

DEVELOPING A COMPREHENSIVE ROAD SAFETY PLAN FOR ETHEKWINI

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ABSTRACT

International research indicates that road traffic accidents are going to be a leading cause of mortality and disability in the future. Global Road Safety Partnership projects that by the year 2020, road crashes will be the 3rd leading burden on health worldwide exceeded only by cardiovascular diseases and major depression. Road accident occurrence rates also tend to distinguish the developed from the developing world. For South Africa to be a caring nation and to lead the way in the development of southern Africa nations, it follows that the importance of road safety cannot be underestimated. The annual loss of life on the roads is horrific, and the cost of accidents to the country is enormous.

A significant proportion of South Africa's accidents occur in the large urban concentrations. It follows that in order to achieve national success a comprehensive strategy is required at the city level. It is in this context that the eThekwini Road Safety Plan is the subject of this paper.

EThekwini is in the process of developing a comprehensive and integrated road safety plan to effectively address the road safety problem.

The paper will focus on the importance of road safety to South Africa as a nation (and eThekwini in particular) and the overall development of eThekwini's road safety plan. Key issues that have been identified from extensive status quo assessments of current education, enforcement, emergency services, engineering and data capture programmes will be highlighted. Also, legislation issues and the institutional arrangements of the newly formed Transport Authority to deal with road safety will be mentioned.

Finally, lessons learnt to date will be given to assist other Municipalities on developing similar plans.

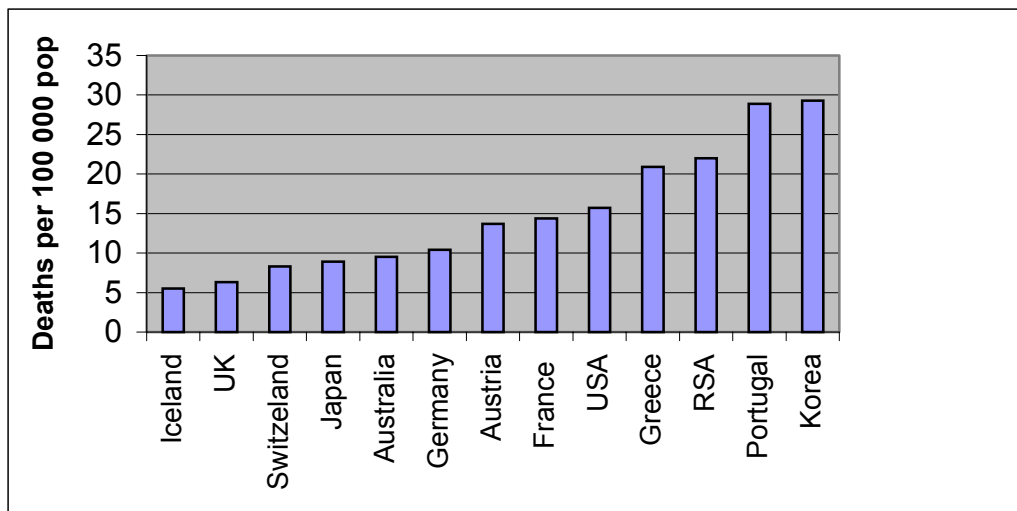
[Please note that the views expressed in the paper are those of the author and not necessarily those of the eThekwini Transport Authority or eThekwini Municipality.]

1. INTRODUCTION

International research indicates that road traffic accidents are going to be a leading cause of mortality and disability in the future. Global Road Safety Partnership projects that by the year 2020, road crashes will be the 3rd leading burden on health worldwide exceeded only by cardiovascular diseases and major depression. Road accident occurrence rates also tend to distinguish the developed from the developing world. For South Africa to be a caring nation and to lead the way in the development of southern Africa nations, it follows that the importance of road safety cannot be underestimated. The annual loss of life on the roads is horrific, and the cost of accidents to the country is enormous.

In 2001 there were some 470 000 collisions in South Africa, costing the country around R 14 billion¹.

This compares exceptionally poorly to many other countries, as is shown by the following graph:



Graph 1. Comparison of countries accident fatalities per 100 000 population.

