

# HALVING Roadway Fatalities

*A Case Study from Victoria, Australia  
1989-2004*

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U.S. Department of Transportation  
Federal Highway Administration

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National Cooperative Highway  
Research Program

Austrroads

APRIL 2006

International Technology Scanning Program



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# FOREWORD

*In April 2004, the Federal Highway Administration (FHWA), American Association of State Highway and Transportation Officials (AASHTO), National Cooperative Highway Research Program (NCHRP), and Austroads undertook a scanning study of how agencies in Australia, Canada, Japan, and New Zealand use performance measures in transportation planning and decisionmaking—Transportation Performance Measures in Australia, Canada, Japan, and New Zealand (FHWA-PL-05-001).*

*The U.S. panel was particularly impressed with how Australia's transportation and safety agencies used performance measures to implement driver behavioral strategies geared toward reducing crashes. According to the panel's observations, the Australian model demonstrated the most advanced process of understanding the problems, benchmarking against others, setting targets, identifying strategies, monitoring effects, and integrating results into future planning efforts.*

*Since 1980, Australia has gone from nearly 4.5 to 1.5 deaths per 10,000 registered motor vehicles. This compares to a change of 3.5 to 2.3 deaths per 10,000 registered motor vehicles in the United States over the same time period. In terms of traffic deaths as a function of population, Australia went from 22.5 deaths per 100,000 population in 1980 to fewer than 9 deaths per 100,000 population in 2003. From nearly identical rates in 1980, the Australian rate has fallen to a point where it is now a little more than half the U.S. rate.*

*This report, which was undertaken through Austroads by Professor Ian Johnston, director of the Monash University Accident Research Centre, reviews Australia's accomplishments in highway safety. It not only discusses the performance measures established, but also goes beyond the public data. It draws from interviews with politicians, senior agency staff, and others with firsthand knowledge of how the traffic safety strategies were put together and, above all, how they were implemented, often amid public controversy but with majority community support.*

*The scan panel, sincerely impressed with these gains, would like to share them with the reader.*

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## Introduction

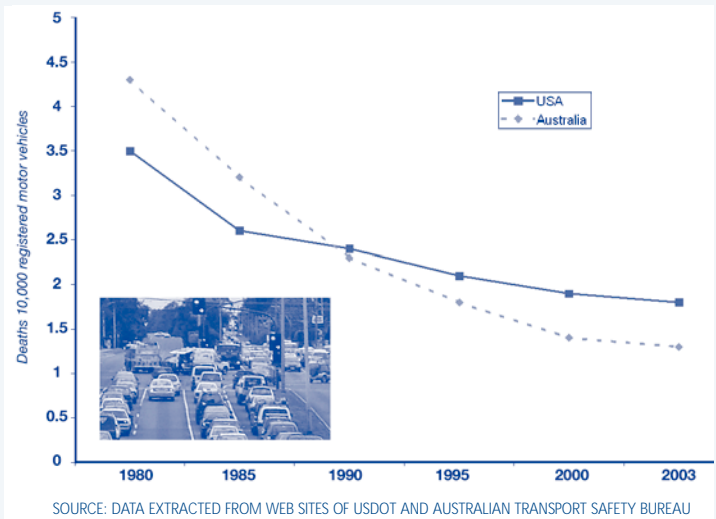
The lowest road crash death rates per capita can be found in Sweden, the Netherlands, and the United Kingdom. Australia is close behind, but comes from a far worse starting point.

Australia is a very useful benchmark for the United States, partly because it is also a federation, but mostly because it is part of the “new world” where urban form, regional development, and road transport developed more or less contemporaneously. The two countries share similar land transport systems.

Australia’s—particularly Victoria’s—success demonstrates the potential that exists for saving thousands of lives per year in the United States. This is a brief account of how that success was achieved and of what it might take for the United States to replicate the outcome.

