

TRENDS IN THE TRAFFIC IMPACT ASSESSMENT PROCESS

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ABSTRACT

This paper discusses the Traffic Impact Assessment (TIA) process of South Africa by comparing it with the trends in other countries. The purpose of the paper is to establish whether the South African TIA process is different than the processes in other countries and what can be learned regarding this process. The trends have been determined for South Africa and a few other countries, through a literature research, a research questionnaire and interviews with a small sample of stakeholders.

1. INTRODUCTION

After ten years of democracy South Africa still struggles to cope with first and third world elements. Although the country has first world transport infrastructure in some places it is also faced with imbalances within the social and economic environments. The country is experiencing constant change and development, which places additional stress on existing systems, including transport systems, making the delivery of improvements more difficult.

However, South Africa is faced with problems that are similar to other countries in the world especially in the transport environment.

Some of these problems are:

- An increase in private car usage (the new political dispensation since 1994 means that an increasing number of previously disadvantaged people can now afford to buy cars).
- Increased congestion on all roads possibly due to economic growth.
- Travel times of both private and public transport modes have increased.
- Environmental degradation due to more transport related pollution and noise.
- Increasing frustrations leading to lawlessness and road rage (*Omar, 2001:1*).

Taking cognisance of the previous issues raised in the introduction there are other factors that work for or against transportation development in South Africa. These factors include the transport planning process, the compilation of transport studies and implementation there-of. The purpose of transport studies is to provide a sustainable environment in which people and goods can be moved.

Transport studies help to determine the impact of developments on the living and working environments and serves as a tool for development of alternatives and mitigation of these impacts. For any planning process to be carried out sufficiently and/or effectively, guidance is necessary which will provide the basic steps and protocols for implementation.

This paper investigates one guidance measure namely: Traffic Impact Assessments (TIA) and its suitability within the South African transport planning environment and the application of these. The TIA process is a standardised step-by-step procedure to determine traffic and transport related impacts. It also assists decision makers in reviewing

the impacts and improves communication between the different stakeholders involved. The paper investigates current trends in South Africa by comparing it with trends in the United Kingdom, Australia, New Zealand and United States of America.

2. DEFINITIONS OF TIA AND TA

In South Africa, only one term (definition) is used for Traffic Impact Assessments. The TIA definition quoted from *NDoT (1995)* is as follows: “A traffic impact study may be considered as a procedure to determine the effect that a change in land use or transportation infrastructure may have on existing and future traffic conditions”.

During the last decade there has been an international shift away from the traditional understanding of the terms of reference and definition of TIA to a more inclusive model, Transport Impact Assessment (TIA) is becoming Transport Assessment (TA). The reason for this was that the TIA definition only catered for traffic related impacts and never allowed for impact assessments that cater for other transport modes like public transport, pedestrians, cyclists and servicing transport. A TA definition that is often used, states: “TA is a written statement which provides detailed information on a range of transport conditions both before and after a development has been built. (*Guide to Transport Assessment in Scotland: 2004.*)

3. THE CURRENT SOUTH AFRICAN TIA APPROACH

3.1 South African Guidelines

The South African TIA process is guided by National, Provincial and City guideline documents.

The Department of Transport Manual for Traffic Impact Studies (1995) is a guideline document. With regard to provincial guidelines, the Province of Gauteng produced a new TIS guideline document in draft compiled by Gautrans during March 1997. As an example of one city’s effort to develop guidelines, the City of Tshwane Metropolitan Municipality, prepared a document titled: “*Requirements for Traffic Access and Impact Studies or Requirements for Traffic Impact Assessments*”.

3.2 Requirements / Warrants for TIAs

Some formal land use procedures exist, that may warrant traffic impact assessments:

- **Township Establishment:** It is done in terms of the provision made within the Town Planning and Township Ordinances of the various provinces when farmland or agricultural land is converted into urban land.
- **Rezoning (Amendment Schemes):** When the Town Planning Scheme has to be amended, a rezoning application has to be submitted to the relevant authority for approval.
- **Consent Use Applications:** The authority is able to consider and grant the application rights without referring them to another higher authority or give it preliminary consent which may be withdrawn at a later stage.
- Removal of Restrictive Conditions.

3.3 Critiques on the South African TIA Process

The City of Tshwane (Pretoria) is researching the key issues and constraints forming part of the TIA process. These issues (constraints) have been categorised into the following main topics:

Table 1: Legal framework for traffic impact assessments.

