



The socio-economic impact of the **Gauteng Freeway Improvement Project and E-tolls Report**

Report of the Advisory Panel appointed
by Gauteng Premier, Mr David Makhura

30 November 2014



Socio-economic Impact
Gauteng Freeway Improvement Project and E-tolls

Table of contents

Part One: Preamble, Preface and Executive Summary

Preamble	i
Preface.....	iii
Acknowledgements.....	vi
Members of the Advisory Panel.....	vii
Executive summary	1
1. Introduction	1
2. Background to the recommendations of the Panel.....	3
3. Recommendations.....	4
4. Conclusion.....	8

Part Two: Main Report - Evidence and analysis, findings and detailed recommendations

Definitions, Abbreviations and Acronyms	6
Tables.....	8
Figures	9
1 Guiding Principles	10
1.1 Conceptual Framework	10
1.2 Critical Thrusts	10
1.3 Rationale for the Human Rights Approach to Socioeconomic Impact	11
1.4 Ethical Dimensions of Socioeconomic Impact	11
1.5 Challenges of the Individual in the GFIP and e-tolls.....	12
1.6 GFIP, e-tolls, and environmental ethics	13
2 Methodological framework	14
2.1 Introduction	14
2.2 Selection of Methods.....	14
2.3 Facilitation of Roundtables and Public Hearings: Critical Considerations.....	15
2.4 The Political Economy of the Gauteng Transport System: Challenges to Methodology	16
2.5 GFIP: The Need for New Way of Impact Assessment and of Thinking.....	17
2.6 Limitations.....	19

3	Scope of work and context	22
3.1	Establishment of the Panel	22
3.2	Plan of work	22
3.2.1	Background	22
3.2.2	Desktop and primary research	23
3.2.3	Consultation.....	23
3.2.4	Assessment and Limitations of the Consultation Process	24
3.3	The Gauteng economy and investment in transport infrastructure	26
3.4	Policy considerations	28
3.5	Road network and modal split.....	30
3.6	Description of GFIP and e-tolls	32
3.7	Assessment of infrastructure policy and projects.....	37
4	Political consequences.....	38
4.1	Introduction and Context	38
4.2	The Importance of Political Legitimacy	40
4.3	The Political Impact of Inadequate Consultation	40
4.4	Contextual Challenges	41
4.5	Protest Against e-tolls: Causes	41
4.6	GFIP: Collective Consumption and Socio-economic Inequalities	44
4.7	Recommendations.....	45
4.7.1	The Primacy of Democratic Consent.....	45
4.7.2	Creating an Enabling Environment	46
4.7.3	The Central Importance of the Implementation Phase.....	46
4.7.4	e-tolls Policy.....	47
4.7.5	Excerpts from stakeholders.....	47
5	Economic impact.....	48
5.1	Background	48
5.2	Introduction	49
5.3	Travel costs and benefits to households and businesses	50
5.3.1	Direct and indirect benefits of the GFIP upgrades	50
5.3.2	Direct and indirect costs of e-tolls	53
5.4	Analysis: Estimated costs and benefits versus the lived experience of road users	62
5.5	Macro-economic impacts of GFIP and e-tolls	68
5.5.1	Evidence and analysis of GFIP and e-tolls on economy.....	68
5.6	Conclusions	76
5.7	Recommendations.....	77

6	Social impact	78
6.1	Background	78
6.2	Envisaged impact	80
6.3	Evidence and analysis	83
6.4	Findings	85
6.4.1	Overall Appreciation of GFIP 1 Road Infrastructure	85
6.4.2	Inappropriate GFIP 1 Social Impact Strategy & Misaligned Pro-poor Programme	87
6.4.3	Public Consultations	89
6.4.4	Poor Alignment and Sequencing	90
6.4.5	Social Inclusion, Equity and Poverty Reduction Considerations.....	91
6.4.6	Congestion effects	93
6.4.7	Technocratic Approach to Impact Analysis.....	94
6.5	Recommendations.....	95
7	Environmental impact.....	98
7.1	Introduction	98
7.2	Implications for Transport Projects	98
7.3	Safe and healthy living environment for all	100
7.3.1	Evidence and analysis	100
7.3.2	Noise Pollution.....	105
7.3.3	Carbon emissions.....	105
7.4	Sustainability	107
7.4.1	Envisaged impacts	108
7.4.2	Evidence and analysis	108
7.5	Recommendations.....	112
8	Legislative and legal considerations	114
8.1	Introduction	114
8.2	Parameters of the report.....	114
8.3	Competency of the Premier in appointing the Panel	114
8.4	Legislative framework of e-tolls in South Africa.....	117
8.5	Consultative Process.....	119
8.6	E- toll cases and their implications	120
8.7	Constitutional issues.....	121
8.8	Contracting regime	122
8.9	Accessing information from SANRAL.....	125
8.10	Competition issues associated with e-tolls?	126
8.11	Recommendations.....	136
8.12	Conclusion.....	138

9	Cross cutting issues.....	139
9.1	International best practice: Pricing as a demand management measure.....	139
9.1.1	Introduction.....	139
9.1.2	Evidence and analysis.....	139
9.1.3	Critical success factors.....	140
9.1.4	Lessons from Unsuccessful Projects.....	140
9.1.5	Discounts and Exemptions.....	141
9.1.6	Impact of projects.....	141
9.1.7	Comparison of e-toll system and international best practice.....	142
9.2	Spatial planning.....	144
9.3	Integrated transport planning and implementation.....	147
9.3.1	The need for an integrated approach.....	147
9.3.2	Evidence of a lack of integration.....	148
9.3.3	Causes of the lack of integration.....	151
9.3.4	Recommendations for an integrated transport system.....	153
9.4	Institutional arrangements.....	155
9.4.1	Transport Authority.....	155
9.4.2	Transport Regulator.....	156
9.5	Funding model.....	158
9.5.1	Analysis of funding arrangements.....	158
9.5.2	Differential payment schemes for e-tags and no e-tag.....	161
9.5.3	Funding options.....	162
9.5.4	Recommendations.....	177

Part Three: Summary of recommendations from stakeholders;
Longer term detailed recommendations of the Panel; and
Immediate recommendations of the Panel

10	Summary of recommendations	179
10.1	Introduction	179
10.2	Consultation recommendations	180
10.3	Detailed recommendations contained in the report	184
10.3.1	Political impact	184
10.3.2	Economic impact	185
10.3.3	Social impact	185
10.3.4	Environmental impact	187
10.3.5	Legislative and legal recommendations	188
10.3.6	Spatial planning recommendations	189
10.3.7	Integrated transport planning and implementation	189
10.3.8	Funding alternatives	190
10.4	Recommendations for immediate implementation, to address short term challenges	191
10.5	Conclusion	196
11	Bibliography and References	197

Part One
Preamble, Preface and Executive Summary

Preamble

- a) Recalling the principles proclaimed in the Constitution of the Republic of South Africa and the Bill of Rights which recognises freedom of movement and trade as a central human value;
- b) Realising that the Gauteng Provincial Government is committed to the social and economic upliftment and well-being of all its people without discrimination, clearly reflected in the Premier's State of the Province Address;
- c) Realising, also, that available funds to maintain existing roads and to build new ones have decreased significantly over the past twenty years, and that very little, if any, funds are currently available to build new major roads and limited funds are available to maintain existing ones, resulting in Gauteng's freeways becoming more congested and key roads deteriorating;
- d) Recognising that the White Paper on National Transport Policy (1996) established a close connection between safe, reliable, effective, and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable;
- e) Noting that the National Development Plan 2030 recognises the need for South Africa to maintain and expand its transport infrastructure in order to support economic growth and social development goals, and given the government's limited finances, private funding will need to be sourced for some of these investments;
- f) Noting that the Gauteng Provincial White Paper on Transport Policy emphasizes the importance of developing an integrated, affordable, and accessible transport system for the City-Region, and that to achieve this the government will, within any area or transport corridor, review the role of the different modes of transport, and will consider incentives and policy instruments and develop transport services in such corridors with priority given to public transport;
- g) Noting, further, that the World Bank, in its publication entitled "Development in Practice: Sustainable Transport – Priorities for Policy Reform", emphasises the centrality of transport to development, that without physical access to jobs, health, education and other amenities the quality of life suffers; and that without physical access to resources and markets, growth stagnates and poverty reduction cannot be sustainable;
- h) Concerned that, despite attempts by Government since the adoption of the White Paper on National Transport Policy in 1996, both the freedom of movement and trade for the poor and marginalised is still restricted compared to that of their better resourced counterparts;
- i) Mindful of the need to improve Gauteng's transport infrastructure – an essential part of South Africa's competitiveness – through greater effectiveness and efficiency to better meet the needs of different customer groups, both locally and globally;

- j) Mindful, further, that most of the participants in the impact analysis process called for investigation of alternative funding instruments to repay the public debt associated with the current e-tolls system and to fund future road infrastructure development which they deem necessary for economic growth and development of Gauteng;
- k) Noting that the Gauteng Province developed the Gauteng Transport Master Plan (ITMP25), which is a twenty five year plan to enable the Department of Roads and Transport to regulate, plan, and develop an efficient and well integrated transport system;
- l) Emphasizing, further, that the Gauteng Government should set out a progressively realisable set of targets and specifying exactly what Government will do in terms of concrete action;
- m) Convinced that the optimal context for the success of an integrated transport system, or for any public policy for that matter, requires the creation of mechanisms for the effective articulation of “people’s voice”, particularly at the implementation stage; and
- n) Convinced, finally, that an integrated transport system includes the need for an integrated regulatory framework, awareness of multiple institutional configurations, integrated functional skills and competencies, the ability to work collaboratively, and the capacity to cope with the intricate interpenetration of politics and transport administration - all of them critical to the consolidation and repositioning of Gauteng’s transport services across government, the private sector, civil society, and other social partners;

Have agreed as follows:

Preface

What is the socioeconomic impact of the Gauteng Freeway Improvement Project (GFIP) and the e-tolls? This question is being posed with increasing urgency by key policy implementers, captains of industry, civil society, and political organizations; and even by the general public in the Gauteng City-Region. This question is echoed, with growing concern, by various people's organic networks, who speak from personal experience of the effects, on their lives, of the GFIP and the e-tolls.

The report which addressed the core problems experience with the Gauteng transport system, and how it can be improved and made more responsive to the economy and people's needs. The report highlights how the Gauteng transport system can be developed and managed more effectively provided the people, particularly the poor and the marginalised, are actively involved in decision processes, and if there is appreciation of the subtle interrelationship between deliberation, participation, policy development and implementation. The report is designed to make South African democracy stronger as it grows and becomes more and more democratic. The Advisory Panel's recommendations – doubtless in some respects provocative – are designed to serve that overriding goal.

The Advisory Panel accepted this assignment and understands that the vitality of the Gauteng transport system is a central precondition for the growth of the national economy and for fashioning of more cooperative relations between government and the people, as well as among the various publics. Though very much concerned with issues pertaining to the Gauteng Freeway Improvement Project and the e-tolls, the Advisory Panel has conducted the study that follows in the belief that at this juncture it is important for the citizens of Gauteng City-Region, and for greater South Africa, to reassess the execution of the Gauteng Freeway Improvement Project and the e-tolls; to benefit from a combination of efficiency and economic growth with the enhancement of socioeconomic justice.

On 17 July 2014, the Premier of the Gauteng Province, Mr David Makhura, brought together thirteen people to form an Advisory Panel, invited in their personal capacities rather than as delegates or representatives of government, organisations, associations, or institutions. The team comprises professionals from all aspects of the transport value chain – engineers, planners, economists, environmentalists and social scientists – with varied experiences as professionals, academics and field experts within government and the private sector.

The Terms of Reference are precise:

- *The Advisory Panel must undertake a comprehensive assessment of the socio-economic impact of the introduction of the Gauteng Freeway Improvement Project in general and the e-tolls in particular on the economy and the people of Gauteng;*
- *The Advisory Panel must invite proposals and submissions from the people of Gauteng and stakeholders on the socioeconomic impact and proposed solutions to the identified problems; and*
- *The Advisory Panel must submit its findings and recommendations to the Gauteng Provincial Government*

The Panel's starting point was the recognition that South Africa's economy needs an efficient, affordable, and safe public transport system and that the people must drive the policy process. All South Africans should support that, because it is in the common interest to make this country more prosperous and socially cohesive. What is clear is that South Africans must create the necessary conditions for an efficient and equitable transport system.

The report is presented in the form of Evidence, Analysis, Findings, and Recommendations. These elements of the report are developed as a succinct statement of the investigation that was undertaken. It is hope that after reading the Evidence and the Analysis, the Premier and the Provincial Government will wish to know about the second part of this report. This is the Findings and the Recommendations, which lays out the substance and basis of the Panel's recommendations.

The recommendations are based on two things. The Panel studied all the evidence available about the socioeconomic impact of the Gauteng Freeway Improvement Project and the e-tolls to find out what is working and what is not. It consulted extensively, through public hearings, roundtables, and focus group discussion, throughout the length and breadth of the Gauteng City-Region, with government, civil society, experts and those in the private sector.

The Panel met individuals and groups from the three metros and the two district municipalities. Written submissions were received and all the political parties represented in the Gauteng Provincial Parliament met with the Panel. The Panel is enormously grateful to all these individuals and groups for their contributions.

How can the Gauteng Provincial Government and its citizens foster the development and management of a sophisticated but equitable transport system? How can the public be consulted? What alternatives are there to toll roads? Why not rather extend public transport than build toll roads? Why not use fuel levy rather than tolling? What are the advantages of toll roads? Which department or body should be responsible for the financial management and administration of the toll fees? These are questions many people and organisations ask. They are searching and probing to find ways to develop and sustain a new transport system that can make a substantial contribution to economic growth and wellbeing.

A principal purpose of this report is to assess the socioeconomic impact of the Gauteng Freeway Improvement Project and the e-tolls, to identify and analyse the social and economic challenges confronting democratic government in a severely unequal society, twenty years after the democratic transition in 1994, to ascertain the basis for confidence in the future of the economy and democracy, and to suggest whatever innovations may seem appropriate to make the economy and democracy more viable in the future.

This report approaches the conception of socioeconomic impact analysis in a new way, one centred on the experience of sharing a world in which people differ significantly from one another in the way they perceive and experience public policy. This approach is best called "multi-epistemic" because it is multi-epistemicism that draws attention to the opportunities and dangers in a society of differences. A

multi-pistemic conception of socioeconomic impact poses new questions and employs new concepts to address issues inherent in the study of human experience and perceptions.

Why the need for a new conception of socioeconomic impact? Throughout much of its history the basic question in the conception of socioeconomic impact has been: is socioeconomic impact analysis scientific, or can it be? Social scientists have historically sought to claim the mantle of science and have modelled their impact assessment work on the natural sciences. Consequently, the conception of social science has traditionally consisted in evaluations of the ways social science is like and unlike natural science. Some new approach more in touch with current knowledge generation and management concerns is required.

Given the appeal of multi-pistemicism and relativism in a multicultural society and given the problem they raise regarding the possibility of understanding others, the basic question of the idea of social science today ought not to be whether social science is scientific, rather, it ought to be whether understanding others – particularly others who are different – is possible, and if so, what should understanding involve.

The Panel's most difficult assignments have been to uncover all the facts concerning the public outburst against e-tolls and, in this process, to identify the core issues responsible for the public outcry through our examination of the evidence.

The procedures followed by the Panel in developing and assessing evidence necessarily differ from those of a court or a judicial commission conducting a criminal trial or allegations of corruption, since under our system of Advisory Panels there is no provision for a trial. The Advisory Panel has functioned neither as a court presiding over an adversary proceeding nor as a prosecutor determined to prove a case, but as a fact-finding agency committed to the ascertainment of a clearer perspective. In the course of this investigation of the facts and perceptions surrounding e-tolls, it was necessary to explore impressions and other sources of information not admissible in a court proceeding obtained from persons who saw or heard and others in a position to observe what occurred on the roads, in households, or elsewhere.

With this report the Panel is submitting, partly in the form of annexures, the complete testimony of all the participants who appeared before us or made written submissions. The Advisory Panel is committing its report and all its working papers to the Premier of Gauteng Province, Mr David Makhura.

Acknowledgements

The Panel acknowledges with appreciation the support received from:

- a) The Gauteng City Region Observatory
 - Professor David Everatt
 - Mr Ross Jennings

- b) The Office of the Premier
 - Mr Thabo Masebe (Acting DG and Head of Communications)
 - Mr Rashid Seedat (Head of Planning)
 - Ms Nalini Naicker (Director Long Term Planning)
 - Janine Julies (Chief Director Communications)
 - Moorgash Rungasamy (Director Security)
 - Ms Nokuthula Masimla (Admin support team)
 - Ms Johanna Sethusa (Admin support team)
 - Ms Lerato Motaung (Admin support team)
 - Communications, Finance and Security staff

- c) Service providers who assisted with logistical arrangements, recordings and transcriptions of proceedings

- d) The media who reported on the proceeding of the Panel

The Panel particularly acknowledges all those who participated in providing evidence, articulating their different points of view, and proposing solutions to problems identified.

Finally the Panel acknowledges the transparent and open-minded participation of government departments and entities in all three spheres of government.

Members of the Advisory Panel

Prof Muxe Nkondo Chairperson

Dr Trish Hanekom Secretariat

Ms Luci Abrahams

Dr Danisa Baloyi

Dr Vuyo Mahlali

Prof Chris Malikane

Dr Anna Mokgokong

Mr John Ngcebetsa

Mr Khehla Shubane

Dr Bridget Ssamula

Ms Laretta Teffo

Prof Fiona Tregenna

Prof Christo Venter

Executive summary

1. Introduction

The White Paper on National Transport Policy (1996), the National Land Transport Act (5 of 2009), and the National Development Plan 2030 (NDP) aim at an efficient, equitable, and sustainable transport system. The Gauteng 25-Year Integrated Transport Master Plan (GITMP) maps out the background, objectives, key initiatives and projects, and key role-players that are central to the implementation of the plan over the next 25 years. The Master Plan proposes eight key interventions, namely, subsidised housing provision within urban core areas; land use densification in support of public transport; reinforcing the passenger rail network as the backbone of the system; extending the integrated rapid and road-based public transport networks; strengthening freight hubs; ensuring effective travel demand management; mainstreaming non-motorised transport; and ensuring continued provincial wide mobility.

The integration of the Gauteng transport system requires a national, provincial and local government network of cooperation among all stakeholders. Most people and organisations in Gauteng accept the fact that the GITMP provides the basic transport necessities not only for a life of dignity and well-being, but also for economic productivity. They also accept the fact that the poor and marginalised need a responsive and equitable transport system to meet their basic needs, but they are dissatisfied with the consultative processes followed by the National Department of Transport (NDoT) and South African National Roads Agency Limited (SANRAL) in the decision processes that led to the establishment of the e-tolls.

If there is widespread dissatisfaction in Gauteng about the policy processes, what should be done? In each chapter of the report, strategies are laid out, guided by the principles of social justice and freedom, that must be adhered to going forward. The report focuses on the key interventions that can give everybody in the province, particularly the poor and marginalised, the transport tools for development and well-being. The report emphasises the importance of integrated planning, budgeting, mutual accountability, inclusive deliberation and participation, and sustainable funding mechanisms. But even before this is achieved, – including viable economic and transport models, the report suggests that there should first be a more concrete understanding of what the integrated transport system will mean to the millions of people in Gauteng who can be helped. It is the fortitude of the people on the ground and government's sense of responsibility that spur the Panel in their analysis of the evidence and recommendations.

The Gauteng Provincial Government (GPG) has begun to make progress in the long battle against transport inefficiencies and inequalities. The establishment of the Panel is part of that progress. But to sustain that will require strong partnerships with the private sector, within and beyond the Province, and civil society. That means resolute action and commitment to change on all sides.

The NDoT must take the lead in partnerships, taking on responsibility for the transport problems raised in the public consultations and the various forms they take in the economy and the actual lives of people. These partnerships should include business, labour and civil society who also have a part to play in supporting government to do those things which can enhance transport inefficiencies and advantage the poor and marginalised. Partnerships will support the reforms recommended in the

GITMP; and these reforms must accelerate significantly if the transport system is to improve and the economy prosper, enabling the poor and the marginalised are to share in the prosperity.

Some of the recommendations – on infrastructure and funding – require significant investments in material resources. Others – underpinned by new approaches to transport behaviour and collaboration in an integrated system – require changes in behaviour, ways of working and choice of priorities. Others call on all stakeholders to stop doing things which will damage efficiency and social cohesion. All these should be seen as an integrated package. All stakeholders should work together to implement this package with integrity, perseverance and speed, each focussing on how they can make the most effective contribution. So the report emphasises the great need to pay attention to democratic processes and the running of integrative initiatives so they can provide a rhythm to the GITMP, and be run most efficiently.

Decision processes must be thought through with great care but also observed and regularly reviewed throughout the integration plan. The Panel is aware that everything cannot be done at once and that it is necessary to prioritise. It would be fantastic if the various stakeholders could do things together because the better prepared they are, the more they are able to understand each other with half a word. But time to review, to rethink, to take stock, to keep everybody on course has to be set aside and planned.

Questions to guide this aspect are:

- a) What are the priorities?
- b) How are decision and management processes organised to ensure the effective implementation of the GITMP?
- c) What work processes are needed in the integrated transport system and how can they be organised in the most effective way?

Answers to all these questions will play an important part in the implementation of the GITMP. Some of these questions will be taken up more consciously than others; some will be the focus of attention at a particular time. All have their place and together they form a totality. Beyond the integration and consolidation of structures, functions, and processes there is a need for a team of committed people, who will be willing to take up the challenge, be creative, and use the Master Plan as a free space in which they can make a positive contribution to the economy and the actual lives of people. The report presents the findings and recommendations around a set of interrelated themes.

The Gauteng City-Region is beset by acute transport inequalities and inefficiencies. The situation is far more grim than described in official documents. The situation is also salvageable, but all the stakeholders, including the international aid community, require a much better understanding of its severity, dynamics, and solutions if the transport crisis is to be solved.

The situation is best understood through the voices of Gauteng's struggling residents. In response to the invitation from the Panel, well over a thousand members of the Gauteng community came to meet the Panel. Frustrated, they stayed for hours, speaking with dignity, eloquence, and clarity about their predicament. *They are frustrated but they are capable and determined. Though struggling to manage their households and their enterprises, they are not dispirited but determined to improve their situation.* They know how the transport services could become an integrated and equitable public transport system. *Whatever the official data show about costs and benefits, transport inefficiencies and inequalities are real.*

Partners could sit down with the government leadership and say, “We would like to help you scale up transport services to ensure that all of Gauteng’s people have access to transport services. Together, let’s design a funding and management system that will reach the townships and ensure an affordable, governable, and scalable set of interventions across the City-Region. We’re prepared to ensure good governance on such a historic project”. Experts, committed to social justice and efficiency, could be brought in to help design mechanisms for the implementation of the GITMP and lend credibility to its implementation and performance.”

If partners would join the Gauteng Provincial Government in meeting with the people on the ground and brainstorming with government officials, they would come up with a range of fruitful interventions to make a difference in people’s lives. It is possible to be more creative in order to improve the lives of millions of people now struggling to afford transport services – and often failing – in the impoverished townships and villages around the City-Region. Partners and the Gauteng Provincial Government can and should agree on a suitable and bold strategy for the implementation of the GITMP. South Africa’s new democracy, from the national government through to the provincial government and municipalities, is equipped to manage the GITMP, with transparency, efficiency, and equity if the transport delivery mechanism is right and if there is investment in infrastructure and human capabilities.

2. Background to the recommendations of the Panel

In making representation to the Panel, Father Smangaliso Mkhathshwa, Chairperson of the Moral Regeneration Movement, commented on the Gauteng Freeway Improvement Project and e-tolls as a user pay funding mechanism

Now what started like a very good project, and I really believe it is a good project, it seems has now become almost like a nightmare in certain circles. It is causing a lot of bitterness to a lot of people. It is also causing a lot of confusion as we saw during the general election.....

.....I am just saying we are talking here about perceptions and in real life, especially in a political environment, perceptions become the truth and the only way to deal with that situation is therefore that we once again meet the people..... if there is any contribution that the MRM can make in terms of maybe facilitating the dialogue, the moving forward together, finding one another, that would probably be part of our responsibility

The Panel quotes the Chairperson of the MRM to underline that there is an impasse that must be solved; it requires a meeting of minds and compromises in the interests of individuals, communities and our country.

The recommendations of the Panel are informed by understanding the origins of the freeway development project; studying the information at its disposal about the planning and implementation of Gauteng Freeway Improvement Project (GFIP) and e-tolls; analysing the empirical evidence; and, most importantly, listening to the views of organisations, communities and individuals.

At times, the empirical evidence considered and the lived experience contradict each other; the representations and proposals made were at times mutually exclusive; and, whilst there was overwhelming recognition and appreciation for the infrastructure, the level of anger and frustration about the funding mechanism of e-tolls cannot be underestimated. The Panel is therefore under no illusion that there will be 100% support for its findings and recommendations. However, solutions born of consideration and compromise can work and as set out in the recommendations of the Panel, it is proposed that a process of inter-governmental consultation takes place, with a view to achieving consensus, on implementation of the immediate and longer term recommendations of the Panel. It is also recommended that a comprehensive communication strategy be developed and implemented to reach all interested and affected parties in the most direct way possible, with leadership being given by all political parties, who represent that electorate.

3. Recommendations

The full recommendations of the Panel are contained in Section 10 of the report. The recommendations include innovative and workable proposals made in representations to the Panel that may warrant consideration. The recommendations also include the longer term, more detailed recommendations of the Panel, reinforcing the objectives of the GITMP for integration of the Gauteng transport system, prioritising public transport, which requires national, provincial and local government cooperation and the involvement of all stakeholders.

The recommendations set out here are the recommendations for more immediate short term implementation and many of them have implications for the future planning and implementation of infrastructure projects including GFIP 2 and 3:

At the heart of the recommendations of the Panel is the paradigm shift from apartheid spatial and transport planning reflected in the GITMP:

It serves as a point of departure from apartheid spatial planning; land use and mobility; and ushers in an integrated and equitable transport value chain, where public transport has the highest priority.(Executive summary, p.7)

The GITMP is a detailed plan with identified short to medium term initiatives and a set of interventions identified for the longer term making up the 25-year plan. The strategic road network is one element of the integrated transport system which is essential to enable and sustain mobility and economic growth in Gauteng.

The Panel has observed that the timing and sequencing of interventions such as the recapitalisation of rail for commuters and freight; provision of alternative provincial and local road routes; planning and implementation of bus rapid transport systems; incorporation of a regulated taxi industry into the system transport for commuters; and implementation of traffic demand management measures to disincentivise the dominance of single driver private cars have not materialised simultaneously with the implementation of GFIP. However, the benefits of the implementation of GFIP should not be underestimated. Road infrastructure is a crucial driver of economic growth.

The Panel has also observed the dire macroeconomic position of the country and the pronouncements of the Minister of Finance and the MEC for Finance and Economic Affairs on the

budget allocations nationally and provincially. It is in particular noted that there is already an intention to increase motor vehicle license fees as a source of general revenue. Even if the macroeconomic position of the country was to improve dramatically, there also remain competing demands on the fiscus, not least competing demands for other major infrastructure investment needs in the areas of water and energy in particular.

The Panel therefore supports the policy position on funding principles set out in the White Paper on National Transport Policy (1996), and carried through in all subsequent policy and strategy documents:

- a) User pay provision for “economic” infrastructure and operations which provide a measureable economic or financial return through the use of, for example, fuel levy and tolls for roads
- b) Contribution from the fiscus for infrastructure and operations which provide social benefits which cannot or should not be paid for by users e.g. public transport

As set out in section 3.7 of the report, infrastructure policy and projects should to be guided by principles of efficiency, equity, sustainability and social acceptability. In the absence of adequate funding from the national or provincial fiscus funds must be found for payment for GFIP Phase 1 as well as for commencement with GFIP Phase 2 and 3. In addition funds must be found for other transport infrastructure investment needs in Gauteng and in the country. The current maintenance need for the national network is an additional R 65.8 billion per annum and there is a backlog of R 91.7 billion required for gravel road surfacing.

The Panel has considered all representations, arguments for and against e-tolls and alternative scenarios. The advantages and disadvantages of the different scenarios and options are discussed in detail in different chapters of the report. The Panel is of the view that elements of the e-toll project should be reviewed and its immediate recommendations are:

a) A mixed source of revenue streams

Given the pressure on the fiscus, a mixed source of revenue streams is recommended for repayment of the debt for GFIP Phase 1, as well as raising the necessary funding for other transport infrastructure needs including, GFIP Phase 2 and 3. Options in this regard have been set out in Section 9.6. Debt financing (as opposed to equity) was used for GFIP Phase 1, which is an important option for raising funds for infrastructure cheaply. It is also worth noting that infrastructure investment is the responsibility of the people of South Africa and not just the business of the state. The proposed sources of revenue to contribute to the debt repayment, and raise future funding may include:

- A reasonable portion of funding from the provincial fiscus sourced from goods and services budgets of departments, without impacting on service delivery budgets. This would demonstrate commitment from the Gauteng Provincial Government to investment in transport infrastructure as a driver of economic growth
- A reduced cap e-toll accompanied by exemptions for progressivity and traffic demand management instruments to incentivise behavioural change, bearing in mind that a model of single driver private cars is simply unsustainable.

- A ring fenced national fuel levy for the benefit of investment in a national integrated transport system, as part of the total road network, and prioritisation of public transport which could include GFIP Phase 2 and 3.
- Increasing and ring fencing the cost of road advertising along the toll routes
- Ring fencing a portion of any increase in motor vehicle license fees for investment in transport infrastructure and progressively increasing the fee for increased axle weight and luxury vehicles
- Increasing fees for tyres
- Recovery of funds from the construction industry in the quest to mitigate costs

The option of a fuel levy for Gauteng may not be advisable due to the complexity of implementation, the likelihood of cross border refuelling in the event of application of a fuel levy at the pump.

The option of increased corporate and personal income tax may not be advisable in view of the competing demands on the fiscus, and the announcement in the Medium Term Budget Policy Statement of the intention to increase taxes. However a progressive personal income tax could be contemplated to shift the burden for infrastructure investment to the wealthy.

b) Traffic demand management

A single driver private car model¹ resulting in increased congestion and gridlock, together with the adverse climate change impacts of urban transport are simply unsustainable. Analysis of evidence and recommendations on management of traffic demand are set out in Chapters 4, 5, 6 and 9. Substantive proposals include:

- Revisit proposals of retrofitting one or more lanes on sections of the tolled routes for HOV vehicles of 3 passengers or more. An option of increase law enforcement to achieve voluntary compliance at the point of passage under dedicated lanes at each gantry point could also be considered
- Implementation of park and ride schemes to facilitate car pooling and bus transport, and facilitating the establishment of highly-visible public transport services specifically aimed at providing alternatives to tolled routes
- Immediate introduction of a single ticketing system to facilitate easy use of existing public transport
- Greater differentiation of the tariff at peak to spread the peak and reduce congestion
- Greater differentiation of tariffs to incentivise behavioural change to fuel efficient and low engine capacity vehicles
- Immediate establishment of a traffic authority

¹ The weighted average occupancy of vehicles in Gauteng is 1.26. Source: GDRT, November 2014, Derived from *“Gauteng Strategic Road Network Review: Transport Demand Modelling, Evaluation and Prioritisation, May 2010”*,

c) Social impact and exemptions

The legacies of apartheid spatial planning has indeed resulted in a disproportionate financial burden on the lower income households who have no option other than private transport, who live in the periphery and travel longer distances from home to work. The cost of heavy reliance on taxis with limited bus and rail access requires an improvement on the social impact strategy and exemptions. There are additional categories where removal of the financial burden of e-tolls is warranted. Substantive proposals include:

- Complete exemption for low-income vehicle owners² based on presentation of reasonable evidence. Most desirable would be to link the e-NATIS vehicle ownership information to the SARS database.
- Complete exemption for HOV vehicles including taxis, scholar transport, registered vehicles of people with disabilities and vehicles of NGO's doing charitable work. The implication of this is that the e-tolls administration should not be used as a proxy for regulation of the taxi industry
- Consideration of switching off gantries for periods of time over weekends to allow unhindered movement for religious, cultural and family reasons

d) Administration of e-tolls

The Panel is cognizant of the major opposition to e-tolls in their current form, amongst others due to the perceived overhead costs of administration. However, the GFIP Steering Committee established in 2011 found, in benchmarking international best practice, that the overhead costs of administration was not exorbitant. It should also be borne in mind that the administrative costs decline with economies of scale and therefore are artificially high at present. The alternative of a fuel Levy is indiscriminate with respect to immediate equity impacts on low, medium and high income households. Substantive proposals include:

- Issuance of a tag to all vehicle owners at the time of motor vehicle license renewal to facilitate full realisation of the Intelligent Transport Systems capability. It would be desirable for the tag to be credited with the capped fee for the first month to avoid any risk of penalties arising from non-payment and to allow the user to become familiar with the capabilities of the tag.
- Clear communication of a single system for reloading of the tag similar to a pre-paid electricity metre or cell phone which is familiar to users
- Determination of a flat rate per gantry and elimination of all "alternative tariffs" to remove complexity and the accompanying disputes due to variable discounts
- Removal of all penalty fees to remove the additional administrative burden
- Removal of all postal administration and the accompanying overhead administrative costs of postal billing
- Subject to a balance with other traffic demand measures, switching off gantries that provide access to low income areas and/or where viable alternative routes do not exist.

² This would cater for students at tertiary institutions who do not have access to public transport

- Implementation of a plan for payment of arrears for all non-compliant users based on actual usage at the e-tagged rate and without application of penalties.

e) Consultation and communications

The Panel acknowledges that there have been numerous previous consultation processes. By its nature, consultation can never be exhaustive and nor will it result in 100% consensus. The Panel has also observed that the opposition to e-tolls has taken place in a heightened political climate accompanied by massive civil disobedience. Whilst the underlying sentiments of the campaign, including the anger and frustration about perceived and real lack of consultation, complexity of the system, billing problems, conflicting information and pressure on household incomes, the Panel can see no justification for the campaign, which sets unsustainable precedents and threatens democracy and social cohesion. The campaign of non-payment must also be weighed up against the evidence of payment of R 678 m by 1.2m users in the 6-month period 3 December 2013 to 31 May 2014.

The substantive recommendation of the Panel is that there should be a process of engagement between national, provincial and local government to decide on changes recommended by the Panel, and thereafter to communicate these changes to all interested and affected parties in the most direct manner possible. This would require commitment from political parties to communicate with their constituencies as per their undertakings in their submissions to the Panel; face to face engagement with major organised formations who made representations to the Panel; provision of information to all vehicle owners through the motor vehicle license registration system; and implementation of a public communication strategy and plan.

4. Conclusion

As set out in the foreword to the NDP – Our Future, Make it Work – the Panel trusts that its advice will assist the Premier in

uniting South Africans, unleashing the energies of its citizens, growing an inclusive economy, building capabilities, enhancing the capability of the state and leaders working together to solve complex problems

Part Two

Main Report - Evidence and Analysis, Findings and Detailed Recommendations

Table of contents

Part One: Preamble, Preface and Executive Summary

Preamble.....	i
Preface.....	iii
Acknowledgements.....	vi
Members of the Advisory Panel.....	vii
Executive summary.....	1
1. Introduction.....	1
2. Background to the recommendations of the Panel.....	3
3. Recommendations.....	4
4. Conclusion.....	8

Part Two: Main Report - Evidence and analysis, findings and detailed recommendations

Definitions, Abbreviations and Acronyms.....	6
Tables.....	8
Figures.....	9
1 Guiding Principles.....	10
1.1 Conceptual Framework.....	10
1.2 Critical Thrusts.....	10
1.3 Rationale for the Human Rights Approach to Socioeconomic Impact.....	11
1.4 Ethical Dimensions of Socioeconomic Impact.....	11
1.5 Challenges of the Individual in the GFIP and e-tolls.....	12
1.6 GFIP, e-tolls, and environmental ethics.....	13
2 Methodological framework.....	14
2.1 Introduction.....	14
2.2 Selection of Methods.....	14
2.3 Facilitation of Roundtables and Public Hearings: Critical Considerations.....	15
2.4 The Political Economy of the Gauteng Transport System: Challenges to Methodology.....	16
2.5 GFIP: The Need for New Way of Impact Assessment and of Thinking.....	17
2.6 Limitations.....	19

3	Scope of work and context.....	22
3.1	Establishment of the Panel	22
3.2	Plan of work.....	22
3.2.1	Background	22
3.2.2	Desktop and primary research.....	23
3.2.3	Consultation	23
3.2.4	Assessment and Limitations of the Consultation Process.....	24
3.3	The Gauteng economy and investment in transport infrastructure.....	26
3.4	Policy considerations.....	28
3.5	Road network and modal split	30
3.6	Description of GFIP and e-tolls.....	32
3.7	Assessment of infrastructure policy and projects	37
4	Political consequences	38
4.1	Introduction and Context.....	38
4.2	The Importance of Political Legitimacy.....	40
4.3	The Political Impact of Inadequate Consultation	40
4.4	Contextual Challenges.....	41
4.5	Protest Against e-tolls: Causes.....	41
4.6	GFIP: Collective Consumption and Socio-economic Inequalities.....	44
4.7	Recommendations	45
4.7.1	The Primacy of Democratic Consent	45
4.7.2	Creating an Enabling Environment	46
4.7.3	The Central Importance of the Implementation Phase	46
4.7.4	e-tolls Policy	47
4.7.5	Excerpts from stakeholders	47
5	Economic impact	48
5.1	Background.....	48
5.2	Introduction.....	49
5.3	Travel costs and benefits to households and businesses.....	50
5.3.1	Direct and indirect benefits of the GFIP upgrades	50
5.3.2	Direct and indirect costs of e-tolls.....	53
5.4	Analysis: Estimated costs and benefits versus the lived experience of road users.....	62
5.5	Macro-economic impacts of GFIP and e-tolls.....	68
5.5.1	Evidence and analysis of GFIP and e-tolls on economy	68
5.6	Conclusions.....	76
5.7	Recommendations	77

6	Social impact.....	78
6.1	Background.....	78
6.2	Envisaged impact.....	80
6.3	Evidence and analysis.....	83
6.4	Findings.....	85
6.4.1	Overall Appreciation of GFIP 1 Road Infrastructure.....	85
6.4.2	Inappropriate GFIP 1 Social Impact Strategy & Misaligned Pro-poor Programme	87
6.4.3	Public Consultations.....	89
6.4.4	Poor Alignment and Sequencing	90
6.4.5	Social Inclusion, Equity and Poverty Reduction Considerations	91
6.4.6	Congestion effects	93
6.4.7	Technocratic Approach to Impact Analysis	94
6.5	Recommendations	95
7	Environmental impact	98
7.1	Introduction.....	98
7.2	Implications for Transport Projects	98
7.3	Safe and healthy living environment for all.....	100
7.3.1	Evidence and analysis	100
7.3.2	Noise Pollution	105
7.3.3	Carbon emissions	105
7.4	Sustainability	107
7.4.1	Envisaged impacts.....	108
7.4.2	Evidence and analysis	108
7.5	Recommendations	112
8	Legislative and legal considerations.....	114
8.1	Introduction.....	114
8.2	Parameters of the report	114
8.3	Competency of the Premier in appointing the Panel.....	114
8.4	Legislative framework of e-tolls in South Africa.....	117
8.5	Consultative Process	119
8.6	E- toll cases and their implications	120
8.7	Constitutional issues	121
8.8	Contracting regime.....	122
8.9	Accessing information from SANRAL	125
8.10	Competition issues associated with e-tolls?.....	126
8.11	Recommendations	136
8.12	Conclusion	138

9	Cross cutting issues	139
9.1	International best practice: Pricing as a demand management measure	139
9.1.1	Introduction	139
9.1.2	Evidence and analysis	139
9.1.3	Critical success factors	140
9.1.4	Lessons from Unsuccessful Projects	140
9.1.5	Discounts and Exemptions	141
9.1.6	Impact of projects	141
9.1.7	Comparison of e-toll system and international best practice	142
9.2	Spatial planning	144
9.3	Integrated transport planning and implementation	147
9.3.1	The need for an integrated approach	147
9.3.2	Evidence of a lack of integration	148
9.3.3	Causes of the lack of integration	151
9.3.4	Recommendations for an integrated transport system	153
9.4	Institutional arrangements	155
9.4.1	Transport Authority	155
9.4.2	Transport Regulator	156
9.5	Funding model	158
9.5.1	Analysis of funding arrangements	158
9.5.2	Differential payment schemes for e-tags and no e-tag	161
9.5.3	Funding options	162
9.5.4	Recommendations	177

Part Three: Summary of recommendations from stakeholders;
Longer term detailed recommendations of the Panel; and
Immediate recommendations of the Panel

10	Summary of recommendations	179
10.1	Introduction.....	179
10.2	Consultation recommendations	180
10.3	Detailed recommendations contained in the report	184
10.3.1	Political impact.....	184
10.3.2	Economic impact.....	185
10.3.3	Social impact	185
10.3.4	Environmental impact.....	187
10.3.5	Legislative and legal recommendations	188
10.3.6	Spatial planning recommendations	189
10.3.7	Integrated transport planning and implementation	189
10.3.8	Funding alternatives.....	190
10.4	Recommendations for immediate implementation, to address short term challenges	191
10.5	Conclusion	196
11	Bibliography and References	197

Definitions, Abbreviations and Acronyms

AA	Automobile Association
ANC	African National Congress
BBC	Black Business Council
BRT	Bus Rapid Transport
BUSA	Business Unity South Africa
CESA	Consulting Engineers South Africa
COSATU	Congress of South Africans Trade Unions
COTO	Committee of Transport Officials
DBO	Design, Build and Operate
DEA	Department of Environmental Affairs
DA	Democratic Alliance
EFF	Economic Freedom Fighters
e-NATIS	National Traffic Information System
ETC	Electronic Toll Collection
FAC	Fully allocated cost
FEDUSA	Federations of Unions South Africa
FIS	Freeway Improvement Scheme
FMF	Friday Mavuso Foundation
FF+	Freedom Front Plus / Vryheidsfront Plus
GDP	Gross Domestic Product
GDRT	Gauteng Department of Roads and Transport
GFIP	Gauteng Freeway Improvement Project
GFIS	Gauteng Freeway Improvement Scheme
GITMP	Gauteng 25-Year Integrated Transport Management Plan, 2013
GNTA	Gauteng National Taxi Association
IFP	Inkatha Freedom Party
ITP	Integrated Transport Plan
JPSA	Justice Project South Africa
LRIC	Long-run incremental cost
MOA	Memorandum of Agreement
MRM	Moral Regeneration Movement

Definitions, Abbreviations and Acronyms (continued)

NACTU	National Council of Trade Unions
NASGB	National Association of School Governing Body
NBBC	National Black Business Council
NDED	National Department of Economic Development
NDoT	National Department of Transport
NDP	National Development Plan 2030
NEDLAC	National Economic Development and Labour Council
NLTA	National Land Transport Act (5 of 2009)
NPC	National Planning Commission
OUTA	Opposition to Urban Tolling Alliance
Panel	Advisory Panel on GFIP and e-tolls
PICC	Presidential Infrastructure Coordinating Commission
PRASA	Passenger Rail Agency of South Africa
QASA	QuadPara Association of South Africa
RFA	Road Freight Association
RMI	Retail Motor Industry
ROD	Environment Impact Assessment Record of Decisions
RSC	Road Safety Campaign
SACCI	The South African Chamber of Commerce & Industry
SALGA	South African Local Government Association
SANRAL	South African National Roads Agency Limited
SANTACO	South African National Taxi Council
SAVRALA	South African Vehicle Rental and Leasing Association
TEASA	The Evangelical Alliance of South Africa
TMT	TMT Services and Supplies (Pty) Ltd
ToR	Terms of Reference
VLN	Vehicle License Number Recognition
VoC	Vehicle Operating Costs
VoT	Value of Time

Tables

Table 3.1: South African Road Network	30
Table 3.2: Modes of transport for workers in Gauteng on a daily basis	32
Table 3.3: History of GFIP	35
Table 5.1: Estimated savings in vehicle operating costs for different journeys during AM peak.....	52
Table 5.2: Estimated toll cost per household for October 2014	59
Table 5.3: Estimated toll cost for October 2014 (Source: Own estimates from ETC gantry data)	61
Table 5.4: Output and employment impact of the GFIP construction	71
Table 5.5: Assumptions and data	72
Table 5.6: Cost savings due to the GFIP with and without e-tolls	73
Table 5.7: Output and employment impact of the GFIP with e-tolls	73
Table 5.8: Cost savings with and without e-tolls (VoC plus VoT, with business break-even)	74
Table 5.9: Output and employment impact with e-tolls (with business breaking even)	75
Table 6.1 Social Impacts of Traffic Congestion (Bews, Uys and Senekal).....	82
Table 6.2 INDICATIVE MODAL SPLIT (GCRO 2014)	89
Table 7.1: Record of EIA ROD's.....	99
Table 7.2: Kilometres travelled on the GFIP network vs alternatives at am peak	108
Table 7.3: Change in GFIP demand with and without tolls.....	109
Table 7.4: Planning strategies to limit environmental impacts of transport.	112
Table 8.1: Prescribed projects	130
Table 8.2: Non – prescribed projects	131
Table 8.3: Bid Rigging contraventions and associated penalties.....	133
Table 9.1.1: International best practice	142
Table 9.5.1: Arguments around advantages and disadvantages of alternative funding sources.....	164
Table 9.5.2: Examples of hybrid funding models.....	166
Table 9.5.3: E-toll flat rate tariff structure with with no rebates or exemptions.....	169
Table 9.5.4: E-toll flat rate tariff structure with exemptions.....	170
Table 9.5.5: E-toll tariff structure with a time-of-day discount.....	171
Table 9.5.6: E-toll flat rate tariff structure with some gantries 'switched off'	172
Table 9.5.7: E-toll flat rate with R200 monthly cap under different funding scenarios	174
Table 9.5.8: Increase in Gauteng vehicle license fees under the different funding scenarios, 2015...	175
Table 9.5.9: Increase in fuel levy under different funding scenarios, 2014	176

Figures

Figure 3.1: Condition of the South African Road Network	31
Figure 3.2: Comparison of traffic volume and capacity in 2007 and 2013	34
Figure 3.3: GFIP road network.....	36
Figure 4.1: Location of gantries.....	39
Figure 4.2: Trips made by respondents going to work categorised by race	39
Figure 5.1: Time of day distribution of heavy vehicle trips in Gauteng.....	61
Figure 5.2: Estimated time savings vs toll costs for full compliance and no compliance cases.	65
Figure 6.1: SIA process map	79
Figure 6.2 GFIP benefits to costs for light vehicle road users	86
Figure 6.3: Users of GFIP	88
Table 6.2 INDICATIVE MODAL SPLIT (GCRO 2014)	89
Figure 6.4: Individual monthly income per province – Census 2011	92
Figure 6.5 : Differentials in net migration by province – Census 2011	93
Figure 6.6: Travel time index 2000 - 2013	93
Figure 7.1: Simulated hourly NO ₂ concentrations for the three GFIP Scenarios	101
Figure 7.2: NO ₂ concentration in proximity to the N1	101
Figure 7.3: Emissions per vehicle kilometre in peak hour traffic	103
Figure 7.4: Emissions in peak hour traffic for Buccleuch interchange vs alternative routes.....	104
Figure 7.5: Total CO ₂ emissions for a constant vehicle parc accounting for road congestion.....	106
Figure 7.6: Total CO ₂ emission rates during peak hour traffic	107
Figure 7.7: Transport split for work trip modes in Gauteng.....	109
Figure 7.9: Increase in average hourly flows for each road link on GFIP network.....	110
Figure 7.10: Travel Time index during peak hour on GFIP.....	111
Figure 9.3.1: Transport Investment Drivers.....	148

1 Guiding Principles

1.1 Conceptual Framework

- a) Each person irrespective of race, ethnicity, religion, class, gender, orientation, age and nationality has an equal claim to a fully adequate system of equal basic rights and freedoms; and in this system the equal political rights and freedoms are to be guaranteed their fair value.
- b) Social and economic rights and freedoms, though conditional, are to satisfy two requirements: first, they are to ensure fair equality of opportunity; and second, they are to be to the greatest benefit of the poorest and least advantaged members of society.

