ecoscape

Local Government Experiences in Balancing Road Infrastructure Demands and Native Vegetation Management:

Milestone 1 of the Road Reserve Asset Management Plan (RRAMP) project

Western Australian Local Government Association

science+design

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Rev No.	Author	Approved for Issue	Date
0	MM	BT	15/12/10
Final	MM	BT	16/02/11
Final2	MM	BT	

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1.0 introduction

1.1 background

Ecoscape, Eddy Wajon and Tony Shaw (hereafter the Project Team) were commissioned by the Western Australian Local Government Association (WALGA) to produce a Road Reserve Asset Management Plan (RRAMP), a guide for local governments (LGs) to strategically manage their road and associated infrastructure assets while conserving their roadside vegetation's environmental values.

To develop the RRAMP, the process was divided into ten milestones, the first of which was to conduct in-depth interviews with several LGs (including two pilot programs) and investigate how they manage their road works and roadside vegetation. The collated information would then support the subsequent milestones, namely to:

- develop a medium-term Road and Infrastructure Program (RIPs) for the pilot programs (Milestone 2)
- determine, compile and supply all available environmental and other relevant data to the LGs to assist with their RIPs (Milestone 3)
- perform a gaps analysis of what necessary data is missing and recommend how this may be acquired (Milestone 4)
- develop medium-term RRAMPs for the pilot programs (Milestones 5 to 8)
- develop a model so other LGs can use this to develop their own RRAMPS (Milestones 9-10).

The following report summarises the findings of the in-depth interviews from Milestone 1.

Funding for the project has come from the State NRM Community program 2009/ 2010.

1.2 interview process

1.2.1 DESKTOP ASSESSMENT

Prior to the interview phase Ecoscape undertook preliminary desktop research of current Asset Management Plans which involved:

- reviewing current local government practices and other relevant literature within pilot projects
- identifying what statutory requirements apply to infrastructure provision and its maintenance
- identifying all relevant design guidelines and standards applicable to infrastructure provision and maintenance.

1.2.2 QUESTIONNAIRE PREPARATION

Ecoscape prepared interview questions which were focused around the following eight themes:

1. current practices
2. future growth and changes
3. design and standards
4. clearing regulations
5. offsets
6. costs and resources
7. funding sources
8. outcomes.

The face to face interviews with the pilot programs consisted of 52 questions which explored the eight themes (**Appendix One**). The phone interviews consisted of an abbreviated 26 questions (**Appendix Two**).

The results of the interviews were then used to prepare the following document.

1.2.3 INTERVIEWS

The Project Team conducted face to face interviews with two pilot programs:

- Shire of Esperance, on 21st October 2010
- Shires of Cuballing and Pingelly, on 27th October 2010.

The interview process took approximately four hours for each pilot program to complete.

The Project Team later had phone interviews with three local governments on 9th November 2010:

- Shire of Dundas
- Shire of Northampton
- Shire of Perenjori.

The Shires of Menzies and Wickepin and the City of Rockingham were also intended to be interviewed, however these local governments were not available at the time of the interviews.

2.0 interviews

2.1 current practices

2.1.1 PLANS

Most of the LGs did not have any detailed Asset Management Plans (AMPs) over a medium-term period. One LG had a 10 year program of work for roads, general infrastructure and paths, as well as a two year program to work on Black Spot projects. Another LG is currently into their third year of a five year program, however this is frequently subject to change. Another LG has a five year plan through the Regional Road Group and Road to Recovery program. An additional LG also has a five year plan though the Regional Road Group, however, it is unclear how detailed these plans are.

