ROAD SAFETY STRATEGY
To Reduce Road Trauma in Western Australia 2008-2020

TOWARDS ZERO – ROAD SAFETY STRATEGY
OFFICIALLY ENDORSED BY GOVERNMENT – MARCH 2009
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ROAD SAFETY
– A long-term plan for WA

OUR MINISTER DISCUSSES THE FUTURE FOR ROAD SAFETY

“Much is asked of Western Australia in this new road safety strategy. The work ahead is demanding and requires community and political support. I am asking you all to join me in confronting the great challenges before us. Towards Zero is an ambitious target but it’s expected outcomes are achievable if we work together.”

Hon Min Rob Johnson MLA, Minister for Road Safety

We must look at road safety in a new way, because our state has both geographical and community challenges. The evidence shows us that while lives are being saved in the metropolitan area, about two-thirds of our road deaths consistently occur in our regional and remote areas.

There is also the major challenge of serious injuries – two thirds of these happen in our urban areas. For every one death there are about 15 serious injuries, many of which alter lives forever and place a huge burden on public health and the community.

Towards Zero considers the different needs of metropolitan, regional and remote road users.

Importantly it is built on the globally-recognised Safe System approach that benefits all road users by identifying strategies for: safe road use; safe roads and roadsides; safe speeds; and safe vehicles.

Towards Zero will help all of us to recognise that road deaths and injuries can be prevented if we make the conscious decision to give road safety the priority it deserves. This government is committed to improving road safety. We can move forward in confidence because we trust the evidence and the community consultation process used to develop this plan.

The safety of Western Australians depends on us sharing responsibility and implementing the initiatives in Towards Zero together. We will continue to reduce risk-taking behaviour through education and enforcement but also protect road users when they make mistakes by creating a more forgiving road transport system. The benefits won’t happen overnight, which is why we have developed a 12-year strategy to create the systemic and sustainable changes needed to make our roads safer. Every day Western Australians set themselves challenging and ambitious goals. As citizens, we deserve the safest road transport system in the world. Towards Zero will take time, but ultimately it will help us deliver that system

STATEMENTS OF SUPPORT

“Thousands of us have contributed to create a world class, uniquely Western Australian road safety strategy. No single person, agency or Minister can deliver this strategy alone. With the help of our community, members of Parliament and all key stakeholders, we are ready to implement a long term plan that will benefit us all.”

Grant Dorrington BEM
Road Safety Council
Independent Chair

“Death and injury on our roads does not discriminate – it can shatter the lives of anyone, at anytime. This is why for the first time a bi-partisan approach was used in the development of this strategy. This inclusive approach recognised that informed leaders such as politicians from differing parties are vital in progressing road safety initiatives.”

Eric Howard
Parliamentary Reference Group
Independent Chair
TOWARDS ZERO STRATEGY
Statement by Minister for Road Safety

MR R.F. JOHNSON (Hillarys — Minister for Road Safety) [10:39 am] — by leave: Today, my fellow members of Parliament, is a pivotal moment in our history—one that will mark the point at which we redefined the way we approach road safety in our state. Today is the day we create a lasting legacy for future generations…

…Every year, about 3,000 crashes in our state result in either death or serious injury. Today I ask members to take the moral high ground. I ask members to refuse to accept that death and serious injury are an inevitable result of using our road system; they are certainly not acceptable consequences…

…Towards Zero recognises that although crashes will always occur, no-one needs to die as a result of a crash. Today we should be proud that many people in this chamber and many more people across our community have helped create a road safety strategy that will change the way we need to think and act. This strategy challenges our standards and practices; it holds a vision for an inherently safe road system for our future generations…

…Today I ask that all members support this vision, as it will be achieved only with the support and action of the entire community. The Government will continue to deal firmly with those who defy or blatantly ignore our road rules, and who deliberately take risks on our roads, endangering the lives of all road users… Beyond these initial steps, we must encourage and support our engineers, planners and designers and challenge them to design and build roads beyond our current Australian standards… our community wants, and deserves, a forgiving road system.

Let me give members an example. At about 7:40 pm on Sunday, 19 August 2007, Mr and Mrs Bromfield were driving north along Mitchell Freeway in their Kia. They had just passed the Karrinyup Road exit when a Ford Falcon bumped their car, causing the Bromfields to swerve into the path of a Holden utility. The Bromfield’s car hit the ute, left the freeway and crashed into a tree. The ute then overcorrected, spun out of control and also left the freeway, hitting the Bromfield’s car, which had already hit the tree. The Bromfields were both killed that day; the driver of the Ford Falcon was not hurt. The driver and passenger of the ute sustained serious, but not life-threatening, injuries. The deaths of Mr and Mrs Bromfield was a tragedy that should not have happened – a tragedy that is repeated about 3,000 times a year on our roads in crashes that result in serious injury or death.

Can we do more to prevent similar crashes in the future? The answer is yes. The challenge is to identify the solutions and progressively apply them with the knowledge and resources available. There are various factors at play in crashes, including roads and roadsides, speed, road-user behaviour and types of vehicles. We need to look at what we can realistically put in place and then ensure that for every dollar we spend, we prevent as many deaths and injuries as we can…

…Road safety is something about which we all have an opinion, but I am asking all members who make up this Parliament to put their differences aside and unite behind this major long term road safety strategy. Realistically, we know that we cannot achieve zero deaths and injuries by 2020, but we can and must strive to achieve that noble goal. I further ask my fellow parliamentarians to show leadership and to take ownership for road safety; whether directly or indirectly, we all share responsibility for road safety in this state…

… we should never just stand back and assume that it is business as usual. We have zero tolerance for road trauma in this state. We will take responsibility and action, jointly and individually, to improve road safety; this is a core principle of Towards Zero.

… Road death and injury in WA place a huge burden on our health system, community and the fabric of our society. Our road safety strategy should not discriminate either – it goes beyond political persuasions. Mr and Mrs Bromfield were not just statistics or numbers. They were real people doing everyday things – like driving on the freeway. They are missed by their loved ones, their colleagues and their friends. The fact that they were killed on a Western Australian road in a crash in which their deaths could have been avoided is not good enough. I appeal to all members: do not accept that death and serious injury on our roads is inevitable. Challenge the standards. Be bold. Aspire for zero. It is a long journey and by sharing responsibility and working together, Towards Zero will set us on the path to achieve this ultimate aspiration. Mr and Mrs Bromfield’s deaths were not inevitable, but neither will they be in vain, because within this strategy we have the potential to save many lives.

Together we will aspire to and commence the journey Towards Zero for our community and for our future generations.
SIGNED
by all members of the Ministerial Council for Road Safety (as at March 2009)

Hon Rob Johnson JP MLA
Minister for Police, Emergency Services, Road Safety (Chair)

Hon Kim Hames MB BS JP MLA
Minister for Health

Hon Dr Elizabeth Constable MA DipEd MEd PhD MLA
Minister for Education

Hon Simon O’Brien MLC
Minister for Transport

Hon John Day BSc BDSc MLA
Minister for Planning

Hon John Castrilli MLA
Minister for Local Government

Hon Brendon Grylls MLA
Minister for Regional Development
SIGNED
by all Road Safety Council Members at March 2009

Rose Moroz
Director Schools
DEPARTMENT OF EDUCATION AND TRAINING

Dr Andrew Robertson
Director, Disaster Management, Regulation and Planning
DEPARTMENT OF HEALTH

Vic Evans
Managing Director
INSURANCE COMMISSION OF WESTERN AUSTRALIA

Des Snook
Executive Director, Road Network Services
MAIN ROADS WESTERN AUSTRALIA

Trevor Maughan
Director, Strategy and National Reform
DEPARTMENT FOR PLANNING AND INFRASTRUCTURE

Iain Cameron
Executive Director, Office of Road Safety
DEPARTMENT OF THE PREMIER AND CABINET

Michael Heath
General Manager Membership and Retail, RAC
ROAD USER REPRESENTATIVE

Stephen Brown APM
Assistant Commissioner
WESTERN AUSTRALIA POLICE

Mayor Troy Pickard
Deputy President
WESTERN AUSTRALIAN LOCAL GOVERNMENT ASSOCIATION
WHY THIS STRATEGY HAS BEEN DEVELOPED

The previous road safety strategy for Western Australia, *Arriving Safely*, covered the period from 2003 to 2007. This strategy *Towards Zero: Getting there together 2008-2020* will build on the progress achieved under *Arriving Safely* and address the lessons we have learnt.

All the evidence demonstrates a longer-term strategy implemented through a series of short-term action plans will be much more effective in achieving dramatic reductions in death and serious injury on our roads.

*Towards Zero* will cover 12 years to ensure that, as well as putting in place immediate measures to help save lives and reduce serious injuries, we also implement initiatives (such as improvements to infrastructure) that require more extensive planning and development.

HOW THE STRATEGY WAS DEVELOPED

*Towards Zero* was developed with more consultation than used in previous strategies. For this strategy to succeed, we needed to understand the community’s views on road safety. This has ensured the community has a deeper understanding of what is achievable, and that shared responsibility and ownership of the strategy have been encouraged from the start.

The strategy is anchored in evidence-based research conducted by the Monash University Accident Research Centre (MUARC). In particular, the research focused on WA’s unique road environments. This means metropolitan, regional and remote areas were considered individually.

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**Figure 1: Metropolitan, Regional and Remote areas as defined by the Accessibility/Remoteness Index of Australia (ABS, 2007)**

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1 We used the Australian Bureau of Statistics’s ARIA (Accessibility/Remoteness Index of Australia) index to determine which areas of the state fell into each category. The ARIA index is derived from measures of road distance between populated localities and service centres. These road distance measures are then used to generate a remoteness score for any location in Australia.
We knew that we had to take a longer term view of road safety. We looked at immediate, short-term measures and longer-term initiatives that require substantial planning and preparation.

As well as consulting with the community, we reached out to key stakeholders – special interest groups; other government agencies; local government; and business and industry leaders. In addition, we consulted with a bi-partisan Parliamentary Reference Group to ensure our political leaders were involved every step of the way. All this was essential to encourage and promote the importance of ‘shared responsibility’ for owning and implementing the strategy. (An overview of the strategy development process can be found at Appendix 1.)

### STRATEGY RECOMMENDATIONS

Towards Zero incorporates the Safe System, which aims to improve road safety through four cornerstones: Safe Road Use; Safe Roads and Roadsides; Safe Speeds; and Safe Vehicles.