### U.S. Traffic Safety: The Potential for Further Gains

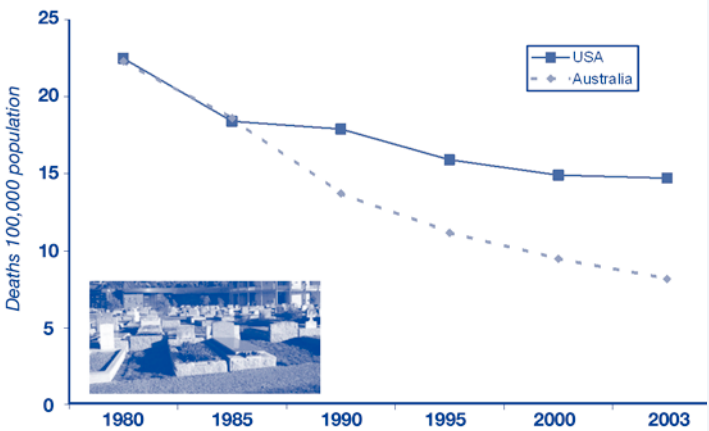
The primary measure of traffic safety progress in the United States is the death rate per 100 million vehicle miles traveled and this rate is at a historic low. However, all Western motorized nations are similarly and continuously reducing their death rates per unit of road use and many have made far greater gains than the United States. Among these, Australia has the most comparable type of road transport system and is therefore a valuable benchmark. Figure 1 shows that the Australian death rate per unit of road use has decreased far faster and further than the U.S. rate.



**Figure 1.** Road traffic deaths in the United States versus Australia per 10,000 registered motor vehicles (comparable estimates of distances traveled are unavailable).

The public health measure of traffic safety—the rate of death per head of population from a motor vehicle crash—tells the same story (figure 2). From nearly identical rates in 1980, the Australian rate has fallen to a point where it is now little more than half the U.S. rate.

In motorized societies, road crashes are the single most common cause of unintentional death in the first five decades of human life, making road trauma one of the major public health problems of the 21st century. The real story is told not by rates, but by the actual number of debilitating injuries and deaths among a nation's citizens.



SOURCE: DATA EXTRACTED FROM WEB SITES OF USDOT AND AUSTRALIAN TRANSPORT SAFETY BUREAU

**Figure 2.** Road traffic deaths in the United States versus Australia per 100,000 population.

The sheer volume of road use—numbers of vehicles, numbers of drivers, and distances traveled—increases inexorably over time. Unless improvements in the rate of safety outstrip increases in the volume of road use, then the total number of people seriously injured or killed will increase. This is exactly what is happening in the United States; while the safety rate continues to improve, it is not at a sufficient level to prevent an increase in the total numbers killed. Table 1 shows that the number of persons killed in road crashes in the United States has increased by 2 percent in the past 10 years. In contrast, the number of persons killed in Australia has decreased by more than 20 percent in the same period, with improvements in the rates of traffic safety two to three times greater than those achieved in the United States.

### **Why is Australia Doing so Well?**

Australia, like the United States, is a federation. Responsibility for major road construction, maintenance and operation; traffic management; vehicle registration; driver licensing; and traffic safety legislation and

**Table 1. Road traffic fatalities between 1995 and 2004.**

	<b>Total deaths</b>	<b>Deaths per 100,000 population</b>	<b>Deaths per 10,000 vehicles</b>
<b>United States</b>			
<b>1995</b>	41,798	15.9	2.1
<b>2004</b>	42,636	14.7*	1.8*
<b>% change</b>	+2%	-8%	-14%
<b>Australia</b>			
<b>1995</b>	2,013	11.2	1.8
<b>2004</b>	1,596	8.0	1.2
<b>% change</b>	-21%	-29%	-33%

\*2003

SOURCE: DATA EXTRACTED FROM WEB SITES OF USDOT AND AUSTRALIAN TRANSPORT SAFETY BUREAU

enforcement all lie with the individual State Governments. The Federal Government is responsible for vehicle safety design standards, national data sets, national research projects, funding of national safety initiatives, and coordination of State efforts. While a national road safety strategy exists, it serves as a model and most States drive their traffic safety efforts through a State strategy and action plan. To identify the key factors for success and, particularly, to explore how political and community coalitions influenced implementation, it is necessary to drill down within one State. The International Technology Scanning Program report *Transportation Performance Measures in Australia, Canada, Japan, and New Zealand* (FHWA-PL-05-001) identified the Victorian model as being of special interest, so it has been selected for discussion in this report. Table 2 shows that Australia's two largest States in terms of population have outstanding traffic safety improvement records over the past 15 years, both above the impressive national average. It is important to note that most Australian States have a success story to tell, each with unique elements.

