Submission to the State Sustainability Strategy

Main Roads Western Australia

March 2002

1. INTRODUCTION

In December 2001 the Premier, Dr Geoff Gallop, released a consultation paper for the State Sustainability Strategy for Western Australia. The paper provided a broad discussion of sustainability issues and outlined the process of developing the Strategy. Government agencies were invited to provide written submissions in response to the consultation paper. This document represents the submission of Main Roads Western Australia.

2. MAIN ROAD'S ROLE WITHIN THE STATE TRANSPORT SYSTEM

Main Roads Western Australia (Main Roads) is charged with the responsibility of managing the network of major roads within Western Australia. It does not have responsibility for minor and local roads. These roads are generally managed by local government for a statutory authority.

Main Roads is a statutory authority within the Department of Planning and Infrastructure (DPI) portfolio. The DPI is responsible for the overall transport planning function, part of which is the strategic-level planning of roads. Main Roads is responsible for the delivery of road construction projects and the management and maintenance of the existing road network.

3. THE ECOLOGICAL 'FOOTPRINT' OF ROADS

By their very nature, roads present particular challenges to the sustainable management of the environment. The linear nature of roads means that they necessarily will pass through many different environments. Apart from the direct effect of the loss of vegetation from the path of the road, there is the potential for degradation through 'edge effects' on the environment along the route. They may also pose environmental threats by presenting barriers to the passage of water and fauna. They can be a conduit for the spread of weeds and plant disease.

These impacts can certainly be minimised by appropriate route selection, design and environmental management plans. However, it must be recognised that the management of road projects is a 'balancing act' whereby economic, social and environmental benefits and costs are balanced.

4. HOW WELL ARE SUSTAINABILITY PRINCIPLES REFLECTED IN CURRENT PRACTICES?

Sustainability is about the integration of social, environmental and economic factors into the decision making process.

The following generalisations can be made regarding the current treatment of economic, environmental and social factors in Main Roads decision-making processes:

- Processes and practices adopted by Main Roads typically consider environmental, social and economic aspects, but rarely attempt to explicitly package these into a 'sustainability' theme
- The consideration of economic factors in decision-making processes is 'standard practice'. These are generally in the form of a benefit-cost ratio.
- The integration of environmental aspects into decision-making processes is generally well developed. Further improvements are occurring as part of a current

project to achieve ISO 14001 compliance for Main Roads environmental management systems.

- The integration of social aspects is driven mainly by public consultation and customer service needs. It is recognised that methods for integrating social aspects in decision-making processes are less well understood. Main Roads does however incorporate road safety benefits as a major component of its assessment and prioritisation process.

5. DISCUSSION OF SUSTAINABILITY AND KEY MAIN ROADS ACTIVITIES

A discussion of current sustainability issues across some of key management activities is provided below.

5.1 Policy

Main Roads does not have a policy specifically addressing sustainability. The principles of sustainability are nevertheless reflected within the current policy framework of the organisation. For example, the draft Main Roads Strategic Plan 2002-2005 indicates that Main Road's purpose is "to provide a safe and efficient road network as part of an integrated Western Australian transport system within a sustainability framework" (Appendix A). These principles are also reflected in the Main Roads Code of Conduct and Customer Service Charter (Appendix A). The Main Roads Environmental Policy Statement states that Main Roads seeks to achieve "balanced economic, social, safety and environmental benefits for the community" (Appendix B).

Main Roads is also a signatory to a sustainability policy at the national level through its membership of Austroads.

5.2 Performance Indicators

Performance indicators (PIs) have been used by Main Roads for a number of years. Performance measurement is part of Main Road's management approach, and is also required by State Treasury. The PIs relate to efficiency and effectiveness and are measured in terms of quantity, quality, timeliness and cost. The PIs are reported in the Main Roads Annual Report, together with a comparison between actual and target performance.

The PIs currently used by Main Roads are:

- Maintenance and minor modifications costs;
- % of vehicle kilometres travelled (VKT) meeting roughness standards;
- Ride quality (community perceptions survey);
- Costs per 1,000 million VKT;
- % of VKT on roads meeting operational standards;
- % of network available to large freight vehicles;
- Peak hour travel times;
- Road construction costs per lane kilometre;
- Return on construction expenditure (benefit cost ratio);
- Bridge construction costs per square metre of bridge deck;

- Environmental performance (community perceptions survey); and
- Road fatality/serious injury rates per 100 million VKT.

These PIs are appropriate measures of Main Roads core business, but at present there is limited provision for the consideration environmental or social aspects within the PIs.

There is presently one PI relating to environmental performance, although this is based on the results of a community perceptions survey rather than the use of objective data against specific environmental objectives and targets. Additional specific and measurable environmental PIs are currently under development.

5.3 Reporting

Public reporting by Main Roads through its Annual Report and website concentrates on the core activities and outputs of the organisation. Sections of the report are dedicated to social and environmental aspects. The results of a public perceptions survey are included.

