

RESPONSE TO THE INQUIRY INTO CRASHES INVOLVING ROADSIDE OBJECTS

Recommendation 1. That VicRoads gather information from a sample of crashes to improve knowledge about the proportion of crashes with roadside objects at different distances from the edge of the road, for various categories of road.

This recommendation is supported in principle

The Government supports this recommendation on the basis that a structured sample of data be collected in a consistent and cost effective way that lends itself to improving knowledge about road crashes.

The *Enhanced Crash Investigation* project currently being undertaken by VicRoads gives effect to earlier Government commitments to increasing road crash knowledge so that effective countermeasures can be identified, developed and implemented.

This project has included a detailed examination of a number of run off road hit fixed object crashes on various categories of road. Part of the crash investigation process has included obtaining detailed measurements of vehicle path, trajectory and damage caused by the object struck and resultant occupant injuries. Findings from this project will be considered in developing the proposal for the sample study, which will be included in VicRoads Research and Development Program.

Recommendation 2. That VicRoads investigate means of gathering data about roadside object crashes involving property damage, in which a vehicle is towed away.

This recommendation is supported

The Government supports an examination of the means and associated costs and benefits of collecting property damage crash data about crashes involving roadside objects. VicRoads will include an appropriate project in its Research and Development Program

Recommendation 3. That VicRoads gather and publish information on travel exposure on the entire Victorian road network, by road category and area, and for different road user groups, to better assess crash risk and target safety treatments.

This recommendation is supported in principle

Travel exposure of vehicles, within broad vehicle configurations, is collected by VicRoads on many types of roads in Victoria. For example, vehicle volumes are collected during speed monitoring surveys, weigh-in-motion surveys, travel time estimations, and turning movements as well as traffic volume counts for use in VicRoads traffic modelling. Traffic volumes are then linked to crash information to estimate crash risk per vehicle kilometre travelled on various categories of the Victorian road network.

Government Response to Inquiry into Crashes Involving Roadside Objects

The travel exposure survey conducted on Melbourne arterial roads in 2001 is used to estimate relative crash risk for young and old drivers compared to the safest group of 40-49 year old drivers. This is now being extended for older drivers, by combining the exposure measure with a telephone survey, to produce better estimates of older driver crash risk.

A travel exposure survey of road users in Victoria would entail identifying suitable survey sites that were representative of each type of road and each type of area. Complete coverage would be expensive. There would be benefit in conducting a survey of road users on a subset of higher priority roads and areas in Victoria. A proposal will be developed by VicRoads for inclusion in its Research and Development Program. The travel exposure information resulting from this project will be published.

Recommendation 4. That VicRoads and Victoria Police publish quantitative information on the contributory factors to collisions involving roadside objects.

The recommendation is supported in part.

Victoria Police record information on crashes in the Police Traffic Accident Information System (TAIS), Blood Alcohol System (BAS) and Police Collision Reports (510 Forms). VicRoads uses this information to populate the Road Crash information System (RCIS).

While crash factors such as road condition (wet/dry) and road surface (paved/unpaved) are recorded on RCIS, quantitative information on contributory factors for collisions involving roadside objects from Police 510 forms is currently only provided for fatal crashes.

In some instances, for non fatal crashes, explanations are also provided by Victoria Police on the narrative section of the 510 form. Generally this area includes a sketch plan of the crash location and a brief description of the crash. This information is made available to local government and researchers through the Restricted Crashstats application available on the VicRoads website. Care is required to protect the privacy of individuals involved in crashes so a less detailed version of Crashstats is available to the general public on the VicRoads website.

Confidential factors identified in Police observations for fatal crashes are viewed as preliminary rather than definitive with final validation occurring through the coronial findings of each case.

VicRoads and Victoria Police will conduct a joint research project to review past Coronial Findings and other suitable sources of information (for example the Enhanced Crash Investigation study or reports by the Major Collision Investigation Unit) with the aim of publishing a summary of the contributing factors to collisions involving roadside objects.

Recommendation 5. That VicRoads and Victoria Police expand routine crash data collection to include more detail about the type of barrier struck, type of pole, frangibility of object and whether planted or native trees.

This recommendation is supported in part

Government Response to Inquiry into Crashes Involving Roadside Objects

The Government supports the collection and recording of additional crash data about types of roadside objects struck, including barrier and pole types, where it is cost effective to do so. It will ask the road safety agencies to address this matter in the current redevelopment of the Victoria Police Traffic Accident Reporting System.