**Table 2. Road traffic deaths in the 15 years since 1989.**

	<b>Australia</b>	<b>New South Wales</b>	<b>Victoria</b>
<b>Annual Average 1988 and 1989</b>	2,844	999	739
<b>Annual Average 2003 and 2004</b>	-1,610	531	337
<b>% change</b>	-43%	-47%	-54%

SOURCE: DATA EXTRACTED FROM WEB SITE OF AUSTRALIAN TRANSPORT SAFETY BUREAU



## The Importance of Political Saliency

Victoria is Australia's second most populous State. Located in the southeastern corner of the mainland, it has a population close to 5 million with some 3.4 million registered vehicles and some 160,000 kilometers of public road. As in many other places, the number of deaths from road traffic crashes increased rapidly during the 1960s as motorization grew quickly. The number of deaths peaked at more than 1,000 in 1970, stimulating a public outcry and a rapid political response. That response, quickly followed by other States in Australia, was the introduction of compulsory seatbelt wearing. It also marked the beginning of official recognition of traffic safety as a legitimate area for scientific inquiry and systematic action by government agencies. By the mid-1980s, the number of deaths had stabilized at around 700 per annum with no gains having been achieved for several years. In 1989 the number of deaths was more than 10 percent greater than the levels in 1988 and 1987. Again there was public outcry, and the Minister for Transport called in the heads of the key agencies and demanded action. The immediate catalyst for the meeting was the October 1989 spike in deaths, one of the highest monthly numbers of fatalities on record. The following agencies were involved:

- **VicRoads**—Responsible for road infrastructure, traffic management, vehicle registration, driver licensing, and commercial vehicle regulation.
- **Victoria Police**—Responsible for enforcing traffic safety legislation and regulations.
- **Department of Justice**—Responsible for legislative and regulatory policy and adjudication processes.
- **Transport Accident Commission (TAC)**—The government-owned monopoly provider of no-fault injury compensation for transport accident victims in Victoria. TAC had been created just 2 years earlier (in 1987) and it is unlikely that its critical role in the future Victorian model was fully foreseen at this time.

This was a watershed event. For the first time, the key agencies were charged collectively with the task of reducing deaths on Victorian roads, compared with the traditional model in which each agency was responsible only for matters under its immediate control with minimal coordination of planning or implementation.

Victoria's first formal traffic safety strategy was formed in 1990. It examined the tools of engineering, enforcement, education, legislation, research, and the possible synergies of interagency coordination. A target was set of a 50 percent reduction in deaths. Neither the strategy nor the target was made public. Nevertheless, given the political imperative for action and the political instruction for interagency coordina-

tion, traffic safety intervention implementation was integrated for the first time.

Over the next 2 to 3 years, Victoria did the following:

- Introduced a considerable number of traffic safety legislative and regulatory amendments to increase police powers, sharpen laws, and increase penalties. For example, a zero blood alcohol requirement was introduced for drivers in the first 3 years after licensing, the probationary license period was increased from 2 to 3 years, compulsory helmet wearing by bicyclists was introduced, the demerit points scheme was revised, and immediate license loss for all second and subsequent drunk-driver offenses was established.
- Introduced speed cameras as a method of speed limit enforcement.
- Increased random breath testing for the detection of alcohol-impaired drivers by a factor of at least five, to a point where (statistically) one in three Victorian drivers could be expected to be tested in any given year.
- Began a long-term program of public education to support specific safety initiatives and keep traffic safety in the public arena.

By 1992 the number of deaths had fallen to around 400, a drop of more than 40 percent against the levels of the mid-to-late 1980s and close to the (unpublicized) 50 percent target that had been set.