A project which has commenced aimed at developing a public environmental report. This reporting will specifically deal with environmental management issues and environmental performance. Currently there are no plans to extend this to a 'sustainability' or 'triple bottom line' report, although this could be considered a logical extension. The introduction of public environmental reporting is planned to commence in early 2004 for the period covering the 2003 calendar year.

5.4 Project Planning

Main Roads has in the past undertaken various approaches to incorporate economic, environmental and social values associated with road projects into the assessment of road options. The use of multi-criteria analysis (MCA) has long been recognised as a tool of benefit in this regard. Variants of this methodology have been applied at both the individual project level and the road network level. In the early 1990s MCA was used in the assessment of future road projects in the Perth metropolitan region. The Roads 2020 planning work in the mid 1990s utilised a structured MCA approach.

The analysis of route options for major road projects usually involves some form of MCA. The relative weighting applied to different factors is an issue, and stakeholder/community involvement may influence the agreed approach.

5.5 Road Investment Prioritisation

On an annual basis, Main Roads undertakes a formal process to update a rolling ten year road investment plan. The plan is a prioritised list of projects based on needs identified through a systematic review of current and future road use. The process of arriving at a prioritisation of projects involve two steps.

The first step involves identifying and assessing potential individual road projects by Main Roads regional offices. The assessment derives the economic efficiency indicators, i.e. benefit –cost ratios (BCRs) of projects, which are carried out by using the Western Australia Road Evaluation System (WARES) for rural road projects and

the TRIPS system for metropolitan projects. The BCRs are then factored by considering social, environment, safety and economic impacts of the projects to produce corresponding 'value-for-money' scores as a multicriteria variant.

The second step is to prioritise all candidate projects in a descending order with respect to their value-for-money scores.

Work has commenced to enhance the accommodation of environmental and social inputs and to develop the capability of exploring different scenarios of road investment options within the framework of sustainability.

5.6 Contracts and Project Management

Much of Main Road's activities are project based, and construction and maintenance works typically utilise the services of contractors. Thus contract and project management systems need to be well developed to achieve the desired outcomes. This is true of environmental and social outcomes as well as the more obvious 'value for money' aspects.

The project and contract management systems that have been developed by Main Roads need to incorporate the policy and standards relevant to sustainability issues. In practice this occurs through the linking of the project and contract management systems with Main Roads environmental and other standards and guidelines eg environmental impact assessment, management plans, approvals, community consultation.

As a further level of control, steps are being taken for the introduction of a pre-qualification system for major construction contractors that will require them to be certified to the international standard for environmental management systems (ISO 14001).

6. SUSTAINABILITY ISSUES OF PARTICULAR RELEVANCE TO MAIN ROADS

6.1 Land Management Issues

The Main Roads system of road reserves is a network of linear land parcels (~ 17,000 km of varying width corridors) managed by the Commissioner of Main Roads (CMR) under the MR Act (1930) for the main purpose of road transport. By default, the CMR is also a land manager on behalf of the Western Australian community.

The core function of the road reserve is for road transport, but the road reserve corridor also serves other functions such as:

- Tourism;
- Biodiversity;
- Social (eg heritage and visual amenity);
- Ancillary (eg road user facilities); and
- Public utility corridors.

Explicit policy objectives for the roadside are included in the Main Roads Environment Policy, i.e. conservation values and amenity values of the roadside are maintained or enhanced wherever compatible with road transport objectives. This is reflected in performance indicators associated with long term road maintenance contracts. Under these contracts, the contractors are required to manage the road reserves such that there is no decline in the condition of roadsides. An innovative system has been developed whereby digital video records of roadsides are collected at regular intervals and assessed to determine the condition of roadside vegetation across the network (Appendix C).

Main Roads recognises the conservation value of roadsides, and seeks to manage the roadside accordingly. Nevertheless, this is a huge land management task and there is considerable debate about what is the appropriate level of resources to devote to this task. Because of their narrow linear form, and the nature of their use for transporting people and materials, and providing space for public utilities, there is an inevitable tendency for the gradual decline of conservation value of road reserves. This is particularly so in urban and agricultural settings, where the 'edge effects' of threatening processes are particularly severe.

The importance of road reserves within the context of the overall State conservation estate is an issue. It is generally held that that road reserves have an important function as habitat and wildlife corridors, and there is evidence to support this view, eg a study of birds in road verges commissioned by Main Roads (Newby, 2000). However, the question arises as to how resources are most effectively applied towards maintenance of the conservation values of road reserves in the context of the larger conservation estate. For example, should resources be selectively applied where there is a clear benefit, say in providing a habitat corridor between two key conservation reserves? These road reserve land management issues cannot be resolved by Main Roads alone. A comprehensive State conservation strategy is required which extends to the role of road reserves.

6.2 Compensating for Unavoidable Environmental Losses – Vegetation and Wetland Replacement Issues

In the road planning process Main Roads naturally seeks to minimise environmental impacts by avoiding sensitive environments or those having significant conservation value. However, this may not always be achievable. For example, the Swan Coastal Plain contains areas of vegetation and wetland with high conservation value. A number of these areas are located within reserves established for future road construction. The road reserves were often established prior to the recognition of these areas as having conservation significance. Indeed, in the Perth metropolitan area, the establishment of road reserves and subsequent urban build up around the road reserves has led to a situation where the road reserves contain the only significant remaining natural areas. Such remnant vegetation and wetlands are now afforded regulatory protection, and wetland losses are of major concern to both environmental agencies and community stakeholders.