The Government accepts however that there are practical limitations to the level of detailed data which can be reasonably expected to be collected by Victoria Police at crash scenes. For this reason, requiring data to be collected about frangibility of objects and whether trees struck have been planted or have seeded naturally is not supported.

Recommendation 6. That VicRoads increase the minimum clear zone distance for high-speed high-volume roads, such as freeways, beyond the current nine metres, in line with international best practice.

Recommendation 7. That VicRoads review clear zone requirements to take into account the different vehicle speed-slowness characteristics of the surfaces of road shoulders and roadsides.

Recommendation 50. That Victorian road authorities consider the use of earth, gravel, shrubs and other frangible vegetation as a means of slowing out-of-control vehicles as they travel across roadsides, thereby reducing roadside object crash severity.

These recommendations are supported in principle

The Government recognises the need to keep road safety standards and guidelines under review to ensure they reflect best practice, and to monitor developments in new technologies and research findings from Australia and overseas.

VicRoads will review the clear zone guidelines, taking into account information provided by the Committee. The new guidelines will address the cost and practicality of achieving clear zones on existing roads as well as the cost of providing clear zones or alternative safety treatments on new works.

VicRoads will also consider the benefits and costs of use of various roadside surfaces and frangible vegetation as a means of slowing errant vehicles as part of the clear zone guidelines review, which will be completed by the end of 2006.

Recommendation 8. That VicRoads adopt the European term ‘safety zone’ when referring to clear zone distances.

This recommendation is not supported

The Government considers that the term *Clear Zone* is well established and understood amongst Australian road authorities and associated industries and there would be little benefit, if any, in adopting the European term.

Further, the term ‘safety zone’ has a legal meaning in the Australia Road Rules in relation to tram stops.

Recommendation 9. That, in order to increase general community awareness of the roadside object crashes, government agencies publish crash type/profile statistics, including the roadside object category, and promote the statistics in the same manner as statistics for road user and age groups.

This recommendation is supported

The Government will ask its road safety agencies to include statistics on crash types in the annual *arrive alive!* Road Toll Update from early 2006.

Recommendation 10. That VicRoads fund application guidelines and Government budget documents give an increased emphasis to items related to roadside object crashes.

Recommendation 12. That the Government create a separate funding program, with associated annual performance measures, to address the roadside object safety issue. New consultative arrangements should also be developed to assist in addressing the issue.

These recommendations are supported in principle

The Government has allocated substantial funding over the last five years for specific road safety infrastructure improvements throughout Victoria. These programs include the:

- \$240m Statewide Blackspot Program;
- \$10.7m Run-off Road Treatments on A Road Curves;
- \$130m Safer Roads Infrastructure Program (Stage 1); and the recently announced
- \$110m Safer Roads Infrastructure Program (Stage 2).

The VicRoads guidelines for these programs all provide for projects to be developed to target the run-off the road type crashes that most often result in a vehicle hitting a roadside object. The guidelines for each program require all projects to deliver clear cost effective crash reductions based on an understanding of the prevailing crash type and the selection of an appropriate, proven, countermeasure. Many of the projects delivered to date and of those approved for delivery in the coming years specifically address the problem of run-off the road crashes.

For example, more than \$58 million of the \$240 million Statewide Blackspot Program and all of the \$10.7 million 'A Curves' program specifically targeted run-off the road crashes.

The current \$130 million Safer Roads Infrastructure Program (SRIP 1) was developed specifically to target run-off-road crashes. Over \$98 million of this program is being invested to treat run-off the road crashes in rural Victoria and outer Metropolitan Melbourne.

While the recently announced \$110 million Safer Roads Infrastructure Program (SRIP 2) will target crashes occurring at intersections, it is expected that an estimated \$20 million of this funding will be allocated to further target run-off the road crashes over the next two financial years.

Government Response to Inquiry into Crashes Involving Roadside Objects

In addition to the above programs run-off the road motorcycle crashes are also being targeted as part of the Motorcycle Blackspot Program, funded through the TAC Motorcycle Safety Levy.

The Government's funding for on-road safety measures is based on programs which will deliver the highest reduction in casualties (particularly fatalities and serious injuries) for the available funds. The programs outlined above include major components targeting the major fatal crash type in recent years (of run-off road crashes) but the Safer Roads Infrastructure Program (Stage 2), for example, is also addressing the major serious injury crash type – intersection crashes.

It is important that future decisions on funding taken by Government as part of the annual budget process are based on treatment locations and types which will provide the most benefit for the available funds. Earmarked ongoing funding programs for particular crash type treatments are likely to be sub optimal in achieving the greatest overall road safety benefit with available funds.

