
Environmental Audit

TYERS RIVER CATCHMENT

Responses to Recommendations
Addendum to EPA Publication 782
September 2002

because this is our home



TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

RESPONSIBLE AGENCY RESPONSES TO RECOMMENDATIONS

After release of the Tyers River Catchment Environmental Audit report, responsible agencies were invited to provide responses to the recommendations put forward in the final report. This opportunity enabled stakeholders and interested parties to contribute information about programs that may have been implemented since the audit period. Responses were received from most nominated agencies, and are included in the following table. Although not directly responsible for implementing recommendations made in the Audit report, the Tyers River Catchment Project Steering Committee did provide a response to the Audit findings and recommendations, and a summary of this response is included in this document.

	Recommendations	Agency Responsible	Response to Recommendations
<i>General Forestry Activities and the Code of Forest Practices for Timber Production</i>			
6. 1. 1	Include water quality performance indicators and targets in the next revision of the Code, and (for public land) in Regional Prescriptions and Forest Management Plans.	NRE	<i>Meaningful water quality assessment of small streams is time consuming, expensive, and often complex to interpret. Routine measurements of water quality conducted by non-scientific staff would be unlikely to provide a sound performance indicator of water quality impacts resulting from harvesting activities. This is especially the case at the coupe level where any significant runoff and sediment generation is only likely to occur during large storm events. A more effective approach would be the use of agreed “indicator” coupes that are considered typical and where targets and performance indicators are investigated and reported on in a scientifically rigorous manner. The findings of such work could then be incorporated in regional management prescriptions, which are reviewed annually. Changes to the Code and Forest Management Plans are usually undertaken at ten year intervals and are not appropriate vehicles for detailed information on local indicators.</i>
6. 1. 2	Through the Code and (for public land) Regional Prescriptions, require Forest Coupe Plans to incorporate the concept of “whole of coupe planning” to minimise impacts on water quality. This should involve pre planning buffer strip widths and locations of snig tracks on the basis of the layout and drainage features of the whole coupe.	NRE	<i>The Code and Forest Management Plans provide the guidance for appropriate buffering of streams and this is implemented through the recently reviewed coupe planning documentation. The Department’s Utilisation Procedures for all commercial harvesting in State forests in Victoria, released in August 2001 requires pre-planning of snig tracks and landings on all coupes. A Coupe Management System is being trialled with timber industry contractors in Central Gippsland FMA currently. Additionally, the Forest Science Centre is investigating the use of Airborne Laser Survey to provide improved coupe topographic information for use in coupe pre-planning.</i>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	Recommendations	Agency Responsible	Response to Recommendations
<i>Forestry on Public Land</i>			
6. 1. 3	Require logging syndicates to retain road maintenance contractors over the winter period when logging is not occurring, so that adequate inspection and maintenance of these roads can be performed over winter periods.	NRE	<i>Once harvesting contractors have been given a temporary coupe clearance, the responsibility for coupes and the roads that access them rests with NRE. It is appropriate for this arrangement to continue. NRE will look at ensuring that coupe access roads are left in an appropriately maintained state before a clearance is issued and will consider a process of inspecting these roads throughout winter, where required, to ensure that problems do not arise.</i>
6. 1. 4	Initiate a program of water quality monitoring for general forestry operations on public land (that covers representative points and/or major areas) within the Tyers River Catchment (see also section 6.5). The results of an expanded South Face Road water quality monitoring program could help to supplement the data obtained.	NRE	<i>The members of the Tyers Catchment Water Research Network are undertaking continuous in-stream turbidity monitoring, grab sampling at strategic points throughout the Upper Tyers Catchment and continuous monitoring of road runoff water quality at three locations on the South Face Road. The network has representatives from NRE's Forest Science Centre, Forestry Victoria and Forest Management, Gippsland Water and the EPA.</i>
6. 1. 5	Expand the information included in Wood Utilisation Plans to identify particular environmental issues associated with a planned coupe or a road, and to make the environmental assessment performed by NRE during the planning phase more transparent to the public ¹ .	NRE	<i>This recommendation will be taken into account during the next (annual) review of the Wood Utilisation Planning guidelines. Currently, environmental issues are identified by the internal checking systems in the planning process prior to public comment. NRE will explore methods of making this information accessible to the public.</i>
6. 1. 6	Expand the scope of NRE's Code Compliance Audits to: <ul style="list-style-type: none"> – Include qualitative assessment of environmental outcomes. – Perform water quality monitoring and/or stream bed assessments, or review existing data for the area being audited. – Audit a portion of the coupes and associated roads while they are being 	NRE	<i>The Code of Practice audit procedure is reviewed annually by the Executive Director of the Forest Service. The audit procedure was independently reviewed in 2000 and the process was subsequently amended in response to the recommendations of the review. The recommendations made in the EPA report regarding audit procedure will be considered in the review prior to next season's audit. External stakeholders such as the catchment management authorities and environment groups have been invited to participate in the last two annual audits. NRE is currently considering expanding the audit process to other stakeholder groups in order to expose more people with an interest in these issues to the process and the application of the Code in the field.</i>

¹ This recommendation applies equally to other areas in Victoria.

