

# 30 : 30 : 30

Cyclists:Motorists:Government

## Bicycle Victoria's Report into Cycle Deaths in Victoria



This study draws on reports from:

- State Coroner's Office reports from 1999 - 2001
- Crash data collected by Victoria Police for 1991-2001 on 'CrashStats' at [http://www.vicroads.vic.gov.au/road\\_safe](http://www.vicroads.vic.gov.au/road_safe)



*More People Cycling More Often*

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**Acknowledgements:** Thanks to Phil Bezemer, Bicycle Victoria volunteer, who helped collect and compile information from the Coroners Office for this report.

**Cover Photo:** Death of cyclist - Williamstown Rd and Thomas St, Yarraville 11 June 1997, from Age 12 June 1997. Photographer Ray Kennedy

## Summary of recommendations

### 1. Cyclists

- Select your route for safety and be traffic aware especially on faster roads and in poor weather conditions
- Obey the road rules – breaking the law is dangerous to yourself and others
- Make sure your children know the road rules and are ready for the roads
- Make yourself conspicuous to other road users with bright, reflective clothing and front and rear lights in bad light.
- Wear your helmet at all times and make sure it is properly adjusted

### 2. Motorists

- Respect other road users, especially vulnerable road users. This may mean you have to slow down or change lanes some times
- Take care when overtaking cyclists especially in high-speed environments - give them room in case they need to avoid potholes or gravel or if a gust of wind blows them.
- Obey the road rules
- Avoid drugs, fatigue and speeding. They all make you much more likely to kill someone
- Avoid distractions such as using hand held mobile phones while driving

### 3. Government

- Develop public reporting program of illegal use of hand held mobile phone while driving based on the highly successful EPA program and the New Zealand Community Roadwatch program.
- Provide more safe places to ride through continued and increased funding for bike lanes and paths. The most effective way of protecting bicyclists is to separate them from vehicle traffic.
- Introduce a program for safe routes to schools for bike riders and pedestrians.
- Make rural and high-speed roads safer for riders by including cycle friendly shoulders to the left of Vibra line in rural road upgrades.
- Review penalties for dangerous driving. Negligent drivers are getting off too lightly for killing cyclists. A review of penalties for drivers caught driving under the influence of other drugs.
- Continue the road safety emphasis on speed, fatigue and alcohol.

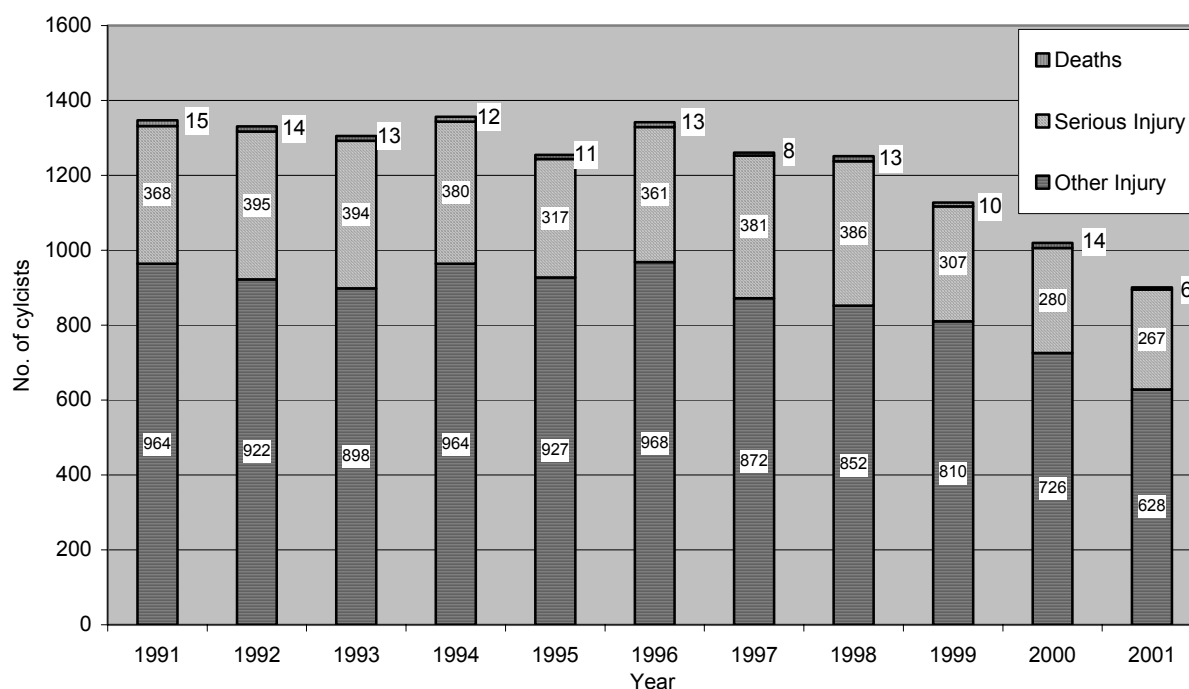
## Overview

This is Bicycle Victoria's fourth report on bicycle deaths and injuries.<sup>1</sup> Bicycle Victoria, which represents 22,000 cyclists in Victoria, is the largest bicycle membership organisation in Australia. Bicycle Victoria aims to encourage responsible authorities to develop a systematic approach towards crash prevention<sup>2</sup> so we can eliminate cycle deaths and reduce injury.

In this report we have focused on the circumstances that surround fatal cycle crashes. We looked at twenty-seven fatal cycle crashes over the last three years. When we look in detail at how cyclists die it is sickening to see how simple, obvious things save lives.

The health benefits of cycling such as a more active lifestyle and better fitness far outweigh the risks of death or injury from crashes.<sup>3</sup> This is especially true for responsible cyclists obeying the road rules and those that can use bike lanes or paths.

Cycling is getting safer in Victoria with deaths and injuries on the roads are trending down<sup>4</sup>. The overall number of reported cycle crashes has been dropping for the last three years. This is at least partly due to a safer road environment and more visible cycle facilities.<sup>5</sup> Victoria is the only mainland state to record a reduction in cycle fatalities last year (from 14 to 6)<sup>6</sup>. To keep this trend going there needs to be a common approach to the problem.



**Figure 1: The number of reported cyclist crashes on Victorian roads has fallen over the past four years. Deaths have dropped from 14 in 2000 to 6 in 2001.**

In Victoria we have some clear data on cycle crashes provided by police crash reports<sup>7</sup>, coroners reports and hospital admission data<sup>8</sup>. We still lack information such as exposure rates which would allow a definitive study<sup>9</sup> to form the basis of a shared understanding of the problem.

Victoria does not have a systematic approach to reducing cycle death and injury. Apart from occasional reports by Bicycle Victoria and the Victorian Injury Surveillance System<sup>10</sup> there is no consistent study of the problem. Nor do we have a steady program of developing and improving countermeasures.

This report attempts to address some of these deficiencies by reviewing:

- Reports on cycle fatalities by the State Coroner's Office. We have looked at 27 deaths over the last three years where we have been able to source the Coroner's report on the death. This includes cycle deaths that occurred off road and not included in VicRoads Crashstats.
- Police data on fatal bicycle crashes over the last ten years available from VicRoads Crashstats. This only includes deaths that occur on roads.

We have developed recommendations that, if implemented will help reduce the number of cyclists killed and make the roads safer for all road users. These initiatives relate to the three groups involved: cyclists, motorists and Government, each of which must contribute to the solution.

## Fatal cycle crashes in general

In the last 10 years there have been 129 fatal crashes involving cyclists<sup>11</sup>. Fatal cycle crashes on Victorian roads have gone down from around 30 a year in the 1980s to between 6 and 14 a year over the last four years.

In Victoria, cyclists are the only road user group where the number of fatal crashes fell in 2001. Victoria is also the only mainland state to show a decrease in cycling fatalities over the last year<sup>12</sup>. According to Australian Transport Safety Bureau figures, cycling fatalities Australia wide rose 63%, while in Victoria they dropped 44%. Victoria is the also only state with a funded program for marking bike lanes on a network of main roads in regional cities towns.

## When and where do they happen?

Most fatal cycle crashes (69%) are not at an intersection. This suggests that the provision of bicycle lanes in the mid block is a relevant countermeasure.

Cross and T intersections account for the balance (30%). Only 12% of fatal cycle crashes occurred at signalised or signed intersections or pedestrian crossings. This suggests that signalised intersections are 'safer'.