If all cornerstones of the Towards Zero strategy are fully implemented we have the potential to save 11,000 people from being killed or seriously injured between 2008 and 2020. That is a reduction of around 40 percent on present day levels.

The key initiatives under the four Safe System cornerstones are:

- **Safe Road Use** – integrating behaviour change programs with improved enforcement to make them more powerful and addressing impaired driving (alcohol, drugs, fatigue and distraction), restraint use, graduated licensing and speed choice.
- **Safe Roads and Roadsides** – investing in Safe System infrastructure improvements.
- **Safe Speeds** – enhancing speed enforcement and further reflecting on the appropriateness of WA’s speed limits.
- **Safe Vehicles** – promoting the uptake of safer vehicles and key safety features, particularly by government and corporate fleets.

In addition, the four cornerstones are anchored in a series of supporting initiatives (such as data collection, research, monitoring and reporting) that will help us to implement the countermeasures recommended by evidence. We refer to these supporting initiatives as the Safe System Foundations.

### OTHER BENEFITS

Ultimately Towards Zero will help reduce the impact of road trauma on all our lives, ensuring a healthier lifestyle for all Western Australians.

The strategy highlights opportunities for improvements in road safety to contribute to other areas of public policy and community interest. It will help:

- enhance the quality of life and wellbeing of all people throughout Western Australia by providing high quality, accessible services;
- reduce the number of hospital admissions and health resources used;
- encourage low environmental impact alternatives to car use which will reduce energy consumption and slow climate change;
- encourage more active lifestyles;
- improve public amenity; and
- create safer local neighbourhoods.

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2 Refer to page 15 for further details of the ‘Optimal Safe System Option’.
Towards Zero - getting there together

Our long-term vision is of a road transport system where crashes resulting in death or serious injury are virtually eliminated.

Towards Zero means we do not accept that any human being should die or be seriously injured on our roads. Realistically we understand it is not practical to achieve zero serious injuries on our roads by the year 2020, but we do not accept any death or serious injury as inevitable.

This vision can be achieved if the community as a whole makes a fundamental change in the way it thinks about road safety and what it is prepared to accept.

Our Target by 2020
11,000 fewer people killed or seriously injured.

If the Towards Zero strategy is fully implemented we could see up to 11,000 fewer people killed or seriously injured on Western Australian roads between 2008 and 2020, a reduction of up to 40 per cent on the average number of people killed and seriously injured each year between 2005 and 2007.

This would have a major impact on the level of pain and suffering endured by the community and the resources used by our health system to treat the victims of road trauma. MUARC estimates the financial cost of that level of road trauma would be around $6.6 billion, of which over $5 billion dollars would be due to serious injuries. The cost savings to WA’s health services, business and community would be enormous.

The average financial cost of a single death or serious injury is $600,000. Of course, it is impossible to measure the emotional cost of road trauma to families and loved ones.

In the next 12 years we will take substantial steps forward in road safety to reduce the number of people killed and seriously injured on Western Australian roads.

3 It has been assumed that 6.85% of the 11,000 deaths and serious injuries estimated to be saved are deaths.

4 MUARC, unpublished (in 2008 dollars).
The aspiration of towards Zero means…

Towards Zero applies a long-term, ultimate level of aspiration for the implementation of the Safe System to Western Australia. It takes into consideration our unique road infrastructure and specific priority areas. It is recognised that it is probably not possible to prevent all crashes. However, by taking a total view of the combined factors involved in road safety, Towards Zero aims to design and build a transport system that, in the longer-term, will protect road users and prevent crashes that result in death and serious injury.

To aspire Towards Zero also means:

- knowing humans make errors (and take risks) and that there is a critical physical limit to the amount of energy our bodies can absorb, beyond which survival and recovery from an injury are not possible;
- applying a Safe System approach that views the road transport system holistically by seeking to manage the interaction between the road user, the road, travel speed, and the vehicle;
- continuing to deal with risk-taking but increasingly catering for the mistakes people make. This approach must be taken if substantial gains in road safety are to continue in the future.

- leaving a legacy of a sustainable, inherently safe road system for the next generation. A positive legacy that does not act as a burden for our children but instead delivers the optimal solution to save lives and prevent serious injuries;
- considering any initiatives that have evidence to support their effectiveness in striving for zero road deaths and serious injuries in the longer-term. However, we expect our governments, current and future, and the organisations primarily responsible for road safety, will prioritise those initiatives that have been proven to deliver the greatest gains in terms of reducing death and serious injury. This will make optimal use of scarce resources; and
- encouraging individuals, groups and organisations that choose to support and pursue road safety initiatives. Government and its agencies may assist these activities from time to time (for example, by sharing expertise and funding pilot programs).
The Approach

We developed a longer-term strategy to help realise the ambitious goals we all aspire to achieve. Here’s how we went about it.

Take the longer view – developing a 12 year strategy

We know there are some immediate measures we can put in place to reduce the number of deaths and serious injuries in the short-term. These are typically enforcement activities supported by education. But we also need to look at those initiatives that require substantial planning and preparation like improvements to roads and roadsides, and enhancing the safety of vehicles. These types of initiatives will have a larger and more sustainable impact on the number of lives and injuries saved over the life of the strategy. This strategy spans 12 years to take a longer-term look at the issue of road safety, providing the greatest opportunities to reduce road trauma.

Look at the research

This strategy is anchored in evidence-based research that tells us what works and what is best to meet WA’s unique challenges. MUARC – Australia’s largest injury prevention specialist, provided much of the research. MUARC is recognised as a world leader in safety research and promotion. It also has a track record in developing successful road safety strategies in Australia. We will continue to take advantage of new road safety developments and research throughout the life of the strategy. It is a living strategy informed by evidence to focus our efforts on those initiatives that will deliver the most lives and serious injuries saved for every dollar spent.

Build relationships with the community

Our community was invited to be involved right from the start of the strategy process, helping to form the recommendations to Government. A range of consultation opportunities were made available such as surveys and community forums (held in over 40 locations right around Western Australia – refer Appendix 1).

Community engagement has now evolved into an ongoing relationship. The community owns the strategy as much as the Government. The continued support and involvement of the community is essential for effective implementation and ambitious gains.

Partner with key stakeholders

Consultation with key stakeholders across multiple government agencies, special interest groups and industry and political leaders was an intrinsic part of the strategy’s development process. These partnerships will continue to develop as the strategy is implemented.

Encourage a shared implementation

To implement this strategy effectively we need absolute clarity about the practical measures we will take and at what point these will be put in place over the next 12 years. To do this, we will use detailed three-year action plans. These will identify priority programs, allowing us to evaluate progress and to consider emerging research and developments. The action plans will provide clear direction on who will do what, where and when. Clear commitment and accountability are pivotal to the success of this strategy.

Methodology

MUARC assessed the road safety benefits possible from alternative initiatives using a computer-based model it developed specifically for this purpose. The model estimates and compares the total number of deaths and serious injuries that are likely to be saved over the life of the strategy from implementing individual road safety initiatives.

These estimates, which were based on the best available scientific evidence on initiative effectiveness, were then combined using advanced mathematical methods to forecast the total savings in serious casualties possible over Towards Zero’s 12 year life.
WA WILL CHANGE OVER THE NEXT 12 YEARS

Forecasting 12 years into the future is a challenging task, with high levels of uncertainty and the need to make assumptions about the nature of the road transport system into the future. Road safety outcomes in WA will be affected by many factors including the:

- number of vehicle kilometres travelled in WA;
- level of economic activity (WA's rate of economic growth will continue to affect road safety performance);
- composition of the WA vehicle fleet;
- socio-demographic profile of the WA population (along with Queensland, Western Australia has Australia's youngest overall population and the highest proportion of young drivers coming into the road transport system);
- overall level of alcohol consumption per capita;
- growth in the road freight task; and
- advances in technology.
OUR PROGRESS IN ROAD SAFETY

We have reduced death, and maintained serious injury numbers on our roads (despite substantial population increases). Figure 4 shows the progress we have made in road safety over the past three decades. Broadly, we have halved the number of deaths while our population has nearly doubled. Figure 5 highlights the target line of improvements for the next 12 years.

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**Figure 4:** The number of people killed and seriously injured in WA over the past 30 years and key road safety initiatives (RSC, 2007a)

**Figure 5:** Projection of the reduction in the number of people killed or seriously injured annually (if Towards Zero is fully implemented) 2008-2020
Still, our performance relative to other Australian jurisdictions has recently dropped. Figure 6 compares Western Australia to other Australian jurisdictions and a range of OECD nations in 2006. Compared to those places, WA as a whole is an average performer in terms of “deaths/100,000 population”.\(^5\)

While we have made progress, the community expects more and does not accept the current level of death and injury. This strategy aims to deliver further substantial improvements.

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\(^5\) Metropolitan and regional WA results are shown to demonstrate the significant difference in results but should not be directly compared with overall results of other nations. Metropolitan and regional breakdowns for the other jurisdictions are not available. It is likely that regional areas in other jurisdictions also perform more poorly than their metropolitan areas and the nations as a whole.
OUR POTENTIAL

Based on research into the most effective solutions to WA’s road safety crash problems, MUARC presented the Optimal Safe System Option (OSSO) which estimates a potential 15,300⁶ lives and serious injuries could be saved over the 12 year life of the strategy (MUARC, 2008).

However feedback on the OSSO told us the community had diverse views on speed limit reduction. While the evidence showed us that by reducing speed limits we can achieve immediate reductions in trauma at a very low cost, we know the community is not ready to adopt that MUARC recommendation. As a result we asked MUARC to adjust its estimate for Towards Zero to reflect the impact of not including speed limit reductions in the strategy. The best we can now expect to save is 11,000 lives and serious injuries.

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⁶ This figure has been revised down from the estimated 16,300 documented in the Towards Zero Discussion Paper (RSC, 2007a) based on MUARC’s revised estimates on the expected benefits of infrastructure improvements.
WESTERN AUSTRALIA’S ROAD SAFETY PROBLEM AREAS

We have collected and analysed data on fatal and serious injury road crashes for many years so we now have a vast amount of WA specific research and evidence to draw on. This gives us the opportunity to pin-point our problem areas and develop strategies that relate specifically to the unique needs of the metropolitan, regional and remote areas of WA.

Priorities for WA

By understanding how and why crashes occur, who is at greatest risk and what strategies have been proven to be the most effective, we have identified clear priorities for WA, which must be addressed by Towards Zero.