Construction of roads within these reserves is increasingly problematic. One strategy being pursued by Main Roads and the Department of Environmental Protection to mitigate these unavoidable environmental impacts has been for Main Roads to purchase 'replacement' sites for inclusion into the conservation estate.

This is seen as providing an appropriate 'offset' for environmental losses associated with road projects.

Attempts are being made presently to develop principles for the selection of 'offset' land. Regulatory agencies are naturally insistent that that 'like should be replaced by like' i.e. replacement land must have similar properties, ecological functions, conservation values (and location) to that which is being lost. The replacement property must also be outside of the currently proposed conservation estate.

The onus is on Main Roads to identify and acquire the property. In practice, this is proving to be a difficult exercise due to the shortage of suitable sites in the metropolitan area remaining in private ownership. The task would be far more efficient if the State was able to provide direction in terms of what sites are considered of potential value for inclusion in the conservation estate. Taking this a step further, it may be preferable for development agencies such as Main Roads to contribute to a centralised conservation fund to allow purchases to be made according to a defined overall metropolitan conservation plan. This is an issue where further direction and leadership could be provided by government in terms of a State conservation plan.

6.3 Road Building Materials

The use of raw materials in road building and maintenance clearly has important sustainability implications.

6.3.1 Natural materials

Gravel and other road building materials (RBMs) have in the past been regarded in Western Australia as a readily available. In recent years this situation has changed with the recognition that RBMs are a finite resource. In addition, accessibility to RBMs is diminishing due to the demands of competing land use.

In recognition of a need to better understand the ongoing demand for RBMs, to examine options for optimal use of RBMs and to address the environmental implications, the Ministers for Transport and Environment established the State Gravel Supply Strategy Group in 1994. Following a process of extensive investigation and consultation, the Group produced the State Gravel Supply Strategy in 1998 (Main Roads, 1998). The Strategy considered the entire State road network, both local roads and the major roads for which Main Roads has responsibility.

The Strategy went some way towards establishing the demand and availability of the resource. It concluded that there was likely to be insufficient resources in some areas of the State, particularly in areas of high population growth. The Strategy recognised that past access to low cost resources could not be sustained and that additional costs were inevitable. This would result from a combination of the depletion of resources immediately adjacent to roads and the alienation of resources within the conservation estate. It was also recognised that the price of materials should reflect not only the cost of extraction, but also the cost of reduced productivity of farmland and the environmental costs, including the cost of satisfactory site rehabilitation.

The State Gravel Supply Strategy contains a number of recommended actions, including research and development work, relevant to a State Sustainability Strategy.

6.3.2 Recycled materials

Asphalt from old pavements is not usually recycled in Western Australia. The reason for this is that in Western Australia only very thin asphalt layers (typically 30mm) are used which provide a surfacings function rather than a structural one.

Main Roads does recycle two waste materials into pavements, namely crushed demolition waste and old tyres.

Recycled Concrete - Main Roads has developed specifications for both sub-base and basecourse material manufactured from crushed recycled concrete. Main Roads is currently assisting a recycling company in Kwinana to manufacture material which conforms to the required specification. Planning for joint field trials between Main Roads and the Town of Kwinana using crushed concrete from construction and demolition waste is also taking place. Provided suitable material can be produced, the trials will be constructed on a section of Town of Kwinana pavement. If the material proves to be satisfactory and competitive cost wise, the potential usage could be large, and would probably only be limited by the amount of recycled concrete available.

Recycled Tyres - The only current use of old tyres within the road construction industry is for the manufacture of rubberised bitumen, through the use of crumb rubber. Crumb rubber (scrap rubber) consists of fine particles, generally vehicle tyre buffings from retreading works. Crumb rubber is added to bitumen to provide an elastic binder, whose properties can be an advantage in a number of circumstances. Main Roads specifies that crumb rubber bitumen is used within stress alleviating membranes, stress alleviating membrane interlayers and for water-proof membranes on bridge decks. The use of crumb rubber is reducing mainly due to polymer modified binders (which can provide similar benefits) becoming more cost effective.

Recycled Plastics – The potential for the use of recycled plastics in traffic noise barrier structures is currently being examined by Main Roads. Recycled plastic noise barriers have been installed on the Mitchell Freeway and are currently being evaluated for their durability. The use of noise barriers is expected to become an increasingly common feature along major roads in built-up areas.

6.4 Other Issues

The above examples, while representing the main issues of importance to Main Roads, are not the only ones relevant to sustainability. Traffic noise, air quality, cultural heritage, landscape and salinity are also significant. Salinity, for instance, threatens a significant portion of the Main Roads asset in the agricultural regions and will result in increased maintenance costs. Although it is an issue that increasingly affects Main Roads, it is an issue over which the organisation has little or no control.