Roundabouts are known to be dangerous for cyclists accounting for 5% of injuries but only 1% of fatalities. This might be because the collision is at an angle reducing the impact velocity. Railway gates and booms are the location for 1% of fatals but only 0.1% of injuries. This relationship may reflect the high speeds of trains at rail crossings.

Not surprisingly most fatal cycle crashes occur during the most popular cycling times - - during dry (90%), clear (93%) days (80%) and peak hours (7-10am (25%) and 2-7pm (38%)). There is an over-representation of fatalities during:

- ❑ Non-daylight hours
- ❑ In rural Victoria
- ❑ On 100km/h roads.

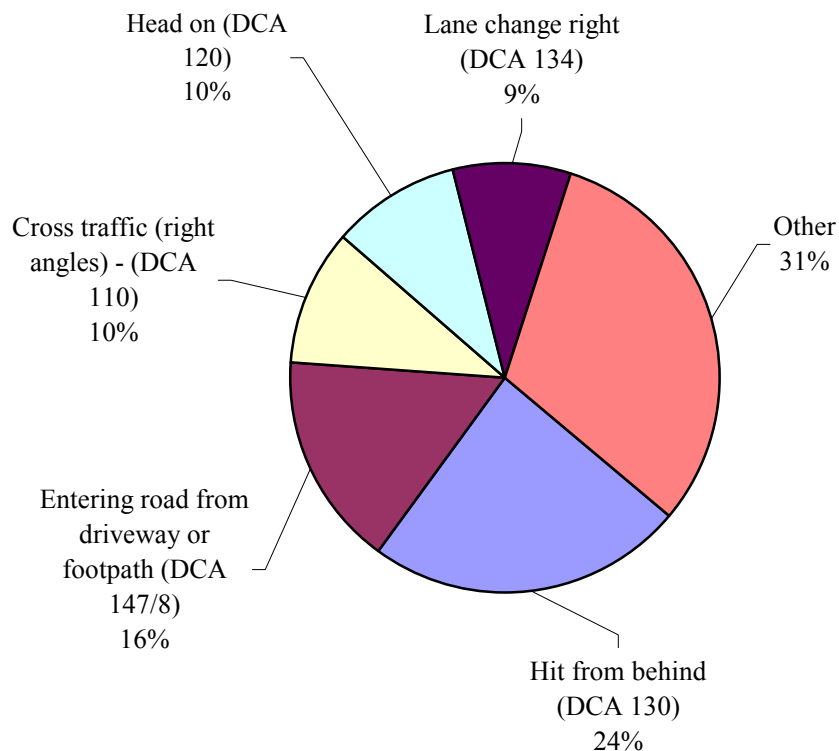
Our previous studies found that 68% of all fatal and serious crashes occurred on arterial roads. From 1992 - 1995 there was a steady increase from 66% to 76% of all bike crashes occurring on arterials.

## The types of fatal crash

Five types of crashes make up the majority (68%) of reported fatal cycle crashes on Victorian roads from 1991-2001.

Type (DCA Category <sup>#</sup> )	Proportion of fatal crashes
Hit from behind (130)	24.0%
Entering a road from a driveway or footpath (147/8)	16.0%
Cross traffic (right angles) (110)	10.4%
Head on (120)	9.6%
Lane change right (134)	8.8%

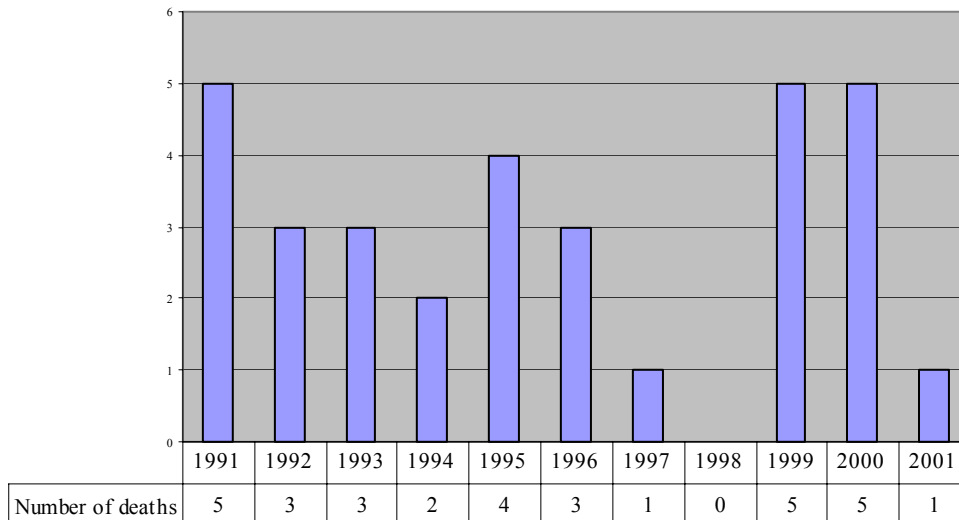
<sup>#</sup>Police use the Definition for Classifying Accidents (DCA) when reporting the geometry and circumstance of a crash.



**Figure 2: Over the past ten years, five types of crash made up 68% of fatal cycle crashes**

# 1. Hit from behind

## Training & touring cyclists hit from behind and killed on high speed & rural roads



**Figure 3: The number of cyclists killed when hit from behind (DCA 130) rose in 1999 & 2000 but dropped to one in 2001**

Cyclist killed when hit from behind (DCA 130) are the largest fatal crash type. Most fatal rear end cycle crashes are on roads with higher speed limits. These tend to be rural roads (56%) and those with a 100kph limit (60%). Roads with a speed limit above 60kph account for a further 20% of crashes.

The trend looked good in 1997 as rear end fatals had declined and none were recorded in 1998. Since then there have been 5 in 1999 and 2000 but only one in 2001. Rear end fatal cycle crashes are more likely to occur in the dark (40%), especially before 8am in the morning and up to 7pm at night, than other fatal crashes (19%).

### Recommendations for cyclists

- Make yourself more visible by wearing bright reflective clothing and carrying two flashing rear tail lights – especially in low light. Make sure your rear lights are mounted correctly. A higher mount or helmet mount may help.
- Be aware that these crashes have also occurred when the motorist is looking into the sun or into oncoming headlights and take appropriate action.
- Take especial care when training in early morning darkness or in poor weather conditions.

### Suggestions for motorists

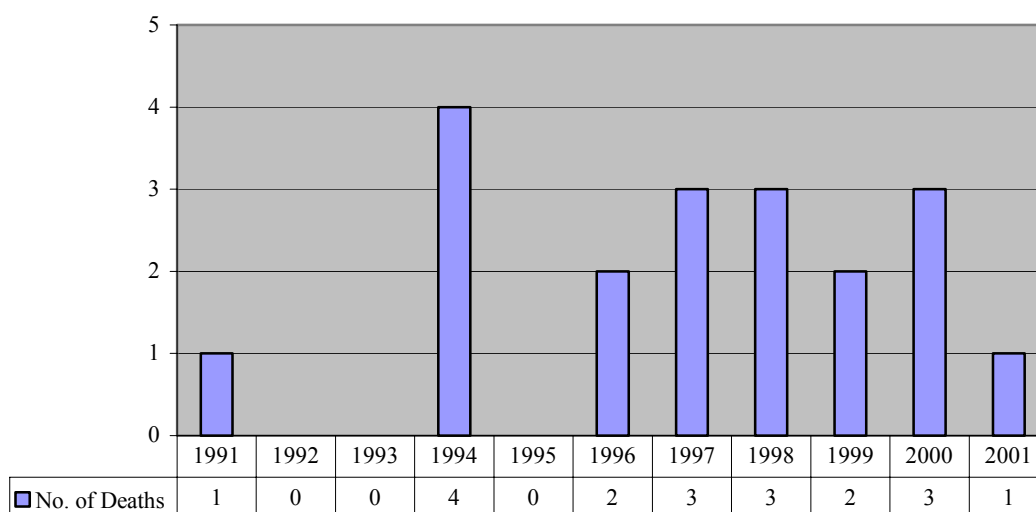
- Concentrate on the road ahead and adjust your speed for the conditions. You must be able to stop or avoid other road users if necessary. Avoid distractions such as mobile phone use and tuning the radio, changing CDs or cassettes.
- Leave enough room when overtaking cyclists so that you can avoid them if they have to swerve around potholes or if they are blown by wind etc. Ask yourself the question: “If I suddenly came across a cyclist on this road, could I stop in time before hitting them?”

