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THE DEVELOPMENT OF A STRATEGIC APPROACH TO RURAL ROAD MANAGEMENT.

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THE DEVELOPMENT OF A STRATEGIC APPROACH TO RURAL ROAD MANAGEMENT.

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Abstract

Many local road networks include a large number of low traffic volume, and/or low standard roads. The LGAQ/Main Roads alliance, increasing user expectations and non-feasance issues are driving the demand for improvement of these roads. This demand is in conflict with the need to keep the costs to road users and ratepayers at an acceptable level.

This paper describes:

- A process to develop a series of maintenance and construction standards, tailored to different functional road categories that provides a balance between service level provision and affordability; and
- A consultation approach that ensures there is widespread acceptance of these standards by building an understanding of the performance – cost tradeoffs made.

The development of a greater understanding by road users and other stakeholders of the issues affecting the road network and their costs promotes cost-effective management of these roads through the minimisation of reactive road works. The processes described achieve community endorsement of the road work activities undertaken by councils on, and through the fact that they have had a say in the planning of these works.

Key Words: Roads, Rural, Management, Strategy, Investment, Optimisation, Stakeholder, Consultation, Design, Standards.

Introduction

Local governments in Queensland and across Australia own and manage the vast majority of the Australian road network¹. In meeting their road responsibilities councils have to deal with numerous, often conflicting, influences. These influences include:

- An aging road network;
- An increase in the number of road users;
- An increase in the expectations of the road users;
- Changes in vehicle types and allowable vehicle loads;
- Changes in land utilisation and land use planning strategies;
- Increasing community knowledge on the environment and subsequent emerging standards;
- Road safety and litigation issues, including the removal of non-feasance immunity;
- Road management alliances with other authorities and government departments;
- Increasing competition for funds;

¹ RoadFacts 2000

- Rising construction and maintenance costs, and
- Changes to industry minimum design and construction standards.

The challenge for all local government road managers is to deliver an acceptable level of service while addressing these many influences.

The challenge becomes greater for low trafficked roads, where any investment is difficult to justify economically. These roads are invariably rural and provide a service to communities that is not easy to quantify in financial terms.

This paper presents a strategic approach that road managers can employ to address rural roads. This approach will not result in the miraculous appearance of significant additional funds for these roads, but it will ensure that local governments achieve the greatest level of stakeholder ownership for the investment made.

What is "A Strategic Approach"?

In the context of road management, "a strategic approach" ensures alignment of day-to-day processes with the longer-term objectives and priorities for the network.

It is obvious from the dynamic and complex nature of the road network influences presented above that targeting fixed performance criteria or levels of service over a strategic timeframe (Say 10-years) is a poor strategy. The strategic approach therefore, is to put in-place a framework that ensures that what is done on the roads remains responsive to these changing influences over the longer-term.

Regular review of stakeholder needs is the mechanism for testing alignment between desired service levels and what is being delivered "on the road". The review process typically comprises three main components:

- Communication;
- Education; and

- Prioritisation.

Stakeholder endorsement of the review outcomes will not be achieved if this process does not include significant stakeholder involvement.

Taking all of this into account, our proposed strategic approach to managing the road network is the development of a stakeholder consultation framework. Refer Figure 1