Government would expect future recommended road safety program components to reflect the priorities identified in the successor strategy to *arrive alive!*

Recommendation 11. That VicRoads, in conjunction with its road safety partners, prepare a Strategic Plan and Action Plan for Roadside Object Safety. The plans should include short and long term targets and published performance measures to enable progress to be monitored.

Recommendation 17. That VicRoads develop a proposed program of measures to improve roadside safety in Victoria.

These recommendations are supported

The Government will request VicRoads to develop a strategy and action plan for roadside safety. The plan will be completed by the end of 2006.

Funding for implementation of programs based on the strategy will be subject to their potential road safety benefit compared to other road safety programs.

Recommendation 13. That VicRoads and the Transport Accident Commission improve community awareness of the dangers of roadside objects, the limitations of vehicles to protect occupants in such crashes and the need for people to drive and ride accordingly.

This recommendation is supported

The Government's road safety agencies will continue to promote awareness of the risks associated with roadside objects to Roadsafe groups, local government and other stakeholder and community groups across Victoria. Further opportunities to improve community knowledge in this area will be examined.

Government Response to Inquiry into Crashes Involving Roadside Objects

VicRoads, Victoria Police and the TAC have continued to run campaigns and programs aimed at raising awareness amongst motorists of the hazards and risks associated with travel on Victorian roads.

Awareness campaigns tend to highlight issues such as drink driving, fatigue and inappropriate speed which lead to many run-off the road crashes as if it is felt more appropriate to address the causes of crashes that the motorist can most directly influence.

The Government's road safety agencies will also continue to work together to raise public awareness on the importance of vehicle safety features in helping to avoid crashes in the first instance and in protecting vehicle occupants should a crash occur.

Recommendation 14. That VicRoads change speed zone guidelines and practices to include roadside safety as a determining factor.

Recommendation 15. That VicRoads and municipalities modify roads and/or roadsides to ensure travel speeds are appropriate for the level of safety provided by both the road and the roadside environment.

Recommendation 16. That lower speed limits be used for Victorian roads where the level of safety provided by both roadways and roadsides is low and modifications are not currently possible.

These recommendations are supported

The roadside environment is an important factor that is reflected in the current speed limit setting guidelines. VicRoads will be reviewing the speed zoning guidelines in 2005/2006 and the weighting given to the presence and proximity of roadside hazards along a road will be reviewed as part of the process.

Government road safety agencies adopted the "Safe System" approach to road safety in late 2003. This approach recognises the biomechanical limits of the human body to absorb energy without sustaining a life threatening injury. By understanding the limits of the human body to withstand the typical forces in different crash types and the interaction between vehicles, speed and the wider road environment, the system can (in the longer term) be designed to ensure that a road user does not lose their life because of a simple mistake of a moment's lapse of attention.

A side impact crash with a narrow fixed object, such a tree or power pole is most likely to have fatal consequences even at relatively low speeds (30 to 50 km/h). For this reason, the most effective countermeasures include either the removal of hazards (to achieve an improved clear zone) or barrier installation to protect the motorist from the hazard. These treatments can be supplemented with other treatments, such as shoulder sealing and tactile edge linings which are designed to help avoid the loss of control events that lead to run-off the road crashes in the first instance.

While a lower speed limit may have some effect on the likelihood of a run-off the road crash occurring, for travel speeds of 80 km/h and above, it is uncertain that it would lead to lower severity outcomes (that is non-fatal outcomes) for run-off the road crashes that do occur.

Government Response to Inquiry into Crashes Involving Roadside Objects

For higher traffic volume roads with roadside hazards, and a high crash rate, the recommended treatments are most likely to be the sealing of shoulders, tactile edge linings, plus hazard removal and/or barrier installation to enable a 100km/hr speed limit to be maintained, in recognition of the economic importance of the route.

For low volume roads with roadside hazards and a high crash rate, a lower speed limit may be the only feasible treatment that can be cost effectively implemented to reduce risk.

VicRoads will develop initial specific guidelines for application of the safe system approach by the end of 2006 to assist road authorities in identifying the most appropriate countermeasure for a given section of road for the range of major crash types.

Recommendation 18. That VicRoads determine the total cost of roadside object safety measures on all roads, for various levels of risk reduction.

This recommendation is supported in principle

The Government is concerned that this would be a major exercise, requiring substantial resources for the development and analysis of treatment types and costs across the State, with diminishing benefits (and hence lower prospects of funding) as lower crash rate lengths are examined.