### **Recommendations for Government**

- Upgrades of rural roads should include a cycle friendly shoulder to the left of Vibra Line markings. Road authorities should increase the use of Vibra Line shoulder markings.
- Illegal hand held phone usage while driving needs to be targeted before it becomes more of a problem. Public reporting of illegal hand held phone usage should be introduced along the lines of the EPA litter report or NZ Community Roadwatch programme.
- Councils and VicRoads should target popular cyclists training routes for safety improvements and policing. An example is Beach Rd in Melbourne - Australia's most popular training routes for cyclists. Three cyclists have been killed on this stretch of road in the last three years. Wider kerbside lane markings and policing of dangerous behaviour would help make the road safer.

## 2 Entering the roadway

Young people are being killed riding off the footpath onto the road



**Figure 4: Over each of the past 6 years between one and three cyclists have been killed riding onto a road from a footpath or driveway (DCAs 147 &148)**

Almost one in five fatal cycle crashes (16%) involved a cyclist, usually young, riding off a footpath (DCA 147) or driveway (DCA 148) onto the road. This type of crash also accounts for 18.2% of all cycle crashes.

Most (63%) of the fatalities in this group are under 15 and male. The crashes mostly occur on weekdays (90%) from 7am to 11am and 2pm to 7pm. They are mostly in metro Melbourne (52%) and in regional centres, mainly (74%) in 60 and 70km zones.

### Recommendation to parents of young cyclists

- Do not let your child near the road unsupervised until they are road ready. This means they can stop their bike and cross the road safely. Road safety for children is like pool safety – constant supervision is the key.
- Riders need to take care when leaving the footpath to cross a road or to begin riding on the road.

### Suggestions to Motorists

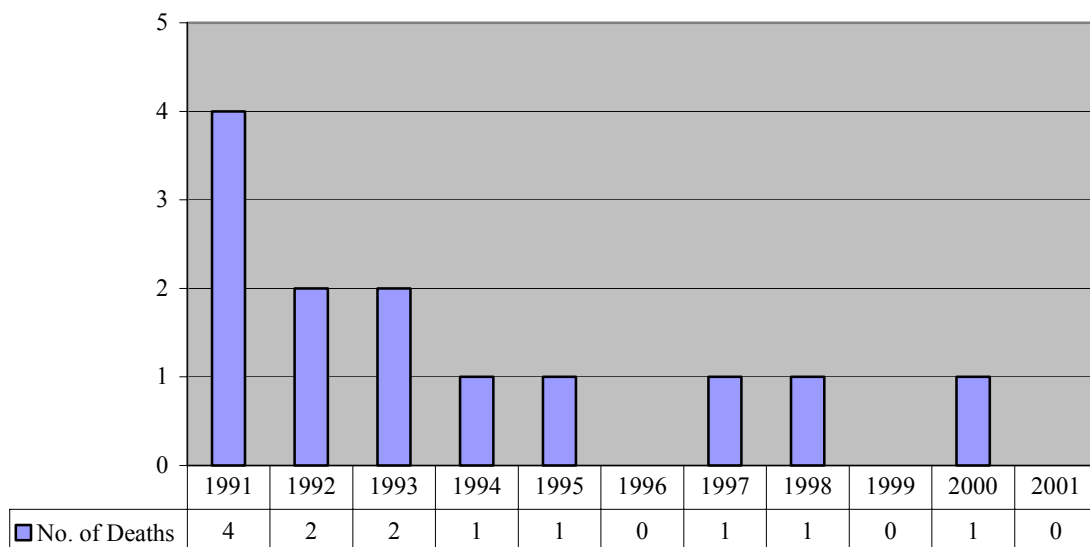
- Motorists need to watch out for young riders entering the roadway or crossing the road. This is especially true on rural roads passing residential properties.
- Adjust your speed around residential properties

### Recommendations to Government

- Off road paths need clear crossing points with all roads. This crash type illustrates one of the main problems with footpath riding - cyclists still have to cross a road at every intersection, including each driveway.
- Implement a safe routes to schools program to provide safe off-road paths to schools with clear crossing points at roads
- Expand the 50kph speed zones to cover all residential areas. Consider 40kph speed limits for local streets.
- Include alerts to this danger in their public education information.

### 3 Cyclist hit from the side

Cyclists riding in traffic being killed when hit from the side



**Figure 5: Over the last five eight years only one or no cyclists have died being hit from the side (DCA 110 – Cross Traffic)**

Cyclists hit from the side by a motor vehicle (DCA 110 – Cross traffic) account for 10.4% of fatal cycle crashes and also 10.4% of all cycle crashes.

There are few distinctive features for this crash type.

- about half (42%) are under 17.
- half at controlled intersections and half at uncontrolled.
- 39% are in Metro Melbourne and half (54%) in 70km or under speed environments.

The trend looks to be improving – there has been one or no deaths in each of the last eight years compared to two or more previously.

#### Recommendations for cyclists

- Look for routes with controlled intersections and follow the road rules. Young riders especially need to use this approach
- Be traffic aware when using the roads
- Obey the road rules – running red lights makes you prone to this type of crash

#### Suggestions for motorists

- Beware of cyclists trying to cross the road or turn right

#### Recommendations for Government

- Controlled intersections or grade separation (underpasses) should be installed where bike routes cross major roads. Grade separated crossings should be included for all arterial off road paths. An example is road crossings for the Federation Trail alongside the New Geelong Rd.

## 4 Cyclists Hit Head on

### Cyclists die when hit head on

This crash type (DCA 120) accounts for 9.6% of fatalities and 1.8% of all cycle crashes.

This type of crash is atypical in that it occurs disproportionately in the dark (34%) and in the wet (25%) and while raining (8%). Half occur in rural locations and these tend to be 100kmh roads. The crash type is spread across all ages.

#### **Recommendations for cyclists**

- Use headlights and front reflective material especially in 100kmh zones.
- Beware making right turns or overtaking slower vehicles

#### **Suggestions for motorists**

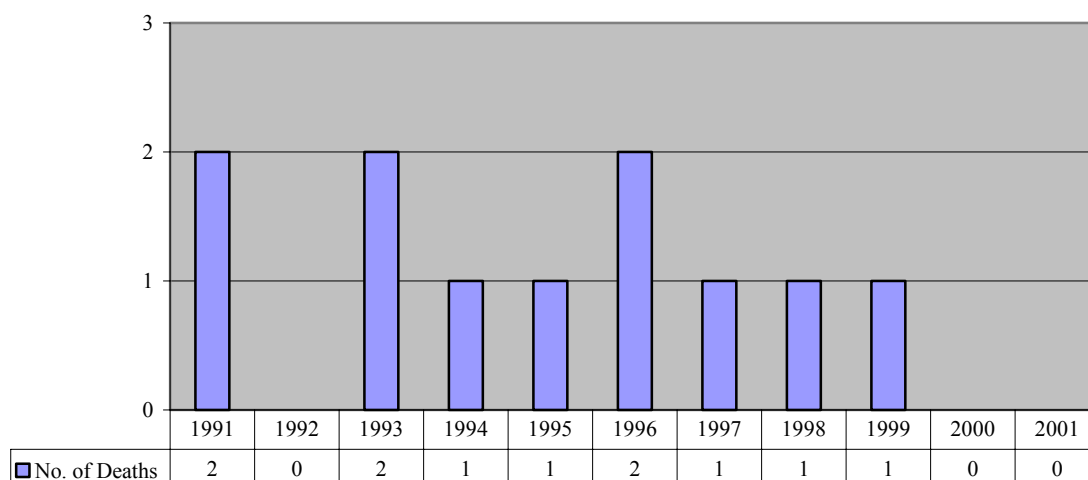
- Beware making right turns or overtaking slower vehicles

#### **Recommendations for Government**

- Fund and construct more safe places to ride such as bike lanes on main roads
- Implement lower speed regimes, especially on suburban roads

## 5 Cyclist hit changing lanes to the right (not overtaking)

Cyclists killed crossing lanes, especially slip lanes, on high speed roads.



**Figure 6: No cyclists have been reported killed changing lanes to the right (DCA 134) in the last two years**

Cyclist hit when merging right or changing lanes to the right (crash type DCA 134) account for 8.8% of fatal cycle crashes and 3.1% of all serious cycle crashes.

Most (55%) involve cyclists under fifteen. The crashes occur not at an intersection (81%) in rural areas (63%) and in a high-speed environment (100 and 110kmh - 55%). This describes exit and entry ramps from highways.

There have been no cycle fatalities of this crash type during the last two years.

### Recommendations for cyclists

- Be careful before moving right in a high speed environment. This includes crossing entry and exit ramps from highways or freeways.

### Suggestions for motorists

- Watch out for cyclists especially at on and off ramps to freeways.

