What happened to the Bikeway Network promised to Melbourne's cyclists in 1991: why are we still waiting

By Alan A Parker, Vice President, Victorian Bicycle Coalitionl, July 2001.

Introduction

Ten years ago VicRoads, was given the job of making main roads safer for cyclists in Melbourne (Lambert 1991). Victorian Ministers for Transport since then have publicly stated that VicRoads has been successfully creating a continuous network of Bikelanes on main roads throughout the metropolitan area. VicRoads was also made the host agency for the Victorian Bicycle Committee (VBC) from 1989, renamed a year ago as the the Bicycle Advisory Committee (BAC). In accordance with the VicRoads bicycle strategy of 1991 the VBC was entrusted with the job of advising the minister about linking up the VicRoads 'on-road bikelane network', (2000 km long), with an off-road network of shared footways (1370 kilometres km) provided by other government agencies.

In 2001, the combined network of 3420 kms of bikeways, known as the Principal Bicycle Network, or PBN for short, is still only one third complete (see figure 1) and at the current rate of construction it will take 38 years to complete. Since 1991 the problem has been that VicRoads has been constructing the proposed bikelane network at a very slow pace and the off-road shared footway network is also far behind schedule. Neither the VBC or the BAC advised ministers of the true situation which brings into question the role of these commmittees. There has also been a failure by VicRoads to coordinate the efforts of local governments and other government agencies.

There an urgent need for the Department of Infrastructure to create a planning unit that will encourage bicycling and coordinate the efforts of the many government agencies currently involved with real policy direction and funds to ensure that an arterial bikeway network is completed by the year 2011.

The Bikeway construction record 1991 to 2001

The dismal record of implementation of the the principal bicycle network (PBN) from 1991 to 2001is as follows and shown on figure1:-

- Only 467 kilometre (26%) of the 2000 km of bikelane have been lane marked after ten years and of these 67 kilometres had already been lane marked between 1981 and 1991. (Lambert 1991). This means that since 1991 an average of 40 kilometre of bikelanes per year have been marked. At that rate, it would take VicRoads 37 years to complete the Bikelane network.

- Only 640 kilometres (47%) of the 1370 km long shared footway network is complete, including 65 kilometres provided by VicRoads as part of freeway construction. 575 km of the 640 kilometre shared footway network has been being provided by Melbourne Water, Parks Victoria and local government. As 300 km of the shared footways were built before 1991 an average of only 34 kilometres per year has been built since then and at that rate would take another 18 years to complete.

Most main roads are perceived as being hazardous by most cyclists because so few of them have bikelanes and even when there are bikelanes a significant proportion of cyclists still percieve motor vehicle speeds as being too high for comfort. As a consequence the number of bicycle trips in Melbourne has decreased over the last five years from 161,900 in 1995 to 128,600 in 1999, a decline of 20% in bicycle trips. (VATS 2001) Cyclists are only reacting to VicRoads flawed concept of bikeway network planning which defies world best practice.