The two principles express an egalitarian form of democracy in virtue of three elements. These are: a) the fair value of the political freedoms, b) fair equality of opportunity; and finally c) that the social and economic inequalities are to be adjusted so that, whatever the level of those inequalities, they are to the greatest benefit of the poorest and least advantaged members of society (Rawls, 1993: 3-46; MacIntyre, 1998).

1.2 Critical Thrusts

- a) The aim of the two principles of justice is practical: they present an idea of justice that may be shared by citizens as a basis for informed and reasoned political agreement. Taken together, these principles regulate the basic political, social, and economic institutions that realise these values. The identification of redressible injustice, in the current discourse on the Gauteng Freeway Improvement Project (GFIP) and e-tolls, is not only what animates the Panel to think about justice and injustice, it is also central to the idea of deliberative democracy. In our impact assessment processes, diagnosis of injustice should figure as the starting and end point for deliberation.
- b) Understanding the nature and scope of the socioeconomic impact of the GFIP and e-tolls, is never a matter of simply recording people's immediate perceptions and experiences. Understanding invariably involves reasoning. The Panel was required to interpret what the people feel and see, and ask what those perceptions and experiences indicate and how to take them into account without being overwhelmed by them.
- c) Critical questions to consider include: first, in what way can a diagnosis of injustice, or the identification of what would reduce or eliminate it, be objective; second, does this demand impartiality or objectivity, such as detachment from one's vested interest; and, third, what is the role of rationality and of reasonableness in understanding the demands of justice?
- d) What is presented here is an idea of justice in a broad sense. Its aim is to clarify how the Panel proceeded to address questions of enhancing justice and removing injustice in the Gauteng transport system, rather than to offer resolutions about the nature and governance of perfect justice. There is a need for reasoned argument. The presence of remediable injustice in the Gauteng transport system may well be connected with both institutional shortcomings and behavioural transgressions.
- e) In the approach adopted here, it is argued that there are crucial inadequacies in the concentration on institutions or the governance of justice (where behaviour is required to be compliant), rather than on the actual lives that people are able to lead. The focus on actual lives

in the assessment of the socioeconomic impact of the GFIP and e-tolls has many far-reaching implications for the nature and reach of the idea of justice.

- f) In this impact assessment exercise, democracy is assessed in terms of public reasoning, which leads to an understanding of democracy as “government by deliberation”. But democracy must also be seen more generally in terms of the capacity to enrich reasoned engagement through enhancing informational availability and the feasibility of interactive discussions. Democracy has to be judged not just by the institutions that formally exist but by the extent to which different voices from diverse sections of society can actually be heard.
- g) Furthermore, this way of seeing democracy can have an impact on the pursuit of it at the national, regional, and global levels – not just within a province. If democracy is not seen simply in terms of the setting up of some specific institutions (like inter-spherical government or intergovernmental ministerial fora or councils), but in terms of the possibility and reach of public reasoning, the task of advancing – rather than perfecting – both democracy and justice can be seen as eminently understandable ideas that can plausibly inspire practical action across differences of all kinds.

1.3 Rationale for the Human Rights Approach to Socioeconomic Impact

In refusing to assess impact on rationalistic, technocratic, and institutionalist terms and in suggesting that the socioeconomic impact of the GFIP and e-tolls must be assessed in terms of actual human experience and relations, the Panel is not simply speaking in the name of a debatable ideological position – it is providing a conceptual and practical framework for the concrete assessment of the Gauteng transport network which cannot be refuted by idealist arguments. The value of policy is the value it places upon actual human experience. It is not just a question of what the government had in mind but how the policy is actually experienced by the users within and beyond the borders of the Gauteng City-Region. This approach is based on the strong conviction that to understand and judge the GFIP and e-tolls one has to penetrate their basic structure to the human experience on the ground (Merleau-Ponty, 1947: xiii-xlvii; Sen, 1999).

Any serious assessment of the socioeconomic impact of the GFIP and e-tolls must therefore pose the problem not in technical terms, that is to say, not on the grounds of abstract principles but on the ground of human experience. The Panel will not brandish an abstract ideology to push a particular viewpoint, they will examine whether the project and the e-tolls as well as the policy and legislation that underpin them are adequate to resolve the problem raised by the Constitution, namely, to reduce, if not eliminate socio-economic inequalities.

1.4 Ethical Dimensions of Socioeconomic Impact

The central question in socioeconomic impact assessment is who, and what counts (Sneed 1977; Barnett 2002; Crawford 2002; Finnemore, 2003). This question must be decided before any calculations of cost, benefits, savings, or risks can be made. In the Gauteng City-Region, whose costs, benefits and savings should be counted? And whose should be ignored? Whose count fully and whose are to be discounted? (MacIntyre, 1988; Seidman, 1994; Outhwaite; 1996: 67-112)

These are complex, if messy questions in the sense that they are not amendable to precise calculations. Any precise calculations, however, will mislead the makers of transport policy to the extent that they omit matters that ought to be included. This makes ethical analysis of the socioeconomic impact of the GFIP and e-tolls very difficult. Selective judgements must be made, not least because an analysis of the socioeconomic impact of the Gauteng transport system that is to be useful in the choice of policy interventions, must focus attention sharply on what matters most to the actual lives of people. So what matters most to the people of the Gauteng City-Region? And what matters not at all? These selective judgments are ethical judgements.

The National Department of Transport (NDoT) is absolutely right when it says, in its Presentation to the Panel, that “the social impact of congestion cannot be calculated in monetary value only, but manifests in the social health of families, the ability of parents to assist their children with homework, ensuring that they attend school, family times, etc.”.

It is important to realise that the most fundamental judgements about the socioeconomic impact of the Gauteng transport system, about who and what to take into consideration in the first place, are judgements about relative importance – value judgements. However contentious or inconclusive ethical debates may be – and it is not that they need to be anymore inconclusive than debates among economists themselves – they are the debates that need to be concluded in the assessment of the GFIPs and the e-tolls. The purpose in the report is not to offer quick solutions, but simply to demonstrate why the choices need to be confronted in the fundamental ethical terms in which they arise and should be dealt with as the ethical issues they are.

These judgements can be made on the basis of referenda, plebiscites, public hearings, media coverage, roundtables, and focus-group discussion. But there is no way not to make them because all assessment of the socioeconomic impact of public policy presupposes that some things matter and other things do not, and that some matter a lot and others matter only a little. Ethics is the attempt to reflect systematically about relative importance and arrive at judgements that can be publicly justified (Guttman and Thompson 2005; Mills 1992; Shue 2006). Ethics can provide the Gauteng government with reasonable guidance.

1.5 Challenges of the Individual in the GFIP and e-tolls

The report is in part a search for the place of the individual in the GFIP and e-tolls. It tries to show how people on the ground experience the Gauteng transport policy. Too often social analysts offer generalizations about governmental and institutional actions without concretely exploring how the individual citizens and workers are affected by the actions, how the behaviour of individuals, when aggregated, gives rise to the actions, or how and why the actions in question are consistently reproduced by the behaviour of the individuals (Lipsky, 1980). To understand how and why the Gauteng transport system performs, how transport policy, transport legislation, and transport regulations are experienced by the people and to what pressures they are subject must be known. This report is grounded in personal and collective testimonies, as well as in scholarly reflections, and advances a view of socioeconomic impact as individual persons experience Gauteng’s transport services.

1.6 GFIP, e-tolls, and environmental ethics

The intention here, to be discussed more fully in the chapter on environmental impact, is to present the environmental question as a whole and in all its ramifications. Hence writings on economics, psychology and philosophy are drawn on, as well as on the writings of ecologists and historians. It is argued that environmental impact issues must be addressed fully by all the people of Gauteng in their everyday circumstances and should not be the sole responsibility of government. Their solution is possible only if people are motivated to confront them, and the task of government is to create the conditions in which the right kind of motive can emerge and solidify. The motive (or rather, family of motives) are described as the love and feeling for home, and the conditions in which the love and feeling for home arises are set out as well as the task of government in making room for it. Local initiatives are defended against global schemes, civil society against ideology-inspired activism, and small-scale institutions of friendship, local allegiances and affiliations against large-scale and purpose-driven campaigns (Scruton, 2012: 5-37; Bond, 2012; Goodin, 1992). Hence the argument runs counter to much of the instrumentalist literature today, and may be greeted with scepticism by people who nevertheless share our central concerns. For this reason, in the chapter on methodology, the first principles of practical public reasoning and the ways in which rational people can reach co-operative solutions to problems that cannot be addressed either by the individual or the state are explored. The Panel is critical of top-down regulations and goal-directed social movements, and sees environmental problem as arising from the loss of equilibrium when the people in Gauteng cease to understand their surroundings as a home, and treat them essentially as an industrial resource. This loss seems to have many causes; but not the least among them is the wrong use of transport policy, and the fragmentation of society that comes about when self-serving market forces take charge of it.

The ethical approach to the environmental impact of the GFIP and e-tolls is wrongly identified as a protest on behalf of the poor and the marginalised against big business, consumerism and the structures of social power. But that image is inaccurate. Its roots, like in Britain and Europe, are found in the profound reverence for natural beauty and in the reaction to excessive industrialisation in which the environmentalist movement in South Africa played an important part. The concern of the Department of Environmental Affairs to “minimize the impact on the environment and reduce the carbon-footprint of transport” and the caution by the NDoT “not to ignore the potential negative load of congestion” represent the general thrust of our argument. This concern is captured succinctly in the two principles that guide the two departments:

- a) Reduce and /or mitigate against the pollution and emissions in the transport sector
- b) Reduce the environmental impact as a result of the construction and implementation of transportation projects

According to the environmentalist view, the purpose of transport policy, amongst other things, is not to rearrange the Gauteng City-Region in the interest of some overarching trade and industrial vision, such as prosperity and global competitiveness. It is to maintain a principled balance with vigilant resistance to the entropic forces that threaten Gauteng’s social and ecological equilibrium.

The objective is to pass on to future generations, in a sustainable manner, and to maintain and enhance the order of which this generation are the temporary beneficiaries.

2 Methodological framework

2.1 Introduction

The question about the socioeconomic impact of the GFIP and the e-tolls raises two questions. The first is: did government really have a choice? Or were the decisions largely dictated by circumstances? Both questions ask: does politics matter, but in different ways? The first question enquires whether government can make real choices, or whether its decisions were largely determined by social and economic forces beyond their control. The second question asks whether the decisions they made (including how they arrived at them) made a difference in people's actual lives or circumstances. It is the second question with which the Advisory Panel is concerned.

Specific as the Terms of Reference (ToR) are, this is a very large question, which calls for meticulous attention both to perspective and detail. In order to maintain coherence, the Panel had to focus on the socio-economic impact of the e-Tolls as an integral part of the GFIP, mainly because that was part of the brief which required particular attention. However, most of the points the Panel found itself needing to make also apply to other parts of the GFIP, such as the congestion, the discomfort created by collective consumption and the organisation of transport in a large metropolitan area. Whilst the Panel had to concentrate on the impact itself, methodological discussion could not be avoided, as different approaches (sometimes) generate different answers.

2.2 Selection of Methods

A variety of approaches are available in the literature on policy impact. First, there is the "social experiment" method in which persons are randomly assigned either to a "treatment" group, which receives the services of a certain project (the e-tolls in this instance), or to a "control" group, which does not. The impact of the project is measured as the difference between outcome variables before and after the "treatment", after adjusting for results in the "control" group, which are supposed to capture the effects apart from the project which might influence the outcomes. Despite its obvious attractiveness, the social experiment method was not possible in this instance.

Another approach considered – a basic one at that – was to compare outcome variables before and after the introduction of the project - the e-Tolls. If data are available for the period since the introduction of the e-Tolls, one can control for other trends, such as changes in the price of petrol and the unemployment rate.

All the approaches reviewed above have in common that they compare impacts after a program has been implemented with a situation that existed or had existed previously in the real world.

There is another approach, based on model-based impact assessments, in which the comparison is made not with a really existing state, but with a hypothetical or simulated counterfactual one. In this approach, the assessor uses a model to predict the impact of the introduction (or absence) of a project, with particular features, on persons or organisations. Use is made of survey data to predict impact. The validity of such predictions depends crucially on the quality of the data and on, in particular, that of the model and its parameters. Typically for behavioural models, these parameters are estimated using survey data, which makes them subject to sampling variability and, more importantly, to specification error (Bosch, 2006).

All these approaches help to assess impacts that the investigator is looking for. Yet, there may be a host of unintended effects, positive and negative, that the investigator just has not thought about.

Another consideration is that it was temptingly easy to take the political economy of the Gauteng transport system for granted. Once set up, the transport system seemed to function along rigid, technical lines. Only social pressure, such as the current outcry against the e-tolls, could reopen the basic political questions of how government should react to market forces. Before the protests, it was easy to overlook the usual questions about who governs and with what results for people on the ground and for the political system as a whole. This is especially true when it comes to the collection of toll fees. It has so far been considered of only marginal significance, suitable for micro-economic analysis, or of interest to a minor branch of transport economics. Yet, as South Africa's trade grows every year and as more and more people move around the country and the world further, faster and more often than before, the nature of the transport services they use, the layout of freeways and secondary roads, the toll fees charged and the terms laid down for the carriage of goods or people have become more and more salient issues of national and international political economy.

2.3 Facilitation of Roundtables and Public Hearings: Critical Considerations

- a) In facilitating roundtables and public consultations the deliberative framework used was to discuss the socioeconomic impact of the and e-Tolls. It was not to provide a detailed reading of the Gauteng transport system and e-tolls financing model, but to engage stakeholders on GFIP and e-tolls - a foundational deliberative discourse. It was also to facilitate disciplined dialogue across differences among stakeholders. The Panel's function was to lead stakeholders, as a collective, through positive deliberation with the ultimate aim of uncovering the nature and scope of the socioeconomic impact.
- b) The central premise of the facilitation was that deliberation matters. The deliberations concentrated on both 'objective' and 'subjective' evidence. The questions asked were: How shall everybody's "voice" be heard? How shall decisions be made? In a highly professional sector like urban transport and e-tolling, how shall tensions between expertise and democratic consent be negotiated, given the fact that understanding across difference entails a fusion of conflicting experiences, perceptions, justifications, and judgments?
- c) As a consequence of the deliberative and participatory nature of South African democracy, the political cannot be restricted to parliament, political parties, or to a certain type of institution, or envisaged as constituting a specific sphere or level of society. It must be conceived as a dimension that is inherent to every human society and that defines the human condition.
- d) Twenty years after the democratic transition, South African society is undergoing a deep process of redefining its collective identity and experiencing the establishment of a new political frontier. This is linked to the collapse of the colonialism of a special type and the emergence of "public interest" lobbying groups, increased concern for the rights and provision of opportunities for poor and marginalised groups, and a pervasive criticism of those who possess or are even thought to possess excessive power or wealth. The spirit of protest, the spirit of equality, the impulse to expose and correct inequalities, manifested in, for example, service delivery protests and the public outcry against e-tolls, are abroad in the land. The themes are those of the Bill of Rights; they embody ideas and beliefs deep in the struggle for justice and freedom. In a real sense, the protests bear testimony to the vitality of the democratic idea

2.4 The Political Economy of the Gauteng Transport System: Challenges to Methodology

The political economy of the Gauteng transport system has not grown up haphazardly or by accident. It has evolved within a national and international political system in which the state has been the major political authority in charge of markets and at the same time has had to provide for the public good; people have looked to the state for their wellbeing, for justice and freedom and for defence against hostile forces, within the country and outside its borders. The prime purpose of the transport system is to increase the freedom of movement and promote the integration of the economy and the people into a prosperous, cohesive, and governable society. Even the remotest parts of the country have to be linked to Gauteng – the hub of the national economy – and just as “all roads led to Rome”, so rail and roads radiate to and from Gauteng. But, at the same time, the accentuation of socioeconomic inequality, its globalisation and its direct connection to political power, now forms the basis for a practical articulation of the more general demand of the transformation of the transport system. Thus mobilisation of society around issues of urban transport in Gauteng is a major element of the social dynamics in so far as it permits the progressive formation of organs of people’s power upon a much broader basis than that of the specific interests of motorists or the contingent political alliances.

It is impossible to assess the socioeconomic impact of GFIP and the e-tolls without giving attention to the role of power in economic life. Each transport system differs in the relative priority it gives to wealth, order, justice and freedom. Each reflects a different mix in the proportional weight it gives to the four basic values of society. What decides the nature of the mix is, fundamentally, a question of power.

Markets cannot play a dominant role in the way a transport system functions unless allowed to do so by whoever wields power and possesses authority. The difference between a private enterprise, market-based economy and an economy run by a developmental state lies not only in the amount of freedom given by government to the market operators, but also in the source of the authority. It is not enough, therefore, to ask who has the power. It is important to ask – what is the source of the power? Is it command of coercive force? Is it the possession of great wealth? Is it moral authority, power derived from the proclamation of powerful ideas that have wide appeal, and accepted as valid and give legitimacy to the proclaimers, whether politicians, social movements, organic intellectuals or religious leaders?

The point, as already stated, is only that it is impossible to arrive at the end result, the assessment of the socioeconomic impact of the GFIP and the e-tolls, without giving explicit or implicit answers to these fundamental questions about how power has been used to design the transport system and the way it distributes costs and benefits, risks and opportunities to individuals and social groups, enterprises and organizations within the system.

Some scholars on the political economy of Gauteng’s transport system avoid making their answers explicit, either because they do not see how important it is to their conclusions, and especially policy recommendations; but for the Panel, which is required to come up with practical recommendations, it is particularly important to clarify the assumptions about power that underlie our view about the nature of the political economy of the Gauteng transport system. All impact analysis of the transport system has to start with the examination of power.

2.5 The Gauteng 25-Year Integrated Transport Master Plan: The Need for New Way of Impact Assessment and of Thinking

What does it mean, for methodology, to treat Gauteng's transport as a system? The GITMP Vision reads: "An integrated and efficient transport system in Gauteng that promotes economic growth, skills development, and job creation, fosters quality of life, socially includes all communities and preserves the environment."

How can an integrated transport system full of uncertainty, complexity, and ambiguity be approached? Is there preparedness for this tremendous challenge? The Bill of Rights, the National Development Plan, the Intergovernmental Relations Act and several national and provincial plans, are crucial for familiarisation with the political economy of urban transport systems worldwide. The coupling of politics and economics, no matter how remote it may seem, does have profound repercussions in the daily lives of people. Deepening unemployment and poverty have recently caused a lot of people in Gauteng considerable transport-related problems. Based on submissions to the e-tolls Panel, it is clear that there is growing awareness of the close link between politics and economics. It is also abundantly clear that there is a sense of urgency about understanding the integrated political context of the Gauteng transport system. The full implications of an interconnected, uncertain, and ambiguous system must be understood. In fact, it's increasingly obvious that it is extremely difficult to even figure out how to begin to think about the GFIP and e-tolls.

Unravelling the complexities of the e-tolls and their socioeconomic impact, is an enormous challenge. The system is so complex, changes so rapid, and technology playing such a dramatic role in this acceleration, that it is unrealistic to expect things to stay the same very long. Whereas in less complex economies transport systems are arguably relatively simple, predictable, and unambiguous, this is a different transport system. Is there readiness to deal with this? Increasingly, the answer is that there is choice.

Disturbingly, in times of crisis, complexity, uncertainty, or faced with potential chaos, there is a tendency to seek certainty, rationality, logic, simplicity, and an analytical framework that will make sense of the world and reduce anxiety. These frameworks are informed by reductionist and dualistic thinking that drastically reduce the complexity of the situation. Much of the impetus behind the search for a simple transport solution are the emotions evoked by the perception of threat, the need for clarity, the assumption that anything other than a strong stance, a powerful position and reflects weakness and unwillingness to confront the problem. There is a whole sociology and psychology of knowledge at play in socio-economic analysis, which must be carefully examined.

Particularly relevant here is the introduction of the assessor into the process of impact assessment. The tradition of reductive, dualistic thought eliminates the assessor from the process of assessment. In this investigation, the assessor must take centre stage and become a subject of inquiry, self-reflection and self-analysis. This opens up an entirely different understanding of the nature of impact assessment, deepening the complexity and forcing the inquirer to take responsibility for his or her own assessment process. This involves a recognition that all impact assessment is engaged by a human being, not an objective lens with no emotions, presuppositions, ideologies, and so on. Impact assessment, therefore, requires a process of self-assessment. One can only hope that this method will

be widely applied, beyond this investigation, to address national challenges, prepared to do this with patience, humility, wisdom, and care.

What was the work of the panel appointed to look into the socio-economic impact of GFIP and e-tolls and the related activities really all about? At one level it was about the implementation of a specific policy and programme (GFIP and e-tolls); at another level it was about the design and implementation of mega-infrastructure programmes with high levels of complexity; and at yet another level it was about the practice of democracy in South Africa in the early 21st century.

The research and engagement activities of the Panel and the many stakeholder groups that participated, suggests the importance of scanning the multiple views of multiple players on an ongoing basis in order to address unforeseen weaknesses in programme design. It is often the case that *ex ante* consultation is insufficient for full programme implementation and that *ex post* contemplation is needed to reveal the broader dynamics and dimensions of the particular programme design, in this case the social and economic design of the programme. The process reveals the need for GFIP and the particular funding models and/or funding mix to be subject to regular review by the policy-maker and the implementer, in conversation with the broader society, creating structured opportunities for adaptation and flexibility. This would obviate continued challenges to a rigid model.

Government departments and agencies, policy-makers and implementing agencies, when taking on a large-scale, multi-billion rand project, often work from the assumption that planning will address all the potential complexity that could possibly emerge and that simply following the original plan will lead to successful outcomes. In reality, complex projects lend themselves to the emergence of issues and challenges that often defy the intentions of the planners, who have so carefully pursued a particular design. This leads to the requirement for the project and programme management of the complexity associated with such mega-infrastructure projects, an emerging field of management expertise that is not yet sufficiently well-understood or practiced.

Mega-infrastructure programmes are generally organised as an ecosystem of issues, rather than a simple programme. In the case of the GFIP, it is part of at least three ecosystems (i) GFIP as a multi-phase project; (ii) building an integrated inter-modal transport system that promotes socio-economic freedom and development; and (iii) an even broader ecosystem of transport and communications.

With respect to (iii) the transport and communications ecosystem, it should be noted that broadband electronic communications via fixed, wireless or mobile Internet is a 21st century alternative to land transport and must be considered carefully as a particular mode of social and economic communication that reduces the requirement to move physically from one place to another, while potentially giving a similar level of socio-economic impact to that of land transport.

This ecosystem view means that, while particular players may have a limited mandate to pursue particular objectives in terms of land transport, and may have no direct role in communications alternatives to transport, all these players need to create a platform for engagement where their goals and objectives overlap.

Democracy can create discomfort and in this particular case, it has. The practice of democracy includes society overturning carefully laid plans, new players emerging when not expected, and voices appealing loudly for alternatives and approaches. All activities of all stakeholders have been part of the democratic process pertaining to GFIP and e-tolls. Democracy has gained, nothing is lost.

2.6 Limitations

First, a methodological point that is perhaps uncontroversial, but still worth making. Modelling, both economic and transport modelling, is insufficient on its own to predict the socioeconomic impact of policies. Modelling can guide us as to what to look for, but often the direction of the impacts, and almost always their magnitude, can only be established empirically. It so happens that often impacts that loom large in the theoretical discourse turn out to be insubstantial in the real world (Bosch 2006:314).

A second, perhaps less obvious point is that, even though the tool kit of socioeconomic impact analysis contains a variety of methods, it is often very hard to identify, let alone quantify the impact of particular policies, particularly in an integrated institutional environment with a reasonable degree of accuracy. Even the economic and social impact of the e-tolls have turned out to be hard to pinpoint, despite the scope of the changes, and the wealth of data available from many sources. Economic modelling is a powerful method, particularly suitable for programs that are not yet in place. For larger and existing programs, such as GFIP, economic modelling requires other accompanying methodologies. The fundamental problem in analysing the socioeconomic impact of GFIP and the GITMP is to assess the impact of exogenous social and economic development. It then becomes difficult to tease out the message from the noise.

Thirdly, the macro-social – economic approach that the political economy paradigm requires, which looks at urban transport systems as a whole, is extremely difficult with five focus areas and at least ten interventions across several sectors. In all these complexities, it is clear the socioeconomic impact of GFIP and e-tolls has been produced by a range of factors, not just by a single measure. Unfortunately the work of the Panel for a duration of only four months has not been enough to see how the different parts of the transport system work together, particularly the interactions between the various transport institutions and the cross-impacts. In the real-world policy packages are often complex and detailed, and need to be so, in order to manage uncertainty and ambiguity, and to ensure focus and relevance.

2.7 Selection of research methods

The Panel selected a range of methods applicable to each of the key areas of its investigation, namely the political, the economic, the social, the environmental and the legal aspects, which is set out in this section. Methods common to each of the main areas of analysis included review of recently published scholarly literature on GFIP and e-tolls, and public consultation.

Particularly relevant here was the role of the Panel in the process of impact assessment. The Panel set out to collect data from a wide variety of sources, including data available from SANRAL, from the NDoT, from the GPG, from scholarly literature, from institutions, experts and the general public. Organisation of the data revealed particular findings, which when analysed led the Panel to a set of recommendations for consideration by the relevant decision-makers. The recommendations represent the views of the Panel as a whole.

Political: The data gathered for this component of the investigation was sourced largely from the public consultations held with community groups, with stakeholder groups, with experts, focus groups, political parties and with SANRAL and the NDoT. The analysis of the political environment pertaining to GFIP and e-tolls was built on a review of the verbatim transcripts of each of these events.

Economic: Data for the economic chapter was sourced from SANRAL and other sources and used to construct economic models that highlight particular forms of economic impact, namely the costs and benefits to households, to businesses and the total cost-benefit overall. The cost-benefit approach included indicators such as savings and the value of time. The findings enabled the Panel to construct a narrative regarding economic impact and to analyse the findings as the basis for recommendations. The recommendations emerging from the economic focus, took into account data arising from the political and social foci.

Social: The methodological approach used in this aspect of the investigation was social impact analysis, underpinned by an understanding of social impact assessment (SIA) process adapted from Vanclay (2012). Particular attention was given to the guiding principles for SIA namely social inclusion, equity, sustainability, efficiency and administrative justice (UN, 1994). Similarly to the economic analysis, the recommendations emerging from the social focus were contextualised against the findings from the political, economic and environmental foci.

Environmental: Environmental impact was explored through principles outlined in the National Environmental Management Act 1998, including holistic evaluation, internalisation of externalities, the precautionary principle, sustainable development, sense of place, and processes for consideration of environment-friendly alternatives. The perspective that environmental management must place people and their needs first, and serve their physical, psychological, developmental, cultural and social interests equitably; and that development must be socially, environmentally and economically sustainable, was observed and informed the data collection and analysis for this component of the investigation.

Legal: This part of the report addressed the legislative and legal analysis considered by the Panel in arriving at its findings. It addressed a few pertinent legal questions that were likely to arise from the mandate of the Panel, namely the regulatory framework; the consultative process; the contracting regime for GFIP; the constitutional issues; the competition issues; and the proposals and recommendations to emerge from the Panel.

At the outset, it was agreed that these five lines of enquiry, namely political, economic, social, environmental and legal, should be complemented by a sixth area, namely cross cutting issues, which provide an overarching perspective of each of the individual foci. This sixth area was explored through analysing selected cases of international best practice in transport demand management in urban transport systems. Critical success factors and lessons from unsuccessful projects were identified as a means to establishing the knowledge base, for counter-factual analysis to the perspectives arising from the thematic enquiry.

Finally, recommendations were derived based on extensive analytical debate of the full Panel, and arising from the relatively extensive qualitative and quantitative data collected over a four month period, from August to November 2014.

3 Scope of work and context

3.1 Establishment of the Panel

In the State of the Province Address delivered on 27 June 2014, Premier David Makhura, made the following commitment:

Over the next 100 - 200 days, we shall undertake extensive consultations and engagements with all sectors of society to elaborate detailed plans and targets. The people's voice must be heard on all the issues that affect our province. It is against this background that we shall also set up a Panel to review the impact of e-tolls and invite new proposals on how we can find a lasting solution to this matter, working with the national government, municipalities and all sectors of society. While we shall not promise easy solutions and claim easy victories, we must make it clear that we cannot close our eyes to the cries of sectors of our population who are severely affected by the cost of travelling across the province. We must all move from the premise that we need good roads in our province to support economic development. How we finance such infrastructure must be deliberated upon and agreed. I urge those who are having vehicles to continue to pay while we are finding a lasting solution.

The Panel, comprising experts appointed in their individual capacity, was duly appointed and met for the first time on 17 July 2014. The Panel, required to report its findings and recommendations to the Premier by 30 November 2014, was given precise Terms of Reference:

- a) The Advisory Panel must undertake a comprehensive assessment of the socio-economic impact of the introduction of the GFIP in general and the e-tolls in particular on the economy and the people of Gauteng;
- b) The Advisory Panel must invite proposals and submissions from the people of Gauteng and stakeholders on the socioeconomic impact and proposed solutions to the identified problems; and
- c) The Advisory Panel must submit its findings and recommendations to the Gauteng Provincial Government.

3.2 Plan of work

3.2.1 Background

The starting point of the work of the Panel was the status quo: the GFIP Phase 1 has been rolled out, the Rea Vaya Bus Rapid Transport (BRT), and the Tshwane and Ekurhuleni equivalents, are being rolled out, and e-tolls exist. Detailed impact studies were conducted prior to the introduction of e-tolls, providing both quantitative and qualitative findings and / or projections, and the various stakeholder consultation processes were documented. The function of the Panel was to analyse the impact of GFIP and e-tolls, in the context of government's broader strategy for developing Gauteng economically while enhancing social cohesion, make an assessment of short-, medium- and long-term impacts in these different contexts, and make recommendations to the Premier accordingly.

The plan of work of the Panel comprised research to gather empirical information and a comprehensive consultation process.

3.2.2 Desktop and primary research

In addition to desktop research, primary research studies were conducted:

- a) Traffic modelling
- a) Specialist air quality studies
- b) Web based quantitative business survey
- c) IPSOS time series quantitative survey of responses to e-tolls
- d) Social Accounting Matric / Input-Output Financial Model
- e) Financial analysis of alternative payment arrangements

3.2.3 Consultation

The Panel consulted extensively with the explicit objective to:

- a) Solicit views on consultation processes and communication to date
- b) Expand the public discourse to solicit views on economic, social, environmental and political impacts;
- c) Assess the distributive effect of the financing model;
- d) Explore the implications and perceptions of financing the GFIP from the fiscus against the background of other demands on the fiscus;
- e) Assess the extent to which the e-tolls model is a progressive financial transfer, and solicit public opinion on this;
- f) Request innovative recommendations; and
- g) Assess and build bridges between antagonistic parties

The premise of the consultation process was that good roads are needed to support economic development and the consultation process was designed to hear views on how to finance such infrastructure. Interested and affected parties were asked to comment and provide evidence as to whether or not, in their view, the expectations of government – at all spheres – that investing in freeway development would lead to positive socio-economic outcomes, had materialised.

The Panel heard representations from:

- a) Key implementer and entities affected by GFIP and e-tolls at all three spheres of government.
National: The NDoT, SANRAL, the Treasury³, the National Planning Commission (NPC), the Department of Environment Affairs (DEA), the Passenger Rail Agency of South Africa (PRASA), Transnet
Provincial: Gauteng Department of Roads and Transport (GDRT)
Local: the South African Local Government Associations (SALGA), Ekurhuleni, Johannesburg and Tshwane Metropolitan Municipalities and Sedibeng and West Rand District Municipalities

³ Written submission included in representation of NDoT and SANRAL

- b) Organised Labour: COSATU, FEDUSA, NACTU, Solidarity⁴
- c) Organised Business: Black Business Council (BBC), Business Unity South Africa (BUSA), Consulting Engineers South Africa (CESA), National Black Business Council (NBBC), South African Chamber of Commerce & Industry (SACCI)
- d) Civil society organisations: Justice Projects South Africa (JPSA), Moral Regeneration Movement (MRM), National Association of School Governing Bodies (NASGB), Opposition to Urban Tolling Alliance (OUTA), Road Safety Campaign (RSC), Faith based organisation represented through The Evangelical Alliance of South Africa (TEASA)
- e) Organisations representing people with disabilities: Friday Mavuso Foundation (FMF), QuadPara Association of South Africa (QASA)
- f) Major transport organisations and the taxi industry: Automobile Association (AA), Gauteng National Taxi Association (GNTA), Road Freight Association (RFA), Retail Motor Industry (RMI), South African National Taxi Council (SANTACO), South African Vehicle Rental and Leasing Association (SAVRALA)
- g) Political parties represented in the Gauteng Provincial Legislature: African National Congress (ANC), Democratic Alliance (DA), Economic Freedom Fighters (EFF), Inkatha Freedom Party (IFP), Freedom Front Plus / Vryheidsfront Plus (FF+)
- h) Round table meetings with identified experts: Key implementers, transport experts, economists and social scientists, opinion makers and analysts

Community organisations and individuals had an opportunity to make representations at a total of fifteen public meetings which were scheduled to take place at different times and places, to accommodate as many interested parties as possible throughout Gauteng. 1 636 people participated in the public meetings.

The opportunity was also afforded to the public at large to make written submissions and a total of 53 written submissions and 67 statements of opposition to e-tolls were received.

3.2.4 Assessment and Limitations of the Consultation Process

Consultation and communication, by its nature, is never exhaustive. Key limitations of the consultation process include the omission of the input of the Finance and Fiscal Commission with a view to discussion of the allocative process of funds from the fiscus; the National Economic Development and Labour Council (NEDLAC) with a view to discussion of the processes of consultation and consent in the relevant NEDLAC Chamber; the e-toll operator and shareholders with a view to understanding the overhead costs of administration of the e-toll system. This was due to time constraints.

⁴ Written submission only

The public meetings did not yield a very high level of participation which may have been due to time of day, and day of week considerations. Although the public meetings were designed for attendance by leaders of community organisations who were invited to attend and provided transport by municipalities the attendance varied from a low of 20 to a high of 219.

Notwithstanding the limited attendance, the quality of input was generally high and it should be borne in mind that the political parties represented in the Gauteng Provincial Legislature represent the electorate, and all made substantive submissions to the Panel.

The submissions and representations were diverse, and numerous innovative and workable proposals were made. Overarching themes emerged from the submissions and these are analysed and presented in later chapters:

Impacts of GFIP

- a) Benefits of GFIP
- b) Economic growth impacts
- c) Unemployment, poverty and inequality
- d) Spatial planning impacts
- e) Safe and healthy living environment

Integrated transport planning and system

- a) Integrated transport system
- b) Public transport
- c) Bus and taxi industry
- d) Traffic demand management

Consultation and communication

- a) Civil disobedience
- b) Social cohesion

Governance

- a) Governance arrangements
- b) Collusion in the construction industry
- c) Contractual arrangements

Design and implementation of funding mechanism and e-tolls

- a) Policy and law
- b) Implementation system
- c) Funding arrangements
- d) Billing and administration of e-tolls
- e) Exemptions

3.3 The Gauteng economy and investment in transport infrastructure

By combining e-tolls and GFIP in the Panel's mandate, the Panel was expected to assess the impact of GFIP and e-tolls:

- a) Taking into account the overarching national transport strategy
- b) In the context of the public transport master plan that covers the next 25 years of public transport roll-out;
- c) With understanding of the requirement to develop the infrastructure needed to both maintain and grow Gauteng's economy;
- d) In the context of a massive, on-going attempt to reverse engineer apartheid's spatial geography, which has left so many living many miles from their point of employment; and
- e) Understanding that transport infrastructure is one aspect of the massive, long-term infrastructural programme of national, provincial and local spheres, and GFIP and e-tolls need to be understood in this holistic context.

The Gauteng economy generates 36% of national Gross Domestic (GDP), and the broader Gauteng City-Region, which includes key economic nodes that are fully integrated in the Gauteng economy but lie beyond its administrative boundary (such as Sasolburg, Rustenburg and so on), generates 46% of national GDP (OECD, 2010). Investing in the infrastructure of the province is critical for obvious economic reasons; as it is for equally obvious post-apartheid reasons relating to equality and social justice. The Gauteng spatial landscape remains deeply scarred by massive dislocations between where the majority of people live and where the bulk of economic activity takes place. Long-term outcomes of the GFIP include social goods such as transforming these apartheid consequences – which, via more efficient transport coupled with vastly improved public transport, will allow firms to be established closer to population densities and/or allow people to live closer to public transport nodes.

It became clear to government many years ago that if the Gauteng economy was to continue growing (historically, the Gauteng economy has grown considerably faster than the national economy) then the existing freeway network would be unsustainable. There were challenges in multiple areas: degrading roads (freeways and secondary), growing congestion, and costs to business related to both time wasted in traffic and health problems arising from environmental damage (air pollution most obviously). The Strategic Economic Infrastructure Investment programme of the GPG in the late 1990's sought to achieve a 20% CAPEX expenditure, including on roads, in order to crowd in private sector investment.

The GFIP and tolling strategy have their origins in Gauteng Toll Road Strategy published in 1998 which, in the executive summary, proposes the following solution:

The choice is to do nothing, with existing roads becoming congested and no new ones being built – or to seek new mechanisms for financing road building. The best mechanism is a user-pay approach, where the motorist and commuter help to pay for new roads whilst having the advantage of using them.

Certain forms of user-pay financing, such as a share of the fuel Levy; introducing a tyre or spares tax; or raising vehicle license fees by about 50% are not suitable inter alia because income from these sources goes to different government budgets or is very difficult to collect.

The only practical the form of user pay available to the Provincial Government is a toll road system.

An efficient way of building these facilities is to Build-Operate-Transfer (BOT) type approach. This means these roads are partly or wholly financed, built and operated by the private sector, which covers its costs and receives the toll fees for a specified period.

Toll roads offer the advantages that, as freeways, they provide a higher level of service, mobility and safety, and their construction and maintenance do not burden the provincial budget. This is then free for maintaining secondary roads and providing public transport.

By 2007, the situation had continued to deteriorate with increased congestion caused by a combination of factors:

- a) the marginalization and under-use of public transport within the province;
- b) insufficient road space relative to transport demand;
- c) the increasing use and reliance on private cars within a context of historically sub-optimal public transport systems; and
- d) the spill over effects of a failing rail system that has suffered years of under-investment and poor service quality.

Investment in an integrated transport system (rail, road, aviation, and ports infrastructure etc.) was therefore undeniable to grow the economy and generate the value-added income opportunities the country needs to alleviate the current unemployment levels. However such investment, as advocated by Moving South Africa Strategy, requires huge capital outlay, the investment of which would require creative funding models in support of the fiscus. This is because total reliance on the fiscus for all the construction, upgrade and maintenance of public infrastructure is unrealistic considering the amount of capital required, some of which is urgent to stimulate particular strategic outcomes. Dependence on the limited fiscus will mostly delay implementation of particular strategic interventions. It will also increase the tax burden on the citizens. Whilst creative financing models which involve participation by the private sector, facilitate for the expedient delivery of public infrastructure.

The ease with which people, goods and services can move across the country and the Gauteng province, is one element that informs the attractiveness of any nation to investment (by both local and international businesses). The efficiency of transport infrastructure and services, coupled with effectiveness of basic services in telecommunications; bulk infrastructure (in water & sanitation; electricity) represent the basis for a quality of life for its citizens and also an added appeal as a potential investment destination.

