

APPENDIX E

Pedal Power Submission

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Cycling and Walking Infrastructure Master Plan Submission

This is Pedal Power ACT's submission to the Cycling and Walking Infrastructure Master Plan. Given the resources involved in estimating capital works costs, we have not fully estimated our suggested capital works program. Upon further discussion, we may revise our suggestions.

EXECUTIVE SUMMARY

- The ACT Government has targeted a 161% increase in cycling as a percentage of work trips between the years 2001 and 2011. A Cycling Master Plan is needed to achieve this.
- There is big potential for cycling, Pedal Power estimates that around 35-40% of car trips in Canberra are less than five kilometres – a distance many people can cycle.
- A Master Plan which sets out an appropriate cycling network and emphasises priority, directness and safety will help overcome the two major physical reasons why people don't cycle – trip times and fear of traffic.
- Cycling will generally be used for trips between 500 metres and 5 kilometres. However providing for longer trips (to and from work) and for training/racing cyclists is important.
- Cycle lanes are a very cheap and effective means of increasing cycle safety and decreasing trip times. However to meet the Government's ambitious goals, cycle lanes will not be enough because many people feel uncomfortable cycling on arterial roads, even with cycle lanes. For this reason it will also be important to build separate paths in high volume/high speed situations, largely around the major destinations where cycle paths end suddenly.
- Physical separation of cars and bicycles does not have to be achieved entirely by off-road paths. 'False kerbs' can be used to provide separation on-road.
- Cycle paths must be built to the same standard (priority, directness etc) as an adjacent road, so cyclists have little reason to use the road.
- The aim of this study is to establish trunk routes. These routes should then be brought up to the 'regional' routes standard of the NSW Bicycle Guidelines.
- We suggest trunk routes should be the routes between Canberra's major destinations. In addition, we suggest that quiet parallel street routes and bike paths within 3 kilometres of the major destinations (and within 5 kilometres of Civic) be designated trunk routes.
- We suggest a two pronged capital works program comprising (a) fixing the major missing links around Canberra identified by Pedal Power and (b) a rolling region by region program that brings each region's trunk routes up to the standard of the NSW Bicycle Guidelines.
- The current policy of building on-road lanes on Canberra's arterial roads when they are built or resealed should be continued. In addition, cycle lanes should be painted on collector streets when they are resealed.

BACKGROUND

Who is Pedal Power ACT?

Pedal Power ACT is a Canberra-based community organisation. Its mission is ‘more Canberrans cycling, more often, for a better community’. It achieves this largely by running cycle rides and advocating for cycling improvements. It has over 1600 members and was founded in 1974.

A 161% increase in cycling work trips is targeted

Pedal Power commends the commissioning of a cycling and walking Master Plan. A well thought-out Plan is essential if capital works are to be prioritised and built which will increase cycling. This is important given the Government’s Draft Sustainable Transport Plan has adopted a target of increasing cycling as a percentage of work trips from 2.3% in 2001 to 6.0% in 2011. This is a 161% increase. In absolute terms the percentage increase in cycling trips is even higher because Canberra’s population (and the number of trips made) will grow over time. Precise targets have not been set for non-work trips because of a lack of reliable base data.

There is plenty of potential to increase cycling. Pedal Power estimates that around 35-40% of car trips in Canberra are for less than 5 kilometres – a distance many people can cycle. This is based on:

- The 1997 Canberra Queanbeyan Travel Survey found that 22% of *all* trips are for less than 3 kilometres and 55% of trips are for less than 8 kilometres¹.
- In Sydney the NSW Department of Planning has estimated 33% of *car* trips are less than 3 kilometres and 55% are for less than 5 kilometres².
- The research firm, Socialdata, amalgamated surveys of five different Perth local government areas to create a composite Perth figure and found that 10% of car-as-driver tips were for less than 1 km, 32% were less than 3km and 48% were for less than 5km³. Even in Joondalup, an outer metropolitan area, 38% of car-as-driver trips were still less than 5km⁴. The Draft Sustainable Transport Plan indicates that Canberra’s population density is similar to Perth.
- Werner Brog, managing director of Socialdata, which conducts travel surveys around the developed world, notes a 10% less than 1km, 30% less than 3km and 50% less than 5km rule for car trips appears to hold true across all European and US cities.