Table 2: Developer responsibility to network upgrading.

Table 3: Inter-authority co-ordination and cross-border issues.

Table 4: Professional standards

Table 5: Technical aspects.

Table 6: Additional technical issues.

Table 7: Development of guidelines.

(Van Rensburg & Van As, 2004.)

4. THE TIA APPROACH OF AUSTRALIA AND UNITED KINGDOM

4.1 Australia

Australia has TIA/TA guidelines catering for each state or city respectively. One of the changing trends is that the Roads and Traffic Authority of NSW is in the process of updating their "*Guide to Traffic Generating Developments*" to provide a package which consists of a policy which is less car-focussed and includes:

- An overview of the Integrating Land Use and Transport Planning process.
- The Right Place for Business and Services Planning Policy.
- Improving Transport Choice – practical guidelines.
- Draft State Environmental Policy.
- Employment and Journey to Work Patterns.

4.2 United Kingdom

The national or overall guideline document of the Institution of Highways and Transportation, namely: "*Traffic Impact Assessments*" of 1994 has become outdated. A new updated version prepared by Steer Davies Gleave in 1999 is still in draft format.

In the guidelines for "Planning for Public Transport in Developments" the following is quoted. "The IHT Guidelines or Traffic Impact Assessments are incomplete in that they do not provide guidance on the non-car movement of people generated developments. Whilst a multi-modal approach is necessary, in many cases the most significant and damaging transport impact of a new development is vehicular traffic".

Another more up to date document, *Planning for Public Transport in Developments* should be regarded as one of the UK's most successful documents produced in the last few years because it not only addresses all public transport related issues affecting new developments, but also include a developer's checklist, a Local Authority checklist and a typical bus operator checklist. (DETR, 1999.)

4.3 Critiques on the International TIA Process

The *Urban Transportation Monitor* (1990:5) carried out surveys illustrating similar constraints and issues that are experienced in South Africa. The Urban Transportation Monitor frequently carried out surveys to identify trends within the TIA process.

Some of these were:

- The reason for relaxing traffic impact mitigation requirements for political/economical reasons was that the bottom line appears to be the need to attract business to the city.
- Only 28% of local authority traffic engineers considered consultants and developers to be objective when they conduct TIA's, which leads to officials contracting their own consultants directly to carry out TIA's.
- Almost 50% of the respondents indicated that they are not satisfied with their TIA process.
- Reasons for the dissatisfaction include the inability of the system to take into account the cumulative effect of small developments, political pressure to reduce mitigation requirements, lack of objectivity among some consultants, and insufficient resources to study as much areas as necessary, to ensure an effective study.