2. THE RELEVANCE AND IMPORTANCE OF MUNICIPAL ROAD SAFETY PLANS

Presently in South Africa, road safety plans, strategies and programmes are primarily prepared by National and Provincial spheres of Government, with little input from Local government. The national “Arrive Alive” campaign, as part of their “Road to Safety” Strategy, is currently moving into its eighth phase². In KwaZulu Natal, “Asiphephe” (now also called “Arrive Alive”) has been the strategy running over a number of years. Arguably, little or no attempt has been made to meaningfully involve local government in the national or provincial strategies, despite the extent to which the problem is contained in metropolitan areas, and the fact that much of the implementation of remedial measures falls to that sphere of government.

Currently, to the author’s knowledge, no comprehensive road safety plans (resulting in co-ordinated strategies, programmes and campaigns) are being driven at the local level. This is not to say that Municipalities are not addressing road safety issues through various initiatives and committees, but that there seems to be a lack of a BOLD, DECISIVE AND COMPREHENSIVE plan to tackle the road safety problem.

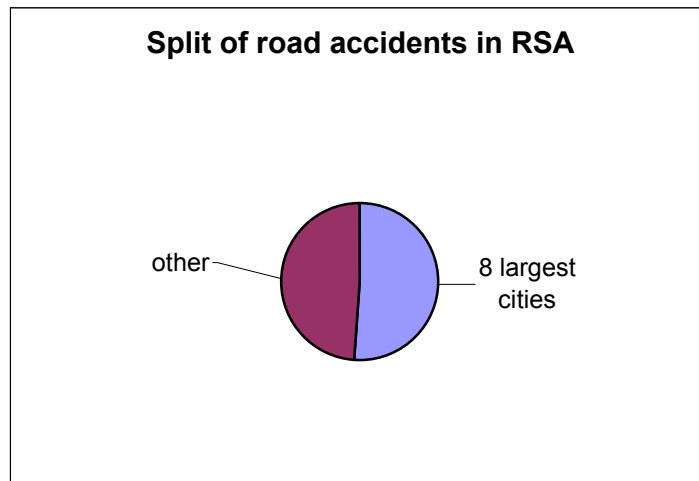
More specifically, there seems to be a lack of:

- Specific high-level accountability for road safety outcomes and targets
- Direct institutional responses that elevate the importance of road safety in local government
- A clear plan that directs and drives the co-ordinated efforts of enforcement, engineering, education and publicity around specific campaigns aimed at specific target markets and issues.

There is strong motivation for Municipalities to confront the road safety problem more directly and determinedly by preparing comprehensive road safety plans and driving targeted campaigns at the local level. This motivation is given briefly in the following sections.

2.1 The High Proportion of Road Accidents Occurring in Large Urban Concentrations

The following graph shows that of all the road accidents in South Africa in 2001, *51% of these accidents occurred in the eight largest cities* (namely, eThekweni, Tshwane, Cape Town, Johannesburg, Ekurhuleni, Mangaung, Nelson Mandela Metropolitan Municipality and Buffalo City).



Graph 2. Proportion of road accidents in RSA (2001)³.

This is particularly significant, as it can be argued that the patterns and causes of road accidents in concentrated urban areas may be totally different to the other parts of SA. Typically, national and regional trips would tend to be much longer, and hence fatigue and related issues could be a main cause of accidents. Also, peaking would occur around holiday periods or major events. However, in urban concentrations trips are shorter, peaks are daily occurrences in the morning and evening, and the intense land-use activities result in more intensive and diverse traffic conflicts.

Whilst in the recent past attempts have been made to ensure that the National and Provincial campaigns cover the entire year, visible “on the ground” actions tend to focus *on the peak holiday periods of Easter and Christmas. This focus may not be that relevant in municipal areas.* In eThekweni, for example, the accident patterns over the years have shown March and September / October to be the highest accident months.