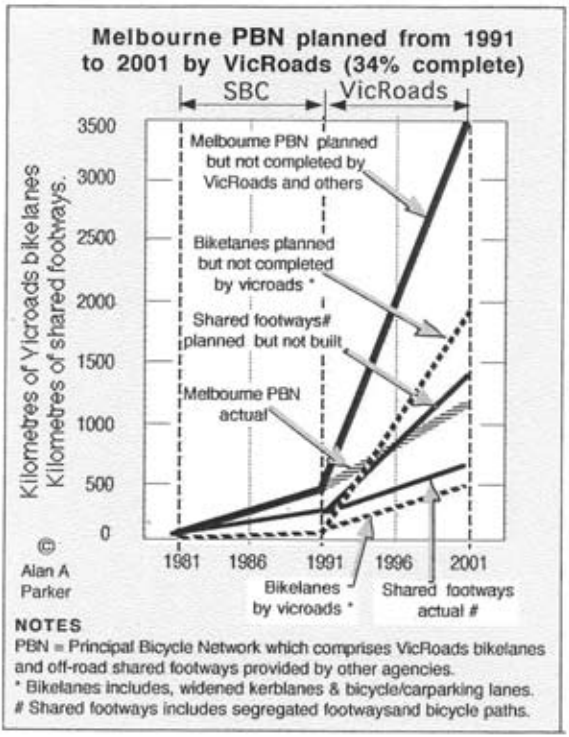


Figure 1

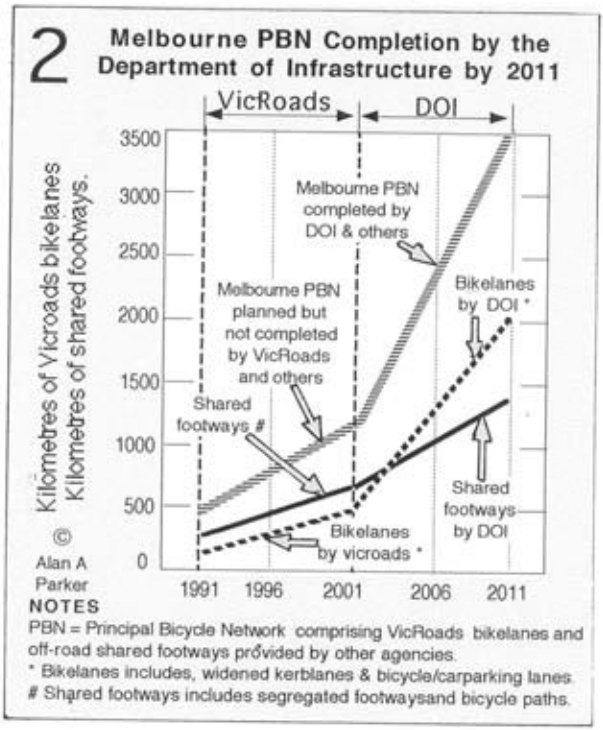
Only in the CBD and some inner suburban areas has cycling increased, because local councils have enabled cyclists to either bypass main roads on residential streets or collector roads that have been traffic calmed. Many more women choose to cycle in the inner suburbs but the high speed roads feeding the rapidly growing outer suburbs can be considered No-Go areas for traffic senstive cyclists, particularly adult cyclists who want their children to e able to cycle with them

Since VicRoads took over the hosting of the VBC it has so mystified and manipulated it and the new BAC that its own failure to deliver has not been reported back to the minister responsible. As a consequence there are no funded plans in existence to complete the Principal bike network (PBN) in the next ten years.

Could the Principal bike network be completed in the next ten years?

The first question that needs to be addressed by the Victorian government is VicRoads flawed concept of 'bicycle network planning'. Clearly it is possible with more funds and planning effort to complete the off-road shared footways, but what about the bikelanes on main roads? A VicRoads leaflet (VicRoads 2000) implies that it is possible to make all main roads bicycle friendly and even though that is not possible (as is shown later). However let us assume that VicRoads could put bikelanes on all main roads in the next ten years. Figure 2 shows that 150 kilometres of biklanes and 73 kilometres of shared footways would need to be installed each year. from 2001 to 2011.

To complete the Principal Bicycle Network, (PBN) a total 223 kilometres of bikelanes and shared footways would have to be built each year and to do that the bicycle budget would have top be increased to around $30 million per year. To ensure effective coordination with local goverment and other agenciess around six more staff would need tobe provided as proposed in the Bicycle Federation of Australia submission to the Victorian Department of Infrastructure (BFA 2000)



The problem is that building shared footways is feasible but the heavy and fast traffic on many narrow arterial roads makes an on-road bikelane network impractical. This is why only the wide main roads have been lanemarked. Soon only the "impossible, narrow bits" will be left which means that maybe up to one half of the 2000 kilometre bike lane network is unachievable. (See tables 1 and 2).

We know from the Dutch experience that the way to make four lane main roads, which have "mixed flow and access functions", safer for cyclists (and pedestrians) would be to reduce the traffic lanes to two and use the space for bikeways (Corben 1998). The Dutch have almost zero population growth and less traffic growth so they can do this. This cannot happen in Melbourne because the population will grow from 3.4 million in 2001 to 3.9 million in 2021 and after ten years VicRoads has no bikelane master plan. Bicycle Victoria (BV) booklet "It can be done" also ignores trowing the demand for road space. It's true that many more bikelanes could be provided in Melbourne if there was zero population growth but with high levels of population growth and land use and transport plans taht generate car dependence that is not going to happen.

Fortunately we have world best practice in the Netherlands and Denmark as a practical guide and their experience shows that a bicycle arterial route network is possible that enables cyclists to bypass the main roads that are too narrow. The Dutch have an excellent network of freeways and high speed main roads for essential motor vehicle traffic and have provided a close knit and

continuous bicycle arterial network that goes to everywhere and that is what is needed in Melbourne. The Dutch concept of bicycle arterial route network works well but the concept of the PBN as defined by VicRoads is fundamentally flawed as the following discussion of the data in tables 1 and 2. clearly shows.