On this basis, the categories in Table 1 were identified by MUARC from an analysis of WA’s reported traffic crashes between 2005 and 2007. They are listed in broad groupings, in decreasing order of priority based on their estimated contribution to the number of deaths and serious injuries. For some problems, such as distraction and fatigue, reliable figures are not currently available. In some instances, the problem size may be relatively small, but the associated risks high.

<table>
<thead>
<tr>
<th>High Priority Category</th>
<th>Metropolitan</th>
<th>Rural</th>
<th>Remote</th>
<th>WA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Intersections</td>
<td>1,855</td>
<td>44%</td>
<td>1,006</td>
<td>29%</td>
</tr>
<tr>
<td>Run-off-road</td>
<td>774</td>
<td>18%</td>
<td>1,349</td>
<td>39%</td>
</tr>
<tr>
<td>Head-on</td>
<td>141</td>
<td>3%</td>
<td>289</td>
<td>8%</td>
</tr>
<tr>
<td>Other crash types</td>
<td>1,444</td>
<td>34%</td>
<td>810</td>
<td>23%</td>
</tr>
<tr>
<td>Speed</td>
<td>582</td>
<td>34%</td>
<td>556</td>
<td>32%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Distraction</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Drug driving</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Drink driving</td>
<td>418</td>
<td>10%</td>
<td>350</td>
<td>10%</td>
</tr>
<tr>
<td>Non-restraint use</td>
<td>122</td>
<td>5%</td>
<td>202</td>
<td>8%</td>
</tr>
<tr>
<td>Young drivers</td>
<td>768</td>
<td>29%</td>
<td>680</td>
<td>29%</td>
</tr>
<tr>
<td>Indigenous drivers</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Motorcyclists</td>
<td>516</td>
<td>12%</td>
<td>440</td>
<td>13%</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>403</td>
<td>10%</td>
<td>151</td>
<td>4%</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>198</td>
<td>5%</td>
<td>84</td>
<td>2%</td>
</tr>
<tr>
<td>Older road users</td>
<td>518</td>
<td>12%</td>
<td>387</td>
<td>11%</td>
</tr>
<tr>
<td>Heavy vehicle occupants</td>
<td>19</td>
<td>0.5%</td>
<td>56</td>
<td>2%</td>
</tr>
<tr>
<td>Casualties involved in heavy vehicle crashes</td>
<td>170</td>
<td>4%</td>
<td>262</td>
<td>8%</td>
</tr>
</tbody>
</table>

Table 1: Contribution to death and serious injuries by high priority category and Accessibility/Remoteness Index Australia (ARIA) region, WA 2005-2007 (Source: RSC, unpublished preliminary data unless otherwise stated)

# These are percentages of the total number of people killed and seriously injured between 2005 and 2007 unless otherwise indicated.
1. While only 5 per cent of total deaths and serious injuries, head-on collisions still account for 12 per cent of all fatalities on WA roads.
2. While this data identifies death and serious injury crashes in which speed was considered to be a contributory factor, MUARC contends that speed is a factor in all fatal and serious injury crashes. Speed is at the core of the road safety problem. Speed as a contributing factor is also likely to be underestimated due to the difficulty of assessing the contribution of low level speeding in crashes. Percentages are based on the total number of people killed and seriously injured in a crash in which a determination whether speed was a factor was made.
4. Percentage of the total fatalities in 2005 in which illegal drugs were detected in a driver.
5. Percentage of passengers and drivers killed and seriously injured in Police attended crashes where the vehicle was likely to have a seatbelt fitted.
6. Percentage of all drivers killed and seriously injured (does not include passengers and other road users).
7. Nine per cent of deaths and serious injuries involve Indigenous people although they are only three per cent of the WA population.
**Priority Crash Types**

<table>
<thead>
<tr>
<th>Run-off-road crashes</th>
<th>Intersection crashes</th>
<th>Head-on crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>33% of people killed or seriously injured in road crashes were involved in run-off-road crashes</td>
<td>33% of people killed or seriously injured in road crashes were involved in intersection crashes</td>
<td>5% of people killed or seriously injured in road crashes were involved in head-on crashes</td>
</tr>
<tr>
<td>39% of regional and 62% of remote crash related deaths and serious injuries are due to run-off-road crashes</td>
<td>44% of deaths and serious injuries in the metropolitan area occurred at intersections</td>
<td>14% of people killed in road crashes were involved in head-on crashes</td>
</tr>
<tr>
<td>47% of the people aged 17-24 years that were killed or seriously injured in crashes were involved in run-off-road crashes</td>
<td>51% of the people aged 60 years and over that were killed or seriously injured in crashes were involved at intersections</td>
<td>8% of regional and 5% of remote crash related deaths and serious injuries are due to head-on crashes</td>
</tr>
</tbody>
</table>

*Table 2: Crash priorities* (Source: RSC, unpublished preliminary data for 2005-2007)

**Where Crashes Occur in WA**

The maps on the following pages illustrate where death and serious injury crashes occurred throughout WA between 2003 and 2007. In addition, the maps also show the volume of traffic on the specific road where the crash occurred. It can be seen that where the most people live, work and travel is where the most crashes occur.

Many of these roads are built to our highest current standards. This highlights the need to find ways to build even better roads and roadsides. Western Australia is a vast state with a low taxpayer population, which puts a limit on the resources available to improve roads. We cannot afford to build every road to the highest possible level of safety. However, by treating the roads carrying the most traffic beyond the requirements of current standards we can make substantial reductions in the level of death and serious injury.
WHERE CRASHES OCCUR IN WA (from previous page)

Figure 8: Metropolitan region traffic volumes and death and serious injury crashes 2006 - 2007 (Main Roads WA, unpublished).
Figure 9: South West traffic volumes and death and serious injury crashes
Figure 10: Western Australia traffic volumes and death and serious injury crashes
ABOUT THE SAFE SYSTEM

The ‘Safe System’ views the road transport system holistically by seeking to manage the interaction between road users, roads and roadsides, travel speeds and vehicles. The Safe System recognises it is probably not possible to prevent all crashes but aims to prevent those that result in death and serious injury.

In Australia the Safe System road safety approach is being adopted to help reduce road trauma as part of the Australian Transport Council’s National Road Safety Action Plan 2009-2010. The Safe System has also been applied internationally in countries such as Sweden and the Netherlands. Towards Zero has been framed using the Safe System approach.

Central to the Safe System (see Figure 11) is an acknowledgement of our limited ability as humans to tolerate physical force. Human tolerance levels in crashes are shown in Figure 13 (page 41). The Safe System aims to manage crash energies to prevent death and serious injury. It also recognises human error in the system is inevitable no matter how educated and compliant we are in obeying traffic laws. In Sweden it was estimated that even with total compliance with current speed limits, seatbelt wearing laws and drink driving laws about half of all road trauma would remain (Nilsson, 2005).

While individual road users remain responsible for behaving safely and complying with all traffic laws, the Safe System requires system designers to provide a road system that increasingly prioritises safety outcomes to cater for the mistakes people make in traffic.

While efforts will continue to prevent crashes, when they do occur, there are three factors that directly influence the severity of the outcome: the protection provided by the vehicle; and the nature of the object it hits. We can manage these factors to keep crash energies below our physical limits.

Of course, we cannot build a system where users can behave irresponsibly. We must continue our efforts to improve road user behaviour. We do this by managing the licensing of vehicles, drivers and riders in the system, informing and educating road users, enforcing road rules, and building our understanding of road crashes and risks, to encourage road users to be alert and compliant.
SAFE SYSTEM CORNERSTONES

The Safe System identifies four cornerstones that should be adopted in a road safety strategy:

Safe Road Use
Influencing road user behaviour by:
- advising, educating and encouraging road users to comply with road rules;
- promoting the philosophy of shared responsibility;
- encouraging road users to drive unimpaired and alert, and according to the prevailing conditions;
- managing the gradual introduction of novices into the system and understanding their specific needs; and
- taking action against those who break the rules.

Safe Roads and Roadsides
Improving road infrastructure by:
- designing and maintaining roads and roadsides to reduce the risk of crashes occurring and the severity of injury if a crash does occur; and
- providing a transport system that supports safe outcomes.

Safe Speeds
Ensuring speed limits and travel speeds reflect the safety of the road infrastructure by:
- undertaking speed enforcement and education, and
- establishing speed limits according to the features of the road and roadside, vehicle crash-worthiness and the functional performance and known limits of the road user.

Safe Vehicles
Improving the safety of the vehicles in the road system by:
- promoting safety features that reduce the likelihood of a crash (and reduce the impact of the crash on vehicle occupants as well as pedestrians and cyclists);
- encouraging consumers and businesses to purchase safer vehicles; and
- implementing mandatory safe vehicle procurement in Government fleets and recommending additional safety features to be considered.

The Safe System emphasises the importance of ensuring these components work in support of each other to keep crash energies below human tolerance limits.

‘Towards Zero incorporates the Safe System. The Safe System recognises two key limits of people using the road transport system - firstly, we all make mistakes (and some of us take risks) and secondly, there are physical limits to the amount of force our bodies can take before we are injured.’

Grant Dorrington BEM
Independent Chairperson,
Road Safety Council
**SAFE SYSTEM GUIDING PRINCIPLES**

Creating a Safe System depends heavily on understanding and implementing the following five principles.

1. **The limits of human performance.** We all make mistakes and we need to acknowledge the limits of our capabilities. Traditional approaches to road safety focus on preventing risk-taking behaviours. Prevention programs (such as drink driving, speeding and seat belt non-use) are still important but they cannot address the whole road safety problem. We also make mistakes (for example through inattention, poor gap selection while overtaking and failure to stay within the travel lanes). A guiding philosophy that acknowledges ‘human error’ and fallibility is essential.

2. **The limits of human tolerance to violent forces.** In a crash there are physical limits to the amount of force our bodies can take before we are injured. The Safe System seeks to create a road transport system in which the forces in foreseeable collisions are within our physical limits. This means the ability of a vehicle to protect its occupants and other road users in common crash types and at typical impact speeds must be known and taken into account by road system designers and operators. In addition to vehicle occupants, it is vital that we understand and cater for the physical tolerance limits of unprotected road users such as pedestrians, cyclists, motorcyclists and scooter riders.

3. **Shared responsibility.** Previously the majority of road safety responsibility rested with the individual road user. Within a Safe System we all take an individual and shared role in road safety. Road users remain responsible for complying with all road rules such as speed limits, using restraints, driving unimpaired and purchasing vehicles with good safety features. System designers are responsible for planning, designing and influencing the operation of a Safe System.

