



Casualty Reduction for Power Two Wheeled Users in Hampshire and the Isle of Wight, England

Bikesafe 03 >

SUMMARY OF THE PROJECT

Bikesafe 03> was initiated within Hampshire & the Isle of Wight with a clear aim:

To reduce the increasing number of motorcyclists killed and seriously injured [KSI] on the roads of Hampshire and the Isle of Wight.

Scanning:

A variety of comprehensive data was collected from police, health, highways, riders, media etc in order to fully understand the problem. Traditional enforcement methods, predominantly police led, did not appear to impact upon the problem. Bikesafe within Hampshire and IoW was initially implemented in 2000 however fatal and serious accidents of riders of PTW [Power Two Wheelers] were continuing to rise year on year.

Year	Fatalities	Increase % on previous year
2001	16	
2002	22	27%
2003	33	50%

Analysis:

The PTW community is continuing to grow, partly fuelled by the increased popularity in both recreational and commuter use. Analysis of rider profiles involved in fatal collisions between 2001 - 2003 shows;

- Large numbers of collisions involving larger sized bikes
- Motorcycles are 4% of registered vehicles, but are involved in 31% of fatalities
- Ages of riders vary each year
- Injuries vary from a fractured thumb to a severed lower leg

- The age ranges from 16-60 the highest number of injured are 16-20 the second highest 36-40
- The highest number of serious injury collisions have occurred in 30mph speed limit areas
- There were three main motorcycle casualty routes that accounted for the highest proportion of accidents

Responses:

An innovative partnership approach combined enforcement, safety engineering and education. Responses from key partners was directly supported and part funded by the Strategic Casualty Reduction Partnership. They included;

- Local and motorbike press awareness and media messages
- Partnership road shows at key locations and events
- Enhanced police patrol and focussed enforcement
- Extensive safety engineering work on the three main routes
- A newsletter designed specifically for the PTW community
- The "Edge 44"; a riding assessment scheme operated by Police and Council to improve skills

Assessment:

Regular partnership team meetings delivered clear strategic intent and operational reality to properly progress and jointly evaluate the overall project plan:

- Year one - fatal collisions involving PTW's reduced by 70% (23) = £24 million savings to community
- Driver Improvement Scheme under used (new response being implemented)
- More riders using Edge 44 scheme = more aware and improved riders
- Year two - no fatal collisions on targeted routes
- Reduced level of serious PTW injury collisions



DESCRIPTION OF THE PROJECT

Scanning

- A main priority of this intervention was to reduce the level of PTW [Power Two Wheel Vehicles] collisions on three identified routes of concern where collisions were recurring
- The overall objective was to reduce the number of killed and serious injury PTW collisions in Hampshire and the Isle of Wight by a minimum of 15% year on year
- To minimise community costs and public concern in terms of the loss of life and the associated burden upon already stretched resources, including the financial and opportunity costs to the emergency services, as well as to the health authorities and hospitals
- To develop a clear project lead and development of a partnership approach to reduce the number of PTW collisions and injuries

A study of three years of collision data involving PTW's in Hampshire and the Isle of Wight was undertaken. This report, called BikeSafe 03>, highlighted the specific problems and formed the basis of a PRIME [Problem Resolution in a Multi Agency Environment] project. In 2003 there were 33 fatal collisions involving PTW's.

- The data set used for the purpose of analysis for this project was gathered primarily from Police collision data but analysed by both the Police and Hampshire County Council [HCC]
- Gap analysis identified that there was no clear strategy for dealing with the increasing problem, there were no clear lines of communication between and with key partners, and whilst good work was ongoing, much was being done in isolation
- Police resourcing, direction and response was not cohesive and lacked clarity of purpose

- A structured meeting framework involving all key partners was required to improve delivery of partnership working at both a strategic and tactical level, once the strategy had been agreed. Key partner agencies needed to include the HCC Road Safety & Engineering Team, Hampshire Ambulance Service, Hampshire Fire and Rescue Service, Unitary Authorities, the Police and the Motorcycle Industry
- A more detailed understanding of the national and regional perspective in tackling this problem was also required
- A preferred model for problem solving needed to be properly applied to assist in shaping the overall plan and drive the agenda forward and so the PRIME approach was utilised

Background work identified that the two counties have one of the highest number of registered PTW's in the country. In 2000, there were 860,600 motor vehicles registered of which 35,800 were PTW's. Therefore, PTW's represented 4% of all motor vehicles and yet this group represented 21% of all KSI's on our roads.