VicRoads has identified and analysed the highest run-off road crash rate sections on high speed arterial roads across the State in formulating the current run-off road crash treatment component of the \$130M Program.

The Government will ask VicRoads to identify the next (lower) crash risk lengths and examine a sample of those lengths to determine likely benefits and costs of treatments. This will enable a case for extension of current programs to be developed for Government consideration.

Recommendation 19. That VicRoads conduct and publish the results of on-going monitoring of roadside crash countermeasure effectiveness so that estimates of future crash reductions are based on scientific evidence.

This recommendation is supported

The Government considers that evaluation should be an intrinsic step in all major road safety and road infrastructure programs, and that the results of evaluations should be communicated widely to assist in making future road safety programs more effective and innovative.

VicRoads will conduct an evaluation of the \$240m Statewide Blackspot Program in 2005/06. The findings of this evaluation will be widely disseminated to improve the evidence base for future programs. The evaluation of the Statewide Blackspot Program (the largest program of this type ever undertaken in Australia) involving a large range of different treatments, will provide a unique opportunity to review and update estimated crash reduction factors to ensure that the most cost effective treatments are utilised in future programs.

Government Response to Inquiry into Crashes Involving Roadside Objects

Evaluations of the two Safer Roads Infrastructure Programs are also planned upon substantial completion and findings will be published.

Recommendation 20. That VicRoads continue to undertake pilot projects showing the effectiveness of best practice roadside object countermeasures and publish the results.

This recommendation is supported

The Government will continue to encourage VicRoads to trial new and innovative countermeasures in this and other areas and to publish the findings.

For example, in May 2005 the Government announced an allocation of \$2m over 4 years to pilot the use of Speed Activated Roadside Warning Signs. VicRoads will identify suitable sites for the pilot program and begin installation of the signs in 2005/06.

The signs will contain a simple message relating to the road conditions (e.g. dangerous bends) that will only be displayed if a vehicle approaches the hazard at an unsafe speed. Overseas studies have shown that the signs can significantly reduce run-off the road crashes at treated locations.

Recommendation 21. That VicRoads and municipalities ensure roadside safety reviews are regularly undertaken and the recommendations implemented.

This recommendation is supported in principle

The Government supports the need for road authorities to regularly review the safety of their road networks. However, the Government is aware of the development of more effective network-wide risk assessment tools which provide more useful outcomes than traditional road safety reviews.

In the past, roadside safety reviews were conducted for more than 40% of the arterial network. The results of these reviews (issues identified for improvement) were of limited value as the risk equivalence of the considerable number of issues identified could not be assessed.

VicRoads is moving to a network-wide means of identifying high run-off-road risk locations to enable high priority projects to be identified and funding to be directed to where there will be the greatest return in terms of crash reduction.

To support this process, each year VicRoads conducts a video based data capture exercise for 50% of the arterial road and roadside networks, resulting in coverage of the total arterial network every 2 years. This provides a complete video record of the entire system, which also enables lateral distances – for example hazard offset data – to be subsequently measured using the video and associated software.

This information enables data to be input to Austroads Road Safety Risk Manager software package to enable relative risk levels to be established and compared along the length.

Government Response to Inquiry into Crashes Involving Roadside Objects

VicRoads will continue to analyse data for the arterial network to identify the highest crash rate lengths. This will be completed and published by mid-2006.

The Government expects VicRoads to identify key risks by crash type (including run-off-road) within those lengths and to determine the most cost effective treatments. This work will assist the development of future funding proposals for Government consideration. (This work will be completed by the end of 2006 for run-off-road crashes and a similar approach is to be developed by the end of 2007 for rural intersection and head-on crash risk assessments).

The Government will ensure that VicRoads continues with its ongoing road surveillance programs including monitoring and remedial actions to address roadside maintenance and safety issues to meet the requirements of the Road Management Act.

Recommendation 22. That the Auditor General, oversee roadside safety audits and reviews and publish the results.

This recommendation is not supported

The Government notes that the Auditor General has expressed concern to the Committee about the impact on the independence of the Victorian Auditor General's Office if it were to be required to be an integral part of the implementation of a government program and advised that this position would not, of course, preclude the periodic examination of the issue by the Office.

Current Government guidelines and processes provide oversight of the effectiveness of state funded road safety programs. For example, the evaluation of the Statewide Blackspot Program and the planned future evaluation of current road safety infrastructure programs will report on the effectiveness of these programs in reducing casualty crashes.