7. HOW CAN PROGRESS BE ASSISTED BY A STATE SUSTAINABILITY STRATEGY?

7.1 Policy Direction from Government

Main Roads has not yet developed a specific 'stand alone' sustainability policy. There may well be value in Main Roads adopting a specific sustainability policy in terms of general awareness raising within the organisation and in providing added impetus for the adoption of sustainability principles within business processes and performance assessment. Some direction from government on this matter would certainly be of assistance, and provide for consistency across government agencies.

As alluded to above, Main Roads believes that there is an urgent need for policy in the area of a State conservation strategy and plan. Two main aspects are of interest:

- The role of road reserves; and
- Acquisition of 'replacement' of conservation estate unavoidably lost as a consequence of road construction.

7.2 Research and Development

There are a number of areas where research and development work could assist Main Roads is developing and adopting sustainable practices. Two issues worthy of mention are materials recycling and roadside vegetation condition assessment.

8. CONCLUDING REMARKS

Main Roads recognises the value and importance of adopting sustainability in policy and practice. What is now needed is an understanding of how the principles can be adopted in a policy sense, and perhaps more importantly how sustainability can be achieved in the day-to-day business of Main Roads, i.e. an operational interpretation of sustainability.

The Government's sustainability consultation paper is timely and welcome. We hope that the above discussion provides assistance in the development of a State Sustainability Strategy.

9. REFERENCES

Main Roads (1998) State Gravel Supply Strategy, Final Report, March 1998.

Newby, B (2000) Birds in Rural Road Verges in Southern Western Australia, Birds Australia.

Appendix A

Main Roads Western Australia

Draft Strategic Plan

2002-2005

Main Roads Western Australia

Draft Strategic Plan

2002-2005

OUR PURPOSE

To provide a safe and efficient road network as part of an integrated Western Australian transport system within a sustainability framework

OUR VISION

A vital organisation, accountable and responsive to the road transport needs of the community.

OUR OBJECTIVES

To provide:

- A safe and accessible road system for all road users including public transport, pedestrians, cyclists and customers with disabilities
- Time and cost savings for all road users
- Regional development and improved road user services
- A balanced road investment program
- Best use of available resources

BENEFITS

The benefits to industry and the community from investment in the road program are:

- Improved accessibility
- Less road trauma
- Better public transport
- Integrated freight network
- Reduced travel times
- Reduced congestion and pollution
- Reduced transport costs
- Resource development - growth in mining and agriculture
- More tourism opportunities
- Regional growth
- Job creation

ABOUT THE PLAN

This 2002-2005 strategic plan identifies the new corporate challenges ahead and outlines strategies to address them.

Its role is to set the scene for regions and branches across Main Roads to undertake their business in a coordinated manner in accordance with corporate direction and priority provided by this plan.

Our job is to manage these new challenges in a balanced way so that our many ongoing efforts directed at achieving our objectives are not frustrated or compromised.

The challenges outlined in this plan were identified by consideration of input from Government, our Minister, our five official Advisory Groups, external customers/stakeholders and staff.

ONGOING ACTIONS

Whilst there are new challenges, it is recognised that there is much important work already underway that must be continued including the following:

- Implementing the Government's policies and road priorities
- Exploring Government policy options in relation to heavy vehicles/routes
- Strengthening our customer relationship management
- Strong emphasis on road safety and road user services
- Development and review of standards and guidelines in accordance with best practice
- Improving project and contract management performance
- Business planning and improvement using the business excellence framework
- Ensuring we have the right people with the right skills in the right place now and in the future
- Addressing key issues raised through the ongoing employee opinion surveys

NEW CHALLENGES AND STRATEGIES

GOVERNMENT

The Issue: Recognition and appreciation of the economic and social worth of the road network

The Challenge: As manager of the State road network and associated assets with a value in excess of some $11 billion, Main Roads needs to develop new solutions for the management of the condition and performance of the road network.

Strategies: Develop a robust predictive model to demonstrate the effect that different funding scenarios will have on road condition and network performance. Monitor and report on road network condition and performance. Provide specialist advice with respect to roads. In partnership with Local Government and the private sector, develop and deploy innovative road management practices.

Measures of Progress:

Feedback received from the Government
Road network performance indicators

COMMUNITY

The Issue: The Government's commitment that community input and concerns will be fully sought and acted upon.

The Challenge: Implement best practice in community consultation relating to road projects and road network management including, traffic and safety management, network capacity, maintenance strategy and the level and extent of improvements.

Strategies: Involve the community and develop responsive, flexible and sustainable solutions. Review different approaches, determine the best way forward and deploy across Main Roads.

Measures of Progress:
- Customer and community feedback

NEW CHALLENGES AND STRATEGIES

CORPORATE CAPABILITY

The Issue: Strengthening Main Roads' in-house technical and management capability to retain the role as the State's principal source of road management expertise.

The Challenge: To be recognised as a centre of expertise for road management in Western Australian.

Strategies: (1) Implement endorsed recommendations of the Review of Main Roads' Contracting. (2) Identify and resource core functions through comprehensive and rigorous annual planning. (3) Carry out 25% of design work with in-house resources within 3 years.
(4) Develop graduates and trainees through assignment of responsibility and mentor support.