In 2002, a total of 6824 road traffic collisions involving personal injury were reported to Hampshire Constabulary resulting in a total of 9016 casualties. This is represented as follows:

Severity of casualty	Total all vehicles	PTW's from total	Percentage
Killed	95	22	24%
Serious	1212	257	21%
Slight	7709	798	11%

This was also a 53% increase on 2001 and a 12% increase in those seriously injured.

In 2003, there were 108 fatalities as a result of road traffic collisions, 33 involved PTW's which was an increase of 50% over the 2002 figures. PTW's represented 31% of all fatal traffic collisions recorded that year. This escalating problem was cause for concern for all partner agencies and understandably so for the family and friends of those who died or suffered injury, as well as for the wider community.

Victims in the main were the riders of PTW's. In addition, it is recognised that the level of incidence and the extent of injury and trauma suffered also has a knock on effect upon witnesses, other road users and the emergency services personnel who may have witnessed the collision, been involved in it, or rendered aid and support to the injured person. The emergency services are affected in the time spent dealing with the scene, the resources and the follow up. This can mean that those resources may not be available to respond and deal promptly with other incidents; thus other users of the service may be affected. In addition, there is the extensive demand and burden that falls upon the hospitals and health authorities in trauma care and treatment. A serious injury collision can cost the NHS tens of thousands of pounds, figures quoted are in the region of £100,000, with a breakdown of in-patient care, theatre procedures, treatment and other resources costing £76,000, intensive care unit £16,000 and then after care at outpatients making up the remainder.

The cost of repairs to roadside furniture or vehicles involved in the collisions is borne out by insurance companies. UK Motor Claims experience shows that in the year 2000 there were 27,000 claims involving PTW's at a cost of £72m with an average cost of each claim £2,623, in 2001 in the region of 33,000 claims with a payout totaling £71m. In this sense the victims can be seen as the general road users who pay higher premiums.

In 2002 sports bike riders were more at risk; mainly male and in his mid thirties. A review of serious injury data from Southampton General Hospital indicates that the injuries occur to riders aged between 14 and 40 years. Further analysis reveals that those aged between 14 -19 years old are riding scooters or mopeds. In the first quarter of 2003 the age of those who died ranged from 18 to 58 years old with larger capacity PTW's being involved.

The evidence from police activity reveals a majority of riders being stopped and identified as committing traffic offences are those who ride the high performance sports type bike. This has to be combined and considered with what we know about the increased use and sales of these machines, together with our knowledge of the world of motorcycle racing, which has a competitive edge and a cult following. The rider tends to be male; the

age range tends to be mid thirties to mid forties and known as the 'born again biker'. We also need to factor in those who seek the 'thrill' factor and have a propensity to want to take risks.

While the information gathered shows that 17 riders lost their lives through a loss of control while cornering, other road users need to be aware of motorcycles as they emerge from or turn into junctions and these types of collisions are still high.

The report identified three key rural roads of concern where riders had been significantly more at risk. They had become regarded as a 'rider challenge' being widely reported on biker websites and in motorcycle magazines. In addition, group riding and peer discussions at bike meeting places across the country also helped to advertise the routes and fuel rider interest in them.