In accordance with accepted practice, the findings of these evaluations will be published.

VicRoads has existing policies for road safety audits of new projects which require audits at various stages throughout the planning, design and construction stages in accordance with the Austroads Road Safety Audit Guide (2002).

Recommendation 23. That validity of the results of the Austroads Road Safety Risk Manager software program be evaluated and published.

This recommendation is supported

VicRoads has used and is using a version of the Road Safety Risk Manager software to help identify and prioritise run-off the road treatment projects for inclusion in the two Safer Roads Infrastructure Programs. The planned evaluation of these programs will enable the software to be further assessed and provide important feedback and input for further calibration and refinement of the tool.

Government Response to Inquiry into Crashes Involving Roadside Objects

The future development and ongoing calibration of the Road Safety Risk Manager software with crash based data is a major focus of the Austroads national road safety research program. VicRoads will continue to support Austroads with the development, evaluation and dissemination of information related to the Road Safety Risk Manager software package.

Recommendation 24. That VicRoads take the lead in continually building risk management knowledge and experience by collating the results of and disseminating the findings of VicRoads and municipal risk analyses.

This recommendation is supported

The Government has allocated pilot funding to VicRoads to support local municipalities in developing risk based methods to identify, prioritise and treat roadside safety issues. The funding will be allocated via the Saferoads partnership between VicRoads, Transport Accident Commission, Victoria Police, the MAV, Local Government Professionals (LGPro), and the RACV. This initiative is intended to encourage local governments to strengthen their risk based assessments for roadside safety.

As part of the evaluation of this program VicRoads will collate, evaluate and disseminate the findings to help increase knowledge on the use of risk management tools.

Recommendation 25. That new Australian road infrastructure safety rating systems, such as AusRAP, include roadside safety as a key component of the hazard rating protocol/methodology.

This recommendation is supported

The Government will continue to support the development of AusRAP, for example by providing the RACV with access to relevant VicRoads data. VicRoads technical experts will continue to provide support and comment as appropriate.

The Australian Road Assessment Program aims to provide motorists with an indication of the relative risk associated with using particular sections of the interstate highway network. To do so it has developed two protocols based on the European model. The first uses colour coded maps to illustrate either the 'collective risk' or 'individual risk' associated with using a particular road section.

The collective risk map shows the average annual casualty crash rate per kilometre of length for the road section. The individual risk map shows the average annual casualty rate per 100 million vehicle kilometres travelled for the road section.

The second protocol, a 'Road Protection Score (RPS)' is currently under development. In determining the RPS account is to be taken of the road and roadside environment.

Recommendation 26. That VicRoads review roadside crash hazard rating techniques used in New South Wales, Europe and the United States, to see whether elements might be introduced into Victorian risk assessment practices.

This recommendation is supported

The Government will ask VicRoads to review these techniques and where beneficial introduce elements into Victorian practice.

Recommendation 27. That a survey of current roadside hazard management practice be undertaken for both VicRoads arterial roads and local roads in all municipalities to identify compliance with standards and guidelines and identify aspects requiring attention.

This recommendation is supported in principle

The Government will ask VicRoads to review a representative sample of roads (including local roads with the agreement of local government) to identify if current guidelines and standards for roadside hazard management are appropriate. The review will assess current practice, consider opportunities for strengthening standards and recommend measures to improve practice.

Recommendation 28. That the Government provide additional funding to improve the most unsafe local roads and roadsides in the least affluent and lightly trafficked rural municipalities.

This recommendation is not supported

Local governments receive substantial road funding from the Commonwealth Government.

Funding to address blackspots on local roads is available through the Federal Black Spot Programme and is subject to the relative benefit cost ranking of a project.

To encourage local government to further develop their capability to assess roadside risk and to expand their program of works to address roadside hazards the Government has allocated funding in 2005/2006 to pilot a Saferoads infrastructure package with up to 5 local municipalities.

State Government funding will generally be directed towards the improvement of Victoria's arterial roads.

Recommendation 29. That Victoria Grants Commission financial assistance grant methods take into account roadside safety factors.

This recommendation is supported in principle

Government Response to Inquiry into Crashes Involving Roadside Objects

The Government will forward the recommendation to the Victoria Grants Commission for its consideration.

The Australian Government local roads component of general revenue assistance is currently allocated to councils as far as practicable on the basis of the relative needs of each council for roads expenditure and to preserve its road assets. In assessing road needs, relevant considerations include each council's length, type and usage of roads.