Encouraged by their success, the key agencies continued to build cooperative relationships, integrated traffic safety programs, and jointly formulated, under their own initiative, a new strategy for government to adopt. Meanwhile, the government had changed. The new government released the first public traffic safety strategy for Victoria (*Safety First, Victoria's Road Safety Strategy 1995–2000*), but it contained no targets and no accountability mechanisms. Its stated objective was simply to keep Victoria at the forefront of traffic safety performance both nationally and internationally. What this suggests is that the very large reduction in the average annual number of deaths from road crashes had removed the political imperative for further action, not that no further gains could be achieved. It may also have been that this particular government was less inclined to continue with tough legislative and enforcement initiatives.

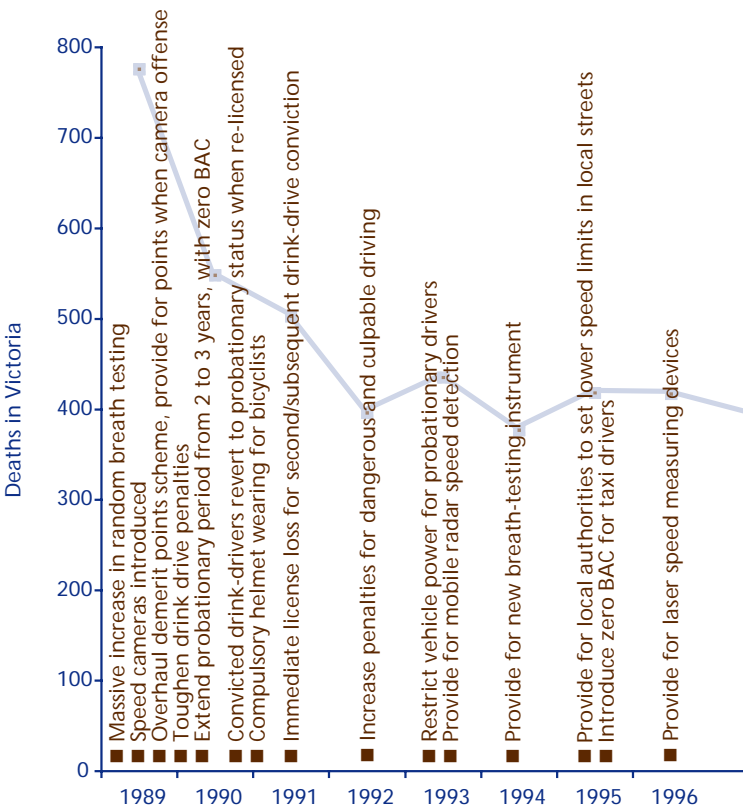
(As an aside, some claim that most of Victoria's success has come from socialist-type rather than conservative-type governments. There is no real evidence to support this; innovative legislation has come from both. It would be more accurate to say that the government's willingness to act stems more from the personal beliefs of the ministers and premier of the day.)

The average annual number of deaths hovered around 400 for the rest of the decade. There was

another apparent spike in 2001 with an increase of about 10 percent over the previous year. The government had changed again (in 1999) and the combination of public concern over the apparent upturn in the death toll, existence of a new government keen to make its mark, and appointment of a Minister for Transport with a strong personal commitment to reducing deaths and serious injuries from road crashes underpinned a new level of effort. This effort has reduced average annual deaths from about 400 to about 350, the lowest number since the 1940s.

Figure 3 plots road crash deaths in Victoria between 1989 and 2004 against a timescale of the major legislative, regulatory, and enforcement initiatives (derived from material supplied by VicRoads). The vehicle and infrastructure initiatives are not listed, so the reader should not infer any direct causal link.

