registration and taxation of car parking provision in the CBD area, with revenue funding a free public transport zone for the CBD.
- Integrated Transport Planning – State Government providing corridor and area wide planning to consider the competing opportunities for all modes in the context of the transport targets.
- 10 Year Public Transport Plan – a program of improved frequency bus services, transitway construction, ticketing technology and service information (4).

Studies of European cities (5) show that a package of cycling facilities, parking control, speed reduction and public transport priority can more than double bicycle use in the medium term. Recent developments in 'dialogue marketing' have proven that cycle use can be doubled in the short term in the context of existing safe cycling conditions (6)

3. Perth Bicycle Network program

The Perth Bicycle Network program was developed in 1995 through an extensive consultation process with the community. That process identified cycling desire lines, opportunities for new infrastructure, major barriers to access and the general problems experienced using the existing road and path network. In 1995 Perth had a partial network of foreshore recreational paths, few on road cycle facilities, very poor cycle access to the CBD and isolated and sub-standard shared use paths in the suburbs.

An evaluation of the Perth Bicycle Network shows it to be a strong public sector project returning health, environmental and transport benefits of more than three to one (7).

In 1996 the Perth Bicycle Network (PBN) plan was launched by Richard Court, Premier of Western Australia, with a funding package for the first four years of a twelve year program. The PBN identified 1400 km of convenient, continuous and connected bicycle routes (749 km being funded in Stage I). Of the initial 749 km of routes 107 km are path based and the remainder road based. The network staging is designed to provide coverage to every Local Government area within Metropolitan Perth and to achieve a strategic network of routes feeding major destinations.

The Perth Bicycle Network first stage is funded by Main Roads WA and Transport WA with 10% contribution from Local Governments.

The components of the Perth Bicycle Network are:

Local Bicycle Routes (LBRs) – Signposted routes on low trafficked local streets providing access to local facilities. Priority is provided by constructing path sections to link culs de sac street systems and constructing crossing facilities of major roads.



Figure 3 – Local Bicycle Route signs

Principal Shared Paths (PSPs) – High quality arterial routes along the five freeway/ rail corridors linking major regional centres to the CBD. In Stage I the system is being constructed to provide key road crossings and 3.0 metre wide path alternatives to hostile road environments, the remainder of the system being on low trafficked streets. By the completion of Stage III the Principal Shared Paths will be fully separated from road traffic.



Figure 4 – Principal Shared Path

Regional Recreational Paths (RRPs) – A system of paths through green corridors and along the river and coastal foreshores. Path provision is determined by demand ranging from 2.5 metre shared path through to 5 metre separated pedestrian and cycling facilities. Recreational paths serve both recreational and commuting usage.

Priority Spot Improvements (PSIs) – 20 major barriers to cycle access are identified for priority works such as new bicycle bridges and underpasses.

Central Area Access – Projects to link together the arterial routes through the CBD and to establish links to major trip attractors such as office developments and retail areas.

Generic Improvements – An unallocated pool of funds to fix common problems such as obstructions in paths, poor kerb ramps and for the installation of bicycle lanes.

End of Trip facilities – An unallocated pool of funds for provision of cycle parking in public places.

Some 80% of the network coverage is made up of Local Bicycle Routes at a cost of 12% of the program budget. Other budget allocations are 36% to Principal Shared Paths, 22% to Spot Improvements, 12% to Recreational Paths, 10% to CBD access and the remainder to parking and generic projects.

The program was scheduled to commence with the low expenditure, high coverage Local Bicycle Routes and build up to the more complex tasks of construction in the rail reserves and on the foreshore areas.

4. Delivery Progress

June 2000 marks the end of the third year of implementation of the network, in that time the key achievements have been:

- securing flow of funds from the roads budget into the bicycle network;
- securing land from the railways to create Principal Path corridors;
- agreement from 29 of the 30 Local Government Agencies in Perth to support and part fund the network concept;
- construction of a Shared Use Path through the CBD;
- delivery of most of the major structures required to provide safe access;
- completion and sign posting of three-quarters of the planned on-road Local Bicycle Routes;
- upgrading of sensitive river foreshore paths;
- user satisfaction with the new routes at 65% and satisfaction with Priority Routes at 90%
- usage of key Network corridors up by between 10 and 20%
- usage of priority routes and major reconstructions up by between 50 and 240%

Three-quarters of the way through Stage I some 70% of the network is now in place.