How can the Master Plan get more people cycling?

Assuming that around 35-40% of car trips in Canberra are less than 5 kilometres (a distance many people can cycle) the question remains why don’t people in Canberra cycle more? There are two major physical reasons why people don’t cycle.

- Cycle trip time. This is more important than trip length. Trip length helps determine trip time but it is not the only factor. Cycle trip times are lengthened when cycle routes are circuitous rather than direct, take hills rather than a flatter route and involve frequent loss of right of way, particularly in Canberra where cycle paths often cross streets.

¹ Data provided by ACTPLA.

² NSW Department of Transport, *Integrated Transport Strategy for the Greater Metropolitan Region*, 1995.

³ Socialdata, *Potential Analysis “Perth” Report*, December 2000, p15.

⁴ Socialdata for Department of Planning and Infrastructure, WA, *How Joondalup Residents Travel: Findings of the 2000 City of Joondalup Travel Survey*, April 2002, p20.

- Fear of traffic and accidents. Although the actual risk of an accident is much less than generally perceived, *the perception is the reality* when it comes to what stops people cycling. Fear of traffic is the major factor explaining why in Australia, women (who are generally more risk averse than men) cycle less than men. This is contrary to European countries such as Holland and Germany where women cycle more than men⁵.

A Master Plan which sets out an appropriate cycling network and emphasizes the importance of priority, directness and safety will help overcome the issues of trip time and fear of traffic.

(Other physical factors that affect cycling usage include end of trip and beginning of trip facilities and trip purpose. There are also subjective factors such as: lack of information, misinformation and lack of motivation; force of habit; and the status attached to cycling. TravelSmart programs in Perth have consistently increased cycling by around 50%⁶ and show how important subjective factors are in transport choices. These programs have not changed the physical environment but have worked by simply giving information and motivation to those who are interested in alternatives to the car.)

BICYCLE NETWORK ISSUES

What is a Trunk Route?

The focus of the study will be on trunk routes. We note these are defined as high demand routes, not necessarily long distance routes. We agree with the emphasis on high demand routes. For instance we think the Sullivan's Creek bike path (ANU to Dickson) should be a trunk route because it is one of the most heavily used paths in Canberra, however it is only around 5 kilometres long.

Role of cycling in transport

To help choose priorities for cycling it is necessary to define a role for cycling in Canberra's transport system. We see cycling as providing transport generally for trips between 500 metres and 5 kilometres. For cycle trips of this distance, trip times are not much longer, and often shorter, than driving times, especially when traffic congestion, car parking and walking times from car parks are taken into account.

Over longer distances, the proportion of cycling trips decrease. Even in Denmark, which has one of the highest rates for cycling in the developed world, the bulk of cycle trips are for less than five kilometres⁷.

Longer trips are undertaken, especially for regular journeys such as to work (where there are appropriate end-trip change rooms etc) and by training/racing cyclists. Given the target of increasing work trips by bicycle, providing for long trips is important. As Canberra is the home of the Australian Institute of Sport and the ACT Academy of Sport, providing for training/racing cyclists is also important. Canberra's large cycle racing fraternity has produced world class

⁵ Garrard J, 'Healthy Revolutions: promoting cycling among women' in *Health Promotion Journal of Australia*, 2003, 14:213-215. See also Bicycle Victoria, April 2003, *Ride to Work and Beyond: Focus Group Research Report* for the Australian Greenhouse Office, Travel Demand Management Program, and the Victorian Department of Infrastructure (TravelSMART). (See www.bv.com.au.)