### Recommendations for Government

- Fund and build more safe places to ride. Visible bike lanes at potential conflict points help define the cyclist's path. The new red lanes at St Kilda Junction, Heidelberg Rd overpass and Burnley St, Burnley are good examples where coloured lanes have made merging situations safer.

## How cyclists die – some case studies

This study has reviewed the coroner's reports of twenty-seven cyclist deaths over the last three years. These include two off-road deaths that are not included in VicRoads Crashstats data. We've reviewed in detail the circumstances of crashes that resulted in cyclist's deaths. They reveal some important lessons that can be used to prevent more cyclists being killed. We've presented the important lessons to be learnt as case studies. The case studies are based on real crashes but we have added fictitious names and places.

### Case study 1: Poor risk reduction by the cyclist

Case 1 – Doing everything wrong – riding at night with no lights or helmet and breaking the road rules.

*Circumstances* - Ben decided to ride his bike to the pub instead of driving the car. Not bothering with a helmet, bright clothes or lights, he had a "few beers" with his mates and jumped on the bike for the trip home. In his drunken state, riding on the footpath, he crossed a major road against the lights and was hit side on by a car. Ben died at the scene from multiple injuries. The motorist had no chance of avoiding Ben.

*Lessons* – Many fatal crashes are the result of a sequence of bad decisions by cyclists.

- Obey the road rules. Ben was breaking multiple road rules when struck by the car but running a red light was the most critical.
- Lights and bright, reflective clothing in the dark. In poor light conditions, lights and bright, reflective clothing are a must. If Ben had been more visible the motorist may have been able to avoid him.
- Wear your helmet. A helmet is a must – though it may not have saved Ben's life and won't prevent a crash, a helmet will help prevent many cycle deaths or reduce the severity of head injury
- Drugs and roads do not mix – as a vulnerable road user you need your wits about you at all times.

## Case 2 – Child not ready for the road

*Circumstances* - Emily had just got her new bike for Christmas. Mum and Dad had shown her how to ride but had not been riding with her. She was testing the new bike at her parents place in the country and decided to ride to the road and back. Emily rode out the front gate into the path of an oncoming utility travelling at 80km/h. She died immediately of multiple injuries.

*Lessons* – Too many children die because they cannot control their bikes and are not “traffic” aware:

- Supervision is the key. Don't let your child near the road unsupervised until you are sure they can stop safely and cross roads safely. Adequate supervision or a child-proof front gate could have prevented Emily's death.
- Education. Traffic awareness courses are available to young children can learn the rules of the road in a safe environment. This should be backed up by supervised rides with adults. Road safety is like pool safety
- Care at crossings. If riding on the footpath or shared path care must be taken crossing intersecting roads. Councils can make sure off-road shared paths have clear, safe crossing points at roads, these should be signalised or grade separated (underpass for the path) for busier roads.
- Safe routes to school. Safe off-road paths allow children and novice cyclists to learn cycling skills in a traffic free environment.

## Case study 2: A combination of factors

Case 1 – Fast roads leave little room for error, drivers must give cyclists room when overtaking

*Circumstances:* Jim was on a cycle touring holiday. He was riding out on a country road with no sealed shoulders when a gust of wind blew him into the path of a passing truck.

Lessons: These types of fatal crashes are less common and the circumstances rarely duplicated.

- Chose your route carefully. Cyclists must be aware of their vulnerability and give themselves and other road users some margin of error. Chose your route and position on the road carefully especially on high-speed roads and in poor weather conditions.
- Share the road. Motorists need to give cyclists room when passing in case cyclists are blown sideways or need to avoid road obstacles. This is especially true on high-speed roads or in poor weather conditions.
- Cycle safe shoulders. Cycle safe shoulders to the left of a Vibra line should be installed as part of rural road upgrades. Shoulders give cyclists and motorists more room for error.

## Case study 3: Motorist at fault

### Case 1 Drunk driving kills, so does drug driving

*Circumstances:* Jeff was out on his usual training ride along the coast early one morning with some riding buddies. He was wearing all the right gear – a helmet, bright clothing and two rear flashing lights and a front light – and obeying the road rules. He was hit from behind by a car and died from massive head injuries. A 26 year old returning from an all night party drove the car. The driver had been drinking and smoking cannabis. He was charged with culpable driving. His license was suspended for four months and he was fined \$1,000.

#### *Lessons*

- Drink driving kills. Driving when drunk or under the influence of other drugs is deadly to yourself and other road users. The same applies to fatigue and speeding
- Penalties. The penalties for negligent drivers who kill are not harsh enough. Jail terms are warranted.
- Road safety messages. The Government's focus on drugs, fatigue and speeding road safety messages is warranted
- Other drugs. The Government needs to treat driving under the influence of other drugs the same as alcohol. At present there is no blood alcohol type limit for other drugs.
- Cyclist training routes. Targeted measures can help make cycling training routes safer. These included wide kerbside lanes, marked bike lanes, cycle friendly shoulders and fixing blind corners, narrow points and providing overtaking opportunities.

### Case 2 Not paying attention to the road

*Circumstances:* Harold was bike touring on a 100km/h rural road on a sunny Saturday. He was hit from behind by a car and died from multiple injuries. The driver was reportedly replying to a text message on a mobile phone when the car hit Harold at 100km/h.

#### *Lessons*

- Avoid distractions. Drivers must avoid distractions that take their attention off the road while driving.
- Public reporting of dangerous driving. The Government needs to target hand held mobile phone use in moving vehicles before it becomes a bigger problem. Community reporting of hand held mobile phone use along the lines of the highly successful EPA litter reporting or New Zealand's Roadwatch should be implemented.

## Recommendations

### How cyclists can help themselves

Select your route for safety especially on high-speed routes or in poor weather conditions.

- In poor light or weather or on high-speed roads it is sensible to choose a route and position on the road that leaves more room for error on the part of yourself and motorists. Look for a route with a bike lane, sealed shoulder or wide kerbside lane if training in the early morning or late evening.

Obey the road rules

- Breaking the law, especially running red lights, is dangerous to yourself and others. Three cyclists were killed in the last two years after running a red light or stop sign.

Make yourself as visible as possible – use tail lights, headlight and reflective and/or bright clothing

- The more you can do to make yourself visible the better, especially at night or in bad light or in poor weather conditions. Cyclists are hard to see, especially at night amongst other traffic and looking into the sun. Make sure your lights are visible especially the rear lights. A light on your backpack may not be visible as it faces upward when you bend to reach the handlebars. A better spot for rear lights is mounted to the seat post or rear rack, attached to a waist belt or to the rear of the helmet. Five cyclists killed in the last two years were riding in poor light conditions without lights or bright clothing.

Educate and train your children on road safety

- Supervise your children until they are road ready. Children must be able to stop and know how to cross roads safely before being allowed near the road unsupervised. Three children under 13 years old were killed in the last two years after riding off a footpath or driveway into the path of a car.

Wear your helmet and make sure it fits properly

- Helmets will not prevent you from crashing but they can help prevent serious head injuries or death. Eight cyclists who died in the past two years were not wearing helmets. In two of these it is clear that a helmet would have lessened the injuries or saved the cyclists life. The Director of Neurosurgery at Austin Repat Hospital said of one of these that it was "highly likely that his injuries would have been lessened if wearing an appropriate helmet"

# How motorists can make it safer for cyclists

## Obey the road rules

- As with cyclists, breaking the road rules is dangerous to both yourself and others

## Share the road and respect other road users

- Be aware of bicyclists, especially on higher speed roads. This may mean you have to slow down or change lanes some times.
- Take care when overtaking cyclists especially in high-speed environments - give them room in case they need to avoid potholes or gravel or if a gust of wind blows them. Ten cyclists were killed when struck from behind by motor vehicles in the last two years. Many of these deaths could have been avoided.

## Avoid alcohol and illegal drugs, fatigue and speeding.

- These key safety messages are often repeated and they are as relevant as always. Alcohol, illegal drugs, fatigue and speed all make you deadly. Both to yourself and especially to vulnerable road users who do not have the protection that the car structure affords. Alter your speed for the conditions. If you cannot see other road users or stop for others, you are going too fast. This applies to all roads.

## Avoid distractions such as mobile phones and changing music while driving

- If your attention is not on the road then you cannot drive safely. Cyclists riding on the left of the road are potential victims if you drift left while not paying attention.