Recommendation 30. That, in order to keep vehicles from running off the roadway, especially on curves, VicRoads and municipalities:

- **Improve road delineation, particularly with audio-tactile edge lining;**
- **Improve speed advice at hazardous locations;**
- **Seal road shoulders where there are hazardous objects nearby, particularly on crests of hills;**
- **Improve road surfaces, especially skid resistance for wet conditions; and**
- **Trial the installation of barriers separating opposing traffic streams on single carriageway roads.**

This recommendation is supported in part.

VicRoads will implement the first four measures outlined, subject to funding availability.

VicRoads is currently developing proposals to trial the use of tactile centre lines and the use of centre line barriers on single carriageway roads (i.e. the Swedish 2+1 type system). In developing the proposal VicRoads will undertake a critical examination of the results in other jurisdictions to determine whether all the crash reductions can be attributed solely to the barrier, or whether other measures introduced at the same time, such as improved delineation and signage, have played a significant part. The trial would be subject to availability of funding.

Recommendation 31. That the decisions by road authorities and the Department of Sustainability and the Environment be based on the principle that the safety of road users always take precedence over the conservation of the native vegetation within road reserves.

Recommendation 32. That VicRoads, in conjunction with the Department of Sustainability and Environment and municipalities, develop a Code of Practice for roadside safety zones based on the principle that the safety of road users should always have precedence.

Recommendation 34. That the Department of Sustainability and Environment remove the vegetation replacement requirements for trees removed because they are a roadside safety hazard.

These recommendations are supported in principle

The Government recognises that a greater degree of consistency in the assessment of potential vegetation impacts is required to ensure that important road safety benefits are achieved.

Government Response to Inquiry into Crashes Involving Roadside Objects

The Government supports the view that Road Authorities should not be prevented nor unduly encumbered by the requirement for permits from meeting their obligations in managing the roadside within the road reserve.

To achieve this outcome the Government supports the development by DSE and VicRoads of a Code of Practice to guide decision making about hazardous vegetation within road reserves.

It is intended that the Code of Practice (which will need to be consistent with Commonwealth and State legislation) will allow important decisions affecting road safety and the natural environment to be taken, without lengthy delay, in a way that is both transparent and consistent. There also needs to be a clearly defined mechanism for the resolution of disputes between stakeholders that delivers outcomes which will reduce road trauma. Further resolution of these issues through the code development process is proposed.

Vegetation removal is an important issue for both improvement projects and the on-going maintenance of a clear envelope alongside and over the road. Road authorities should have the ability to remove road safety hazards as promptly as practical. Net gain considerations, while required, should not be used to prevent the removal of the hazard.

The Government is committed to meeting its net gain objectives on road related projects, however it acknowledges that meeting offset requirements on a project by project basis may not be the most effective and efficient way to achieve the desired outcome

Recommendation 33. That VicRoads and municipalities be exempt from a planning permit for the clearing of roadside trees and hazardous native vegetation within defined distances from the edge of the road and heights above the road.

Recommendation 35. That requirements under the Planning Framework of the *Planning and Environment Act 1987*, be amended to exclude the need for a road authority to obtain a permit for removal of roadside vegetation which the authority considers poses an unacceptable risk to the safety of road travellers.

These recommendations are supported in principle

The Minister for Planning is currently overseeing an exemptions review in relation to the net gain policy. It is expected that decisions arising from that review will be available in early 2006. The Committee appointed to undertake the review have been made aware of the Committee's recommendations.

Recommendation 36. That the Planning Framework established by *Planning and Environment Act 1987*, be amended to include road safety as an objective.

This recommendation is supported in principle

The Government will consider the Committee's comments whenever reviewing the various elements of the Planning Framework as detailed in the response to Recommendation 33 and 35.

Recommendation 37. That to improve inter-departmental involvement in roadside safety issues the Department of Sustainability and Environment become part of the Road Safety Management Group for the Victorian Road Safety Strategy *arrive alive!*.

This recommendation is supported in principle

The membership of the Road Safety Management Group is limited to the government road safety agencies with a direct, on-going, operational role in managing road safety activities and programs. The Government would expect the Management Group to consult with the Department of Sustainability & Environment when necessary.

The role of the Department of Sustainability & Environment in delivering government policy in relation to vegetation maintenance and removal is a critical issue that is most effectively addressed in the proposed Code of Practice

The Government will also ask the Department of Sustainability & Environment to join the Road Safety Reference Group, a regular forum convened by VicRoads with broad membership including a range of government and non-government road safety stakeholders. This Group exchanges information and provides input and feedback for the development and implementation of road safety countermeasures.