The routes identified were all A class roads as follows:-

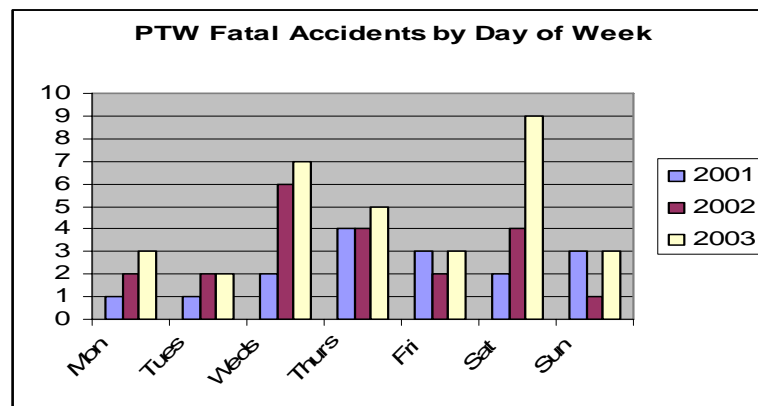
- The A339, a national speed limit road of approximately 10 miles in length, rural twisty and challenging at greater speeds, which had a route from Alton to Basingstoke
- The A272, mainly national speed limits with twisty rural sections and then entering small villages between Winchester and Petersfield
- The A32, mainly national speed limits running from Fareham to Alton. On this route there was a natural meeting place at a local café where riders would congregate and ride out from on a regular basis and always on a Sunday morning
- Between 01st January 2000 and 17th April 2004 there were 17 reported fatal PTW casualties along the three routes of concern

The three routes were quite central in the county and had become somewhat of a magnet for riders of high PTW's from across Hampshire and surrounding counties. There were a growing number of complaints regarding noise as the routes became more popular. In some areas along the routes during the operation there were speeds of 110 – 115 mph detected in rural national speed limit areas, a number of offences of failing to comply with traffic signs and double white line systems were recorded. Unchecked these may have gone on to be collisions in the near future.

Analysis

When are the collisions taking place?

In 2000 – 2002 PTW fatal collisions would begin to occur in February and continue through to November. However, in 2003, the first reported fatal collision was reported in January and this was followed by more death and injury. The times vary according to seasonal changes, but as can be seen by the following charts, two periods stood out. The following chart reflects how annual change prevents a more targeted approach to identify which days are at a greater risk of when collisions are likely to occur.



Wednesday, Thursday and Saturday were the most likely days for collisions involving PTW's to occur. The incidents on a Wednesday coincided with an established bike meet that took place within close proximity to these key routes and which riders frequented from across the county and elsewhere.

Who are the victims/riders involved?

The riders most at risk are in their mid-thirties and those aged 16-19. Fatalities occur mainly in the older age bracket and are predominantly male riders, aka in the popular press as 'born again bikers'. Whilst there is some reticence amongst riders to accept this label, it does identify those riders who passed their motorcycle test earlier in life followed by a period away from riding [5 - 10 years] and thereafter return to riding again. They had no further training or rider assessment and the timeframe away from riding combined with the advanced technology, power and performance of the machinery, as well as the increased traffic volumes, plus the significantly reduced rider capability and experience make the risks to the rider and road user far greater. The physical fitness of the rider in terms of the ageing process will have also had an effect on their reaction times, their balance, eyesight and brain to body coordination and these must also be added to the equation.

What is the Impact of KSI Collisions Involving PTW's?

There is a significant impact upon the community which manifests itself in a variety of different ways. These include road closures, congestion, delays and diversions for other road users, local households and businesses affected within close proximity, NHS resources stretched in hospitals and related treatment procedures. Of course the most significant impact is upon those who were injured or the families of those who died, friends and employers in both human costs and staff well-being. In purely financial terms great expense is calculated to communities as can be seen below:-

	Motorway	Built-up Roads	Non Built-up Roads
Fatal collision cost	£1,191,210	£977,510	£1,081,660
Serious collision cost	£143,690	£117,420	£138,090
Slight collision cost	£16,740	£11,690	£14,190

The Department for Transport recognises the cost of dealing with collisions [total to community, not just police resources] Source HMIC Thematic Inspection Report 1998.