# How Government can help make it safer for cyclists

While most current initiatives are supported, more needs to be done to promote safe and responsible driving and make roads safer for cyclists

## Public reporting of drivers using hand held mobile phones

- Hand held mobile phone use while driving needs to be targeted before it becomes more of a problem. Already one cyclist has been reportedly killed by a driver using a hand held mobile phone while driving.
- We call for the introduction of community enforcement of illegal hand held mobile phone use. We propose that members of the public can report mobile phone use 'in-the-act-of-driving'.
- Currently litter and the EPA handles smoky vehicle reports in a similar way<sup>13</sup>. 'Under the Litter Act 1987, you are able to report someone committing an offence by sending a signed report to the EPA. The most likely outcome will be for EPA to issue the registered vehicle owner with an infringement notice'
- In New Zealand, under the Community Roadwatch<sup>14</sup> program, members of the public can report a driver overtaking on 'no passing lines', or a driver following too close (tailgating) behind your vehicle or another vehicle

## A review of penalties for negligent drivers that kill cyclists

- Cyclists continue to be killed by irresponsible drivers and the penalties are not high enough. Drivers can kill cyclists and are only punished by a fine and suspended license. Three cyclists have been killed by motorists on Beach Rd alone in the past three years. In all cases the cyclists were obeying all road rules but were killed by dangerous drivers who were speeding or under the influence of drugs. In one case the negligent motorist was only fined \$1000 and his license suspended for 6 months. This is not good enough. Dangerous drivers are getting off too lightly for killing cyclists

## Fund and build more safe places to ride

- The Victorian Govt acknowledges in its Arrive Alive Strategy "the most effective way of protecting bicyclists is to separate them from vehicle traffic."
- Victoria is the only state to record a significant reduction in cycling deaths in the past year. It's also the only State to have a program of building bike lanes on main roads – where most cycling fatalities occur
  - Unfortunately there is no funding commitment beyond 2003 for the current VicRoads program that aims to install a visible cycle network on 2 000km of arterial roads in Metropolitan Melbourne (the Principal Bicycle Network) and to provide a similar network base in regional centres (Priority Bicycle Routes). The government needs to provide an ongoing and increased commitment to this successful program.
  - Safe routes to schools. The Government needs a commitment to building safe routes to schools. More safe off-road paths that link directly to schools are

needed so that children can safely travel to and from school. A trial program in both Metro Melbourne and a regional Victorian town is warranted.

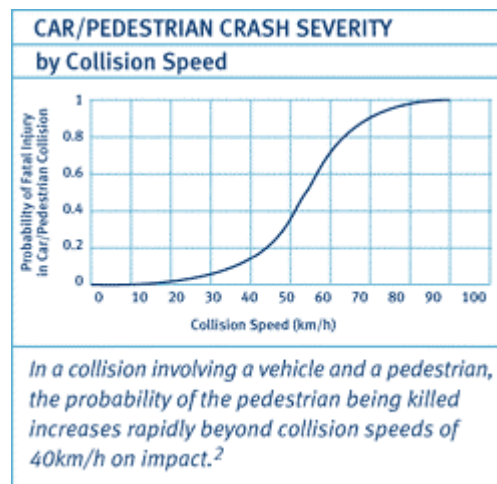
- Cycle friendly shoulders on rural and high speed roads. Rural high-speed roads are more dangerous for cyclists. Upgrades to rural roads should include a cycle friendly shoulder to the left of a Vibra line. Shoulder must be smooth enough to encourage cyclists to use it. The stone size in the aggregate generally needs to be less than that on the road (7-10mm as opposed to 14mm). Regional local governments responsible for ‘training circuits’ on high speed rural roads need to implement appropriate measures such as lanes, shoulders, improving blind corners and overtaking lanes, and intersection controls to increase cyclists safety.

#### More focus on other illegal drugs.

- We urge the Government to introduce drug-driving regulations for all non-alcohol drugs. Currently there is a defined level for alcohol in the blood but no limits for other drugs.

#### Continued focus on speed regimes and road safety messages

- We support lower urban speed limits to ensure impact speeds fall below 40 kph. Pedestrians or cyclists hit at 40kph have a greater than 80% chance of survival compared less than 40% at 60kph (see figure below from State Governments Arrive Alive strategy). Lower speed environments favour cyclists and pedestrians –they should be expanded to include all residential areas.



- We support a continued focus on the road safety messages targeting speed, fatigue and alcohol.

## Other Proposals based on this study

### Improved access to data on cycle deaths

- Currently it is very difficult to track data on crashes through the multiple agencies including police, coroner and courts. We have only been able to track two cycle deaths from police report to court decision. Some coroner's reports take over 2 years to complete eg for foreign tourists. This system should be improved and better integrated so that information related to a road fatality can be tracked from death to any court decision. The introduction of the National Coroner Information Service (NCIS) should not make it harder to track data on deaths. Not-for-profit interest groups such as ours should have free access to the NCIS.

### Coroners Office

- The Coroners Office would benefit from further study on cycle death and injury. This would allow them to evaluate each death in the context of a sound understanding of risk, exposure, cause and countermeasure.

### Inappropriate emphasis on helmet wearing

- Helmets are useful in a crash as they reduce the severity of brain damage<sup>15</sup> – the most severe and irremediable injury type. But helmets do not prevent the crash from happening in the first place. Unfortunately most bicycle penalties and warnings issued by Victoria Police are for helmet wearing. We urge the police to emphasise crash prevention enforcement initiatives such as booking riders who go through red lights and stop signs.

### Penalties for the responsible party in 'hit from behind' crashes

- Bicycle Victoria is aware of cases where cyclists have been booked when hit from behind. We are also aware of motorists who are not booked when they have injured a cyclist. The Coroner is empowered to make recommendations on matters dealing with the administration of justice. When cyclists are hit from behind the Police and Coroner must ensure an adequate investigation and application of appropriate penalties.

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## Endnotes

<sup>1</sup> *Cyclist Trauma the Facts: 1995, Cyclist Trauma the Facts: 1996, Cyclist Trauma 1998*

### <sup>2</sup> **Bicycle Victoria's approach**

Bicycle Victoria's approach to road safety is based on the following principles:

#### **Data:**

- Identify reliable information about cycle trauma.
- Analyse, interpret and publish the data.
- Identify data that needs to be gathered. For example, establish a sound basis for measuring exposure or the amount of cycling that occurs.

#### **Consensus:**

- Build a consensus amongst all stakeholders on the priority problems.

#### **Prevention:**

- Encourage all stakeholders to move to a preventative approach.

#### **Emphasise engineering countermeasures:**

- Ensure that bike paths are built or adapted to reduce crashes caused by poorly designed corners, sight lines, centrally located bollards and inadequate maintenance.
- Ensure that bike lanes that meet the national guidelines are installed as part of bicycle networks.
- Monitor implementation of countermeasures.
- Evaluate effectiveness.

#### **Training:**

- Support training courses that increase bicycle skills for adults and children.

#### **Standards:**

- Support appropriate standards that improve bicycle safety.

#### **Regulations:**

- Support regulations that improve bicycle safety.
- Encourage regular review of penalties.

#### **Insurance solutions:**

- Develop insurance solutions for common causes of injury and property damage.

<sup>3</sup> Anderson, Lars Bo “**All-Cause Mortality Associated With Physical Activity During Leisure Time, Work, Sports and Cycling to Work**” Archives of Internal Medicine Vol 160 No. 11 June 12, 2000.

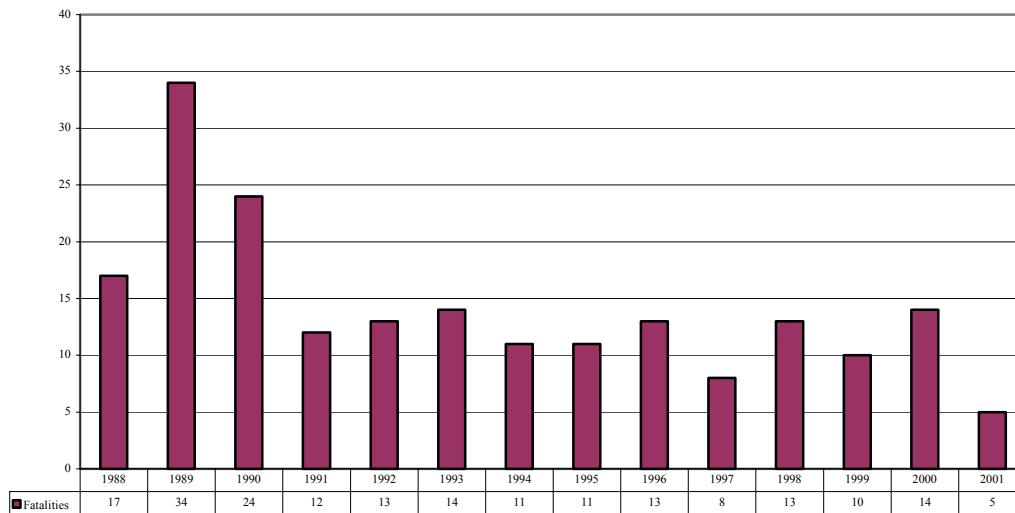
This study took place in Copenhagen, Denmark over 14.5 years and found that cycling to work (an average of 3 hours cycling per week) decreased risk of mortality by approximately 40% of that of the sedentary control group. The study took into account issues such as age, health status, and socio-economic factors. The study also found that there are increased benefits of physical activity for the aging population.