Recommendation 38. That VicRoads, in conjunction with municipalities and the Department of Sustainability and Environment, develop guidelines for roadside tree planting.

This recommendation is supported

VicRoads will develop new Roadside Planting Guidelines. These guidelines will provide detailed advice on planting design for safe, attractive, environmentally sound and low maintenance roadsides and will be completed by the end of 2006.

The Government will ask VicRoads and municipalities, through the Municipal Association of Victoria, to agree on the content of the guidelines and their application by the end of 2006 to achieve consistency of application across the Victoria road network for any new plantings.

Recommendation 39. That there be more use in Victoria of new types of plastic or aluminium light poles and that a comprehensive program to replace hazardous poles with safer types be investigated by VicRoads and municipalities.

This recommendation is supported in principle

The Government will encourage VicRoads to continue to assess the potential for new products to reduce road trauma. It is considered preferable to specify performance requirements as this encourages design innovation within the industry rather than specify a particular pole type or material.

Road authorities aim to reduce the number of poles alongside a road and every opportunity is taken to share poles (for example many street lights are hung from power poles). Any

Government Response to Inquiry into Crashes Involving Roadside Objects

program to replace poles would need to be assessed on the basis of risk reduction and benefits to the community.

Substantial consultation and discussion occurs between the electricity distributors, municipalities and VicRoads prior to the installation of new public lighting assets in road reserves. In this regard, frangible aluminium poles that collapse or break away on impact have been available for many years. However in many instances where there is the need for the pole to support the electricity distribution conductors, the strength of these alternative poles has not been sufficient for use.

Recommendation 40. That the Office of the Chief Electrical Inspector develop a policy and initiate action to remove disused power line poles, identified by VicRoads or municipalities as a roadside safety hazard.

This recommendation is supported

The Office of the Chief Electrical Inspector has communicated with the five electricity distributors advising of the need for them to have policies and procedures to ensure any disused power poles are removed as soon as possible after they have been removed from service.

Recommendation 41. That VicRoads and municipalities should identify and effectively treat hazardous poles, especially poles on the outside of curves and poles which have been struck more than once.

Recommendation 42. That VicRoads develop a program of pole relocations and power supply undergrounding on high-volume high-crash risk urban arterial roads.

These recommendations are supported in principle

The Government will ask VicRoads to work with municipalities and the electricity distribution companies to develop a risk based approach to deal effectively with hazardous poles and meet the requirements of the Road Management Act.

The outcomes of this work will form the basis of a recommended program for consideration by Government in the annual budget process.

It is recognised that many poles perform several functions, such as electricity supply, telephone lines, street lighting and tram wire support. While undergrounding of the power supply function may facilitate the use of lighter, more frangible poles the overall risk reduction may not warrant the cost of undergrounding.

Recommendation 43. That VicRoads review Victorian practices with the aim of developing a program to improve the safety of irrigation channel structures if vehicles run off the road.

This recommendation is conditionally supported

Irrigation channel structures on declared arterial roads are the responsibility of VicRoads.

The Government will ask VicRoads to carry out a study by the end of 2006 to assess and evaluate the potential for a targeted safety program in future. Any proposals arising from the study will be considered on a safety cost-benefit basis in comparison with other safety initiatives and programs.

Recommendation 44. That VicRoads and municipalities ensure that:

- **Attention is given to bridge and culvert safety by widening of structures and clear identification of hazards;**
- **Fences and walls within road reserves are as far from the road edge as possible;**
- **Slopes of embankments and drains are reduced where possible;**
- **Landscaping not introduce roadside hazards; and**
- **All roadside furniture is as crashworthy as possible, located as far from the edge of the roadway as possible and surplus items are removed.**

This recommendation is supported in principle

The government will ask VicRoads to commission work to ensure the risks associated with items in the first three dot points are adequately reflected in the risk manager software package. This work will be completed by the end of 2006 and will be supported by the ongoing development of this tool by Austroads. This work will enable all road authorities to benefit from use of the risk manager.

VicRoads will develop roadside planting guidelines as outlined in Recommendation 38. Guidelines for other landscaping elements will be developed as part of the clear zone review to be carried out in response to Recommendations 6, 7 and 50.

The Government will ask VicRoads and municipalities through the Municipal Association of Victoria to agree on the guidelines for other landscaping elements and their application by the end of 2006 for new installations, to achieve consistency of application across the Victorian road network.