Most LGs only had documented plans for road works and maintenance for the next six to twelve months. These plans were very flexible, often subject to change and sometimes not in keeping with regulations. This is mostly the result of LGs having to plan in reaction to the following factors:

- **Funding** – LGs often cannot afford to both undergo road and associated infrastructure development (eg grain roads, high speed roads) and maintain the roadside vegetation to public expectations. As such, LGs often require considerable external funding to complete identified roads works, which are only issued on an annual basis. The lack of long term funding prevents planning for road projects beyond 12 months.
- **Accidents** – Priority attention must be given to roads where accidents or "near misses" occur.
- **Changes in CBH road routes** – The grain handler CBH Group often give short term notice to LGs of changes in haulage routes to their grain bins. Subsequently, there is little time for LGs to address any road upgrades required to accommodate the increased traffic along the new routes.
- **Changes in school bus routes** – The locations of students vary each year as a result of students commencing or graduating.
- **Increased traffic** – One of the interviewed LGs has recently experienced increases in traffic from mining activities.
- **Landowner**s – Many farmers do not give adequate notice that they need certain roads to be widened to accommodate their large machinery.
- **Gravel pits** - LGs often receive little notice of when a new road is required, so may not have enough gravel on hand for the new works. Also, the cost of transporting the gravel to the new road works may prove too expensive if the gravel pits are located far from the new road works site.
- **Location of equipment and labour** – It is often more cost effective to undertake road works near where previous road works have just been completed.
- **Weather** – LGs may need to immediately address any damaged roads and roadside vegetation caused by extreme weather.

2.1.2 ROAD WORKS

Most road works being carried out by the interviewed LGs were:

- sealing existing unsealed roads
- widening existing sealed and unsealed roads
- maintaining existing unsealed roads
- maintaining verges of existing sealed and unsealed roads.

In most cases involving widening of roads, the LGs did not require to clear vegetation as the original clearing envelope was sufficient.

Maintenance of the roads and verges requires clearing overgrown vegetation from road verges, including the table drains and up to the back slopes. Machinery involved in clearing vegetation includes:

- graders
- chainsaws
- vertical mulching machines
- tree and tractor drawn slashers
- mowers
- herbicide sprayers.

All LGs report that they only clear in the existing corridor, however is it possible that there is a gradual 'creep' over time that results in the road verges being expanded.

One major activity was identified that required LGs to clear vegetation outside the maintenance zone - the widening or realignment of a road for safety reasons. This may include:

- improving line of sight at bends or corners
- changing Y junctions to T junctions
- reducing the amount of vegetation near roads that may shelter animals
- removing overhead branches
- removing dead standing trees that may fall onto roads.

In general, there has been little consideration of alternatives to clearing besides clearing along one side of the reserve. This is because LGs believe there are no real options available. Often very little vegetation is kept along the fence line. Also, in many instances LGS do not have the resources or expertise to undertake formal risk assessment. No formal risk assessments are undertaken to justify the type or extent of the works (eg Black Spot, roadside hazard, traffic management, road design).

2.1.3 GRAVEL PITS

Many of the interviewed LGs traditionally sourced gravel from vegetated road reserves, however as a response to the Clearing Regulations, many LGs are now increasingly sourcing gravel from cleared paddocks. One LG still source their gravel from vegetated road reserves. In addition, vegetation clearing may be required to access gravel close to the point of use to minimise the transport costs. One LG recommended that the *State Gravel Source Strategy* be more widely known to LGs.

2.1.4 WEED CONTROL AND REVEGETATION

Most LGs reported that they use herbicides to control vegetation regrowth, suckers and weeds in the road reserve. The most common herbicide used is glyphosate. Selective herbicides such as Garlon© and Simazine© are sometimes used, but these are much more expensive. There was little evidence of weed control being successful as many roadsides were observed to be infested by weeds. Some of the rural LGs now believe that the battle against weeds has been lost.

Revegetation is not actively undertaken along road reserves by any of the interviewed LGs. One LG has been revegetating their new gravel pits while old gravel pits have been revegetated as their resources and proximity allow.

2.1.5 ROMAN

All LGs use ROMAN I (ROad MANagement program) to record road condition and upgrades. Most of the LGs admit that this action is to only to support funding applications but not to plan road maintenance work or vegetation clearing.

In general, the LGs believe that the new software ROMAN II will be more user friendly and will hold more information and therefore could be more useful for LGs. However, the LGs also believe the ROMAN II is very expensive and will require extensive training. As a result, most of the LGs do not envisage using it to plan future road works, except possibly for sealed roads.