Using these figures for Hampshire & the Isle of Wight, the overall costs to the community can be expressed in monetary terms as follows:-

	2001	2002	2003
Fatal	£15 million	£22 million	£32.5 million
Serious	£28.5 million	£31.6 million	£29.4 million
Slight	£9.8 million	£9.9 million	£10 million

The analysis that took place reveals that since the 1st January 2000 until the 17th April 2004 a total of 28 people died on the three routes of concern, the breakdown of this can be seen in the next table; the first part shows the number of collisions and the second part shows the number of fatalities involved in the collisions. The PTW's are expressed in the number and percentage involved from all vehicle collisions.

Fatal Collisions 01/01/2000 - 17/04/2004

	Total fatal collisions	Fatal collisions involving PTW's	PTW's as % of total
A32 Fareham - Alton	5	4	80%
A339 Alton - Basingstoke	12	8	67%
A272 Winchester - Petersfield	6	4	67%
Totals	24	16	67%

Fatal Casualties 01/01/2000 -17/04/2004

	Total fatal casualties	PTW fatalities	PTW fatalities as % of total
A32 Fareham - Alton	8	4	50%
A339 Alton - Basingstoke	14	9	64%
A272 Winchester - Petersfield	6	4	67%
Totals	28	17	61%

Serious Injury Collisions

Serious injuries received vary from a fractured thumb to a severed lower leg. The age range for this classification of crash injury is 16-60 years with the highest number of injured typically in the 16-20 year old age bracket and the second highest in the 36-40 ages. The majority of serious injury collisions occurred in urban and city areas which have 30mph speed limits. Again, many of the collisions were avoidable if there had been improved road safety awareness based on rider education.

Response to the Problem

The first period of 2004 has seen many new methods of casualty reduction measures being implemented, the post of Bikesafe Coordinator was developed, and Hampshire County Council carried out a lot of engineering work on the A339 Alton-Basingstoke section. There has been a greater awareness in Safer Roads Campaigns, with the benefit to focus on these particular issues, more information was available to put back into road safety campaigns relating to causation factors and target groups. A successful funding bid to assist with publicity and help police the routes over a six month period during the summer months helped to ensure that police activity on these routes was maintained. An operation was developed called "Operation Ardvasar"; this was a partnership project to help solve the problem.

Hampshire Ambulance Service supplied Paramedic Motorcyclists to be present on the routes at weekends, the assistance of a BASICS Charity Doctor was also gained; this helped to reduce the time for an Ambulance to be deployed as the help was already on hand and thus treatment was able to commence at a much earlier stage.

The main areas of Education, Engineering, Enforcement and Assessment were considered.

Education

HCC Road Safety Team and Police developed a scheme called "Edge 44" which gave riders the opportunity to book an assessed ride with a Traffic Police Motorcyclist. Edge 44 operated to focus upon raising sports bike riding standards; this included sponsorship and incentives which included cheaper insurance and biker clothing and gained support from dealers and companies. This scheme was promoted at key bike events throughout the year and via radio and poster advertisements. It was further supported by 'Biker Insight' a publication aimed at the target audience which included key safety messages, updates on progress and encouraging rider assessment and training.

A rider first aid workshop was delivered to raise the standard of biker first aid, developed jointly between the Police and a Royal Navy Doctor from the BASICS charity. Up until December 2005 there have been 6 courses with an average of 18 students on each course and already one student was the first on the scene of a potential fatal PTW collision and has put the skills learnt to good use. The course was designed by Police, Ambulance Paramedics and a Doctor aimed specifically for motorcyclists, the first part was designed to talk about accident causation and scene safety. The theory of First Aid was then discussed with a practical demonstration on life saving techniques and then a scenario to complete the package.