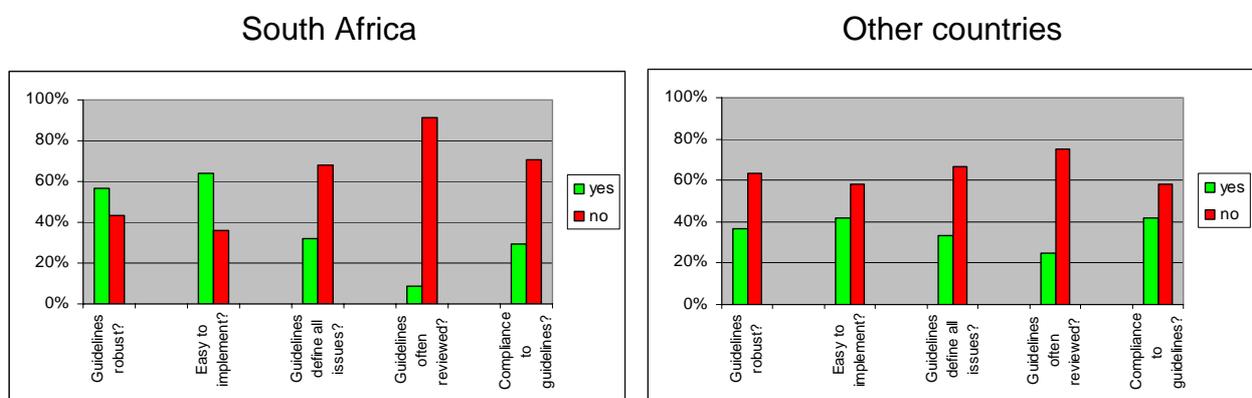
5. ANALYSIS OF THE MAIN TIA TRENDS

5.1 Research Questionnaire and Interviews

Different stakeholder views regarding the TIA/TA process were obtained from a questionnaire. The questionnaire was set up to include a wide range of topics within the TIA/TA process. It was sent to both the practitioners in the field that are doing the work and the decision makers or authorities who deal with the planning process on a day-to-day basis. All in all about 500 questionnaires were e-mailed both locally and internationally. To verify the questionnaire results and to obtain a better understanding of the TIA/TA process, a small number of interviews with practitioners and decision makers were conducted. These were held in London (UK), Rotterdam (The Netherlands), Pretoria (South Africa) and Johannesburg (South Africa).

5.2 Results and Trends

A question regarding TIA guidelines to determine the respondent's views on the TIA guidelines process, the documentation thereof, the application thereof and the monitoring of it, yielded the following results.



The majority of the respondents indicated that the South African guidelines are robust and easy to implement. Another question asked whether the guidelines are often reviewed, whether it addresses all issues and whether the industry is complying with the guidelines, most respondents (>60%) indicated that this is not the case.

The response from other countries indicated (approximately 60%) whether guidelines are often reviewed, whether it addresses all issues and whether the industry is complying with the guidelines that it is not the case. The respondents also indicated that whether the guidelines are robust and whether it is easy to implement is not the case.

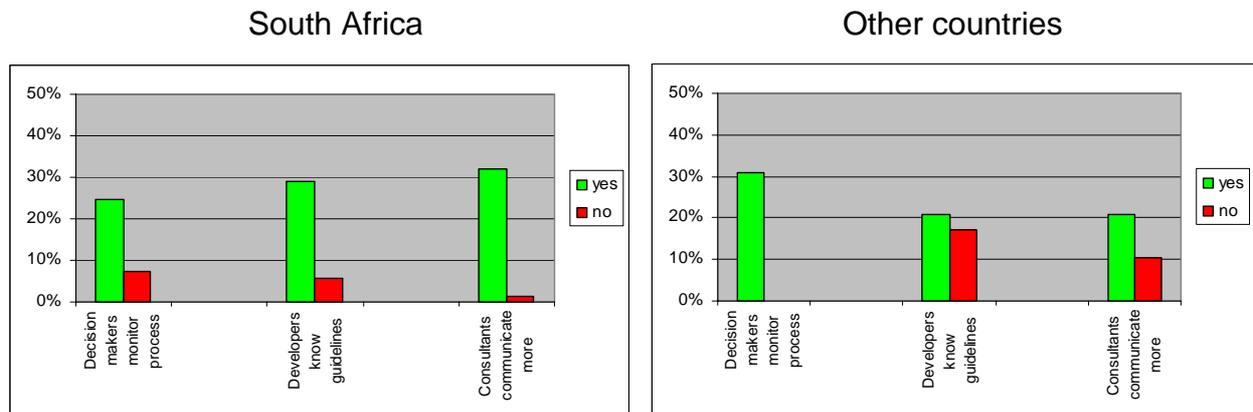
The interviews showed that internationally there is mixed feelings about the satisfaction regarding the TIA process and the guidelines that guide it.

Some of the responses are quoted to indicate the positive and negative international views:

- *The TIA process is cumbersome. Takes too long. It is too prescriptive.*
- *It provides for an independent assessment.*
- *There is a lack of reviewing TIA's by authorities.*
- *The guidelines need to be reviewed. The guidelines are not clearly defined.*

Don't think the TIA/TA process is universally understood.

As a next step, it was considered necessary to determine what respondents would recommend as improvements to their current TIA processes and planning applications.



The majority of the South African respondents (70%) indicated that the process should be more transparent, developers should be aware of the guidelines and consultants should communicate the implications to their clients as ways in which the TIA process can be improved.

5.3 TIA Process

From the interviews the following changes were recommended regarding the TIA process in South Africa:

- *It should address the basics and should not be too prescriptive.*
- *Simplify the process.*
- *The guideline document should be reviewed since it currently does not cover non-motorised transport.*

Local authorities should demand public transport infrastructure as opposed to for example road widening, when dealing with development.

