

# **ROAD SAFETY IN THE 21<sup>ST</sup> CENTURY: INTELLIGENCE DRIVEN TRAFFIC LAW ENFORCEMENT**

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## **ABSTRACT**

**It has been accepted in Police Forces and law enforcement agencies that intelligence driven criminal investigations is the way ahead in the 21<sup>st</sup> century. The same rationale must be applied to traffic law enforcement and road safety strategy implementation.**

**Road safety practitioners at all levels must be provided with the information required to tactically and strategically deploy the resources available to them in order to ensure appropriate and effective road safety outcomes. This applies particularly to road safety based traffic law enforcement.**

**This paper examines and recommends the establishment of centralised traffic intelligence units.**

**The establishment of these units focused on the provision of traffic related intelligence to appropriate managers and operational personnel, by means of effective and efficient processes and methodology, would provide the opportunity to maximise the use of traffic and road safety resources within any road safety management structure.**

**The role of these units would be to collect, analyse and effectively disseminate the information required by all levels of road safety management and operations for the efficient management of traffic law enforcement and road safety resources.**

**These units would also allow the community to be fully informed on the legitimacy of the traffic enforcement outputs as being in line with the published project policies of reducing the incidence and severity of road crashes across the Province.**

## **1. INTRODUCTION**

It is generally accepted that effective planning relies heavily on the provision of timely and accurate data upon which to develop the operational outputs that will result in the strategic outcomes of any business or government program. In the case of saving people's lives via effective and efficient road safety intervention programs, it becomes a critical dimension.

Road crash data serves two basic purposes. The first is to monitor and identify trends and spikes in road trauma. The second purpose should be to provide the ability to analyse the available data to identify the causes.

This second function also provides road safety practitioners with the level of information required to develop and implement effective intervention programs.

The lack of relevant and timely data to form the basis of road safety planning, strategy development, implementation and evaluation will render any such program, no matter how well intentioned, ineffectual and inadequate.

This paper examines the role of centralised Traffic Intelligence Units (TIU) and the outputs that would be required to ensure that they add value to existing road safety strategies and programs.

## **2. THE PROBLEM**

The impact of any road safety program cannot be measured unless systematic and scientific data gathering and analysis are employed in a holistic manner.

There are a number of disparate databases sourced by various areas and disciplines both within and outside the road safety management sphere. These data sources and their respective applications need to be identified and their value determined.

In many instances, there is no centralised management of the data available nor any common user interface to allow consistency of data output to the end users. Further, many operational areas develop locally databases relative to the provision of decision support information for deployment of road safety resources.

What is apparent is that the various affected units have developed data applications that suit their specific needs without catering for a holistic perspective. Whilst a number of these units and areas utilise the same data sources, their individual and collective outputs do not meet the current and predicted requirements for resource managers for effective and efficient deployment of road safety resources.

## **3. CENTRALISED TRAFFIC INTELLIGENCE UNITS**

### 3.1 Role and Function

The role of the TIU is to collect, analyse and effectively disseminate all levels of information required for the efficient management of road safety related resources.

By developing and utilising detailed Customer User Requirements (CURs) the TIU will produce and physically present outcomes, trends and predictions to Provincial, Regional and Divisional management on a cyclical basis as is determined by need.

The presentations will consist of tabular, graphical, map based and narrative representations of traffic and road safety related activities applicable to the state wide context or specific to an individual Province, Region, Division or District as is required, particularly where there is evidence of a trend developing. The TIU will also provide comparisons to similar geographic or demographic areas so that deployment strategies can be gauged for effectiveness.

Monthly graphical and narrative summaries for activities, occurrences and trends relative to National, Provincial and regional levels will be required to provide resource managers with timely “snapshots” for their respective areas.

The TIU should provide recommendations to resource managers as to the course of action required to counter any adverse trends and forecast the outcomes of such courses of action.

As part of the function of the TIU, a Unit Website should be established. This site should contain links to various output formats so that local resource managers can drill down to specific areas and problems within their respective spans of control without having to wait for the cyclical presentations to appropriate road safety managers.

### 3.2 Customer User Requirements

Customer user requirements can only be developed after consultation with all key stakeholders.

Key stakeholders have initially been identified as:

- National Department of Transport – Arrive Alive;
- Provincial Departments of Transport;
- Department of Health;
- SAPS;
- UNIARC;
- SANRAL;
- Municipalities and Local Authorities;
- Emergency and Medical Services; and
- Community Consultative Groups.

Stakeholders at varying levels of road safety management have varying information needs from such a facility.

The four levels of need are:

<i>Level</i>	<i>Description</i>	<i>Details</i>
1	Executive Information	Requirement for reporting on output groups and monitoring of management action and initiatives across the country, Province and authority but also within the Regional management structures.
2	Management Information	Managing and reporting on regional and divisional activities, strategies and initiatives relative to traffic safety related action plans.
3	Decision Support Information	Managing the deployment of traffic resources in line with local, regional and province wide traffic safety trends and initiatives.
4	Information only	Broad overview requirements without direct and active participation in Road Safety activities.

Each level incorporates the information requirements of the level or levels below it.

General requirements for any system that is developed have been identified as:

- User Friendly;
- GIS (Mapping) functionality;
- Decision Support System basis;
- Simplicity;
- Timely/Accurate; and-
- Ability to interface to DISC systems.