The full report can be found at:

<http://archinte.ama-assn.org/issues/v160n11/full/loi90593.html>

#### 4 There are fewer bicycle fatalities

The following table shows how the number of cyclist fatalities has fallen since the 1980s



#### Causes

The reduction in cyclist fatalities could be due to a combination of the following factors:

- the reduced danger from motor vehicles through increased enforcement of penalties for speeding, drink driving and fatigue.
- the provision of visible cycle facilities on arterial roads where most crashes occur has allowed the ratio of trips to each serious injury to improve.
- A reduction in cycling by the highly at risk 12 - 17 year olds. Fatalities for this age group totalled 27 in the three-year period 1988 - 90 and 11 in the five-year period 1991 – 95; 7 in the period 1996- 1998; and 4 from 1999-2001 – see below
- Increasing use of helmets.
- Increasing use of red flashing tail lights though this is not fully borne out in the statistics:

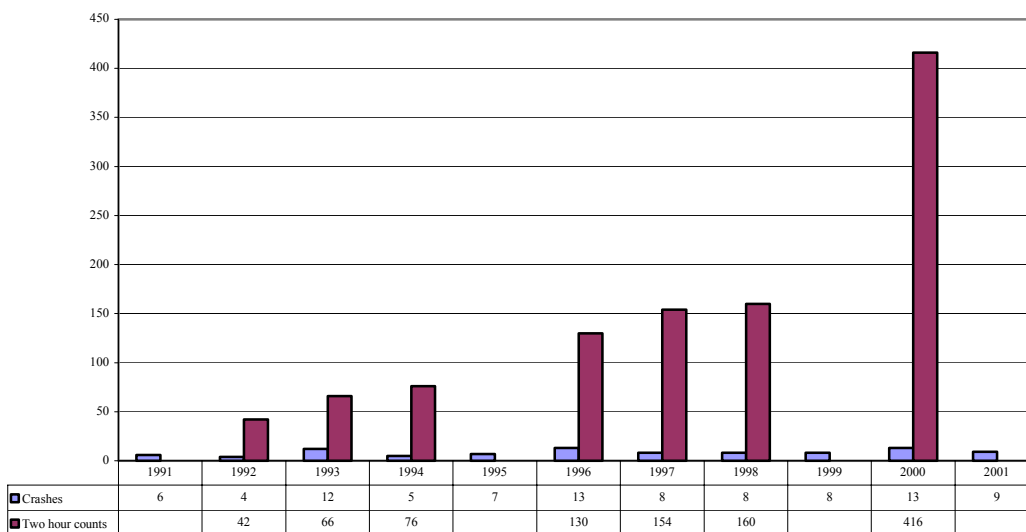
• Year	No of Fatal Crashes at Night	No of 12-17yo fatal crashes
• 88	• 8	• 5
• 89	• 7	• 13
• 90	• 5	• 9
• 91	• 4	• 5
• 92	• 1	• 1
• 93	• 0	• 3
• 94	• 0	• 5
• 95	• 1	• 0
• 96	• 4	• 1
• 97	• 3	• 2
• 98	• 1	• 4
• 99	• 3	• 0
• 00	• 5	• 4
• 01	• 1	• 0

It is possible however that these trends are running in parallel with decreased cycling by some groups. There is some anecdotal evidence that young people under 20 are not riding as much.

## 5 Bike lanes and crash reduction

For this report we have looked at St Kilda Road. In 1993 an on-road bicycle lane was installed in this section of road at the minimum width of 1.5m. Since 1992 Bicycle Victoria has done a number of two-hour counts of City-bound riders on St Kilda Rd during the morning peak.

The following chart compares the numbers of riders in our counts and the number of crashes recorded by police.



This chart shows that the number of riders has increased by around 9 times since the lanes went in, but that the number of crashes has stayed at a similar level. This suggests that the number of ‘trips per crash’ has increased by 300%.

This example illustrates the impact of on-road lanes. They increase trips and contribute to increased safety.

<sup>6</sup> Australian Transport Safety Bureau March 2002 report April 2000 – March 2001 compared to April 2001-March 2002. NSW 7 to 14; Vic 9 to 5; Qld 4 to 14; SA 2 to 5; WA 2 to 6; Tas 1 to 0; NT 2 to 0; ACT 0 to 0. Vic 12 to 6 figure is Vic Police Stats for full calendar year.

<sup>7</sup> ‘Police’ data on cycle injuries caused in crashes with motor vehicles comes from the State Traffic Accident Database held by VicRoads and derived from police accident report forms. Crashes on private property are not included. A fatality is recorded if the person died within 30 days of the crash. A serious injury is a non-fatally injury which police assess as serious enough to require admission of the person to hospital. Police are not required to follow up at the hospital to check that the person was actually admitted. Minor injuries are assessed by police as not serious enough to warrant hospital admission. Police attend all crashes in which a person is injured and a motor vehicle is involved. The report on the crash is collated by VicRoads and published on their website at [http://www.vicroads.vic.gov.au/road\\_safe](http://www.vicroads.vic.gov.au/road_safe) This covers only about 20% of cyclist hospitalisations. This data allow us to analyse key features such as:

- Time of day
- Location
- Type of crash — there are 71 crash codes
- Age
- Gender

These police reports do not include:

- 
- All the cyclists who have a crash 'all by themselves', called bicycle alone or single vehicle crashes. These account for around 80% of all hospitalisations. (The police data include DCA 174 'out of control on carriageway'. Police would not be called to a similar crash on a bike path.)
  - Minor injuries to the cyclist where police are not called. There are a substantial number of crashes treated by casualty departments, general practitioners and at home that are not recorded.
  - Crashes that damage the car and or bike but cause no personal injury.
  -

<sup>8</sup> Hospital admission data is collected on the Victorian Inpatient Minimum Database held by the Department of Health and Community Services. This data covers people admitted to Victorian public hospitals, cyclists being identified by the external cause code associated with the principal injury on admission. Non-inclusion of admissions to private hospitals will contribute a small undercounting, but this is likely to be consistent from year to year. Readmissions, if they were not correctly coded as such, would result in over counting.

The VIMD does not record causality. Thus one hospital official reported verbally that a patient was admitted and said they were injured on their bike. It turned out they had been using their bike as a ladder to do some painting.

### **What the hospital admissions data tells us**

Bicycle Victoria's study *Cyclist Trauma: the facts 1996*, which covered the years 1988 - 1995 highlighted a number of factors:

#### **Hospitalisations**

- Around 80% of all cyclist hospitalisations are for crashes that do not involve motor vehicles.
- There is a significant trend towards decreasing lengths of stay for hospitalised cyclists.
  - The stay for bicycle/motor vehicle casualties has fallen from 10.4 days on average in 1988 to 5.1 days in 1994.
  - The stay for bicycle alone casualties has fallen from 3.6 days on average in 1988 to 2.4 days in 1994.
- The period 1992 - 1994 has shown an increase in the number of admissions. As mentioned above, without exposure data it is hard to interpret this fact.

#### **Age (1991 - 1994)**

- Under 10s crashes are mainly bicycle alone. Over 80% involve no motor vehicle.
- Males aged 10 - 14 are most commonly injured and account for 22% of all hospitalised cyclists.
- Teenagers bicycle motor vehicle crashes have declined by 7%.
- Males under 20 years old accounted for 50% of hospitalised cyclists.
- Cyclists under 20 years old: crash frequency declined by 34%.
- Over 20s bicycle motor vehicle crashes have increased by 7%.
- Cyclists between 20 and 29: crash frequency increased by 28%.
- Cyclists older than 30: crash frequency increased by 37%.
- Males accounted for 76% of bicycle alone crashes and 84% of bicycle motor vehicle crashes.