This brief history demonstrates the critical importance of both political saliency for the traffic safety issue and the vital importance of committed political leadership. The primacy of these two factors is hardly surprising given that traffic safety policy often involves



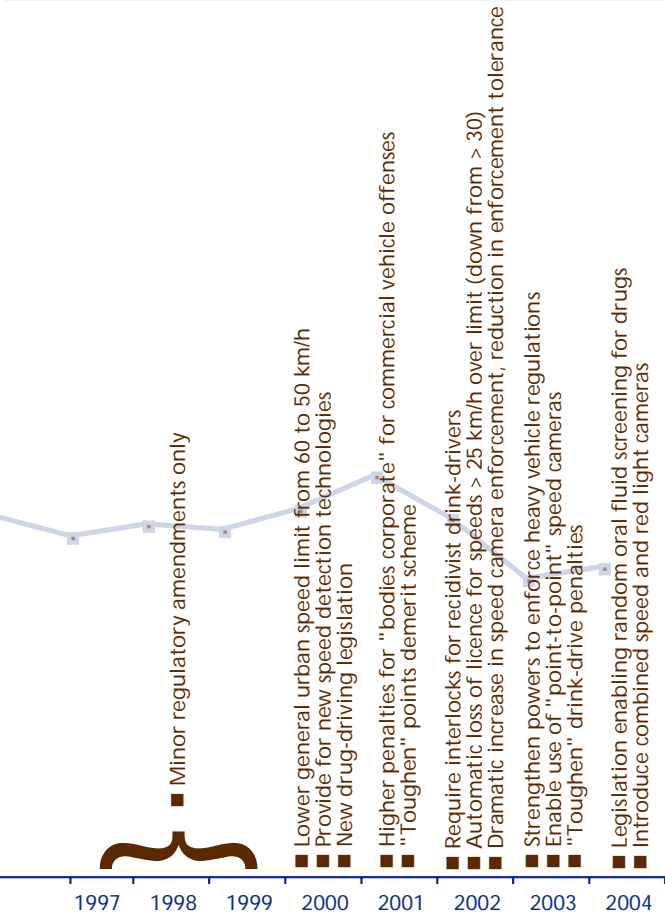
**Figure 3. Major regulatory and enforcement initiatives taken in Victoria from 1989 to 2004.**

tradeoff decisionmaking with mobility, development, and environmental objectives in transport.

## The Power of Evidence-Based Strategies and Plans

Formal strategic plans to guide traffic safety programs are a relatively recent phenomenon, first appearing in the 1990s. *Australia's National Road Safety Strategy 2001–2010* is the second national strategic plan. Australia's most populous State, New South Wales, has its first 10-year strategic plan (*Road Safety 2010—A Framework for Saving 2000 Lives by the Year 2010 in New South Wales*). Victoria has its second (public) 5-year strategy (*arrive alive!—2002-2007*), albeit its first with numerical targets for reducing serious injury and death.

There are two important aspects of preparing formal traffic safety strategic plans. First, the plan must not only be evidence based, but it must have sharp teeth. Second, the public release of a strategic plan that contains specific actions and targets for achievement helps



**Figure 4. Australia's 10-year strategic plan for road safety.**



ensure, but does not guarantee, application of sufficient resources and political and agency commitment to effective implementation. Through public release the government commits to performance.

Many traffic safety strategic plans are limited to general statements and lack accountability mechanisms. To achieve stated targets, the action plan should include the following:

- The traffic safety problems to be addressed should be the major problems and each should be tractable.
- The action plan should include interventions for which there is adequate scientific evidence of likely effectiveness (or controlled trials of innovations of unknown effectiveness).
- The implementing agencies should have transparent lines of accountability for effective implementation.

The current Victorian strategy is a model in this regard.

There is clear political leadership. Senior politicians comprise the Ministerial Road Safety Council. These are the Minister for Transport, the Minister for Police and Emergency Services, and the Minister for the Transport Accident Commission. All three are senior politicians with considerable collective power in government circles.

Another feature of the Victorian system is the existence of a Parliamentary Road Safety Committee, including politicians from both the Government and Opposition. Their public inquiries stimulate debate over the nature of key problems and the issues surrounding possible interventions. While the committee is purely advisory, its role is very valuable.

The advent of three ministers forming a council to guide the collective of key agency chief executives was a unique experiment. What helped build trust and confidence in both directions was the use of a former politician as a go-between during the formative stages of the process. This was a pivotal role.