Measure of Progress:
- % of design work undertaken in-house over time
- Assessment and ongoing monitoring of corporate capabilities and skill level

REGIONS

The Issue: Resourcing regional offices.

The Challenge: To maintain a skill base that allows a full appreciation of the road network needs specific to the region and to respond effectively to changing workloads/patterns across the organisation and deploy resources to maximum benefit.

Strategies: Strengthen resource management and resource planning with a focus on delivery of the road program. Investigate skills development to meet changing needs. Evaluate costs and benefits of alternative options to attract people to the regions.

Measure of Progress:
- Skill/competency and experience levels
- Customer feedback

PARTNERSHIPS: PORTFOLIO

The Issue: Developing a productive working relationship across the portfolio and particularly with the Department for Planning and Infrastructure (DPI).

The Challenge: To establish arrangements with DPI which recognise our complimentary roles and responsibilities.

Strategies: Provide input on policy, planning and regulation in relation to the management of the State road network. Develop mutually beneficial operating arrangements. Work with DPI to develop a forward work program and implement the agreed road program.

Measures of Progress:
- Customer feedback
- Agreements

PARTNERSHIPS: LOCAL GOVERNMENT

The Issue: Maintaining and strengthening the relationship between Main Roads and Local Government.

The Challenge: For Main Roads to assist Local Government to improve the management of the States' road system.

Strategies: Provide technical assistance to Local Government. Develop and manage funding agreements. Assist Local Government with the development of road hierarchies, investment and programming.

Measure of Progress:
- Customer feedback
- Agreements

OUR CODE OF CONDUCT (Extract)

In the Community we will:

Be responsive to the road transport needs of the community
Look for creative, value for money solutions
Value and support new ideas
Make road safety a priority
Protect and enhance the environment
Ensure a safe and efficient road network

In Main Roads we will:

- Value and promote workplace diversity
- Use information responsibly
- Encourage others to contribute and value their contribution
- Set good examples for those around us
- Understand and ensure that we are accountable for our actions
- Give opinions but always support the team decision
- Approach our work with flexibility and enthusiasm
- Enhance our skills and knowledge
- Provide an environment which enables our individual development
- Acknowledge individual and group achievements
- Work together as one organisation towards common goals
- Share information and knowledge
- Maintain safe and health workplaces
- Practice open and fair decision making
- Promote open and effective competition

In everything we do we will:

Comply with our external obligations
Comply with Main Roads' Standards, Codes, Policies and Practices
Comply with Government procurement policy
Respect everyone's right to courtesy, consideration and fairness
Strive for excellence

OUR CUSTOMER SERVICE CHARTER

SERVICES

Develop and Maintain Major Roads (Infrastructure)		**Safe and Efficient Movement on the Roads (Operations)**	
New Works	**Maintenance**	**Safety and Efficiency for Motorists**	**Safety and Efficiency for Users other than Motorists**
Developing and scoping of new roads Manage construction of freeways, major roads and bridges Managing the environment Setting design and construction standards for new roads Management of State and Federal Black Spot programmes Provide design and technical expertise Construction of rest areas and additional lane widths for cycling safety Implement passing lanes	Road, bridge and verge management Road fault reporting service Emergency response Roadside and median strip management Maintenance of rest areas Kerb design improvement and vehicle slowing devices Improvement of roads Provide information on who has responsibility for which roads	Approval and monitoring of road closures Installation of passing lanes and sealing of shoulders Route development and monitoring for large and heavy vehicles Installation and coordination of traffic signals Monitoring traffic flow and volume Speed signing on all roads Installation and maintenance of road signs and lines on all roads Collection and monitoring of crash data	Construction of cycle paths along freeways and major roads Pedestrian and cycling access across major roads and freeways Establishment of policies, guidelines and standards for users other than motorists on all relevant issues including cycling and pedestrian shared paths, school guard crossings and school zones.

STANDARDS OF SERVICE MRWA Will:

Prior to commencement: Develop the best design and consult with the community Communicate with potentially affected groups **During Construction** Provide project information Provide ongoing consultation with those affected Ensure the safety of workers and the public Minimise pollution and disruptions to traffic	Provide 24 hour toll free road closure reporting service – 1800 013 314 Provide 24 hour toll free road fault reporting service – 1800 800 009 Provide advance notice to public of major roadworks Follow up on contractors to ensure work is carried out on time In emergency cases respond to maintenance issues within 4 hours	Constantly monitor traffic flow and volume on all metropolitan roads Ensure speed limits on roads are appropriate Ensure signing complies with standards Provide information to the public on traffic works and flow Synchronize traffic signals to optimise traffic times Provide timely information on road conditions Ensure routes and usage of large and heavy vehicles are managed	Consult with relevant agencies and groups Seek direct input from stakeholder and customer groups Contribute to cross government peak bodies on bicycle and pedestrian issues Work with and assist other agencies to promote cycling and walking Consider the needs of people with disabilities when planning and modifying road assets Comply with Standards for accessibility to roads