According to the GDRT, the current upgrades constituting Phase I of the GFIP project will bring short-term relief of between 3-5 years, if additional Phases 2 and 3 are not implemented.

The Phases 2 and 3 of GFIP are also essential to unlock the economic potential of the City Region through enhanced linkages across the province such as the PWV 14 on the east-west axis, and the PWV9 linking south of Johannesburg to Mabopane freeway north of Pretoria (including for the proposed Centurion-Mabopane Development corridor with the PWV9 as its activity spine).

The GFIP and e-tolls as a funding mechanism, therefore, anticipated that investing in road infrastructure would, amongst others, lead to:

- a) A decrease in travel time, which would compensate business as well as enhance social cohesion by allowing people to spend more time in social reproduction and not in traffic;
- b) A decrease in congestion and travel time would lead to greater logistical efficiencies, thus lowering the cost of doing business and helping grow the economy;
- c) Existing road networks and quality would simply not sustain a growing Gauteng economy;
- d) A decrease in travel time would compensate the individual (as above) and the Gautrain would enhance efficiency of travel and reduce both carbon emissions and congestion;
- e) Long-term public goods and services would emerge over time deriving from, amongst others, improved air quality, lower congestion leading to fewer motor vehicle accidents, and in particular contribute to a more equitable spatial geography, allowing people to live closer to public transport feeder nodes and by densifying residential and business opportunities along public transport nodes (such as the 'corridors of freedom').

The Panel therefore had to consider whether or not desired end results have been achieved, and if not why not. Some of these long-term outcomes will not have been achieved, after just 1 year of tolling. The critical question is, are we headed in the right or wrong direction, bearing in mind that this is a state implemented toll; if the former, how do we speed up progress and mitigate negative or perverse outcomes; if the latter, how do we change direction so that desirable social goods are the outcomes of government policy.

3.4 Policy considerations

The work of the Panel is informed by the rights enshrined in relevant clauses in the Bill of Rights of the Constitution

- Clause 9: Equality
- Clause 21: Freedom of movement and residence
- Clause 24: Environment
- Clause 33: Just administrative action

The National Development Plan 2030 (NDP), adopted in August 2013 by all political parties in the National Assembly, sets goals and to eliminate poverty and reduce inequality by 2030. The plan identifies establishment of effective, safe and affordable public transport as a milestone with the following critical actions required:

- a) A strategy to address poverty and its impacts by broadening access to employment, strengthening the social wage, improving public transport and raising rural incomes
- b) Public infrastructure investment at 10 percent of GDP, financed through tariffs, public-private partnerships, taxes and loans and focused on transport, energy and water
- c) Interventions to ensure environmental sustainability and resilience to future shocks
- d) New spatial norms and standards – densifying cities, improving transport, locating jobs where people live, upgrading informal settlements and fixing housing market gaps

Chapter 4 of the plan commits to investment in the transport sector to:

- a) Bridge geographic distances affordably, foster reliably and safely so that all South Africans can access previously inaccessible economic opportunities, social spaces and services
- b) Support economic development by allowing the transport of goods from points of production to where they are consumed. This will also facilitate regional and international trade
- c) Promote a low-carbon economy by offering transport alternatives that minimise environmental harm

The NDP resonates with the policy directives of the White Paper on National Transport Policy (1996)

- a) *"Provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable".*
- b) User pay provision for "economic" infrastructure and operations which provide a measureable economic or financial return e.g. fuel levy and tolls for roads
- c) Provision for infrastructure and operations which provide social benefits which cannot or should not be paid for by users e.g. public transport

The GITMP reaffirms and further elaborates the policy prescripts of the White Paper, setting out as its key aims:

- a) Provide a planning framework, which will assist government at all three spheres to deliver the planned transport system over the next 25 years
- b) Deliver a world class and sustainable transport system that supports Gauteng's economic, social and cultural, and environmental goals
- c) Empower the GDRT, in collaboration with others spheres of government, to plan, regulate and develop an integrated and efficient transport system that serves the needs of all Gauteng's citizens
- d) Strive to embody the principles of an efficient, competitive and responsive economic infrastructure network that prioritises public transport, non-motorised transport and freight

A prerequisite for the transport infrastructure investment and development plans is sustainability which requires adherence to the mitigation measures proposed in the National Climate Change Response Policy (2011):

- a) Modal shift
- b) Demand reduction measures
- c) More efficient vehicle technologies
- d) More efficient operations
- e) Alternative lower-carbon fuels

It is worth noting that there has been consistency in both national and provincial policy positions articulated over the past 20 years – the 1994 Reconstruction and Development Plan; the 1996 White Paper on National Transport Policy; SANRAL and National Roads Act (7 of 1998); Moving South African Action Agenda: A 20-year Strategic Framework for Transportation in South Africa, 1999; the National Land Transport Transition Act (22 of 2000); the Road Infrastructure Strategic Framework for South Africa, 2006; and the National Land Transport Act (5 of 2009) (NLTA). At Provincial level the 1998 Gauteng Toll Road Strategy preceded the 2005 Gauteng Road Freight Corridor Study; the 2006 Gauteng Roads Develop Plan; the 2007 Gauteng Strategic Action Agenda for Transport; the 2009 Spatial Development Framework; the 2010 Gautrain Integration Report and culminating in the GITMP. This is set out in more detail in the accompanying Desktop Research Report (Jennings and Everatt 2014).

3.5 Road network and modal split

South Africa has the 10th largest road network in the world at almost 750 000km. The national road network of 21 403km, under the jurisdiction of SANRAL, is entirely paved. Of this, 18 283km (85%) are non-tolled, with the remaining 3 120km tolled. This includes 1 832km of toll roads operated by SANRAL and 1 288km by private consortiums.

Table 3.1: South African Road Network

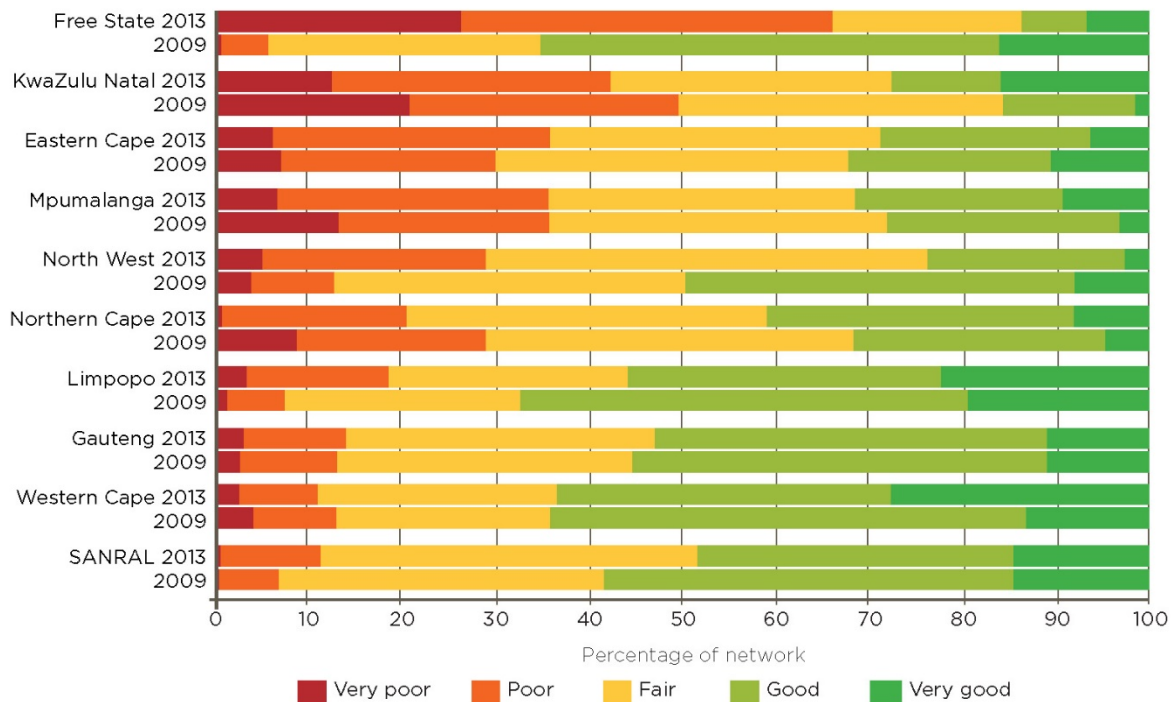
Authority	Paved	Gravel	Total
SANRAL	21 403	-	21 403
Provinces	47 355	143 338	190 693
Metros	57 111	14 325	61 436
Municipalities	42 262	302 294	344 556
Un-proclaimed (est)	-	131 912	131 912
Total	158 131	591 869	750 000

Source: COTO (2014) South African Road Network: Condition and Budget Needs 2014

Gauteng has a road network of 55 000 km, 7.4% of the total network with GFIP comprising 0.3% of the Gauteng road network.

In contrast to the national road network, only 25% of the provincial road network (which totals approximately 190 000km) is paved. Of the remaining roads in SA, approximately 406 000km are managed by metros/municipalities (of which, only 24% is paved) and approximately 132 000km of gravel roads aren't under the jurisdiction of any authority.

Figure 3.1: Condition of the South African Road Network



Source: COTO (2014) South African Road Network: Condition and Budget Needs 2014

Figure 3.1 shows the condition of the national and provincial paved road network and the changes from 2009 to 2013. According to the 2014 Committee of Transport Officials (COTO) report, the “international norm for a well-maintained network is to have only 10% of the network in poor to very poor condition”. Based on the 2013 data, only Western Cape (10.95%), SANRAL (11.36%) and Gauteng (14.03%) were close to the norm and the national network as well as the network in most provinces deteriorated from 2009 to 2013 with regard to the proportion of road classified as poor to very poor. The cost of maintenance is known to increase exponentially as a result of delayed maintenance. The current maintenance backlog on the national network is estimated at R 197 bn and the capacity expansion backlog is estimated at a further R 118.9 bn.

The number of vehicles nationally has doubled since 1994 (5 million to more than 10 million). The number of vehicles in Gauteng stands at 3.8 m with 570 000 of these having been added over the past 5 years, whilst the use of private transport in Gauteng grew over a period of 10 years from 49% in 2000 to 56% in 2011. The modal split, and the numbers that would be required to pay e-tolls if

travelling on the GFIP network, for workers in Gauteng’s population of 12.3 million⁵, is shown in Table 3.2.

Table 3.2: Modes of transport for workers in Gauteng on a daily basis

Mode	Exempt from e-tolls	Could pay e-tolls
Walking	561 000	-
Cycling	35 000	-
Taxi	1 402 000	-
Bus	236 000	-
Rail	339 000	-
Car - Driver	-	1 757 000
Car - Passenger	-	272 000
Total	2 573 000	2 029 000

Source: National Household Travel Survey, 2013

3.6 Description of GFIP and e-tolls

The GFIP represents a single component of the overall integrated transport operations and infrastructure envisaged in Moving South Africa, a 20 year strategy developed in 1998 to realise the vision developed in the 1996 White Paper on National Transport Policy. The strategy advocated for the overhaul of transport infrastructure that was subjected to neglect from underinvestment over the years, with diminishing capacity to support social and economic growth demands of the country.

The 2007 Traffic and Toll Feasibility Study Report, which preceded the adoption of GFIP, identified Gauteng as the economic heartland of South Africa and the fourth largest economy in Africa. The road infrastructure at that time had not kept up with the increased traffic demand resulting in the primary road network being beyond capacity during peak periods. The Automobile Association estimated in 2007 that the 80 000 daily commuters between Pretoria and Johannesburg wasted 56 million litres of fuel with a value of R 338 m per annum and that 1.57 m days with a value of R 1.69 b were lost to the economy annually as a result of traffic congestion.

The GFIP, an element of the strategic road network, was intended to pro-actively address this by improvement of “the management of existing and future freeways so that congestion is reduced, public transport and its users prioritized, and freight moves efficiently around the province “. GFIP was expected to contribute to achieving an integrated transport system through measures such as:

- a) Congestion management as one of the objectives of a tolling scheme and setting toll prices in a way to achieve this objective;

⁵ 2011 Census

- b) Setting the toll price in a way that would push private car users traveling in a North/South direction to use the Gautrain and road based public transport;
- c) Reaching agreement across spheres of government on relevant action plans for identified national freight corridors;
- d) Ensuring that where appropriate freight is moved by rail and not road;
- e) Prioritisation of public transport on the freeway system, thus also supporting taxi recapitalisation and bus transformation;
- f) Introducing legislation to encourage high vehicle occupancy through car pools and ride-sharing supported by the provision of HOV lanes; and
- g) Having a single incident management system for all parts of the major road network.

The assessment of the social and economic impact of GFIP therefore needs to be located within the context of integrated transport system in Gauteng and South Africa to facilitate for mass transit and movement of freight goods as a strategic response to current challenges experienced in congested roads, aging transport infrastructure, as well diminishing capacity of transport infrastructure to support the growth aspirations of the national economy.

The most suitable funding mechanism for GFIP was identified to be a user payment based toll scheme, with electronic fare collection as a basis to ensure free traffic flow.

Tolling is a user based funding mechanism for road infrastructure development. It enables the mobilisation of substantial capital funds upfront, usually through debt equity, for the construction of infrastructure such as freeways. It does not require the government to make available additional funding from their current revenue base for these projects and allows them to rather spend the funds for essential services such as health and education and other parts of the transport system such as upgrading of gravel roads in townships.

Toll financing has a distinct advantage of accelerating the availability of initial funding for construction as compared to **traditional tax-supported highway finance**. The initial capital cost for a project could therefore be financed over a shorter period than through limited tax based budgets. As a result, the benefit of increased roadway capacity is available to the public sooner. Therefore, tolling is an equitable way of implementing the user-pays principle and does not compromise fiscal integrity. Under a toll scheme two options are available for raising debt, namely **private project financing** and a **state toll scheme**.

With **private project financing**, a complex process of risk identification and cost detailing is undertaken prior to the preparation of concession agreements. Risks and costs can usually be offset by benefits, and the ratio of these normally determines the feasibility of such ventures.

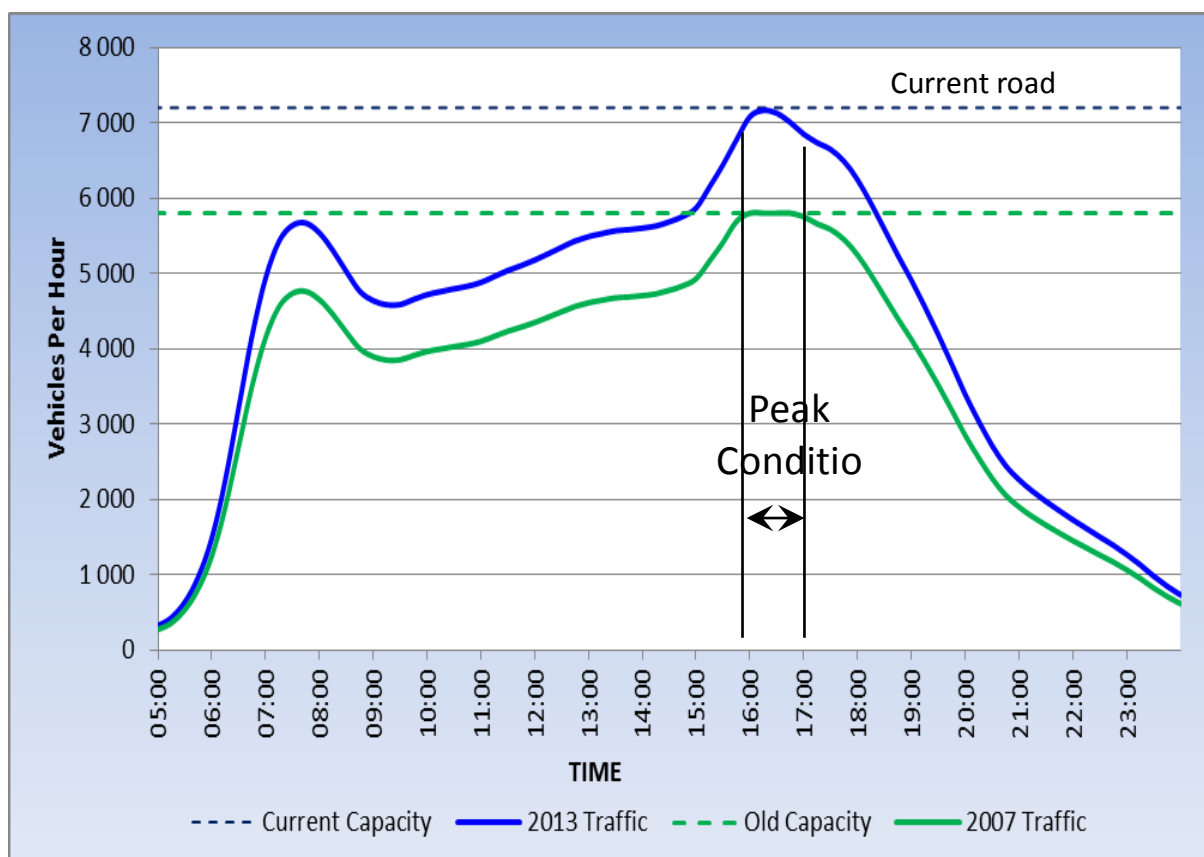
The second option is for application of the '**state toll road**' option. This option will allow road authorities to provide a balanced toll and not only focus on the more profitable sections. The scheme can be implemented systematically, as and when demand requires it.

GFIP Phase 1 has now been completed, comprising

- a) 201 km of upgraded freeways;
- b) 585 km of new traffic lanes;
- c) 265 km of fully reconstructed lanes;
- d) 34 interchanges significantly upgraded
- e) 4 new directional ramps built;
- f) 47 new bridges built and 134 existing bridges widened;
- g) 186 km of freeway lighting installed;
- h) 127km of concrete median barriers erected; and
- i) Intelligent Transport Systems and Incident Management Systems deployed.

GFIP Phase 2 and 3 are on hold and traffic models show that, with the upgrade, capacity has already been reached at peak.

Figure 3.2: Comparison of traffic volume and capacity in 2007 and 2013



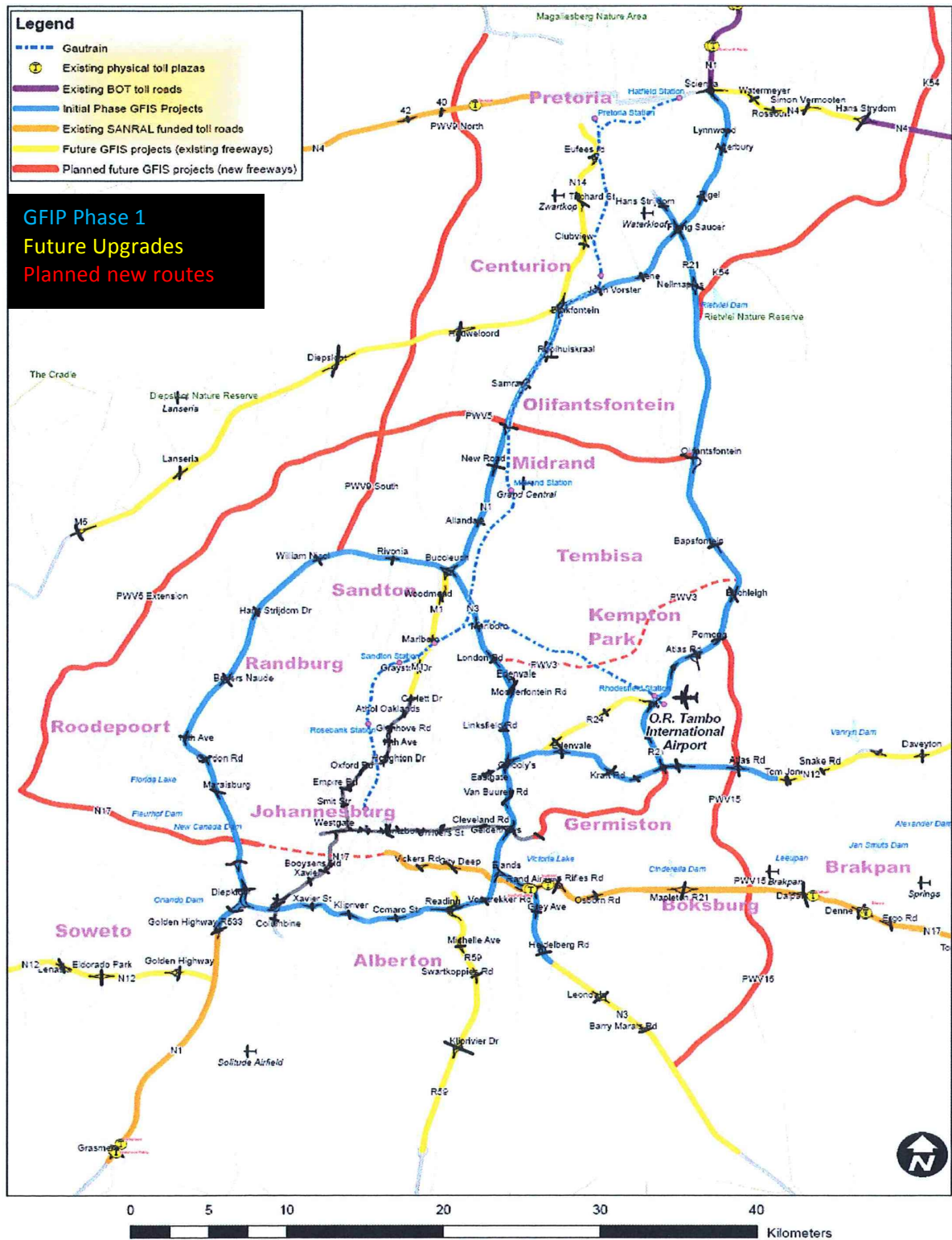
Source: SANRAL, Presentation to Panel, 19 November 2014

Table 3.3: History of GFIP

1995	<i>FREEWAY IMPLEMENTATION SCHEME (FIS)</i> established by Gauteng. It was decided that the freeways would be privatised (BOT or build, operate and transfer) and tolled due to lack of funding. Central government however refused to pass the provincial toll road bill.
1998	<i>GAUTENG TOLL ROAD STRATEGY</i> published premised on establishment of a "network of toll roads". Culminated in the publication of the GAUTENG TOLL ROADS BILL, 2003 (Notice 1880 of 2003 in the Provincial Gazette) providing for user charging on Provincial toll roads, an agreement with SANRAL for implementation of the toll road network and proper consultation with municipalities regarding the declaration of toll roads. The Bill was not promulgated after the election in 2004
2006	<i>GAUTENG TRANSPORT NETWORK INTEGRATION PROCESS: PROPOSAL FOR A GAUTENG FREEWAY IMPROVEMENT SCHEME (GFIS)</i> was developed as a joint initiative of GDRT, NDoT, SANRAL and municipalities, for improving the utilisation and sustainability of Gauteng's freeways. A user payment based toll scheme, with electronic fare collection as a basis to ensure free traffic flow, was proposed as the most effective funding mechanism. The scheme included existing road network capacity expansions and development of new freeways. GFIS was to be implemented holistically to include the Gautrain, the upgrading of the commuter rail network, bus rapid transit systems, high occupancy vehicle lanes, intercity public transport, intermodalism and park-and-ride facilities.
2006	<i>GAUTENG ROADS DEVELOPMENT PLAN</i> adopted by the Gauteng Executive Council in 2006 identified the Top Twenty Class 1 roads (upgrades and new roads), funded through tolling, as the basis for the freeway improvement programme.
2007	<i>GAUTENG FREEWAY IMPROVEMENT PROJECT</i> approved by National Cabinet after the World Cup was awarded to SA. Approval was given for the upgrade and tolling of the N1, N3 and N12. SANRAL advertised the intention to toll at an estimated 50c/km and 82 representations were received from the public.
2008	<i>MEMORANDUM OF AGREEMENT</i> signed by GPG and SANRAL handing over the R21 to be funded through e-tolling. SANRAL advertised the intention to toll the R21 and two representations were received. Contracts were awarded and construction commenced in June.
2009	Construction of e-toll gantries commenced.
2010	Anticipated launch of e-tolling, but had to await promulgation of the <i>TRANSPORT AND RELATED MATTERS ACT AMENDMENT BILL</i> .
2011	Toll tariffs published followed by establishment of the <i>GFIP STEERING COMMITTEE</i> chaired by the DG NDoT and the DG GPG to revisit the proposed tariff, implement a broad consultative process and explore the possibilities of increasing the public transport offering. SANRAL commenced with e-toll registrations and Phase 2 of GFIP put on hold by NDoT
2012	<i>INTER-MINISTERIAL COMMITTEE ON GFIP</i> established to coordinate all work of the implementation of the project, respond to the legal dispute, consult stakeholders and propose short term funding solutions for SANRAL
2013	The bill signed into law by President Zuma on 25 September 2013 and e-tolls commenced on 3 December 2013

Source: GCRO, Desktop Research Report, November 2014

Figure 3.3: GFIP road network



Source: GDRT, Presentation to Panel, 15 August 2014

3.7 Assessment of infrastructure policy and projects

The work of the Panel was guided by principles considered in economic analyses of infrastructure policy and projects internationally.

- a) Efficiency – ability to reduce direct and indirect costs, deliver net benefits, improve economic performance
- b) Equity – three most important dimensions are *horizontal* equity (are all citizens treated the same, fairly? Do they have access to the same opportunities?); *vertical* equity (are there extra protections for those most vulnerable or needy? Are some groups identified as more deserving of extra mitigation efforts due to historic reasons etc.?); and *longitudinal* equity (fairness of how the costs of current consumption are passed on to future consumers, or vice versa).
- c) Sustainability – focuses specifically on use of environmental and social resources that are harder to quantify or external (i.e. not priced in). May well be included in efficiency principles if externality costs can be internalised, but this is contentious and hard to explain to the public.

An additional principle which explicitly guided the Panel was:

- d) Social acceptability – linked to notions of inclusion, administrative justice, accountability of public power, consultation, legality, and consent that are relevant to our democratic process.

In the following Chapters the Panel sets out the evidence, its analysis and findings, and recommendations for consideration of the Premier. The first area of deliberation is a chapter on the political consequences of the planning and implementation of GFIP Phase 1. This is followed in Chapter 5 – 7 with detailed assessment of the Economic, Social and Environment Impacts of GFIP and e-tolls. In Chapter 8 consideration is given to legal and legislative implications before dealing in Chapter 9 with five major cross cutting issues:

- a) International best practice in using pricing as an instrument of traffic demand management
- b) Spatial planning and in particular the implications of the legacies of apartheid spatial planning
- c) Integrated transport planning and implementation
- d) Institutional arrangements; and
- e) The funding model with consideration of alternatives.

Chapter 10 summarises the proposals heard during the consultation process as well as the major and minor, longer term and immediate recommendations of the Panel.

4 Political consequences

4.1 Introduction and Context

Any road map of how government should deal with the GFIP and the e-tolls has to factor in the political decision making process. Policy makers might make transport policy, but their ideas rarely have any meaning apart from their political objectives. Whether the issue is road e-tolling, fuel levy, or an integrated transport system, politics lies at the core of the policy process. The policy process is thus inevitably political, since it involves translating political decisions into practical steps. Each step brings in crucial decisions about public values, which means that politics infuse policy work. Politics thus raise critical questions about principles and values – does the process really produce a transport system that serves the economy, the public good and the will of the people?

The NDoT and SANRAL seem to have ignored the central importance of politics. They seem to have viewed – wrongly as this impact assessment process shows – political issues as less important than the administrative battles fought over efficiency and economic growth. In fact, however, politics provide the real life and true meaning to the GFIP and the e-tolls. Without effective political participation, even the best transport administrative ideas will disappear and even enrage citizens.

Sound political processes are essential to sound transport administration because they bring democratic principles to life. Even more fundamentally, political processes help define what democracy really means. The drafters of the Constitution realised that the rich diversity of South African society, particularly after the democratic transition in 1994, would make it hard to arrive at clear decisions on important issues. They demonstrated genius not so much in figuring how to resolve the public's inevitable disagreements, about e-tolls for instance, but in devising institutions that can help resolve them, over time, in peaceful ways. The democratic system creates opportunities, such as the impact assessment process, to debate – and even to revisit – the big transport policy issues. The multimodal, multilevel, multispherical transport system helps citizens work through their policy differences, even as it makes it harder to get certain things done quickly. The deliberative, participatory system tends to prefer ambiguity to clarity in its processes and structures. After all, the crafters of the Constitution built it to accomplish political, not administrative, ends, and the most important of these is accommodating the vast range of interests that threaten to tear the nation apart.

Many residents of Gauteng have articulated their views strongly about the GFIP and e-tolls. Beyond the obscure motives of various parties and interest groups, and however the events may be exploited here and there, the intensity of the reactions is perhaps indicative of a certain ambition of South African democracy.

And then this public outcry, which cannot be left to speak for itself, must be understood in its overall political context. Moreover, there must be basic meaning contained in it, relating this to the struggle for the elimination of socio-economic inequalities and poverty. In short, there is a need to pass from intense emotion to sober consideration.

Nothing has had a greater socioeconomic impact than the apartheid spatial geography (difficulties in democratising urban space have impacted on the right to freedom of movement and trade). A study by GCRO clearly identifies the impact of the apartheid geography on transport behaviour patterns in the City-Region (GCRO, 2013). The report borrows heavily from the study. An overview of the impacts of the apartheid special planning in the City-Region is illustrated by the Figures below:

Figure 4.1: Location of gantries

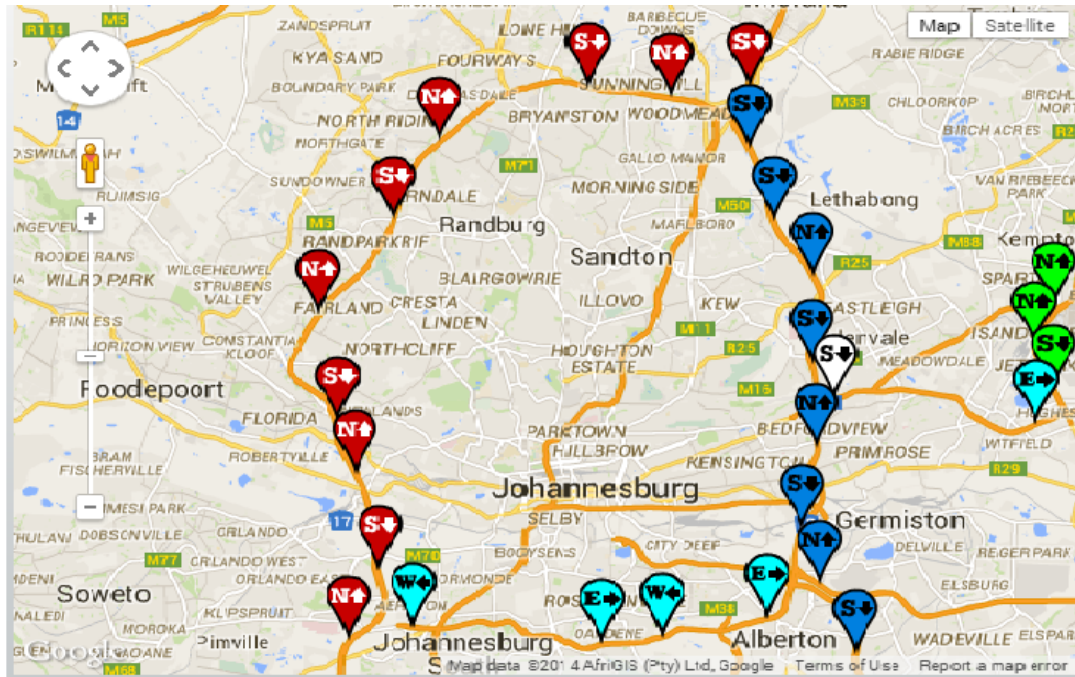
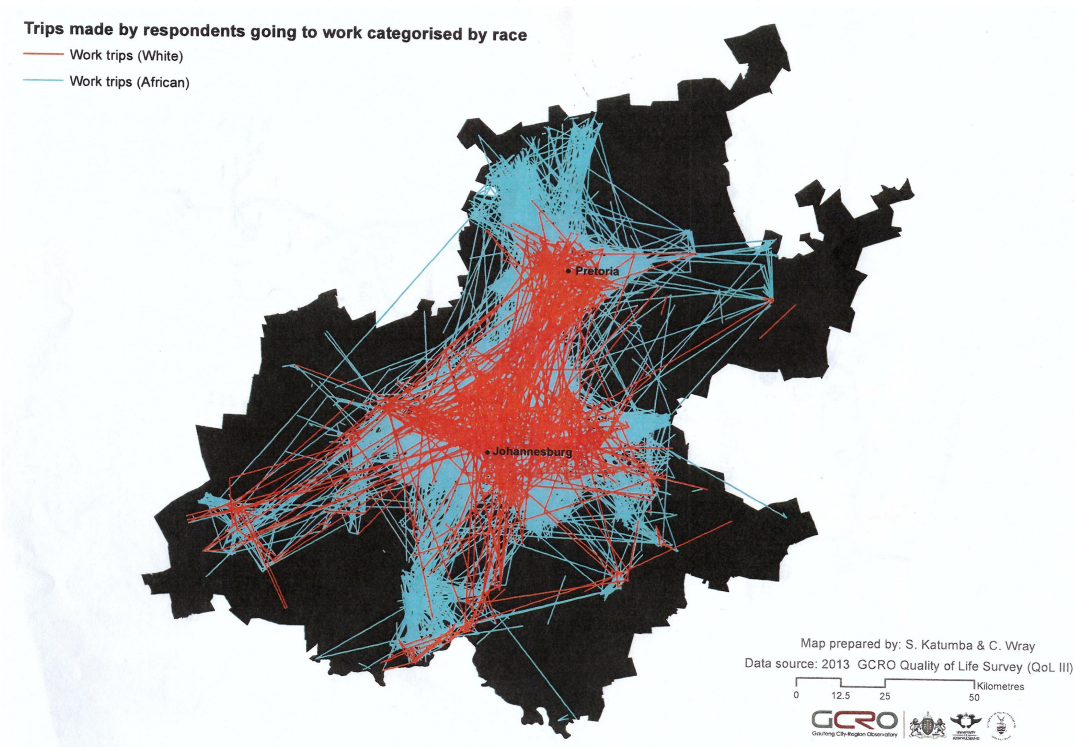


Figure 4.2: Trips made by respondents going to work categorised by race



Maps prepared by: S. Katumba & C. Wray
 Source: 2013 GCRO Quality of Life Survey (QoL III)

Two impacts are identified:

- a) Trips of people going to work still reflect apartheid racial patterns.
- b) The gantries - who is in and who is out of the ring-roads – are located in racially configured spaces.

If one considers the history and current state of Gauteng’s spatial patterns, it is reasonable to conclude that apartheid’s geography still has a very real impact on the right to freedom of movement and trade, that in fact the gantries continue and reinforce apartheid’s legacy.

Impacts include:

- a) Racially differentiated costs and benefits.
- b) Racially determined access to transport services.
- c) Racially determined operational discomfort and congestion.
- d) Limitations on collective consumption and well-being.
- e) Detrimental effect on access to educational, health, and recreational facilities.

The “hard approach” to address these transport inequalities will have to include the reconfiguration of apartheid’s urban geography.

4.2 The Importance of Political Legitimacy

Since the democratic transition in 1994, the South African government has foregrounded political legitimacy as a crucial indicator of the ability to govern, and hence policy makers and public officials have, from the start, relied on inclusive deliberation and participation in decision processes, in order to institutionalise their authority and influence. The authorities strove to deepen democratic processes to create stability and social cohesion. Thus the masses, ungovernable under apartheid law, were finally exposed to ample opportunities. It is an important principle that the decisions and actions of government respond to legitimate perspectives of civil society. In success stories, such as the making of the Constitution, the people reinforced the legitimacy imperative by their actions; the power of the grassroots has been essential in effecting political change.

4.3 The Political Impact of Inadequate Consultation

Faced with these democratic imperatives, SANRAL initiated consultative processes in its effort to introduce e-tolling in the Gauteng City-Region. However, most of the participants in the socioeconomic impact investigation – policy makers, key implementers, labour, civil society, disability groups, faith organisations, opinion makers, experts, and so on – testified that no real attempt was made to consult effectively. Consequently one of the major effects that the e-tolls have had is the general sense of the illegitimacy of transport policy, which has led to a large degree of non-compliance with payment of e-tolls.

The non-compliance is making it increasingly difficult for SANRAL and the NDoT to uphold the political order. This process eventually culminated in the establishment, by the Gauteng Premier, of the Panel that has set the scene for the search for alternative ways of funding the Gauteng transport system.

It should be recognised that when sections of civil society decide to exercise action in a manner that interferes with the rights of others, it is wrong. It should be borne in mind that SANRAL undertook consultation, notwithstanding the assessment of the adequacy of this consultation. In this regard, it is unusual for different interest groups to converge in their thinking, but for very different reasons. It would be wrong for civil society to be given a veto power and the role of government includes arbitrating and being fair to all, including the rich and the poor, opponents and supporters for particular initiatives.

4.4 Contextual Challenges

The current public outcry seems to stem from the conjunction of three types of challenges to democratic government.

First, contextual challenges arose automatically from the internal political environment in which South African democracy operates and are directly a product of the SANRAL consultative process which did not result in the active participation of the citizenry. Processes of democratic participation, mobilising diverse interests is crucial for political stability. The nature and seriousness of contextual challenges may vary from sector to sector, reflecting differences in management and leadership, as well in the level of mobilisation.

However, these contextual challenges would pose major issues of policy and institutional management in the best of circumstances. They arise, however, at a time when the South African government is also confronted with other serious problems stemming from the social evolution and political dynamics of South African society. The viability of democracy in a country clearly relates to the societal structures and social trends in that country (Crozier et al, 1975: 5). A social structure in which wealth and learning were concentrated in the hands of a very few, as is the case currently in South Africa, would not be conducive to democracy; nor would a society divided between polarising racial groups.

This combination of challenges seems to create a situation, around the e-tolls, in which the need for longer-term and more broadly formulated purposes and priorities, for greater coherence to transport policy, appear at the same time that increasing political pressure on government makes it more and more difficult for government to function without democratic consent.

4.5 Protest Against e-tolls: Causes

The immediate causes of the public outcry are to be found in the Bill of Rights. What, however, is in turn responsible for the sharp increase in political mobilisation on this issue? As indicated in various submissions to the Panel, the causes of the outcry can be usefully explored in terms of strong perceptions of lack of transparency and inadequate consultations. Are these causes, one may ask, e-tolls specific? Are they transitory, secular, or recurring? In actuality, the causes of the outcry seem to partake of all these characteristics.

The most specific, immediate, and in a sense “rational” causes of the outcry are the specific transport policy problems confronting the government and its apparent inability to deal effectively with the problems. Unaffordable toll fees, congestion, administrative inefficiencies, deepening poverty, unemployment, and persistent social and economic inequality have led to increased anger over transport policy, higher levels of political agitation, and declining confidence and trust in the NDoT and its agencies. In fact, these issues and the ways in which the government dealt with them seem to have had considerable impact. More generally, however, a far-from-perfect fit exists between the perceived inability of the government to deal effectively with the transport policy problems and the various attitudinal and behavioural manifestations of the democratic surge. The expansion of political participation and political agitation has been long underway before the e-tolls problems came, and the beginning of the decline in public confidence and trust go back a long way.

The increase in political agitation is primarily the result of the increased salience which citizens perceive politics to have for their own immediate concerns. Thus, the causes of increased attitude intensity and persistence, like the causes of higher political participation, are to be found in transformed democratic citizen-government relationships.

All this suggests that a full explanation of the outcry against e-tolls can be found neither in transitory nor in secular social trends common to all industrial societies. The timing and nature of the public protests also need to be explained by the distinctive dynamics of the South African political system and, in particular, by the interaction between political ideas and transport institutions. These roots of anger are to be found in the basic South African value system and the degree of commitment which groups in Gauteng feel toward the value system. And what is more, there is broad consensus on democratic, egalitarian values. For much of the time, the commitment to these values is passionate and intense. The intensity of belief during such creedal periods, such as the installation of the e-tolls, leads to the challenging of established authority and to major efforts to change public policy to accord more fully with those values. The goals, the values, and targets of all these movements are strikingly similar. To the extent this analysis is valid, the causes of the democratic surge around the e-tolls could be specific to Gauteng and limited in duration but potentially recurring at some point in the future.

Predictably, the implications of this analysis is that in due course, if democratic principles are followed in transport policy processes, the democratic distemper will moderate. Prescriptively, the implication is that these development ought to take place in order to restore the balance between vitality, law, and justice. As Al Smith once remarked, “the only cure for the evils of democracy is more democracy” (Crozier, 1975: 113). The analysis suggests that applying that cure at the present time could well be what the crisis requires. Indeed, some of the problems of service delivery today stem partly from the failure of democracy. Democracy is the best way of constituting legitimate authority. The claims of expertise, seniority, power, and technical experience may not override the claims of democracy as a way of constituting authority.

The vulnerability of democratic government in South Africa thus comes not primarily from external threats, though such threats are possible, nor from internal subversions from the left or right, but rather from the internal dynamics of democracy itself in a highly mobilised and participant society.

In a democracy, the authority of government and its agencies depends in part on the extent to which the public has confidence and trust in those institutions and leaders. Today that confidence and trust seem to be in decline. The democratic surge involves a politically active citizenry, which is developing increased political consistency on policy issues, and which then is losing its confidence in public institutions and when government policies fail to correspond to what they desire.

The outburst against the e-tolls may have one more cause. In the Gauteng City-Region, like in most industrialised societies, people have become much more social animals than before. There has been an explosion of human interaction and correlatively a tremendous increase of social pressure. The social texture of human life has become more and more complex and its management more difficult. Dispersion, fragmentation, and simple ranking have become replaced by concentration, interdependence, and complex texture. Organised systems, such as the GFIP and E-tolls, have become tremendously more complex and they tend to prevail, in a much social system, over the simple focus of rural environments, because the urban complex social texture, its management has a crucial importance which raises the question of social control over individuals and groups (Castells, 2002).

The argument for strong democratic participation in the transport policy process begins with the view that normative deliberations about policy objectives are not inferior to scientific assessments, but merely different, and both have value. Deliberations about socioeconomic impact analysis took place at two levels. The first order assessment raised technocratic issues of examining impact of the GFIP and E-tolls achieve their objectives and how appropriate are the objectives, given the nature of the challenges at which they are aimed? These questions required technical information that was largely generated and evaluated by experts. The second level of analysis shifted to the larger social, political and economic system, the impact of GFIP and the E-tolls on the economy and the people as a whole and to their underlying normative principles and values. Decision making required different but interrelated discourses, from assessments of GFIP and e-tolls (or likely impacts of policy alternatives) to the compatibility of policies with the constitutional order, public values and norms, and the capacity of democratic transport institutions. As evidenced in the public participation process, both experts and citizens had a role in generating and assessing information and experiences that were used in impact assessment.

Implicit in our argument for effective and inclusive participation, as well as the importance of testimonial evidence, is the view that equal protection under the law is not enough to constitute a constitutional democracy. South Africans must not only be equal under the law, they must also be able to understand themselves as the authors of the law that bind them. "Once we take this internal connection between democracy and the constitutional state seriously," Habermas writes, "it becomes clear that the system of rights is blind neither to unequal social condition nor to cultural differences" (Guttman, 1992: ix)

A further analysis of the protests against e-tolls also requires reflection on the class dynamics in South African society and where 'voice' and power are located. The middle and upper classes tend to have far more 'voice' – capacity to publicly air and disseminate their views in an influential way – than are the poor. One aspect of this is that the middle and upper classes have far more access to the media, and the media give greater coverage to their concerns than is the case for the poor. This partly explains the public profile of the opposition to e-tolls. Primarily affecting the middle and upper classes, opposition to e-tolls has given considerable prominence in the public domain. This prominence has dominated that of issues such as unemployment, which undoubtedly has a greater negative effect on the poor. Thus, the middle- and upper-class nature of those primarily affected by e-tolls and who have spearheaded this campaign has elevated the prominence of the profile of the campaign.