2.1.6 COMMUNITY INPUT

All of the interviewed LGs reported that they do not actively seek input or provide information to the community groups or other interest groups about road related works. All LGs believed that they provided sufficient information through their budgets (eg rate statements) and that most active groups were already well represented in the Council. As a result, if any community member had an issue with a road related work, the person would directly liaise with the Council.

One LG commented that while Councils may be attentive of public expectations in roadside conservation, contractors who undertake the works may not be aware of such details. As such, roadwork carried out may not meet the public's expectations.

2.2 future growth and changes

2.2.1 FUTURE PLANNING MECHANISMS

The interviews did not reveal any standard or mechanism that would be used by LGs to identify roads that need to be upgraded. There were two exceptions. One LG reported that they use safety audits and traffic counts. Another LG used increased traffic volumes, size of traffic and general community pressure.

2.2.2 FUTURE WORKS

All of the interviewed LGs report that there are little to no new roads planned for construction in the near future. New roads were mostly within subdivisions which are the responsibility of the land developers.

Planned road widening programs varied between LGs:

- One LG reported around 170km of roads were planned to be widened to 6 to 7m. Most of the widening would occur within the existing formation and therefore should not require much vegetation clearing.
- Two LGs identified a requirement to widen some of their narrow sealed roads, however this was dependant of securing funding and could be affected by changing priorities.
- Another LG reported that the Hyden-Norseman Road was progressively being upgraded to a 10m wide pavement. A clearing permit has already been obtained for the associated clearing of vegetation.

The main identified reason for road widening was to accommodate large farm machinery and to provide safe access for livestock and school buses.

Most of the interviewed LGs have ongoing programs to improve road safety. The most common programs were to change Y junctions to T junctions and to improve line of sight at corners and bends. These works require clearing of vegetation, often up to the fence line. One LG believes that it is possible to minimise the amount of vegetation to be cleared for line of sight programs by restricting such clearing to corners, leaving the rest of the road reserve untouched.

Gravel sourcing has been identified as an ongoing requirement for future works. Many of the interviewed LGs need to expand their existing pits or to create new pits to source gravel, which sometimes requires vegetation clearing to access the gravel.

Two LGs commented that CBH would continue to require road upgrades to accommodate haulage between grain bins. However, the location and times of these road changes is currently unknown and is generally determined each season.

2.3 design and standards

2.3.1 REFERENCES

All of the interviewed LGs indicated that the final designs may vary from the guidelines, depending on what is perceived by the LG to be safe and may be influenced by the Councillors' views and instructions.

Most of the interviewed LGs either use Austroads (2003) *Guide to the geometric design of rural roads* or Main Roads Western Australia (MRWA) guidelines as a guide for formation, pavement and seal width for most of their unsealed and sealed roads. One LG indicated that they use MRWA guidelines as a fallback, but are unsure what is actually used to guide road works. Another LG reported that they sometimes refer to a design consultant for particular road works, such as improving Black Spot areas.

2.3.2 DESIGN FEATURES

Most LGs did not seek advice from external parties regarding road designs and alternatives, except for complicated works. Most designs were conducted in-house. One LG stated that it was highly difficult to meet the design standard widths without reducing the width of, or even depleting, the road reserve.

Most LGs did not allow for clear zones in their road designs. There were two exceptions:

- One LG stated that they determine their clear zones from prior experiences. The clear zones only occur on a small number of roads where trees occur in the zone.
- Another LG has clear zones up to 4 m outside of the table drain, resulting in a 10m clear zone from the travel path. Their clear zones have been based upon advice from the Department of Environment and Conservation (DEC).

All of the interviewed LGs table drain designs followed the same approach of adapting the design to suit local conditions. In general, table drains are mainly constructed to a standard cross section, but then may be adjusted by the Works Manager to take into account the soil type and topography, for example, the drains are narrow and shallow for sandy soils and wide and deep for clay soils.