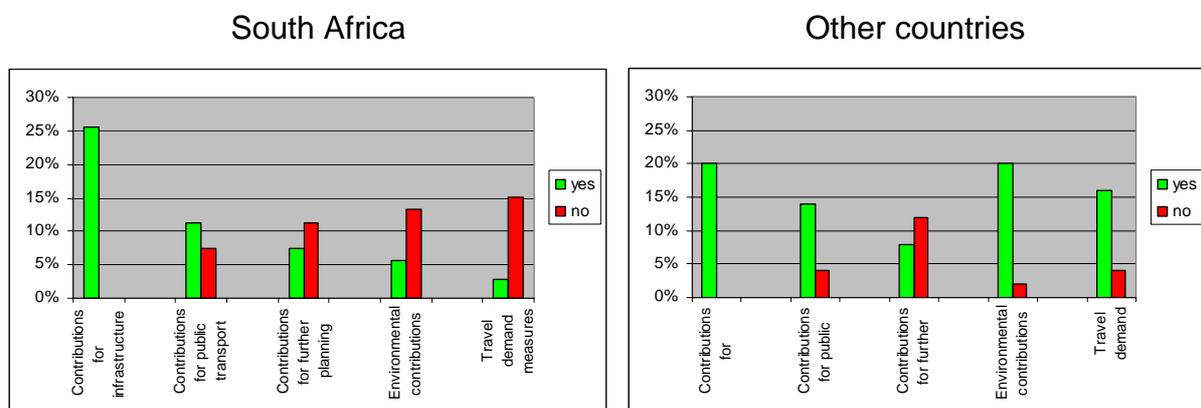
The trends in South Africa are similar to those of other countries.

From the interviews in other countries, the following changes were recommended regarding their TIA process:

- *Concentrate more on public transport capacity, pedestrian movement and good servicing arrangements.*
- *It doesn't have the same statutory status as Environmental Impact Assessments (EIA).*
- *It would be nice to see a standardized approach to TIA/TA.*
- *It should be less complicated. The whole system should be reformed from the top down.*

5.4 Mitigation

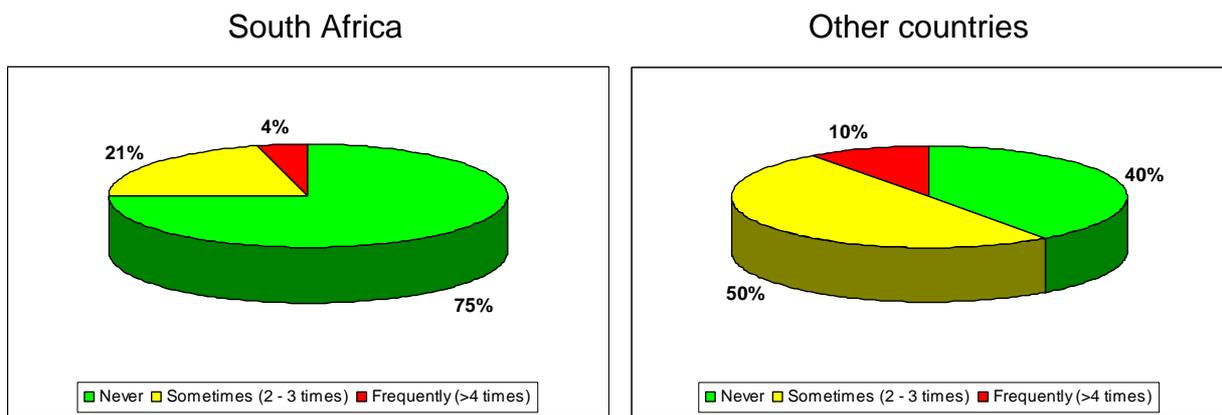
In terms of mitigation measures used, the respondents were asked what they would recommend within the TIA process.



The South African response shows the current way of thinking which could be due to a lack of other planning measures.