Engineering

The Safety Engineering Team from HCC would focus on remedial measures that may help to prevent reoccurrence of collisions at certain sites. The Engineering Department installed 'gateway' signs to each of the targeted routes and undertook an audit of the key routes in terms of their safety to riders. Other measures included road treatments and limited use of interactive signage. Following every fatal and potential fatal collision the partnership (Engineering/Traffic Management/Bikesafe Coordinator) would visit the scene of the collision and identify areas that may improve road safety, or to see if engineering had been a contributory factor. The Transport Research Laboratory was used to carry out speed evaluation along the routes by laying inductive loops into the road layout to collect speed data over a period of time. This showed the speed in relation to motorcycles and other vehicles.

Enforcement

Operation Ardvasar commenced on the 17th April and concluded at the end of September 2004; the biking season. Hampshire Constabulary provided high visibility patrols as part of the education and enforcement package, the patrols would remain on the routes between 0700 -1700hrs each weekend through summer months, a road safety

awareness stand was set up at the West Meon Hut, Little Chef Café at the junction of the A32 and A272 once each month on a Sunday, this was a renowned meeting place for bikers. This provided a good platform to engage with bikers and get the Bikesafe message across in a non-confrontational environment. At first the bikers did not accept Police in uniform and resisted conversation. The road safety stand was then staffed by officers in biking kit and this appeared to breakdown previous barriers.

The Safety Camera Partnership worked closely with the Police and targeted the routes at various locations along the three main routes. Hard standing areas / lay-by's were introduced to allow access for safety camera vans with speed detection equipment. The partnership also introduced a motorcycle as part of the flexibility to patrol more rural routes; this was also equipped with speed detection equipment.

In previous years a zero tolerance Police enforcement policy operated which meant that officers did not use a lot of discretion and this tended to alienate those riders more at risk and they had become what could be termed 'a hard to reach' group. This core group was identified as requiring investment in further training and the traditional approaches had not helped change attitudes or alter rider's behaviour. Therefore, a more educational policy was adopted with 'safety' its key driver in tackling infringements in the law, with every interaction with a rider giving an opportunity to encourage further assessment and training. Within a short space of time the people that were booking to come on to Edge 44 assessment courses had changed and the sports bike rider was more predominant. The road safety stand was generally staffed by the same people and experience showed that at an early stage there was reluctance from becoming involved with any training issues but as time went by the same people began to book courses.

Media

- A partnership communication strategy was developed and implemented which included making effective use of the following mediums: local newspapers, television, radio stations and websites [www.bikesafe.co.uk and www.hants.gov.uk/roadsafety]. The operation became well known to these organisations and they would always be looking for updates on success. It focussed briefly on the past and the ongoing work and gave riders and local community's interest. It also helped to make clear the partnership's intentions at all levels. A newsletter was introduced to show where problem locations were, and as the interest for this increased, extra information on riding tips were added. These are handed out by all Police patrols when stopping a motorcyclist and made available at places of interest along the routes.

Assessment & Learning

The early identification of the right partners and resources to turn strategic intent into operational reality has been key to the success of this project. Clearly defined goals and effective and ongoing communication between them has helped deliver the outcomes. Some pushing of traditional boundaries and innovative working by a dedicated team with a shared vision has also helped make a difference.

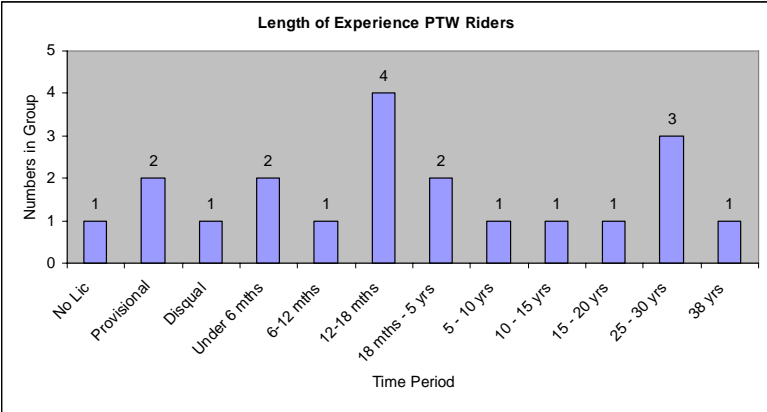
Ongoing analysis of the collision data shows that since the start of the intervention on the three routes there have been no fatal PTW collisions and, in fact, there were no fatal PTW collisions within the two counties between 17th July and 10th December 04. Since the intervention commenced on the 17th April 2004 until the 17th April 2006 there have been only two fatal collisions reported along the three routes of concern, these involved motor cars. Encouragingly too, there had been only four recorded serious injury PTW collisions on these routes, as against twelve the previous period.