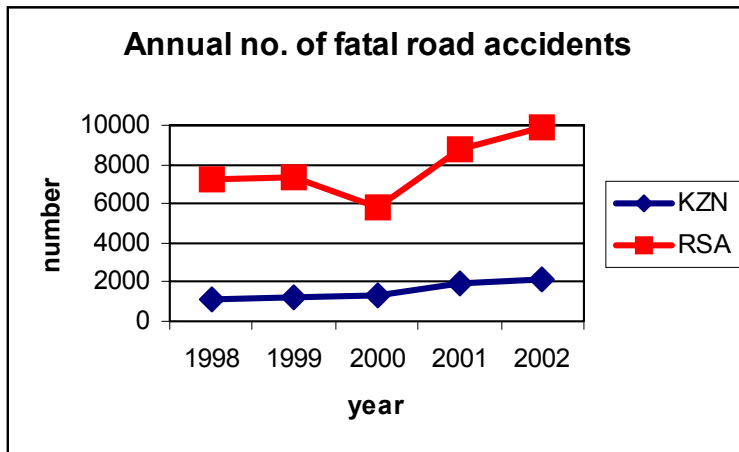
The conclusion that can be drawn is that national and provincial plans, programmes and campaigns are not able to effectively take into account the differing patterns of trips and accidents in large urban areas. This is clear motivation for large Municipalities to develop their own plans, strategies and campaigns, not only to generally support the national and provincial programmes, but also to deal with urban road accident patterns in a more focused manner.

2.2 The Relative Ineffectiveness of National and Provincial Programmes

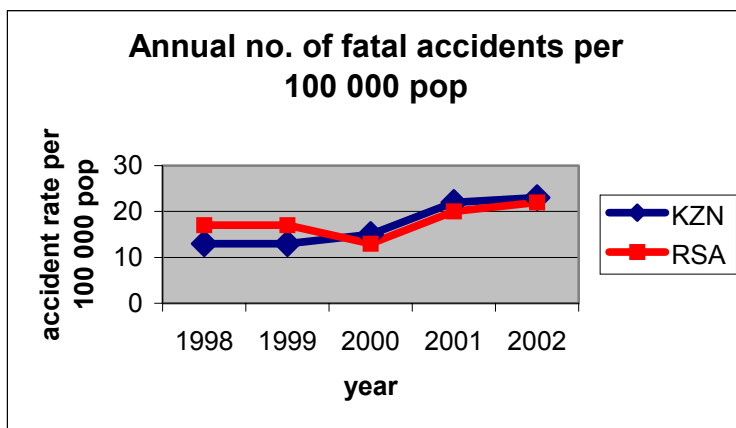
While it is not the intention of this paper to criticise the national or provincial programmes (nor to detract from their efforts to reduce road accidents), the following graphs show that the accident rates in SA have not been significantly affected by these programmes. In fact, the road accident figures continue to rise.

Similar, increasing trends in the annual number of fatal accidents for all the provinces have been reported from the period 1998 to 2002⁶.

The major municipalities, with such a high proportion of South Africa’s accidents, therefore have a very meaningful contribution to make towards reducing the accident rates through targeted programmes and strategies. In fact one may hypothesise that the lack of involvement of local authorities in National and Provincial strategies is one reason for a lack of success in terms of accident reductions. The critical issue is the deployment of resources which should transcend jurisdictional boundaries.



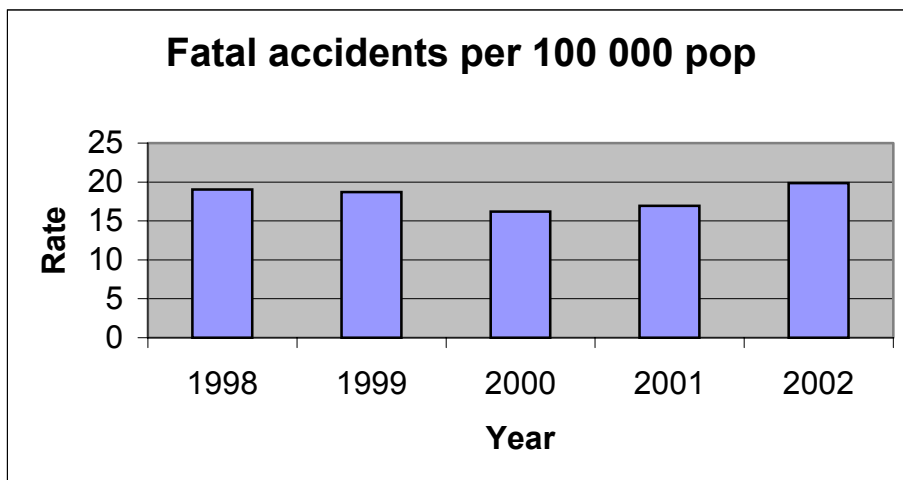
Graph 3. Trend in the annual number of fatal accidents⁴.