⁶ Colin Ashton-Graham, manager of the Travel Demand Management Team (ie TravelSmart programs), Department of Planning and Infrastructure, WA at the Connecting Cycling Conference, Canberra, 20-21st November 2003.

⁷ Danish Ministry of Transport (1993) *The Bicycle in Denmark*.

cyclists.

Separation and integration - cycle lanes and cycle paths

To reduce the fear of accidents, which stops many people cycling, the importance of traffic volumes and speed in determining cycle safety and perceptions of safety must be acknowledged. On-road cycle lanes separate cyclists and motorists, decrease travel time for both modes and increase cycling safety. They increase cycling (see Attachment One). The 1992 report 'On-Road Cycling In The ACT' noted that, on a per kilometre basis, cycle lanes cost about one tenth of an off-road path⁸. This is particularly when, as is often the case in Canberra, roads are wide enough to make a cycle lane within Austroads standards without road widening and line marking can be done as part of routine resealing. In these circumstances, even a modest increase in cycling, together with the increase in safety that results, justifies creating on-road lanes on a cost/benefit basis.

While on-road cycle lanes increase cycling and cycle safety at a very low cost, it needs to be recognised that a great many people will still feel uncomfortable riding on arterial roads. Recent NSW Bicycle Guidelines suggest that at speeds of over 60km/h and traffic volumes of over 5000 vehicles per day cycling should be provided for with separated cycle paths⁹. The Dutch engineering guidelines (known as CROW guidelines) are even more conservative in their assumption of what is needed to make cyclists feel safe. They suggest that at speeds of over 60km/h and traffic volumes of only 2000 vehicles a day separate cycle paths are needed¹⁰.

Physical separation does not have to be achieved entirely by off-road paths. Simple separation measures such as kerbing laid directly onto existing road surfaces, physically separates cars and bicycles on-road. This is cheaper than off-road paths and provides reassuring separation for less confident cyclists. See page 28 of the NSW Bicycle Guidelines for details on 'false kerbs'.

It is important that new (or upgraded) cycle paths be built to at least the same standard (priority, connections, directness, surface quality, gradient and lighting) as the adjacent road, so that a cyclist would have few reasons to want to use the road instead. Unfortunately, many of our current cycle paths are built to such a low standard (especially in terms of priority, directness, alignment, width and condition) that many people only use the paths for recreation, finding them (amongst other things), too time-consuming for commuting.

In summary, on-road cycle lanes on Canberra's arterial roads should continue to be provided because they are very good value - they can increase cycle safety and cycling at a very low cost, especially when done as part of resealing. However if the ambitious goals of the Transport Plan are to be attained, providing on-road cycle lanes will not be enough. Provision of high priority separated paths on high speed/traffic volume routes – largely around major destinations where cycle paths end suddenly - will be also needed based on the NSW/CROW guidelines.

The 'Last Link'

A major problem with cycling in Canberra is the lack of provision for cyclists for the last kilometre, or in many cases, simply last the 500 metres close to major destinations, such as the

⁸ Arup Transportation Planning and Feliman Planning Consultants (1992) *On-road Cycling in the ACT*.

⁹ Roads and Traffic Authority (2004), *NSW Bicycle Guidelines*, p13.

¹⁰ CROW (1993) *Sign up for the bike: design manual for a cycle-friendly infrastructure*, Ede, The Netherlands.

These guidelines are excellently discussed in Godefrooij, T, 'Chapter 36: Segregation or integration of cycling in the road system: the Dutch approach' in Tilley R, 2003, *Sustainable Transport :Planning for Walking and Cycling in Urban Environments*.

major town centres. This is where space is at a premium and, in the past, planners and engineers have given up on providing space for cyclists. However it is vitally important if people are to be encouraged to cycle more. Less confident cyclists will be deterred if there is an off-road path/quiet route most of the way to their destination but it stops short 500 metres from the destination and they have to ride on a busy road with no cycle lane. While experienced and hardy cyclists can handle this, many people simply won't cycle because the last 500 metres deters them.