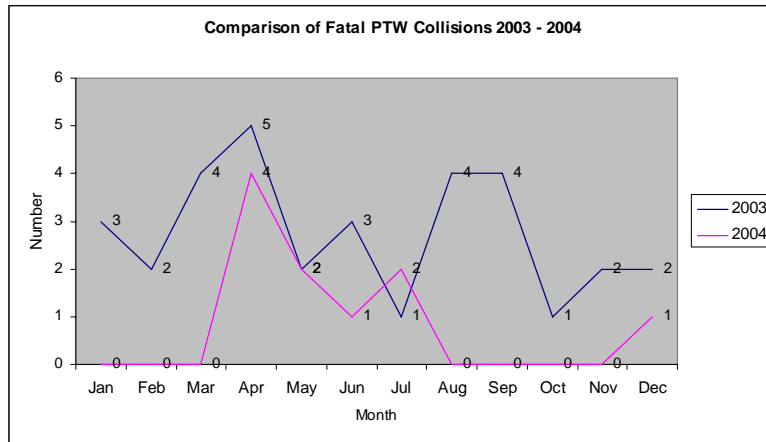
A quarterly casualty reduction partnership meeting takes place to inform all stakeholders of the current situation and to further evaluate progress made and future plans.

A review of operational effectiveness covering a 12 month time frame has been undertaken. Very positive results and feedback from a wide variety of sources have been received. The residents along the routes support the Police response to the ongoing problem, the benefit being that roads have not been closed for protracted periods of time for investigation of collisions. Noise complaints have reduced giving a better quality of life.

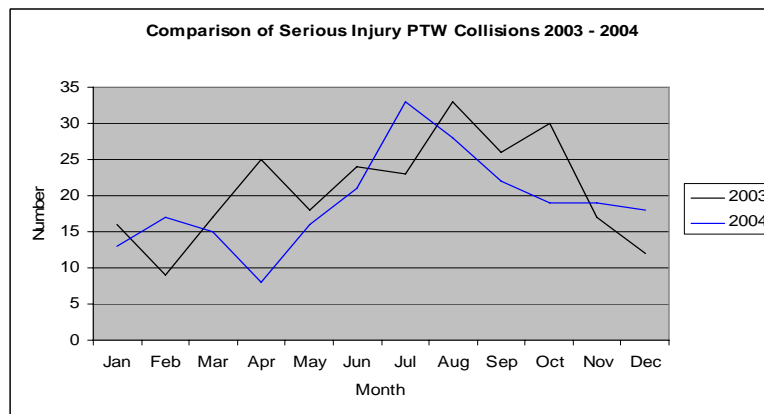
Ongoing review and analysis has identified a further route to be included in the 2005 Plan. Since the 01st December 2000 and 25th April 2004 there were 5 fatal PTW collisions along this road. This same tactical application is easily transferable to this route [A3057 from Romsey to Andover] and is already underway.

During the year 2005 there have been a number of fatal collisions where the rider had held a full licence for less than 2 years, showing a lack of experience as one of the factors involved. The chart below shows the length of time that the riders involved in the fatal PTW collisions had held their driving licence before the collision. Just fewer than 50% of the fatal collisions occurred on the approach to a junction where other vehicles were emerging.





In year one there was a 70% reduction in the number of people killed where a PTW was involved in collisions within the two counties, and there are no fatal PTW collisions recorded on the routes of concern since the intervention commenced. There were 23 less motorcyclist's dead, in monetary terms this represents a saving in community costs of at least £24 million.