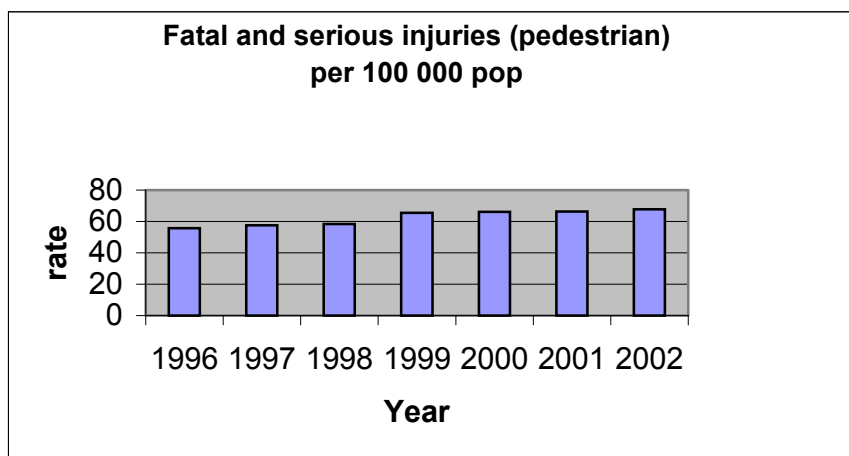
Graph 4. Trend in the annual number of fatal accidents per 100 000 population⁵.

2.3 The Relative Ineffectiveness of Current Municipal Efforts to Reduce Accidents

Again, while it is not the intention of this paper to criticise or detract from the efforts and resources that Municipalities have been putting into road safety, the following graphs, as an example, show that the accident rates in eThekweni are still generally increasing.



Graph 5. Trend in fatal accidents per 100 000 pop in eThekweni.



Graph 6. Trend in pedestrian fatalities of serious injuries per 100 000 pop in eThekweni⁷.

[The population figures used for these graphs take into account changes in the Metropolitan boundary.]

The following number of accidents (with associated costs) occurred in eThekweni in 2002:

Table 1. Number of incidents by injury and associated costs for eThekweni for 2002.

| Fatal | Serious | Slight | Damage only | TOTAL |
|-----------|----------|----------|-------------|-------------|
| 627 | 2630 | 10266 | 41526 | 55049 |
| R 299 mil | R322 mil | R358 mil | R 1026 mil | R 2 000 mil |

As can be seen, some 55 000 accidents cost just over R 2 billion, not to mention 705 road deaths from the 627 fatal accidents.

Similar trends (i.e. generally increasing rates of accidents and fatalities) have been reported in other major Cities in SA^{8,9}.

Clearly, these trends and statistics show that current efforts in Municipalities to promote road safety are relatively ineffective, and there is a need to reassess current programmes and projects and tackle the problem more fundamentally and holistically. More specifically and importantly, there appears to be a lack of co-ordination of limited resources to the critical problem areas, emanating from what appears to be the absence of a singular purpose in respect to road safety. This is the aim of the road safety plan.

As mentioned before, this review of the national, provincial and municipal road safety trends is not meant to criticise or detract from their current efforts. Yet honesty compels one to come to the clear conclusion, on the basis of the reported statistics, that no sphere of government is making major inroads in the road safety problem in SA.

3. APPROACH TO THE ETHEKWINI ROAD SAFETY PLAN

In March 2003 eThekweni began developing a comprehensive road safety plan. The following sections outlines the principles and process to develop the plan, and institutional arrangements to implement the plan.

3.1 Guiding Principles

The following guiding principles have been adopted:

Data driven

Any road safety plan and strategies must be developed from a thorough analysis of road accident patterns and causes. The more accurate and detailed the data is, the more focussed the strategies can be.

Realistic

Due to current financial and resource constraints, it is unlikely that there will be an immediate and dramatic increase in resources to implement the plan. The plan must therefore be realistic in what it aims to achieve.

Comprehensive

Although the plan must be realistic, it must still assess and define the entire range of strategies and actions that need to eventually be implemented. These actions need to be prioritised according to resource constraints.

Multi-disciplinary

It is well known that road safety strategies need to be multi-disciplinary and include all stakeholders if they are to be effective.