### 3.3 Minimum Common Dataset

A minimum common data set for the reporting of crashes should be developed in consultation with all stakeholders that play a role in road safety management or response.

This data set would include (but not be limited to) such variables as (as developed by Austroads AP 126 1997):

- Crash Level Variables
  - Date of crash
  - Time of crash
  - Geographical location
  - Local government area
  - Speed limit
  - Road design
  - Light conditions
  - Weather conditions
  - Road division
  - Other engineering features at crash site
  - Road curvature
  - Road surface
  - Traffic control device
  - Traffic control function
- Vehicle Level Variables
  - Make, model and age of vehicle
  - Vehicle type
  - Province of registration
- Road User Level variables
  - Road user type
  - Level of injury
  - Age
  - Gender
  - Race
  - Licence type
  - BAC
  - Seat belts
  - Airbag
  - Seating position
  - Helmets (motor cycles)

The development and application of National minimum common road crash dataset will allow for consistency of information management and interchange across all levels of road safety management.

### 3.4 Data Sources

All applicable data sources must be identified and accessed. These sources would include, but not be limited to:

- SAPS;
- National and Provincial DoTs
- Department of Health (Hospitals and Clinics)
- Emergency Medical Services (Ambulances etc.)
- Mortuaries; and
- Insurance Companies

To ensure efficient and consistent data collection, all forms used for reporting accidents and road trauma would need to be reviewed and, if required, customised to meet the needs of the minimum common data set.

### 3.5 Data Integrity

In order to ensure that data being entered is accurate, relevant and secure, quality assurance processes need to be developed and implemented. These processes would include data sampling and auditing combined with real time data entry monitoring by qualified supervisory personnel.

## **4. ADVANTAGES OF THE TRAFFIC INTELLIGENCE UNIT**

The advantages of these proposed units are:

- Resource managers will be provided with the management and decision support information needed, in a user friendly and functional format, to effectively deploy their traffic enforcement units;
- Under current processes, managers in the various areas are required to access the information themselves or make use of the data that is supplied to them. There is no positive onus, or obligation, on those managers to utilise the information supplied. Presentation of the information relevant to their particular geographic area, in a graphical and map based format and in a timely manner, will provide managers at all operational levels with the basis for strategic and targeted deployment of their resources;
- Detailed measurement of traffic and road safety related activities will be provided, at both organisational and operational levels, relative to:
  - Quantity;
  - Quality;
  - Timeliness; and
  - Cost.
- Outcomes and impacts of implemented strategies will be quantified and assessed as to effectiveness;
- This option provides the opportunity to utilise the infringement data that is currently stored on the various systems in the country and provinces;
- A detailed, documented and measurable strategic deployment methodology will be implemented;
- Trends or spikes in collisions or road user behaviour will be quickly identified or predicted and remedial or preventative action planned or implemented;
- This will allow the community to be fully informed on the legitimacy of the traffic enforcement outputs as being in line with the published project policies of reducing the incidence and severity of road crashes across the province; and
- The return on investment of government funds allocated to road safety programs will be measured and optimised.

### 4.1 Future Requirements

The implementation of the proposed unit will cater for short and medium term information requirements, and allows the flexibility for future expansion of function and capability as required.

However, a management policy group should be established to ensure that the activities and direction of the TIU are complementary to developments within the broad context of the National and Provincial Road Safety Strategies.

A direct and continuous liaison must be established by the unit with contemporaries in other Provinces and authorities so that full advantage can be taken of the combined activities of the various intelligence units at a National level.

In the long term, consideration should be given to the integration of a number of concurrent and related activities undertaken in various areas

## **5. CONCLUSION**

It has been accepted in Police Forces and law enforcement agencies internationally that intelligence driven criminal investigations is the way ahead in the 21<sup>st</sup> century. The same rationale must be applied to traffic law enforcement and road safety strategy implementation.

In a period of government restraint in budget allocations and the dynamic changes taking place within the Government Sector, road safety managers at all levels must be provided with the information required to tactically and strategically deploy the resources available to them.

The establishment of these units focused on the provision of road safety intelligence to appropriate managers and operational personnel, by means of effective and efficient processes and methodology, will provide the opportunity to maximise the use of traffic and road safety resources within the new management structure.

## **6. REFERENCE**

- [1] AUSTROADS, 1997: A Common Minimum Dataset for Reporting of Crashes on Australian Roads (AP 126), ARRB Transport Research, Australia.

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## **BIOGRAPHY**

Grad. Dip. Public Admin (Policing), Dip. In Business, Grad. Cert. Applied Management

Des Myers was a member of the Victoria Police and has over twenty six years of operational and specialist policing experience resigning at the rank of Chief Inspector. Over the last ten years of his career he occupied key positions in a number of major organisational change and technology based projects.

From 1998 to October 1999, he was the Principal Police Adviser to the KwaZulu-Natal (South Africa) Road Safety Project. He is currently an International Public Safety Management Consultant specialising in the areas of road safety and ethics and counter corruption planning. He has recently completed an evaluation of the Arrive Alive 2003 – 2004 Festive Season Communications and Enforcement Strategy on behalf of UNIARC.

He has provided consultancy services in Australia, USA, Canada, Republic of South Africa, Botswana and the Middle East.