VicRoads is currently considering trials of new types of roadside furniture features, such as signposts, safety barrier attachments and guardrail delineator mountings, which reduce the hazard to motorcyclists in the event of a collision with the roadside furniture. The trials are to be conducted on rural routes with high motorcycle use, but subject to successful trials and cost-effectiveness, such products could be considered for wider use on the road network.

The Government will continue to encourage industry to develop new products to improve frangibility and cost of roadside furniture. VicRoads will continue to trial and evaluate innovative products and techniques and publish the findings where appropriate.

Recommendation 45. That VicRoads and municipalities prepare Roadside Management Plans for all arterial and major local roads in Victoria, based on guidelines developed by VicRoads.

This recommendation is supported in principle

VicRoads is currently developing guidelines for Roadside Management Plans which will also be recommended for use by municipalities. The Code of Practice described in response to Recommendation 32 will provide a basis for the assessment, management and treatment of risk.

Recommendation 46. That VicRoads guardrail guidelines address the issue of the need for drivers to briefly park their vehicles safely away from traffic lanes in emergency situations, adjacent to long lengths of barrier installed close to the roadway.

This recommendation is supported

The VicRoads guidelines for the installation of wire rope safety barriers have already been changed to reflect this recommendation. VicRoads will review all other guardrail guidelines.

Recommendation 47. That VicRoads undertake research into crash barriers and crash cushions by a research program to develop more appropriate barriers and testing standards for Victorian conditions over the next five years.

This recommendation is supported in part

Current barrier standards used in Victoria have been developed using the findings of extensive overseas research. While the government accepts that there would be benefit in an extensive local barrier testing and research program it is unlikely to be cost effective. A preferred approach is for VicRoads to continue to actively monitor developments in international standards and research.

VicRoads will develop a proposal for consideration by AustRoads for the establishment of a national barrier “best practice” monitoring capacity on an ongoing basis. This proposal will be referred to AustRoads for consideration in their annual research program. The proposal will also include a capacity for limited local research funding to address specific local issues that have not been adequately addressed internationally.

Recommendation 48. That VicRoads undertake a detailed analysis of the requirement for widespread installation of flexible roadside safety barriers on high speed Victorian highways. If appropriate, a long-term large-scale installation program should be proposed.

This recommendation is supported in principle

(Refer to responses to Recommendations 6, 7, 18 and 50)

Government Response to Inquiry into Crashes Involving Roadside Objects

The Government has established the Safer Roads Infrastructure Program (Stage 1) in which more than \$90m has been allocated to treatments to address run-off the road crashes. A further allocation in the order of \$20m is expected to be provided for run-off the road crash treatments from the Stage 2 program.

VicRoads has examined the Victorian State road network to identify lengths with the highest levels of run-off the road crashes. Detailed assessments were carried out within these lengths to identify sections with significant risk from roadside hazards. A range of countermeasures were then considered for these sections, and treatment projects were developed.

Benefit cost ratios were calculated based on the run-off road crashes that had occurred on the sections where treatments were proposed.

Projects were then listed in order of highest benefit-cost ratio as the basis for prioritisation. Some flexibility to ensure consistency of treatments along a route was also applied (for example to avoid short gaps in shoulder seals).

The program has provided important opportunities for the establishment of new working relationships between VicRoads, DSE and local government as well as a better understanding between all parties of implementation issues.

In many locations (including some state highway lengths) current environmental practice for vegetation and the presence of embankments near to the edge of the road shoulder prevent the installation of flexible barriers as the required deflection parameters for the barrier to work as designed cannot be achieved. In these circumstances the more rigid guard rail type barriers are a viable alternative.

The evaluation of the program will be an important input into the development of potential longer term large scale barrier installation programs.

The implementation of future programs will be subject to cost effectiveness and available funding when compared to other potential road safety initiatives in Victoria.

Recommendation 49. That VicRoads and municipalities ensure that all existing guard rails, barrier systems and crash cushion installations meet, as a minimum, current standards. This includes crucial details such as end anchorages and post installations.

This recommendation is supported in part

The Government will continue to target road safety investment to programs which deliver the most cost effective reductions in road trauma. Upgrading all existing systems to current standards is unlikely to offer the best value for money. In many instances older barrier systems, while not meeting current standards, still provide a significant reduction in risk for road users.

There should be an emphasis on maintaining existing infrastructure to the standard relevant when it was installed, to ensure that it performs as originally intended. Any upgrading will then be undertaken when identified as being warranted as a priority by a risk based assessment and subject to available funding.

Government Response to Inquiry into Crashes Involving Roadside Objects