4.6 The Gauteng Freeway Improvement Project and e-tolls: Collective Consumption and Socio-economic Inequalities

The processes of collective transport consumption, since the introduction of the GFIP and the e-tolls, express the growing socioeconomic inequalities and their management as functions of the interests of trade and industry, the contradictory interests of the economy, the exigencies of the market, the confrontation of the different sections of society, and the confrontation in particular between popular transport demands and the rationality of the market to which the state subscribes.

The tension between popular demand for public transport and the rationality of the market forms the basis of social inequality, which derives from the importance of collective transport consumption in a highly industrialised society. Everything happens as if the industrialisation of the Gauteng City-Region economy is accompanied by a quasi-communitarianism and closing off of the elite class, for whom spatial mobility has come to mean, primarily, private car travel.

On the other hand, for the mass of commuters and workers, there is a growing spatial diffusion of activities, to the separation between home and work, shopping, recreation, etc. Such dependence, particularly on e-tolled roads, sets up new cleavages and gives rise to sharper socioeconomic imbalances.

Thus for public transport the main problem is its extreme dependence on the social function which has made it necessary, i.e., the daily travel from home to work at hours and locations which are quite distant and extremely concentrated for the large mass of workers who have no possibility of arranging their time or space. Public transport operates at a minimum level, i.e., predominantly at the times of "rush or peak hour". Thus spatial mobility is worked according to the timetables of the elite and captains of industry, even when the urban structure of the Gauteng City-Region makes freedom of movement and trade in the crowded areas as almost impossible.

This dependence on the time-tables of trade and industry is reinforced by dependence stemming from routes of the Gauteng Freeway Network, to the capacity to resolve certain problems of spatial distribution of place and of work rather than the attempt to increase intra-urban mobility for all the people.

Thus collective transport becomes a synonym for discomfort, for congestion, for excessive processing of behaviour, for compulsory timing, if not of personal insecurity. The consequences for the consuming agents, particularly on the poor and marginalised, are numerous and complex, but they can be summarised in three points:

- a) Collective consumption and the routines of daily life, which depend on public transport, become extremely rigid, standardised and constrained.
- b) Now with the installation of e-tolls, the ensemble of these problems appears as a coherent whole dominated by an implacable logic, insensitive to freedom of movement and trade.
- c) The service provider, the supplier, the agent of central initiatives, appears to be the state and markets. They politicize transport and all the problems in making their collective treatment more necessary, but at the same time make the daily lives of the individual, especially the poor and marginalised, more difficult.

4.7 Recommendations

4.7.1 The Primacy of Democratic Consent

The South African state has a specific political obligation because it is founded on the sovereignty of the people. The crux of the matter is that the state represents the will of the people. One can stress, as much as need be, the authority and power conferred upon the state by the people. If the state is thus obligated in its intentions, it has to advance through history by means of democratic decisions. It is not possible to exclude from the definition of the South African state the idea of democratic decisions, that is to say, which affect the actual lives of people organised and directed by the state. The South African state is a social organisation; politics involve democratic decisions: participatory deliberation over situations, consultative projections as to the future. Thus the South African state fundamentally involves democratic politics.

The South African state takes on meaning before, during, and after the fact. Political decisions are pursued step by step, that is to say, both in the uncertain development of policy and in the collective steadfastness of resolutions. Thus, if the political function of the South African state carries on without interruption, one can say that South African politics exist not only in crises but in policy processes, not just in the climactic and turning points of history as it did in 1994.

But if it is impossible to define the South African state without including the democratic moments of collective decisions, neither is it possible to speak of political decisions without reflecting on the sovereignty of the people – from the democratic state to democratic politics, from democratic processes to events, from the sovereignty of the people to the obligated sovereign state, from institutional authority to people's power.

Based on historical analysis of high-achieving democracies, it is possible to establish certain key conditions or an optimal context for success in social development. One context that emerges is that these exist in each democratic society a mechanism for the effective articulation of "voice". The role of democratic politics cannot be ignored as a driving force behind public policy and public action.

4.7.2 Creating an Enabling Environment for Inclusive Participation in Transport Policy Process: Mobilising the Poor to Mobilise Themselves

Integrated and sustained efforts to develop an integrated transport system in Gauteng have become a matter of political priority for the provincial government. With the adoption of the GITMP and the focus of the National Development Plan 2030, there is now a climate in which new approaches to the urban transport problem can be systematically addressed.

There is now scope to argue for real priority for the integrated transport system through direct and inclusive participation. What can the Gauteng government make of this opportunity? It is not sufficient just to ask that more public money and other resources be devoted to transport. Over the last twenty years, intentions and outcomes have diverged; government programmes intended to benefit the poor often leak into the pockets of the non-poor, who are better organized, better politically collected, more articulate and informed. It is important that public resources be more effectively used. Given the opportunity presented by the current policy climate, can more innovative ideas for planning and implementing an integrated and sustained transport programme be offered?

One way of responding to this question is to search for 'best practices', programmes in other countries that have found effective ways of eradicating poverty through specific strategies. This approach involves defining success in urban transport programmes, analysing effective programs to understand what made them effective and then using these effective mechanisms to identify strategies that can be effective in Gauteng. There is a recurrent problem in socioeconomic inequality eradication mechanisms: the intended recipients, the poor, tend to be politically weak, in the broad sense of the term, in relation to public agencies and the non-poor. The transport eradication programme can work better if the poor can increase their influence over the implementation stage through collective action of various kinds. This can be achieved by mobilizing the poor to mobilise themselves. Concerted effort should be made to positively stimulate, among the poor, the collective action that is needed to make the programme more effective, and counter efforts meant to frustrate collective action.

4.7.3 The Central Importance of the Implementation Phase

There are abundant 'design level' ideas about effective socioeconomic inequality alleviation interventions. There is a rich literature on, for example, decent employment through inclusive economic growth, skilled and capable workforce to support an inclusive growth path, sustainable human settlements and improved quality of household life, and responsive Local Government system. Yet programme outcomes have been disappointing and what will work in Gauteng is needed. The outcomes of the programme in the province is likely to be decided in the implementation rather than the decision phases of policy-making. There are at least two separate reasons for this.

First, in Gauteng, like in other unequal societies, the implementation phase tends to be particularly significant in all spheres and sectors of public action, not simply integrated transport interventions. Because of the generally low level of political institutionalization, discretionary decisions made by bureaucrats and politicians at the implementation phase shape actual allocations of public resources to a greater extent than in the non-poor environments, where government processes are more open,

procedures more formal and predictable, and encompassing interest groups better organized to hold government to account.

Second, poor people generally lack political resources. This is particularly so in Gauteng where they are physically dispersed and face high transport and communication costs; are ill-educated; (partially) excluded from the public sphere because they cannot understand the language of elites; and face government agencies and bureaucratic processes that are weakly institutionalized, informal and accessible mainly to those who have privileged personal or social connections. Those connections are most effectively employed during implementation.

Poor people's testimonies of encounters with a range of transport institutions call out for government to rethink its strategies. From the perspective of poor people, inefficiency, corruption, and abusive behaviour often mar the formal institutions of the state. How then do poor people survive? They turn to their informal networks of family, kin, friends, neighbours (QASA). But these are not enough.

4.7.4 e-tolls Policy

Elements of the e-tolls policy should be reviewed as a matter of urgency, and, to avoid further protracted conflict, the process must be transparent, deliberative, and participatory

South Africa's Vulnerability

This review of some of the major problems of protest in South Africa as manifested in the e-tolls crisis may suffer from an overly pessimistic overtone. By focusing on the more intractable problems one is easily led to overemphasize contradictions and to give the misleading impression that breakdowns are likely to occur.

To present a more balanced conclusion, these analyses are put in a more general perspective. The problems of South African society, with special reference to the e-tolls, are difficult to solve but they are not intractable, and South African society, whatever its weaknesses, does still possess a lot of resources that can be mobilized when wanted. It has already shown, during the service delivery crises, considerable resilience and a capacity to adapt, to adjust, and to be innovative. Right now it still manages to maintain democratic stability against very difficult odds.

4.7.5 Excerpts from Policy Makers, Key Implementers, Business, Labour, Civil Society, Opinion Makers, Experts, and Faith Organizations

Excerpts of representations are inserted on the following pages.

A detailed assessment of the Economic, Social and Environment Impacts of GFIP and e-tolls, informed by an understanding of the political context, is contained in the next three Chapters, Chapters 5 - 7

5 Economic impact

5.1 Background

The assessment of the economic impact of GFIP and e-tolls in its implementation as a strategic government policy directive is premised on the following principles as enshrined in Section 9 of Constitution of the Republic of South Africa (on the Bill of Rights):

- a) **Equity:** in enforcing the right to social justice and choice. A policy intervention has to ensure that benefits are equitably shared across the economy. This may mean that the benefits must be equally shared, in which case the preferences of individuals or groups are the same. Another way is to ensure that the benefits are so distributed that the levels of well-being increase in equal measure across individuals or groups across the economy.
- b) **Fairness:** in exercising impartiality. The value that individual agents pay for the service must be proportional to the benefit they derive from it.
- c) **Redress:** in restoring the past inequalities. The economy is a historical entity which has within it embedded historical power relations which generate inequality and unfairness. Policy interventions have to alter such situations by shifting power relations towards the less powerful groups in society.
- d) **Efficiency:** A policy intervention must ensure that it minimises the social cost associated with it. For example, a policy that seeks to encourage employed people to go to work may be costly because employed people would have gone to work anyway. Another example is the costs associated with the implementation of the policy, e.g. bureaucratic costs may far outweigh the benefits envisaged as a result of the policy. Lastly, inefficiencies may arise because of perverse incentives that a policy might generate.

The above principles will be used in analysing findings from both primary and secondary research to arrive at recommendations on the economic impact of GFIP and e-tolls on the economy and the quality of life.

According to Gauteng Roads Development Plan, 2006 “the strategic intention of a GFIP is to improve the management of existing and future Class 1 roads so that they perform their strategic function, congestion is reduced, public transport and its users prioritised so that public transport becomes the preferred mode; and freight moves efficiently around the province”. The GFIP includes the following three elements according to the Gauteng Roads Development Plan, 2006:

- a) “Introducing a toll scheme on the majority of the freeways in Gauteng which would aim to prioritise public transport users, manage private car use and ensure freight moves efficiently on the freeways system.
- b) From the funds generated by the toll scheme, provide limited new freeways and on adjoining or affected by the freeway system designated public transport corridors, public transport infrastructure (dedicated lanes, shelters, lighting, pedestrian walkways etc)

- c) Introduce travel demand management measures such as car pooling and sharing, traffic flow control and incident management to ensure that private car use of the freeways system is more efficient”.

The three elements outlined above represent the premise for the conception of GFIP and its support by the GPG, including implicit benefits envisaged in its implementation.

An important factor which is not considered in this chapter is the impact of apartheid spatial planning on the socio-economic impact of GFIP and e-tolls. This subject is dealt with extensively in the chapters on Political consequences, Social Impact and Cross-cutting issues.

5.2 Introduction

The GFIP is a public infrastructure project that involves the extension and improvements of existing-, as well as construction of new highways in Gauteng. Roads in general are known to have significant positive benefits, and they also have significant economies of scope. Externalities arise when the activity of one agent affects that of another agent in ways that cannot be reflected in market prices. For an example, an industrial plant located next to a river may produce industrial waste that pollutes that river and thus negatively affect the output of the fishing industry. However, the costs incurred by the fishing industry may not be reflected in the price of the commodity that the polluting industrial plant produces. This is the case of a negative externality.

An example of a positive externality is the case of a honey-maker who sets up their outfit and rears bees next to the garden of a florist. The florist benefits from the bees through pollination, and the honey-maker benefits from the florist because bees need flowers to make honey. In this case both agents benefit from each other's positive externality. Positive externalities need not benefit all parties involved, one party may benefit from the activity of another party without charge. Another example, which is directly relevant to GFIP, is road-building. Imagine a village without a road and one person decides to build a road. The whole village will benefit from the road, unless the road-builder has a right to the road as their private property *and* unless they further set up mechanisms to exclude others from using the road. One popular mechanism to do this is toll-gates, of which electronic tolls (e-tolls) are a modern version.

Roads have significant economies of scope, because they can be used for a number of activities, they contribute towards the lowering of costs of production and the cost of living. In addition, roads create better linkages between firms through the improvement of transport services, improve national and social cohesion by linking people in different regions, and have spill over effects in other sectors that do not use transport intensively. For example public infrastructure delivery in general, road improvement in particular, is known to significantly increase land and real estate value, thereby allowing property-owners to pocket large amounts of ground-rent. Given the complex spill over effects that public infrastructure produces, particularly roads, economic analysis of the costs and benefits needs to be carefully approached.

This chapter focuses on the economic impact of GFIP and e-tolls on the economy and quality of life in Gauteng, through assessment of costs and benefits to society associated with the infrastructure investment, as well as multiplier benefits generated across sectors of the economy. The benefits arise as a result of the infrastructure investment, while the costs are mainly associated with the payment of tolls by users and the manner in which they are collected. The analysis attempts to disaggregate the costs and benefits between households and business, to help elucidate the differential impacts across society. The analysis notes that costs and benefits estimated at the aggregate level are not necessarily perceived in the same way at the level of the individual motorist or business.

A Traffic Model and Social Accounting Matrix, both commissioned by the Panel, were used as the scientific tools to evaluate the possible cost and benefits of GFIP and e-tolls, the results/findings of which underpin assumptions made in this chapter.

5.3 Travel costs and benefits to households and businesses

This section considers the direct benefits and costs accruing to users of Gauteng's roads, as the most directly affected sector of society. The focus here is on the qualitative difference that the individual road user may or may not experience, while they are using the road. Benefits thus firstly include those aspects which are quantitatively measurable, such as savings in fuel consumed or less time spent on the road. In this case, in line with common economic practice, travel benefits result from the reduction in user costs. It is however important to define the concept of benefits more widely, to include qualitative improvements to travel conditions such as improved safety and comfort.

5.3.1 Direct and indirect benefits of the GFIP upgrades

Travel time benefits

One of the main motivations for undertaking the GFIP upgrade – and a main source of benefits to society emanating from it – is the reduction of travel times due to congestion relief brought about by the expansion of freeway and interchange capacities. Evidence exists that the overall travel time savings of the GFIP are in fact substantial, and these include:

- a) The traffic study commissioned by the Panel (Gibb, 2014) estimated the travel time savings due to the GFIP alone at about 45 000 hours (assuming one person per vehicle) for the average morning peak hour, compared to what the situation would have been in 2013 without the GFIP upgrades. This amounts to a 20% saving overall. Average speeds on the GFIP network is estimated to have increased from 64 km/h (without the GFIP) to 100 km/h (with the GFIP) during the peak.
- b) It is noted that the GFIP benefited not just travellers on the freeways, but also those using the rest of Gauteng's road network. By relieving congestion on the freeway network, many drivers who previously used alternative roads to avoid freeway congestion switched back to the freeway. This also reduces congestion levels on the secondary roads. The traffic model (Gibb, 2014) showed that average peak hour speeds on the non-freeway road network in Gauteng increased from 40 km/h to 48 km/h due to GFIP. In this way transport capacity upgrade projects can multiply their benefits widely beyond the limits of the project itself.

- c) Actual measurements of travel speeds on the GFIP confirmed this travel time reduction for specific sections of the freeways. For instance, based on independent electronic vehicle counting data⁶ (not the GFIP gantries), peak hour speeds on some sections of the N1 between Pretoria and Johannesburg improved from 30-40km/h to 60-70 km/h between 2007 and 2013, despite a 27% growth in traffic.

While the overall travel time benefits of GFIP are not in dispute, the economic value of these benefits is subject to wide disagreement. This disagreement is evident not only between GFIP proponents and opponents, but also among different groups of users. Submissions to the Panel also indicated that not all road users experience or perceive travel time savings from the GFIP project. The impacts of this disagreement are discussed later in the chapter.

Reduced vehicle operating costs

It is likely that the GFIP upgrades resulted in significant savings in vehicle operating costs to users of freeway and of other roads in Gauteng. Such savings result mainly from:

- a) reduced fuel consumption (as a result of reduced stop-and-go traffic conditions, which raise fuel consumption); and
- b) reduced vehicle maintenance, tyres and oil costs due to improved pavement conditions, faster travel and reduced wear-and-tear of vehicles on the roads.

These savings reduce the overall cost of travel, and increase the disposable income of households – in other words extra money in the driver’s pocket that can be spent on other things.

Some estimates of the magnitude of these savings are available from SANRAL’s economic analysis study, which were obtained using standard road engineering cost models. Since the study did not report travel time savings separately from vehicle operating cost savings, additional calculations were made using recent estimates of travel time savings on specific routes (GIBB, 2014). The results for specific journeys on sections of the GFIP, for three vehicle classes are shown in Table 5.1.

⁶ R Du Plooy, 2014. “Mobility Performance Analysis of the Ben Schoeman Freeway: Before and After GFIP”.

Table 5.1: Estimated savings in vehicle operating costs for different journeys during AM peak

Vehicle type	Journey	Distance	Running costs without GFIP	Running costs with GFIP	Savings (%) per journey
Light passenger vehicle	N1 Proefplaas to Brakfontein (Lynnwood section)	5.1km	R20.01*	R18.88*	R1.13 (5.6%)
Light passenger vehicle	N12-N3-R24 Soweto to OR Tambo	40km	R152**	R132***	R20 (12.8%)
Medium heavy vehicle	R24-N3-N12 OR Tambo to Soweto	40km	R537*	R470*	R67 (12.5%)
Large heavy vehicle	N1 Proefplaas to Brakfontein (Lynnwood section)	5.1km	R155*	R146*	R8 (5.6%)
Large heavy vehicle	R24-N3-N12 OR Tambo to Soweto	40km	R1020*	R823*	R196 (19.3%)

Sources: *Estimated from Panel's traffic model & economic analysis (updated to 2014 values); ** Estimated from AA standard rates; *** Estimated from Standish, presentation to Panel, Nov 2014.

Savings for these typical trips vary between 5% and about 20% of the running cost, with the larger number applying to longer sections that were more congested before the GFIP upgrades.

Improved logistics efficiency

These cost savings can be expected to lower the cost of logistics – the movement, storage and handling – of all kinds of freight and services in the South African economy. It is noted that, before the GFIP, several business organisations expressed concern at the impact on business of congestion and vehicle running costs due to insufficient maintenance of Gauteng's road network (e.g. AA, 2009 and SACCI, 2010, quoted in NDoT's presentation to Panel, 2014). Some experts appearing before the Panel argued that GFIP contributed significantly to lowering logistics costs, currently averaging at about 12.8% of GDP (e.g. De Villiers, 2014). This was further confirmed by some business groupings appearing before the Panel, such as the BBC and SACCI.

However this view is not universally held by individual businesses. The survey of businesses undertaken by the Panel indicated that a substantial number of businesses perceive few or no benefits from the GFIP upgrades. About two out of every three business representatives responding to the survey failed to see any decrease in travel time for their fleet. About 85% failed to see any savings in vehicle maintenance or fuel costs. (It is noted that due to the self-selection sampling strategy, recruiting channels used, and small size of the sample the results are not necessarily representative of the business sector in general. However, even if the exact numbers are disputed, the survey indicates at least significant current negative perceptions that should not be dismissed).

Improved travel conditions due to GFIP

Together with the upgrading of the GFIP freeways, SANRAL has also implemented an advanced incident response system, linked to the continuous surveillance of freeway traffic, with a dedicated on-road emergency vehicle fleet. This service is provided free of charge to all freeway users. SANRAL's records show that, in recent months, about 1400 incidents were attended to monthly, including an average of 225 patients who received medical care. Enhanced incident response also reduces the impact of incidents by minimising the delays to other motorists and reducing the chances of secondary accidents occurring. This enhances the economic value of the project, as it makes journey times more predictable.

Travel conditions are further being enhanced through night-time lighting of all sections of freeway and provision of traveller information through variable message signs and electronic media. The Panel's public hearings and focus group showed that many commuters appreciate the enhanced travel experience along the upgraded freeways.

The high engineering standards applied to the GFIP freeways enhance safety for road users and may result in a reduction in accidents. No specific accident data is available for the period under investigation, but it is accepted that enhanced safety benefits of the GFIP is not under dispute.

5.3.2 Direct and indirect costs of e-tolls

The main issues related to the costs of the toll collection aspect of the project are the incidence of toll costs on users (both households and businesses), and the costs of open-road tolling as a revenue collection mechanism. Both of these issues emerged as major points of contention during the Panel's investigation.

Implementation costs related to e-toll

The costs related to the implementation of open-road tolling as a revenue collection mechanism were a major point of concern raised by many who participated in the Panel's public hearings and consultation forums with business, labour and civil society. (This deals with the direct costs of toll collection only⁷).

- a) The additional costs of implementing open-road tolling raise the overall price to be paid by users, as its costs are included in the toll tariff. The toll collection takes place in terms of a tendered contract, which was awarded by SANRAL on the basis of a design, build and operate (DBO) model. The contract makes provision for the maintenance and facilities of all roadside, back office, and customer service centre systems; operation of the Transaction Clearing House; and Violation Processing Centre, and includes asset replacement costs. The invitation to tender was advertised

⁷ Issues related to the actual level of tolls paid are discussed later in this section.

internationally to attract skilled and competent companies in the industry. SANRAL clarified that the contract signed with Electronic Toll Collection (ETC) company was based on rand value to avoid price fluctuations from forex, and payment is made in accordance to the services rendered according to the bills of quantities, and within payment bands in accordance with agreed service level requirements and not a lump sum or retainer basis.

- b) Public concern centres on the cost of this system, especially in comparison with lower costs that would have been possible had already available funding mechanisms been used, such as a fuel levy. The value of the toll collection contract amounts to R6,22bn, according to SANRAL. This amount was R2.57bn lower than the next lowest tenderer. ETC is a joint venture between Kapsch (Sweden), Kapsch (Austria), and TMT (a South African company). The foreign members have a joint interest of 65% in the JV. Since the operation is based in South Africa and all running costs are spent locally (e.g. call centre, IT, procurement), the vast majority of the contract revenue remains in the country. SANRAL clarified that the only component of the contract that could leave South Africa is the dividends declared by the foreign partners, limited to 65% of after-tax profits, if any profits are realised. While no exact figures on the likely size of these dividends are available (in fact it is unlikely that any profits would be realised for the first few years of the contract due to the size of the upfront costs), these figures are unlikely to be as large as they appear in the popular imagination. This issue is mentioned because the magnitude of toll revenues that would “leave the country” to foreign investors repeatedly came up as a point of concern during public hearings. There appears to be some amount of popular misinformation about this issue.

It is also worth mentioning that, as reported by the NDoT and published in Government Gazette No 35184, 26 March 2013, R 5.7 bn was allocated during the 2011 / 12 financial year “to pay for debt incurred for the completion of the GFIP”

The toll collection contract awarded by SANRAL was based on a DBO model, and the procurement was influenced by amongst others, the tendered amount including the asset replacement costs. The invitation to tender was advertised internationally to attract the skilled and competent companies in the industry. SANRAL clarified that the contract signed with the ETC company was based on rand value to avoid price fluctuations from forex, and payment is in accordance to the services rendered according to the bills of quantities, and within payment bands in accordance with agreed service level requirements and not a retainer basis.

Although based on rand value, the cost model adopted by SANRAL remains sensitive to inflation rate, interest rate, law enforcement / non-compliance risks etc., as confirmed by SANRAL Cost Model Review: Deloitte, 2011.

Tariff determination

The toll tariff payable by GFIP users was originally determined based on SANRAL's funding model, to ensure repayment of the capital and operating costs for phase 1 over 25 years. No contribution to overheads, profits or further expansion costs are included in the determination of the tariff. SANRAL notes that "other than the possible contribution in terms of processing fees from other toll authorities or toll roads adopting the technology developed, no cross-subsidies or other interactions with other toll roads have been allowed for in the calculation of the tariffs. As such, the GFIP will not be cross-subsidising other toll roads or authorities", (SANRAL, 2011).

The tariff has been adjusted downwards several times, in response to concerns around affordability of the tariff. After the 2011 Steering Committee process, reductions of the original tariff were achieved by the above mentioned re-apportionment of part of the toll collection costs to other toll routes. According to SANRAL's data the current e-tag rate of 30c/km is, on a purchase parity basis, lower than any of a number of international toll tariffs in developed and developing countries.

There is however a larger issue around the costing and pricing of the GFIP usage that bears examination. Noting that there are three possible funding models for road infrastructure financing, namely (i) public finance, or (ii) infrastructure development finance with service user charges, or (iii) private finance with service charges, this discussion focuses on issues related to private finance with service charges, because it is the form of service charge adopted in e-tolls.

Public finance should be carefully considered as one element in a public-private funding mix, alongside infrastructure development financing and service charges.

It was not possible in the course of this short Panel process to get insight into all relevant funding and financial issues. Hence, there is a need for greater clarity and transparency with respect to the costing and pricing models used to set prices for e-tolls. Pricing is clearly an issue, as the absence of public knowledge can lead to concerns of possible excessive pricing or cross-subsidisation between different segments of road users. The normative approach for pricing an infrastructure-based service would be cost-based pricing, taken into account historical costs, current costs and forward-looking costs.

Cost elements and aggregations: There are many ways of presenting particular cost elements that are aggregated into a tariff, of which the following set represents the most basic set of elements and aggregations, as applied to public infrastructure:

- a) *Marginal cost* = short-run direct and indirect variable cost + long run indirect variable cost
- b) *Directly attributable long-run incremental cost (LRIC)* = marginal cost + long run direct fixed costs (includes cost of servicing the loan)
- c) *LRIC plus mark-up* = directly attributable LRIC + infrastructure related joint and common costs
- d) *Fully allocated cost (FAC)* = LRIC plus mark-up + corporate and business joint and common costs
- e) *FAC plus mark-up* = this added mark up could be for future phases of the same public infrastructure e.g. GFIP 2 and GFIP 3

The actual tariff could be set at any of the above levels. However, the most appropriate level for the tariff would be fully allocated cost (FAC), because it is the estimated level at which all costs would be covered and no surplus would be created.

The costing and pricing model for GFIP Phase I is not transparent to the user and the public. Furthermore, the costing and pricing model for GFIP Phase I is not transparent to the e-toll Panel. In this context, the following questions arise:

- a) At which costing aggregate level is the GFIP e-tolls priced?
- b) At which costing aggregate level is the GFIP e-toll priced for e-tag holders?
- c) At which costing aggregate level is the GFIP e-toll priced for Vehicle License Number Recognition (VLN) road users who do not hold e-tags?

Given the potential answers to these as yet unanswered questions, policy-makers, decision-makers, road users and the public would get better insight into (i) what costs are being covered; (ii) which of these costs are legitimate or not. More specifically, it could become clearer why there is a difference between the price paid by e-tag holders and the price paid by VLN road users in relation to the fully allocated cost. For example, (Scenario 1) if VLN road users pay at FAC and e-tag holders pay at marginal cost or LRIC, how will the full cost of the GFIP infrastructure be covered as there will be a finance gap? Furthermore, in this scenario, why are e-tag holders being offered a below cost pricing structure? How is it intended that the finance gap would be covered? If, (Scenario 2), the price for e-tag holders is currently set at FAC, this would imply that VLN road users are paying significantly above FAC and this would be tantamount to excessive pricing and effective cross-subsidisation of e-tag holders. There are other possible scenarios, but most importantly, it is necessary to establish the actual costing and pricing model in order to answer the questions posed above.

It has been pointed out by SANRAL that there are differing marginal costs for e-tag holders and VLN road users, specifically with respect to the cost of tracing vehicle and vehicle owner registration details for VLN road users, the costs of billing using the postal service, and the cost of violations processing and debt recovery that might follow (should the user refuse to pay). Two points are relevant here: (1) If this tracing process is still a manual process, this is problematic as the e-toll uses an electronic information system and the NATIS is an electronic information system and the two information systems need to be linked so that a particular information set from the NATIS database is fully searchable by the e-toll software, in order to minimize the cost of manual tracing (manual processing may explain some errors in billing); (2) If the tracing process is already electronic, then it would be important to know the actual cost of electronic tracing. While the marginal costs for e-tag holders and VLN road users may well be different, the actual costs for each could be made clear, as it is unclear why the difference in total cost would be as great as it is.

In this report, the Panel has used the term “discount” only where it appears that there is an actual discounted price, namely in the case of frequent user discount. In other uses, the term discount may not be appropriate. For example, “time-of-day discount” may be an incorrect use of the terminology, and may be better described as peak pricing and off-peak pricing. Similarly, with reference to the discussion above on costing and pricing aggregates, it may be incorrect to refer to the price paid by e-tag holders as a discount. Pending responses to the questions raised here, it may be that what e-tag holders pay is a price set at a particular cost aggregate level, not a discount. The use the term discount for marketing purposes may not be appropriate in this environment of public road infrastructure use.

Toll costs to households

The complexities of social migration into the cities of people looking for, amongst others, employment, services, grant access and schools has added a further burden on public transport and infrastructure demands.

What are the toll costs actually payable by GFIP users in Gauteng? Objective evidence showed that monthly toll costs payable by individual households can vary widely depending on such factors as frequency of freeway use, home and work location of a household,, number of vehicles owned, and whether users are registered e-tag users or not.

Data on actual toll costs per household are not available. The Panel thus estimated the monthly toll bill of drivers in Gauteng under various scenarios. Data on the actual number of e-toll gantries passed by each vehicle registered⁸ in Gauteng was supplied by ETC, for the months of February 2014 and October 2014. Using the data for light passenger vehicles (cars) only, the focus was only on household costs (i.e. by excluding larger freight vehicles), although there was no way of removing business-owned cars from the data.

Table 5.2 below summarises the results, if it is assumed that each household owns one vehicle using the GFIP. The following is noted:

- a) The majority of GFIP drivers incur relatively low toll costs. At the e-tag rate of 30c/km, about 55% of households would pay less than R50 in tolls per month. About 72% of households would pay less than R100 per month (this figure is even more than SANRAL's projections). This indicates that the majority of drivers use the GFIP freeway network infrequently and/or for short-distance trips only.
- b) The average monthly toll cost for e-tagged households with one car is R87.
- c) As e-tag registration qualifies users for a different pricing structure and a cap on monthly toll expenses, households who do not register may incur significantly higher toll costs. For instance, only 7% of households with e-tags would pay more than R300 per month, while almost 20% of households without e-tags would pay more than R300 per month (i.e. at the VLN rate, before late payment penalties).
- d) Around 3 to 4% of e-tagged drivers benefit from the frequent user discounts (reduction of toll rates above R400 per month and a cap of R450)⁹.

⁸ Licence plate data was removed from this data prior to handing it to the Panel, to protect privacy.

⁹ The actual figure should be higher than the 3.3% shown in the table (e-tag rate, R400-R450), since frequent users are more likely to be registered for e-tags than infrequent users.

- e) It is possible for households to incur considerable cumulative toll bills if they do not register for e-tags and fail to pay their toll bills. For instance, without an e-tag, 2.4% of households might incur more than R850 per month in toll bills (at the VLN rate). Assuming two-thirds of households are not tagged, and that tagged and non-tagged households have similar travel patterns, this might amount to some 30 000 Gauteng households. Should such households fail to pay, the rate increases to the alternate rate, which might triple their monthly bill to more than R2 550.
- f) Households with more than one vehicle frequently using the freeways, for instance where both spouses drive to work on GFIP freeways, would incur higher costs than those shown in the table. A household with one tagged driver making 10km-long freeway trips to work every day and back (passing one gantry per trip) would incur R130 in toll fees. With two similar drivers, the toll bill would double to R260 per month.
- g) At the e-tag rate, about 7% of drivers – or 127 600 drivers – would pay more than R300 per month. This toll bill amounts to about 10% of the income of low income households, and 5% of the income of medium income households¹⁰. Low and medium income drivers make up about one-third of GFIP usage¹¹, implying that about 40 000 households incur costs of this magnitude. The figure is likely to be higher as not all households benefit from the registered e-tag rate.

The overall picture that emerges is that, although the overwhelming majority of households incur relatively low toll costs, there is a substantial minority of households who end up facing high costs, for a variety of reasons.

¹⁰ Assuming median income of R3250 for low-income, and R8450 for medium-income households, 2014 Rands, in line with definitions used in traffic model (see Annexure XX).

¹¹ By vehicle-kilometres – see traffic model (Annexure XX)

Table 5.2: Estimated toll cost per household, assuming one vehicle per household, for October 2014

Monthly toll cost			No of households (e-tag & cap)	% of households (e-tag & cap)	Cumulative % of households (e-tag & cap)	No of households (VLN)	% of households (VLN)	Cumulative % of households (VLN)
R 0	to	R 50	1 054 453	54.9%	54.9%	717 383	37.3%	37.3%
R 50	to	R 100	330 736	17.2%	72.1%	337 070	17.5%	54.9%
R 100	to	R 150	172 866	9.0%	81.1%	215 724	11.2%	66.1%
R 150	to	R 200	108 915	5.7%	86.8%	127 074	6.6%	72.7%
R 200	to	R 250	73 988	3.9%	90.6%	94 709	4.9%	77.7%
R 250	to	R 300	52 140	2.7%	93.4%	80 385	4.2%	81.9%
R 300	to	R 350	36 934	1.9%	95.3%	56 577	2.9%	84.8%
R 350	to	R 400	27 295	1.4%	96.7%	52 250	2.7%	87.5%
R 400	to	R 450	63 444	3.3%	100.0%	37 973	2.0%	89.5%
R 450	to	R 500	-	0.0%	100.0%	31 904	1.7%	91.2%
R 500	to	R 550	-	0.0%	100.0%	29 515	1.5%	92.7%
R 550	to	R 600	-	0.0%	100.0%	21 879	1.1%	93.8%
R 600	to	R 650	-	0.0%	100.0%	18 572	1.0%	94.8%
R 650	to	R 700	-	0.0%	100.0%	17 285	0.9%	95.7%
R 700	to	R 750	-	0.0%	100.0%	13 682	0.7%	96.4%
R 750	to	R 800	-	0.0%	100.0%	12 620	0.7%	97.1%
R 800	to	R 850	-	0.0%	100.0%	9 577	0.5%	97.6%
more than R 850			-	0.0%	100.0%	46 592	2.4%	100.0%
			1 920 771	100.0%		1 920 771	100.0%	

(Source: Own estimates from ETC gantry data)

Notes: Includes light vehicles (passenger cars) only. Includes vehicles registered in Gauteng only (i.e. excluding any out-of-province visitors). Assumes only one vehicle owned by household uses the GFIP. Excludes lower off-peak price. E-tag rate average = R2.77 per gantry (30c/km). VLN rate average = R5.33 per gantry (58c/km). Calculated from gantry pass data, October 2014

That there is a wide range of views regarding the cost of tolling is apparent from independent surveys of public opinion. A random survey of more than 1100 Gauteng residents conducted by IPSOS in November 2014 showed that 34% of people agree that the toll charge is reasonable. A further 27% are neutral, leaving about 38% feeling that the toll rate is unreasonable. In November 2014, 31% of car owners in the sample reported owning an e-tag or intending to buy one. Clearly there is a core – albeit a minority – of drivers who use the e-tag pricing structure and find the toll costs reasonable. But there is equally a core of drivers who are very concerned with the cost implications for them.

Toll costs to businesses

Submissions to the Panel by organised business and the freight transport sector indicated that toll costs are considered too high by many businesses. In particular:

- a) The BBC felt that they do not oppose tolling in principle, but that the cost of e-tolls for their individual members was too high, and that a fuel levy would be a preferable funding mechanism.
- b) BUSA raised concern with the impact of tolls on the cost of doing business, and advocated an alternative mechanism to tolling.
- c) The SACCI was not opposed to e-tolling in principle, but reported that e-tolls imposed a significant cost on business, and that some businesses they canvassed face consequent closure.

d) The RFA noted that they originally supported e-tolls versus the fuel levy, based on their 2013 study which indicated that e-tolls would cost freight operators about R400 million per year, compared to a national fuel levy which would come to about R700 million. However the RFA submitted evidence that e-toll costs would make up about 9 to 13% of the annual profit per vehicle, of local operators, at the e-tag rate (with monthly caps). For unregistered operators that do not qualify for the monthly cap, this rises to between 60% (for light delivery vehicles) and 142% (for heavy fuel trucks) of profit. On this basis the RFA concluded that e-tolls are too expensive, even with the capped threshold, as operators cannot pass the toll costs (including the additional overhead costs they impose) fully on to customers, whereas fuel costs can. The RFA noted this against the background of a shrinking freight industry that is under cost pressure, and that cannot absorb additional costs. The RFA also objected to the fact that differentiated rates are not clearly displayed on all route access points.

Concerns around the cost impacts of e-tolls on businesses would apply equally to other funding options that raise revenue from users, including additional fuel levies and vehicle licence fees. In addition the point was argued by some that tolling can help reduce vehicle operating costs by managing demand and reducing congestion costs for business (De Villiers, 2014). The point to be taken is that any funding option should perhaps more carefully consider the cost impacts on hauliers and businesses.

A specific concern raised by almost all representations related to the high administrative cost imposed by the administration of toll accounts. Although SANRAL reports that billing errors, which seem to have caused as much dissatisfaction as the tariff amounts, are resolved within 72 hours, many in the business community report continuing problems with the electronic tolling system. Many businesses seem not to take advantage of the additional account management services offered by the toll operator. Since these services are only offered to larger account holders (with 20 or more vehicles), it is likely that smaller businesses especially face higher administrative barriers in dealing with toll collection.

This point was supported by the results of the business survey conducted on behalf of the Panel. About 80% of respondents said they did not find the system easy to understand, and a similar percentage felt that benefits of the GFIP and e-tolls did not outweigh the costs. For the majority (71%) of respondents, the cost of administering the e-tolls system adds up to a further 50% of the costs of the actual e-tolls. However, for a tenth (11%) of respondents, their total spend on e-tolls more than *doubled* what they were spending on the actual tolls – this was true for:

- a) 14% of small businesses (1-5 employees)
- b) 14% of medium businesses (6-50 employees)
- c) 7% of large businesses (51+ employees)

The implication is indeed that small and medium businesses are disproportionately affected by e-tolls and its administration.

The Panel attempted to estimate the toll costs to businesses from gantry data for October 2014. No information is available on which vehicles are registered to businesses, but under the assumption that Class B (Medium heavy) and Class C (Large heavy) vehicles are business-owned, it is seen below that business vehicles are much more intensive users of the GFIP than household-owned vehicles. Ninety-

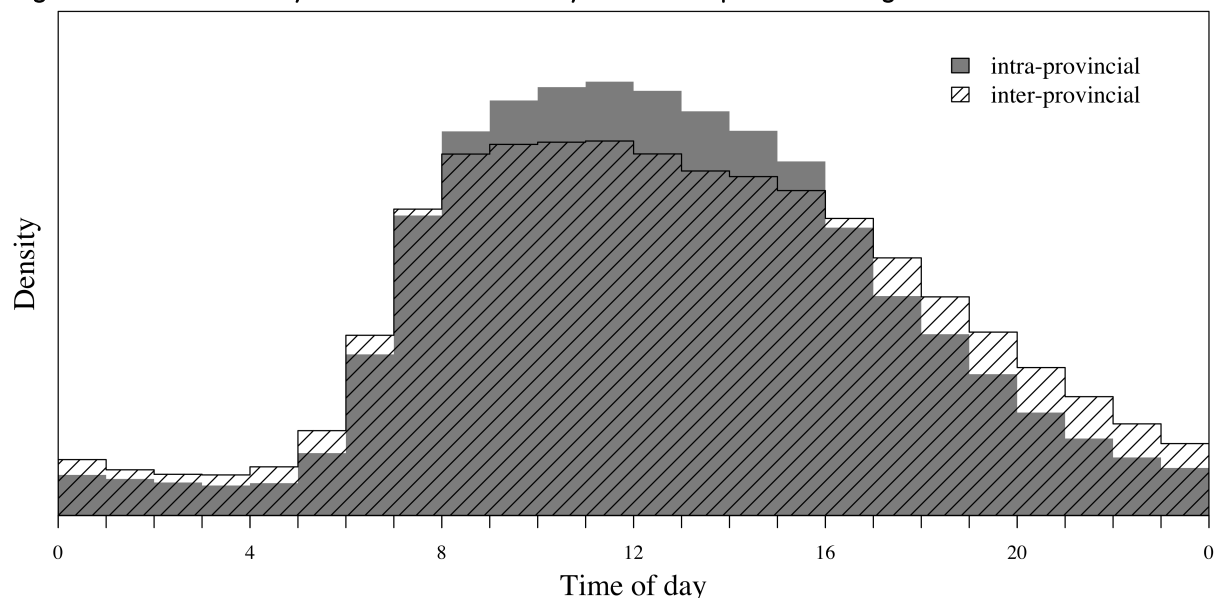
seven percent of Class B and 87% of Class C vehicles on the GFIP hit the monthly caps of R1750 and R3500 respectively. The costs are inclusive of the time-of-day prices applicable to heavy vehicles during the off-peak. Independent research by the University of Pretoria suggests that heavy vehicles benefit substantially from these time-of-day prices, as about 50% of travel happens outside of the peak periods (see Figure 5.1).

Table 5.3: Estimated toll cost for October 2014 (Source: Own estimates from ETC gantry data)

	Class A2 (Light vehicles)	Class B (Medium heavy vehicles)	Class C (Large heavy vehicles)
e-tag tariff (Rands/km)	30c/km	75c/km	R1.50/km
e-tag tariff with lower midday price	30c/km	46c/km	92c/km
Monthly cap	R450	R1750	R3500
Percentage of vehicles at monthly cap	2%	97%	87%
Average monthly toll cost per vehicle, with cap and time-of-day price	R87	R1730	R3402

Notes: Includes all vehicles registered in Gauteng and elsewhere. Calculated from gantry pass data, October 2014

Figure 5.1: Time of day distribution of heavy vehicle trips in Gauteng



(Source: Venter & Joubert, 2014)

However, these figures overstate the actual impact of this toll bill on business expenses as VAT can be claimed back by businesses, and tolls are tax-deductible as business expenses.

The question arises whether businesses are able to pass on any benefits of GFIP and costs of e-tolls to upstream and downstream industries, and what the effects are on the consumer or household. The next section considers the macro-economic impacts of GFIP and e-tolls in more detail.

5.4 Analysis: Estimated costs and benefits versus the lived experience of road users

The analysis above presents the estimation of costs and benefits at an aggregate level, for the GFIP and e-tolls project as a whole. It pointed to large positive benefits and savings as a result of the road upgrades, and attempted to put them in perspective against the overall costs of tolls. However the evidence before the Panel suggested that these estimates do not concur with the actual experiences of many road users. In fact throughout the past three years questions of what the benefits and costs of both GFIP and e-tolls are, and how they are borne by groups and individuals of users, have been an area of intense contestation. During the consultations process conducted by the Panel, a diversity of opinions was expressed, especially with regard to the magnitude of benefits delivered by the GFIP and e-tolls. There is by no means universal agreement on these benefits; for many individuals and organisations, benefits are not perceived to outweigh costs. This contestation bears on the ability to solve the problem, as the question of whether benefits exceed costs goes to the heart of people's willingness or unwillingness to pay tolls.

The Panel feels that it is important to acknowledge this wide range of experience, and to understand it as a source of discontent. This section attempts to put the estimated benefits and costs in perspective against the lived experience of road users.