VicRoads needs to establish where bicycle lanes are feasible

VicRoads have no detailed master plan, stating which main roads have enough width to cater for widened kerb lanes, bikelanes, shared car parking/bike lanes. They do not know which have road reserves with enough space for new shared footways or widening existing footpaths and making them shared footways. Table 1 shows that there too many four lane main roads 13.2 metre wide or less to provide bikelanes. Table 1 shows that asVicRoads rarely allow the centre lanes to be less than 3.15 metres the bikelane option is extremely restricted..(Cummins 2001)

TABLE 1. Shows how few options there are for the provision of bikelanes and widened kerblanes on four lane main roads.

Note. That VicRoads minimum width for traffic lanes is 3.15 m. See (VicRoads 2001) for the widths of bikelanes and kerblanes.

Road width(m) between kerbs	Lane Widths(m) Kerb L	Centre L	Lane Widths (m) Bikelane	Traffic
12.8	3.25 *	3.15	0.1 *	3.15
13.0	3.35 *	3.15	0.2 *	3.15
13.2	3.45 *	3.15	0.3 *	3.15
13.4	3.55 *	3.15	0.4 *	3.15
13.6	3.65 *	3.15	0.5 *	3.15
13.8	3.75	3.15	0.6 *	3.15
14.0	3.85	3.15	0.7 *	3.15
14.2	3.95	3.15	0.8 *	3.15
14.4	4.05	3.15	0.9 *	3.15
14.6	4.15	3.15	1.0 *	3.15
14.8	4.20 +	3.20	1.1 *	3.15
15.0	4.30	3.20	1.2	3.15
15.2	4.40	3.20	1.3	3.15
15.4	4.50 $	3.20	1.4	3.15
15.6	4.60	3.20	1.5 +	3.15
15.8	4.70	3.20	1.6	3.15
16 0	4.70	3.30	1.7	3.15
16.2	4.70	3.40	1.8	3.15
16.4	4.70	3.50	1.9	3.15
16.6	4.70	3.60	2.0 $	3.15
16.8	4.70	3.70	2.1	3.15
17.0	4.70	3.80	2.2	3.15
17.2	4.70	3.90	2.3	3.15
17.4	4.70	4.00	2.4	3.15
17.6	4.70	4.10	2.5 #	3.15

* Substandard widths for bikelanes and kerblanes.
\+ VicRoads desirable widths on new 60 kilometre/h main roads.
$ VicRoads desirable widths on new 80 kilometre/h main roads.
\# VicRoads desirable widths on new 100 kilometre/h Main roads.

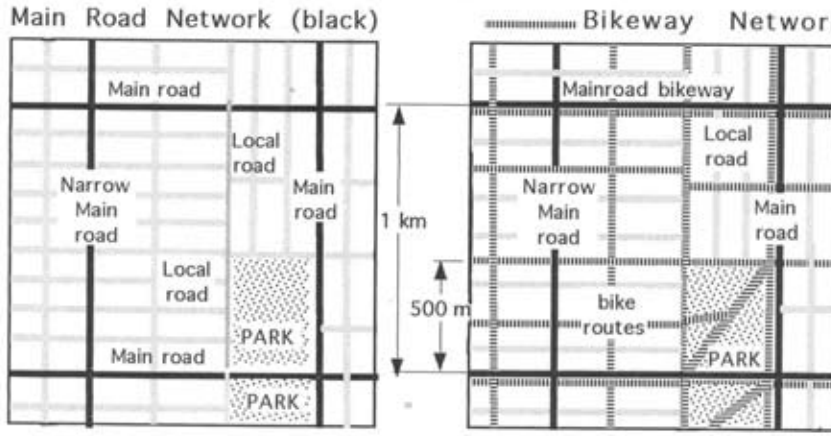
Table 2 shows an even worse problem with the older main roads that are only 12.8 metres wide. Even with centre lane widths of only 2.8 metres (as in much of Sydney) table 2 shows that it is impossible to put in bikelanes on arterial roads. Kerblanes can only be widened to 3.6 metres which is substandard (VicRoads 2001) and is completely unacceptable on roads with B-double

trucks with a speed limit of 60 kph or more. After ten years supporting engineering surveys and costs are still not available to show what can be provided and what cannot.

TABLE 2. Shows how few options there are for the provision of bikelanes and widened kerblanes on old 12.8 m to 13.6 wide four lane main roads.