#### **Ages and injury**

Children under 10 are over represented in

- Fracture of the upper arm
- Fracture of the upper leg
- Vault of the skull

Children aged 10 - 19 are over represented in

- Fracture of the lower arm
- Fracture of the fingers

Riders aged 20 - 39 are over represented in

- Fracture of the vertebra

- 
- Fracture of the collar bone
  - Fracture of the bones of the hand

Riders aged 40 and over are over represented in

- Fracture of the top of the upper leg
- Fracture of the vertebra (without spinal cord injury)
- Fracture of the collar bone

### Head injuries

- There has been a reduction in the rate of admissions for head injury.
- The greatest reduction in frequency have been for skull and brain injuries in crashes involving motor vehicles decreasing 50% in the period 1988 to 1994.
- Over the same period there has been an overall 29% decrease in lengths of stay for skull and brain injuries.

### Common injuries (1994)

<b>Bicycle motor vehicle</b>		<b>Bicycle alone</b>	
Skull and brain	58	Skull and brain	196
Face neck and scalp	26	Lower arm	185
Upper leg	16	Face neck and scalp	136
Lower arm	13	Leg/foot	58
Rest of hand	13		

- Skull and brain injuries were the most frequent type of injury in all types of crashes.
- Fracture of the lower arm is the second most common injury. 93% occur in bicycle alone crashes.
- Leg fractures occur commonly in motor vehicle crashes.

<sup>9</sup> We lack clear data on exposure or the number of trips by bike. The Victorian Activity Travel Survey VATS provides some clues but only in metropolitan Melbourne. VATS bicycle data was summarised in 1999 in a VicRoads publication *Cycling in Melbourne Ownership Use and Demographics*. VicRoads will publish a comparative study in 2002, which will show some broad trends across the metropolitan area. Bicycle Victoria from time to time conducts site-specific counts, which also provide some clues.

### <sup>10</sup> Victorian Injury Surveillance System

The September 1998 Edition of *Hazard*, the magazine of the Victorian Injury Surveillance System at the Monash University Accident Research Centre, published an article by Lei Li and Virginia Routely in which they investigated the police and hospital data.

The following chart shows the decrease in cycle fatalities during 1984 to 1996. It also shows a reduction in the numbers of injured cyclists.

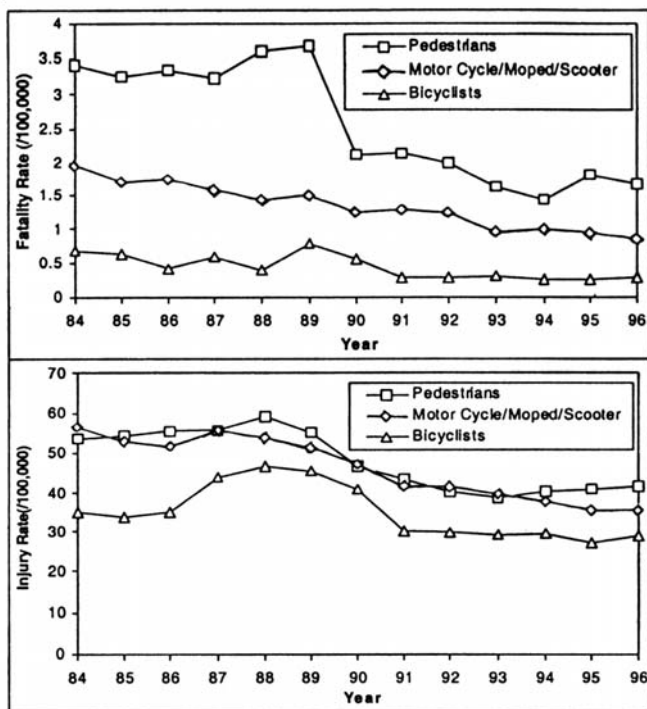


Chart : Pedestrian, Motorcyclist and Bicyclist Fatality and Injury Rates, 1984-1996, Victoria (Source: State Traffic Accident Record database of police reported crashes)

The authors conclude:

The fatality rates of bicyclists fell during the period shown. There were 28 bicyclists killed in 1984 but only 13 in 1996. There were 1 429 bicyclists injured in 1988 and 1,318 in 1996.

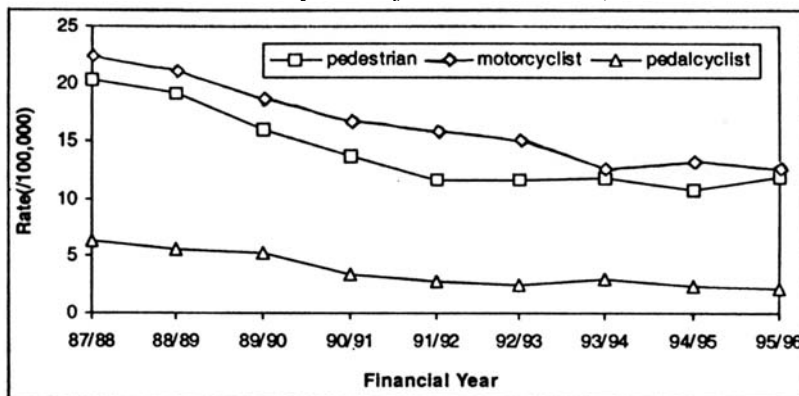


Chart : Admissions to Public Hospitals by Age Groups and Road User Types, July 1 1987 - June 30 1996, Victoria (Source: Victorian Inpatient Minimum Dataset)

The authors conclude:

The hospitalisation rates of pedal cyclists decreased two thirds from 6.3 per 100 000 population between 1987-88 and 1995-96.

They add:

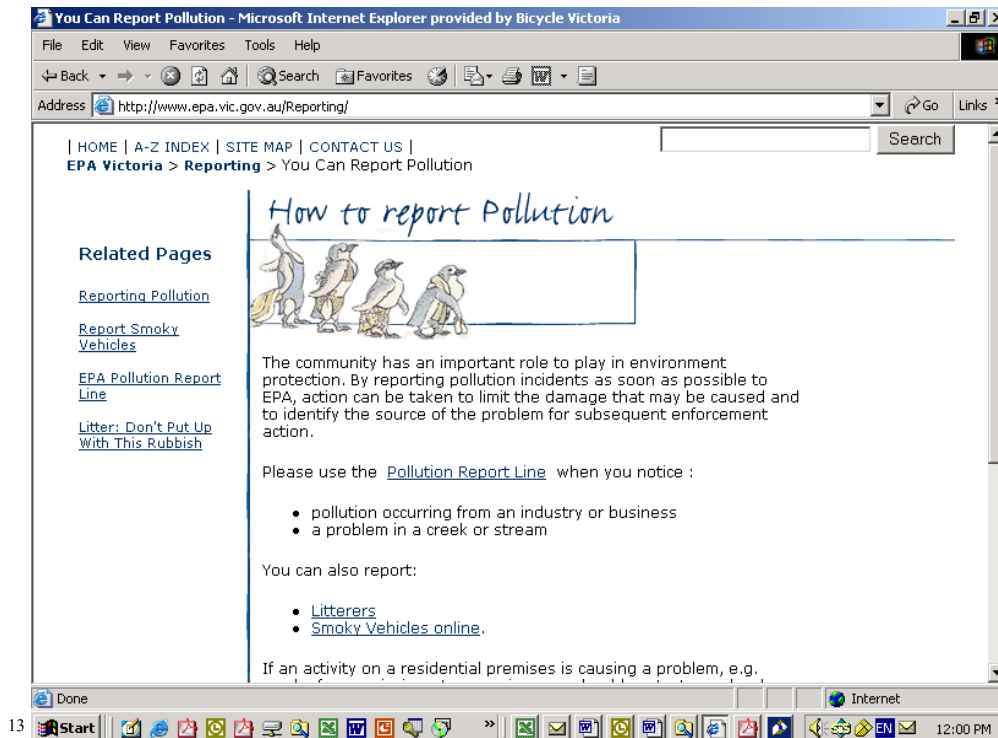
Pedal cyclists incurred higher proportions of both intercranial (not skull fractures) and head injury than other road users. There was a decline in head injuries for cyclists over the period.