2.3.3 SAFETY AND ENVIRONMENT

The interviewed LGs declared that they provided little to no formal information to ratepayers regarding environmental and safety requirements. One LG indicated that they only supplied this information when sending out rate notices, however they were unsure if the ratepayers read the information.

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2.4 clearing regulations

2.4.1 UNDERSTANDING OF REGULATIONS

Until recently, most of the interviews LGs were unaware or at least unclear of their statuary obligation or requirements under the *Environmental Protection* (*Clearing of Native Vegetation) Regulations 2004*. Several LGs thought they had exemptions to clear:

- less than 1 ha of vegetation per annum
- when it is for safety reasons
- when maintaining the envelope within a road reserve which has been cleared in the previous 10 years. This includes clearing up to the back of the back slope and the removal overhanging branches.

As a result, some of the LGs could technically be classified as non-compliant within the Regulations and the *Environmental Protection Act 1999*.

All of the interviewed LGs believe the Clearing Regulations are too onerous and difficult to comply with. Some of the LGs also stated that the DEC officers were unhelpful when seeking assistance. One LG even stated that they would consider clearing vegetation without a permit for safety reasons, as they would rather risk facing the DEC than the Coroner.

2.4.2 CLEARING PERMIT APPLICATIONS

Some of the interviewed LGs have prepared Clearing Permits in recent years. This is usually done in-house by the CEO or Works Manager, however a LG once commissioned a consultant.

- One LG lodged one permit in last the two years. The permit was prepared by the Environmental Officer, as external assistance was not considered necessary.
- Another LG prepared a permit using a consultant. The permit took six to nine months to be issued from DEC, provided they followed conditions for offsets and preparing 10 years of reports. The employed consultancy now refuses to undertake another permit application as they found the overall process to be such a difficult experience.

All LGs reported that the Clearing Permits were very difficult and complicated. They also stated that the DEC appear to be scrutinising Clearing Permits more rigorously over recent years with increasing restrictions and conditions, yet simultaneously providing poor support and feedback. It was also felt that DEC officers assessed permits from a desktop perspective, rather than onsite inspections, which affect the quality and accuracy of their appraisal. This administration approach may be the result of the DEC not having enough resources to offer genuine assistance through working relations and on ground partnerships with LGs.

The difficulties in the process have resulted in some LGs changing their approach to clearing:

- Two LGs now source their gravel from previously cleared paddocks by having a gravel supply agreement with landowners.
- Another LG has issued a memorandum to all of their staff outlining what activities are exempt or not exempt under the Clearing Regulations.
- A third LG has attempted to reduce the amount of area to be cleared to minimise the revegetation and offset requirements. However, they have recognised that it is very hard to measure the actual area without undertaking a major survey.
- All LGs now seriously consider whether they need to clear the land.

2.5 offsets

2.5.1 AWARENESS

Most of the interviewed LGs were aware that the DEC may request offsets as a condition of a clearing permit as a variance of the 10 Clearing Principles. Only one LG was unaware of this condition.

Several LGs believed that the requirement for offsets was unrealistic, with one LG even withdrawing their Clearing Permit application.

2.5.2 BUSH BANKING

Only one LG was aware of the concept of bush banking where they could implement their offset proposal in advance. All of the LGs stated that they lacked the funds to undertake bush banking and preferred to spend their limited funds on road works. One LG also stated they were sceptical of the long term security of this action, because the conditions for offsets may change, possibly making some areas banked no longer viable for offsets.

2.6 costs and resources

2.6.1 COSTS OF CLEARING APPLICATIONS

One LG reported that it was difficult to estimate the financial cost to prepare a clearing application, as the work was done in-house. It was estimated that the clearing permit took about four hours to prepare. Another LG did not know the actual financial cost of their application, but it was estimated to cost around $7,500 including the employment of the consultant.