As was already noted, a fair number of submissions to the Panel expressed awareness of the benefits of the GFIP upgrades, and appreciation of the enhanced travel experience and reductions in travel times and logistical costs that result. However, other submissions reflected either a lack of awareness of the benefits, or denial that the benefits are substantial enough to outweigh toll costs for individuals and businesses.

Further examination suggested the following reasons for this diversity of opinions and experiences:

- a) Travel time savings vary widely across individual users. On average GFIP delivered large travel time savings to drivers, both on the freeway network and on the secondary roads. However it is quite possible for an individual user to experience no benefit, or small or large benefits. Benefits vary significantly according to how congested the particular road was before the GFIP, by trip distance, and by time of day. For instance, drivers on the N1 from Brakfontein to Buccleuch Interchange could experience an estimated 22 minute time saving due to GFIP in the morning peak hour. By contrast, drivers on the same section in the opposite direction would experience an estimated 6 minute time saving (GIBB, 2014), which might be too small to perceive. SANRAL's economic evaluation acknowledged this: *On non-congested parts of the network toll payments would exceed user benefits in the early years. In addition people travelling in the evening and on weekends would face increased costs. (Standish et al., 2010, p.iii).*

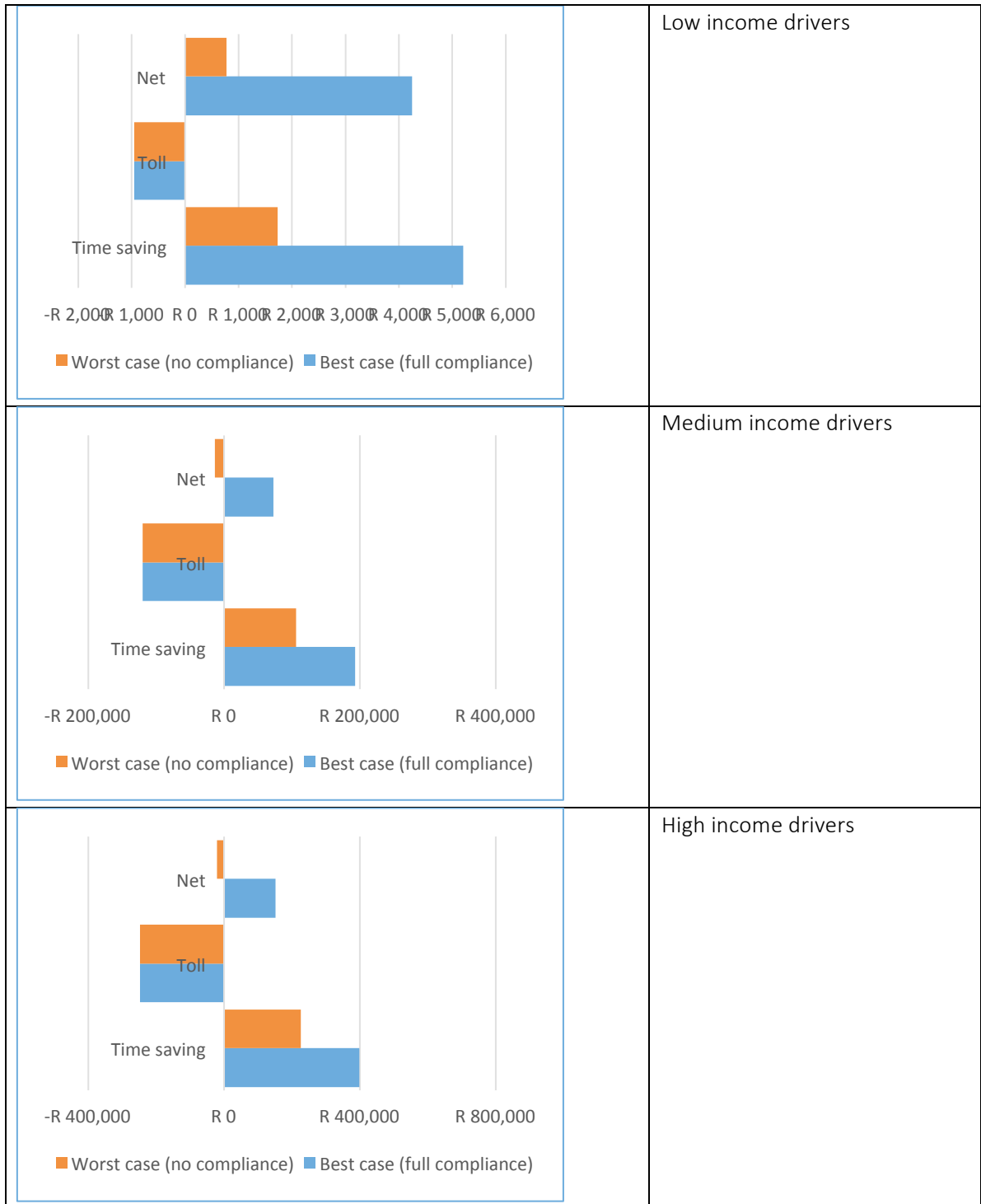
Of course the non-existence of savings during some times of the day does not negate the savings existing during other times of the day. This is the nature of road infrastructure. But the question is whether users receiving no or little benefit (in the form of travel cost savings) are paying more

than they feel is fair. Some adjustment of toll tariffs to more closely reflect benefits – such as even lower tariffs in the evening or on weekends -- might help to mitigate this effect.

- b) Non-compliance erodes the travel time benefits for some users. With fewer drivers choosing to divert from the freeways because they are not paying e-tolls, the travel time savings are reduced for all other users. The Panel's commissioned traffic study illustrated this point by examining the balance between time savings and toll costs for different income groups, for two indicative scenarios:
- Full compliance case (All drivers pay e-tolls): this case mirrors the case modelled during previous estimation of costs and benefits; ;
 - No compliance case: assuming that toll compliance is so low that no vehicles divert from the freeways in order to avoid paying tolls. (This was essentially modelled as the zero-toll case).

The results are shown in figure 5.2

Figure 5.2: Estimated time savings vs toll costs for full compliance and no compliance cases.



(Source: GIBB, 2014)

The figures show, for each income group, the value of time savings due to freeway upgrades, the toll paid, and the difference between time saved and toll paid. Vehicle operating cost savings are ignored. In every case, the results show a large positive benefit (i.e. that the value of time saved exceeds toll payments) for the full compliance case. However, should nobody pay tolls, the overall time savings reduce significantly due to increased freeway congestion, to such an extent that, for somebody who actually pays tolls, the net effect is near zero or even negative, for all three income groups. What this means is that drivers who do pay would experience no net benefit,

possibly leading to a perception of being overcharged for what they receive, especially if they are charged at the higher standard or alternate user rates.

The situation in practice is somewhere between these two scenarios, as some but not all drivers pay tolls. The point remains that it is likely that for some drivers their toll payments are more than the travel time savings they perceive. This situation will improve as toll compliance improves, even as it shifts some of the congestion back onto secondary roads.

- c) Continued traffic growth already erodes perceived savings for some users. Traffic count data shows that, for some sections on the N1 between Tshwane and Johannesburg, peak hour travel times in 2013 (i.e. before tolling started) were already back at their pre-GFIP (2002) levels¹². This observation in fact reflects one of the key shortcomings of freeway upgrades as a congestion relief measure, which is that the benefits tend to be short-lived (especially when further induced traffic growth kicks in), *unless travel demand is reduced or shifted to other modes through pricing mechanisms such as tolling*. Further compounding this aspect is the fact that users may compare the congestion that they currently face with pre-GFIP congestion, rather than with the counterfactual scenario of what current congestion would have been in the absence of GFIP, as discussed further below. The fact that there has been substantial growth in Gauteng traffic volumes independently of GFIP means that congestion would be far worse than it is today had there not been the GFIP upgrades, but this benefit may not be recognised by users.
- d) The time lag between the GFIP upgrades and the introduction of e-tolls. Several transport experts and key implementers argued that, contributing to the problem of the perception of benefits, is the fact that users became accustomed to the time and monetary savings deriving from the freeway upgrades for a prolonged period of time before e-tolls became operational. Savings became absorbed into users' budgets and used for other expenditure. By the time e-tolls were effectively introduced, these savings were no longer directly recognised by many users, and were not readily available for e-toll expenditure. The direct link between the benefits of the GFIP upgrades and the costs of e-tolls was also weakened by this time lag.
- e) The value attached to travel time savings vary across individual users. Standard practice in economic evaluation is to value travel time savings for individuals in relation to the wage rate, or some proportion of the wage rate, in an attempt to capture the opportunity cost of travelling. As has been argued elsewhere in this chapter, the implicit assumption that households can “convert” time saved into productive time or extra income, or conversely that individuals are willing to pay some amount in Rands in order to “buy” travel time savings, can be contested. Clearly the monetary value attached to travel time is of utmost importance here: the lower the value of time, the lower will be the economic value of the time saved, and the lower will be the toll that users are willing to pay (that is, the fair price as perceived by the consumers).

¹² See Du Plooy, 2014.

In line with standard practice, including that used by the World Bank, the economic analysis of the GFIP project valued business travel time at a value equal to users' incomes, and travel time for non-work travel (including commute trips to work) at a third of the wage rate. This amounted to R168 per hour of travel for business travellers, and R44 per hour of travel for non-work travellers¹³ (2010 Rands). These figures were based on incomes derived from telephone surveys of freeway users in 2009 and adjusted for inflation (Standish et al., 2010).

These values – especially for business travellers – differ from other values of time used in Gauteng transport projects. For instance, the Gauteng ITMP model used values of time ranging between R5.02 (for low income), R38.47 (for middle income), and R62.44 (for high income travellers, 2014 Rands) (GIBB, 2014). By using a single average rate for all travellers in a class, differences in impacts across travellers in different income groups are not taken account of. If the ITMP values of time are assumed to be correct for middle and low-income drivers of private vehicles, then the willingness to pay tolls in exchange for travel time savings is much lower in these communities than suggested by the use of a single average (higher) value of time. The contention that values of time are much lower in poorer communities is in line with much of the evidence presented to the Panel during public hearings, when many people made it clear that they simply do not have disposable income with which to pay tolls.

To examine the impact of a more diverse range of values of time across income groups, the Panel compared the monetised travel time savings with toll costs for a sample of longer-distance routes on the GFIP. At the above values of time, toll costs exceed time savings benefits (i.e. delivering negative net benefits) for low-income drivers of private vehicles on all routes, and for middle-income travellers on almost half of the routes (GIBB, 2014). Among high-income travellers, benefits exceeded toll costs on almost all routes. Since high-income travellers contribute 70% of GFIP use, the sheer magnitude of their positive net benefits outweighs the negative net benefits of medium (28%) and low income drivers (2% of GFIP use), causing overall benefits to exceed overall costs. But the evidence suggests that the lived experience of many medium and low income drivers is, in many cases, significantly different from that suggested by the aggregate picture.

- f) It is difficult to perceive benefits if they accrue incrementally over time. Benefits are measured in relation to how different things would have been in the current period, had the project not been implemented. Analytically comparison with the counterfactual might be the correct way of measuring benefit and cost, but conceptually this is difficult to communicate to the public. Users on the ground are more likely to compare their current experience with the experience some time in the past – and this introduces another source of diversity of perceptions. Depending on factors such as whether an individual had used a particular part of the freeways before the upgrades, on whether they can accurately remember what it was like, and on whether they can assess average improvements rather than one or two singular experiences (e.g. recall particularly bad travel experiences due to incidents), they may or may not arrive at the same perception of

¹³ These figures take the vehicle occupancy into account, i.e. that the average business traveller typically has fewer persons in a vehicle than the average commuter.

the benefits of road upgrades as the objective analyst. Users might also not be able to perceive small incremental savings over time, for instance they might not notice that their monthly fuel bill decreased by 5% due to GFIP upgrades, against much larger fluctuations in fuel prices and other costs of living. The time delay between completion of the GFIP and the start of tolling contributed to this problem.

The conclusion is that the balance between perceived benefits and costs might vary greatly across individual households and businesses. A multitude of factors contribute to this, many of which are outside of the NDoT's control. There is likely a substantial minority of households and businesses who, subjectively or objectively, feel that their toll costs exceed the benefits they receive from the project. A key question is how to manage such differences of experience.

5.5 Macro-economic impacts of GFIP and e-tolls

5.5.1 Evidence and analysis of GFIP and e-tolls on economy

Input-Output Model / Social Accounting Matrix Model

Given that roads have significant spillover effects across industries and regions, and also given that sectors and regions are themselves inter-linked, the best methodology to use in assessing the impact of expenditure on roads is the input-output model. This model describes how sectors are inter-related to form an economic structure. For example, the construction sector uses steel products for reinforcements, cement, basic chemicals, vehicles such as trucks and earthmoving equipment, etc. Therefore, to produce one kilometre of a road, all these material inputs are required, plus labour. Overall, the rand value of one kilometre of a road must incorporate the value of material inputs from other sectors, the value of labour employed, plus some mark-up for profit. The demand for one kilometre of a road, will lead, for example, to a demand for a thousand bags of cement. The cement sector will, in turn demand material inputs from other sectors and demand more labour. In this way, the construction of one kilometre of a road has ramifications, which are transmitted throughout the economy by the inter-linkages of demand and supply between sectors and regions. One sector's output is an input for other sectors and at the same time, one sector's inputs are outputs produced by other sectors. Hence the model is called the "input-output" model.

The SANRAL macroeconomic impact assessment study¹⁴ applies the same methodology that is proposed here to assess the impact of the GFIP on output (GDP) and employment. Nevertheless, like other forms of modelling, input-output models have various limitations that should be borne in mind when interpreting the results. These include the following: a) the assumption of constant returns to scale, which means that a percentage increase in an input leads to an equal percentage increase in output; and b) the assumption of unchanged prices, which means that prices do not change as the economy experiences changes in output and employment; c) the assumption of that inputs in the

¹⁴ Standish B., Boting A., Marsay A., An economic analysis of the Gauteng Freeway Improvement Scheme, 2010. Prepared for the Gauteng Department of Roads and Transport and the South African National Roads Agency.

production process are used in fixed proportions; d) the assumption that there are no supply or capacity constraints; and e) the assumption of fixed technical coefficients of production, i.e. the value of inputs required to produce a unit of output does not change. Estimates deriving from this methodology are thus more reliable for relatively small short-term changes than relatively large or long-term changes. In addition, the model does not take account of factors and dynamics such as monetary policy, savings, innovation, and so on, the way in which these may affect or be affected by the changes that are modelled.

This assessment uses a national input-output model. This means that the construction expenditure on the GFIP and its subsequent benefits are viewed at a national level, rather than at a provincial level. In other words, national data is used and the benefits of GFIP are modelled as though it is national, as opposed to a provincial project. The modelling is done as though the spending on GFIP was evenly nationally distributed rather than being in Gauteng, and the benefits here are also modelled as though they are national. The sectoral composition of the economy used here, as well as all other parameters of the model, are national rather than provincial. This limitation needs to be taken into account when interpreting the results.

While it is clear that the benefits of the GFIP would spillover to other provinces beyond Gauteng, these are difficult to accurately measure with the data available. This point is important to note, especially because it is related to the principle of fairness. Given that there is acknowledgement that there are spillovers of benefits to other provinces beyond Gauteng as a result of the GFIP, just as there are benefits to Gauteng from infrastructural upgrades in other provinces, policymakers have to think carefully about the way they align the provincial burden of financing the GFIP with the distribution of the benefits from the GFIP.

Another methodological issue relates to the valuation of time savings. The improvement of the highways is intended to reduce travel time. The question is how the time saving is valued in monetary terms. It is a complex issue to quantify how the saving of travel time adds to national wealth, in addition to increasing standard of living. From the standpoint of firms, savings in travel time definitely reduce the costs of operating the vehicles (e.g. fuel and wear and tear) and it may lead to savings in overtime pay among other benefits. However, it is difficult to measure how much more firms will produce as a result of this, since the level of production may be determined by the level of demand. Despite these complications, the “value of time” concept is the centrepiece in the valuation of transport infrastructure investment.

While value of time is an important concept in the valuation of transport infrastructure, there is no consensus on the way value of time is measured. In the light of these complications, this assessment adopts two approaches. The first approach measures only reductions in vehicle operating costs (VOCs) as a result of travel time reductions, leaving out any actual time savings. From the standpoint of input-output analysis, the lowering of VOCs can be thought of as a reduction in the transport input requirement of sectors, each sector benefiting by the extent to which its production process is “vehicle intensive”. This constitutes the change in the structure of the economy. The concrete savings in VOCs thus gained, by both businesses and households, are then translated into expenditure into the economy. This expenditure is however distributed according to the share that each sector commands in the economy. In other words, travel-time saving is directly linked to VOC and nothing

else. The funds generated from savings on vehicle costs are spent in accordance with the sectoral distribution of output. The change in the structure of the economy once the GFIP is operational is captured by changes in the transport input requirement.

The second approach includes not only VOC savings but also Value of Time (VoT) of users; these may either be in the form of wages or the revenue of firms. The economic impact study commissioned by SANRAL states that “in the analysis different road users are, based on their declared income, given different values of time. Business travellers have costs of time equal to their income, whereas commuters and other travellers have lower costs of time. According to the World Bank guidelines on economic analysis non-business road users should be allocated a cost of time equal to a third of their income. This sensitivity examines the impact of varying the costs of time” (p. 40). According to a traffic modelling study commissioned by this Panel, “Value of time is defined as the cost of time spent on transport. It includes costs to businesses of the time their employees and vehicles spend on travel, and costs to consumers of personal (unpaid) time spent on travel. It is standard practice to use ‘generalised cost’ as a means of including the various attributes of a trip, such as travel time and out-of-pocket expenses, in a single cost function. For this reason, values of time are used to convert time units into monetary equivalent values so that the generalised cost of the journey (a combination of both monetary and non-monetary costs) can be calculated. Therefore value of time gives the monetary values travellers (or consumers) place on reducing their travel time (i.e. savings). It varies considerably from person to person and depends upon the purpose of the journey” (p.4).

The study continues to say that “although different values are used from project to project”, a study by Lake, M. and Ferreira, L. (2010) indicates that for:

- Non-business trips – values of time of 40-50% of average wage rates are used.
- ‘business’ trips - tend to be valued at higher rates of up to 80%-100% of the wage rate” (p.5).

This assessment thus uses two approaches: Vehicle Operating Costs (VoC) only, assuming that there are no economic benefits to reduced travel time at all (aside from lower vehicle operating costs) and VoC plus Value of Time (VoT). For the latter approach, this assessment uses the measurement derived from the study commissioned by the Panel.

Impact of the GFIP construction

The first step in the assessment of the economic impact of the GFIP and e-tolls is to estimate the impact of the construction of the GFIP on the national economy. At this level of the assessment, the value of time concept is not relevant, since the GFIP is not yet operational. The results suggest that the construction phase of the GFIP generated an estimated 132 194 direct and indirect jobs nationally. In terms of output, the GFIP construction phase is estimated to have added R32.351 billion to the national economy¹⁵. These results are presented in Table 5.4.

¹⁵ These results, and all the results that follow, should be interpreted with the limitations of input-output analysis that have been mentioned borne in mind.

Table 5.4: Output and employment impact of the GFIP construction

	National Output (Rmillions)	National Employment
Agric	1274	9506
Mining	2165	6064
Man	1862	2203
Electr	1123	952
Const	21896	96652
Trade	1210	9411
Trans	1213	2574
Finance	1439	3834
Comm	170	997
Total	32351	132194

Source: Malikané (2014)

As noted above, it is acknowledged that the national impacts do get distributed between Gauteng and the other provinces. However, there is no consensus on the precise way in which this distribution of benefits can be measured with available data.

Impact of the GFIP with and without e-tolls

GFIP and e-tolls impact with VoC-based savings only

In this part of the report, an assessment of the impact of the GFIP is undertaken. The improvement of roads improves travel times, which increases the efficiency of the economy. In this version of the analysis, the benefits arising from this are measured only through changes VoC. These permanent changes in turn alter the magnitude of the multiplier in that the transport input requirement is reduced across sectors because of efficiencies brought about by GFIP. The value thus generated is then spent in the economy by it being distributed in line with the contribution of each sector to the economy.

The data used to conduct the assessment is based on the ENATIS database as of 31 October 2014. However, there is no consensus on the number of vehicles that use the GFIP. Data derived from the gantries suggests that about 10% of vehicles registered in Gauteng use the GFIP network. Although it seems low, this is consistent with the figure derived from the modelled traffic on the GFIP network. Data from gantries suggests that the number of business vehicles which use the GFIP is 620 165 and the number of household vehicles which use the GFIP is 1 458 512. The assumptions and data are summarized in Table 5.5.

Table 5.5: Assumptions and data

	Household vehicles	Business vehicles
Number of vehicles (millions)	1.46	0.62
Fuel cost as a proportion of operating cost	0.6	0.6
Average litres of fuel consumed per vehicle per annum	1500	3350
Proportion of operating cost saved as a result of the GFIP	0.05	0.1
Average price of a litre of fuel (R)	13	13
Average etolls cost per month (R)	89.5	2383
Total etolls cost per annum (Rmillions)	1566	4685

Source: Malikane (2014)

The value on the cost of e-tolls is calculated on the assumption that 25% of light passenger vehicles are owned by businesses and 75% are owned by households. Furthermore, gantry data shows that 2% of light passenger vehicles hit the monthly e-tolls cap of R450. It is assumed that all such vehicles are business vehicles and the rest of business light vehicles, 23% of light passenger vehicles, are charged at R89.50 per month (the average rate for light vehicles not hitting the cap). Gantry data also reveals that 97% of small heavy vehicles hit the e-tolls monthly cap of R1 750, while 85% of large heavy vehicles hit the e-tolls monthly cap of R3 500. Based on this data, the average e-toll cost for business vehicles is estimated to be R2 383.

Another issue that is presented in Table 5.4 is the calculation of VoC. This assessment takes a cautious approach of presenting results from two measures. The first measure assumes that fuel costs are 60% of vehicle operating cost (VoC1). It is further assumed that business vehicles consume more litres of fuel per annum than household vehicles. The average litres of fuel consumed per vehicle per annum is calibrated using information from the South African Petroleum Industry Association (SAPIA) and information on the number of live vehicles in South Africa from the ENATIS database. The second measure of VoC is derived from the traffic modeling exercise that has been commissioned by the Review Panel (VoC2). Presenting both these measures goes some way in establishing the robustness of the evidence upon which the recommendations will be based.

In terms of VoC1 the savings by business are R4.5 billion per annum and for households the savings are R2.4 billion. This amounts to a total of R6.9 billion. For VoC2, business savings are R1.7 billion and for households the savings are R4.1 billion. This amounts to a total saving of R5.8 billion. It is clear that both these measures almost place opposite emphasis on households and businesses. This has serious implications for the assessment of the economic impact of the GFIP and e-tolls on these two social groups.

Table 5.6 presents the results for both measures of VoC. In both cases the benefits of the GFIP fail to outweigh the costs from the standpoint of business. Nevertheless Households unequivocally benefit from the GFIP with e-tolls. Therefore from a qualitative perspective, if businesses do not realize any value from the reduction in travel time (other than a reduction in vehicle operating costs), the benefits of the GFIP are likely to be overshadowed by the costs of e-tolls. Note that these estimates are only for the ongoing benefits of GFIP, without including the benefits from the construction itself.

Table 5.6: Cost savings due to the GFIP with and without e-tolls

	VoC1				VoC2			
	Vehicle usage	GFIP benefits	E-tolls cost	E-toll benefit	GFIP benefits	E-tolls cost	E-toll benefit	
Agriculture	0.029	132	137	-5	50	137	-87	
Mining	0.033	147	153	-6	56	153	-97	
Manufacturing	0.642	2889	3007	-119	1097	3007	-1911	
Electricity	0.003	12	12	0	4	12	-8	
Construction	0.002	10	10	0	4	10	-6	
Trade	0.013	58	60	-2	22	60	-38	
Transport	0.085	383	399	-16	145	399	-253	
Finance	0.015	67	69	-3	25	69	-44	
Community	0.179	804	837	-33	305	837	-532	
Households		2373	1566	807	4126	1566	2560	
Total		6873	6251	622	5834	6251	-417	

Source: Malikane (2014)

Note that, in the case of VoC1, the GFIP with e-tolls delivers a positive net benefit, which when it filters throughout the economy it will nevertheless generate positive impacts on output and employment, which may reverse the short-term costs. Table 5.7 presents the results.

Table 5.7: Output and employment impact of the GFIP with e-tolls

	VoC1		VoC2	
	National Output (R millions)	National Employment	National Output (R millions)	National Employment
Agric	200	1554	-134	-1043
Mining	207	609	-139	-409
Man	268	317	-180	-213
Electr	155	131	-104	-88
Const	82	362	-55	-243
Trade	195	1514	-131	-1016
Trans	198	421	-134	-285
Finance	264	705	-177	-473
Comm	146	859	-98	-576
Total	1716	6474	-1152	-4345

Source: Malikane (2014)

In the case of VoC1 the impact of the GFIP with e-tolls generates positive impacts that more than compensate for the short-term costs incurred by businesses. However, the case of VoC2 shows that since the positive household benefits do not outweigh the negative business benefits, the GFIP with e-tolls would tend to reduce output and employment. These results suggest that it would be prudent for policymakers to be cautious about implementing e-tolls in their current form, e.g. maintaining the current tariff structure, if businesses fail to realize any value from travel time savings beyond savings on vehicle operating costs.

GFIP and e-tolls impact with VoC and VoT savings

In this part of the assessment, businesses also benefit from VoT savings as a result of reductions in travel time. The complexity in this part of the analysis substantially involves the calibration of the amount of value that can be gained from travel time savings. There is no consensus on the amount of value to attach to a unit of time saved, or the amount of additional value that can be produced as a result of travel time cost savings. The VoT measures used here derive from the transport modelling exercise undertaken by the Panel. In one case an hour of travel time saved is value as equivalent to a full hourly wage savings by businesses. In another case, an hour of travel time saved is valued as equivalent to half of the hourly wage.

Given the complexity that surrounds this part of the assessment, it is safe to model the amount of value that businesses must at least generate in order to break-even with e-tolls. In addition, given the two net benefit values that arise from the two measures of VoC in Table 5.5, it is prudent that a conservative approach be adopted. Therefore, this assessment takes VoC2 as the basis upon which VoT is added. Furthermore, note that in Table 3 households derive a net benefit from the GFIP with e-tolls, therefore any addition beyond their VoC will add to the already positive net benefit.

Table 5.7 illustrates the case where businesses generate an estimated value worth R2.989 billion as a result of travel time savings. This is equivalent to an addition of 1.75 times their savings on vehicle operating costs. In other words, for the GFIP with e-tolls to have a neutral short-term impact on businesses, businesses must be able to generate at least R2.989 billion as a result of travel time savings, over and above VoC. At this point, it cannot be assessed whether the “hurdle rate of 1.75 times the VoC” that is required for a business to break-even with e-tolls is too high or too low. It should be noted that, using the standard measures of VoT in the transport modelling field, there is indeed a net benefit to businesses.

Table 5.8: Cost savings due to the GFIP with and without e-tolls (VoC plus VoT, with business break-even)

	Vehicle usage	GFIP benefits	E-tolls cost	E-toll benefit
Agriculture	0.029	138	137	0
Mining	0.033	153	153	0
Manufacturing	0.642	3016	3007	8
Electricity	0.003	12	12	0
Construction	0.002	10	10	0
Trade	0.013	60	60	0
Transport	0.085	400	399	1
Finance	0.015	70	69	0
Community	0.179	839	837	2
Households		4126	1566	2560
Total		8823	6251	2572

Source: Malikané (2014)

In this case, where in the short term businesses break-even with e-tolls, subsequent output and employment expansion would be driven by the value gained already gained by households. In other words, the estimation that follows does not take into account any net benefit to businesses. The impact on output and employment is presented in Table 6. Output is estimated to expand by R7.1 billion whereas employment is expected to increase by 26 798. Note that these estimates take no account of direct VoT savings to households, which would boost the overall net benefit shown here.

Table 5.9: Output and employment impact of GFIP with e-tolls (with business breaking even)

	National Output (R millions)	National Employment
Agric	826	6433
Mining	857	2520
Man	1111	1314
Electr	642	544
Const	340	1499
Trade	806	6267
Trans	824	1749
Finance	1094	2916
Comm	605	3556
Total	7104	26798

Source: Malikane (2014)

The analysis illustrates the point that as long as individuals and social groups do not experience the benefits of the GFIP, particularly beyond the reduction in vehicle operating costs, there will be an economic basis for a ground-swell against e-tolls. From a technical point of view, there is no consensus on the amount of monetary value to attach to travel time savings. Yet, it is this monetary value that is decisive in the valuation of transport infrastructure investments. The level of confidence that policymakers can place in such models therefore remains primary concern. On the one hand, it may be that social groups and individuals underestimate their benefits and overestimate the costs they face with the view to unfairly gain from the project. On the other hand, the models that policymakers rely upon may be fraught with technical and subjective challenges, leading to a disjuncture between lived experience and what policy models estimate the impact to be.

Impact of the GFIP with a fuel levy

One alternative to e-tolling that has been put forward on various occasions is the increase in the national fuel levy, ring-fenced to finance the improvement and extension of roads nationally, including the GFIP. The arguments for and against the national fuel levy are discussed elsewhere in this report. In this part of the assessment, the focus is on the economic impact of the increase in the national fuel levy.

Differences in cost and impact between e-tolls and a fuel levy derive essentially from the levels at which these are each set. The higher the e-tolls or fuel levy, the more funds are raised, and conversely the greater the negative impact on business and households.

Table 5.8 shows that total e-toll cost is R6.25 billion per annum. From the calculations here, a national fuel levy of about 27c/litre would raise approximately the same revenue as the current levels of e-tolls. Since the revenue raised is also the cost to those paying it, the costs (combined to business and households) would thus be approximately the same. Setting a national fuel levy at less than 27c/litre would mean that less revenue is raised than with current e-tolls and the total costs to business and households is less; setting a fuel levy above 27c/litre means the reverse.

As with funding GFIP through e-tolls, with a fuel levy the same VoC and VoT savings and benefits would apply.

The major difference in impact between a fuel levy and e-tolls lies in the split between households and businesses. In order to raise the same amount of revenue (i.e. the same total costs), and with e-tolls set at their current rates, a fuel levy falls more heavily on households and less heavily on businesses, compared to e-tolls. That is, when comparing a national fuel levy and e-tolls raising the same aggregate revenue, business is relatively better off with a fuel levy, while households are relatively better off with e-tolls. One implication of this for businesses is that, for the same aggregate revenue to be raised, they require a higher “hurdle rate” (for the measurement of VoT) in order to break even with e-tolls (R2.3b with a fuel levy as compared to R2.989b with e-tolls).

There would also be distributional differences between types of businesses and types of households when comparing e-tolls and a fuel levy.

5.6 Conclusions

The construction of the GFIP was necessitated by the need to increase the capacity of the economy to grow. Rising levels of vehicle ownership, spurred in part by the growth of the middle class, would have put even more pressure on existing infrastructure. If the GFIP was not initiated traffic congestion levels would be higher, transport logistics would become less efficient and environmental quality would deteriorate. There is strong evidence to suggest that had the deterioration of roads continued unabated, the costs of repairing and rehabilitating roads would even be greater.

However the decision to undertake road infrastructure improvements goes hand in hand with decisions on the best way to finance it. Given the pressing demands on the national budget, and the need to address inequalities in terms of access to infrastructure across the country, policymakers had to devise innovative ways through which to finance the GFIP in particular. The assessment presented in this section analyses the costs and benefits to business and households of the infrastructure and the financing thereof. It is shown that, for households, the benefits of the infrastructure unequivocally outweigh the costs of paying for it, whether payment is through e-tolls or a national fuel levy. However, it must be noted that households are heterogeneous, and not all households will necessarily net benefit. It is recommended that the process of engagement on major transport infrastructure projects should take place in the most direct manner possible taking into account the diverse experiences of costs and benefits. Although the overwhelming majority of households incur relatively low toll costs, there is a substantial minority of households who end up facing high costs, for a variety of reasons. It is recommended that mechanisms be found to mitigate the high costs for households with pressure on disposable income. The funding of future transport infrastructure, and tariff determination, should take into account the economic impact on poor households in particular.

For business, the situation is more complex. Whether there are net costs or net benefits for business depends on how time savings are valued. Beyond a certain valuation of time savings for business deriving from the improved infrastructure, the benefits outweigh the costs, whereas the reverse is true below that threshold. This applies for both funding through e-tolls and a fuel levy, although for a fuel levy the threshold is lower since business bears a lower burden of the fuel levy. Once the direct and indirect benefits of GFIP *construction* are added in, then business unequivocally benefits. There is evidence that the cost of administering accounts adds to the cost of doing business, which has a

disproportionate impact on small businesses. The administrative burden of e-tolls, to both users and administrators, should be minimised.

Part of the process of shifting the paradigm involves rethinking the way public infrastructure in general is financed, and to explore more progressive and innovative ways in which public support for developmental programmes can be mobilised. Two key ingredients of this new paradigm would need to be greater transparency and inclusiveness in identifying prospective costs and benefits, and greater sensitivity to the heterogeneity in the way in which these impacts are experienced on the ground.

5.7 Recommendations

Further research is needed, focused on:

- a) Decomposing the aggregate cost and benefits of both GFIP and e-tolls accrued to both households and business;
- b) Spill over effects of GFIP and e-tolls on adjoining provinces;
- c) More innovative financing options for transport infrastructure that take into account the national development agenda.

It is recommended that:

- a) The process of engagement on major transport infrastructure projects should take into account the diverse experiences of perceived costs and benefits.
- b) Mechanisms be found to mitigate the high costs for poor households
- c) The funding of future transport infrastructure, and tariff determination, should take into account the economic impact on poor households in particular.
- d) The administrative burden of e-tolls, to both users and administrators, should be minimised.
- e) The manner in which tariffs are determined should be transparent and communicated clearly to the public.

6 Social impact

6.1 Background

In assessing the social impact of GFIP, it was important for the Panel to ascertain the degree of appreciation and preparedness for addressing social costs and consequences, as well as to analyse the information that influenced and informed modelling for social benefits and mitigating risks. To this end, a literature review was prepared and data was analysed from interviews and consultations. The Panel's investigation further considered relevant reports and guiding frameworks pointing to the status quo and social impact aspects broadly. Chapters 1 to 4 provide a more detailed background of the scope, guiding policy frameworks, principles and methodology used.

The mandatory nature of impact assessment is covered in the NLTA, which stipulates that any form of built environment change that results in significant changes in travel demand and travel patterns is subject to a transport impact assessment. Furthermore, the person (entity) responsible for generating the impact must be liable for paying for the amelioration of the impact, if any. Social impact assessment is a useful component of broader transport impact assessment. The International Association of Impact Assessment (www.iaia.org) and the United Nations (UN) Comprehensive Guide for Social Impact Assessment, amongst others, has guided the framing of the social impact assessment scope for this report.

In the *International Handbook for Social Impact Assessment: Conceptual and Methodological Advances* (2003), editors Becker and Vanclay highlight a critical point that:

Social impact assessment (SIA) is a developing field of practice. However, unlike environmental impact assessment (EIA), SIA is not bound by a regulatory context, which defines this practice. This is both a blessing and a curse in that it is hard to determine the boundaries to SIA.

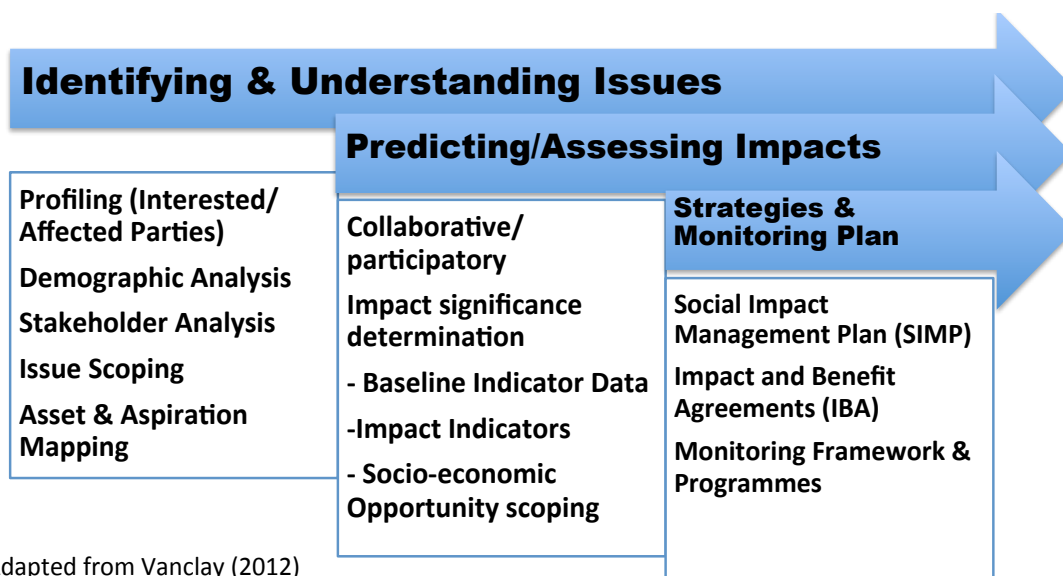
Their varying definitions also attest to this. Becker defines SIA as “a process of identifying the future consequences of a current or proposed action which are related to an individual, organizations and social macro-systems”. Vanclay broadens the definition to “the process of analysing and managing the intended and unintended consequences of planned interventions on people so as to bring about a more sustainable and equitable biophysical and human environment” (2003:xi).

Drawing from the UN, *the Inter-organisational Committee on Guidelines and Principles for Social Assessment (1994)* focuses SIA on the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their view of themselves and their society.

The Panel's perspective encapsulates all these elements as they align with the GFIP context of an integrated transport system and the guiding principles of social inclusion, equity, sustainability, efficiency and administrative justice. The SIA scope focused on the analysis of GFIP/e-tolls benefits, as well as the social ramifications, consequences and mitigation measures for responsiveness to the social development concerns. The analysis commences with the envisaged impact at the design stage, focusing on the SIA process as presented in Figure 6.1 below. The SIA process and methodology draws from, and aligns with economic, environmental and political impact processes discussed in other chapters.

Figure 6.1: SIA process map

Social Impact Assessment Process



Adapted from Vanclay (2012)

Drawing from Figure 6.1 above, the analysis focused on the following areas:

- a) Consider public participation and consultative processes in the design phase and the intended social benefits;
- b) Understand the effects on interested and affected parties (I & AP);
- c) Identify relevant GFIP equity and social well-being issues and analyse social consequences and social costs in terms of: planning and procurement, construction phase, operation and cumulative impact;
- d) Identify and collect data on SIA variables and social change processes related to GFIP/e-toll;
- e) Review related policy and planning frameworks and analyse adherence/fit;
- f) Analyse government response to social consequences;
- g) Analyse the management and monitoring of social impact;
- h) Identify alternatives and mitigating measures; and
- i) Analysis of the Social Impact Plan (if it exists).

Other considerations included population characteristics, intergovernmental relations, institutional structures, individual and family changes, and impact on state resources. The next section provides a brief summary of what was envisaged.

6.2 Envisaged impact

GFIP conceptualisation

The previous chapters provided the GFIP historical background and objectives. Minister of Transport Peters in her submission to the Panel on 4 November 2014 emphasized that discussions around the tolling of Gauteng freeways started in 1996 and, “importantly, were initiated by the Gauteng Provincial Government”. She referred to the October 1997 Gauteng Department of Transport and Public Works published report titled ‘Development of a toll strategy’, noting that SANRAL had not yet been established at that time, and was only established in April 1998. Reference was also made to former Gauteng Transport MEC Jacobs, who stated in 2004 that “our goal in the next five years is to ensure increased mobility and accessibility of Gauteng citizens, particularly the poor, to transport and socio-economic infrastructure that facilitates their meaningful participation in economic and social activities.”

In the 2004 SANRAL Annual Report, the CEO referred to supporting co-operative governance and socio-economic goals. He presented SANRAL’s vision as being to consolidate the identified primary road network and to secure the condition of national routes of strategic and economic importance “even more so now that our country has secured the Soccer World Cup in 2010. It is imperative for the sake of the growth of South Africa’s economy and social development”. It was only in 2007 that GFIP was approved by Cabinet to rehabilitate and improve road infrastructure in Gauteng. The approval included Albertina Sisulu highway, previously known as the R21.

The 2008 SANRAL Report referred to the principle and objective of the scheme as being “to provide an interconnected network of inner and outer ring roads as a solution to the traffic congestion experienced in Gauteng, and directly link the historically neglected areas of the western and southern townships of Johannesburg with areas such as the Ekurhuleni”. It further highlighted that the scheme will incorporate facilities for public transport and dedicated high occupancy vehicle (HOV) lanes. “Improvement of public transport efficiency, safety and regularity is a national priority which will have a positive effect on congestion and safety. Furthermore, it will also reduce transport costs as well as allow continued growth of the economic hub of South Africa in the metropolitan areas of Johannesburg, Ekurhuleni and Tshwane”.

The Panel acknowledges that, in terms of the current duration since the introduction of the e-toll system, the assessment of social impact at this stage is limited, however the quantitative and qualitative data gathered or made available makes it possible to provide commentary, even at this early stage of implementation.

Social Impact Planning in GFIP Design Phase

This section focuses on social impact planning in the design phase. Vivek Misra from India’s Centre for Good Governance underscores the significance of SIA in the planning phase (Misra 2011). The argument is that SIA is predicated on the notion that development interventions have social ramifications and it is imperative that decision makers understand the consequences of their decisions before they act and people affected get the opportunity to participate in designing their

future. According to this view “social assessment helps to make the project responsive to social development concerns. Developmental initiatives informed by social assessment alleviate poverty, enhance inclusion and build ownership while minimizing and compensating for adverse social impacts on the vulnerable and the poor”. Critical here is the question of the extent to which involved government entities factored in social impact upfront, and how that informed implementation. If social impact was duly considered, and incorporated in planning and implementation, why then is there such public outrage, civic disobedience, negative perceptions, misconceptions and discontent of such great proportions warranting Presidential and Gauteng Premier interventions? This phenomenon needs clearer understanding and explanation.

The April 2007 *Development of a Toll Road Network Social Impact Assessment Draft Report* by Bews, Uys and Senekal (SANRAL GFIP Addendum B dated January 2008) is a useful reference in this regard. According to this report, SIA aims to ascertain the nature, extent, duration, probability, significance, and status of identified impacts that may result from either leaving the traffic situation on the Gauteng freeway system as is, the ‘do nothing’ option, or to introduce a toll fee on the freeway system as one way of managing traffic on the system” (2007:21). The background section highlights

the “as is” “do nothing” status quo indicating that the current state of the freeway system in Gauteng is such that it is having a detrimental social effect on the lives of road users and the citizens of Gauteng. Road users are forced to spend extended hours commuting to and from work or travelling to and from business engagements. The effects on the quality of life, safety, productivity, cost of travel, emotional wellbeing, and economic development are all negative.

The authors further acknowledge that the issue of tolling roads is not new but, since its inception, has been controversial. Of importance, it cites the Synovate (2006) survey with 68% of respondents who did not regard the tolling of high density roads as a viable option. Comparing the prospect of Gauteng e-tolling to the Central London Congestion Charging Scheme, the report states that “the Gauteng situation involves a more complicated intra-city freeway network congestion problem that cannot simply be solved through tolling in isolation. What is also important is to ensure that all interested and affected parties are given fair and equal opportunity to air their views and that these views are noted” (p39). Important to note is the acknowledgement by the Report that the consideration of the social impact of GFIP tolling was **based on the assumption that an integrated transport plan is successfully implemented** (their emphasis). In deconstructing the particular nature of the “congestion” problem on the Gauteng freeways, it should be understood that this a very different form of congestion to what occurs in London. In London, commuters were using cars as a preferred mode of transport even when multiple alternative forms of transport were available, thus making a congestion tax a reasonable mechanism to shift behaviour. This is not the case in Gauteng. Congestion arises because there are poor alternative routes and there are few or no alternative modes of transport. Hence the problem is not simply one of shifting commuter behaviour. Rather, it is one of building out an intermodal transport infrastructure for a 21st century conurbation, that interconnects the city and its people, in order to break down the historically racially defined spatial arrangements, for the first time in history.