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	Recommendations	Agency Responsible	Response to Recommendations
	<p>harvested or constructed and assess the timeliness of works to reduce environmental impact.</p> <ul style="list-style-type: none"> – Inspect roads built before the Code and assess programs to progressively upgrade these roads. – Review the number of coupes and permanent roads assessed in each area, to determine if there is a wide and frequent enough selection to adequately identify environmental concerns. – Involve independent auditors, such as Environmental Auditors appointed under the <i>Environment Protection Act 1970</i>, in the audit teams. 		
<i>South Face Road</i>			<p>NRE</p> <p><i>The various road erosion control techniques described in the audit should not be assumed to be appropriate for the site-specific conditions of the South Face Road. Examples of practices that would need further investigation for use on these erodible sub-soils include detention holes, laying back of batters, and batter-top catch drains.</i></p>
6. 1. 7	Provide asphalt surfacing for 50 – 100 metres on either side of bridged stream crossings on the South Face Road and install grated cross drains prior to bridges.	NRE	<p><i>Asphalting of road approaches to the major streams on the South Face Road would enhance water quality protection. However, NRE considers that the emphasis should be at smaller stream crossings on poorer quality roads. Recent research data indicates that sediment loads discharged from the well surfaced South Face Road are at least an order of magnitude lower than the loads measured from other local poorer quality roads. Water quality modelling shows that the impacts of road runoff on in-stream sediment concentrations is far greater for small streams than for large streams because of the diluting effect of the larger streams.</i></p> <p><i>Research by the Forest Science Centre is investigating the relative importance of different road sediment sources so that protective measures can be most effectively placed from a cost/benefit perspective. Following this research NRE will weigh up the construction costs with the resultant sediment mitigation benefits before deciding to</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	Recommendations	Agency Responsible	Response to Recommendations
			<p><i>proceed with sealing bridge approaches, or undertaking other water quality protection measures.</i></p> <p><i>If surfacing is undertaken on the South Face Road, the recommended grated cross drains are unnecessary because the crossfall of the bitumen road would ensure any water from the unsealed road would be rapidly delivered to the roadside table drain. A better option would be to extend surfacing 2 culverts back from either side of the crossing (rather than 1 culvert back as recommended). Surfacing up to the first culvert protects the water draining directly to the bridge. Extending surfacing to the next culvert protects water discharging from the culvert closest to the crossing, which often still has a minimal buffering distance from the stream, especially if the road extends deep into the valley along the stream before the crossing.</i></p>
6. 1. 8	Ensure that site specific Environmental Management Plans are prepared as adjuncts to the EMS prior to the commencement of construction works at the Tyers River West Branch bridge and the Buckles Spur realignment. These plans should be reviewed by Gippsland Water, EPA and the West Gippsland Catchment Management Authority.	NRE	<p><i>Site EMPs have been prepared for all construction works on the South Face Road over the least three seasons. These have been sent to Gippsland Water, West Gippsland CMA and the EPA for comment and NRE sees this as an important part of it's commitment to continuous improvement of works on the South Face Road and planning for other forest operations.</i></p>
6. 1. 9	Expand the existing South Face Road water quality monitoring program as detailed in Appendix 3 and clearly document these requirements in the EMS.	NRE	<p><i>The Environmental Management System documentation has been amended to reflect the integrated water quality monitoring program undertaken by the Tyers Catchment Water Research Network. Within stream fauna monitoring has been undertaken at the West Tyers South Face Road crossing by the EPA and this monitoring will continue as required.</i></p> <p><i>The recommendation to monitor for baseline physico-chemical parameters on a monthly basis should be considered by the Gippsland Water Quality Monitoring Agreement committee for implementation by that group.</i></p> <p><i>While the construction of the South Face Road presents a large potential threat to water quality in the Upper Tyers, the operation (use) of this road (assuming BMPs are adhered to) probably poses less of a threat than does the operation of many unsealed tracks and roads in this part of the catchment eg. West Tyers Rd. This is because the South Face Road is surfaced, thus reducing sediment generation. Also, it does not run</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	Recommendations	Agency Responsible	Response to Recommendations
			<p><i>parallel to streams, thus the linkage is limited to individual crossings. And finally, because it is a major road, the road and the runoff from it, are likely to be well managed, unlike many of the other less used roads in the catchment. For this reason the water quality monitoring program listed in Appendix 3 of the audit should be skewed away from the operational areas of the South Face Road (eg. East Tyers and Growlers crossing) and a greater emphasis given to road crossings on poorer quality roads.</i></p>