This happens to a greater or lesser extent at all of Canberra's town centres, which are often surrounded by four or six lane arterial roads and there is limited cycling provision through, or around the centre.

Canberra's current cycling facilities are either on-road cycle lanes or totally separated cycle paths. To provide for cycling in the confined space of Canberra's town centres, we suggest where appropriate, cycle paths be provided on-road with separation being achieved by the use of 'false kerbs' (as discussed above). Another option in newer developments where the verge between building and kerb is bigger, and there are few driveways, is to provide a path in this verge.

Improving the 'last link' for cyclists can be part of 'pedestrianisation' programs. Pedestrianisation programs, which decrease traffic speed and volumes in urban centres, are being increasingly undertaken around the world to make a more attractive environment for walking and cycling. Pedestrianisation programs will be needed to increase walking in Canberra's town centres, which are generally oriented towards driving a car and against walking.

Lower traffic speeds in neighbourhood areas

Given the fear of traffic that deters people from cycling, Pedal Power has strongly supported a 50km/h speed limit for all streets in neighbourhood and shopping areas. This is important given that cycling is well-suited to short trips around the local area. Also trips on neighbourhood and shopping streets often occur at the beginning and end of trips that involve trunk routes. Lower traffic speeds help solve the 'last link' problem. As discussed below, lower traffic speeds can be effectively combined with cycle lanes.

Collector and local cycle routes

To increase cycling it is important to recognise that cycling is perfect for short trips down to the local shops, schools, church, swimming pool, club etc. For this reason cycling conditions on local, and particularly collector streets where traffic volumes and speeds start to build up, are important. 85th percentile traffic speeds on Canberra's residential collector streets are generally around 60km/h or greater. In these situations both the NSW and CROW guidelines recommend cycle lanes should be provided (and cycle paths if traffic volumes are high enough). For this reason we believe cycle lanes should be painted on all of Canberra's residential collector streets as they are resealed.

Painting cycle lanes on existing roads (particularly residential collector streets) narrows the road space for cars and hence reduces traffic speeds. Cycle lanes can then be combined with reduced speed limits of 50km/h or less to provide a more attractive cycling, walking and residential environment.

Cycling conditions on collector streets are also important because they feed into the trunk cycle routes, particularly on-road routes.

Old Grid Canberra and New Spaghetti Canberra

To understand and improve cycling in Canberra it is important to recognise the two types of town planning in Canberra. In the older Inner North and South town plans are based more on grid patterns. These town plans are more amenable to the use of quieter parallel streets for cycling routes. A good example of this is Sherbrooke St in Ainslie (800 vehicles per day), which parallels Majura Ave (8000 vehicles per day). Direct routes can be used for rat running. However, any direct routes can easily and cheaply be turned into safe cycling and pedestrian routes by strategic ‘cul-de-sac-ing’ that eliminates motor vehicle traffic without hindering walking or cycling.

The rest of Canberra is largely built on town plans built around cul-de-sacs and curves. Quieter parallel streets are harder to find. The street pattern is less legible and walkers and cyclists are forced onto main roads for many trips.

To increase cycling and walking in new developments it is important these incorporate planning principles that make walking and cycling trips safe and easy to do.

Design principles

The recently released NSW Bicycle Guidelines provide more detail than exists in Austroads Part 14. We haven’t evaluated all the guidelines but we strongly endorse a number of elements they discuss, in particular:

- Principles of bicycle network design (p10). We particularly note the importance of coherence, which is consistent with one of the aims of this study, to fill-in the missing links.
- Giving trunk¹¹ cycle routes priority over minor streets at intersections. This decreases trip times and makes cycling more attractive. The Guidelines also suggest a number of methods of achieving this priority.