Long term focus

In order to address road safety effectively, peoples values, culture and habits need to be changed. This is never a quick process, and there is no “quick fix” with road safety. It also means that “foundations” need to be put in place now that may only yield results in many years time. Yet these foundations are critical to affect lasting results and change.

3.2 Process to Develop the eThekwini Road Safety Plan

A fairly standard planning approach was adopted to develop the plan, and Professor CS Roebuck was appointed to develop the overall phasing of the plan and the detailed briefs¹⁰. The development of the plan was divided in to the following stages:

Stage 1: Status quo assessments of current road safety activities and resources:

Detailed status quo assessments of current road safety activities and resources for all spheres of government and other key stakeholders have been done.

These included:

- Current related plans
- Highway and traffic Engineering
- Education, publicity and community liaison
- Enforcement and judiciary
- Emergency services
- Current evaluation of road safety measures
- Current accident records and the analysis typically done
- Current road safety legislation (Legal situation)

Stage 2: Detailed accident and risk analysis (Current accident situation):

The value of the analysis is almost entirely dependent on the accuracy of the accident database. In this regard, eThekwini has invested many years and resources into developing its current accident record database. This database is considered to be one of the best in the country, and is a tremendous asset to eThekwini.

This activity was currently being undertaken at the time of the writing of this paper. It involves a complete and detailed analysis of the accidents in eThekweni from 2000 to 2002.

The following provisional matrix will guide the analysis:

Table 2. Provisional matrix of key components of accident analysis.

| | Road class | Road condition | Residential area (income) | Age group | Gender | Weather | Time of day | Drink /seatbelt/ cell phone | Road worthiness |
|---------------|------------|----------------|---------------------------|-----------|--------|---------|-------------|-----------------------------|-----------------|
| Pedestrians | x | | x | x | x | x | x | | |
| All PT | x | | x | | x | x | x | x | x |
| Minibus taxis | | | x | | | x | x | x | x |
| Heavies | | | x | | | x | x | x | x |
| All veh | x | x | x | x | x | x | x | x | x |

Risk analysis will also be carried out to identify vulnerable groups and help with prioritisation of strategies and actions.

Stage 3: Development of objectives:

Long term objectives for each aspect of road safety (as mentioned under the Status quo assessments) and the overall accident rates are to be developed, with the specific aim of setting targets, reducing high risk areas and improving systems. Interdependencies between the various objectives need to be highlighted. It is critical that these objectives include outcomes and not merely resource outputs. In the final analysis, true success can only be seen in the lasting reduction of accident rates.

Stage 4: Comprehensive action programme:

The specific programmes and actions that need to take place for eThekweni to realise its road safety objectives need to be developed. Again, interdependencies between the various actions need to be highlighted.

Stage 5: Short term 5 year action plan:

Taking into account interdependencies and resource constraints, the programmes and related actions need to be prioritised into a five year action plan. It is critical that the programmes and actions that built proper foundations for lasting change in road behaviour enjoy priority, even though they may not yield immediate results.

Stage 6: System for implementation and evaluation:

This will include institutional issues, liaison structures, systems and criteria for evaluation etc to ensure that the plan is implemented and continuously evaluated.

The eThekweni Road Safety Plan is due for completion in June 2004.

3.3 Institutional Provisions for Road Safety in The eThekweni Transport Authority

South Africa's first Transport Authority has been established in eThekweni. A Road Safety Branch has been included under the Strategic Transport Planning Department. The Manager (Road Safety) will be responsible to implement the Road Safety Plan. It is anticipated that this Branch will help co-ordinate the activities of the multitude of stakeholders involved in road safety, and also keep records of all road safety activities in eThekweni.

Although more could still be done institutionally to elevate the importance of road safety, this is a

significant start. Also, part of the plan (as mentioned above) will be to review these institutional arrangements.

4. KEY ISSUES AND CRITICAL SUCCESS FACTORS IDENTIFIED TO DATE

Although the eThekweni Road Safety Plan was still in progress at the time of writing this paper, some of the critical success factors and key issues have already begun to emerge from the status quo assessments.

It needs to be stated again that the intention of this exercise has not been to assign blame to any parties nor to criticise, but to honestly and openly evaluate the facts and realities of the current situation. Until the current realities and real issues are frankly admitted by all and real solutions sought, road safety initiatives will always be hampered by defensiveness and blame shifting.