6. 1. 10	<p>Upgrade the South Face Road Environmental Management System (EMS) to:</p> <ul style="list-style-type: none"> – Improve documentation to clarify the inspection and maintenance regime for major stream crossings, large batters, the road’s surface and pollution controls including silt traps. Areas to address include when silt traps need to be emptied, and requirements for ongoing assessments of the adequacy of their position or frequency. Requirements to cease the practice of cutting holes in the fabric should also be included. – Improve inspection checklists for road maintenance to, for example, require recording of the condition of specific locations of the road or of specific silt traps and to include space to record observations of impact, such as silt build up downstream of silt traps. – Include a contingency plan regarding slumping and collapse of batters. – Specify timelines for implementation of measures such as stabilisation of batters, which should reflect risks to 	NRE	<p><i>The South Face Road EMS has now been externally audited over the past two years and NRE is this year undertaking a third audit which will include consideration of the adequacy of the existing EMS with respect to ISO 14001 accreditation standards. As part of that process the EMS documentation has had improvements made which include an annual performance review with external stakeholder input, in addition to the annual external audit. The EMS has been expanded to include a more rigorously outlined maintenance program, which includes most of the recommendations made in the EPA audit.</i></p> <p><i>The EMS contains a contingency plan for the slumping of batters. However, this will be improved in the next review. The EMS does have a reporting element outlining the annual water quality monitoring results. For the next annual review of the EMS the review team will consider how well it is meeting the recommendations outlined by the results of the EPA audit.</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	Recommendations	Agency Responsible	Response to Recommendations
	<p>the environment.</p> <ul style="list-style-type: none"> – Improve documentation of water quality monitoring results including any actions triggered by these results. – Expand the pro forma for site specific Environmental Management Plans. This should include inspection and maintenance checklists, and maps of locations of silt traps and other control devices. – Upgrade systems for reviewing performance of the EMS, including reviewing and addressing any deficiencies in contractor performance reports and in water quality monitoring results. 		
<i>Forestry on Private Land</i>			
6. 1. 11	Inspect private forestry areas to ensure that operators are submitting Timber Harvesting Plans.	Baw Baw Shire Council	<i>No response received.</i>
6. 1. 12	Assess and provide formal feedback on Timber Harvesting Plans. External expertise through NRE or private forestry contractors is likely to be required.	Baw Baw Shire Council	<i>No response received.</i>
6. 1. 13	Expedite the development of a Best Practice Environmental Management Guideline for forestry on private land to complement guidance provided by the <i>Code of Forest Practices for Timber Production 1996</i> .	EPA	<p><i>The Regional Code Interpretations for the Private Forest (Plantation) Industry in Gippsland is in its final stage of development. EPA Victoria has partially funded the development of this document and is represented on the Steering Committee along with representatives from other stakeholder groups.</i></p> <p><i>A draft document is expected to be released in late 2002 and will contain many aspects of a best practice guideline. It is expected that this document will form the basis of an appropriate statewide Guideline for timber production on private land. EPA Victoria will consult with NRE and other relevant stakeholders to expedite the</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	Recommendations	Agency Responsible	Response to Recommendations
			<i>development of this document.</i>
6. 1. 14	Progressively establish a permanent buffer of 200 metres of native vegetation around the Moondarra Reservoir from which the harvesting of timber is excluded ² . Buffers of at least 20 metres should be established around adjacent watercourses. Special precautions to protect water quality during these operations should be developed based on a risk assessment and incorporated in an Environmental Management Plan	Gippsland Water	<p><i>Approximately 1800 ha of freehold and crown land vested in Gippsland Water’s control is managed by Gippsland Water “to protect water quality and as a complement to adjoining public land” (LCC District 2 Review Final Recommendations July 1994).</i></p> <p><i>Upon construction of Moondarra Reservoir in 1961 approximately 394 ha of this land mass was cleared farmland. These parcels of land were subsequently planted to Pinus radiata plantations that were clearfelled and replanted between 1987 and 1995.</i></p> <p><i>In 1999 Gippsland Water recognised that the existence of plantations within reservoir and stream buffer zones was contrary to the protection of water quality objectives. Since this time Gippsland Water has committed to a program of plantation removal and the establishment of indigenous vegetation.</i></p> <p><i>Approximately 20 ha of juvenile plantation trees located within 200 metres of Moondarra Reservoir were culled (using an in situ stem injection technique that requires nil soil disturbance) and replaced with indigenous species propagated from seed collected on site in the year 2000. A further 32 ha of plantation is deemed to be located in areas designated as having a high risk to reservoir water quality following disturbance.</i></p> <p><i>The advanced age of these plantation areas will necessitate the use of some machinery to enable extraction. Gippsland Water believes that this operation is best planned to coincide with thinning/clearfell works in adjoining plantation areas. Such a replacement strategy will require further establishment of native forest buffers until at least 2005-06.</i></p> <p><i>This planning will be developed using a risk assessment approach and incorporated into Gippsland Water’s Moondarra Reservoir Environs Plan of Management (work in progress).</i></p>