Priority

To reduce trip times and encourage cycling it is important to give trunk cycling routes priority. Other priority measures that should be investigated include:

- Giving walkers and cyclists priority at traffic lights.
- Having pedestrian light crossings at intersections automatically default to green whenever there are no conflicting traffic movements (to save a cyclist or pedestrian who reaches the button one second too late from having to wait an entire cycle to cross).
- Changing the ‘cyclists must dismount at pedestrian crossing’ rule to allow cyclists to cycle across at walking pace. The current rule, if it were obeyed, adds minutes to cycling trips. However, it is much more honoured in the breach than in the observance.
- Providing cyclist boxes in front of the motor vehicle stop line at traffic signals. This makes right turns easier.

A SUGGESTED NETWORK

The objective of this study is to design a trunk network. Once this has been decided then works can be prioritised and chosen that will bring the network up to standard. We believe that the

¹¹ The NSW Bicycle Guidelines use the term ‘regional’ routes instead of trunk routes.

ultimate aim should be to provide trunk routes to the same standard as the regional routes standard set out in the NSW Bicycle Guidelines.

In suggesting a network, we note that we can't demolish Canberra and start again. For this reason our suggested trunk routes are based on working from what is currently provided.

We have suggested trunk routes based on routes that connect or go through the major destinations of:

- the town centres (including Weston Creek and Queanbeyan)
- Russell/Barton/Parkes, Fyshwick and the airport (which are major centres of employment)
- the Australian National University and University of Canberra.

We recommend that these trunk routes should be assigned the same status as arterial roads i.e. they should have priority over collector and local streets. We think this is necessary to decrease trip times and achieve the 161% increase in cycling work trips that has been targeted. We believe the trunk cycling routes should include

- The major arterial road routes connecting the major destinations that are within 10 kilometres of each other. On-road lanes can cater for most of these trunk routes. However, where there is an off-road path that runs parallel to the road, it can be given appropriate priority and treatment to bring it up to a trunk route standard. In the cases of Belconnen and Gungahlin where there are two existing routes connecting them to Civic that need relatively minor work to bring them up to the trunk route standard we have chosen both routes.
- The major bike paths between the major destinations.
- As a rule of thumb we suggest all cycle paths within 3 kms (as the crow flies) of a major destination (and 5 kms of Civic - given that it is Canberra's centre) should be designated trunk routes. This recognises that cycling is particularly attractive for shorter trips and as the distance from major destinations decreases cycle traffic should increase (as long as it is appropriately provided for). Given that many of the cycle paths near town centres, apart from Civic, have underpasses where they meet roads, this decreases potential priority conflicts.
- The bike path around Lake Burley Griffin. This is an important commuter route and has considerable tourist potential.
- In the Inner North and Inner South, where there are few bike paths and more quiet parallel streets we suggest some routes into Civic, the ANU, Barton and Kingston that utilise quieter streets.

Inner North

- Madigan/ Hannan/Sherbrooke/Angas/Torrens (for Hackett/Ainslie/Dickson/Watson residents into Civic)
- Moore St and Mort St (parallel Northbourne Ave routes)
- Blamey/Currong St (for Campbell/Reid into Civic)
- Westgarth/Hart St or Dryandra/Nicholson (from ANU to Belconnen/Civic cycle path)

Inner South

- Sydney/New South Wales/Currie/Leichhardt (fairly direct routes connecting West Fyshwick, Kingston and Barton)
- Dominion/New South Wales/Macquarie

- Un-named service road parallel and East of Sturt Ave/Jerrabomberra Ave from McMillan Cr almost to Hindmarsh Dr

The attached map details our suggested routes

PRIORITIES

Below we set out a suggested 10 year works program. Given our limited resources we have not fully costed all our proposals and are willing to revise them upon further discussion. We suggest that the 10 year capital works program should be composed of two programs which should be undertaken concurrently.