4.1 Lack of Co-ordination

It has been an onerous task simply to identify the various key stakeholders involved in road safety initiatives and establish what they are doing and what resources they have. The sources of information and organizations are numerous and not connected to each other, nor by any single institution. Needless to say, co-ordination of activities and resources between these stakeholders is negligible. Even in the more defined field of enforcement, co-ordination between SAPS, the KZN Road Traffic Inspectorate and the eThekweni Municipal Police cannot be said to be well established or effective¹¹.

Yet co-ordination of stakeholders activities and resources is one of the key success factors in dealing with road safety.

It is anticipated that one of the key strategies for the Road Safety Plan will be to assign the overall co-ordinating role to the Road Safety Branch of the eThekweni Transport Authority. This branch will need to keep updated with all engineering, education and enforcement initiatives and ensure that they are directed by the various programmes and strategies of the road safety plan.

4.2 Lack of Dedicated Resources

There is a severe lack of resources for road safety initiatives. Where resources do exist, they are often not dedicated and more often than not are diverted to other areas that enjoy a higher priority. One example is in the enforcement field, where overall human resources are reported to be 50% under authorised strength, and in some regions even up to 75% under resourced. The resources are also not dedicated to road safety, and are often diverted to other law enforcement areas. Road safety education is another example where resources and equipment are severely lacking in certain areas.

If road safety is a priority, then the necessary dedicated resources need to be assigned to addressing it.

4.3 Performance Measures

Performance measures tend still to be reported in terms of resources utilised or activities completed (i.e. outputs), rather than actual outcomes.

Surprising few government or other organizations do any meaningful assessments of projects that have been implemented to deal with road safety. The fact that the project has been implemented is deemed as sufficient and “successful”.

The Road Safety Plan will need to establish objectives and targets that measure both outputs and outcomes, but the final test of the effectiveness of the plan must always be whether there has been a significant decrease in accident rates. Ongoing evaluation is critical to the success of the Plan.

4.4 Blame Shifting, Defensiveness and Lack of “Team Spirit”

Sadly to say, in nearly all of the Status quo assessments, a major issue was obtaining the relevant information. There was a notable defensiveness in some sectors (for example, emergency services and response times), with basic information being viewed as “sensitive”. Also, blame shifting was common, and there was a lack of overall team spirit.

It is hoped that the eThekwini initiative will result in all stakeholders coming together to be part of real, effective solutions to make eThekwini’s roads safer.

4.5 Road Accident Data

All is not negative! Over the years, the eThekwini Traffic and Transportation Department has expended considerable resources on keeping the accident database up to date with exceptionally high quality data.

This has enabled a rigorous and thorough analysis of the current accident situation in eThekwini to take place. The effectiveness of the road safety strategies rely directly on the quality of the data that is analysed.

This is not to say that improvements to the data or information system will not be needed. Some of the issues that need to be addressed are the more accurate reporting of PT vehicle accidents, the provision of street name signs etc to allow for the more accurate recording of accident locations, and the finalisation of the conversion of the accident database onto a GIS system.

5. CONCLUSIONS

This paper has argued that current road safety initiatives and efforts at all three spheres of government appear to be relatively ineffective in reducing the poor accident record in SA.

International best practice indicates a focussed approach is required. This means that accident reduction strategies must be driven from a basis of accident occurrence which should be viewed in a non-jurisdictional context. In other words, limited resources from all spheres of government should be directed at the most deserving areas.

Fifty-one percent of all SA’s road accidents occur in the eight largest cities. This is clear motivation for large Municipalities to more holistically and fundamentally deal with road safety through comprehensive road safety plans with targeted strategies and programmes.

The eThekwini Transport Authority has embarked on such a road safety plan, and this paper has given an overview of the plan and some of the key issues that have arisen to date.

It is hoped that other large Municipalities will also follow a similar process and help make the roads in SA safer.

6. REFERENCES

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BIOGRAPHY

C.A. Aucamp, Pr Eng

After completing his BSc Civ Eng at the University of Natal in 1990, Andrew Aucamp started working for the Durban City Council in January 1992. After spending one and a half years in the Roads Department, he moved to the Traffic and Transportation Department where he has remained to date. He has mainly been involved in public transportation planning. During this time he completed a post-graduate Diploma in Transportation from the University of Natal.