² This is consistent with the *Tyers River Water Supply Catchment Notice of Determination of Land Use, 1975.*

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

6. 1. 15	Perform any future harvesting of pine plantations on Gippsland Water's land in accordance with the Code of Forest Practices. Provisions for management of harvesting operations and compliance with the Code (NRE's Regional Prescriptions could also be used to provide more detailed requirements) should be included in Gippsland Water's EMS.	Gippsland Water	<p><i>The Moondarra Reservoir Environs Plan of Management will form an Environment Management Plan in Gippsland Water's Environment Management System. This plan will have a strategic and operational role as well as forming a review/monitoring capacity.</i></p> <p><i>As an Environment Management Plan the document will refer to any relevant legislative guidelines, standards and best management practices. The Plan is scheduled for completion in 2002 and no plantation harvesting is scheduled until at least 2004-05.</i></p>
<i>Catchment wide recommendations</i>			
6. 2. 1	Perform an audit of all unsealed roads within the catchment to determine their condition, environmental risk, ownership and ongoing need. Critical locations such as where road lines run adjacent to, or cross, waterways should be identified and targeted for works such as gravelling stream approaches or providing mitre drains.	NRE, Parks Victoria, Baw Baw Shire Council, Gippsland Water, West Gippsland Catchment Management Authority.	<p>NRE</p> <p><i>In partnership with the Tyers Catchment Water Research Network, NRE is undertaking an audit of track conditions in the Tyers catchment this calendar year (2002). The methodology for this audit has been developed and improved elsewhere in the State. NRE, in partnership with Catchment Management Authorities and other stakeholders, have undertaken audits of unsealed forest and park roads in the North East, Otways and Broken/Goulburn catchment. These are either under way or have been completed and follow up actions are now being undertaken.</i></p> <p>Parks Victoria</p> <p><i>Parks Victoria is providing input to the audit of track conditions in the Tyers Catchment being undertaken this year by the Tyers Catchment Water Research Network and NRE.</i></p> <p>Baw Baw Shire Council</p> <p><i>Council has limited resources to perform such an audit; and works to the roads that may be identified from such an audit would need to be prioritised along with all the other priorities that Council needs to consider for its road network, (eg safety, strategic significance, bus routes, maintenance costs).</i></p> <p>Gippsland Water</p> <p><i>The NHT funded Tyers River Catchment Project alerted Gippsland Water to inadequacies in sections of road infrastructure adjacent to Moondarra Reservoir in 1999. These inadequacies elevated the sedimentation risk to reservoir water quality. In response to these concerns Gippsland Water performed road rehabilitation works</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<p><i>in 2001. These works involved installation of additional culverts, road grading and sheeting with metal, development of silt traps and in-stream placement of erosion control beeching.</i></p> <p><i>An audit of all unsealed roads within the catchment would be an invaluable exercise to determine relative road condition and environmental risk. Such an audit could be addressed by including an item within the Natural Resource Impact Management Plan for the Tyers River Catchment, a major outcome of the NHT funded Tyers River Catchment Project planned for publication in May 2002.</i></p> <p>West Gippsland Catchment Management Authority</p> <p><i>No response received.</i></p>
6. 2. 2	<p>Develop and implement prioritised road upgrade programs based on the above risk assessment. This should focus on the upgrade of road surfaces and the provision of sediment control structures at points adjacent to streams including stream crossings.</p> <p>It may be necessary to close and revegetate roads that are poorly maintained or pose a particularly high risk of sediment run off (eg some NRE roads in the Hotel Creek area).</p>	<p>NRE, Parks Victoria, Baw Baw Shire Council</p>	<p>NRE</p> <p><i>It is intended that the outcomes of the road audit will be followed up, within available resource constraints, and improvements to the road network are made where necessary. Prioritisation of works for stream crossings will be influenced by findings from current road crossing water quality research and monitoring being undertaken by the members of the Tyers Catchment Water Research Network. In the past budget constraints have led to a general deterioration in road quality and those same constraints are still relevant to the current road maintenance budget.</i></p> <p><i>The relative contribution of sediment from different road grades, surfaces, slopes and crossing types is poorly understood. It is essential that priorities for road crossing upgrades are informed by on-going research. Focussed research will optimise the cost/benefit ratio for crossing works.</i></p> <p>Parks Victoria</p> <p><i>Parks Victoria will use the findings of this audit and the audit referred to above to prioritise its road funding allocations, within budgetary limits, for Baw Baw National Park and Moondarra State Park. However, many of the roads mentioned in the audit are not on land managed by Parks Victoria.</i></p> <p><i>Most roads and tracks in both Moondarra State Park and Baw Baw National Park were graded and drained in 2001 (since the audit) and are in good condition.</i></p> <p><i>Senini's Track in Moondarra State park is specifically mentioned in the report (page 42). Senini's Track is excluded from the park and is a public road reserve, the maintenance for which Parks Victoria is not responsible. Parks Victoria does,</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<p>however, undertake maintenance of the track every year or so in conjunction with other works in the interests of minimising siltation of Ti-tree Creek and facilitating access to freehold inliers within the Park. Parks Victoria has recently installed silt traps on the track where it crosses the Tyers River.</p> <p>Baw Baw Shire Council</p> <p>See 6.2.7. Roadside Management Plan – Council already has a strategy plan to prioritise the upgrading of roads.</p> <p>It may not be possible to close roads that provide access to private property.</p>
6. 2. 3	Formalise and document specific inspection and maintenance requirements for roads within the catchment controlled by Parks Victoria, NRE and Gippsland Water. Priority needs to be given to sections of road adjacent to and crossing waterways.	Parks Victoria, NRE and Gippsland Water	<p>Parks Victoria</p> <p>A statewide system is currently being developed which will help address this issue across the State. The intention is to inventory the road network and develop inspection and maintenance schedules for managers.</p> <p>NRE</p> <p>NRE is currently rolling out a GIS based roads management package that will allow road managers to schedule ongoing inspection and maintenance as one of the many uses. This will be used in conjunction with the audit process outlined above to provide management information about current condition and prioritised maintenance requirements.</p> <p>Gippsland Water</p> <p>Gippsland Water recognises that a lack of documented inspection and maintenance requirements of roads under its management is a notable weakness of the current program of catchment activities. This will be addressed in 2002 by completion of the Moondarra Reservoir Environs Plan of Management.</p>
<i>Specific management system recommendations</i>			
6. 2. 4	Prepare a Best Practice Environment Management Guideline for the design, construction and maintenance of unsealed roads ³ .	EPA	<p>EPA Victoria has released two publications that relate to the management of sediments and runoff during construction of roads: EPA publication 275 Construction Techniques for sediment pollution control; and EPA publication no. 480 Environmental Guidelines for Major Construction Sites. Currently there is a lack of</p>

³ This is included in the draft *Central Gippsland Water Quality Management Plan* (action AL2) with NRE nominated as the lead agency. It is important to ensure that any such guideline is applicable to and relevant for all stakeholders responsible for road maintenance. EPA may also be able to co-ordinate the preparation of such a document.