A one-off capital works program

This program should focus on the most important missing links that Pedal Power members have identified across Canberra. They should result in a good benefit/cost payoff in terms of getting more Canberrans cycling. These are listed in the attached list of Pedal Power's Top 12 missing links. We expect that this program should be completed in the first two or three years of the Master Plan works.

A region by region rolling capital works program

We suggest that for each area in Canberra a detailed plan should be established to bring the trunk routes up to the standard in the NSW Bicycle Guidelines. The works would cover, but not be limited to:

- Ensuring routes are continuous
- Giving routes the appropriate priority over side streets and collector streets
- Providing separated paths (possibly via false kerbs etc)/cycle lanes where warranted, particularly close to town centres where the cycle paths currently end
- Ensuring continuity of cycle lanes through intersections
- Changing traffic light priorities as appropriate
- Providing pram ramps to connect between on and off-road paths
- Designating collector routes, and carrying out the minor works required on collector routes in the region

The program would work on a region-by region basis. On average, each region should be covered in two years. Six months should be allowed for a saddle survey and planning and 18 months for construction. We suggest the first region be Civic where there is already a high number of cyclists. Improving cycling infrastructure will further increase cycling numbers and provide a demonstration effect. We also understand that a new plan for Civic is likely to be developed in the near future. Planning should be carried out for one region while previous capital works is going on so there is on-going capital works.

We suggest that after Civic, works be carried out in priority order from the older parts of Canberra to the new ie Inner South, then Woden/Weston Creek, Belconnen, Tuggeranong and Gungahlin.

Cycle lanes as part of new work/resealing

In addition to the two-pronged capital works program set out above we suggest that the ACT:

- continues with its policy of marking on-road cycle lanes on arterial roads when they are built or resealed (if the roads are wide enough). As discussed above, this is very cheap way to increase cycling numbers and safety.
- marks cycle lanes on residential collector streets when they are resealed (if the roads are wide enough). The 85th percentile speed on Canberra's collector streets is generally around 60km/h or greater. NSW and CROW guidelines both recommend cycle lanes or cycle paths in these situations. The marking of cycle lanes can be incorporated with lower speed limits on these streets, which further improves safety and the attractiveness of cycling.

Cycle lanes marked on these streets may be not necessarily be part of the trunk cycle route network but will still form an important collector network needed to 'feed' the trunk routes and encourage cycling for the short trips which are well-suited to cycling.

ATTACHMENT 1 – CYCLE LANES INCREASE CYCLING

Attachment 1 is a graph that we have been unable to reproduce in the electronic version of our comments on the Master Plan. The graph has been attached to the printed version we have submitted. The graph shows that bike lanes have increased cycling on the major approaches to Melbourne's CBD. The graph can be found at <http://www.bv.com.au/download/ACFB71.pdf>

ATTACHMENT 2 - PEDAL POWER'S TOP 12 MISSING CYCLE LINKS

That will get more Canberrans cycling, more often

The list below highlights what we think are the major one-off projects that can be completed and offer a high benefit-cost ratio. Completing these projects should be done in conjunction with a region by region program to bring the identified trunk routes up to standard

Costings are only in order of magnitude rather than precise estimates because of the difficulties in costing due to underground utilities, variation in contractors' rates etc. Projects are listed in priority order.

1. Underpass on Parkes Way near Russell roundabout and associated path links

Comment - Has been on agenda for several years to allow cyclists to reach Defence and Constitution Ave, without having to negotiate Russell Roundabout. Defence, NCA and the ACT Government have reached agreement to fund this project. The ACT Government contribution is estimated at \$300,000 towards total cost of \$800,000 (rest funded by NCA and Defence).

2. Cycle lanes Barry Drive, Firth St to Marcus Clarke St (1.5km)

Comment - final unfunded section between current cycle lanes on Belconnen Way and the cycle lanes on Barry Drive east from Marcus Clarke St. Estimated cost - \$40,000. High benefit/cost value.