Reporting to the three senior ministers are the agency chief executives who serve as the Road Safety Executive Group. These are the heads of VicRoads, TAC, Department of Justice, and Victoria Police. They must submit a written monthly report to the ministers on progress with implementation and they meet quarterly with the ministers to review progress. It is critical to note

that these reports are not made separately by each agency but as a single consolidated report. This marks effective collective accountability. At least one of these chief executives has road crash death and serious injury as a formal criterion in his performance-driven employment remuneration package.

With such strong lines of accountability, the agency executives and politicians need confidence in the potential effectiveness of the strategic plan. This, in turn, has forged a strong relationship between the traffic safety research community and the agency policymakers. It is in everyone's interest to ensure that the right problems are being addressed and that the proposed actions are based on evidence of likely effectiveness.

### **Integrated Implementation of Safety Countermeasures**

While the traffic safety crisis of 1989 was the catalyst for bringing the key agencies together, it took several years for strong, enduring relationships to be formed at the working level. The integration of efforts is a key component of Victoria's success story. For example, research evidence suggested that a substantial reduction in the incidence of alcohol-related road trauma could be achieved through general deterrence, which would require intense levels of random roadside testing. While the police were willing to increase dramatically their level of enforcement, they lacked the infrastructure (vehicles, breathalyzers, etc.) to achieve these increases. TAC purchased vehicles and breathalyzers for the police. Similarly, it was anticipated that there might be some adverse community reaction to random roadside screening. The legislation had existed for well over a decade, but the enforcement level had been modest and the now-proposed levels would mean that most citizens would be directly exposed to random screening within a short time. TAC funded a substantial public education



**Figure 5.** *Random roadside screening by Victoria Police.*

program that explained the rationale and purpose behind the enforcement. Public opinion surveys reveal that the vast majority of the Victorian public strongly supports these extremely high levels of random roadside screening for alcohol.

### **A Key Investor is a Direct Beneficiary**

The Transport Accident Commission (TAC) is a government-owned, monopoly provider of no-fault injury compensation for transport accident victims. Its premiums are collected as part of the annual vehicle registration fee. By government decree for a wide range of government charges, the premium increases in line with the Consumer Price Index on an annual basis. This appears acceptable to the community, probably because this annual increase is considerably lower than the growth in general health care costs. Moreover, since a no-fault scheme is particularly efficient, Victoria has been able to keep its levies for transport injury compensation among the lowest in Australia.

While one might expect that the reduction in compensation payouts would result in community pressure for premium reductions, this has not occurred, possibly because TAC's role in road trauma prevention has a very high public profile and is widely accepted by the community. TAC has a strong vested interest in reducing the number of injury claims and has demonstrated significant economic returns from its investment in injury prevention. This investment is regarded as sound business practice, analogous to the investment every company makes in its own future development.

Since its inception in 1987 but mostly from the mid-1990s, TAC has invested substantial sums in implementing traffic safety programs in Victoria. This money is in addition to the traditional funds provided to the other key agencies involved in traffic safety. Victoria has, for example, expended unprecedented sums on blackspot



**Figure 6.** *Victoria blackspot safety improvement project.*



engineering treatments and is heavily investing in demonstration programs for improving roadside safety, with both efforts funded by TAC.

Of special note also is the regular and large investment made by TAC in public education, which helps ensure that traffic safety remains salient in the minds of community members and in direct support of other measures taken by partner agencies. TAC, however, is far more than an ancillary funder. The interagency coordination and intervention program integration in Victoria is one of the key elements of Victoria's success.



**Figure 7.** *Examples of TAC public education materials.*

### **It's Less the What than the How, But . . .**

Australia's achievements are applauded internationally, but the applause is frequently followed by "yes, but..." The "but" queries the ability to replicate the degree of traffic safety legislation and regulation and the accompanying intense levels of enforcement.

Australia certainly has a history of pioneering traffic safety legislation. It was the first country in the world to mandate helmet wearing for bicyclists and motorcyclists and seatbelt use by both adults and children. Australia was a leader in introducing speed cameras, random breath testing for alcohol-impaired driving, and, very recently in Victoria, random roadside saliva screening for drug-impaired driving. In addition, the levels of enforcement are intense by international standards.