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<p><i>Victorian guidance relating to the design and maintenance of unsealed roads to manage drainage and minimise sediment losses and erosion.</i></p> <p><i>Since the time of this audit several developments have occurred which may influence the preparation of a Victorian unsealed roads BPEM Guideline. These developments include the release of the Environmental practices manual for rural sealed and unsealed roads by ARRB Transport Research (Jan 2002), and several current and planned research projects to be undertaken by the Department of Natural Resources and Environment. In addition, a number of municipalities have highlighted the need to address runoff from unsealed roads through the stormwater management planning process.</i></p> <p><i>EPA believes it would be appropriate to evaluate the need for a Victorian BPEM Guideline in light of the outcomes of current and proposed unsealed roads projects.</i></p>
6. 2. 5	Incorporate aims and actions to protect water quality in the Moondarra State Park in Parks Victoria's business plans or the next revision of the <i>Moondarra State Park and Tyers Park Management Plan</i> , May 1991.	Parks Victoria	<p><i>Although there are no specific aims listed in the current Moondarra State Park Management Plan (1991) for protecting water quality the overall theme is conservation that includes water quality issues. The audit's recommendation will be included in the next revision of the plan although this will not be until at least 2003/04.</i></p> <p><i>Parks Victoria will however continue to manage the park with water quality as one of the most important guiding principles.</i></p>
6. 2. 6	Formally agree on responsibilities for the maintenance of roads, particularly those that access private property within or adjacent to State Forest, to ensure that there are no 'orphan' roads within the catchment.	NRE and Baw Baw Shire Council	<p>NRE</p> <p><i>NRE's Regional Management Team meets regularly with the Baw Baw Shire and the shared management of roads is often discussed in this forum. The management of roads identified as orphans in this report will be negotiated with the shire.</i></p> <p>Baw Baw Shire Council</p> <p><i>No response received.</i></p>
6. 2. 7	Baw Baw Shire Council expand their <i>Roadside Management Plan</i> to include a program (with timelines) for assessing, or where necessary, upgrading old roads. This is particularly important in locations such as stream crossings where the environmental risk associated with the road	Baw Baw Shire Council	<p><i>The Roadside Management Plan does not mention a program for assessing, or where necessary, upgrading old roads. This is particularly important in locations such as stream crossings where the environmental risk associated with the road is high.</i></p> <p><i>The development of a program for assessing the need to upgrade roads is outside of the scope of the Baw Baw Roadside Management Plan.</i></p> <p><i>Council does have a "BAW BAW SHIRE ROAD STRATEGY PLAN" that assists Council to</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	is high.		<p><i>set priorities for the upgrading of roads.</i></p> <p><i>This strategy plan considers the following factors when setting priorities for the upgrading of roads.</i></p> <ol style="list-style-type: none"> 1. <i>Traffic Volumes.</i> 2. <i>Strategic Significance.</i> 3. <i>Regular Bus Routes.</i> 4. <i>Additional Maintenance Costs.</i> 5. <i>Public Concerns.</i> 6. <i>Safety Considerations.</i> 7. <i>Existing Pavement Conditions.</i> 8. <i>Other criteria.</i> <p><i>Issues such as the environmental factors raised in this report would be considered in the “other criteria” section of this strategy plan.</i></p>
6. 2. 8	That the VicRoads standard contract covering routine maintenance ⁴ be expanded to include reference to identifying potential sources of sediment run off during routine inspections. This is particularly applicable to high risk areas such as those adjacent to stream crossings.	VicRoads	<i>VicRoads maintenance specification is based on performance criteria and does not specify the methodology to undertake the work. The specification also includes the requirement to undertake all works in accordance with relevant environmental regulations. VicRoads practice is to avoid telling contractors how to do their jobs and it is the Contractor’s responsibility to meet the requirements of the specification.</i>
6. 2. 9	Finalise NRE’s <i>Draft Guideline, Motorcycle Enduros on Public Land</i> and include actions to protect water quality such as discouraging waterway crossings and to require a risk assessment to ensure the risks to water quality associated with a particular area or route are minimised.	NRE	<i>NRE is currently negotiating with Motorcycling Victoria to finalise the Enduros policy document. As part of any route assessment prior to an event NRE identifies environmental risks and negotiates alternative routes or other control measures as required.</i>
<i>Specific roads</i>			
6. 2. 10	Perform maintenance works to minimise sediment run off from the TXU Electricity access track on the south west side of the intersection of Senini’s Track and the Moe –	TXU Electricity	<i>TXU Networks considers this particular track to be joint use. Other users are Telstra, who have assets running adjacent to the track, and recreational users. Our network service provider has conveyed that this track is not in high use by them. They also express that the damage to the track causing sediment run off is largely the result of</i>

⁴ VicRoads, *Standard Contract Section 750 – Routine Maintenance*, July 1999.

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	Walhalla road, and implement a documented maintenance program for this road and other electricity line access roads.		<p><i>recreational use.</i></p> <p><i>As NRE is the land management authority, TXU Networks are happy to undertake negotiations with NRE for the development of equitable land management alternatives for this site.</i></p>
6. 2. 11	Assess the ongoing need for the Tyers River Road and give consideration to permanently closing and rehabilitating the road to form a walking track.	NRE	<p><i>Tyers River Road is a significant recreational access road, primarily used by campers and people conducting fishing in the Tyers River. Due to the road's proximity to the river and poor drainage it currently requires a significant upgrade. Works will be undertaken this financial year to improve drainage.</i></p> <p><i>Any proposal to close the Tyers River Road would require NRE to conduct a public consultation process to ensure that all community issues were considered. Alternative camping and fishing access would be required before a decision to close the road is taken. This could involve an upgrade to Palmers Track providing mid point access to the river from the ridge above. At this stage NRE will defer the decision on the recommendation in this report until after track drainage works have shown if they will withstand the current level of recreational use.</i></p>
6. 2. 12	Minimise sediment run off from Beynon Creek Road by performing works to upgrade and maintain the Road in accordance with NRE's Regional Prescriptions.	NRE	<p><i>Beynon Road will be maintained to meet the Forest Management Prescription road standards for the section of road on State forest this financial year. NRE will consider bypassing the section on private property by connecting Beynon Creek Road to Morgans Mill Road on or about the private property boundary. This road construction will be planned in accordance with the Forest Management Prescriptions, including an appropriate consultation process.</i></p> <p><i>The location of Beynon Creek Road 75 m from the stream on relatively gentle slopes with moderate rainfall is probably sufficient to ensure minimal sediment delivery linkage between the road and the stream. Linkages will be evaluated to assess whether any additional works are needed.</i></p>
6. 2. 13	Implement road closures and rehabilitation works in accordance with the <i>Moondarra State Park and Tyers Park Management Plan</i> , May 1991.	Parks Victoria	<p><i>All actions relating to Roads and tracks in the current management plan have been implemented except for restricting use of Ti-Tree Creek Track to management vehicles only. The Ti-Tree Track receives little public use and is a low priority. It will be closed as soon as funding can be allocated under the Asset Disposal Program to erect gates and vehicle barriers and to undertake rehabilitation works.</i></p>
<i>Agriculture</i>			
6. 3. 1	That the Landcare projects being implemented in the catchment continue	Mountain Rivers Landcare Group	<p><i>No response received. (refer to response from Tyers River Catchment Project Steering Committee)</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	and receive the support of all stakeholders.		<i>Committee)</i>
6. 3. 2	Co-ordinate the assessment and ranking of farm management practices as a supplement to water quality monitoring ⁵ (see also section 6.5 regarding water quality monitoring).	West Gippsland Catchment Management Authority	<i>No response received</i>
6. 3. 3	Consult to develop a joint strategy to motivate all landholders to join the Landcare group.	Mountain Rivers Landcare Group, West Gippsland Catchment Management Authority and EPA	<p>Mountain Rivers Landcare Group</p> <p><i>No response received. (refer to response from Tyers River Catchment Project Steering Committee)</i></p> <p>West Gippsland Catchment Management Authority</p> <p><i>With Michael Bannon from Gippsland Water, WG CMA is represented on the Tyers River Steering Committee with strong links to the local Landcare group.</i></p> <p>EPA Victoria</p> <p><i>EPA Victoria is closely involved with the regional Landcare network, Wellington Catchment Care. Through this network, EPA contributes to all regional Landcare groups, including the Mountain Rivers Landcare Group. EPA will continue to support local Landcare initiatives in the Gippsland Region through network meetings, workshops and interactions with local landholders.</i></p>
6. 3. 4	Initiate a Waterwatch program, involving local landholders, to identify sources of high sediment runoff in the top half of the Jacobs Creek catchment so they can be managed.	West Gippsland Catchment Management Authority and Gippsland Water	<p>West Gippsland Catchment Management Authority</p> <p><i>The Waterwatch program, which is hosted by WGCMA on behalf of the region, is primarily a community education program. While it is possible to target the program to a limited extent, its role is not to identify sources of contaminants and track improvements in water quality. If there are volunteers who are interested in doing this and funds are provided to the Waterwatch program to service these volunteers, then a specialised program may be possible.</i></p> <p>Gippsland Water</p> <p><i>Gippsland Water is a major sponsor of the Waterwatch program in Gippsland. It is our understanding that one landholder in the catchment has joined the program since the establishment of the Mountain Rivers Landcare Group in 2000.</i></p>