4. **A forgiving road system.** We need to design a road system that is ‘inherently safe’ so when crashes do happen, deaths and serious injuries can be avoided. Importantly, the road system is a real world illustration of the basic laws of nature that govern the movement of objects (including humans and vehicles). Drivers and riders are still expected to drive or ride safely but, a Safe System must also be forgiving when mistakes happen. A forgiving road system recognises and caters for the limits of human tolerance to physical force.

5. **Increased use of public transport.** Buses and trains are safer modes of travel than cars and motorcycles. The fewer people driving cars and riding motorbikes and scooters on the roads, the fewer death and serious injury crashes will occur. Increasing the use of alternative modes of transport also reduces congestion and vehicle emissions and supports sustainability.

**TOWARDS ZERO MEANS …**

**Knowing humans are vulnerable**

Creating a road transport system that is ‘inherently safe’. In WA the users of the road transport system have large differences in speed and mass with physically vulnerable and fallible humans at the centre.

Where humans fail, the system should work to absorb our mistakes. For example, installing safety barriers on priority roads would help to prevent death and serious injury occurring as a result of run-off-road crashes.
WHY WE NEED A SAFE SYSTEM

The Safe System seeks to prevent crashes that result in death or serious injury.

It does this by addressing the fact that in the event of a road crash it is the interaction of three key elements that determine the outcomes:

- the speed at which the vehicle is travelling at impact;
- the safety performance of the vehicle; and
- the object that is struck and how forgiving it is (for example, flexible roadside safety barriers are more forgiving than large, solid objects like trees).

The Safe System manages or reduces the risk from these key elements. While the Safe System does rely on, and continues to encourage, safe road user behaviour, it recognises that some users will take risks and many more will make mistakes.

The Safe System helps to cater for our human limitations.

THE CHALLENGE

The challenge is how to direct limited resources to apply Safe System solutions to known road safety problems. Some of these solutions (such as road treatments) are significant and expensive. However, over the next 12 years, there is an opportunity to develop, trial and implement alternative low cost treatments.

Western Australia’s Safe System places significant emphasis on ensuring our community becomes more aware of the risks associated with road travel, so people can make more informed, and therefore, better decisions about vehicles, speed, route selection, travel mode and behaviour.

Additionally, through enforcement initiatives, the Safe System will continue to strive to protect the wider community from the actions of the small number of road users that repeatedly put the community at danger through high risk, anti-social behaviour.
Responsibility for improving road safety rests with each of us.

The Government, through the Road Safety Council and others, has a key leadership role to play on behalf of the community. It provides resources and has core responsibilities in areas such as enforcement, education, road funding and building, licensing, and developing traffic laws and other supporting legislation.

For many initiatives it is the Government’s role to consider both the evidence and community views before deciding which of the Road Safety Council’s recommendations will be implemented. The Government considers road safety initiatives through Cabinet and, in particular, the ministers with responsibility for the agencies represented on the Road Safety Council.

The Road Safety Council is the body established under legislation to identify how to improve the safety of Western Australian roads and help reduce the number of people killed and injured in road crashes. It does this by:

- monitoring road safety data;
- evaluating research and evidence to identify the most effective ways to reduce the level of death and serious injury and prevent property damage on our roads;
- co-ordinating implementation, particularly in areas that span more than one agency. Chief executive officers are accountable for the implementation of their agency’s road safety initiatives; and
- evaluating the effectiveness of the road safety initiatives once they are implemented and reporting on progress.

Traditionally, the Road Safety Council has made recommendations to Government about what needs to be done. Under the principle of ‘shared responsibility’ it is clear the Road Safety Council and its members will need to continue to broaden their focus to engage and develop partnerships with the community and business to facilitate wide support for implementation.

The Council will continue to provide the best possible, evidence based, independent advice on road safety problems. However, responsibility for road safety rests with each of us. That is why we have suggested strategies for the corporate sector, as well as the community, in this strategy. If we all work together, we will achieve more.

‘To achieve Towards Zero’s ambitious targets, Road Safety Council members will focus on implementing initiatives which fall within their area of responsibility. With the support and contribution of the community and business, implementation will be more effective and widespread.’

Grant Dorrington
Independent Chair Road Safety Council
ROAD SAFETY COUNCIL MEMBERS IMPLEMENTING TOWARDS ZERO

The following table lists each member of the Road Safety Council as at March 2009 and highlights road safety responsibilities.

<table>
<thead>
<tr>
<th>Road Safety Council Agency</th>
<th>Areas of Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Education and Training</td>
<td>• Educates young road users through school and TAFE systems</td>
</tr>
<tr>
<td>Department of Health</td>
<td>• Treats those injured in road crashes</td>
</tr>
<tr>
<td></td>
<td>• Collects and analyses road crash injury data</td>
</tr>
<tr>
<td>Insurance Commission of Western Australia</td>
<td>• Manages motor vehicle injury claims</td>
</tr>
<tr>
<td></td>
<td>• Collects and analyses road crash injury data</td>
</tr>
<tr>
<td></td>
<td>• Provides supplementary funding to support agreed road safety initiatives</td>
</tr>
<tr>
<td>Main Roads Western Australia</td>
<td>• Designs, builds, operates and maintains the state road network</td>
</tr>
<tr>
<td></td>
<td>• Sets speed limits</td>
</tr>
<tr>
<td></td>
<td>• Collects and analyses road crash injury data</td>
</tr>
<tr>
<td>Department for Planning and Infrastructure</td>
<td>• Sets standards for the licensing of drivers, riders and vehicles</td>
</tr>
<tr>
<td></td>
<td>• Licenses drivers, riders and vehicles</td>
</tr>
<tr>
<td></td>
<td>• Supports and encourages the use of alternative forms of transport</td>
</tr>
<tr>
<td></td>
<td>• Encourages urban design and planning that enhances road safety</td>
</tr>
<tr>
<td>Department of the Premier and Cabinet (Office of Road</td>
<td>• Provides leadership among key agencies in the co-ordination of road safety</td>
</tr>
<tr>
<td>Safety)</td>
<td>• Undertakes community education, research, policy development and data analysis</td>
</tr>
<tr>
<td></td>
<td>• Monitors and reports on progress</td>
</tr>
<tr>
<td>Royal Automobile Club of WA Inc.</td>
<td>• Represents all road users on the Road Safety Council</td>
</tr>
<tr>
<td></td>
<td>• Educates the community (particularly in relation to safe roads and safe vehicles)</td>
</tr>
<tr>
<td></td>
<td>• Advocates for road safety improvement</td>
</tr>
<tr>
<td>Western Australian Local Government Association</td>
<td>• Represents local government on the Road Safety Council</td>
</tr>
<tr>
<td></td>
<td>• Provides leadership to, and advocacy for, local government (which designs, builds</td>
</tr>
<tr>
<td></td>
<td>and maintains the local road network)</td>
</tr>
<tr>
<td></td>
<td>• Educates the community</td>
</tr>
<tr>
<td></td>
<td>• Advocates for road safety improvement</td>
</tr>
<tr>
<td>Western Australia Police</td>
<td>• Enforces road user behaviour</td>
</tr>
<tr>
<td></td>
<td>• Collects and analyses information about road crashes</td>
</tr>
</tbody>
</table>

Table 3: Road Safety Council members’ responsibilities

TOWARDS ZERO MEANS …

Being ethical

The ethical and moral foundation for a Safe System is that we do not want to design and operate a road system that allows consistently high levels of serious trauma. It is unethical, and puts us as a community at risk of accepting failure as normal. By viewing the road transport system in this new light, and working backwards from the ultimate vision, we can make changes for fundamentally safe designs that can move the safety of the system a large step forward.
Towards Zero is based on the Safe System, which aims to improve road safety through four cornerstones: Safe Road Use, Safe Roads and Roadsides, Safe Speeds and Safe Vehicles. In addition, a series of Safe System Foundations initiatives will support implementation.

This 12 year strategy, if implemented successfully, will deliver large and lasting road safety benefits for Western Australia.

If all cornerstones of the Towards Zero strategy are fully implemented we have the potential to save 11,000 people from being killed or seriously injured over its life. That is, our target is a reduction of 40 per cent on present day levels by 2020.

But for us to achieve these results, we all have a vital role to play. How well we do depends on how well we work together to achieve this goal.

Success will depend on the development of:

- leadership and building knowledge and capacity in our state among system designers through research, professional development and practice; and
- partnerships and ongoing community relationships that continue to be informed by evidence-based research.

We are not alone in the problems we face. We know we can learn from others. So, we will continue to collaborate with, learn from and share our knowledge and experience with our national and international road safety colleagues.

<table>
<thead>
<tr>
<th>Area</th>
<th>Safe Road Use</th>
<th>Safe Roads and Roadsides</th>
<th>Safe Speeds</th>
<th>Safe Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of WA</td>
<td>Ongoing behaviour change programs</td>
<td>Black Spot and Safer Roads Programs</td>
<td>Enhanced enforcement</td>
<td>Crash avoidance and occupant protection countermeasures</td>
</tr>
<tr>
<td></td>
<td>Targeted behaviour programs to match geographic priorities</td>
<td>Safe System intersection transformation</td>
<td>Specific speed limit adjustments to match geographic priorities</td>
<td>Specific crash avoidance counter-measures to match geographic priorities</td>
</tr>
<tr>
<td>Metro Perth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional WA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote WA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4: The Safe System Matrix for Western Australia** (Source: MUARC, 2008)

The Safe System Matrix serves two important purposes:

1. **A systematic, structured approach** to identify strategically important road safety initiatives, consistent with the principles of the Safe System, ensuring that each of the main cornerstones of the Safe System is comprehensively addressed.

2. **Western Australia’s three main geographic areas** (metropolitan Perth, regional WA and remote WA) have different road safety problems and priorities. The Matrix ensures that the differences are properly addressed.
### WA High Priorities Mapped to the Cornerstones

Table 5 below shows how actions in each of the four cornerstones address our major crash types, behaviours and priorities and the benefits they have for specific road user groups.