While the evaluation research has shown high levels of effectiveness for most of these measures, it would be wrong to assume that Australia's success turned entirely on the implementation of behavior-control measures. It is more that, of all the measures in the traffic safety toolbox, legislation and intense enforcement, supported by public education to secure community support, are the types of interventions most likely to produce systemwide results in a short timeframe. Australia has also benefited greatly from improvements in vehicle and road infrastructure safety. Indeed, the strategic plans



now emerging focus on the need for greater investment in creating and maintaining a safe system.

The implementation of a suite of behavior-control measures in Australia is a reflection of the level of political commitment to improving traffic safety and the consequent building of coalitions among the implementing agencies and within the wider community to support these efforts. Community support and political willingness to act are essential.

The Victorian community seems to accept the notion of a “social contract,” the willingness to cede to the government the right to control some areas of daily life in exchange for the government accepting the obligation to provide levels of protection. Such acceptance is not an inherent property of a community; it evolves from positive experiences that build a degree of ongoing trust. While the origins of Victoria’s apparent willingness to accept a social contract for road safety must remain speculative, the following can be suggested:

- A history of success with behavior change interventions dating back to motorcyclist helmet wearing (1960s) and seatbelt wearing (1970)
- Intense, ongoing public education (largely from TAC) that keeps traffic safety in the public arena
- A (generally) supportive media, again dating back to major campaigns for action in the late 1960s and early 1970s
- A high level of formal public debate facilitated by an all-party parliamentary traffic safety committee
- A media-savvy research community publicly promoting evidence-driven strategies.

Nevertheless, it would be wrong to conclude that legislation and its vigorous enforcement are the only factors in Victoria’s success. One must not overlook the full gamut of measures, implemented effectively through an integrated, coordinated approach.

The critical success factors for an effective program to reduce serious injury and death are summarized below. Note that there is nothing about specific measures. The keys are knowing what the big problems are, selecting interventions known to be effective, and systematically implementing those for which political and community support can be garnered. Different packages of measures will have different aggregate impacts, require different levels of investment, and operate on different timeframes, but many different packages will work.

## **A Summary of Victoria's Critical Success Factors**

### **A Sound and Realistic Plan**

An evidence-driven strategy is essential, one that focuses on the major problems and proposes interventions known to be effective. The plan must include objective targets (see Appendix) and mechanisms for monitoring progress and ensuring accountability for effective implementation. Public release of the plan and public monitoring of progress are key.

### **Political and Bureaucratic Leadership**

Committed, political leadership by the ruling government is vital. This must be supported by equally committed leadership from each agency responsible for implementing the various components of the plan. There must be effective accountability mechanisms within each agency and between each agency and the political system.

### **Integrated Implementation**

Traffic safety programs are characterized by the diversity of institutions involved in the implementation process. Integrated, coordinated implementation is an essential ingredient of the Victorian success story. The forging of effective cooperative relationships among senior staff in the key implementing agencies provides clarity of roles and functions and ensures synergistic implementation. In Victoria, the ability of the monopoly no-fault injury compensation insurer to invest in integrated safety programs has been critical. The principle is to link the investment source and the immediate economic beneficiary of the investment.

### **Enabling Factors**

In the Victorian success story, the following enablers appear important:

1. A history of success with interventions based on legislation and enforcement helped create a political willingness to act.
2. Strong relationships have long existed between the traffic safety research community and policymakers in each of the key government agencies, facilitating evidence-based planning and target setting.
3. These relationships have helped create sound data sets but, more important, a climate in which the scientific evaluations of interventions are routine.
4. The extensive public education traffic safety programs have been instrumental in creating a climate of community concern for road safety and support for effective interventions.

5. The media historically have been supportive of effective interventions, which further facilitates political willingness to act.

## **Conclusion**

The United States has—over a long period now—steadily improved its fatality rate per unit of travel, but by nowhere near the extent achieved by many other Western motorized nations. Over the past decade the number of deaths has slowly increased. This case study from Victoria, Australia, illustrates what could be achieved: Many thousands of lives could be saved each year.