⁵ Such a project has been carried out before, see Go Mark Foods Pty Ltd, *Labertouche and West Jindivick Catchment Sustainability Report*, 14 July 2000.

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<i>An effective Waterwatch presence and the adoption of best management practices in the upper portion of the Jacob's Creek catchment could be pursued through the Natural Resource Impact Management Plan for the Tyers River Catchment (Tyers River Catchment Project).</i>
6. 3. 5	Initiate a Waterwatch program, involving local landholders, to identify sources of nutrients and pesticides in the top half of the Jacobs Creek catchment so they can be managed. Discussion with landholders through the Landcare Group would also be a useful way of assessing pesticide usage rates and application of best practice.	West Gippsland Catchment Management Authority and Gippsland Water	West Gippsland Catchment Management Authority <i>See 6.3.4</i> Gippsland Water <i>See 6.3.4</i>
<i>Other land uses and activities</i>			
6. 4. 1	That bank stabilisation works are performed at the O'Sheas Mill Site Camping Area to minimise the risk of sediment run off.	Parks Victoria	<i>Gippsland Water under a section 27 consent issued under the National Parks Act manage water supply pipelines in the Baw Baw National Park. Gippsland Water has agreed to remove the redundant water supply structure from the O'Sheas Mill Site and undertake some streambank stabilisation works. It is expected the works will be completed during 2002. This will see most of the audit's concerns addressed. Parks Victoria will program for 2002/03 any stabilisation works necessary to minimise run off from the campground.</i> <i>Most of the siltation from this site, however, is likely to come from the unsealed access track and ford, both of which are on State Forest. Parks Victoria will discuss with NRE the possibility of closing and rehabilitating this track so that the campsite can be maintained as a low-key facility solely for walkers using the Australian Alps Walking Track.</i> <i>The issue of O'Sheas Mill Site Camping Area raised in the audit will be dealt with in the review of the Baw Baw National Park Management Plan due for completion in late 2002.</i>
6. 4. 2	That a program of turbidity monitoring is undertaken upstream and downstream of the O'Sheas Mill Site Camping Area.	Parks Victoria	<i>With implementation of the measures detailed above and below, Parks Victoria believes any issues of siltation or contamination from the camping areas will be resolved at this very low use site and does not intend to implement any regular turbidity monitoring program. Parks Victoria, however, will support and permit any</i>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<i>such program implemented by other authorities such as Gippsland Water.</i>
6. 4. 3	Assess risk to determine if flood protection works, such as walls, are required for the pit toilet at the Senini's Track campsite (see section 5.8).	Parks Victoria	<i>Senini's Campground has evolved over time rather than being purposely designed and it is the intention to reconfigure the site including either relocation of the toilets off the floodplain or construction of an elevated system. This however is relatively low priority given limited use of the site and low incidence of flooding.</i>
6. 4. 4	Perform a short term program of <i>E coli</i> testing of stormwater in the vicinity of Erica to evaluate the risk of contamination of the reservoir from septic tank run off around Erica.	Baw Baw Shire Council	<i>Council is not resourced to undertake a program of water testing. As E.coli is normally found in the gut of warm-blooded animals, it would be anticipated that a relatively low level would be identified in stormwater. Stormwater consists on rain water runoff and in areas where split septic tank systems are installed it may also contain kitchen, bathroom and laundry wastewater.</i>
6. 4. 5	Develop a wastewater management plan for the township of Erica, which identifies options, costs, priorities and timelines for improved wastewater management for areas that cannot contain wastewater on site. This could involve connection of Erica to the Rawson sewage treatment system, and/or the provision of an artificial wetland for Erica.	Baw Baw Shire Council (as well as Gippsland Water, EPA and landholders)	<p>Baw Baw Shire Council</p> <p><i>The State environment protection policy (Waters of Victoria) is currently being reviewed. This Policy identifies the need for a Wastewater Management Plan, it also acknowledges the \$10,000 cost associated with the development of such a Plan.</i></p> <p><i>The development of Wastewater Management Plans is an issue that the State Government need to address, in conjunction with the EPA and local government so that all unsewered areas as addressed, rather than specific areas.</i></p> <p><i>The legislation in which septic tank systems are regulated (Environment Protection Act) do not allow for any statutory controls for existing septic tanks, other than what was stipulated in each individual septic tank permit. Thus for old septics where there is no permit to be found, or where the permit did not detail operational and maintenance requirements there is little action Council can take under this legislation.</i></p> <p>Gippsland Water</p> <p><i>Primary responsibility for investigating wastewater treatment options for unsewered townships rests with Shires and the Environment Protection Authority based on health and/or environmental grounds. Gippsland Water would be happy to participate in a process aiming to develop a wastewater management plan for Erica that includes broad community representation.</i></p> <p>EPA Victoria</p> <p><i>The development of a wastewater management plan for the township of Erica is consistent with the draft State environment protection policy (waters of Victoria)</i></p>