Facility Type	Program	Distance Completed			% of Program Completed
		On Road	Off Road	Total	
LBRs	610 km	435.5	22	457.5 km	75 %
RRPs	34.2 km		24	24 km	70 %
PSPs	64 km		5.65	5.65km	9 %
PSIs	37.5 km	23	11.55	34.55km	92 %
Central Perth	3.5 km		0.8	0.8 km	23 %
Total	749.2 km	458.5	64	522.5 km	69.7 %

Figure 5 – Table of Completions

Works on Local Government Land (LBRs and RRP) have been facilitated by Transport WA providing area wide maps illustrating the planned alignments and detailed 'work sheets' setting out the improvements and constructions required to achieve a good level of service of the route. A process of sign-off by Local Councils has been followed up with funding contracts for Local Government delivery of the works. Transport WA has then taken on a monitoring, coordinating and audit role. Signage for all of the routes has been coordinated by Transport WA and delivered through a single contract for the whole Metro area.

The Principal Shared Paths in the rail reserves are delivered by the State Main Roads Department (MRWA) who also take on maintenance responsibility for the ongoing operation of the paths. An agreement with the State rail authority (Westrail) allows construction of the paths subject to the passing of liability to MRWA and future rail operations having priority use of the land.

The Priority Spot Improvements are predominately on road reserves controlled by MRWA and were a simple matter of letting contracts for design and then construction of the projects.

General works and parking facilities are delivered by Local Governments following a funding process. Local Government put projects forward to enhance the network.

Spot Improvements and Local Bicycle Routes are almost complete. The progress on Principal Shared Paths has been delayed by difficulties with securing a legal agreement with the rail authority to manage liability issues.

Stage I of the program remains on target for completion in 2001.

5. Monitoring results

A series of screen lines, spot counts and cordon counts was established in March 1988 (the first year of the program) to record base line usage and to monitor progress year on year. Screen lines record the migration of users from exiting corridors of streets onto new facilities, spot counts provide information on rising usage for isolated facilities such as foreshore paths, and cordon counts provide a picture of the trend in overall bicycle use.

In addition to annual counts a road and path side survey was established to record user awareness of the network and satisfaction with the facilities.

In 1998 ten corridors or sites and one cordon count were conducted during peak three hour periods in April. Some 930 cycles were recorded crossing these sites.

In 1999 twenty-two corridors or sites and one cordon count were conducted during peak three hour periods in May. Results from permanent counters was used to seasonally seasonally adjust the data to April usage. Some 2615 users were recorded at the increased number of count sites.

In April 2000 all twenty-two corridors and the cordon count were repeated. 3559 users were recorded through these sites.

The most striking results are (8):

- A 13% increase in usage across the Local Bicycle Route corridors between 1998 and 2000 (n = 861).
- A 10% migration of users from alternative roads onto treated Perth Bicycle Network Routes.
- A 53% increase in usage (1999 to 2000) of newly upgraded/ constructed Spot Improvements, Principal and Recreational Paths (n = 2481).
- 93% increase in usage of the Principal Path alongside the Freeway following the installation of a bicycle bridge crossing of a major highway (n = 207).

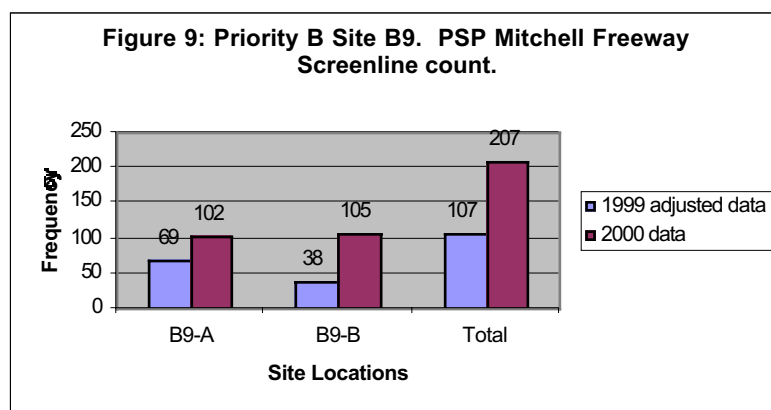


Figure 6 – Mitchell Freeway Screenline Graph

- 108% increase in usage of a foreshore path upgraded from a rough and constrained 2 metre wide path into a top quality 3 metre wide facility (n = 283).
- 241% increase in usage of a busy foreshore path following duplication for pedestrian and cycle use (n = 239)