2.6.2 DATA AND SOFTWARE

All LGs have ROMAN I software. Only one LG has drafting and Geographical Information Systems (GIS) software. Such programs included AutoCAD, Map 3D and LISCAD. Another LG had obtained Quantum GIS for free off the internet, which has a very simple user interface where information such as cadastre and vegetation mapping information can be stored and interrogated. Most LGs had a local financial package (eg IT Vision, Quickbooks), which can store some database material.

Only two LGs have used the Landgate online State Land Information Platform (SLIP). These LGs have successfully used SLIP to download information such as tenure, prior land use, Environmentally Sensitive Areas (ESAs), acid sulphate soils (ASS) and Native Title buffer zones. However they found the system was not user friendly and they were generally frustrated when trying to use SLIP.

LGs that did not have any environmental database or mapping information relied on other methods to gain information, such as:

- information sheets provided to LG workers on presence of endangered spiders (locations not recorded in database); Department of Agriculture and Food (DAFWA) has provided groundwater monitoring and recovery program information
- Google Earth for aerial photography and a five year old flora survey of the Norseman-Hyden Road
- a map of Declared Rare Flora (DRF) as indicated from roadside markers ("hockey sticks").
- verbal advice from DEC for the location of DRF, which are marked by yellow roadside markers but not recorded on a database; information from local groups including aerial photographs, soils and contour banks
- incidental information obtained in the past for various purposes (eg environmental impact assessment, local development).

2.6.3 STAFF

Only one LG had any staff trained in natural resource management, GIS or drafting: two draft persons and an environmental officer knowledgeable in GIS. The other LGs stated that they cannot afford to train or employ such staff.

The Works Manager was the only employee in each LG with any knowledge in road and drain design. Two LGs indicated that they sometimes employed a consultant in these matters.

2.7 funding sources

All of the interviewed LGs reported that they could only provide limited funding for road related and environmental works. Subsequently, they were largely dependent on securing funds from the following sources:

- Roadside Recovery Group Grants
- Black Spot
- Federal Assistance Grants
- South Coast NRM.

2.8 outcomes

2.8.1 LESSONS LEARNT

Due to past experience, the interviewed LGs did not have many positive comments to say about the process of managing road works and roadside vegetation. Two LGs had "no comment".

All of the interviewed LGs were sceptical over whether the clearing permit process would achieve a positive outcome for the environment. Two LGs even stated that the limited help and feedback from the DEC promotes negative behaviour, as frustrated LGs would be encouraged to ignore the process.

Another LG stated that this interview process was useful in that they learnt about offsets.

2.8.2 SUGGESTIONS FOR IMPROVEMENT

The LGs had three main suggestions for improving the ability and ease for LGs to comply with statuary obligations around clearing of native vegetation.

1. Simplify the system

Firstly, the LGs recommended that the clearing permit application system should be simplified and the process time reduced. One possibility was for a "self assessment system" to be developed and endorsed by the DEC. The system should be prepared in a manner where a LG staff member may rapidly complete a permit application. The system should also be designed so that a DEC officer may efficiently assess the application and make a decision as to whether the permit may be approved and to what conditions.

2. Assistance and feedback

The second main suggestion was for the DEC to offer more assistance and feedback to LGs on their clearing permit application. The LGs expressed a desire to have more support to help them understand what information is required when completing an application and to be able to access this information easily. The LGs also want more details about why their application has been granted or denied, and also a comprehensive explanation on the conditions.

3. Additional funding

Many of the LGs feel that they are the "end of the line" of legislation enforcement. They continuously receive more statuary obligations from Federal and State governments, yet they do not receive any additional funding to perform the additional requirements. Most of the LGs need further financial support to obtain trained staff and adequate resources, such as for GIS software and securing offsets. Without more funding, the LGs simply cannot comply with the regulations, despite their best intents.