Road width (m) between kerbs.	Lane Widths (m) Kerblane	Centre L	Lane Widths (m) Bikelane	Traffic L
12.8	3.6 *	2.8	0.8 *	2.8
13.0	3.7	2.8	0.9 *	2.8
13.2	3.8	2.8	1.0 *	2.8
13.4	3.9	2.8	1.1*	2.8
13.6	4.0	2.8	1.2	2.8

See (VicRoads 2001) for the widths of bikelanes and kerblanes.
* Substandard widths for bikelanes and kerblanes.



Typical Melbourne middle suburb on rectangular road grid.

Main arterial road networks have a coarse mesh as shown on the left map above. The arterial bikeway network has to be a much finer mesh so that for most short car trips it is more direct and quicker to get from A to B by bicycle as the map on the right map (dashed line) shows. The proposed "principal bicycle network" in Melbourne is far too coarse, with too many breaks in the network and too few shortcuts to encourage bicycle use. What is needed are arterial bicycle networks to provide short cuts for cyclists and pedestrians over and under freeways, railway lines, rivers and other barriers to motor vehicle travel. Bikeways on or alongside main roads need to be linked up with traffic calmed local streets and off-road shared footways. Also most one way streets for cars should be two way for bicycles and roads with bikelanes should have a speed limit of 50kph.

Drawn; Alan A Parker 1995

Figure 3

A PBN with a mesh size of 1.5 kilometres will not encourage cycling.

The concept of the PBN as defined by VicRoads with a mesh size of approximately 1.5 kilometres is also fundamentally flawed for another reason. A usable and convenient " bikeway network" would have to be at least 5000 to 7500 kilometre long to create the necessary shortcuts and to significantly reduce trip lengths of cyclists. Experience in Holland shows that a 500 metres mesh size is necessary to provide the short cuts and convenience that will greatly encourage bicycle use. This is clearly shown on an example of a bicycle route network map figure 3). All that VicRoads has proposed isa A PBN with a network mesh size similar to or greater than the main road network and in total be no more than 2500 metres long and that is far too short to encourage bicycle use.

There should be two bike routes to every destination and one of them should be socially secure. One route must be well lit and designed in such a way so that it is perceived as being safe particularly by female cyclists or the elderly (C.R.O.W. 10 1993). Most of Melbourne's shared footways have no lighting and many cyclists are scared to use them at night.

Apart from a minority of overconfident males many cyclists are not happy with riding on the main roads where the speed of passing traffic is too high.The solution is to cater for the silent majority by developing parallel back routes that bypass dangerous sections of main roads and connect to the off-road shared footways and local governments traffic managed residential streets which now have a 50 kph speed limit.

The need for better co-ordination of local government and the provision of the Melbourne metropolitan bicycle route maps.

After 10 years of minimal activity by many local governments, local bicycle feeder routes to the bikelanes and shared footways are noticeably absent. According to Bicycle Victoria, only one third of the municipalities can tell you what feeder routes been provided and where they are. No government agency is responsible for overall coordination and the cost of completing the local connections is unknown precisely because most local governments have no idea of what and where these connections should be. Neither the State Bicycle Committee nor VicRoads know where even the existing local bike routes are, because they have not kept up-to-date a master reference copy of the Melbourne Bikeplan bicycle route maps.

In 1984 a set of seven maps in full colour on tear proof plastic with bicycle routes rated as easy, medium or hard were prepared by the SBC, published by the ministry of transport and sold through bikeshops. The SBC view was that the route maps were a coordination tool enabling local government planning and engineering staff to see the overall route network and the discontinuities in the existing bicycle routes that connected to neighbouring suburbs. For the time these maps were available they helped local government to provide of continuous inter-suburban routes that cyclist would choose to use. The maps are now out of date and need revision.

These maps were perhaps the best of their kind in the world in 1986; today with all the additional bike lanes on main roads, more traffic calmed local streets and more shared footways they would be much more useful to cyclists. For example the Perth bicycle route maps were produced using the same method of route mapping in Melbourne and are now into their fourth edition with some new improvements that make them easier to use. These improvements could easily be incorporated into a new set of Melbourne urban bicycle route maps.Unfortunately VicRoads had no intention of employing staff to update them and produce new editions in 1989 and is still opposed to the production of a new edition of the routemaps.(Cummings 2001)

The need to Reinstate the Melbourne Bikeplan planning methodology

The new BFA policy platform (Gellie & Parker 2001) has a key element in its action plan

5. *Identify and implement successful strategies for safer and more convenient cycling in cities.*

The BFA's view is that the Melbourne Bikeplan (stages 1, 2 and 3 and the Final Report) 1986, complete with its seven route maps, is by far a more relevant strategy for safer and more convenient cycling in metropolitan Melbourne than the present VicRoads strategy and should never have been dumped. It represented a much better starting point for the creation of a bicycle arterial network that would encourage bicycle use.