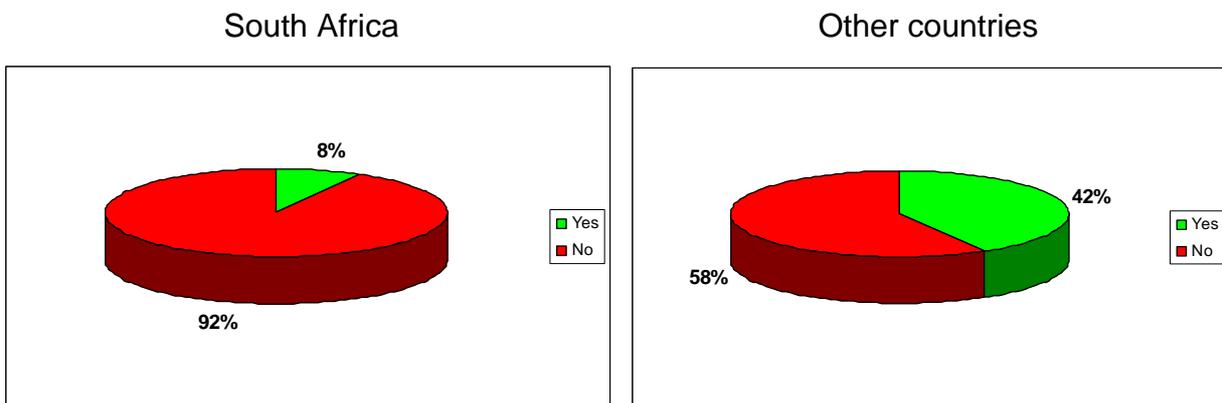
The response from other countries was more broadly defined for all the measures that could have been responded to. A reason for this could be that for a long time, planning in these countries has been in a more advanced stage.

The respondents were asked if they were forced to delay traffic impact mitigation, whether it was as a result of political or economic reasons.



For South Africa results show that 25% of the times mitigation had to be delayed, because of political or economic reasons. For the other countries 60% indicated that economic or political reasons were the main argument for mitigation delay.

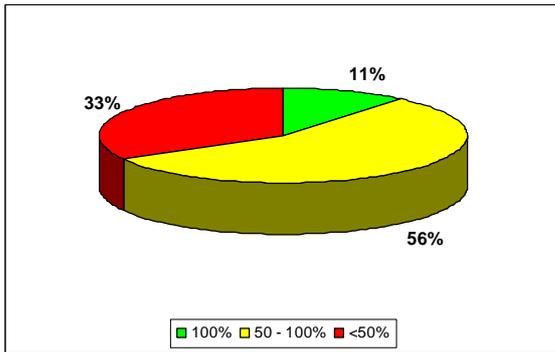
Respondents were asked if their authorities required a TIA study scope (report) to be submitted prior to any work or application is carried out.



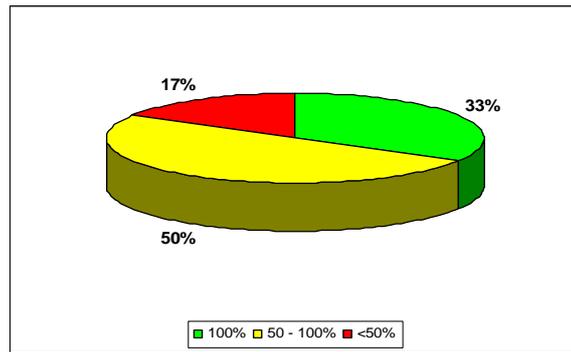
For South Africa, an overwhelming majority of respondents (92%) disclosed that a TIA study scope was not required prior to the study being conducted. 42% of respondents, mostly from the UK, indicated that a scoping document is necessary as part of the consultative process. This indicated a different approach to the planning process that currently exists in the UK, although it seems that some practices still does not follow the process.

The respondents were asked how many of the recommendations that were made through the TIA process have actually been implemented.

South Africa



Other countries



For South Africa 67% of the respondents indicated that more than 50% of the TIA recommendations have been implemented.

For the other countries 83% of the respondents indicated that more than 50% of the TIA recommendations have been implemented.

6. RECOMMENDATIONS REGARDING THE TIA PROCESS

From the questionnaire and interviews the following can be assumed regarding the TIA/TA process:

- The current TIA process and approach displays similar problems for South Africa and for the foreign countries surveyed.
- The TIA/TA guidelines needs to be reviewed both in South Africa as well as in the countries surveyed.
- Regarding the reasons for mitigating transport related impacts the view of the South African TIA industry (private sector and authorities) should change to include other factors like improvements to the environment and implementing travel demand measures.
- It could be beneficial for South Africa and other countries to demand a “study scope” prior to any work being done or negotiations taking place.
- South Africa should address the fact that only 67% of the mitigation measures that have been identified through the TIA process are according to the respondents being implemented.

7. REFERENCES

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