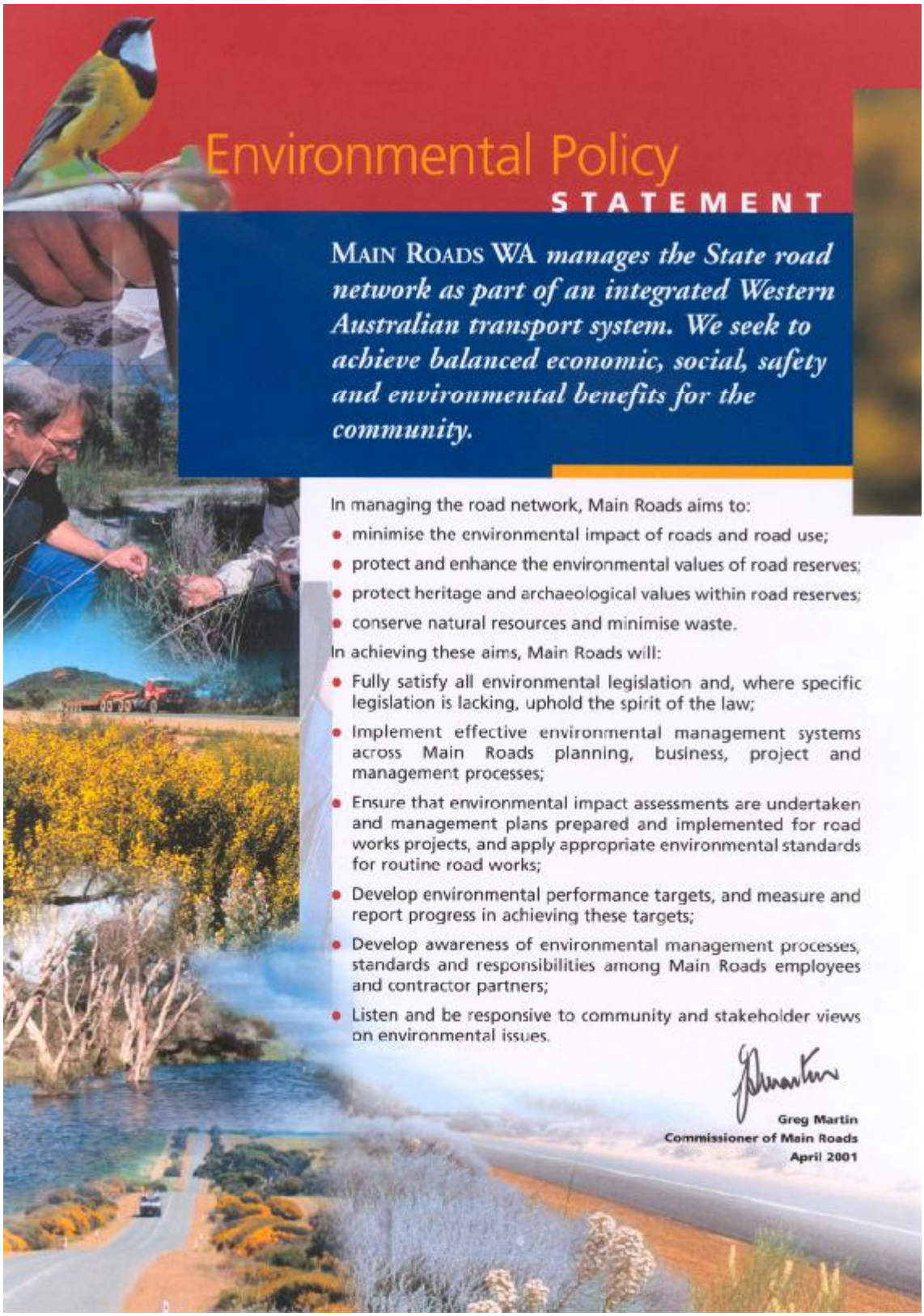
MAJOR CUSTOMER GROUPS

General public Road users(cars, trucks, heavy haulage, motor cyclists, cyclists, pedestrians) Residents and business affected by construction and maintenance Consultants and contractors Road user and tourism groups Transport industry	General public and pedestrians Road users Road user and tourism groups Transport industry State and local government	General public People with disabilities Groups representing people with disabilities Pedestrian and cycle groups Seniors and children

Appendix B

Main Roads Western Australia

Environmental Policy


Environmental Policy
STATEMENT
MAIN ROADS WA manages the State road network as part of an integrated Western Australian transport system. We seek to achieve balanced economic, social, safety and environmental benefits for the community.
In managing the road network, Main Roads aims to:
• minimise the environmental impact of roads and road use;
• protect and enhance the environmental values of road reserves;
• protect heritage and archaeological values within road reserves;
• conserve natural resources and minimise waste.
In achieving these aims, Main Roads will:
• Fully satisfy all environmental legislation and, where specific legislation is lacking, uphold the spirit of the law;
• Implement effective environmental management systems across Main Roads planning, business, project and management processes;
• Ensure that environmental impact assessments are undertaken and management plans prepared and implemented for road works projects, and apply appropriate environmental standards for routine road works;
• Develop environmental performance targets, and measure and report progress in achieving these targets;
• Develop awareness of environmental management processes, standards and responsibilities among Main Roads employees and contractor partners;
• Listen and be responsive to community and stakeholder views on environmental issues.
Greg Martin
Commissioner of Main Roads
April 2001