A micro-economic analysis by Standish et al (2010) indicated that lower income groups would be unable to afford as much use of the network as other groups and would remain dependent on public transport. The authors also pointed out that on non-congested parts of the network, toll payments will exceed benefits in the early years. They also admit that “it would be contrary to national and provincial policies for freeway upgrading or expansion to be procured in isolation from investment in public transport /integrated with public transport”.

The Moving South Africa Reports from 1998 have highlighted the core challenges of urban passenger customers which include the lack of affordable basic access, the ineffectiveness of the public transport system for commuters and users, the increasing dependence on cars within the system, and the impact of past patterns of land use. While recognizing recent efforts towards the implementation of the BRT system in Gauteng metros, the situation has not changed much overall as far as access to public transport is concerned. [According to NDoT (2014) there are approximately 28 000 users making 55 000 trips per day on Gautrain and 60 000 users making 120 000 trips per day on Johannesburg BRT].

Bews, Uys and Senekal (2007) focused the SIA (as per scope) on the tolling with traffic congestion reduction as an objective. The impact of procurement and construction was not covered. Table 6.1 below indicates the nature of the impact areas covered. They used a method that analysed the Extent (Local, Immediate Surroundings, Regional and National); Duration (short to long term); Probability; Status and Impact of each area for both the ‘do nothing’ and the ‘tolling’ options.

Table 6.1 Social Impacts of Traffic Congestion (Bews, Uys and Senekal)

IMPACT CATEGORY	SOCIAL IMPACT
Socio-economic	Travel time Predictability of time schedules Frequency of deliveries/service calls Vehicle running costs Accident rate Job losses
Personal	Journey experience Health and safety Leisure time and exercise Sleep patterns Social activities Choice of residential location
Family	Domestic choices Family time Collecting children from school Supervision of children
Work	Reliability Productivity Interpersonal Relations Education

The result of the “do nothing” scenario was generally negative with severe impact at socio-economic and personal levels, high for work and medium at family level. The negative picture presented compelling reasons for the responsible authorities to act and deal with the prevailing situation. With the only option presented being tolling, the team highlighted the social consequences of tolling citing severe impacts at socio-economic and personal levels, particularly viability of alternate routes and viability of alternate transport.

The usefulness of the Bews, Uys and Senekal (2007) report is that it highlights the key social impact factors that were critical in influencing overall engagement strategy for interested and affected parties and pro-poor mitigation plan. The report mainly focused on the social impacts of freeway improvement and the effects of reducing congestion as well as social impacts of charging a toll fee for GFIP roads. It thus offers a useful guide to structure thinking on social cost and benefit discussed in following sections.

6.3 Evidence and analysis

Stakeholder Relations and Engagement of Interested and Affected Parties

The literature review and consultations enabled the identification and understanding of social impact areas and insights into the issues considered pre-implementation as prescribed by the SIA process above. The data point to a strong economic impact assessment bias, with SIA responding to the consequences of economic modelling. In other words there was a narrow focus on open-road tolling as a revenue collection mechanism. As a consequence there was less attention on the public transport network that adequately services the travel patterns of commuters in general, and the poor and vulnerable. The focus for developing a commuter-centric integrated transport system with cost and benefit sharing models was also missing. This refers to collaborative approaches for public transport and alternative roads synergies towards cost-effective and efficient origin-destination planning. This would involve national, provincial and local government, transport agencies and relevant private players. The consultation of interested and affected parties would have informed the framing of such plans. An analysis of stakeholder perspectives regarding stakeholder engagement indicates discontent about process with misalignment of intents and prioritization. Reference was made by all parties (metros, provincial legislature and NDoT and SANRAL) to the original thinking of alignment and benefit sharing stipulated in the original Memorandum of Understanding (MOU discussed in Chapter 8). The NDoT Acting Director General (DG) Mr. Vilana and SANRAL CEO Mr. Nazir Ali explained that the arrangements proposed had compliance complications in terms of entity roles and functions and could thus not be pursued. These issues will be discussed as part of the findings and recommendations.

Intergovernmental relations and issues relating to municipalities as stakeholders are further highlighted here as they directly impact on the effectiveness of delivery to citizens, particularly poor commuters. Of interest here is the SALGA December 2013 Report on “The Impact of the Proposed Gauteng Tolling Scheme on Gauteng Municipalities”. This report touches on the subject of co-operative governance (including agreements referred to in consultations discussed in later chapters) and raises questions about stakeholder engagement and identification of interested and affected parties. Of further significance is the management of intergovernmental relations.

The transport legislation is quite instructive as far as roles and consultations are concerned. In this regard the SANRAL and National Roads Act, 1998, Section 27 provides for the Minister of Transport to approve any specified national road to be a toll road and may levy and collect a toll. According to the Act, the Minister will not give approval unless the Agency:

- a) has given an indication of the approximate position of the toll plaza contemplated for the proposed toll road;
- b) has invited interested persons to comment and make representations on the proposed declaration and the position of the toll plaza;
- c) has requested the Premier in whose province the road proposed as a toll road is situated, to comment on the proposed declaration and any other matter with regard to the toll road;
- d) has given every municipality in whose area of jurisdiction that road is situated the same opportunity to comment.

In addition the NLTA specifies that the Minister must in terms of Clause 5 (4):

- b) facilitate the increased use of public transport;
- c) ensure that the money available for land transport matters is applied in an efficient, economic, equitable and transparent manner;
- d) assist provincial departments that lack staff and resources in meeting their responsibilities and performing their functions and duties with regard to land transport;
- e) coordinate between the three spheres of government and public entities with a view to avoiding duplication of effort and resources.

Whilst recognizing these provisions, SALGA commissioned an impact assessment citing the Local Government Municipal Finance Management Act (Act 56 of 2003) in respect of local government financial management. In terms of the act, a municipality may only incur expenditure only in terms of an approved budget. Therefore, The Gauteng municipalities felt it was important to understand the budgetary implications of the tolling scheme. Their report acknowledges that the impact analyses carried out showed the gross net benefits of the urban tolling scheme. However, it cites a number of shortcomings of the impact analyses that supported the tolling of existing urban roads. Some of the critical ones are that:

- a) The assessments did not explicitly take into account the historical socio-political context of the urban region, including the travel patterns of different income groupings;
- b) The analyses were undertaken at a highly aggregate level, for example, affordability was assessed at the level of regional GDP as opposed to disaggregate household income and expenditure patterns;
- c) Alternative mobility solutions were not considered for the long term given that the road capacity provided is still likely to be exceeded at some stage in the future;
- d) The costs of secondary road impact were not explicitly quantified and taken into account in the cost benefit analyses;
- e) The quantification of the impact of road traffic accidents that may be caused by diverting traffic were not assessed, given that the secondary road network was built with less stringent geometric and overall quality standards than the primary network.

There is clearly a gap in planning and implementation which the stakeholders have to address. The process going forward has to accommodate these concerns and views for joint ownership and commitment to GFIP. Furthermore, based on the constitutional mandate of sector agencies as empowered by legislation, there is a consideration that advice to Parliament on GFIP and e-tolls specifically, neglected to take into account the socio-economic dynamics prevalent within the municipalities, and reported on by StatsSA in the 2011 Census. Those socio-economic dynamics, informing the strategic focus of much of government, involves the reality of approximately 25% unemployment in South Africa and the increasing welfare population, the stagnation of the middle class as a future tax base, and the strain on the working class from high inflation.

Although it is the decision of Parliament to adopt funding models for various infrastructure investments in the country, it remains the competence of various government agencies, through expert capacity, to assist in such decision-making through technical logic. Although the need for investment in public infrastructure is critical and cannot be emphasized enough to support competing national demands, the decision for the funding options and financial model cannot be considered at the expense of the social effects on unemployment, equity and poverty in an unequal South Africa. The oversight role of Parliament is thus crucial in considering social impact. The discussion on findings expands.

6.4 Findings

6.4.1 Overall Appreciation of GFIP 1 Road Infrastructure

There was an overwhelming appreciation of the road infrastructure during consultations across the board. Other project benefits referred to (covered by Chapter 5) included employment opportunities in the actual construction and maintenance. The capability of SANRAL to manage such big and innovative projects was also acknowledged. The impressive modern infrastructure with more lanes and lights was always an opening statement and moving premise before raising concerns. The National Association of School Governing Bodies (NASGB) representatives said, “we are proud of the beautiful roads, but as parents are forced to use congested secondary roads with time implications for parenting, safety implications and air pollution impacts in residential areas as we cannot afford e-tolls”. They highlighted that there are children travelling on tolled roads from townships to former model C schools in private combis and cars, which are not exempt.

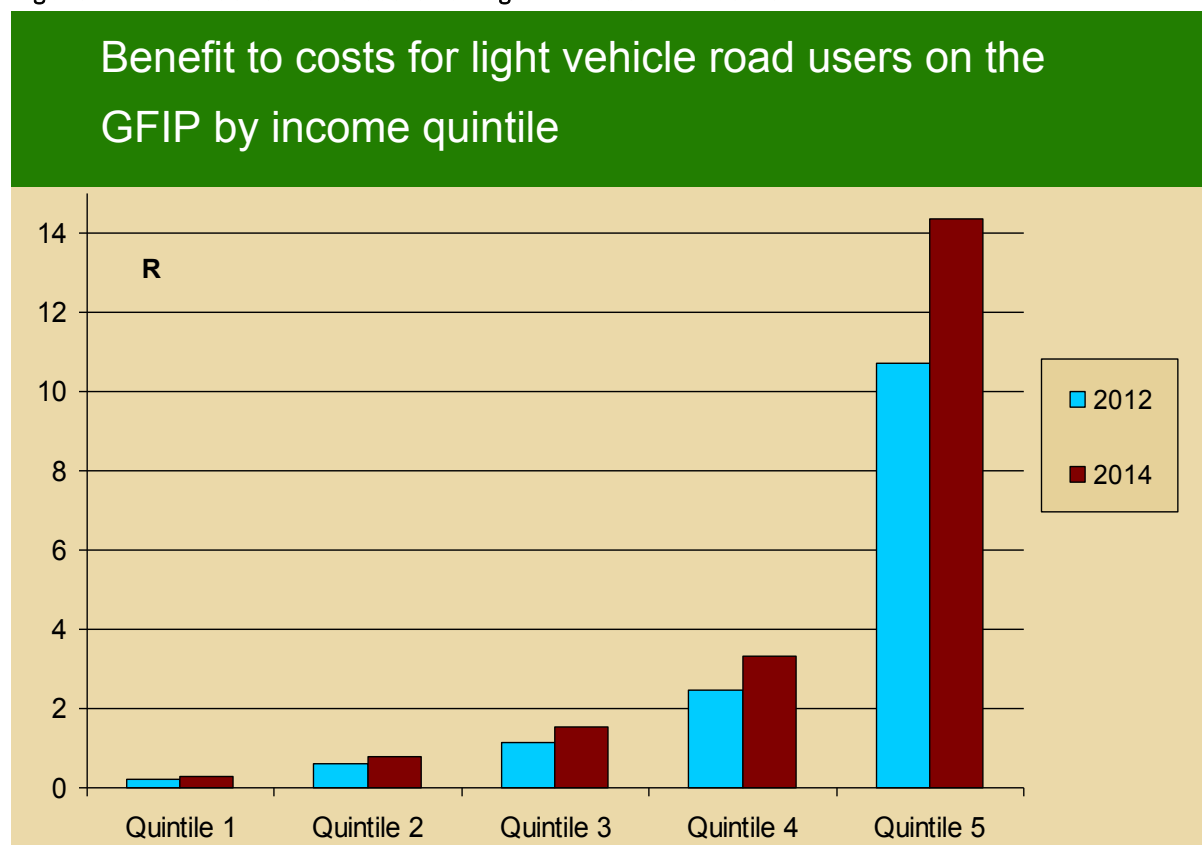
A group of Church Leaders (TEASA) appreciated the road infrastructure but were concerned about public mistrust of the process and civic disobedience and crisis of legitimacy of government. Their submission states that the “main roads in Gauteng now reserved for those who can afford to use them – no viable alternatives – this is grossly unfair”.

Opposition to Urban Tolling Alliance (OUTA) in appreciation of the infrastructure asserts that GFIP was necessary. “We do not have any fundamental problem with the rationale for ‘User Pay’ Principle. The question is a matter of which of the available user-pay options are in the best interest of society.”

South African Transport and Allied Workers Union (SATAWU) also appreciated the road network but emphasized that “the roads should be accessible to all and congestion cannot be used to exclude workers and restrict use of roads to the rich. E-tolls are a financial burden on the working class and this is exacerbated by other economic pressures which disproportionately affect the poor”.

Figure 6.2 below (Botha 2014) highlights the main GFIP/e-toll participants and the relationship of benefits to costs. Botha points to the primary benefit of funding GFIP via user charges, i.e., allowing SANRAL to secure an international credit rating and to raise loans to engage in private-public partnerships.

Figure 6.2 GFIP benefits to costs for light vehicle road users



The free accessibility of pre- GFIP network before tolling and the view of tolling as mainly an income generation tool (not mobility management instrument), led to hardening of attitudes against SANRAL. The fact that SANRAL is responsible for roads infrastructure and not public transport, nor some of the areas of concern, did not persuade those in consultations to change views. The greatest irritation was what some called “the imposition of tolls”. *Considering the inflationary effects of the introduction of toll fees in Gauteng* a report from SARS (2011) warned that the political cost of the highly visible imposition of the new toll system in Gauteng is clearly substantial. It highlighted that people in general, while enjoying the benefits of infrastructure improvement, understandably prefer having the costs thereof spread out over as large a section of society as possible; or to have the higher cost phased in over time. The report indicates that the scheme is not inflationary.

6.4.2 Inappropriate GFIP 1 Social Impact Strategy & Misaligned Pro-poor Programme

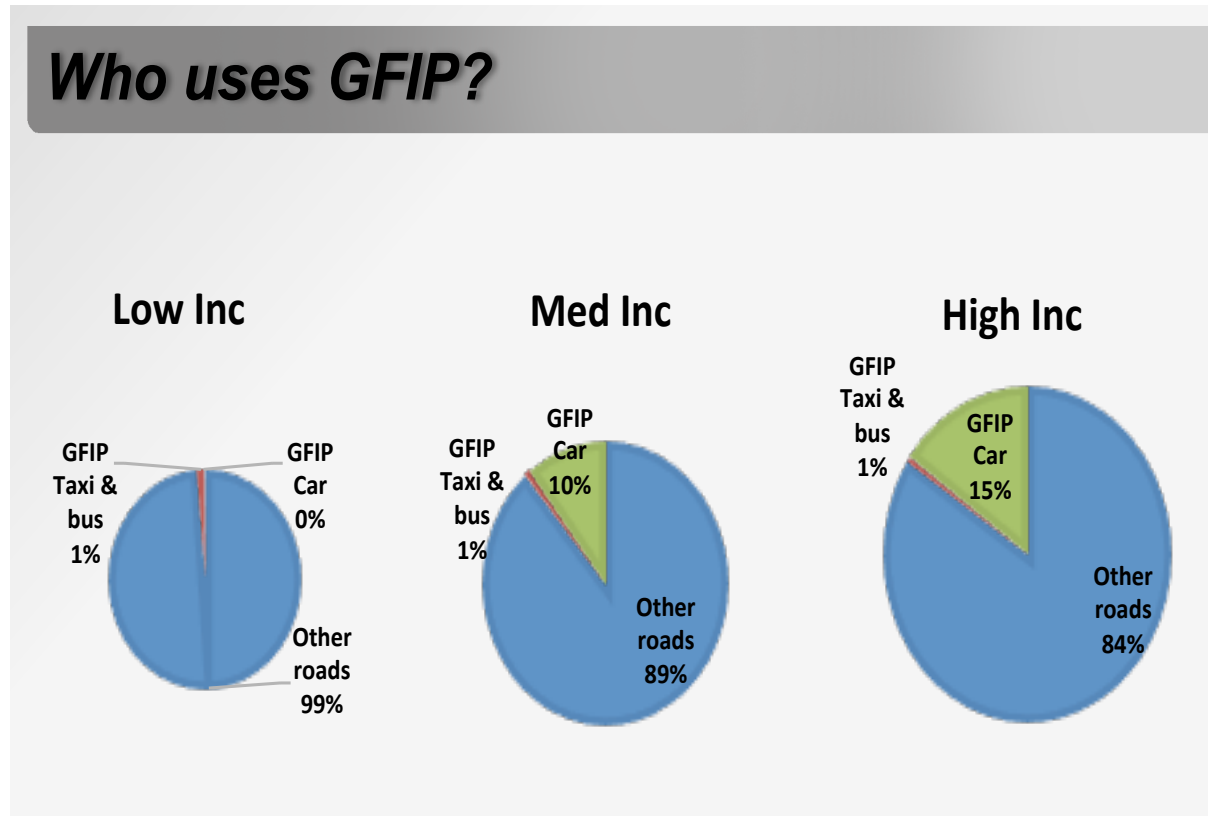
Transport Minister Peters' 2014 submission makes the point that taxis and buses are "exempted because government believes users of public transport are, in the main, people in the low income bracket. Therefore, government wishes to allay fears that the e-toll system will affect or has affected the poor". However, consultations with taxi and bus commuters, as well as taxi operators expressed different views. Consultations and submissions by township dwellers and labour unions and the majority of political parties referred to a system that perpetuates inequality creating a modern platform for the convenience of those who can afford to use cars. The view is that e-tolls to fund freeways disproportionately affects poorer households with lower disposable incomes.

The results raise serious questions about the intended pro-poor benefits and the social impact strategy that rests on the exemption of the public transport users, recognizing the inefficiency of that subsector. De Bruyn et al. (2014) point to a total of 1% GFIP market share for taxis and buses across all income groups. The NLTA (as acknowledged by the NDoT Acting DG when presenting to the Panel), stipulates that infrastructure must be procured in a way that prioritises public transport. The findings point to the fact that the introduction of GFIP has not significantly shifted the modal split as initially intended. The Gauteng transport system continues to be car dominated, with private taxis the backbone of what is termed public transport (85%). This is problematic as the taxis, while exempted, are not regulated and the direct benefits for the targeted poor or vulnerable commuter are thus not guaranteed. Of further concern is that SANRAL admits that of the 46 000 registered (captured by SANRAL system) taxis, only 10 percent use the system. The unresolved issues in the country's taxi strategy are bound to frustrate the attempts to integrate the targeted commuters. On the other hand, the taxi operators are themselves not happy with the system as some indicated that they continue to receive e-toll bills.

According to an assessment of "social impact of introducing a tolling scheme on a pre-existing urban network" (Mokonyama, 2012) the absence of "distinct origin-destination mobility corridors" across Gauteng is problematic and counterproductive. This is viewed to contribute to forcing a large number of road users into private cars.

Another example is the benefit of safety and security associated with GFIP use and the value of the gantry system. Whilst this may be true for middle and high income group car users, the experience for public transport users is different. The Bews, Uys and Senekal (2007) report identified this issue highlighting that "the public regards the taxi services as unregulated, unsafe, the bus service as being sub-standard and mis-targeted and the commuter rail services as dangerous and unreliable" (p20). The authors emphasise that these "are perceived by the public to be unreliable, unsafe, and even unavailable at times, or a combination of these apply" (2007:19) Figure 6.3 below by de Bruyn et al (2014) using transport modelling illustrates who the users are of GFIP. About 70% of GFIP users are high income drivers, and 28% are medium income.

Figure 6.3: Users of GFIP



The discrepancy between who uses GFIP and who pays remains a matter of serious concern as it can distort analysis for future plans. This refers to the current reality as presented by SANRAL with 94% of user-payers being within the higher quintile.

The GCRO 2014 *Mobility in the Gauteng City Region* highlights that the more dramatic shift has been out of the conventional publicly owned and managed public transport systems – bus and rail – and into the privately owned form of public transport offered by minibus taxis (see Table below). According to the study, the main reason for this shift has been the continued deterioration in the quality and reliability of metropolitan commuter rail and bus services. “While the Gautrain and BRT infrastructure investments aim to arrest this drift and provide more public transport choice, they will for the foreseeable future only address the needs of a limited social and demographic market, and will not do much to address the needs of poor and peripherally located households” (2014:7). This is a critical issue in long-term transport planning, as attractive rail and bus services should be the top priorities to draw more commuters to public transport.

Table 6.2 INDICATIVE MODAL SPLIT (GCRO 2014)

	WALK	RAIL	TAXI	BUS	PRIVATE
2003 National Household Travel Survey	11%	9%	31%	6%	42%
2013 National Household Travel Survey	13%	7%	30%	5%	44%

The NDoT presentation to the Panel acknowledged that the public transport is not yet at the level of a fully accessible and integrated public transport system, due to a historical lack of investment, which is being addressed. The NDoT modal split: comparison 2003 to 2013 (Gauteng Province only) is as follows:

- ▶ Train: 292 000 vs 339 000
- ▶ Bus: 192 000 vs 236 000
- ▶ Taxi: 1 328 000 vs 1 402 000

Although SANRAL implemented exemptions for the taxi industry and off peak travel for freight, there are vulnerable groups in society such as the pensioners, students and the physically disabled, whose quality of life has been adversely affected by e-tolls.

According to QASA, e-tolls has restricted social mobility and increased the costs of travel amongst their membership, subjecting them to further isolation as they rely on goodwill to travel to social activities and health facilities. The situation is further exacerbated by the fact that the minibus taxis and existing buses (outside of the City of Joburg’s Rea Vaya), are not designed for travel by the physically disabled, especially those in wheelchairs. SANRAL indicated that discussions with people with disability groups are ongoing.

The modal shift to public transport and efficiency thereof is not just a concern for the poor, vulnerable, and disabled, but a societal sustainability issue. At the round-table by transport experts, the right of the car user to travel everywhere without implications on society was questioned, considering that a car-based future is unsustainable for the future quality of life.

6.4.3 Concerns about Public Consultations with Poor Consideration of Interested and Affected Parties

Whilst evidence of consultation by particularly NDoT and SANRAL exists with respect to meeting the legal requirements, such consultation seems not to have been sufficient with respect to driving the success of the strategy. The SALGA (2013) report refers to this issue. It indicates that public engagement was relatively low key. “For example, only 82 representations were received for the toll declaration process in 2007 (NDoT, 2012). Public comments received from these engagements questioned the necessity of tolling, impact on the economy, impact on secondary roads due to traffic diversions, and general sentiments that tolling of existing urban roads is unacceptable”.

This weakness in social impact strategy may be viewed as having contributed significantly to the discontent and negative sentiments towards e-tolls. Submissions by various civic and business formations, and municipalities, complained about the nature, manner, reach and content of consultation. Reference was made to the arrogance of officials, with township residents complaining about consultation not reaching their areas. The Bews, Uys and Senekal 2007 report also indicates that “no extensive public engagement was undertaken at this stage. This is due to the urgency of the situation and resultant time constraints” (p20). Reference is made to discussions with targeted organizations like Automobile Association of South Africa. In terms of interested and affected parties the report made reference to the dominant players in the relevant Gauteng Province modes of travel (53% white), 18.8% on foot, 11.2% minibus/taxi, 10.1% by car as driver (68.8% white), 6.7% by car as a passenger. The car drivers were residing in all three metros, with the highest proportion of drivers residing in Tshwane (using Stats SA 2001 Census). The demographic analysis during the design phase included the economically active and unemployed, but the information was not effectively used for inclusive participation. This included 25,5% of the Gauteng population between 15-65 years who were economically active according to StatsSA Labour Force Survey (March 2007) and with unemployment at 23.2%. Reaching a sample of the discouraged work seekers at (10.7% in 2007) was important as transport is a catalyst for job seekers. Therefore the views of the workers, middle to high income groupings for collaborative determination of impact and strategies for mitigation was important in the design phase.

Citizen participation is important at all levels in the development of the social impact plan and scoping of socio-economic opportunities linked to the project. The gap in terms of e-toll benefits became more visible during public consultations, which were not known to the targeted groupings (e.g. school transport, tax benefits, etc.). The affected intergovernmental relations between the three spheres of government is another indicator of problems with stakeholder engagement. The resultant view is that the road infrastructure interests dominated, together with the leading agency (SANRAL) compromising the integrated transport objectives. The worrying aspect of the consultation approach is the negative perception that lingers. Naidoo (2013) presents an interesting dimension, which looks at the e-toll as an e-government project. The paper analyses “the collective moral disengagement mechanisms used by leaders and their subordinates to justify a controversial e-toll project in South Africa. The method used was deductive content analysis, with legal documents and public records coded for modes of moral disengagement”.

6.4.4 Poor Alignment and Sequencing to Enhance Shift to Alternative Modes of transport:

The SIA by Bews, Uys and Senekal (2007) rightfully predicted that “it will take a concerted effort from a range of authorities over an extended period of time to switch the attitude of Gauteng motorists away from the perceived convenience of private car towards public transport” (p20). The report also predicted an increase in use of cars in comparison with industrialized countries citing that the shift from private to public cars in South Africa will be more complex. They also referred to van der Merwe in Benjamin (2006) who argues that the South African public continues to choose the private car as a convenient form of transport, notwithstanding congestion. The advantages of safety features and reduced pollution emissions in modern cars was also mentioned.

The report further highlights that the High Occupancy Vehicle (HOV) alternative does not receive a high degree of support. The alignment extends to the poor collaboration between government authorities and commuters in heeding the call for lift clubs. However, attempts by SANRAL to incentivise logistics operators in non-peak hours received a positive response.

The problems in intergovernmental relations demonstrated thus far cannot help address this problem. The areas needing urgent attention are buses and taxis, as well as alignment with trains with possibilities of single ticketing. The uncoordinated management and operation of buses is undermining the investment in modern buses by both metros and Gautrain. The misalignment of the BRT, Gautrain and private buses reduces the potential gains in the few buses that can be used efficiently. Furthermore, the resolution of the subsidy issue and shift from the current month-to-month contractual arrangements for private buses is another obstacle. When the NDoT Acting DG was asked by the Panel about this issue he admitted that it is still a challenge. (He referred to the Public transport subsidies with total Public Transport Operational Grant (PTOG) country allocation is R1. 819, 854.000 out of R4. 832,709.000). He however indicated that there is improvement in coordination between transport authorities, particularly links with Metrorail (PRASA) and their efforts to fast track rail improvements. Another contributing factor in re-alignment is within taxi associations and the resolution of taxi recapitalisation with the government. This requires participation across all spheres of government. The problems of registration (provincial competency) and concern by the taxis that e-toll administration (SANRAL) is used as a proxy for registration is conflating the issue further. The recent (November 2014) taxi e-toll strike highlighted such issues.

6.4.5 Social Inclusion, Equity and Poverty Reduction Considerations

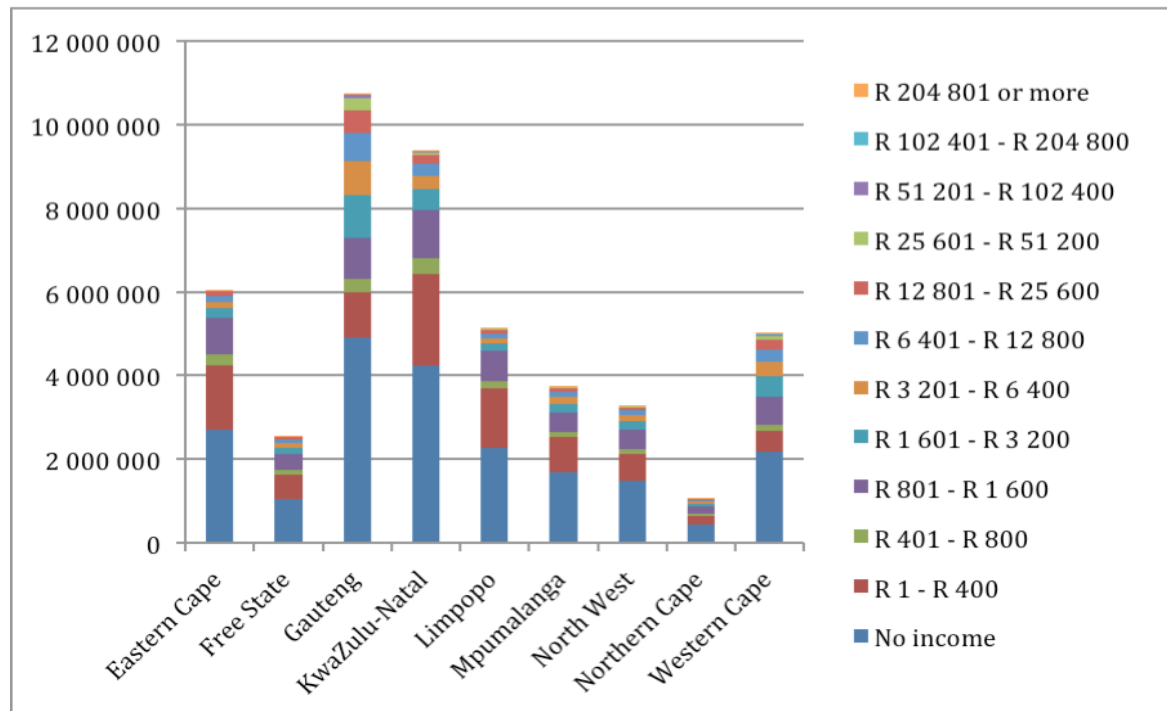
a) GFIP, Spatial inequity and economic concentration

Spatial patterns for the design of GFIP tolled roads embed racial land-use patterns and tend to embed an apartheid spatial-demographic arrangement (GCRO, 2014; Ramoroka, 2014). The National Development Plan (NDP 2012) and the Integrated Urban Development Framework Discussion Document (IUDF 2013) point us to the spatial inequities and strengthening of the urban inner core with a declining outer core. (Inner Core consists of the large metropolitan agglomerations and secondary cities in this case the Gauteng City-Region. Outer Core consists of large towns with major service functions, namely peri-urban agglomerations around the inner core). The role of an integrated transport system in redressing these imbalances is critical. While Gauteng with its three metros remains the economic hub of South Africa and the continent, the distributional impact of this remains a problem. If not corrected, the perpetuation of the status quo could result in the reversal of the gains made in the twenty years of democracy.

E-toll Panel consultations pointed to the reality that people from low-income households and communities, who use private cars on a daily basis, travel further and longer on the GFIP tolled roads at greater cost for a single trip to the workplace, than those who live in the inner core of the cities of Ekurhuleni, Joburg and Tshwane. While these GFIP roads do represent an improvement in the quality of the roads, this may not translate into a quantifiable or significantly improved social impact in the workplace.

Johannesburg is estimated to produce over R300 billion worth of output in 2013, nearly double the value it produced in 1996. Johannesburg’s economy is 50% bigger than Cape Town’s, which is followed fairly closely behind by eThekweni and Tshwane. Ekurhuleni is substantially smaller (about 40% of the size of Johannesburg) and Nelson Mandela Bay is about 20% of the size of Johannesburg. The five biggest metros dominate the economic landscape of the country. However income inequalities persist as figure 6.4 below indicates.

Figure 6.4: Individual monthly income per province – Census 2011

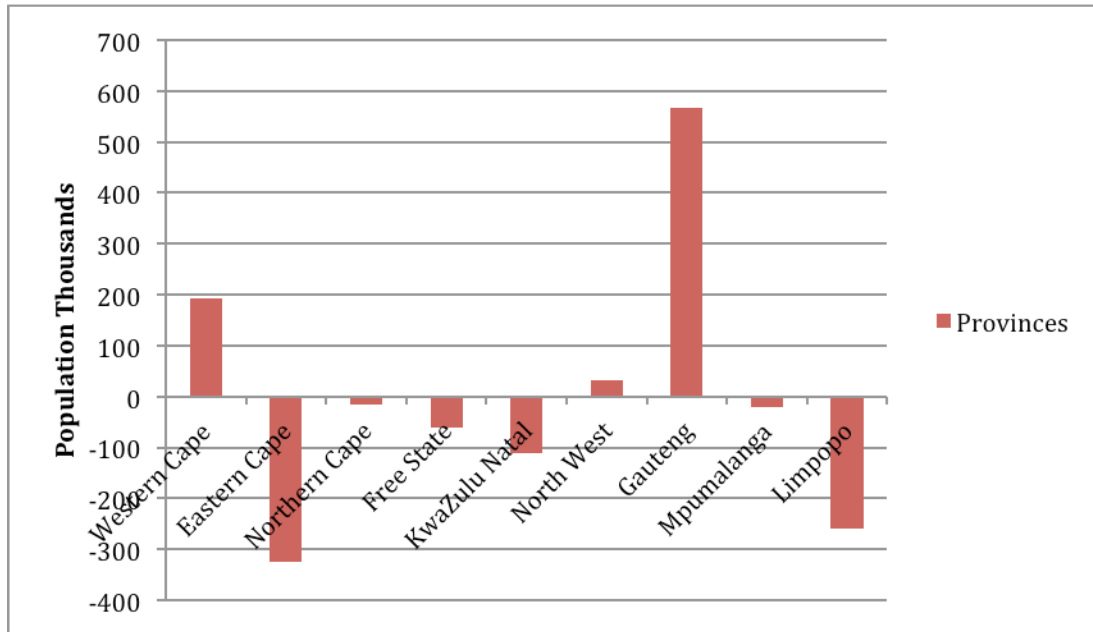


b) Spatial Inequity and Migration Considerations

The NPC Diagnostic (2011) alerts us to the fact that the poorest live either in former homelands or in cities far from where the jobs are and that there is not coordinated delivery of household infrastructure between provinces, municipalities and national government.

The impact of GFIP/e-toll in reducing spatial inequity and enhancing social inclusion is questionable at this stage recognizing findings discussed above. Presentations by civic formations, labour unions and political parties during consultations underscored this gap. Of interest was reference to migration and family relations recognizing the increasing net migration to the province as highlighted in figure 6.5 below. One man in Soweto illustrated the cost of visiting family in Limpopo counting the e-tolls he goes through in Gauteng and on his way to Limpopo. This, he said contributed to the shift from visiting family every month to once a year. Recent studies show that a third of Johannesburg and Tshwane population growth is due to migration (IUDF, 2013).

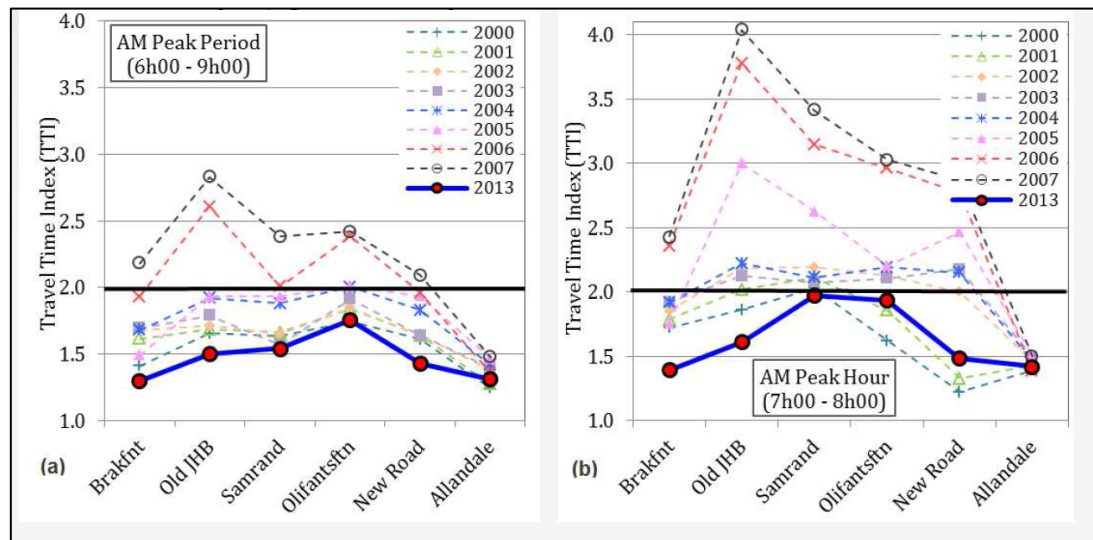
Figure 6.5 : Differentials in net migration by province – Census 2011



6.4.6 Congestion effects

Addressing congestion has been the main focus of the GFIP SIA, however the intended social benefits have not been realized as the road infrastructure is not matched by serious efforts towards integrating the transport system. Assessment of changes in traffic conditions from before (2007) to after implementation (2013) of the upgrades is provided by de Bruyn et.al. (2014) in figure 6.6 below.

Figure 6.6: Travel time index 2000 - 2013



There was value and appreciation of the upgrade presented, however the increase of congestion at the time of consultation (also confirmed by the modelling) raised concerns. Of interest is the impact for 94% high quintile e-toll participants, and the logistics industry participants.

In general, the journey experience was perceived as marginally improved, though some comments during the public consultations indicated that the journey experience had improved nominally for a short period in terms of lower congestion, but had subsequently reverted to earlier levels of congestion. This perception is confirmed by evidence reported by du Plooy (2014) with respect to a particular case, the road section from Brakfontein to Buccleuch:

The results show that that the delay per hour driven in 2013 is less than half of what it was in 2007, whilst all other individual measures have also improved significantly. However, absolute measures, which serve as indication of “total wasted time”, have increased due to increased traffic volumes. Travel is still classified as congested for 100% of the peak time period for this road section.

According to analysis of Quality of Life survey data reported in the 2014 Gauteng-City Region mobility report (GCRO, 2014, p.45), the impact on social activities reflected that pensioners and drivers of private cars chose not to undertake regular journeys in circumstances where such a journey to visit close family required driving on the GFIP tolled road.

6.4.7 Technocratic Approach to Impact Analysis

The diversity of South African society (from a race, class, gender, spatial perspective) with a wide gap between the rich and poor requires more than a technocratic approach to impact analysis from planning, design to implementation. A quantitative technocratic approach that relies mainly on economic and transport modelling, as was the case with GFIP, is bound to miss the people-centred dynamics. The criticism is not only about the attention paid to the social impact process, but also the poor consideration of 2007 SIA recommendations, the result being the battle with six courts of law and 17 judges that followed. This delayed implementation with postponement in March 2011 after various stakeholders raised concerns. This was followed by different structures established with new consultations and revision of offerings. The structures included the Steering Committee, co-chaired by the NDoT and the Gauteng Province, which proposed a comprehensive discount approach including zero-rating of public transport. Tariffs were suspended with a task team appointed to review the fee structure. This led to the August 2011 Cabinet announcement on reduced tariffs and exemption for public transport vehicles like taxis and buses. This was not enough.

In February 2012, having considered further representations from interested parties and the public, government decided to make an extra-ordinary allocation to SANRAL of R5,75 billion from the national budget to reduce the cost of transport to the consumer. This led to a further reduction of tariffs to 30 cents per kilometre for light motor vehicles, including the monthly caps for all classes of vehicles. The implementation date was consequently set for 30 April 2012. It is common knowledge that the then anticipated implementation date did not materialize due to an urgent interdict brought against SANRAL.

On 3 May 2012, Cabinet appointed an Inter-Ministerial Committee chaired by former Deputy President Kgalema Motlanthe. On 27 June 2014 during his State of the Province Address Premier David Makhura announced his intention to appoint an advisory e-toll Panel to conduct a socio-economic assessment.

In Conclusion

The approach raises questions as to whether the GFIP 1 drivers (particularly NDoT and SANRAL) are convinced that e-toll introduction with targeted exemptions would be sustainable on the backbone of car users? Was this information clouded by the focus on paying the debt? Was the “do nothing” versus the tolling of N routes in Gauteng the right approach recognizing these complexities? Is this sustainable? Have the social costs of pushing forward despite raised concerns been factored?

For GFIP to be successful with a reliable and safe public transport system there has to be a joint effort amongst all organs of society to catalyse change in societal behaviour in terms of a balance between private and public transport. Recommendations below are designed to assist.

6.5 Recommendations

The NDP states that moving towards 2030, South Africa’s transport system will support economic development, job creation and growth, providing equitable access to opportunities and services for all and reducing poverty.

There is no doubt that GFIP is a necessary state intervention for local imperatives and global competitiveness. It is thus also important to place the GFIP debate and recommendations within a national context. CSIR (2013) indicates that South Africa has the 10th largest road network in the world at almost 747 000km. The national road network of 19 704km, under the jurisdiction of SANRAL, is entirely paved. In contrast to the national road network, only 25% of the provincial road network (which totals approximately 185 000km) is paved. Of the remaining roads in SA, approximately 400 000km are managed by metros/municipalities and approximately 140 000km of gravel roads aren’t under the jurisdiction of any authority. Presenting to the Panel on 4 Nov 2014 Mr. Vilana Acting DG asserted that the funding policy for road infrastructure cannot be reduced to finding a solution to a single project.

“When considering the current funding model of the GFIP as well as alternatives, we should consider the holistic transport funding policy and requirements of all road infrastructure in the country”. Whilst this is true. It is important to acknowledge the significance of GFIP as a local and global lesson at difference levels. This requires emphasis on design principles and approaches that place GFIP within an integrated transport system paradigm, with a transformative agenda that promotes:

- (1) **Social inclusion:** The particular nature of the tolling of GFIP roads appears to have reduced opportunities for social inclusion, locking people into historical spatial arrangements defined by race and class. A major planning focus going forward should be to give attention to **promoting and sustaining social inclusion** in the future GFIP design and forms of funding, so as not to arrive at unintended consequences with respect to social inclusion.

- (2) **Equity:** Similarly, social equity factors should form a key consideration in the continued design of GFIP and the applicable funding mix, so as to contribute to an improvement in social equity. Innovation that has social and economic characteristics requires regular review and adaptation to local conditions. Thus, **social equity factors should form a key component to be integrated into the long-term design and financial re- visioning** for GFIP 1, and for GFIP 2 and 3, noting in particular the challenges highlighted by car owners, road users and the broader citizenry in this initial round of the GFIP innovation.
- (3) **Sustainability:** It would appear that, from a social perspective, sustainability of a complex, long-term infrastructure development programme such as GFIP requires buy-in from car owners, road users and the broader community. Social sustainability is not just about getting car owners and road users to pay. It is about getting the provincial citizenry at large to adopt GFIP as its own, rather than as an imposition by government. To this end, a programme of **respectful and substantive communication for social sustainability** should be conducted, beyond the narrow confines of “how to pay your e-toll”.
- (4) **Efficiency:** Innumerable instances of incorrect data with respect to cars incorrectly linked to persons, with respect to whether vehicles were in the province on the date of the billing or not, and other incorrect data has been presented. If e tolling is to continue in any form as one element in a broader funding mix, it will be **essential that the data collected by the e-readers at the gantries be analysed to be valid and reliable data**. Furthermore, efficiency must be visible with respect to reduction of paper and postage as inefficient and costly forms of billing. Forms of funding other than e-tolls, such as fuel levy or license fee, may have an advantage in being more efficient.
- (5) **Administrative justice:** Administrative justice requires that affected and interested parties should have the right to be heard. There are a number of issues that arise in this respect. If e-tolling is to continue in any form as one element in a broader funding mix, then a key requirement is the **establishment of a well-defined dispute resolution mechanism and process**, where car owners and other road users who pay e-tolls can have disputed bills rapidly reviewed and corrected.
- (6) **Good governance, intergovernmental relations and institutional structures:** The practice of intergovernmental relations should be significantly enhanced by negotiating and adopting **a structured and well-governed model of engagement incorporating all three tiers of government in Gauteng and SALGA**, as a long-term inter-governmental governing body for oversight of GFIP, its funding requirements and its social impact. Formal social impact studies conducted at regular intervals should be a requirement for good governance, as well as providing insight and guidance for the governing institutions as the infrastructure programme progresses.