appendix one: pilot program questionnaire

Current Practices

1. What is your current regime for managing roadside vegetation and other native vegetation affected by road infrastructure needs (eg gravel pits). Do you document your plans and processes?
2. How many and what roads have recently been upgraded or constructed?
3. Were any alternatives for road and infrastructure construction examined? If so, what were they, if not, why not?
4. Was any consultation undertaken with affected stakeholders including farmers and conservation groups? If so, who? If not, why?
5. Do you have/ use a risk assessment program or methodology, and if so what is it?
6. What is your knowledge and experience of SLIP (State Land Information Platform)?
7. Do you have a 5-year or 1-year forward works (new asset creation) plan? If so, can you make it available?
8. Do you have a 5 year or 1 year works plan (existing asset improvements or rehabilitation)?
9. Do you have a 5 year or 1 year maintenance plan?
10. Do you use ROMAN to manage your road assets? If so, can you provide a copy of the database if required to generate works and maintenance programmes?
11. What alternative solutions to addressing the transport needs have you considered?
12. What practices, equipment and maintenance intervals do you use for maintenance activities outside of the pavement width (eg weed control, shoulder maintenance, table drain maintenance, maintenance of clear zones and sight triangles)?
13. What herbicides do you use and where are they used?
14. Do you have information on the vegetation such as vegetation type, location of Declared Rare Flora and Threatened Ecological Communities, and dieback? If so, can you provide a copy of the data?

Future Growth and Changes

1. What are the areas of identified traffic growth that will require road widening or new roads?
2. What are the areas of identified land development that will require road widening or new roads?
3. What changes are expected to transport patterns (eg heavy truck haulage instead of rail for grain, lime, minerals that will require road widening or new roads)?
4. What growth in traffic volumes are expected that will require road widening or new roads?
5. Are new roads likely to be in new reserves/ corridors or in existing road reservations?

Design and Standards

1. What road design and safety standards are used to determine required formation width, pavement width and seal width?
2. Do you design for clear zones based on traffic volume and zoned speed limits or do you base clearing on a standard width for all roads?
3. How are requirements for table drains determined – do you design drains or use a standard template?
4. Have you sought advice from external parties regarding road design standards and alternatives, and if so from whom?
5. What education/ information have you provided to ratepayers regarding the issues ie increasing environmental and safety requirements and standards, and their benefits?

Clearing Regulations and Permits

1. Can you please explain what you understand to be your Local Government's statutory obligations regarding clearing of native vegetation under the EP Act and Regulations?
2. What Clearing Permits were submitted and who prepared them?(eg internal, consultants)
3. What were the results of your Clearing Permit applications?
4. Were there any difficulties, restrictions, or misunderstanding during the application process? If so, what were they?
5. Did you have to make significant changes to your infrastructure and vegetation management regime after the introduction of the *Environment Protection (Clearing of native vegetation) Regulations 2004*? Why/ why not? Please give a full explanation.
6. What do you believe are the current issues for your Local Government complying with the clearing provisions in *the Environment Protection Act 1986* (incl. the clearing regulations)?
7. Have there been any other changes in approach to applying for a Clearing Permit as result of regulations or restrictions?

Offsets

1. Have you had to create offsets as part of the clearing permit process? If so, can you describe how the process worked for you?
2. What offsets were actually implemented (eg purchase of uncleared bushland, revegetation of degraded land, revegetation of cleared farmland)?
3. On what basis were offsets required? (eg at variance with any of the 10 clearing principles, habitat for endangered species)
4. Who is managing the offset properties (eg Shire, DEC, community group)?
5. Have you included the environmental (including offset) costs in funding applications?
6. Have you considered Bush Banking?

Costs and Resources

1. How much do you estimate the clearing of native vegetation permit application and processing costs your organisation including staff time, application fees, overheads, consultant fees etc?
2. How much do you estimate it has cost your organisation to comply with the requirements of the permit (including offsets)?
3. What environmental resources they have (eg number of people with specific responsibilities and qualifications in environmental matters)
4. What software and hardware resources do you have?
5. What drafting resources do you have?
6. What environmental and biodiversity mapping data do you have or had? How would/ did you obtain it?
7. Do you have access to the State Land Information Platform (SLIP)?
8. Do you have internal resources covering:
    a) Road design
    b) Drainage design
    c) Road safety/ risk assessment and analysis
    d) Asset management (ROMAN).