Appendix C

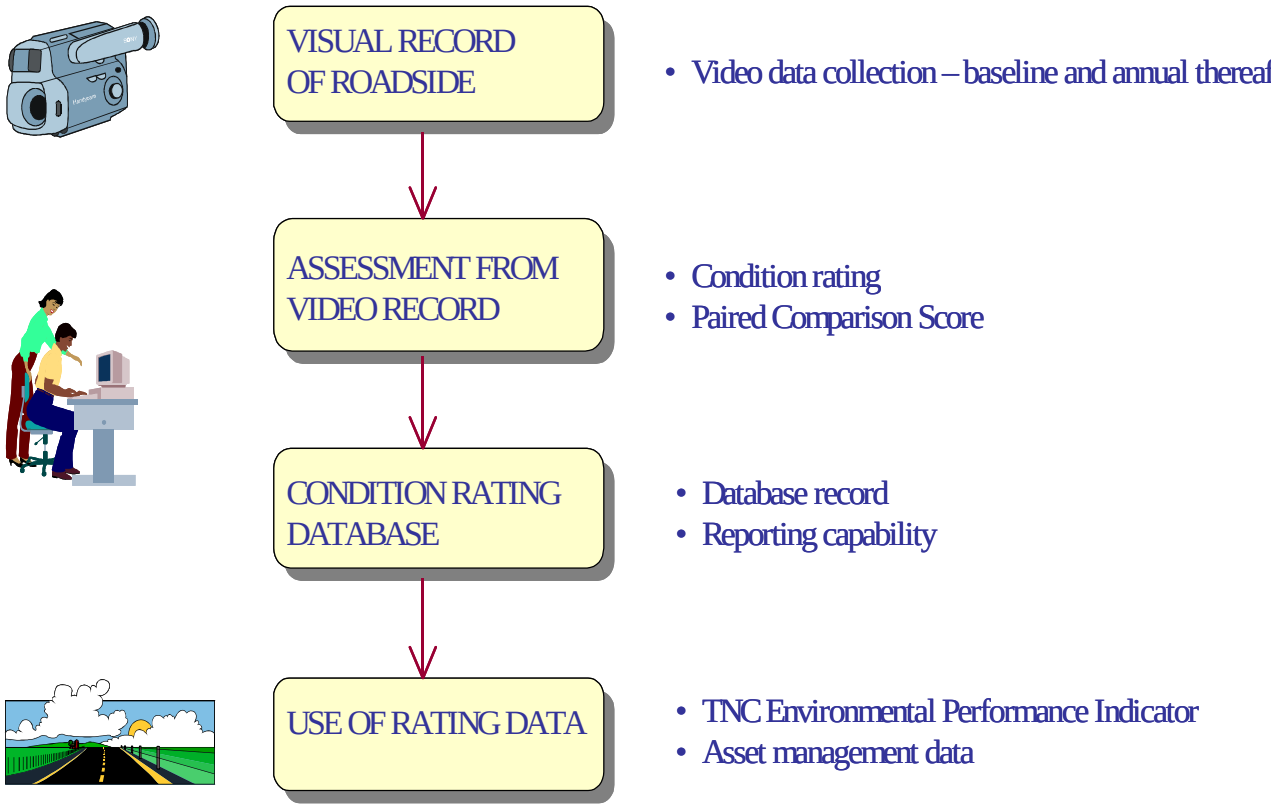
Overview of Roadside Vegetation Condition Rating Method

ROADSIDE VEGETATION RATING SYSTEM

1. PROCESS

The key steps and components in the process of rating condition are represented below.

SUMMARY OF PROCESS



2. CONDITION RATING SCALE

The condition of the roadside vegetation is assessed from the video record using a scale (1 poor – 5 very good). A score of 5 is only used for intact remnant vegetation with minimal apparent signs of disturbance. The descriptive rating scale reflects the differences in the extent and type of changes in vegetation patterns in rural and urban roadsides. Only individuals who are experienced in the assessment of roadside vegetation and trained in the use of the rating method are used as assessors.

RATING SCALE FOR ROADSIDE VEGETATION CONDITION IN AGRICULTURAL AREAS.

The rating scale provides the basis for assigning the rating of roadside condition. Typical examples of each rating value are provided in the guidance notes section 6.10 of the guideline on the assessment of roadside vegetation condition Document No. 6707/004.

Rating	NR	1	2	3	4	5
Description	**Not Rated**	**Very Low Rating**	**Low Rating**	**Medium Rating**	**High Rating**	**Very High Rating**
Extent of native vegetation, weeds or bare soil.	**Unable to assign a rating** Video quality too poor, eg dark shadows/too much sun, Roadside slopes away and not visible Roadside on bend and not visible	**No or very little native vegetation**. Essentially all weeds or bare ground with little or no native vegetation remaining.	**Low extent of native vegetation.** Scattered individuals or clumps of native vegetation, with extensive weeds or bare ground.	**Medium extent of native vegetation .** Native vegetation distributed throughout or as significant clumps interspersed with weeds/bare ground.	**High extent of native vegetation .** Mostly native vegetation but with some weedy areas, obvious patches of damage, or a missing stratum.	**Essentially intact native vegetation** . Original native vegetation with only minor and dispersed weed infestation or other damage.