EPA Victoria

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<p><i>which proposes that domestic wastewater management plans (DWWMP) be developed in municipalities where wastewater can not be retained within allotment boundaries (cl.30). The development of such a plan is primarily the responsibility of Baw Baw Shire Council. EPA Victoria will support Baw Baw Shire Council in this process and provide information as required.</i></p> <p><i>The guidance document, Model Municipal Domestic Wastewater Management Plan, developed by EPA Victoria and the Municipal Association of Victoria, provides the necessary framework to address this recommendation. The model presents a generic DWWMP aimed at implementation on a municipal wide basis. As part of implementing this plan, municipalities would need to prioritise the development and implementation of strategies for individual townships, such as Erica, based on social, environmental and economic considerations.</i></p>
<i>Overall Catchment Management</i>			
6. 5. 1	Finalise and implement the <i>Central Gippsland Water Quality Management Plan.</i>	West Gippsland Catchment Management Authority and EPA	<p>NRE</p> <p><i>This document was not formally endorsed by Government, and NRE have requested in recent years that it be reviewed with the purpose of producing an entire West Gippsland CMA Regional Water Quality Strategy. The WG CMA intends this and funding has been provided for the last few years to facilitate this occurring although progress has been particularly slow to date.</i></p> <p><i>The EPA should not be listed as a responsible agency for [recommendations 6.5.1 and 6.5.2] - it is the sole responsibility of the WG CMA, who will obviously need to consult with a range of stakeholders including both NRE and EPA.</i></p> <p><i>As part of the Statewide Nutrient Management Program, overseen by NRE, each CMA is responsible for developing a catchment/nutrient water quality management plan for their CMA region. There are clear plan requirements, a development process and an endorsement process for completing these plans and NRE oversees this. The plans form the basis for regional management plans, the plans by which NRE delivers funding for implementation of catchment works.</i></p> <p>West Gippsland Catchment Management Authority</p> <p><i>The review of the Central Gippsland Water Quality Management Plan is underway which is to be combined with the draft South Gippsland Water Quality Plan into a Regional Water Quality Action Plan by the end of December 2002. Regional water</i></p>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<p><i>quality priorities will be based on a triple bottom line risk assessment of threats and impacts to environmental, social and economic assets. Cost shares for remedial activities, monitoring and evaluation will be determined on the principle of polluter pays or if they cannot be easily identified, beneficiary pays. Therefore it seems likely that those causing the sediment problems through road building and forestry activities and those benefiting from improved water quality will bear the costs.</i></p> <p>EPA Victoria</p> <p><i>EPA Victoria supports the development of the CG WQMP through involvement at a regional level and through the provision of water quality indicators and objectives in the State environment protection policy (waters of Victoria) (Sepp(woV)). The Sepp (woV) is currently being reviewed and updated.</i></p> <p><i>The involvement of EPA throughout the development process ensures that the CG WQMP addresses the requirements of Sepp (woV) including Schedule F5 (Waters of the Latrobe and Thomson River Basins and Merriman Creek Catchment) and other environment protection policies and guidelines.</i></p>
6. 5. 2	<p>Develop specific water quality performance measures to include in the Regional Catchment Strategy and the <i>Central Gippsland Water Quality Management Plan</i>. This could include indirect measures such as the rate of adoption of best practice land management techniques, index of stream condition assessments, and the extent of riparian vegetation.</p>	<p>West Gippsland Catchment Management Authority and EPA</p>	<p>NRE</p> <p><i>The suggestion of identifying specific water quality performance measures is valid and is already being addressed through the regional planning process, which determines regional resource condition and management action targets and associated monitoring required to understand progress and success in meeting targets. As always, the realistic context for this work includes consideration of budget constraints – unfortunately neither the regional planning process nor budget context is adequately acknowledged in the audit document.</i></p> <p>West Gippsland Catchment Management Authority</p> <p><i>The WGCMA is at present reviewing the regional catchment strategy, which seeks to integrate natural resources management across West Gippsland. A number of agencies and individuals, particularly private landowners, have a role in the management of natural resources.</i></p> <p><i>[The audit] recommendations are supported as an appropriate set of actions to manage the risk to water quality in the catchment.</i></p> <p>EPA Victoria</p>