VicRoads has failed to use the knowledge and information from previous Melbourne Bikeplans. Despite all the data available from the bicycle route survey work done for Melbourne Bikeplan (MBP 1981) (MBP 1986) that showed on high quality bicycle route maps where all the high stress main road bicycle routes are at the time. VicRoads has provided misinformation to transport ministers. Firstly that the "bikelane network" can actually be implemented. Secondly the hundreds of dangerous main road intersections identified on the 1986 bicycle route maps are ignored. Despite all the previous work done in defining "cyclist stress" along roads and at intersections, VicRoads is still committed to building multi-lane roundabouts in built up areas knowing full well that these are dangerous for both pedestrians and cyclists (Parker 1998).

The Victorian Department of Infrastructure (DOI) is currently preparing a transport strategy for the future development of Melbourne. The DOI should reinstate the Melbourne Bikeplan planning methodology as the better model for bicycle planning and, revise and update the Melbourne bicycle route maps. These bicycle route maps would be an essential aid for the DOI in coordinating the efforts of local governments and to achieve its goal of encouraging walking and cycling to school and to give greater priority to the provision of infrastructure for cycling and walking.

Conclusions and recommendations for inclusion in the Department of Infrastructure (DOI) strategy plan "Challenge Melbourne" .

Knowing that a usable and convenient "bikeway network" would need to be 5000 to 7500 kilometres long to create the necessary shortcuts and to significantly reduce trip lengths of cyclists and, that VicRoads has made it very clear that it is only responsible for bike lanes on main roads there is clearly a need for the DOI to take action. The following actions are necessary to create a usable and convenient "bicycle route network" and to complete that network in the next ten years:-

- To complete an average of 150 kilometres of bicycle routes each year on, or parallel to, main roads. These routes would be either bikelanes on main roads or bicycle routes on local roads or reserves that effectively bypass main roads that are not wide enough for bikelanes.
- Build an average of 73 kilometres of the shared footway network each year.
- To provide bicycle routes along existing local roads, most of which have already been traffic managed by local government. Each year around 300 km of these local roads would need to have safer main road crossings provided. VicRoads would have to accept responsibility for providing refuges and other safe crossings where these local road routes intersect with the main roads.

To accomplish the above the DOI should take the following six actions:--

1. Be the host agency for the Bicycle Advisory Committee (BAC) which would have a neutral and independent chairman who would report directly to all DOI ministers. This could be transformed into a "bicycle and pedestrian advisory committee" once a pedestrian strategy for Melbourne has been produced.

2. The BAC or a bicycle and pedestrian advisory committee would coordinate the efforts of local governments, VicRoads, and other government agencies.

3. Reinstate the Melbourne Bikeplan planning methodology and in particular revise and update the Melbourne bicycle route maps as an essential aid to achieve the goal of encouraging walking and cycling and as a coordination aid to all the government agencies concerned.
4. To provide policy direction to VicRoads it would make sense to redefine the hierarchy of roads so that there Would be a much finer 500 metre mesh bicycle network included in the hierarchy of road categories. The need to create such a fine grained bicycle network should be recommended in DOI land use and transport strategy for Melbourne.

5. Increase the bicycle budget to around $30 million per year and employ six to eight staff for ten years, as proposed in the Bicycle Federation of Australia submission to the Victorian Department of Infrastructure . (BFA 2000)
6. Monitor and evaluate the progress made in implementing bicycle and pedestrian programs every year.

VicRoads has mystified bicyclists, politicians and the public about what is possible. Many of their senior engineers have always known that over 1,000 kilometre of the existing main roads are not wide enough to provide for bikelanes and they never had any intention of providing them. So as to assess the truth of these allegation a ministerial directive to VicRoads is required instructing them to prepare a detailed inventory of all main roads in metropolitan Melbourne with the following basic information:-

1. Which main roads do not have enough width to cater for widened kerb lanes, bikelanes, or shared car parking/bike lanes - all of a width recommended in the the Austroads design manual "Bicycles" part 14.
2. Which main roads do not have enough width for the above on-road bikeways but have space in the road reserves for shared footways or widening existing footpaths into shared footways of a width recommended in the the Austroads design manual "Bicycles" part 14.
3. Which of the above main roads have a potential parallel alternative route on a local road or in some off-road reserve that is convenient for cyclists.
4. Identify which local road routes shown of the 1986 Melbourne bicycle route maps have the potential to link up with bikelanes and shared footways so as to create a 500m mesh bicycle route network

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