NOTES

PURPOSE The purpose of this scale is to rate the roadside vegetation condition, using a video record of roadsides in agricultural areas. It is not the purpose of this scale to suggest maintenance or remedial actions.

APPLICATIONT The scale should be applied to 200 m road lengths for all listed roads to be rated using the rating scale for roadside vegetation condition in agricultural areas.

ASSESSMENT ZONE That portion of the road reserve between the edge of the clearance zone and the edge of the road reserve. In general, the clearance zone extends from the edge of the carriageway to the back slope of the table drain. Road medians may also be rated using this scale.

DEFINITIONS

Agricultural Areas The areas listed by MRWA with road links (or part of road links) that are to be rated using the rating scale for roadside vegetation condition in agricultural areas. These are typically adjacent to agricultural land and this may include forest, woodland, shrubland or heath vegetation.

Native vegetation Vegetation that would have been present in the region prior to clearing and other development or may include areas of roadside revegetation with species local to the area. Refer to Appendix A *Background notes on Roadside Management.*

Stratum Refers to the layers formed by the canopies of plants with different life forms. For example grass and herbs form a ground- or bottom layer (stratum), shrubs may provide a middle layer (stratum) whilst the tree canopies form the upper layer (stratum). This example would be of a very simple vegetation type. In mature forest and woodland there may be many strata. Note that in some vegetation, such as grasslands and shrublands, there may only be one or two strata.

Weeds Any plant species that is out of place; in rural areas non-native vegetation species would typically be considered as weeds.

RATING SCALE FOR ROADSIDE VEGETATION CONDITION IN URBAN AREAS

The scale provides the basis for assigning a rating of roadside vegetation condition. Typical examples of each rating value are provided in the guidance notes section 6.10 of the guideline on the assessment of roadside vegetation condition Document No. 6707/004..

Rating	NR	1	2	3	4	5
Description	**Not Rated**	**Very Low Rating**	**Low Rating**	**Medium Rating**	**High Rating**	**Very High Rating**
Extent of bare Soil and Vegetation cover	**Unable to assign a rating** Video quality too poor, eg dark shadows/too much sun, Roadside slopes away and not visible Roadside on bend and not visible	Mainly bare soil with minimal vegetation cover. May include signs of scouring or soil surface movement. May include some paved surfaces of poor quality.	**Mainly annual grasses/herb cover with some bare soil surfaces**. Only some shrubs, trees and lawn grass areas. Mulched surfaces with no plantings.	Medium roadside cover of shrubs, trees and lawn grass. Some annual grasses/herb cover. Limited areas of bare soil surfaces. Mulched surfaces with new plantings.	High roadside cover of shrubs, trees and lawn grass. Very Limited annual grasses/herb cover or bare soil surfaces. May include some irrigated plantings or lawn grass.	Complete roadside cover of shrubs, trees and lawn grass. Area is irrigated, appears unified in appearance and is well maintained. May include some quality paved surfaces.
If the roadside is pre-dominantly paved then use the scale below to assign a rating						
Condition of Paved surfaces			Signs of deterioration including features such as cracking.	Limited signs of pavement deterioration.	No signs of deterioration. May include feature decorative paving.	

NOTES

PURPOSE The purpose of this scale is to rate the roadside vegetation condition, using a video tape record of roadsides in urban areas. It is <u>not</u> the purpose of this scale to suggest maintenance or remedial actions.

APPLICATION The scale should be applied to 200 m road lengths for all listed roads to be rated using the rating scale for roadside vegetation condition in Urban Areas.

ASSESSMENT ZONE That portion of the road reserve between the edge of the clearance zone and the edge of the road reserve. In general, the clearance zone extends from the edge of the carriageway to the back slope of the table drain. Road medians may also be rated using this scale.

DEFINITIONS

Urban Areas The area listed by MRWA with road links (or part of road links) that are to be rated using the rating scale for roadside vegetation condition in urban areas.

Roadside Vegetation This may include remnant native vegetation or roadside planting (lawn grass, groundcovers, shrubs, trees). Planting may include plant species local to the area.

Native Vegetation Vegetation that would have been present in the region prior to clearing and other development or may include areas of roadside revegetation with species local to the area. Refer to Appendix A *Background notes on Roadside Management*.

Weeds Weeds are any plants that appear out of place. In rural areas non-native vegetation species would typically be considered as weeds. In urban areas any plant species that invades roadside landscaping may be considered a weed.

Paved surfaces Areas of paving (eg footpaths) that may form part of any amenity landscaping of the roadside in urban areas. May include in-situ or concrete paving slabs, brick pavers, cement stabilised soil, stone pitching or other impervious built surface treatments.