EPA Victoria

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<p><i>EPA Victoria supports the development of specific water quality performance measures through the provision of indicators, objectives and attainment programs in the State environment protection policy (waters of Victoria) (Sepp(woV)), including Schedule F5 (Waters of the Latrobe and Thomson River Basins and Merriman Creek Catchment). These objectives include biological, physical and chemical objectives to protect the beneficial uses of Victoria’s waterways as well as nutrient reduction targets.</i></p> <p><i>The revised Sepp(woV) will require the development of regional targets to be set for waterways where objectives for protected beneficial uses are currently not met. These targets will be set to assist meeting the objectives in Sepp(woV) over time and will include indirect measures that address best management practice and resource condition targets. Targets are also required under the National Action Plan for salinity and water quality and under the Victorian River Health Strategy. EPA Victoria will contribute to the development of these targets.</i></p>
6. 5. 3	That formal links are established between the WGCMA’s business plan and catchment strategies and the Tyers River Project.	West Gippsland Catchment Management Authority	<i>See 6.3.3</i>
6. 5. 4	The Baw Baw Shire Council develop and implement a Shire Wide Environmental Strategy.	Baw Baw Shire Council	<i>No response received.</i>
6. 5. 5	That NRE clarify and further publicise its role with regard to the assessment of land capability.	NRE	<ul style="list-style-type: none"> • <i>The Regional Catchment Management Strategy is currently being reviewed and it will ensure that catchment management issues relating to water quality are addressed.</i> • <i>Through incentives (eg grants to farmers) NRE will focus on high risk areas to water quality due to various land uses, particularly sediment runoff and faecal contamination. Low to Moderate risk areas will also be considered.</i> • <i>NRE is in agreement that more farmers/landholders need to be involved in Landcare groups to ensure that Best Management Practices are implemented in the catchment.</i> • <i>The Notice of Determination of Land Use is not included as an Appendix to the Prescriptions, nor is the document readily available from NRE offices, as these should be manifested in the Local Government Planning Schemes. This is where landowners are required to go to obtain building licenses, approvals etc and is</i>

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

			<p><i>deemed the appropriate course of action.</i></p> <ul style="list-style-type: none"> • <i>Public (government) resources need to be directed so that these issues can be addressed to ensure water quality remains high. For example, a Landcare facilitator may enhance the number of farmers/landholders involved in these programs. Whole Farm Planning can illustrate to landholders Best Management practices and the sustainable use of their land.</i>
<i>Water Quality Monitoring</i>			
6. 6. 1	That the three upstream water quality monitoring points ⁶ used by Gippsland Water be formally included in the Gippsland Water Quality Agreement. In doing so the list of parameters sampled should be expanded to include pH, nutrients, dissolved oxygen, electrical conductivity, and suspended solids ⁷ . An additional monitoring point at the downstream end of Tyers Junction should also be included in the program.	Gippsland Water, West Gippsland Catchment Management Authority, NRE	<p>Gippsland Water</p> <p><i>Gippsland Water accepts that it remains primarily responsible for two existing water quality monitoring points in the catchment located directly upstream of Moondarra Reservoir. As such Gippsland Water will seek to have [both] the Tyers River @ Brown’s site and the Jacob’s Creek @ O’Toole’s site included within the Gippsland Region Water Quality Monitoring Agreement.</i></p> <p><i>Gippsland Water will be approaching the other two stakeholders to determine the long-term managerial status of Tyers River @ Tyers Junction and West Tyers River @ Morgans.</i></p> <p>West Gippsland Catchment Management Authority</p> <p><i>No response received.</i></p> <p>NRE</p> <p><i>No response received</i></p>
6. 6. 2	Formalise and document requirements for maintenance, calibration and documentation of results of Gippsland Water’s turbidity monitoring devices.	Gippsland Water	<i>A formal process documenting maintenance and calibration of Gippsland Water’s turbidity monitoring devices will be developed as part of the Moondarra Reservoir Environs Plan of Management. Turbidity data is proposed to be published on Gippsland Water’s website. Predetermined ‘trigger values’ based on Sepp criteria will be used to notify relevant stakeholders of elevated turbidity events.</i>
6. 6. 3	Ongoing water quality monitoring be performed in the agricultural sub-	West Gippsland Catchment	<i>See 6.3.4</i>

⁶ These monitoring points consist of (1) Tyers River at the entrance to the Moondarra Reservoir “Browns”, (2) Jacobs Creek at the entrance to the Moondarra Reservoir, and (3) Tyers River West Branch upstream of Tyers Junction at “Morgans”.

⁷ Suspended solids are recommended to provide data to establish a relationship between turbidity loads and suspended solids concentrations in the catchment.

TYERS RIVER CATCHMENT – RESPONSES TO RECOMMENDATIONS

	catchments (particularly around Jacobs Creek) with landholder involvement through a Waterwatch program. This should be aimed at identifying sources of contamination and at tracking improvements in water quality.	Management Authority	
6. 6. 4	That the West Gippsland Catchment Management Authority co-ordinate a water quality monitoring program within the catchment through a partnership agreement under the Gippsland Water Quality network.	West Gippsland Catchment Management Authority	<p><i>Water quality monitoring in itself is of limited value unless the objectives are clear and there is a built in evaluation of the data and reporting to the stakeholders.</i></p> <p><i>The Gippsland Regional Water Monitoring Partnership is well suited to the collection of longer term catchment condition data, but may not yet be ready to deal with site specific investigations to identify sources of pollution. A water quality monitoring program would be co-ordinated by the Gippsland Regional Water Monitoring Co-ordinator, employed by the Partnership, and not directly by the WGCMA.</i></p>

ADDITIONAL COMMENT RECEIVED FROM TYERS RIVER CATCHMENT PROJECT STEERING COMMITTEE

	Non specific	Tyers River Catchment Project Steering Committee	<p><i>The Steering Committee's response to the audit should note the best practice outcomes that the Project continues to yield in the catchment, and the role the pending Natural Resource Impact Management Plan for the Tyers River Catchment will fulfil in implementing key recommendations.</i></p>
--	--------------	--	---