<table>
<thead>
<tr>
<th>Crash Problem Area</th>
<th>Safe Road Use</th>
<th>Safe Roads and Roadsides</th>
<th>Safe Speeds</th>
<th>Safe Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crash Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Run-off-road</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Head-on</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓ ✓</td>
</tr>
<tr>
<td><strong>Behaviours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeding (excessive and inappropriate)</td>
<td>✓</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Fatigue</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Distraction</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Drug driving</td>
<td>✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Drink driving</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Restraint non-use</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Road User Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novice drivers</td>
<td>✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Motorcyclists</td>
<td>✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Indigenous road users</td>
<td>✓</td>
<td>✓ ✓</td>
<td>✓ ✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Heavy vehicles</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
<tr>
<td>Older Road Users</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Key:** ✓ some or indirect benefit only  ✓ ✓ moderate benefit  ✓ ✓ ✓ substantial benefit

*Table 5: How the cornerstones address WA’s high priority crash categories (Adapted from MUARC, 2008)*
PERFORMANCE INDICATORS

We have identified some preliminary indicators, which we intend to use to monitor and report on our progress annually. These indicators will be further developed and refined through the action plans and are as follows:

- Number of crashes in which someone is killed or seriously injured.
- Number of people killed or seriously injured as a result of a crash.
- Number of people admitted to hospital, requiring medical attention, or injured but not requiring medical attention as a result of a crash.
- Cost to the community of crashes in which someone is killed or seriously injured.

TOWARDS ZERO MEANS …

Beware the gap

In Western Australia (and in other places) there is a substantial ‘gap’ between what is known from research about the road safety problems and our ability to implement proven responses. For example, greater support for speed management initiatives including lower speed limits could be achieved if our community understood and supported the magnitude of the benefit across the road network.
We can all improve our behaviour on the road.

The Safe Road Use enforcement and education initiatives have the potential to save 2,200 people from being killed or seriously injured over the life of the strategy. Our target is a 20 per cent reduction in deaths and serious injuries. That level of injury would cost the Western Australian community around $1,320 million.

Towards Zero’s approach to safe road use

While a Safe System builds an injury-tolerant road transport system, we must all use it responsibly.

Our objective

To prevent death and serious injury on our roads by influencing road users to be compliant, alert and safety conscious.

Influencing the behaviour of road users is critical in saving lives and preventing injuries on our roads. We know road users do not always obey the rules so, Towards Zero has a strong focus on:

- educating road users;
- enforcing the road rules; and
- promoting the Safe System.

Community perception

The community accepts and acknowledges that behaviour is important to road safety. Many people believe it is mostly risk taking behaviours (mainly by young males) that cause road deaths. This is partly true – about 30 per cent of roads deaths involve a person aged between 17 and 24 – but it is not the whole story.

The influence of risk-taking on the level of road trauma is a perception based on personal experience of risk taking behaviour on our roads, media reports, and road safety messages over many years (RSC, 2007c). Also, public attention rarely focuses on the high number of serious injuries and the burden they place on individuals and the community as a whole.

Evidence on safe road use

The evidence tells us that it is not only ‘risk taking’ behaviour that causes serious crashes – many are caused by the mistakes drivers and riders make, such as errors of judgement or momentary lapses of concentration. To make substantial reductions in injury crashes, we need to continue to target ‘risk taking’ but we also need to address these inadvertent road user errors that may contribute up to 50 per cent of all serious crashes.
WHAT WILL WE DO?

• Across WA, programs addressing fatigue, alcohol and drug use in combination with driving will continue to be undertaken.

• The community will be educated on the Safe System road safety approach, better speed choice and emerging problem areas (such as, distraction and motorcycle crashes).

• The cost effectiveness of community suggestions (such as, first aid training and attitude enhancement programs) will be evaluated and, provided they are not proven to have negative impacts, will be implemented as appropriate.

• The effectiveness of traffic enforcement will be improved through: integration with behaviour campaigns; standardisation across the state; and the increased use of intelligence-led policing strategies and technology.

• Measures to encourage safe driving habits in novice drivers will continue to be implemented. These will include gradual introduction to the full demands of driving through building the necessary experience, managing risk exposure and intervening early before risk taking patterns of behaviour are established.

• In less-advantaged communities in regional and remote WA, the difficulties in complying with the requirements of the graduated licensing system will be addressed.

• To reduce repeat drink driving, alcohol assessment and treatment programs and technological solutions will be considered. The widespread use of alcohol interlocks could significantly reduce drink driving as a primary risk factor for road safety during Towards Zero’s 12 year life.

• Regional and remote WA have relatively low levels of restraint use and relatively high levels of unlicensed driving. Initiatives to address these problems will be undertaken in those areas.

• Measures to improve the safety of older road users will be considered and implemented as appropriate.

• We also need to support the development of new ways of thinking within agencies and organisations. This will help road safety professionals to better understand the shift in responsibilities necessary for Safe System implementation and the success of the strategy.

TOWARDS ZERO MEANS …

Changing our assumptions

Some problems are obvious to many people but the effective solutions are less obvious and less well known. For example, many people know young drivers – particularly young males – are at greater risk of crashing and believe this is a result of extreme risk-taking behaviour. While this is true in some cases, it is not the whole story, with the majority of young drivers crashing simply due to a lack of experience.
SAFE ROAD USE INITIATIVES

<table>
<thead>
<tr>
<th>All of WA</th>
<th>Develop and implement an integrated suite of campaigns to influence road user behaviour that present and promote the Safe System road safety approach as well as targeting traditional issues (including speed, drink driving, fatigue, restraints, drug driving and novice drivers) and emerging problem areas (distraction and motorcycle crashes)</th>
<th>Develop and implement a corporate road safety policy</th>
<th>Keep abreast of changes in road rules and obey them</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Continue to monitor and implement proven initiatives to improve road user behaviour</td>
<td>Encourage and reward safe driving within the company</td>
<td>Supervise novice drivers</td>
</tr>
<tr>
<td></td>
<td>Improve the effectiveness of enforcement</td>
<td>Encourage employees to undertake driver training courses</td>
<td>Promote safe drivers in your local community</td>
</tr>
<tr>
<td></td>
<td>Acknowledge and encourage some of the programs the community would like to see (such as, first aid training and attitude enhancement programs), provided they are not measures with proven negative impacts</td>
<td>Partner with community led programs around driver behavior</td>
<td>Consider using public transport whenever you can</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Do a first aid course</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pay attention to, and be considerate of, other road users like cyclists, motorcyclists and pedestrians</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Drive with a forgiving, tolerant and positive attitude</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Become involved in community led driver behaviour programs</td>
</tr>
</tbody>
</table>

| Metro Specific Programs | Develop and implement specific programs focusing on driver distractions |  |  |
| Regional Specific Programs | Develop and implement specific programs focusing on novice driver training and licensing, restraint use and unlicensed driving |  |  |
| Remote Specific Programs | Develop and implement specific programs focusing on novice driver training and licensing, restraint use and unlicensed driving, and travel in vehicle load spaces |  |  |

**PERFORMANCE INDICATORS**

- Number and percentage of people killed or seriously injured in crashes according to vehicle type (i.e. truck/heavy vehicles, car/light vehicles, motorcycles, and mopeds).

- Number and percentage of people killed or seriously injured in crashes that involved a person that had engaged in an illegal driving behaviour such as speeding, drink driving, drug driving or not wearing a restraint.

Additional performance measures will be developed as we report on progress.
Safe Roads and Roadsides

We want to transform our roads and roadsides.

The Safe Roads and Roadsides initiatives have the potential to save 2,700 people from being killed or seriously injured over the life of the strategy. That level of injury would cost around $1,620 million. On average, road infrastructure investment lasts around 25 years, so the safe roads and roadsides we build now will continue to save lives and prevent serious injuries well beyond the life of the strategy. In addition, we have the potential to leave a lasting legacy of an inherently safe road network for future Western Australians.

TOWARDS ZERO’S APPROACH TO SAFE ROADS AND ROADSIDES

Most serious crashes in WA occur on metropolitan and regional highways and at intersections in urban areas. We know that intersection and run-off-road crashes are the crash types responsible for most of our road deaths and serious injuries.

Our roads are built to the standard in place at the time of their construction. Although most roads are upgraded over time, several of the standards have remained largely unchanged for a number of years. However, in this strategy we believe current standards can be improved to include additional features that reduce the likelihood of crashes resulting in death or serious injury.

Our objective

To prevent death and serious injury by improving the safety of roads and roadsides so crashes are less likely to happen and, if they do occur, have a less severe outcome.

Many crashes occur because a road user made a mistake - not just because of bad or risk taking behaviour.

Investing in safe roads and roadsides can have a huge impact by reducing the number of people killed and seriously injured when crashes do happen. Towards Zero will focus on:

- improving safety at intersections;
- reducing the risk of run-off-road crashes through sealing shoulders, installing audible edge lines removing roadside hazards and installing safety barriers; and
- expanding the Black Spot and Safer Roads Programs.

Community perception

The community recognises and supports the need to spend more on our roads while also believing drivers and riders must drive responsibly and to the conditions. Both are true. Road treatments are very expensive so it is vital road users continue to improve their behaviour while our roads continue to be improved. This needs to be done on a priority basis, addressing the roads and roadsides with the highest number of crashes first (RSC, 2007c).

Evidence on safe roads and roadsides

Western Australia’s road network has been built over many years, driven (in the early years) by state development needs. This resulted in unsealed roads and low-cost narrow, single sealed roads being built (some narrow sealed roads have since been widened to allow vehicles to pass safely). Thus we have roads that may be narrower than is required to undertake affordable ‘safe system transformations’ over the long lengths of road in the state. This is just one of the many challenges Main Roads WA and local governments will face when planning Safe System transformations.

While our freeways carry large volumes of traffic, they account for a very small proportion of serious crashes each year. In WA, most multiple vehicle crashes occur at intersections. One-fifth of metropolitan, over one-third of regional and nearly two-thirds of remote road deaths and serious injuries occur when a vehicle leaves the road (that is, run-off-road crashes).

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7 Australian standards for the construction of roads do not necessarily include the types of features Towards Zero recommends. For example, Towards Zero advocates the use of safety barriers rather than the ‘clear zones’ required by the standards (Vulcan and Corben, 1998).
In Australia it is estimated that each $100m spent as part of treating high crash risk locations on the road network (for example, through Black Spot Programs) saves at least 20 lives compared to about 1.5 lives for each $100m spent on general road improvement programs (Vulcan and Corben, 1998).

In addition, between 1980 and 2000, in Sweden, the United Kingdom and the Netherlands, engineering treatments combined with speed management measures reduced the number of deaths of vulnerable road users by around a third (Koornstra et al., 2002).

Research highlights the need to invest more on delivering Safe System infrastructure which will improve our roads and roadsides. Evidence shows by making roads and roadsides more predictable, consistent and forgiving in the event of a crash, we can produce a long-term solution that helps save lives and reduce injuries.