The authors suggest that:

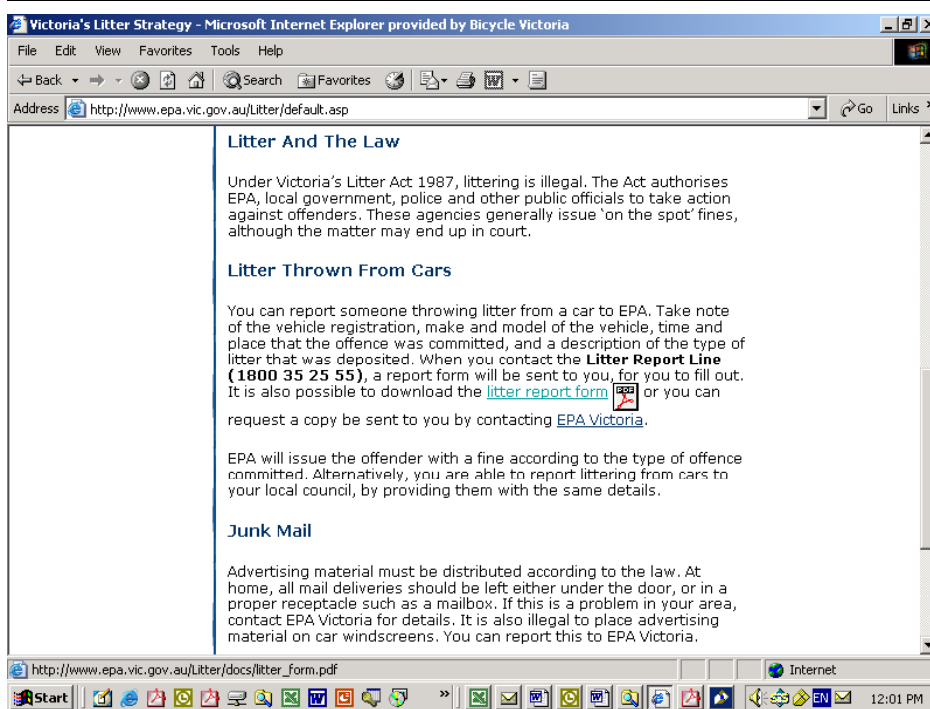
- To sustain further improvement there must be increased sophistication in research design and countermeasure implementation.
- It will be necessary to conduct fundamental research to better understand behaviour and needs of specific road user groups.
- The needs of bicyclists should continue to be considered.

<sup>11</sup>Fatal crashes involving cyclists almost invariably result in a cyclist being killed. In the 129 crashes there were 122 cyclists killed, 3 pedestrians (in 92,00,94), 2 motorists (both in 91), 2 passengers (in 91,93). One crash resulted in two cyclists being killed (in 93).

<sup>12</sup> Aust Transport Safety Bureau, March 2002 bulletin. April 2001-Mar 2001 compared to April 2001 – March 2002 NSW 7 to 14; Vic 9 to 5; Qld 4 to 14; SA 2 to 5; WA 2 to 6; Tas 1 to 0; NT 2 to 0; ACT 0 to 0. Aust wide bike fatalities rose 63% while in Vic they dropped 44%.



13



## Confidential Litter Report Form

Under the Litter Act 1987, you are able to report someone committing an offence by sending a signed report to the EPA. The most likely outcome will be for EPA to issue the registered vehicle owner with an infringement notice. If the fine is not paid, or if the matter is contested, you will be required to give evidence in court. You should only lodge the report if you are willing to appear in court.

### ***Offence Committed by (please tick)***

Driver Front Sex F Reg No.

Passenger Rear M Body Type

Colour

Make/Model

Time am/pm Date

Street Suburb

Nearest cross street Direction of travel

### ***Describe what you saw (including a description of the litter and the offender where possible)***

Please ensure that the description is as detailed as possible, and retain any notes you made at the time of the report.

Please return report form to EPA as soon as possible after the offence.

### ***Your Details***

Name

Address

Postcode

Contact numbers Home Business

Name of Witness (if there was one)

I declare the above information to be true and correct and I am willing to attend court.

Signature Date

### ***Please send report to:***

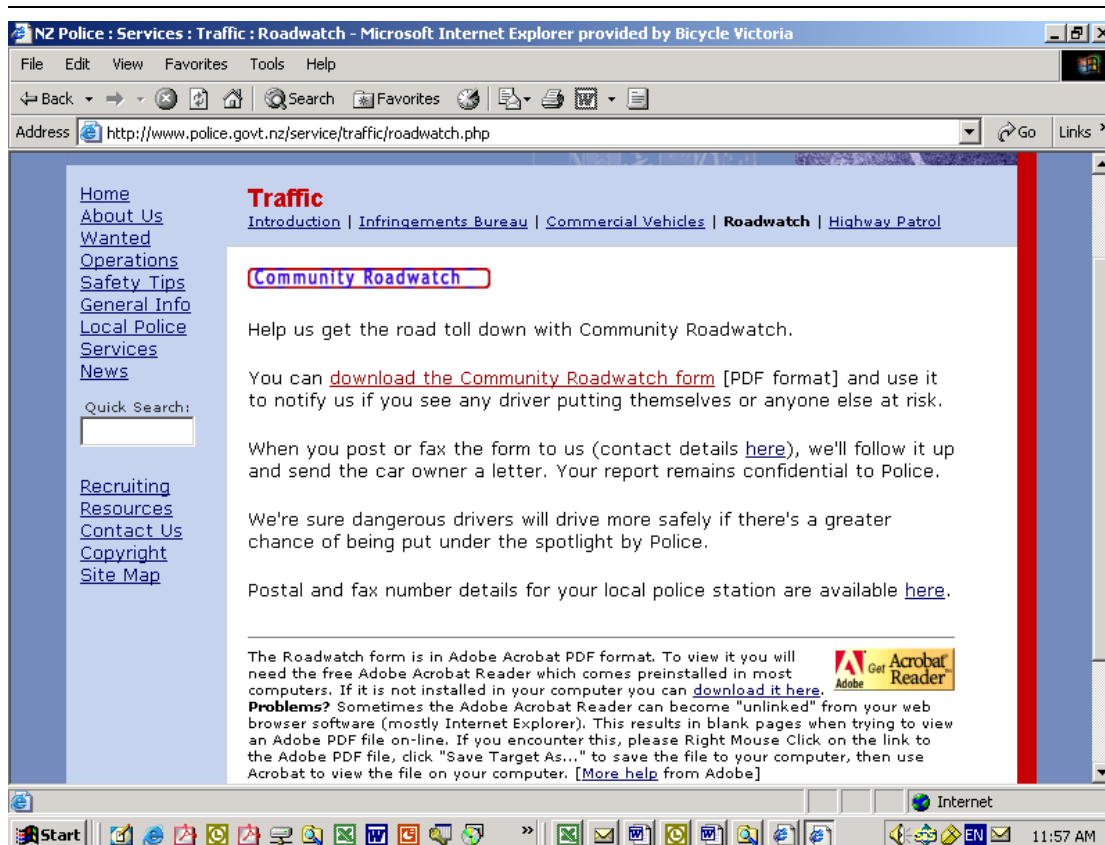
Reply Paid Permit 2326

Technical Support

EPA

GPO Box 4395QQ

Melbourne VIC 8060



## Safer Communities Together

# Community Roadwatch Report

This report will be used by the New Zealand Police to advise the owner of a motor vehicle about the driving behaviour you have observed and reported. The Police will regard your report as confidential; in accordance with the provisions of the law as it relates to privacy and disclosure of information.

### What did you see?

[please tick an option]

- A driver overtaking on 'no passing lines'
- A driver overtaking in the face of oncoming traffic causing another driver to take evasive action
- A driver crossing the centre line on bends in the road
- A driver following too close (tailgating) behind your vehicle or another vehicle
- A slow driver holding up traffic and not making allowance for others to pass
- Other dangerous driving behaviour (please make brief notes about what you saw happening)

.....  
 .....  
 .....

### When and where?

Date: ...../...../..... Time .....am/pm

Location: .....

(please write the name of the road or common landmark)

Nearest city/town: .....

### Details of the offending vehicle

Registration

number:.....Make:.....Colour:

.....

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Information about other passengers (please tick one) Driver only  Family group  Other passengers

**Your details please**

Title: Mr / Mrs / Ms / Miss (circle one) Name: .....

Address: .....

Registration number of your vehicle:.....Your telephone number: (.....).....

Please sign here: .....

Post this form to: NZ Police, Community Roadwatch, PO Box 27304, Wellington. Or deliver it to your nearest Police Station.

**Official use only**

Prec Code:.....

Location:.....

Status:.....

<sup>15</sup> Skull and brain injuries are the most common type of injury for bicycle motor vehicle crashes and for crashes that do not involve a motor vehicle.

The rate of admissions for head injury and the length of stay have reduced. Admissions for skull and brain injuries in crashes involving motor vehicles decreased by 50% in the period 1988 to 1994. Over the same period length of stay for these injuries fell by one third.