The first step is to find a “champion,” an individual or group that can help create political and community saliency.

The second step is to introduce new measures of traffic safety performance. Total reliance on deaths per unit of road use is suboptimal because it implies that improvement in this rate is a sufficient goal. It also accepts that there is a price to be paid for mobility and that the greater the road use, the higher that price will be in total.

The third step is to develop an evidence-based strategic plan with objective targets and effective accountability mechanisms.

The final step is to harness all of the key players and implement the plan in an integrated, effective manner. The issues to be addressed and the range of acceptable measures will require a partnership among many organizations.

# A P P E N D I X

## Setting Public Targets

The public announcement of targets for reducing death and serious injury from road traffic crashes and the routine public reporting of progress in meeting those targets are fundamental components of a successful road traffic safety strategy. Key considerations in target setting include the following:

1. Express the targets as reductions in the number of deaths and serious injuries, not as reductions in rates. Numbers make the most sense to people. Moreover, rates fall while numbers rise whenever the gains in the level of safety are less than the growth in road use, the current situation in the United States. (See table 1 on page 7). Traffic safety rates are improving continuously in all Western motorized nations and this fact must not be used to do nothing.
2. The target can be set as a percentage reduction or as cumulative savings from a nominated baseline. The Victorian strategy "*arrive alive!*" has a target of reducing the absolute number of deaths and serious injuries by 20 percent by 2007. The New South Wales strategy "*Road Safety 2010*" sets a target of saving 2,000 lives by 2010. The latter has appeal in that it focuses on "lives saved" rather than "deaths permitted." The cumulative savings target, however, is high risk in that it can fail through one aberrantly high death toll in any given year in the target period.
3. The targets should include both deaths and serious injuries. However, careful thought must be given to the definition of serious injuries, because many traffic safety countermeasures have more impact on the severity of injury than on the frequency of traffic crashes. Thus, there is a risk that a reduction in serious injuries may be accompanied by an increase in minor injuries. A useful approach is to target the reduction of injuries requiring hospital stays of, say, 48 hours or more.
4. While a single (death and serious injury) public target is essential, the formal traffic safety strategy should include a set of disaggregated targets specific to each implementing agency. For example, the road agency might set a target of reducing death and serious injury from run-off-road crashes into roadside furniture by x percent; the police might set a target of reducing alcohol-related serious injury crashes by z percent; and so on. This is vital for ensuring accountability at the agency level in a complex environment where many agencies have critical contributions to make.
5. Targets for intermediate performance criteria are also

useful. For example, the police might set a target of reducing the mean travel speed on a given road by  $y$  kilometers per hour. The research evidence suggests the likely injury reduction that will follow. The intermediate measure is more robustly measurable than “speed-related crashes.”

6. Input targets—for example, sealing shoulders on  $x$  miles of narrow rural road—are the least useful but are sometimes necessary. In the case of random breath testing, targets of hours of enforcement effort have proven critical in keeping the enforcement above the threshold level needed for effective general deterrence.
7. Targets should not be selected because they reflect current best practices or some political whim. Targets must be demonstrably objective and achievable if the strategy and its programs are implemented.
8. Targets need to be set systematically and scientifically. In most Australian jurisdictions the process involves the following:
  - Disaggregate the traffic safety issues into their key component parts, such as side impacts at intersections, head-on collisions on rural roads, alcohol-related crashes, etc.
  - For each substantial problem, identify from the literature the proven countermeasure options and their likely effects from the scientific evaluations reported.
  - Select a package of measures likely to be implementable within the particular sociopolitical framework and assess the aggregate impact of that package of measures.
  - Make allowances for all counterinfluences—for example, forecast growths in road use—and appropriately discount the anticipated benefits from the selected package of measures. All such assumptions must be made explicit.
  - For longer term strategies (such as a 10-year plan), targets should not be set beyond the halfway point as forecasting is a problematic art. As the halfway point is reached, a new target can be set for the balance of the plan.

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**Publication No. FHWA-PL-06-011**  
**HPIP/1-06(3)EW**