**WHAT WILL WE DO?**

- **Towards Zero** will focus on roads and roadsides that can produce the largest overall savings in road deaths and serious injuries over the life of the strategy.

- The risk of death or serious injury due to run-off-road crashes in regional and remote areas will be reduced by sealing shoulders, installing audible edge lines, removing roadside hazards and installing safety barriers. Run-off-road crashes are also a problem in urban areas, but few effective solutions currently exist. Ongoing research will be conducted into the development of new barrier solutions for urban applications.

- There will be an increased focus on the prevention of intersection crashes through the Safe System transformation of intersections. For example, through the use of well-designed roundabouts (in some instances in conjunction with traffic signals), grade-separation, the implementation of full control right turns, and measures to manage speeds at intersections such as innovative engineering treatments, combination red light and speed cameras and speed limit reduction.

- Initially, potential measures to address problem intersections will be trialed and in the longer-term, proven solutions from successful trials will be implemented. Sites will be selected on the basis of the number of serious casualties that can be saved.

- The Black Spot Program (to address high crash risk sites on both state and local roads) and Safer Roads Program (to treat higher crash risk road lengths) will be expanded to improve high priority lengths of road. Roads identified as a road safety concern by the community and others will also be examined.

- Key strategic routes (where crash densities tend to be higher) radiating out from the Perth metropolitan boundary into regional Western Australia will also be subject to Safe System transformation. In the early years of the strategy, demonstration projects will be undertaken to prove the benefits of the Safe System approach. The roll out of Safe System roads will occur later in the strategy's life. This will address the run-off-road and potentially, head-on crash problems which together account for 38 per cent of deaths and serious injuries on our roads. Roads with the greatest potential to reduce the number of serious crashes will be considered first.

- A similar strategy will be adopted for key regional centres such as Bunbury, Kalgoorlie, and Geraldton.
Many road treatments (such as flexible safety barriers) will change the way roadsides look and perform. Evidence from countries that have implemented these treatments to great effect shows the importance of community engagement. Generally, as the community becomes accustomed to and accepts the changes as beneficial, any initial resistance is replaced by demand for more treatments.

The Safe System transformation of our roads and roadsides will cost millions of dollars. The need to reduce construction costs through innovative approaches will be critical. This means Main Roads WA will undertake demonstration projects (in partnership with local government) to trial initiatives identified in this strategy and draw on the lessons learnt when determining whether these initiatives are suitable for wider implementation.

Vulnerable road users will also benefit from improved roads and roadsides through improved pedestrian separation, lighting and path definition around Indigenous communities, and traffic calming in areas of high pedestrian density in both metropolitan and regional centres. In addition, dedicated bicycle paths and shared paths for pedestrians and cyclists will encourage alternatives to short-trip motor vehicle journeys.

Main Roads will continue to review speed limits in consultation with local government and the community to ensure they match the standard of the road and reduce the risk to users.

As technology in Intelligent Transport Systems (ITS) develops to support the safe interaction between vehicles and the road network, these technologies will be monitored and evaluated for use in Western Australia.

By improving road and roadside infrastructure, Towards Zero will make a major contribution to reducing the number and severity of the common types of road crashes.

TOWARDS ZERO MEANS …

Going beyond ‘standards’

Our planners, designers and engineers are leaders in constructing our roads and roadsides. As a community, we can encourage and support these professionals to find solutions that move beyond current standards. Towards Zero aims for innovative solutions that ensure the way our roads and roadsides are designed and built provides inherent safety (preventing death and serious injury). Designers and engineers will add value to our built environment by developing a safe, sustainable road transport system that results in a positive legacy for future generations.
## Safe Roads and Roadside Initiatives

<table>
<thead>
<tr>
<th>GOVERNMENT (local, state and federal)</th>
<th>CORPORATE/INDUSTRY</th>
<th>COMMUNITY</th>
</tr>
</thead>
</table>
| **All of WA** | Enhanced Black Spot (including national, state and local roads) and Safer Roads programs  
Construct traffic calming to protect pedestrians and additional shared paths  
Communicate the benefits of safer roads and roadsides | Encourage employees to take safer routes to work  
Report unsafe roads to the relevant local government or Main Roads WA  
Advocate to local, state and federal governments for more funding for safe roads  
Get involved in local initiatives to make roads and roadsides safer | Choose the safest route available  
Report unsafe roads to the relevant local government authority or Main Roads WA  
Advocate for more funding for safe roads through lobbying local members of Parliament  
Get involved in local initiatives to make roads and roadsides safer |

| **Metro Specific Programs** | Safe System intersection transformations (roundabouts, bridges, fully controlled right turn signals, red light and speed cameras)  
Develop new barriers for urban applications (around narrow rigid objects such as trees and alfresco dining areas) |  |  |

| **Regional Specific Programs** | Measures to prevent run-off-road crashes (barriers, audible edge lining, wide shoulders)  
Safe System improvements of strategic routes from metropolitan area and around regional centres  
Separation of pedestrians from traffic |  |  |

| **Remote Specific Programs** | Measures to prevent run-off-road crashes (barriers, audible edge lining, wide shoulders)  
Safe System improvements of strategic routes around remote centres  
Research into ‘Intelligent Transport System’ elements such as intersection collision detection systems  
Separation of pedestrians from traffic in remote areas  
Lighting and path definition around Indigenous communities |  |  |

### Performance Indicators

- Number of people killed or seriously injured in crashes according to crash type (i.e. run-off-road, intersection, head-on, other).
- Number of priority metropolitan intersections that have been treated with Safe System improvements.
- Number of kilometres of high volume regional and remote routes that have been treated with safe system improvements.

Additional performance measures will be developed as we report on progress.
SAFE SPEED

We need to manage speed to suit the standard of the road and the vehicle to keep crash energies within human tolerance limits.

The Safe Speed initiatives have the potential to save 3,200 people from being killed or seriously injured over the life of the strategy. That level of injury would cost around $1,920 million.

TOWARDS ZERO’S APPROACH TO SAFE SPEED

There is clear evidence that lower speeds would mean fewer crashes, fewer deaths and fewer serious injuries in WA. Research shows speed reduction would be the most successful of all possible initiatives to cut deaths and serious injuries on our roads.

Our objective

To prevent death and serious injury by ensuring speed limits are appropriate for the standard of the road and the standard of the vehicle and impact speeds on the WA road network are within the limits of human tolerance.

Effective speed management is an essential consideration of any ‘best practice’ road safety strategy but it is also the most controversial. Any substantial changes to speed management will require further community consultation and support.

The **Towards Zero** approach to Safe Speed focuses on the key areas of:

- better speed enforcement and education campaigns on speed reduction;
- further research and community consultation on safe speed limits;
- demonstration projects to reduce travel speeds and raise community awareness of the implications of speed limit reductions; and
- targeted speed limit reductions in areas of high pedestrian activity (such as strip shopping precincts).

Community perception

There is strong community support for the enforcement and policing of existing speed limits and significant support for speed limit reductions in certain areas (such as around strip shopping centres and in CBD areas). The community recognises speed is an essential consideration of any road safety strategy but there is some community reluctance to accept lower speed limits.

Pedestrians and cyclists strongly support lower speed limits because they make sharing the roads safer and less stressful and improve public amenity in urban areas.

Understandably there are mixed reactions to proposals for general reductions in speed limits on metropolitan, regional and remote roads. Although evidence concludes travel times are only increased by seconds on typical urban journeys and less than five minutes for every hour on open road trips, the community is concerned speed limit reductions will increase travel times and may affect their mobility.

There are important issues, including the level of support in the community and implications for traffic flow that must be considered further before implementing reduced speed limits (RSC, 2007c).

Evidence on safe speed

Speed is at the core of the road safety problem. It affects both the risk of being involved in a crash and, more importantly, the subsequent outcomes should a crash occur. The likelihood of being seriously injured in a collision rises significantly with even minor changes in speed. For example, travelling at 65 km/h in a 60 km/h zone doubles the risk of a crash.

Research undertaken during the development of **Towards Zero** showed that **5,500 less people would be killed or seriously injured** if overall reductions of 10 km/h were applied to speed limits across Western Australia. This is the key difference between the MUARC Optimal Safe System Option (OSSO)* and **Towards Zero**.

* Refer to page 15 for more information on OSSO.
In addition:

- Lowering speeds has made a significant difference in the past in WA and other jurisdictions. The reduction of the urban default limit from 60 km/h to 50 km/h led to 20 per cent fewer crashes. In absolute terms, this meant 8,448 fewer crashes were reported in the first two years after implementation.

- For the standard of our roads, speed limits in Western Australia (and in other Australian jurisdictions) are high in comparison to the speed limits on similar roads in many other countries.

- Speed management including lower limits improves the safety of pedestrians, cyclists, and moped, scooter and motorcycle riders.

- The benefits of safe speeds extend beyond road safety and include less noise, less wear and tear on vehicles and reduced fuel consumption and emissions which will help to reduce the impact of climate change. There is also net economic benefit for commercial transport operators (Cameron, 2003).

**The Nilsson Power Model**

In research applied around the world, Nilsson (2004) proved that there is a clear relationship between changes in mean speed and crash outcomes. The Nilsson model shows a 5 per cent increase in mean speed leads to around a 10 per cent increase in all injury crashes and a 20 per cent increase in fatal crashes. Similarly, for a 5 per cent decrease in mean speed, there are typically 10 per cent fewer injury crashes and 20 per cent fewer fatal crashes.

**Figure 12: Relationship between change in mean speed and crashes** (Source: Nilsson, 2004)

**Different road types need different speeds**

The following table is from the Victorian Road Safety Strategy Arrive Alive 2008-2017. It shows the recommended speed for different road types and road users with a focus on the potential crash. It is consistent with the Swedish Vision Zero and Dutch Sustainable Safety approaches. Setting safe speed limits takes into consideration the thresholds for managing better outcomes for crashes.

<table>
<thead>
<tr>
<th>Road types combined with allowed road users</th>
<th>Safe speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads with possible conflicts between cars and unprotected users</td>
<td>30</td>
</tr>
<tr>
<td>Intersections with possible side-on conflicts between cars</td>
<td>50</td>
</tr>
<tr>
<td>Roads with possible frontal conflicts between cars</td>
<td>70</td>
</tr>
<tr>
<td>Roads with no possible frontal or side-on conflicts between road users</td>
<td>≥ 100</td>
</tr>
</tbody>
</table>

**Table 6: Safe speed thresholds for different road types** (Source: Government of Victoria, 2008)
WHAT WILL WE DO?

- On the balance of the available evidence, speed limit reductions, applied where infrastructure improvements are not feasible in a reasonable timeframe, would make a substantial contribution to reducing road trauma in Western Australia.