A 10% reduction in the number of people seriously injured where a PTW was involved has also been achieved.

It was investigated to see if the weather conditions could account for less motorcycle use during 2004 but this was discounted. There were no fatal PTW collisions in the peak summer period between 17th July and 10th December 04, albeit this was a dry summer and research back to 2003 shows that many fatal collisions occurred in dry weather.

Financial support and investment from partners helped to pump prime year one. Year two has successfully secured some funding to help continue the work. The programme has now reached the start of year three and the first of the short term objectives. In the main it is recognised as mainstream business and staff time is absorbed by the various represented groups. However, opportunities for funding streams will continue to be explored as part of the overall plan to keep progress and publicity on track.

A reversing of the three year trend has been achieved on the three routes of concern over the two years of operation to date. As a result of the return on our investment in this partnership project, closer working is ongoing with neighbouring forces who have been seeking advice on the policy and practices adopted. Prosecution has its place but should be proportionate and combined with other measures. Current analysis indicates that enforced education systems like rider improvement schemes are under utilised and there is scope for this to be improved. No one single approach was ever going to have any long term effect. The pooling of resources working to an agreed strategy at both a strategic and a tactical level has demonstrated the clear benefits of working together to deliver a significant reduction in those killed and seriously injured on our roads.

- The ground work and necessary building blocks are firmly in place. The next phase is to build upon those very firm foundations and ensure longevity in this key area of our work. This requires an ongoing commitment and should continue to be reviewed and evaluated to keep it on track and alive to new ideas and developments.

Further analysis of the project identifies that there have been 21 fatal collisions involving PTW's during 2005. These collision sites are wide spread around the two counties and are not in areas that can be specifically targeted; the serious injury collision figures are almost the same as the previous reporting year but still lower than the base line figures of the target. As previously mentioned there were no recorded fatalities involving PTW's on the Red Routes in 2005 and Operation Ardivasar will continue in 2006 as all analysis shows that the intervention is working in this area.

During the year 2004 the causation of many of the collisions was related to loss of control by the rider. In 2005 this has altered and the main area of concern relates to a commuter type problem where vehicles collide at the approach to or at junctions or where other vehicles are turning across the path of the rider; this has become known as the “looked but did not see” type collision. Two fatal collisions in 2005 involved stolen motorcycles and excess alcohol, one user was a disqualified driver and the other held no licence at all.

On several occasions during this reporting period the Bikesafe officer visited schools and gave presentations on road safety to year 11 pupils. This will be developed in the forthcoming year as this would assist in educating the future vehicle drivers/riders before they embark on to the roads.

A new concept in the latter part of 2005 was to get more involvement with companies that have employees travelling to work on PTW vehicles, highlighting the risk involved of commuter type collisions. This appears to be well accepted and two companies have agreed to fund Bikesafe assessments for those employees that wish to take part.

The reduction achieved in the first year was also the lowest recorded PTW fatalities within the two counties than in the previous 14 years. Interestingly other vehicle fatalities also reduced this year; this could be as a result of the knock on effect of radio advertising and the intervention that has taken place, but it is difficult to measure what would have happened if this work had not taken place. The project has support from the partners to continue for the long term plan with continued assessment and learning.

Short Term Plan

- The PRIME initiative Bikesafe 03> short term objective was to reduce KSI PTW Collisions by 15% year on year.

Medium Term Plan

- To reduce killed and serious injuries relating to PTW collisions by 50% over the baseline average figures of 2000 - 2002.

Long Term Plan

- By the year 2010 to have reached the Government Road Casualty Reduction 2010 Targets - to reduce the level of casualties involved in PTW collisions by 40%.

Base line averages for the year 2000-2002 inclusive were: - Fatal = 20, Serious Injury = 255

Costs in 2004

Engineering	£ 250,000.00
Police overtime	£ 7,500.00
Media	£ 5,000.00

Costs in 2005

Police Overtime	£ 7,500.00
Media	£ 5,000.00

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