Road and path side surveys recorded 64% satisfaction with the facilities in 1999. Subsequent upgrades were carried out and at time of writing the results of 2000 surveys were being analysed. Typical user comments were:

“Great: This route cuts down heaps of time”

“Should be more routes of this quality around Perth”

“Compared to New Zealand its bloody wonderful”

6. Promotion

The construction phase has been supported by four promotional initiatives: Signage of the routes – 2,000 signs were erected in 1999 with an additional 4,000 signs being installed in early year 2000. The signs are a combination of route codes on directional arrows and full destination and distance finger boards.

Media openings – a few of the more expensive or striking projects have been officially opened by special public events or Parliamentary bicycle rides.

Cycle Instead campaign – a television promotional campaign positioning cycling has also been run during the Network construction phase (see Greig, elsewhere in the Velo Mondial proceedings).

TravelSmart program – Individualised Marketing has been applied to promote walking, cycling and public transport use to a population of 35,000 in South Perth. Initial results show that uptake in cycling has been significantly higher than the other alternative modes. A pilot program achieved a 93% increase in cycle use within the context of an improved, but incomplete local cycle network.

7. Lessons learned

Pre-planning – Whilst projects had been scoped in 1996, no design work had been put in place at commencement. The resulting six month design development phase put the project under pressure to meet first year expenditure targets. Concept design work for projects due to commence in Stage II (2002) was commenced late 1999 to ensure that momentum will be maintained.

Flow of funds – Funds for the program had not been budgeted by the responsible agencies at time of the announcement of the program. Securing sufficient funds within the four year time frame of Stage I has required constant negotiation of priorities. Stages II and III have been flagged as unfunded projects in the MRWA and Transport programs in anticipation of approval for Stage II.

Land Ownership – A key agreement for establishment of paths in the rail reserve had not been secured at commencement. Additional foreshore projects have proven unfeasible due to private ownership of river foreshore land. Stages II and III rail alignments are covered by the head agreement now secured, negotiations with Ministry for Planning are continuing to schedule State Government land acquisitions.

Status/ priority of works schedules – Local Governments are under pressure to respond to issues raised by residents and rate payers, making minor PBN works a low priority. More regular contact with Local Government and commitments to opening events are being used to keep delivery on schedule. Technical tool kit/ road rules – The status of Local Bicycle Routes remains low because of low use of marked cycle lanes, advanced stop lines and cycle crossing light phases. Moves to amend restrictive road rules and planning to include such facilities in the specifications are in place for Stage II.

Monitoring area wide – A lack of regular general household travel surveys means that there is poor data on the general level of cycle use. Screenline surveys demonstrate the success of facilities without providing information on the achievement of strategic mode share targets. A rolling household travel survey is planned to commence in 2001.

Promotions/ celebrations – There is a lack of awareness of the network amongst new and potential users. An increased effort and budget for promotions has been identified for the final year of Stage I.

Signage – Initial signage was kept minimum impact in order to secure full support from Local Governments. The gradual introduction of more signs including destination and distance has proven acceptable to local residents and not attracted significant vandalism.

Strategy – The Bicycle Network will not realise its potential without full integration into travel behaviour programs.

8. Next steps

- Completion of the Local Bicycle Route network is due for December 2000. Completion and signage of the Principal Shared Path network will be the primary focus through to December 2001.
- Promotion of the Network and provision of maps for users will be increased in 2000/01.
- Detailed planning and design for Perth Bicycle Network Stage II projects has commenced.
- The Benefit Cost Analysis of Stage II will be utilised to support the case for funding of Stage II.
- The TravelSmart Individualised Marketing service will be offered to half of the Metropolitan population by 2010 (subject to funding approvals).

Note:

The views expressed in this paper are those of the author and are not necessarily representative of the Government of Western Australia or Transport WA.

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