- The extent to which lower operating speeds can be achieved over time, through speed limit changes and other measures supported by the community, will impact on the potential number of lives saved and injuries reduced on WA roads.

- Main Roads WA is the sole agency with the legislated authority for setting speed limits on our roads. Main Roads WA will lead the evaluation of the implications of speed limit reductions on crash outcomes, traffic flow, travel time and congestion in partnership with local governments, the Department for Planning and Infrastructure, the Office of Road Safety and the community.

- Speed limits in areas of high pedestrian activity such as strip shopping centres will be reduced.

- Targets and expectations for improvement in road safety performance will be based on the findings of the investigations outlined above. These targets will be communicated to members of Parliament, other stakeholders and the community during the life of the strategy.
SAFE SPEED INITIATIVES

<table>
<thead>
<tr>
<th>Safe Speed Initiatives</th>
<th>Government (local, state and federal)</th>
<th>Corporate/Industry</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of WA</td>
<td>Implement world’s best practice in speed enforcement to ensure compliance with limits targeted according to geographic priorities. Demonstration projects to illustrate the effects of speed limit reductions. More consistent speed limits. Communicate the benefits of speed limit reduction to enhance community support.</td>
<td>Advocate for improved speed education and enforcement where there is inappropriate speeding. Understand travel times and encourage employees to reduce speed. Find out about the economic and safety benefits of reduced speed. Encourage the uptake of Intelligent Speed Adaptation ISA devices. Advocate for speed limit reductions where appropriate.</td>
<td>Choose to reduce risk by doing less than the speed limit: ‘Drop 5’. Drive to the weather and traffic conditions. Check how long it will take to get to your destination and leave yourself time to get there without speeding. Take note of speed restrictions and obey the rules. Install an ISA device to avoid inadvertent speeding. Where you believe the speed limit should be reduced (for example around shopping centres) lobby local councils, or get involved with local groups to advocate a local trial of speed limit reductions. Report areas where speeding regularly occurs to police. Educate novice drivers about the risks of speed and inexperience.</td>
</tr>
<tr>
<td>Metro Specific Programs</td>
<td>Adjust speed limits to complement road infrastructure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Specific Programs</td>
<td>Fine tune speed limits in and around regional centres.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote Specific Programs</td>
<td>Fine tune speed limits in and around remote centres.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PERFORMANCE INDICATORS

- Changes in fatality and serious injury risk as estimated from observed changes in mean speed measured at a representative sample of metropolitan, regional and remote sites.
- Number and percentage of pedestrians and bicyclists killed or seriously injured in crashes.

Additional performance measures will be developed as we report on progress.
Applying the evidence

Did you know the chances of surviving a crash decrease rapidly above certain impact speeds, depending on the nature of the collision?

Figure 13: The impact speeds at which a person is likely to survive vary according to object hit. (Source: ATC, 2007)
SAFE VEHICLES
We will have a vehicle fleet with the best safety features available.

The Safe Vehicles initiatives have the potential to save 2,900 people from being killed or seriously injured over the life of the strategy. That level of injury would cost around $1,740 million.

Towards Zero’s approach to Safe Vehicles
Improvements to the crash protection and safety features in vehicles have been proven to reduce the number of road deaths and serious injuries. These improvements include the ability of the vehicle to assist the driver or rider to avoid collisions, Electronic Stability Control (ESC), Intelligent Speed Adaptation (ISA), active head restraints and side impact and curtain (head protecting) airbags.

Our objective
To prevent death and serious injury by increasing the purchase of safe vehicles and specific safety features in vehicles.

In recent years, there were significant advances in vehicle safety that protect occupants and other road users and improve our ability to avoid crashes. Manufacturers are now responding to market demands to make safety features more widely available. Increasing the proportion of vehicles on our roads with high standard safety features will substantially reduce risks for all road users – drivers, passengers, motorcyclists, scooter riders, pedestrians and cyclists.

These important features are not fitted as standard on many vehicles available on the Australian market, but there is strong community support for measures aimed at improving the safety of vehicles on Western Australian roads. Towards Zero will focus on:

• strongly encouraging making safe vehicles and specific safety features such as Electronic Stability Control (ESC), and side and curtain (head protecting) airbags compulsory for government vehicles;
• educating and encouraging corporations, employees and community members to purchase safe vehicles;
• lobbying manufacturers to fit safety features as standard; and
• continuing to investigate emerging vehicle safety technology.

Community perception
There was strong community support for measures aimed at improving the safety of vehicles on WA roads.

Most road users want a safe vehicle. Many community members were unaware safety performance varies between vehicles and they assumed all vehicles were equally safe. Although they are prepared to pay for them, they were unaware of some of the features currently available.

Some people would consider installing alcohol and seatbelt interlocks for the protection of anyone else that drives their vehicle and eventually, the person who buys it when it is on-sold (RSC, 2007c).

Evidence on safe vehicles
Vehicles with high-standard safety features reduce the likelihood of crashes occurring and the severity of crash outcomes for all those involved, whether they are inside or outside the vehicle. Australian research indicates if each motorist upgraded their vehicle to the safest in its class, road trauma would immediately drop by between 26 and 40 per cent (Newstead, 2004).

Vehicles fitted with ESC have been shown to reduce single vehicle fatal crashes by around one third (Insurance Institute for Highway Safety, 2006).

Australia has one of the oldest vehicle fleets in the developed world - the average age is between 10 and 12 years and many vehicles remain in service for 20 years or more. Therefore, safety features fitted to new vehicles take a long time to spread into the vehicle fleet.

ISA devices have been extensively trialed throughout the world and are now being demonstrated in WA. Elsewhere, ISA has assisted drivers to avoid inadvertent speeding, leading to a 20 per cent reduction in vehicle travel speeds.
Corporate fleet purchases make up a large proportion of new vehicle sales, so maximising the corporate take-up of safer vehicles will improve the safety of the whole fleet. Although government vehicles are only a small proportion of new vehicle sales, the Government can take on a lead role in setting an example to the rest of the community, as well as influencing vehicle manufacturers and importers.

![Figure 14: Crashworthiness by year of vehicle manufacture](Source: New Zealand Government, 2003)

**WHAT WILL WE DO?**

- Across the whole of WA, ESC should be fitted to all new corporate and government-purchased vehicles – ideally across all three levels of government. This is particularly important in remote WA, where four wheel drive vehicles constitute a significant proportion of vehicle sales and are heavily over-represented in crashes where ESC could be of great benefit.
- Research shows there is an economic benefit for companies to operate safer vehicles. There is also the opportunity for an employer with a fleet to be a good corporate citizen through providing safer vehicles, enhancing family safety for their employees and benefiting the broader community when these vehicles are on-sold.
- The installation of advisory ISA devices in government and fleet vehicles will reduce inadvertant speeding.
- Head-protecting side curtain airbags have been available for some years and are demonstrating benefits in early evaluations. They, along with thorax (chest) side airbags, should be fitted to all corporate and government fleet vehicles. Active head restraints, which help to prevent neck injury in rear impacts, are also beneficial.
- Vehicle safety technology is advancing rapidly and new features are being trialed constantly. The Road Safety Council will undertake an ongoing review program and support national approaches to identify and evaluate emerging technologies in crash avoidance and crash protection (for occupants and people outside the vehicle). Emerging technologies such as widespread fitting of alcohol interlocks, advanced seat belt reminders and interlocks, adaptive braking, automatic crash call notification, and following distance, lane departure and fatigue warning systems, promise to improve safety and move us closer to the vision of **Towards Zero**.
## SAFE VEHICLE INITIATIVES

<table>
<thead>
<tr>
<th>GOVERNMENT (local, state and federal)</th>
<th>CORPORATE/INDUSTRY</th>
<th>COMMUNITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All of WA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promote community take up of safer vehicles and vehicle safety features</td>
<td>Purchase safe vehicles for corporate fleets</td>
<td>Check out how safe your car is and how it rates by visiting the RAC website <a href="http://www.rac.com.au">www.rac.com.au</a></td>
</tr>
<tr>
<td>Encourage corporate fleets to purchase safe vehicles and vehicle safety features</td>
<td>Ensure fleet vehicles have specific safety features (such as ESC, side and curtain airbags and active head restraints)</td>
<td>Buy a 5-star safety rated vehicle</td>
</tr>
<tr>
<td>Strongly encourage making safe vehicles and specific safety features such as ESC, and side and curtain airbags compulsory for government vehicles</td>
<td>Influence car manufacturers to provide safety features as standard</td>
<td>Maintain your car in safe condition – have it checked regularly by a qualified mechanic</td>
</tr>
<tr>
<td>Undertake an ongoing research and development program to identify and progress future opportunities (improved alcohol interlocks, fatigue warning systems and safety based route navigation)</td>
<td>Encourage and educate employees and communities about the benefits of safe vehicles</td>
<td>Encourage novice drivers to drive in vehicles which are 5-star safety rated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metro Specific Programs</th>
<th>No specific initiatives identified</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Regional Specific Programs</th>
<th>Promote ESC selection in passenger cars, four wheel drives and heavy vehicles</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Remote Specific Programs</th>
<th>Promote ESC selection in passenger cars, four wheel drives and heavy vehicles</th>
<th></th>
</tr>
</thead>
</table>

## PERFORMANCE INDICATORS

- Number and percentage of new vehicles sold in Western Australia that have at least a four star Australasian New Car Assessment Program (ANCAP) rating.

- Additional performance measures will be developed as we report on progress.

- Number and percentage of new vehicles sold in Western Australia that are fitted with specific safety features such as electronic stability control, side and curtain airbags, and active head restraints.
SAFE SYSTEM FOUNDATIONS

Partnerships, community engagement, capacity building and developing a research centre of excellence.

This support strategy is essential to our success in implementing the four strategy cornerstones and achieving our vision.

TOWARDS ZERO’S APPROACH TO SAFE SYSTEM FOUNDATIONS

Towards Zero uses a results-focused road safety management system (see Figure 15 below) that links what we are all doing (outputs) to what we are all trying to achieve (outcomes) to focus attention on substantial improvements in road safety for Western Australia.