Redress-oriented Recommendations include:

- a) Revise the e-toll funding model to accommodate serious gaps and negative social impact. The ITMP 25 states, "levying of tolls should be part of a holistic approach to road financing and has a role to play in a province such as Gauteng." This consideration as part of a hybrid model has to be considered.
- b) GFIP Implementation Strategy Review with a Comprehensive Stakeholder Engagement for developing a commuter-centric integrated transport system with cost and benefit sharing models
- c) Legislative frameworks review to enhance cooperative governance for alignment and innovative financing
- d) Development of a Comprehensive Social Impact Plan with an objective beyond congestion reduction covering spatial dimensions, gender perspectives, and issues of disability
- e) Formulate and/or Consolidate Strategy and Funding Models and Plans for Integrated and Transformative Gauteng Public Transport. Incorporate Metro BRT (A Re Yeng, Tshwane Metro, Rea Vaya, City of Johannesburg, PRASA, Gautrain, etc.).
- f) Fast-track implementation of Gautrain Integrated Transport Authority
- g) Identify alternatives and mitigating measures and revise government response to social consequences accordingly
- h) Develop a social impact management and monitoring of social impact

The introduction of complex systems, such as advanced transport systems, requires effective monitoring and evaluation from commencement of the programme, in order to identify the practicability and workability of a particular policy or programme, thereby to inform minor or major adjustments as the system unfolds and matures. Regular or periodic monitoring and evaluation of social impact is as important as monitoring and evaluation of economic, political, legal or environmental impact. A few of the key social impact issues that emerged in the course of the consultations and the deliberations of the e-toll Panel were the need for heightened transparency and public accountability of governmental institutions; the requirement for clear, effective and respectful public communications; as well as the need for fair treatment of citizens by public office-bearers. The inference is drawn that social monitoring and evaluation should incorporate the basic foundational aspects of understanding the social impact of a particular complex system such as GFIP and e-tolls on road users who are required to pay, but should also incorporate the social impact of the governance of the particular system.

7 Environmental impact

7.1 Introduction

The impact on the environment has its founding principles in ensuring co-existence in the biosphere and the impact of growth, development and urbanisation minimise the impact on the natural environment in as far as possible. The environment in this context comprises of the community and its ecosystem and looks at the environment as a home within which the transport system exists. The founding documents that provide the governing principles for the environmental impact include:

- a) The Constitution (No 108 of 1996)
- b) The National Water Act (No 36 of 1998)
- c) The Environmental Conservation Act (No. 73 of 1989)
- d) The National Environmental Management Act (No. 107 of 1998)
- e) National Heritage Resources Act (Act 25 of 1998)
- f) National Climate Change Response Policy (2011)

In relating and understanding the environmental impact of this study will be explored through the National Environmental Management Act (NEMA, 1998) principles outlined below:

- a) Environmental principles guide all stakeholders in the manner in which they manage the environment. Some of the principles such as holistic evaluation, internalisation of externalities, the precautionary principle, sustainable development, sense of place, and processes such as the considering of alternatives
- b) Environmental management must place people and their needs at the forefront, and serve their physical, psychological, developmental, cultural and social interests equitably.
- c) Development must be socially, environmentally and economically sustainable

7.2 Implications for Transport Projects

The objectives of the environmental assurance process are to assure that all services and designs incorporate best practicable environmental options in accordance with the National Environmental Management Act (NEMA) principles and National Climate Change Policy (2011), which include:

- a) Limiting environmental liabilities as a result of the project which include; disturbance of ecosystems , pollution and degradation of the environment and disturbance of landscapes and sites of the nation's cultural heritage
- b) Enhance environmental opportunities on transport projects- Production of waste avoided, minimized, re-used, recycled, or disposed of in a responsible manner
- c) Avoid environmental impacts or, where they cannot be avoided, the environmental impacts are minimised, mitigated and / or remedied;
- d) The development, use and exploitation of renewable resources and the ecosystems of which they are part must not exceed the level beyond which their integrity is jeopardized

- e) Transport as a sector in terms of infrastructure and services needs to be made socially, environmentally and economically sustainable; whilst upholding people’s rights as outlined by the Constitution
- f) Ensure the life cycle approach to the project is taken into account during design; and
- g) As an initiative to reduce the impact of transport on climate change, there needs to; create modal shift, reduce demand and promote the use of alternative energy vehicles

SANRAL’s Initiatives

According to SANRAL (2013) SANRAL’s approach to managing the environmental impacts of road construction and operation activities is based on the sustainable development framework, as well as the ISO 140011 international environmental management standard. SANRAL’s environmental policy addresses the environmental impacts and opportunities of the business and provides a framework for the setting and reviewing of environmental objectives and targets.

To give effect to the policy, SANRAL undertakes project-specific environmental impact assessments (EIAs) in accordance with relevant legislative requirements and continues to improve on existing and develops new internal guidelines for environmental management of its activities. A generic construction Environmental Management Plan (EMP) is one such guideline, which is used for projects that do not require authorisation and would thus not have specific EMPs.

In terms of the NEMA Act, all relevant ROD were acquired for the various projects that were involved in the GFIP phase I. Evidence of the ROD are provided as part of the documents received from SANRAL.

Table 7.1: Record of EIA ROD’s

Project Component	ROD date
N# Dward in die Weg to Geldenhuys Interchnage	19/02/2008
N1 14thAve to Buccleuch	23/11/2007
N1 Brakfontein to R21	7/11/2007
N1 Buccleuch to Brakfontein	23/11/2007
N1 Misgund to 14 th Ave	23/11/2007
N12 Uncle Charlies to Elands	18/2/2008

There are further initiatives, outlined below, that SANRAL in its 2013 and 2014 annual report is undertaking that are relevant to some of the impacts of the project:

- a) Management of Road Reserves – Fynbos Focus on the ecosystem that exists in the road reserves;
- b) Understanding and Reducing the Footprint of our Roads – recycling of existing asphalt on road surfaces, and the use of renewable energy forms in operating freeway management systems (FMS);
- c) Greenroads project – developing a tool used for setting sustainability priorities and values in roadway design and construction; and

- d) Road Noise – SANRAL (2013) undertook an investigation into seal types that could potentially be used to reduce noise. Study aimed at develop a guideline for selecting the type of seal that should be used in built up areas to reduce the amount of noise generated from roads. Furthermore initiatives that reduce the noise created by friction on the wet surfaces and the noise during construction are closely monitored and reported in the sustainability report.

7.3 Safe and healthy living environment for all

This section deals with the impact of the project on the environment to include the community and its ecosystems. The section covers evidence and the impact of air quality, noise pollutions and greenhouse gas emissions as a result of this project. Literature pertaining to these components and the environmental modelling results that attempts to compare, if any, the impact on the environment as a result of these projects.

7.3.1 Evidence and analysis

Some of the envisaged impacts that will be investigated as part of this process include:

- a) The health benefits related to the reduction in pollution on the highways as a result of reduced congestion and idling time. (noise & air)
- b) To reduce the carbon-footprint of transport

7.3.1.1 Air Quality

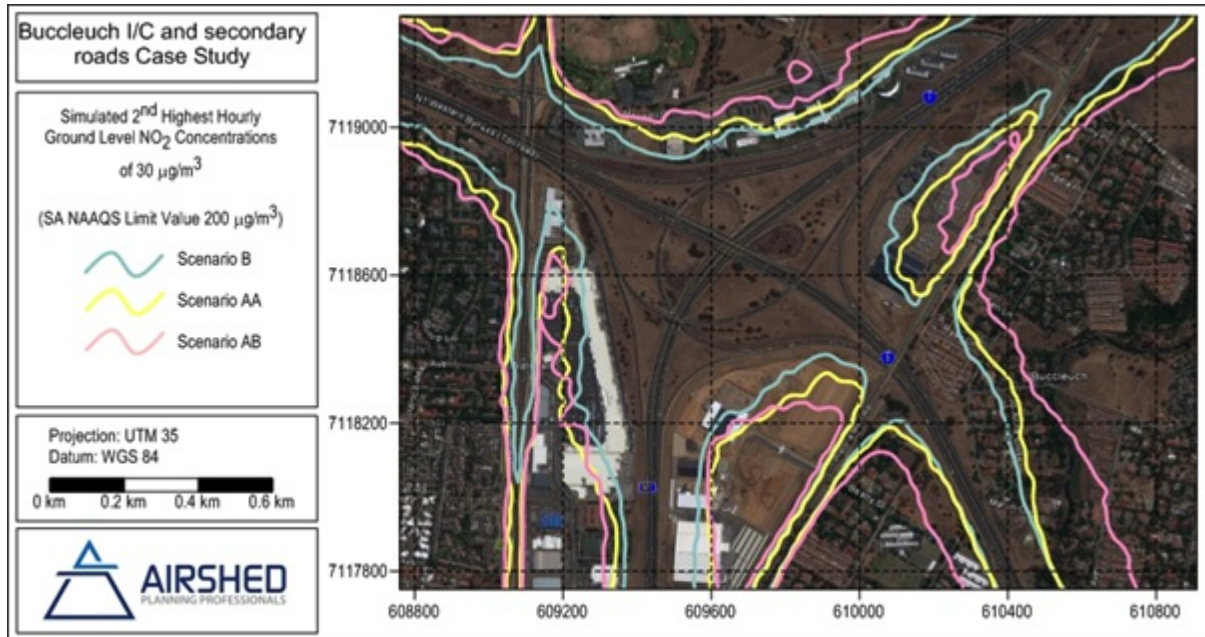
The changes in Air Quality as a result of traffic movement and the road toll project is an important aspect of analysing the impact on the environment as a result of the congestions that in turn creates air pollutions due to the tail pipe emissions during the idling time. It is anticipated that the reduced congestion of the GFIP highway would have an impact on air quality.

The methodology applied in the study by Airshed (2014), involves the inclusion of an atmospheric dispersion model (CALINE4 dispersion model, developed by the California Department of Transportation (Caltrans)) to assess the air concentrations for key pollutants (e.g. nitrogen dioxide, sulphur dioxide and diesel particulate matter) is calculated for each of the pre- and post-construction scenarios. Thereafter the different concentrations are superimposed on base maps for comparison and discussion

The entire Buccleuch Interchange was simulated together with the R101 and R55 road sections located between Buccleuch Interchange and Midrand.

The contours represent a concentration of 30 $\mu\text{g}/\text{m}^3$, which is well below the National Ambient Air Quality Standard (NAAQS) limit for NO₂ of 200 $\mu\text{g}/\text{m}^3$. The ground level concentrations show an increase in the impacted area from Scenario B(Pre GFIP) to Scenario AA to Scenario AB, where these increases are as a result of increased traffic, both on the freeway and on the secondary roads.

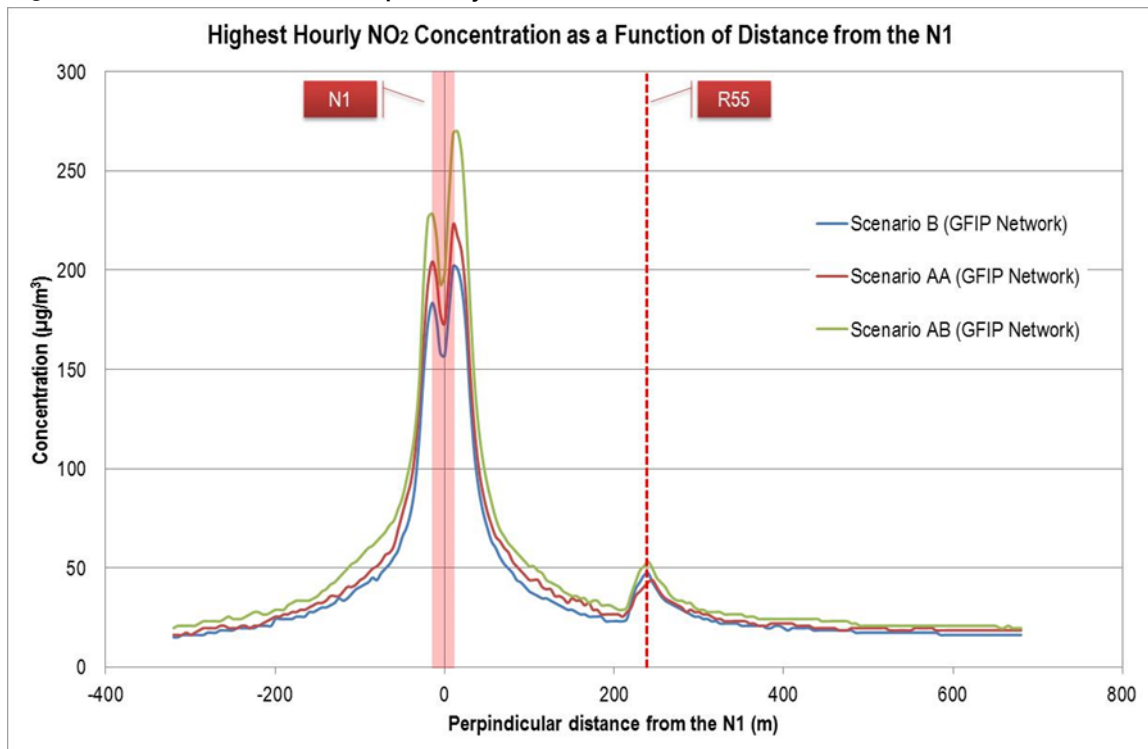
Figure 7.1: Simulated hourly NO₂ concentrations from the Buccleuch Interchange and the R101 and R55 road sections for the three GFIP Scenarios



All pollutants (CO, PM, VOCs and SO₂) were simulated but none resulted in exceedances of the NAAQSs and the impact areas are similar to that of NO₂

In addition to this spatial representation, the predicted concentrations along the west-east transects at the N1, just north of the Buccleuch Intersection, and the R55 were also prepared.

Figure 7.2: NO₂ concentration in proximity to the N1



Simulated hourly NO₂ concentrations from the Buccleuch Interchange and the R55 sections for the three GFIP Scenarios

The figure shows that the highest NO₂ concentrations are on the N1 freeway, reducing significantly with distance. On and directly next to the freeway, the highest hourly concentrations exceed the NAAQS of 200 µg/m³ during Scenario AA and Scenario AB. These concentrations deplete rapidly with distance from the freeway to below 50 µg/m³, 50 m from the N1. A similar trend – where the concentrations deplete rapidly with distance from the road – is depicted for the R55, although for much lower concentrations of maximum 50 µg/m³.

Similar graphs are shown for CO and PM in the Airshed (2014) report to show that the highest concentrations are found on the highway and road, with concentrations decreasing exponentially away from the road. Unlike for NO₂, the highest concentration of CO is CO concentrations are below the NAAQS of 30 000 µg/m.

The general trend in terms of air quality, show that the higher traffic volumes on the N1 highway post GFIP account for the higher number of pollutants with both the contour mapping and simulated hourly concentrations being highest in the scenario post e-toll implementation and the lowest being the scenario prior to GFIP. Furthermore it is only the hourly NO₂ concentration on the N1 highway that is higher than the NAAQS of 200 µg/m³, otherwise none of the other pollutants and those on the R55 exceed the NAAQS requirements.

7.3.1.2 Vehicle emissions

Vehicle emissions present a good measure air pollution which would have a negative effect on public health and the natural environment. Emissions study on the GFIP highway in particular would be directly linked to the types and number of cars using the highway. An emissions inventory is a good indication of the impact of the GFIP project on the environment to ascertain the impacts of the road network expansion project at various phases.

Environmental modelling was carried out by Airshed¹⁶ (2014) using emission rate calculations which are based on emission factors from tail pipes-(Copert IV) specified per vehicle type and fuel use urban passenger transport is environmentally unsustainable due to increases in vehicle numbers. The methodology covers regulated exhaust emissions of carbon monoxide, oxides of nitrogen, sulphur dioxide, particulate matter and volatile organic compounds (VOC), in addition to a number of other unregulated compounds. The impact assessment methodology that was used by Airshed (2014) entails the analysis of changes in vehicle exhaust emissions pre- and post-construction of the GFIP as a result of traffic movement. The emissions modelling also analysed the diversion impact between e-toll highways and adjacent routes. The three scenarios that were analysed for vehicle emissions include the following:

- a) Scenario B: Without GFIP upgrade
- b) Scenario AA: GFIP upgrade without Toll
- c) Scenario AB: GFIP upgrade with Toll

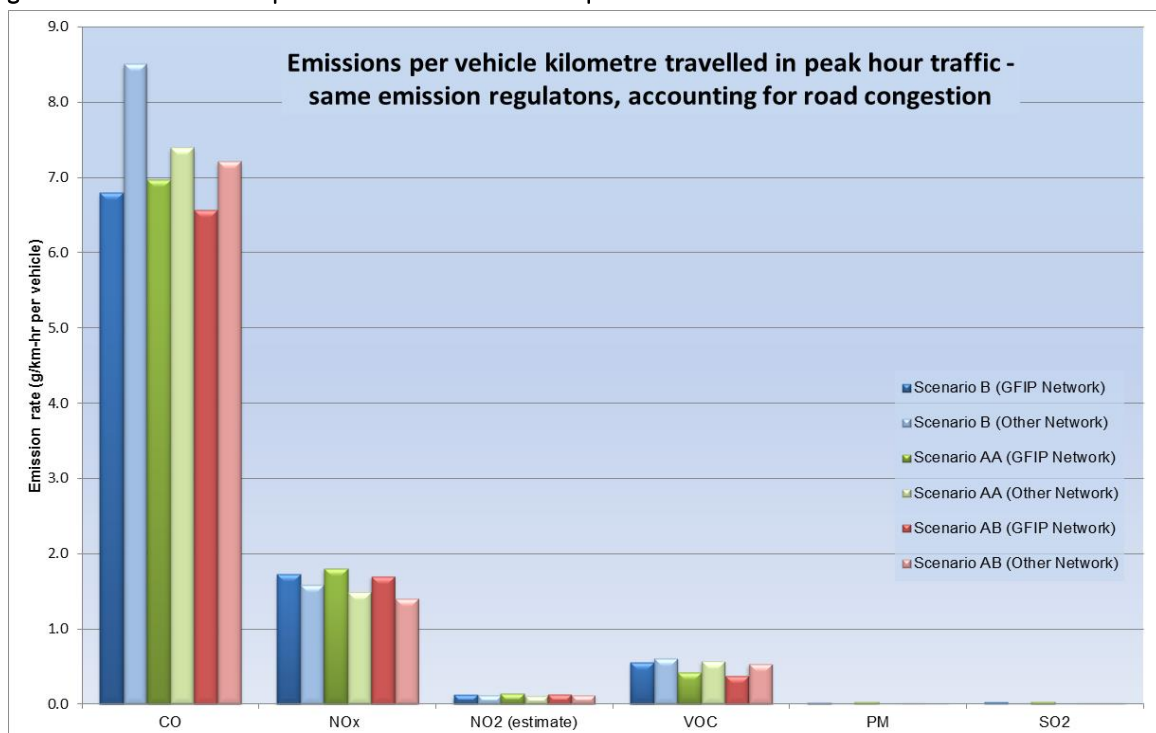
¹⁶ The full report on environmental modelling is found in Annexure of the report and can be referred to for assumptions, methodology and references used in the modelling.

The information used for the emission estimation includes the peak hour vehicle kilometres travelled, and the vehicle time (hours) for average peak hour traffic for vehicles whose vehicle emissions technology for more fuel efficiency vehicle (parc) is varied.

The figure shows the average emission rate per vehicle (g/km-hr per vehicle) for varying parc (as per Euro regulations) during congestion.

- a) congestion and idling time on the other network is generally higher for Carbon monoxides (CO) and volatile organic compounds (VOC) than the congestion of the GFIP network itself during all the three scenarios as more vehicle kilometres are travelled on the other network (86% (other) versus 14% (GFIP)).
- b) Nitrogen dioxide (NO₂) and Nitrous Oxide (NO_x) is higher on the GFIP network as a result of the higher speeds at which the engines are operating due to higher travel speeds. The proportion of NO₂ and NO_x contributed by diesel vehicles is also substantially higher than petrol Vehicles.
- c) On analysing the trend for the GFIP network between the scenarios, the introduction of e-tolls reduced the vehicle-kilometres using the e-toll highway in scenario AB whilst during scenario AA the congestion was substantially higher as more vehicle-kilometres used the network during peak hour. The report further confirms that the decreased vehicle kilometres were attributed to traffic diversion to the Gautrain.

Figure 7.3: Emissions per vehicle kilometre in peak hour traffic

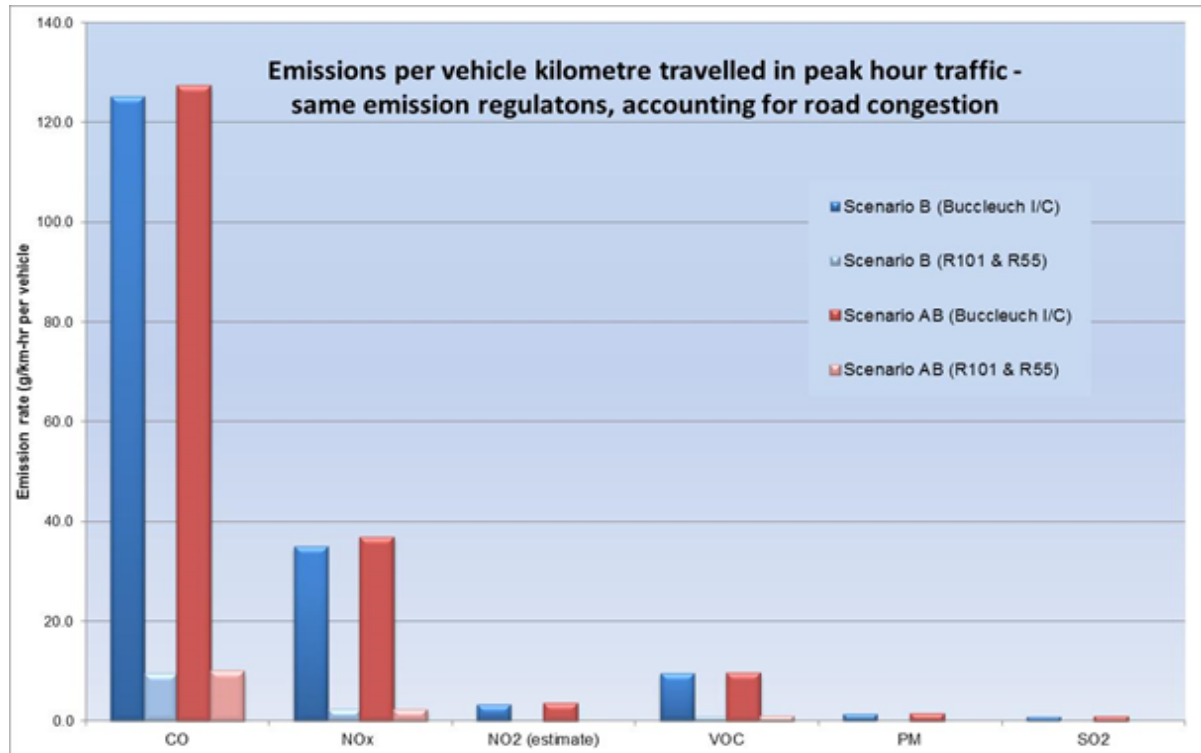


Source: Airshed, 2014

Alternative network

Vehicle emission rates during peak traffic hour for Buccleuch Interchange (GFIP network) and the R101 and R55 (alternative route network) as depicted in the figure below for Scenario B (before GFIP) and Scenario AB (Post GFIP I tolled)

Figure 7.4: Emissions in peak hour traffic for Buccleuch interchange vs alternative routes



Source: Airshed, 2014

The results show that the emissions per vehicle increase slightly between pre-GFIP and post-GFIP (tolled) on the Buccleuch Interchange even though the number of vehicles increases by 32%. This is also reflected in the total emissions from the Buccleuch Interchange, where there is a noticeable increase in CO, NOx and VOC emissions from Scenario B to Scenario AB. This is due to the higher traffic volumes since the on the average vehicle speed is higher after the road network expansion. The vehicle emissions on the secondary roads (R101 and R55) are much lower than the Buccleuch Interchange, reflecting a slight increase between the two Scenarios (A and AB) due to the 19% increase in traffic.

In conclusion, the improved road network (Scenario AA) resulted in increased vehicle emissions on the GFIP Network due to more vehicle kilometres travelled, but a decrease in emissions on the Other Network due to fewer vehicles.

Scenario AB (tolled network) resulted in a reduction in vehicle emissions from the GFIP Network compared to Scenario AA due to reduced vehicle kilometres travelled and increase vehicle speed. The emissions on the other network, however, increased due to more vehicle kilometres travelled. Further details of the traffic model are shown in the Airshed (2014) report.

The sustainability of the road network expansion within a transport system will be discussed in the next section, as evidenced by increased emissions caused by increased vehicle-kilometres, despite the advantages of congestion reduction.

7.3.2 Noise Pollution

Currently in terms of noise pollutions as a result of the highway, SANRAL (2013) has undertaken an initiative to include a study in which investigation into seal types that could potentially be used to reduce noise tests were carried out on two sections of road in Cape Town. For the first section, four different types of seals were selected for testing. The second set of tests was carried out on existing roads with different surfaces. In addition to noise measurements, skid resistance evaluations were done on all surface types.

The investigation has led to the conclusion that there is no standard surfacing applied on South Africa's roads that can provide, by itself, a noise level low enough to meet national specifications and new international guidelines. Additional measures would still be required to satisfy these requirements, especially on high speed inter-urban roads. It was recommended that further investigations be carried out into the development of a standard paved surfacing as well as the cost of different mitigation measures, such as barrier types.

Therefore the impact of noise pollution as a result of high-speed inter-urban roads remains high as per international guidelines, for cars using either the GFIP highway or the increased cars that are diverting from the highway into the alternative routes.

Due to the time constraints of this study and the lack of availability of noise emissions data prior to the start of the GFIP, the Panel was unable to conduct noise emissions modelling impact and has thus placed reliance on SANRAL information related to noise modelling as disclosed in the sustainability reports.

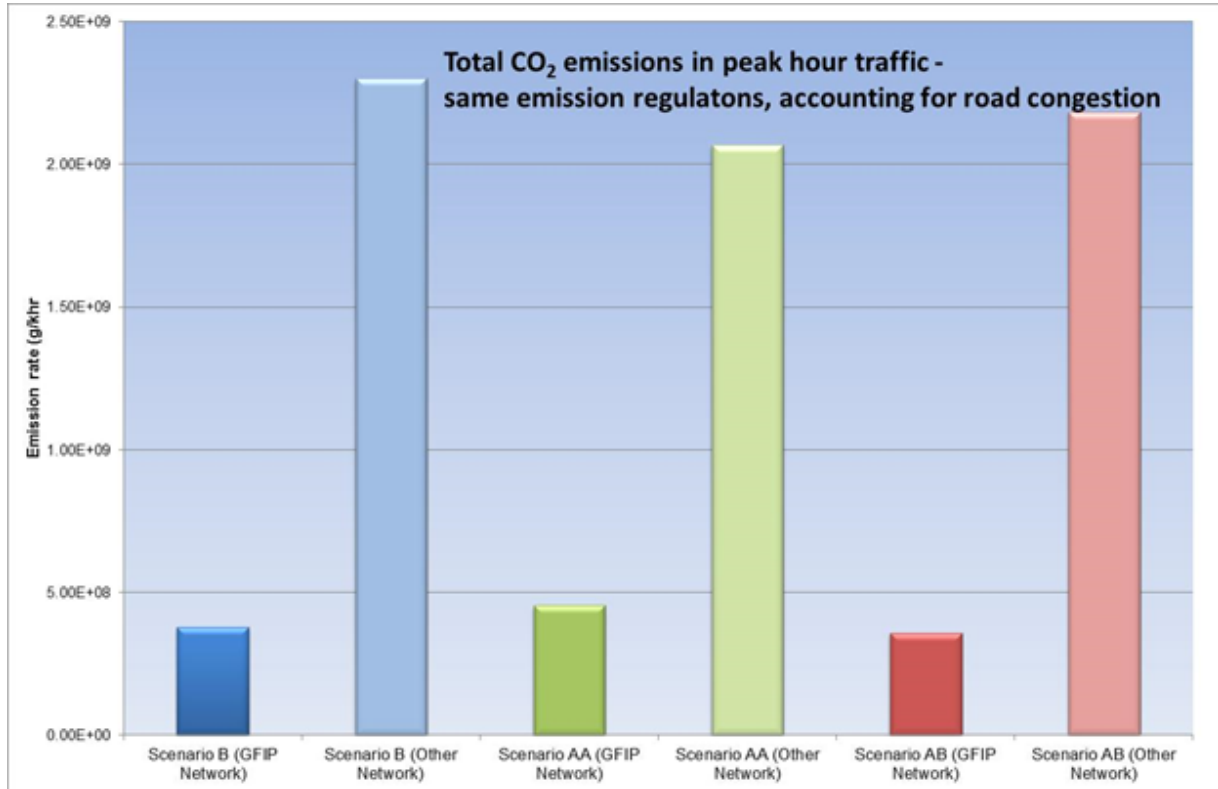
7.3.3 Carbon emissions

Transport contributes to greenhouse gases through the emissions impact of various fuels which include carbon dioxide (CO₂), methane (CH₄) and Nitrogen dioxide (N₂O). In addition, transport activities have these climate change impacts (IPCC WG 3 2007b):

- a) Vehicle air conditioning refrigerants cause about 4.9% of transport climate change emissions.
- b) Nitrous oxide (N₂O) causes 2.0 to 2.8% of transport emissions.
- c) Methane (CH₄) emissions cause 0.1 to 0.3% of transport emissions.
- d) High altitude jet emissions have much greater impact than the same gases emitted at ground level

Airshed (2014) carried out emissions measurement of the change in CO₂ emissions pre- and post-construction of the GFIP as a result of traffic movement. This was done using fuel consumption calculations will be per vehicle type (i.e. engine capacity and fuel type). The fuel consumption was calculated for the given traffic volumes as well as route lengths. Fuel consumption and CO₂ will be estimated using Copert IV factors. Further assumptions and descriptors are can be found in the report in Annexure...

Figure 7.5: Total CO₂ emissions for a constant vehicle parc accounting for road congestion

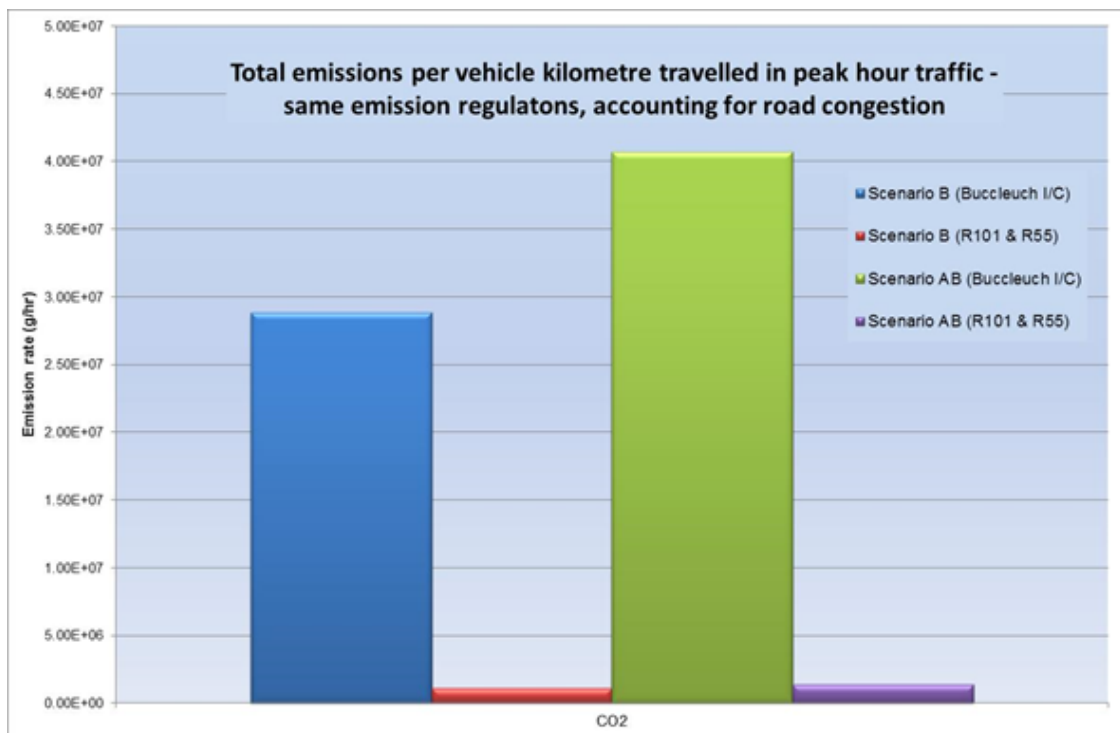


Source: Airshed, 2014

The total CO₂ emissions are graphically displayed in the congested traffic flow. As with the other pollutants, CO₂ is much higher on the Other Network than on the GFIP Network for all three scenarios due to much higher vehicle kilometres travelled. There is a slight increase on the GFIP network emissions from Scenario B to Scenario AA due to the higher vehicle kilometres with capacity expansion and increased traffic and then a decrease to Scenario AB when E-tolls are introduced. The opposite is true for the Other Network where the CO₂ emissions reduce slightly from Scenario B to Scenario AA and then increase again to Scenario AB.

On the analysis of the CO₂ emissions between the sites at Buccleuch Interchange and the alternative route network, before GFIP (scenario B) and after the tolling Scenario (AB) the figure below provides an illustration of the total CO₂ emissions.

Figure 7.6: Total CO₂ emission rates for the Buccleuch I/C and the R101 and R55 during peak hour traffic



Source: Airshed, 2014

There is an increase in vehicle CO₂ emission rates albeit slight (5%) and may be attributed to better traffic flow on the GFIP network. Similarly, the total CO₂ emissions increase due to an increase in traffic flow and vehicle kilometres.

7.4 Sustainability

In the NLTA (2009), transport one of the major principles and policies stated is that investment in infrastructure and operations must promote economic, financial, technical and environmental sustainability. Environmental sustainability within transport is defined as the development of an integrated transport system that is viable in the long-term for the community and the environment. Furthermore the systems, operations and impacts of the transport systems in the long term are minimised.

The components of sustainability in Transport that will be analysed in terms of impact include:

- a) Energy efficient sources of the modes of transport in line with a low carbon and green economy.
- b) The transport system and network
 - that promotes access not mobility of the various modes that use it in a functional hierarchical format
 - It moves people not cars and supports components of energy efficient modes of transport.
 - Remains resource efficient in terms of energy and funding needs.

7.4.1 Envisaged impacts

Some of the envisaged impacts that will be investigated as part of this process include:

- a) E-toll effectiveness in changing road-user behaviour moving drivers from Private to public transport
- b) Minimise the impact of congestion on the road users
- c) Promoting components of a sustainable transport system through alternative energy

7.4.2 Evidence and analysis

7.4.2.1 Changing Travel Behaviour patterns

Transport studies worldwide indicate that the single driver single car and the promotion of a transport system that moves people and not cars is not sustainable. The NDP emphasizes a radical investment in modal shift from private transport in the long term, recognising that behavioural change is critical in reducing environmental, social and economic cost by shifting user and supplier decisions about movement, travel modes and sources of energy.

The table below shows the vehicle kilometres travelled on the Gauteng Network average am peak hour to show that the percentage of vehicle-kilometres travelled on the network as follows to show that only 14% of vehicles use the GFIP network whilst 86% of vehicles use provincial and municipal networks outside of the GFIP

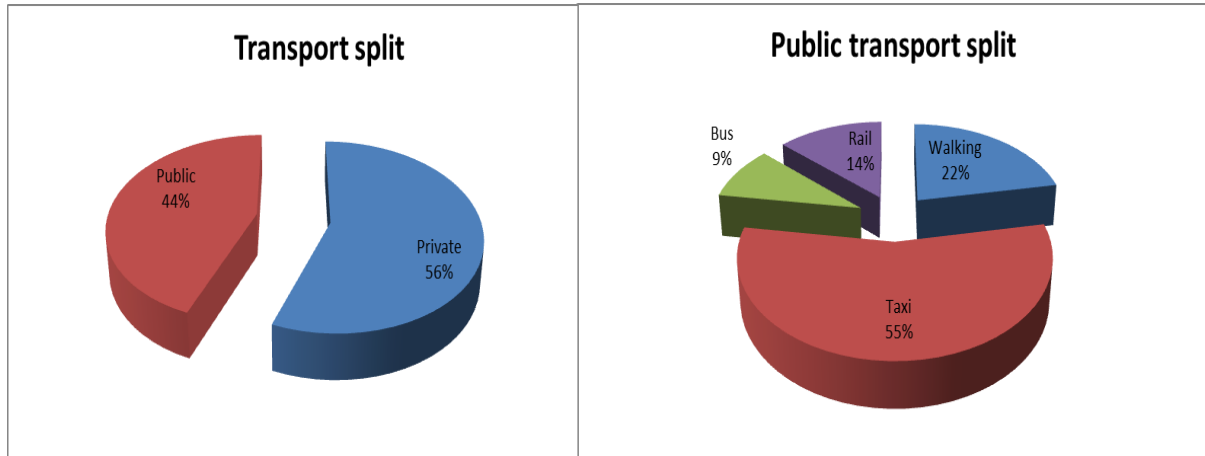
Table 7.2: Kilometres travelled on the GFIP network vs alternatives at am peak

Gauteng Road network	Vehicle-kilometres	Percentage proportions
GFIP Network	1 258 988	14%
Other Gauteng Network	7 786 335	86%

Source: GIBB (2014)

Furthermore the modal split for Gauteng work trips is shown in the two pie charts below indicating that in 2012, which was the base year for the GITMP model that was used in this case, 56% of commuters use private transport and furthermore, that the public transport split reflects that only 14% of the public transport is rail based. The implication of this is that road based transport carries about 84% of the transport trips including both private and public.

Figure 7.7: Transport split for work trip modes in Gauteng



Source: GIBB (2014)

Changes to pollution as a result of increased or reduced travel due to people using alternative, relying on Gautrain numbers.

The SALGA (2013) report stated that when the GFIP network is tolled, it results in traffic being diverted to elsewhere. The most viable option for use of the system as an alternative is the Gautrain. Traffic modelling found that the number of people who were had moved to the Gautrain after e-tolls were introduced grew to 4000 passengers per day.

The Gautrain Demand and Revenue forecasting model was also used to assess the impact of the GFIP upgrades (with and without toll) on the Gautrain passenger demand and kilometres travelled. The model used was a network based model which forecasts diversion from car to the Gautrain system. The table below shows the change in passenger demand and kilometres if the GFIP network is tolled or not tolled.

Table 7.3: Change in GFIP demand with and without tolls

Scenario	Daily		Annual	
	Passengers	Kilometres	Passengers (million)	Kilometres (million)
2013 Gautrain demand (with Tolls)	61,802	2,101,266	17	588
2013 Gautrain demand (without tolls)	58,030	1,973,020	16	552

Source: GIBB (2014)

The table shows that shows that if the GFIP Phase I network is not tolled the Gautrain ridership will decrease by about 6% per annum.

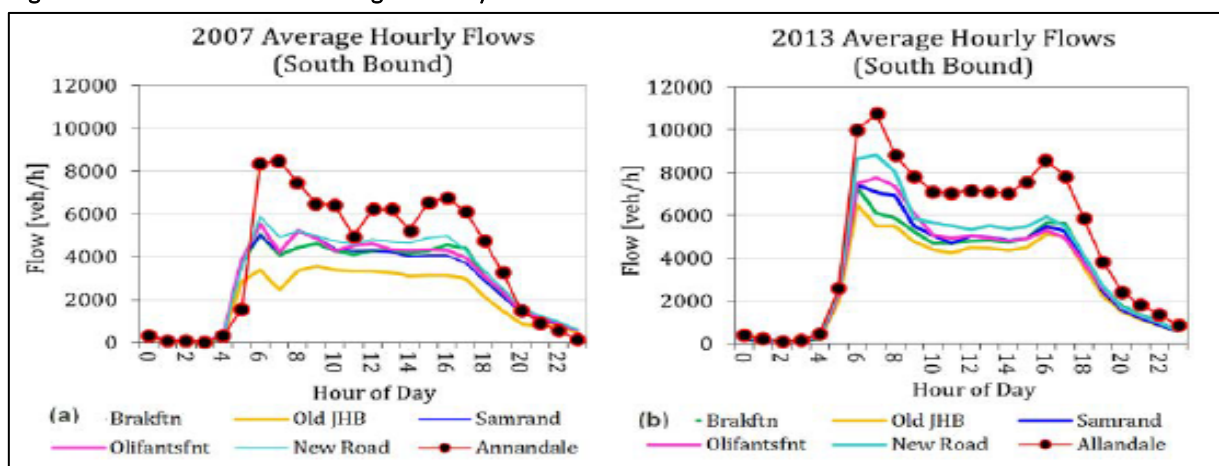
Even though the Gautrain is found to have limited network coverage, the number of people it has been able to attract from the current highways system on the N1 is substantial. The current project assessing the extension of the Gautrain system should therefore target routes that are otherwise served by the Phase I highway so as to have a real impact. Furthermore, integrating the feeder system

of the Gautrain into the BRT networks of all the three cities would serve to increase ridership and offer more meaningful options.

7.4.2.2 Reduced congestion on GFIP Network

The GFIP phase I project was implemented because the congestion facing the road network was a stumbling block to the economy. At that point the Simply looking at the resulting average hourly traffic flows and speeds by Du Plooy (2014) already gives an indication of the road capacity expansion when data for 2007 and 2013 is compared. The figure shows significant increases in traffic flows particularly for the New Road - Annandale - Buccleuch links with increases during the AM peak hour of between 3500 and 4000 veh/h. This is due to the capacity provided by lane additions and the significant upgrade of the Annandale interchange.

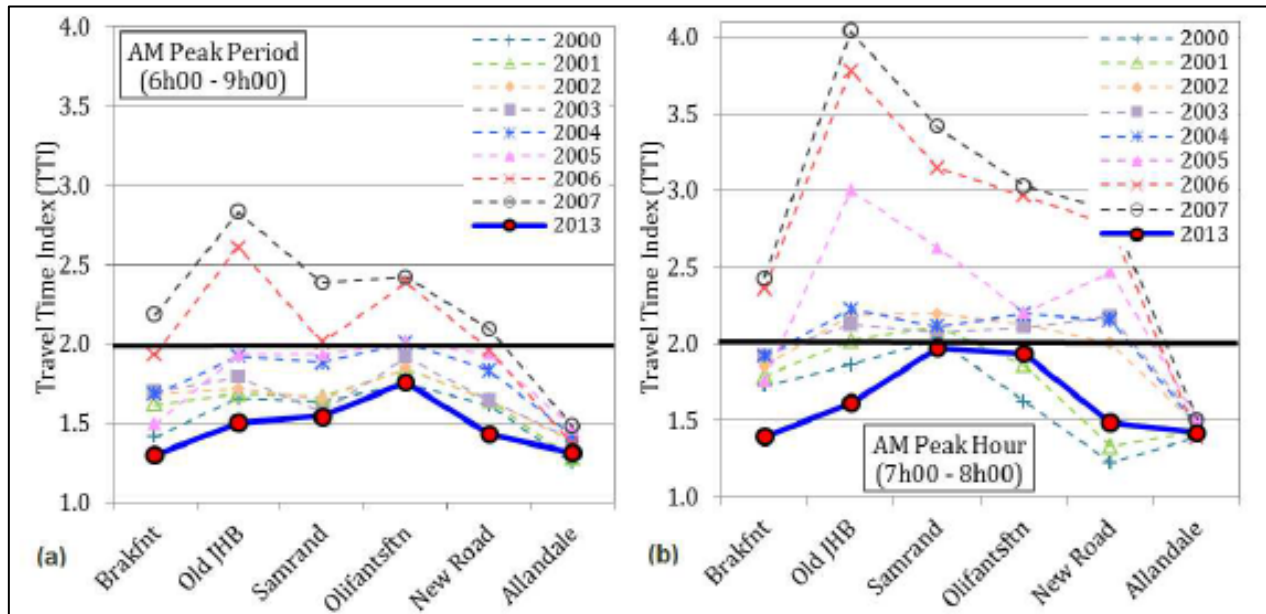
Figure 7.9: Increase in average hourly flows for each road link on GFIP network



Source: Du Plooy (2014)

However, because this figure also shows that the number of veh/hr going through as also increased in absolute terms and as a result. As a result, congestion has started to increase again as shown using the Travel time index which should not be greater than 2. The figure below shows that during the peak period (6-9) the TTI is acceptable for ,most sections but in the works peak Hour (7-8am) travel times are already back to pre-GFIP levels on some sections.