3. Cycle lanes on Mouat St Lyneham from Ginninderra Dr to Northbourne Avenue (1km)

Comment - a short missing link between the current Ginninderra Drive bike lanes and the planned Northbourne Ave lanes- would provide unbroken cycle lanes from North Belconnen all the way to Civic and beyond. Estimated cost - \$20,000. High benefit/cost value.

4. Woden to Hughes Underpass and associated path links

Comment - Was part of the Downer-Woden cycle lanes originally proposed by Pedal Power. Will allow southbound cyclists on the Downer-Woden link to access the Woden Town Centre trunk path, and also allow on-road cyclists to avoid the roundabout in any direction when linking between Yarra Glen, Yamba Drive and Melrose Drive. A short linking bike path from the underpass to the junction of Groom/Webster Sts Hughes, and the existing path that commences there would create a proper Hughes-Phillip path route. Estimated cost - \$800,000.

5. A city-wide comprehensive signage system

Comment - Signage on many bike paths is non-existent. This discourages beginners. It also undermines the effectiveness of TravelSmart programs. Estimated cost for 240 signs at all major bike path intersections – \$60,000. This covers non-trunk paths, signing these paths is important to encourage cycling which feeds into the trunk paths.

6. Completion of the Jerrabomberra Wetlands path. This is the only part of the Lake Burley Griffin cycle path that is unsealed. It is also hard to find your way through the wetlands along the path if you are unfamiliar with the area. Estimated cost - \$200,000.

7. Bike lanes/on-road separated path from Fairbairn Ave to Campbell Park. (700 metres).

Currently planned works on Fairbairn Ave project will include on-road cycling lanes, however the connection into Campbell Park is poor. Not part of a trunk route but an important collector route as Campbell Park is a major employment centre with 2000 plus employees.

8. Trial of cyclepath lighting - suggested route Sullivan's Creek cycle path from the ANU to Dickson.

Comment - Cycling drops off in winter. A major reason is poor lighting of cycle paths. The Sullivan's Creek path is very well used. Lighting is particularly important for safety reasons. Estimated cost for 3km - \$250,000.

9. City to Airport bike path - construction of a 2km path from existing path at Dairy Flat Rd Duntroon, east along river bank beneath 2 traffic bridges (there is space available) then parallel to Pialligo Rd and then crossing it east of Ulinga Pl into airport.

Comment - When combined with existing lakeshore paths would properly connect airport precinct to city. The airport precinct is a fast growing employment area, and only the major destination in Canberra identified by Pedal Power that does not have a bike path to it. Estimated cost - \$450,000.

10. Federation Square Bike path - from existing William Slim/Gundaroo Drive path to Federation Square (500 metres)

Comment - would connect Belconnen suburbs to Federation Square and North Gungahlin. The first five hundred metres have been constructed but stop in a dead end. This is not a Pedal Power suggested trunk route but we believe that it should be completed to make this 'cycle path to nowhere' into a cycle path to somewhere. An important feeder route to/from the Belconnen/Gungahlin trunk route that we have identified. Estimated cost - \$150,000.

11. Cycle path from Tallara Parkway Narrabundah to Wormald St Symonston East, passing underneath Monaro Hwy at already constructed crossing next to Jerrabomberra Creek (700m)

Comment - would create useful short cut between eastern South Canberra and Fyshwick and one option for South Canberra - Hume/Tuggeranong commuters to join the Monaro Hwy. Estimated cost - \$150,000.

12. Cycle path from Hartigan St Garran to Goyder St Narrabundah (2km)

Comment - would provide safer off road path alternative to Hindmarsh Drive which is on-road and has no cycle lanes. The preferred route would have lower gradients by initially staying close to Hindmarsh Drive and following contours to avoid the steep service track which goes over the hill. Could be done in 2 stages: Hartigan to Tamar first, and later to Goyder St. Estimated cost - \$500,000.

(When completed 11 and 12 would provide the safe trunk route connecting Woden, the Inner South, Fyshwick and Queanbeyan that we have identified on our map).