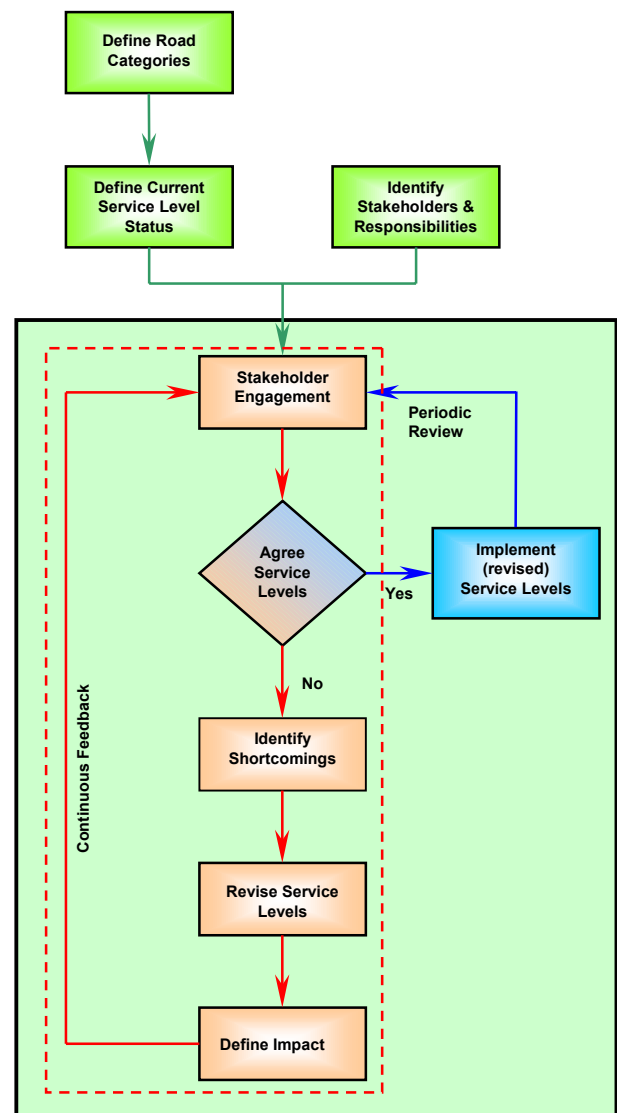


Figure 1 – Stakeholder Consultation Framework

Defining Road Categories

It is impossible to manage an infinite number of standards and performance levels across the network. For this reason and for reasons of equity and transparency, all roads meeting a specific range of functional criteria should

achieve a uniform level of service. The criteria "bins" to which road sections are assigned are the road categories.

Typically, the criteria that contribute to road categories include:

- Strategic importance;
- Current Land Utilisation;
- Traffic volumes; and
- The make-up of the vehicle fleet on the road (and therefore, traffic loading).

For the development of categories representative of rural roads, there is a further need to recognise the unique issues that relate to rural areas, such as:

- Equity of access to social infrastructure and emergency services;
- Low traffic volumes but high freight loadings, and
- Seasonal changes in land utilisation

To facilitate the ease of administration, it is recommended that the number of categories be kept to a minimum. Typical categories can be developed from those documented by NAASRA and various other government agencies.

Defining Current Service Levels

Before Councils embark on any significant stakeholder engagement, it is important that the current road network service levels are well understood. The task of gathering and documenting current service levels is often an educational process in itself and provides a baseline to present to stakeholders. In addition, this task often highlights gaps in current service levels

Typically, current service levels (being the output of technical staff) are highly technical in nature. These include:

- Facility dimensions;
- Structural make-up;
- Materials specifications;
- Statutory requirements;
- Safety Standards;

Most of these standards are applied on a functional category basis, tied back to traffic volumes, urban/rural environment and/or strategic/community importance. Higher levels of service would apply to roads that are higher in the functional category hierarchy.

When documenting current service levels, it is critical that they are presented in a manner that promotes understanding by non-technical participants. Developing documentation that can be used for both reporting and presentation purposes is considered an appropriate and efficient approach to this task.

Identifying Rural Road Stakeholders

It is important that relevant constituents and all groups with a stake in rural roads have an input to developing service levels. Entities that may be represented during the engagement process, either directly or indirectly, include:

- Other business units within council such as planning, finance, environment, health, and parks,
- Elected representatives;
- Road users, such as ratepayers, transport companies and haulage contractors,
- State government departments, such as the Department of Main Roads,
- Other neighbouring councils, and
- Organisations representing specific interests in society, such as consumer associations, and organisations for social development, indigenous

peoples, nature conservation and environmental protection.

The Stakeholder Engagement Process

The scope and scale of the stakeholder engagement process needs to be appropriate to the, by virtue of their lower population density, would require a less formal stakeholder consultation process than larger councils with higher population density and more diverse land-use.

The objective of capturing the issues that are relevant to stakeholders remains the same however. To maintain relevance to the widest number of councils, this paper details the outcomes that should result from the stakeholder engagement process, rather than a specific approach to be employed. These outcomes include:

- To provide awareness of the implications of a given service level in terms of cost, impact and the technical constraints which council operates under
- To gain stakeholder consensus on a given approach to achieving a desired service level;
- To promote stakeholder “ownership” of the resulting service levels;

Integral to the success of the stakeholder engagement process is the realisation by all parties that:

- 1) Service levels must be standardised across a defined functional road category; and
- 2) Compromises will need to be made.

Stakeholder engagement can be successfully implemented in many forms, including:

- Focus groups;
- Workshops;
- Community Meetings;

- Surveys;
- Analysis of Customer Feedback System data; or
- A combination of any of the above.

For reasons of transparency and good governance, it is necessary to standardise and document the adopted stakeholder engagement process.

The process of stakeholder engagement can develop its own problems. These may include:

- Accusations that the processes set up fail to represent all interested parties or fail to encourage participation;
- Accusation of failure to accurately inform;
- An opportunity for those with very strong views to express them, irrespective of their relevance.

To overcome or to limit problems associated with the engagement process, it is preferable they be set up and managed by suitably qualified personnel.