Starting at the base of the pyramid we will continue to improve our data collection, information management and research capacity so that we understand the road safety problems and solutions better. We will use this to build the capacity in our organisations to understand and lead the changes needed to inform and drive implementation of our key interventions for, and with, our community. We will improve our ability to monitor and report on progress to political leaders, decision makers and the community.

Our objective

To prevent death and serious injury by developing support initiatives to ensure effective implementation of proven measures within the strategy cornerstones.

Towards Zero will focus on the following:

• providing evidence through data collection and research to inform decision making and educate the community;

• developing an understanding of, and support for, road safety as a discipline within Road Safety Council agencies through effective co-ordination;

• building capacity and knowledge sharing within the agencies that contribute to road safety outcomes and throughout government and the community; and

• continuing to build partnerships with industry, the non-government sector and the community to work together to implement proven initiatives.

WHAT WE WILL DO

• Develop a greater level of awareness and understanding of road safety problems and solutions within the community, key decision makers and opinion leaders to bring about a shift in thinking from ‘what’s in it for me’ to a ‘community benefit’ focus.

• Keep abreast of emerging road safety issues and solutions over the life of this strategy.

• Continue to inform the community about promising solutions so everyone can share that knowledge and be involved in decision making. This way, we can all share responsibility for road safety in WA.

• The Road Safety Council will lead the implementation of Towards Zero. However, to meet its ambitious targets we need the active engagement and contribution of the community and others who influence the building, operation and use of our roads.

Figure 15: The Road Safety Management System
(Bliss and Breen, 2008)
SAFE SYSTEM FOUNDATIONS INITIATIVES

<table>
<thead>
<tr>
<th>Research and Data Collection</th>
<th>Capacity Building</th>
<th>Political and Community Support and Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish an independent WA based road safety research centre and undertake specific road safety research and data collection</td>
<td>Develop networks to facilitate the sharing of information and knowledge within, across and between road safety stakeholder groups within and outside of WA</td>
<td>Maintain and build on Ministerial, parliamentarian and stakeholder ‘buy-in’ for the Towards Zero strategy</td>
</tr>
<tr>
<td>Partner in national and international road safety research projects and working groups</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partnerships and Alliances</th>
<th>Co-ordination</th>
<th>Monitoring and Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop road safety partnerships with public, private and community sector bodies within and outside of WA where road safety gains can be made for WA</td>
<td>Co-ordinate whole-of-Western Australia road safety activities (including the development of strategy, policy and communication in metropolitan, regional and remote WA) Co-ordinate WA road safety activities with national initiatives</td>
<td>Provide timely and appropriate information on trends in crashes and progress of implementation Communicate this information to key leaders, decision makers, community members and stakeholder representatives Contribute leadership and share results with national and international stakeholders</td>
</tr>
</tbody>
</table>

PERFORMANCE INDICATORS

- Community views about the level of road trauma in Western Australia and the progress being made to reduce it.
- Percentage of the community that report taking specific actions intended to improve road safety for themselves, their family or others.

Additional performance measures will be developed as we report on progress.
In some ways putting the strategy together was the easy part. We can all afford to think about the future and participate in a well-meaning vision. But that is only the start. We all need to commit to putting the strategy into action immediately. The Road Safety Council comprises the leading agencies that will be responsible and accountable for the performance of much of this strategy. But all Western Australians need to take part. We need to honour the vision of Towards Zero and get on with the task of delivering the possibilities of saving people from preventable death and serious injury.’

Grant Dorrington
Independent Chair Road Safety Council

TOWARDS ZERO MEANS…

Setting ambitious yet achievable targets

We have set an ambitious target to focus our efforts to reduce road trauma. While ambitious, it is also achievable as it is linked to specific strategies based on research and community consultation. The success of the Safe System strategies depend on the willingness of us all to share responsibility.

Thousands of people contributed to the development of this strategy. We thank you.

Now ... let’s make it happen.


Monash University Accident Research Centre (MUARC) (unpublished) Towards Zero Strategy Development, Government of Western Australia, Perth. (Corben B and Logan D)


Vulcan P and Corben B (1998) Prediction of Australian Road Fatalities for the Year 2010, Monash University Accident Research Centre (MUARC), Melbourne

There were four distinct stages in developing *Towards Zero*. The following timeline shows key activities and important events during the strategy development process.

**STAGE ONE – JANUARY TO AUGUST 2007**

1. **Establish a clear vision**
   
   *Towards Zero: Getting there together 2008-2020*
   
   - Aspiration of *Towards Zero* means setting ambitious but achievable targets and sharing responsibility.
   - We believe that death and serious injury are not acceptable by-products of using our transport system.
   - Taking the longer view – developing a 12 year strategy. Many initiatives require substantial planning to implement.

2. **Undertake independent evidence based research**
   
   - An independent road safety research team identified best practice and applied the evidence to WA’s unique environment.

3. **Implement Phase 1 Community Consultation**
   
   - Consulted with the community and stakeholders at the beginning of the process.
   - A range of consultation activities and opportunities for participation were developed (deliberative democracy principles).
   - Parliamentary Reference Group formed to create bi-partisan support.

**STAGE TWO – OCTOBER 2007 TO DECEMBER 2007**

1. **Inform the community and stakeholders**
   
   - Implement Phase 2 Community Consultation.
   - Survey tool developed (stratified random sample) to gather opinion from all voices in the community.
   - Recommendations were presented as four cornerstones; safe road users in safe vehicles, travelling at safe speeds along safe roads and roadsides.

   - Discussion document comprised of findings from Phase 1 consultation together with the recommendations above prepared for consultation.
   - Additional briefings for key stakeholders developed and delivered.

**STAGE THREE – JANUARY TO AUGUST 2008**

1. **Road Safety Council (RSC) consider consultation results**
   
   - Office of Road Safety produce briefings for RSC agencies.
   - RSC agencies consider recommendations from an agency point of view.
   - RSC agencies come together as a Council to formulate an agreed list of recommendations.

2. **Draft recommended strategy**
   
   - Communication consultants work with ORS to produce draft strategy.

3. **Handover recommendations to Minister for Community Safety**
   
   - Briefings produced for RSC to debate and consider.

**STAGE FOUR – SEPTEMBER 2008**

1. **Submit RSC recommended strategy**
   
   - Obtain Government endorsement and make changes to reflect Government decisions.

2. **Launch final strategy**
   
   - Inform community and stakeholders of final outcomes.

3. **Move to implementation**
   
   - Strategy development transforms to strategy implementation.
## COMMUNITY CONSULTATION

Over 4,000 people across metropolitan, regional and remote Western Australia

<table>
<thead>
<tr>
<th>What</th>
<th>Purpose</th>
<th>When</th>
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<tbody>
<tr>
<td>Community forums (Phase 1)</td>
<td>To inform the participants of road safety statistics in their local area and help participants debate and gauge their own awareness of local road safety issues and driving behaviours.</td>
<td>May to Aug 2007</td>
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<tr>
<td>Online Survey (Phase 1)</td>
<td>This was an internet based version of the questionnaire presented at the Phase 1 community forums, allowing interested people who had not been able to attend a forum to still have input to the first phase of community consultation.</td>
<td>July 2007</td>
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<tr>
<td>Community and Stakeholder forums (Phase 2)</td>
<td>This phase involved the community and stakeholders in providing feedback on the MUARC recommendations, which were presented as the Towards Zero discussion paper.</td>
<td>Oct to Dec 2007</td>
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<tr>
<td>Online feedback on Towards Zero – MUARC’s recommendations (Phase 2)</td>
<td>The Towards Zero discussion paper was presented online, together with the feedback form allowing people who were unable to attend the community forums to submit their feedback online.</td>
<td>Oct to Dec 2007</td>
</tr>
<tr>
<td>Independent Representative Sample</td>
<td>The primary purpose of this research was to obtain feedback from the larger community and not just from those with an interest or with strong opinions on road safety.</td>
<td>Oct to Dec 2007</td>
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<tr>
<td>Additional specific forums – 1. Industry Leaders 2. Special interest groups (incl cyclists and pedestrians) 3. Road Safety Council agency stakeholders.</td>
<td>These forums encouraged direct feedback from specific groups including vulnerable road users such as motorcyclists, the police and representatives of large companies.</td>
<td>Oct to Dec 2007</td>
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</table>

### Total Participation (approx.)

- Over 4,000 people
actively participated in the development of **Towards Zero**.

<table>
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<th>How</th>
<th>Where</th>
<th>Response</th>
<th>Note</th>
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<tr>
<td>Hosted by local MPs – all community members were invited to attend through media, advertising and direct invites (via MPs).</td>
<td>36 forums were conducted in 19 locations</td>
<td>1,326 people</td>
<td>Two workshops were held in most of the locations.</td>
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<td>Advertisements were placed in <em>The West</em> and the details were emailed to an extensive database of people who had previously indicated an interest in road safety.</td>
<td>Online</td>
<td>1,188 people</td>
<td>Of the respondents 71% were male. The majority of the sample (43%) was aged between 40 and 59. A large proportion held a motorcycle licence (40%). This group cannot be considered a representative sample as there are too many males, too many respondents in full-time employment and the age groups do not represent the wider community.</td>
</tr>
<tr>
<td>Advertisements and some articles were placed in local newspapers. Invites were sent to stakeholders and relevant database contacts.</td>
<td>Busselton, Port Hedland, Carnarvon, Perth City, Geraldton, Kalgoorlie, Narrogin and Albany.</td>
<td>807 people (note: feedback from the forums and online are counted as one source, as some forum attendees chose to complete their feedback online)</td>
<td>The attendees of these forums were largely stakeholders directly involved and concerned about road safety.</td>
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<tr>
<td>Advertisements and some articles were placed in local newspapers. Details were sent to stakeholders and relevant database contacts.</td>
<td>Online</td>
<td></td>
<td>This was an open ‘survey’. Any interested person could complete it.</td>
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<tr>
<td>Recruited via a phone survey conducted through an independent social research company – Synovate.</td>
<td>Respondents were randomly contacted by phone and were given the option to receive and then submit their feedback online or as a hard copy via post.</td>
<td>649 people (note – this is correct to +/- 3% and is a very reliable sample, according to research standards set)</td>
<td>The independent research company ensured this sample was representative of the community gender and age spread and included metro, regional and remote participants. This representative community survey ensured a balanced view from across the community and all voices are heard. This is considered to be the most reliable representation of the thoughts and opinions of the general population.</td>
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<tr>
<td>Invitations were sent to specific groups, companies and organisations.</td>
<td>Perth Convention and Exhibition Centre</td>
<td>200 people</td>
<td></td>
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</tbody>
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