Funding Sources

1. What are the main avenues of road funding for road and drainage projects? (eg LG revenues/ annual budgets, regional road grants (improvement/ rehabilitation), Black Spot etc)
2. What source of funding do you have for environmental activities?
3. What other sources of funding have you explored (eg bond issue, Natural Resource Management funding)?

Outcomes

1. What were the lessons learnt from this process?
2. Has the permit process achieved a positive outcome for the environment? Why/ why not?
3. Do you have suggested solutions for improving the ability and ease for Local Governments to comply with their statutory obligations around clearing of native vegetation (including suggested changes to legislation)?
4. Do you have suggested solutions for improving the environmental outcomes from trying to balance infrastructure and community needs with environmental sustainability?

appendix two: phone interview questionnaire

Current Practices

1. What is your current regime for managing roadside vegetation and other native vegetation affected by road infrastructure needs (eg gravel pits). Do you document your plans and processes?
2. How many/ how long/ what roads have recently been upgraded or constructed? If so, how did you go about it (eg considering alternatives, consulting stakeholders, prioritising road works, consider impacting on vegetation)
3. Do you have any 1-5 year plans for your roads (assets, maintenance, rehabilitation)?
4. What practices, equipment and maintenance intervals do you use for maintenance activities outside of the pavement width (eg use of herbicides, shoulder maintenance, table drain maintenance, clear zones and sight triangles)?
5. How do you use ROMAN? Do you use it to manage your road assets?
6. What environmental data do you have access to and use? (eg SLIP, vegetation type, location of Declared Rare Flora, Threatened Ecological Communities and dieback)?

Future Growth and Changes

1. Have you identified areas that will require new roads or widening of existing roads? If so, how did you identify them (eg increased traffic volume, larger farm machinery)?
2. If you are putting in any new roads? If so, are they likely to be in new reserves/ corridors or in existing road reservations?

Design and Standards

1. What road design and safety standards are used to determine required formation width, pavement width and seal width?
2. Do you design for clear zones based on traffic volume and zoned speed limits or do you base clearing on a standard width for all roads?
3. How are requirements for table drains determined – do you design drains or use a standard template?
4. Have you sought advice from external parties regarding road design standards and alternatives, and if so from whom?
5. What education/ information have you provided to ratepayers regarding the issues ie increasing environmental and safety requirements and standards, and their benefits?

Clearing Regulations and Permits

1. Can you please explain what you understand to be your Local Government's statutory obligations regarding clearing of native vegetation under the EP Act and Regulations which was introduced in 2004?
2. Have you submitted any clearing permits? If yes, who prepared them, what were the results, were there any difficulties or misunderstanding and did you face any issues in complying with the permit conditions? Have you changed your approach to the application process as a result of regulations or restrictions?

Offsets

1. Are you aware of Offsets as a possible outcome of the clearing application?
2. Have you had to create offsets as part of the clearing permit process? Why were the offsets required? What offsets were actually implemented? Who is managing the offset properties?
3. Are you aware of Bush Banking? Would you consider it? Why? Why not?

Costs and Resources

1. If clearing permits have been submitted, how much do you estimate it cost:
   a) to apply for the permit?
   b) comply with the requirements of the permit?
2. Do you have an Environmental/ NRM Officer and/or draftsperson?
3. What drafting, software and hardware resources do you have? (eg version of Microsoft Office, type and version of GIS software).
4. Do you have internal resources covering road design or drainage design? If so, please detail.

Funding Sources

1. What are the main avenues of road funding for road and drainage projects? (eg LG revenues/ annual budgets, regional road grants (improvement/ rehabilitation), Black Spot etc)
2. What source of funding do you have for environmental activities and have you explored other sources of funding (eg bond issue, NRM funding?)

Outcomes

1. Has the permit process achieved a positive outcome for the environment? Why/ why not?
2. Do you have suggested solutions for improving:
   a) the ability and ease for Local Governments to comply with their statutory obligations around clearing of native vegetation?
   b) environmental outcomes from trying to balance infrastructure and community needs with environmental sustainability?