Identification of Service Level Shortcomings

Identification of service level shortcomings is a two-step process. Firstly, the issues raised during the stakeholder engagement process need to be attributed to the service levels that they impact upon. This effectively identifies the service level “symptom”.

The second step analyses the issues raised for a specific service level to identify the root cause of the shortcoming. For instance, for a road roughness service level, the root cause may be patching response time. It is important not to rule out operational issues such as construction quality or treatment effectiveness as a possible root cause at this stage.

Service Level Revision

Once the root cause of a service level shortcoming is identified, the measures taken to mitigate the shortcoming can be determined. This involves the revision of either the service level parameter (such as response time) or a complete re-specification of a treatment to be applied.

A service level parameter may be capacity based, such as roadway width; performance based, such as road roughness; or it may have a safety or environmental outcome.

Treatments may be respecified due to improved methods being developed or as a response to materials availability/cost issues.

Define Revised Service Level Impact

Once a service level has been revised, the impacts of this revision must be exhaustively investigated. Areas of impact to be considered would always address all of the issues of importance to the stakeholders. These may include:

- The total cost impact, including any design or administration costs and overheads;
- The impact on the amenity of landholders adjacent to the road, both during and after construction;
- Any resulting traffic outcomes (induced demand); and
- The impact on the environment.

Due to the technical nature of this analysis, it is not considered appropriate for general stakeholder involvement. The stakeholders will have an opportunity to endorse or revise the service levels prior to their implementation.

Continuous Feedback

To achieve the full benefits from a strategic approach to the management of rural roads it

is necessary to promote a continuous and iterative process with all stakeholders being involved and informed throughout the process with all available information disseminated to all stakeholders throughout the process.

The advantage of this iterative structure is that it delivers a feedback and monitoring mechanism at all stages of the process, raising awareness of the full implications of implementing a given service level. In effect, this mechanism attenuates stakeholder expectations back to levels of service that can be practically achieved within the constraints of available resources. and ensuring that the inputs of all of the stakeholders contribute to the delivery of appropriate and successful outcomes. By operating within a continuous framework means that the process is dynamic and therefore capable of delivering outcomes that are representative of the requirements and desires of the majority of stakeholders without impacting adversely on other areas and the feedback mechanism also allows for stakeholder satisfaction (or lack of it) to become obvious and visible to all.

Implementation of Service Levels

Following acceptance by the stakeholders of the service levels and their impacts, the resulting service levels should be incorporated into council policy. Any resulting operational changes in terms of modifications to construction or maintenance activities or programs should be actioned.

Further to the implementation process is the inclusion of mechanisms that set up periodic reviews of the defined service levels. This to ensure they are being delivered as anticipated and to capture changes in policy, legislation and changes to stakeholder expectations so that service levels continue to meet the needs of all stakeholders in a dynamic environment.

The return interval of the reviews will be a function of the rate of change of the council demographic, public perceptions or governing legislation. They also need to be set so as to achieve suitable feedback data

from stakeholders and may vary between different service delivery parameters.

Conclusion

The strategic approach we have detailed changes the focus of councils' road management processes from imposing standards on the road user to facilitating road user needs. The real engagement of stakeholders, as opposed to the one-way communication commonly employed in "public consultation" processes:

- Captures the issues most important to the road stakeholders;
- Builds understanding of the technical, operational and budgetary constraints that councils work under; and
- Maximises stakeholder satisfaction through their involvement and ownership of the process that derived the service levels.

The level of stakeholder engagement required to implement this process does have

a cost. This cost should be more than offset by the reduction in:

- The level of council effort required to field customer complaints; and
- The quantity of reactive maintenance undertaken.

It is in rural areas where we anticipate that this process will gain the most return to councils. Not because the standard on rural roads will improve radically, but because the stakeholders in these areas will finally have been given a voice.

A strategic approach can only succeed, however if ownership is achieved for the majority of stakeholders.

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Author Biography



Kevin has over 22 years experience in civil infrastructure design, maintenance, management and supervision of which 9 years has been in local government. Kevin now specialises in the areas of asset and maintenance management and rehabilitation and design, with the primary objective of minimising whole of life costs.

Kevin has significant experience in planning and implementing the capture of infrastructure data as well as the overall management of municipal infrastructure. Kevin also has extensive knowledge of construction and maintenance standards and has undertaken numerous projects to develop specifications and operational manuals for both local and international road agencies.

Kevin has been the project manager on projects where he has been responsible for all client liaison and deliverables in accordance with the contracts. Kevin has proposed and managed the development of purpose built video based road condition and data collection system involving the concept design, hardware specification and software development utilising a GIS platform.

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