Figure 7.10: Travel Time index during peak hour on GFIP



Source: Du Plooy (2014)

This figure shows that even though this analysis covers the GFIP Phase I highway that experience the capacity expansion, highway upgrades buy time and allow more travel on the highway. Furthermore the lack of driver compliance (non-payment) of e-tolls and the absence of a meaningful public transport alternatives is not therefore yielding the desired result of TDM though road pricing and urban tolling.

Du Plooy (2014) concludes that a substantial improvement in traffic congestion levels was observed after the GFIP projects were finalised, although it is clear that currently congestion is still at significant levels and that continuing traffic growth will counter the advantages yielded by the road upgrades in due course. It is also observed that the e-tolling system initially led to a decrease in traffic volumes, but that this effect had already been phased out by mid-2014

7.4.2.3 Fossil Fuel Dependency

The sustainability of the use of fossil fuels becomes crucial as the following factors represent South Africa's current consumption levels especially attributed to transport (GCRO, 2014).

- The primary sources of all energy used in South Africa are mainly coal (67%) and oil (20%).
- While the transport sector consumes 27% of all final energy forms, it uses up a significant 78 % of liquid fuels and only 1.6% of electricity, to drive its wheels.
- The transport sector is almost absolutely dependent on petroleum fuels (98%) and South Africa depends for 70% of its oil on imports, mainly from the Middle East.
- Road transport consumes 87% of the energy used by the transport sector as a whole, aviation 11% and rail only 2%.

As part of the GFIP network there are no benefits to driving a fuel efficient or alternative vehicles as the costs charged do not exempt green vehicles. However the Litman (2007) study indicated that fuel-

efficient vehicles tend to reduce energy consumption, pollution emissions and fuel cost (although these savings are often offset by increased vehicle purchase costs). However, because they cost less to drive, owners of fuel efficient vehicles tend to drive more annual miles (due to lower cost), which can increase traffic problems including road and parking facility costs, accidents, and sprawl. Litman (2007) shows the table below to compare the various planning strategies that can be used to limit the environmental impacts of transport.

Table 7.4: Planning strategies to limit environmental impacts of transport.

Planning Objective	Alternative Fuels	Fuel efficient vehicles	Vehicle Travel reductions
Consumer Cost savings	?	Y	Y
Other pollution reduction	?	Y	Y
Reduced import oil costs	Y	Y	Y
Congestion reduction		N	Y
Road and parking Cost savings		N	Y
Reduced traffic accidents		N	Y
Improved mobility options		N	Y
Land use Objectives		N	Y
Physical fitness and health			Y

(Source: Litman, 2007)

Note: Y helps achieve that objective. N= contradicts that objective. ? = impacts are variable.

Litman (2007) states that shifting to alternative fuels, provides relatively few benefits. Increasing vehicle fuel efficiency provides energy conservation benefits, but by reducing vehicle operating costs tends to stimulate more driving, exacerbating other transportation problems such as congestion, accidents and sprawl. Strategies that reduce total vehicle travel (such as improving travel options, pricing reforms, smart growth land use policies) provide a wider range of benefits.

7.5 Recommendations

Energy conservation and some alternative fuels provide consumer savings, and often reduce other pollutant emissions. Petroleum conservation reduces oil import economic costs. Mobility management strategies that reduce vehicle travel (such as improvements to alternative modes, pricing reforms, and smart growth land use policies) can provide additional co-benefits including congestion reductions, road and parking facility cost savings, accident reductions, improved mobility for non-drivers, and increased public fitness and health.

On the other hand, strategies that increase vehicle fuel efficiency (such as fuel efficiency standards) stimulate additional vehicle travel, exacerbating transportation problems (Litman 2005). For example the emissions control program in Milan went through a reduction in vehicle emissions when older less fuel efficient vehicles the only ones being charged. In 2012, the program was revised to charge all vehicles irrespective of emissions type as it was found that residents either purchased more fuel efficient vehicles or travelled more.

The sustainable strategies to be undertaken include considering the emissions and environmental impact of the whole transport system network not just components of it. The current underlying components that plague our transport system in terms of emissions include:

- a) Increased promotion of the single car single driver system.
- b) A transport network that focuses on moving cars not people.
- c) The absence of alternative transport systems and
- d) The absence of compact densities that promote sustainable public transport operations.

Based on the major transport policies principles the sustainable mode of reduction in emissions is better done through reduced vehicle travel which can be implemented through the provision of an integrated transport system in Gauteng that focuses on Rail as the back bone of the transport network. Furthermore, the spatial planning challenges facing the country in terms of the densities and their impact on transport have been dealt with succinctly in the cross-cutting section of the report.

A fully integrated and sustainable system should allow travellers to choose from various modes, location and pricing options, particularly those that are resource efficient, affordable, healthy, and accommodate non-drivers. Furthermore, the various components of the transport system should be well integrated, such as pedestrian and cycling access to transit, and integrated transport and land use planning. The current system of road-based transport promoting the use of cars is not environmentally sustainable and continues to increase the emissions from the transport sector.

The coordination role that Gauteng Provincial government plays between agencies (PRASA, SANRAL), municipalities and relevant departments (Housing, Economic Development) in the planning and implementation of transport projects and initiatives, should be entrenched to ensure planning and implementation of an integrated transport system that reduces vehicle travel is realised.

Some of the proposed exemptions that encourage and further entrench the principles of TDM should be encouraged. This implies that the pricing mechanism of the e-tolls should:

- a) Directly support the: reduction in pollution (distance-based charges);
- b) Encourage sustainable transport systems (alternative fuel vehicles, all forms of public transport);
and
- c) Promotes road user behaviour that reduces vehicle travel (car-pooling or ride-sharing).

8 Legislative and legal considerations

8.1 Introduction

The Panel has, according to terms of reference, been tasked by the Premier David Makhura, of the GPG to advise on the socio- economic impact of the GFIP on the residents of the Gauteng Province. This part of the report considers the legislative and legal analysis considered by the Panel in arriving at its findings. To that end the background to the GFIP project has already been ventilated in this report, consequently, it is deemed unnecessary to be rehashed on this part of the report and must be assumed to be common cause.

8.2 Parameters of the report

There are several legal questions that may arise from the mandate of the Panel, however this submission is limited to the following legal nuances and risk areas:

- a) the regulatory framework;
- b) consultative process;
- c) the contracting regime for GFIP;
- d) constitutional issues;
- e) competition issues; and
- f) proposals and recommendations

8.3 Competency of the Premier in appointing the Panel

8.3.1 To reach an opinion, the Panel had to first establish whether the subject matter in the ToR is within the jurisdiction of the Premier.

8.3.2 Schedule 5 (Part A¹⁷) of the Constitution which deals with the Functional Areas Exclusive to Provincial Legislative Competence lists (1) provincial planning and (2) provincial roads with the provincial legislative jurisdiction. Schedule 4 dealing with Functional Areas of Concurrent National and Provincial legislative Competence lists (1) public transport, (2) regional planning and development and (3) road traffic regulation.

8.3.3 The SANRAL Act¹⁸ gives rise to the creation of a public company, SANRAL. Its issued share capital is held by the state¹⁹. The Minister of Transport (the “Minister”) has the authority to exercise the states’ rights in respect of its shareholding in the company. SANRAL is responsible for²⁰ and has the power to perform, “ *all strategic planning with regards to the*

¹⁷ Constitution of the Republic of South Africa Act 108 of 1996 [Constitution]

¹⁸ Act 7 of 1998 [SANRAL Act]

¹⁹ *ibid* at section 3

²⁰ *ibid* at section 25

south African National roads system, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of national roads for the Republic, and is responsible for the financing of all those functions...” Further, SANRAL in terms of Section 26(m) of the SANRAL Act has the authority “ *to undertake or conduct any research, investigations or enquiries and collect any information in connection with roads, whether in the Republic or elsewhere*”. SANRAL throughout the SANRAL Act works closely with the Minister for example requiring approvals²¹ or recommendations²² from the Minister. It would seem that the activities of the SANRAL fall predominantly within the jurisdiction of the Minister.

- 8.3.4 In the circumstances, it can be argued that in terms regional planning and development the Premier may have concurrent jurisdiction with Minister over the subject matter that the Panel has been tasked to opine on.
- 8.3.5 Notwithstanding the above, it is noteworthy to point out that SANRAL entered into a Memorandum of Agreement (MOA) with the Provincial Government of Gauteng represented by the then Premier, Mr Mbhazima Shilowa, which agreement essentially handed over the then Provincial Roads (which are the subject matter of the Panel’s mandate) to SANRAL for purposes of tolling as SANRAL is the only entity permitted by law to toll national roads.
- 8.3.6 A cursory perusal of the MOA insinuates the existence of a “Main Agreement”, which upon further inquiry from SANRAL appears not to exist.
- 8.3.7 During the Panel’s consultative process with amongst others, the political parties represented in the Gauteng Provincial Legislature, it became apparent that the ruling party (African National Congress) in its submissions to the Panel, inter alia contended that SANRAL had reneged on certain material elements of an Agreement reached with the GPG (presumably the referenced “Main Agreement” in the afore-mentioned MOA), in that such agreement was intended to include transfer of the then Provincial Roads to SANRAL as the appropriate entity with requisite competency to toll roads, which competency does not reside with the GPG. The submission went further to indicate that such revenue sharing was also intended to include the affected municipalities in order to principally deal with the reality of maintenance and upgrade of the alternative routes to the tolled routes that would invariably be affected by traffic diversions.
- 8.3.8 For that reason, the Gauteng Provincial African National Congress (GP-ANC) argued that it does not support e-Tolling in its current form, and consequently urged the Panel, in execution of its work, to consider alternatives that may be viable as part of its recommendations to the Premier. The GP-ANC however maintained its stance in support of the ‘user pay principle’ but

²¹ ibid section 26(d), 27(a), 27 (4), 29

²² ibid section 32

sought to make a distinction on what they termed 'urban tolling' which they submitted opposition to.

- 8.3.9 To the best of our knowledge, the official Provincial Government's position in relation to its support to the GFIP and e-Tolling in particular has to date not changed.
- 8.3.10 The apparent conflict in the position of the provincial ruling party therefore infers a collision course between the GP-ANC and the GPG. Such contradiction may invariably be resolved by realignment of the ruling party's position with that of its government, in such eventuality, resulting in an unenviable conflict and/or dispute in the position of the GPG with that of SANRAL and NDoT.
- 8.3.11 In the event of a dispute on whether the e-tolls (and matters pertaining thereto) fall, section 167 (4) (a)²³ provides that, " Only the Constitutional Court may decide on disputes between organs of state in the National or Provincial sphere concerning Constitutional status, powers or functions of any of those organs of state."
- 8.3.12 Section 40 (2)²⁴ requires organs of state to comply with principles of co- operative governance as set out in section 41²⁵. There is an obligation²⁶ on organs of state involved in a dispute to exhaust every internal mechanism in order to resolve their dispute. A court if satisfied that internal remedies have not been exhausted may refuse to hear the matter.
- 8.3.13 To that end, it is submitted that the appointment of the Panel by the Premier is intended to inter alia advise the Premier on how best consider the socio economic impact of GFIP and e-Toll on the Gauteng residents and where appropriate make recommendations on what possible interventions the Premier may consider in the implementation of such recommendations within the ambit of the law taking into account the Premier's competency or lack thereof, on the recommended interventions proposed.
- 8.3.14 The Premier (together with the executive council) exercise executive authority which amongst other things includes ensuring that provincial and national legislation (within schedule 4 and 5) are adhered to²⁷ .
- 8.3.15 The Premier is however not bound by the conclusions and/or recommendations of the Panel of enquiry and can at his sole discretion elect which advice he desires to implement, if at all.

²³ Supra Constitution at note 1

²⁴ *ibid*

²⁵ *ibid*

²⁶ Supra Constitution at section 41(3)

²⁷ Supra Constitution at Section 125

8.4 Legislative framework of e-tolls in South Africa

- 8.4.1 The first Act dealing with national roads was published by Parliament in 1935 and was the National Roads Act 42 of 1935. There was insufficient revenue to deliver on the demand for roads. Consequently, the 1935 Act established the National Road Board (“NRB”) and the National Road Fund (“NRF”).
- 8.4.2 The resources of the NRF were received from import customs, petrol and other funds allocated by Parliament. The responsibilities of the NRB included developing specifications and road maps, road construction supervision and merging the NRF by settling costs incurred by provincial administration in construction and maintenance of any roads declared as “national roads”.
- 8.4.3 In 1948 the NRB was abolished and was superseded by the National Transport Panel (“NTC”). There was an increase to the quotas from petrol customs; however that could not provide sufficient funds to support maintenance and construction of new roads. Thus, substantial government contributions and another increase in the tax on imported petrol were needed to reimburse the NTC loans from the Treasury.
- 8.4.4 In 1971 a new National Roads Act 54 of 1971 (“National Roads Act”) was assented to and it came to effect on 1 October 1971. This Act assigned exclusive responsibility to the NTC regarding planning, developing, construction and maintenance of national roads. Further increases on tax led to a significant surplus in funds and the available finance accommodated current needs and allowed for future planning.
- 8.4.5 In 1974 there was an unexpected decline in the NRF income due to government’s fuel conservation measures. In 1980 due to income decrease and escalation in construction cost the reserves depleted. Subsequent loans from Treasury financed two new projects, but indicated that the NTC was unable to continue the development of the road network.
- 8.4.6 Consequently, alternative sources of income had to be investigated. There was analysis of other means of supporting NRF by the NTC. The Parliamentary selected committee considered the policy proposal that was tabled before it. Parliament approved the policy. In 1982-1983 an amendment was made to the National Roads Act to facilitate for the collection of tolls. Essentially the amendment provided that monies collected from tolls would be dedicated to the construction and or maintenance of roads and that alternative routes to the toll routes would be made available. By the promulgation of this amendment, the NTC gained the advantage that funds could be borrowed because the toll revenue could repay interest on loans and later fund road maintenance.
- 8.4.7 In 1988 the South African Roads Board (“SARB”) replaced NTC. SARB had similar responsibilities as the NTC. Ten years later, in 1998, The SANRAL superseded SARB. SANRAL is currently the national roads authority in South Africa. The NRF of 1935 was replaced by the SANRAL Portfolio Fund.

- 8.4.8 The NDoT published the National White Paper on Transport Policy, 1996²⁸ The vision of the White Paper on National Transport policy was to provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being economically and environmentally sustainable. This was the paper that led over a period of time to the implementation of GFIP. Also in 1996 in line with the National White Paper on Transport Policy the clause of National Road Act dealing with the provision of an alternative route was repealed. It is suggested²⁹ that the amendment was effected to; (1) allow for economic benefit to the public sector who participate in concession agreement as no provision of alternative routes limits their risk exposure and (2) removal of the clause alleviated the economic burden of maintaining two routes.
- 8.4.9 The provision of alternative routes in the Panel's view is important for economic alleviation for users of GFIP. It is recommended that an amendment to the SANRAL Act that brings back the provision that makes it compulsory to provide for an alternative route or public transport before any National (or urban?) Road may be tolled. To amend the SANRAL Act, the Premier would have to lobby the participation of the Minister of Transport and draw a cabinet memorandum and draft bill for Cabinet's approval.
- 8.4.10 The National Environmental Management Act, 107 of 1998 ("NEMA") at section 24 requires that an environmental impact assessment ("EIA") be done for development activities on the environment. The purpose of an EIA is to enable the Minister of Water and Environmental Affairs to make an informed decision as it is supposed to; promote sustainable development, ensure public participation regulate development and limit the detrimental effect on the environment. SANRAL did acquire environmental authorisations in terms of NEMA. The difference between the SANRAL Act and NEMA is the standard/ threshold for consultation which is dealt with in terms of the SANRAL Act more fully hereunder are different. It is mentioned though that in awarding environmental authorisations the Minister of Water and Environmental Affairs had to consider not only the environmental impact but the social and economic impact of GFIP. The Opposition to Urban Tolling Alliance in their submissions³⁰ in the constitutional interdict judgement submitted that the Minister of Environmental Affairs did not make an informed decision in that she did not have access to the socio-economic impact of e-tolling when granting authorisations. The merits of this submission were not dealt with by the court.
- 8.4.11 Accordingly, there is no basis to find that there may have been an infringement of environmental laws, if anything, the contrary appears to be true.

²⁸ National Department of Transport Strategic Plan of 2011/12-2013/14.

²⁹ CJ Tolmie, The Tolling of Existing Roads – The South African Experience 2014

³⁰ National treasury and others v Opposition to Urban Tolling Alliance and Others 2013 (6) SA 223 (CC)

8.5 Consultative Process

- 8.5.1 Public consultation is one of the key tools employed to improve transparency, efficiency and effectiveness of regulatory frameworks. There are three elements to consultation; notification, consultation and participation. Guidance on process is given by the applicable act.
- 8.5.2 Section 27(4) of the SANRAL Act sets out the elements that must be dealt with by SANRAL prior to the declaration of a toll road. SANRAL must give notice in the prescribed manner setting out in that notice (i) the positioning of the toll roads and (ii) inviting interested persons to make comment and representations on the proposed declaration and to do so no later than a minimum of 30 days. According to the Supreme Court of Appeals review³¹ application on or about 14 October 2007, SANRAL published its notice of intention toll in the government gazette with diagrams displaying intended positioning of toll. Similar notices were placed in 6 newspapers circulating in Gauteng. These notices invited comment for a period of 30 days until 14 November 2007. OUTA suggested in the High Court review application³² that notices issued by SANRAL should have made mention of what the tolls would cost and what potential costs of running e-tolls would be for informed comments to be received. The court thought that this view was misguided and highlighted their departure from this view by analysing Section 27(4) of the SANRAL Act stating that it only requires comment with regards to the physical aspects of the proposed toll road declaration. Considering the afore-mentioned SANRAL was found in the High Court Review application to have complied with the requirements set out in section 27 (4).
- 8.5.3 Section 27(4) further states that SANRAL must give the Premier of the relevant province 60 days to comment on the proposed declaration and allow every affected municipality a similar opportunity. Letters were addressed on or about 14 October 2007 to the Premier and MEC for Transport in Gauteng and affected municipalities giving them a period of 60 days until 14 December 2007 to comment. SANRAL thereafter on 15 January 2008 applied to the Minister of approval of the declaration of seven toll roads. It was approved 15 January 2008.
- 8.5.4 SANRAL did comply with the minimum statutory requirements for consultation in terms of the Act. Until such time that a competent court makes an alternative finding the rule of law demands that the process adhered to by SANRAL be recognised as being legal in that proper process in terms of the act was followed.
- 8.5.5 From the aforementioned litigation review, it is apparent that SANRAL complied with the law, consequently, its actions are deemed to be lawful in the absence of any court ruling to the contrary.

³¹ South African National Roads Agency Ltd v Toll Collect Consortium 2013 (6) SA 356 (SCA)

³² Opposition to Urban Tolling Alliance v The South African National Roads Agency Ltd 2012 JDR 2472 (GNP) [High Court review Application]

8.5.6 What remains however, is whether any lessons may be learnt for future consultations in respect of further phases intended for the GFIP project. To that end, it is recommended that due consideration be given by the Premier to the possible amendment of SANRAL Act to extend the issues of consultation to include potential price implications of tolling and/or e-tolls at the time of publication of the invitation to comment from the public prior to the declaration of the to be tolled road as opposed to the manner in which the current Phase 1 was approached by announcing the costs or price implications during the consultative process pursuant to declaration of the tolled road.

8.6 E- toll cases and their implications

8.6.1 Four cases are considered which were dealt with in various South African court that are at the heart of issues raised in the ToR. These cases are the Opposition to Urban Tolling Alliance “OUTA”; interdict application heard in the North Gauteng High Court³³, the interdict appeal to the Constitutional Court³⁴, the review applications heard in the North Gauteng High Court³⁵ and its appeal in the Supreme Court of Appeals.

8.6.2 In the High Court interdict application, OUTA sought to interdict the payment of e-tolls pending the adjudication of the High Court Review application. The interdict was granted in favour of OUTA. An appeal application was made directly to the Constitutional Court which appeal was granted and the High Court interdict was set aside.

8.6.3 In the High Court review application OUTA sought the court to review;

8.6.3.1 various decisions made by SANRAL in terms of sections 27 (1) (a) of the SANRAL Act declaring national roads;

8.6.3.2 number of environmental authorisation in terms of section 24 of the National Environmental Management Act 107 of 1998; and

8.6.3.3 they also sought condonation for late service and filing of the review application. The application was dismissed with costs of not only that application but of the Constitutional Court interdict application (which were reserved pending the outcome of the review application). OUTA appealed this decision to the Supreme Court of Appeals and such appeal was dismissed with no order of costs.

8.6.4 The common issues raised by these matters are: (1) compliance by SANRAL in the process leading to the declaration of certain toll roads which discussion the Panel has canvassed

³³ Opposition to Urban Tolling Alliance v The South African National Roads Agency Ltd 2012 JDR 0808 (GNP) [High Court Interdict]

³⁴ Constitutional Case supra note at 3

³⁵ Opposition to Urban Tolling Alliance v The South African National Roads Agency Ltd 2012 JDR 2472 (GNP)

above; (2) the doctrine of separation of powers (3) and lastly the constitutional challenges made against the e-tolls.

- 8.6.5 The doctrine means that specific functions, duties and responsibilities are allocated to distinctive institutions with a defined means of competence and jurisdiction. It is a separation of three main spheres of government, namely, Legislative, Executive and Judiciary.
- 8.6.6 It was found that the court in granting the interdict in the High Court application, overstepped its powers in that they meddled in the sphere of the Executive.
- 8.6.7 The view that seems to emerge from the Supreme Court of Appeals review case is that SANRAL's exercise of power is derived from an executive power. Mention is made of section 25 of the SANRAL Act which states before listing SANRAL's mandate that "The Agency, within the framework of government policy, is responsible and hereby given power to..." The court explains in the Constitutional interdict judgment that there is a nexus between the decision by the Cabinet in 2007 to proceed with e-Tolling and the implementation of that decision by SANRAL and the Minister.
- 8.6.8 The court found that the decision to fund GFIP through e-tolls was an executive decision thus not subject to review.
- 8.6.9 OUTA in its submission to the Panel, inter alia indicated that it still had an opportunity to appeal the decision of the Supreme Court of Appeals (SCA) to the Constitutional Court, as according to them, the case was not dealt with on merits but on legal technicalities which presumably largely dealt with their failure to obtain condonation for late filing of their application
- 8.6.10 Proper reading of the SCA judgment however leads to a different conclusion in that the SCA dealt with the merits as well as the condonation application on late filing, the prospects of success at the Constitutional Court are in any event, at best, doubtful, at worst, remote.
- 8.6.11 Accordingly, we are of the view that there are no real risks arising out of the aforementioned litigation.

8.7 Constitutional issues

- 8.7.1 One of the constitutional issues raised, but later abandoned at the Constitutional Court interdict application was section 25 dealing with the right to property and condemning unlawful deprivation of property except by a law of general application. It was argued that the users were being deprived of their monies by paying for e-tolls. This approach was not entertained by the Constitutional Court as it opined that the process leading to the declaration of the e-tolls was lawful and therefore paying e-tolls could not be viewed as unlawful deprivation.

- 8.7.2 Similarly, consideration on infringement of right to freedom of movement and trade is likely to suffer a similar outcome thus yield no substantive outcome absent of any evidence of unlawfulness.
- 8.7.3 A delegation of the Minister of Transport powers in terms of the Constitution occurs in the SANRAL Act. Section 25 of the SANRAL Act advises that SANRAL, within governmental policy has the power to amongst other things; plan, design, construct, operate, manage, control...matters pertaining to National Roads. The Constitution which is the supreme law of the republic of South Africa (section 2) states that any conduct that is contrary to the constitution is invalid. Section 99 of the Constitution provides for the assignment of functions by a cabinet member it states; “99. A Cabinet member may assign any power or function that is to be exercised or performed in terms of an Act of Parliament to a member of a provincial Executive Council or to a Municipal Council. An assignment (a) must be in terms of an agreement between the relevant Cabinet member and the Executive Council member or Municipal Council; (b) must be consistent with the Act of Parliament in terms of which the relevant power or function is exercised or performed; and (c) takes effect upon proclamation by the President.
- 8.7.4 Consideration may be given to strengthening of the SANRAL Act to mitigate the risk that may be associated with the extensive powers granted to SANRAL. More time would have been required to delve onto this item in more detail.

8.8 Contracting regime

- 8.8.1 This report is based on information availed on 19 November 2014. The actual contract, Volume 1, Book 1 has not been availed. Views expressed hereunder have been, in the interim gleaned from Volume 2, Book 1 which amongst other things contains; part A Contract Data, part B Special Provisions and part C the Sample Forms of Agreement and Volume 3 of the tender documents.
- 8.8.2 An Infrastructure Concession Agreement occurs where a public authority identifies a project. In this instance SANRAL and through some kind of acquisition mechanism acquires the Concessionaire (ETC) creating a type of Public Private Partnership³⁶ which leads to the signing of the Concession Agreement (the “Agreement”). As a result of the Agreement risk³⁷ of the user demand and economic risk would be borne by the Concessionaire and as a result thereof the Concessionaire acquires the right to; establish, assess, collect, enforce, and retain

³⁶South African law defines a PPP as a contract between a public sector institution/municipality and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building and operation of a project. (National Treasury)

³⁷ US Department of Transportation Federal Highway Administration, Model Public –Private Partnership Core Toll Concession Contract Guide, September 10 2014

tolls paid by users. The afore-mentioned rights usually accrue for a period between 30-99 years³⁸.

- 8.8.3 There are four types³⁸ of Concession Agreements that can arise in infrastructure development but for the purpose of this report only a build, operate and transfer contract (“BOT”) is dealt with which has been the Agreement used by ETC and SANRAL. A BOT occurs when the Concessionaire funds, constructs, owns and operates the infrastructure. On expiry of the agreed period, the infrastructure is transferred to the public entity. The terms of the Agreement used have been from the International Federation of Consulting Engineers (“FIDIC”) terms of contract.
- 8.8.4 The shareholders in the company ETC are; Kapsch Trafficom AB a company incorporated in Sweden, Kapsch Trafficom AG a company incorporated in Austria and TMT Services and Supplies (Pty) Ltd which is a company incorporated in South Africa. The joint venture ETC ceded its right acquired as a result of the tender to a Special Purpose Vehicle a registered South African company also called ETC. ETC then sub-contracted 34 companies in the execution of the mandate and concluded a Co-operation agreement with these pre-selected sub-contractors.
- 8.8.5 The Agreement provides that ETC was to design, build and operate the e-Toll system. The accepted tender amount was R10 052 175 790. 70.
- 8.8.6 The signed contract contains the following terms;
- 8.8.6.1 The contract would be governed by South African Law;
- 8.8.6.2 It would seem that there was an initial design-build contract period of 18 months (Section 2) and thereafter a period that would be ended by the issuance of a completion certificate. The contract at sub-clause 1.1.58, is for a period of 8 years for the operation service and a period of 5 years in respect of the Violation Processing Centre’s (“VPC”).
- 8.8.6.3 ETC had to put up a performance security of R500 million which according to a pre-determined calculation (sub-clauses 13.8 and 4.2) would be adjusted. Similarly SANRAL had to put up a performance security of R500 million.
- 8.8.6.4 A contract price adjustment was included which catered for the adjustment of the contract price rates in terms of a schedule of a cost indexation (formulae) contained in the schedule of payments.
- 8.8.6.5 In terms of the Public Finance Management Act³⁹ provisions were made for services, costs, and equipment that were procured separately.

³⁸ Franck Bousquet and Alain Fayard, Report on Road Infrastructure concession Practice in Europe, September 2001

³⁹ Act 1 of 1999 [PFMA]

- 8.8.6.6 A contingency amount was set aside (as at issue of the press release on 27 May 2011 this amount had not been used) for unforeseen expenses, subject to applicable law.
- 8.8.6.7 Sub-clause 9.6 provided for delay damages to be paid per day the amounts of which ranged from R0.5million (section 3), R5 million (section 2), R2 million (section1). The maximum amount payable for delay damages is R450 million which is adjustable.
- 8.8.6.8 The maximum compensation payable by the SANRAL and ETC is R350 million (sub-clause 10.6).
- 8.8.6.9 According to FIDIC definitions, the Base Date means the date 28 days prior to the latest submission of the tender. The compensation amounts are calculated as of Base Date.
- 8.8.6.10 During the operating period according to sub-clause 17.4 of the agreement risk with respect to loss of revenue, resulting or arising from design, operation and maintenance of the Works shall be borne by ETC.
- 8.8.7 GFIP success was premised on optimum collections and minimised/ controlled violations. The current status quo is the opposite. If termination of the GFIP contract was to be considered, it would seem that the performance security, R500 million (or less) in terms of the Agreement may be called up and perhaps damages (capped at R350 million) could be claimed by ETC.
- 8.8.8 If early termination of the ETC contract was to be considered, in part or in full, it would require a cost benefit analysis be conducted to consider the penalty costs in terms of the contract provisions, versus the costs of proceeding with the unviable contract to its full term.
- 8.8.9 It is submitted that such early termination penalty fee if proved to be cost effective could find application within the provisions of the contract.
- 8.8.10 Section 32⁴⁰ provides that where conduct by SANRAL is contrary to the national interest or strategic or economic interest of the Republic, the Minister, by notice in writing to the Board, may order the SANRAL to discontinue the offending act or conduct. If this is done one of the consequences in terms of the SANRAL Act is that the State shall bear the costs of the project and make the necessary funds available to SANRAL for that purpose.
- 8.8.11 Alternatively, SANRAL can in terms of section 27 of the SANRAL Act with the approval of the Minister withdraw a declaration of a toll road.
- 8.8.12 Such withdrawal may be partial and/or complete withdrawal dependant on the cost benefit exercise results.

⁴⁰ ibid

8.8.13 It is the Panel’s recommendations that the Premier lobbies, in the spirit of intergovernmental co-operation, the Minister and/or SANRAL and/or national treasury with regards to the Panel’s findings and recommendations if found acceptable.

8.9 Accessing information from SANRAL

8.9.1 To the extent that not all information has to date been availed to the Panel regarding certain elements of the ETC contract with SANRAL, it is submitted that the Premier and/or GPG must consider making further requests to SANRAL for the release of such further data s as to enable a conclusive finding on the contracting regime with all necessary documentation at its disposal.

8.9.2 The Panel attempted to obtain all the necessary information but was unable to get everything timeously. The Panel does not however come to the conclusion that SANRAL deliberately refused to release all the required documentation, if anything, it must be stated that SANRAL, in particular its Chief Executive, had been quite co-operative with the Panel, particularly after the determination to formally engage with the Panel pursuant to initial reluctance, expressed in the public domain.

8.9.3 The request for information was thus made at the eleventh hour due to pressing deadlines for the Panel to conclude its work on or before the 30th of November 2014.

8.9.4 In the most unlikely event of none- co-operation from SANRAL and/or the minister, the Premier would be at liberty to access such information by a request for information in terms of the Promotion of Access to Information Act⁴¹ (“PAIA”).

8.9.5 The Constitution⁴² under the Bill of Rights at section 16 (1) (b) states, “Everyone has the right to freedom of expression which includes the right to freedom to receive or impart information and ideas.” A more specific right to access to information can be found at Section 32⁴³ which states that, “ Everyone has the right to access; a) any information by the state and b) any information that is held by another person and that is required for the exercise or protection of any rights. The following subsection following this clause deals with the call for legislation to be enacted which will give effect to the right to information. Such legislation is the Promotion to Access to Information Act⁴⁴ (“PAIA”).

8.9.6 PAIA⁴⁵ provides that a requester has a right⁴⁶ to access a record that is held by a public body provided that the right process has been followed and no refusal has been given in terms of

⁴¹ Act 2 of 2000 [PAIA]

⁴² Supra Constitution at note 4

⁴³ ibid

⁴⁴ Supra PAIA at note 40

⁴⁵ ibid

⁴⁶ Supra PAIA at note 40 at Section 11

Chapter 4 of the act. A public body is defined as, “any other functionary or institution when exercising a public power or performing a public function in terms of any legislation.” This definition includes SANRAL that performs its mandate in terms of the SANRAL act. A record is defined regardless of medium, as recorded information, in the possession/ control of a public body.

- 8.9.7 There is a process that must be adhered to when requesting information but for the purpose of this report this is not elaborated on.
- 8.9.8 As discussed above, when asked for the Agreement signed, SANRAL advised that it contained confidential information with regards to a third party. In chapter 4⁴⁷ PAIA sets out the circumstances in which an information officer may refuse to avail a requested record. It lists, amongst other things, the protection of commercial information of third parties and the protection of certain confidential information. Essentially an information officer of an institution may refuse to avail information if the record requested contains⁴⁸: trade secrets of a third party; financial, commercial, scientific or technical information of the company or any other information of a third party which if released may cause either party commercial prejudice. PAIA further protects information deemed confidential in terms of an agreement⁴⁹.
- 8.9.9 Despite these elaborate protection mechanisms, the Act provides that an information officer of a public body must grant a request for a record⁵⁰ if that record would reveal;
- a) *a substantial contravention of, or failure to comply with, the law; or*
 - b) *an imminent and serious public safety or environmental risk; and*
 - c) *the public interest in the disclosure of the record clearly outweighs the harm contemplated in the provision in question.*
- 8.9.10 It is the Panel’s view that the record with regards to the Agreement can be obtained from SANRAL as it is in the public interest. The process would involve a request for a record. If such record is refused than the internal appeal procedure of SANRAL would have to be exhausted⁵¹ before making an application to court⁵².

8.10 Competition issues associated with e-tolls?

- 8.10.1 The Competition Act 89 of 1998 as amended (‘the Competition Act’) applies to all economic activity within or having an effect within the Republic of South Africa.⁵³ The Competition Act regulates horizontal practices (interaction between competitors); vertical practices

⁴⁷ Supra PAIA at note 40

⁴⁸ Supra PAIA at note 40 at Section 36

⁴⁹ Supra PAIA at note 40 at Section 37

⁵⁰ Supra PAIA at note 40 at Section 46

⁵¹ Section 74 of PAIA

⁵² Section 78-82 of PAIA

⁵³ Section 3 of the Competition Act.

(interaction between suppliers and their customers); abuse of dominance; pricing behaviour and mergers. The Competition Act does not prohibit all conduct that falls into the categories of these practices, it only prohibits restrictive behaviour. The rules that regulate restrictive practices or behaviour are classified as either “per se” or, “rule of reason” provision.

- 8.10.2 A horizontal agreement is a decision, concerted practice, contract, arrangement or understanding, whether or not legally enforceable between parties in a horizontal relationship. Section 4(1)(b) of the Act sets out conduct that is per se prohibited or that is outright prohibited. The prohibition is subject to a “rule of reason” justification contained in section 4(1)(a) of the Act. Section 4(1)(b) of the Act lists restricted horizontal practices. A restrictive horizontal practice is a practice that is regarded to almost always lessen or prevent competition and no justification for its occurrence is allowed.⁵⁴
- 8.10.3 A cartel is ‘an organisation of independent enterprises from the same or similar area of economic activity, formed for the purpose of promoting common economic interests by controlling competition between themselves.’⁵⁵ The Corporate Leniency Policy Notice 628 of 2008 (“the CLP”) defines a cartel as ‘an agreement or concerted practice among competing firms or a decision by an association of firms, to coordinate their competitive behaviour, for instance through conduct such as price fixing, division or allocation of markets, and/or collusive tendering.’⁵⁶ It is evident from these definitions that cartel behaviour is aimed at managing or organising competition between rivals or competing firms.
- 8.10.4 Cartels by their very nature eliminate competition. The adverse consequences of cartel conduct are mainly borne by consumers. Cartel behaviour also negatively affects law abiding businesses which are at a competitive disadvantage as they do not benefit from the manipulated or artificial market conditions enjoyed by cartel members.
- 8.10.5 Cartel activities that fall under section 4(1)(b) of the Act include the following prohibited horizontal practices, (i) fixing the purchase or selling price or any other trading condition; (ii) dividing the market by allocating consumers, suppliers, territories or specific types of goods and services; and (iii) collusive tendering.
- 8.10.6 Collusive tendering which is commonly known as ‘bid rigging’ is a form of a prohibited restrictive horizontal practice. Therefore, collusive tendering cannot be validated by any justification and the Competition Act does not permit an inquiry into “technological efficiency or other pro-competitive gains” that may result from the conduct. The illegality of collusive tendering is established by its very occurrence.

⁵⁴ M Neuhoff, M Govender & M Versfeld et al *A Practical Guide to the South African Competition Act* (2006) 62.

⁵⁵ Christopher Harding & Julian Joshua *Regulating Cartels in Europe: A study of legal Control of Corporate Delinquency* (2003) 12.

⁵⁶ CLP paragraph 5.1.

- 8.10.7 Collusive tendering occurs when tenders are called for goods or services and the producers of goods or the providers of services sought in the tender decide which one of them should submit the lowest and winning bid.⁵⁷ Although the firms bid independently to tenders, they agree on what the price should be, this price is usually higher than the market price and they also decide on who wins the bid. The purpose of the scheme is to allocate tenders between the tenderers over a period of time so that each obtains a share of the market. Collusive tendering distorts the market and competitive process resulting in prices being maintained officially high. Collusive tendering is anti-competitive as it also results in market allocation or market division and ultimately price fixing.
- 8.10.8 Restrictive behaviour or anti-competitive conduct is enforced in the public sphere by the Competition Commission. The Competition Commission is responsible for investigating, as well as, prosecuting anti-competitive behaviour. The Competition Commission has the initial responsibility of investigating complaints of alleged anti-competitive conduct and must investigate any complaint upon receiving it or initiating it.⁵⁸ A complaint may be received from a firm, a person, an association or whistle-blowers. If it determines that a prohibited practice has been established, the Competition Commission must refer the matter to the Tribunal within one year after the complaint is submitted.⁵⁹ If the matter is not referred to the Tribunal, the Competition Commission must issue a notice of non-referral to the complainant.⁶⁰ The one year period may be extended by agreement with the complainant⁶¹ but may not be extended after the one year period has lapsed. In *SAD Holdings Ltd & Another vs. Competition Commission & Others*⁶² the Tribunal stated that it has no discretion to extend the one year time limit after it has lapsed and as such the Competition Commission had no jurisdiction to refer the complaint and the Competition Commission was deemed to have issued a notice of non-referral to the complainants.
- 8.10.9 The Competition Act does not address the time limit, if any, within which the matter must be referred to the Tribunal if the complaint was initiated by the Competition Commission itself and it appears as though the Competition Commission has an infinite period to investigate its own complaints.⁶³
- 8.10.10 During or after the completion of the investigation, the Competition Commission may negotiate and conclude agreements with the accused parties and the agreements are referred to the Tribunal for confirmation as consent orders.⁶⁴ The complainant may refer the matter directly to the Tribunal within twenty (20) business days if the Competition

⁵⁷ Brassey Martin (ed), Campbell John, Legh Robert, Simkins Charles, Unterhalter David & Wilson Jerome *Competition Law* (2010) 142.

⁵⁸ Section 49B of the Competition Act.

⁵⁹ Section 50(2)(a) of the Competition Act.

⁶⁰ Section 50(2)(b) of the Competition Act.

⁶¹ Section 50 (4) of the Competition Act.

⁶² CT 41/CR/Jul01,23.10.2001.

⁶³ *Neuhoff et al op cit* 245.

⁶⁴ Section 49D(1) of the Competition Act.

Commission determines that a prohibited practice has not been established and issues a notice of non-referral.⁶⁵ The complaint in this case will present its complaint personally in the proceedings and costs may be awarded to or against it.⁶⁶

8.10.11 If a firm is found to have contravened the provisions of the Competition Act it may be fined an administrative penalty of up to 10% of its annual turnover in the previous year and such monies collected are handed to the national treasury.

Collusive tendering in the construction sector and affected projects

8.10.12 On 24 June 2013 the Competition Commission (“Commission”) announced that it had reached settlement agreements with fifteen (15) of twenty one (21) construction sector firms (“firms”) in terms of the Competition Commission in terms of the Construction Fast Track Settlement Process (“CFTS”). The CFTS Process was introduced on February 2011 and applications were received from 21 companies in the construction industry covering over 300 projects worth an estimated R 47 billion.⁶⁷ The CFTS Process incentivised the companies to make full and truthful disclosures in exchange for penalties lower than those the Competition Commission would seek if it had prosecuted the companies.

8.10.13 The Competition Commission found that 160 of these projects had prescribed and the 140 projects that had not yet prescribed and were eligible for settlement. The Competition Commission only reached settlements for projects that were concluded after September 2006, which include civil engineering, mechanical engineering and general building projects. The projects included both public sector (worth R28 billion) and private sector (R 19 Billion) projects. The Competition Commission estimates that the overcharge could have been anything between 10 - 30 %. There was an allegation that in most instances, the cartelists agreed on a mark-up of approximately 17.5% profit margin in contrast to the industry norm of 5-6% profit margin. However, the Competition Commission emphasised that empirical calculations would need to be undertaken in respect of each individual project to calculate the exact overcharge.

8.10.14 The bid rigging by the construction companies during the bidding for the construction of the 2010 World Cup infrastructure constituted anti-competitive conduct that is prohibited and no justification for its occurrence is allowed. As shown in the tables that appear below, SANRAL’s road construction projects were part of the projects that were affected by the collusive tendering in the construction sector.

⁶⁵ Section 51(1) of the Competition Act read together with Tribunal Rule 14 (1)(b).

⁶⁶ Section 57(2) of the competition Act.

⁶⁷ Competition Commission Media Release dated 24 June 2013 (Appendix 1).

Table 8.1: Prescribed projects

Client	Project name	Construction firms involved	Nature of anti-competitive conduct involved
SANRAL	GFIP Reinforcing Qualification	<p>Murray & Roberts Limited (Concor Limited) (Concor is a subsidiary of Murray & Roberts)</p> <p>and</p> <p>WBHO Construction (Pty) Ltd</p>	<p>As a prescribed project it fell outside the stipulated time frame for prosecution and as such the Commission could not prosecute or settle in respect of this project.</p>

Table 8.2: Non – prescribed projects

Client	Project name	Construction firms involved	Nature of anti-competitive conduct involved
	2006 Road Contractors Meeting	<p>Murray & Roberts Limited (Concor Limited)</p> <p>WBHO Construction (Pty) Ltd</p> <p>Aveng</p> <p>Raubex</p> <p>Haw & Inglis</p> <p>Basil Read</p>	<p>Murray & Roberts through its subsidiary, Concor, reached an agreement with Aveng, WBHO, Raubex, Haw & Inglis and Basil Read on or about 2006; in that they were attendees at the 2006 Road Contractors Meeting where they agreed to allocate tenders for the construction of roads. There was also an agreement in terms of which the firms who were not interested in the projects or in winning the tenders or were not allocated a project would submit cover bids to ensure that those who were interested in winning particular bids won them.</p>
SANRAL	<p>Gauteng Freeway Improvement Project ('GFIP')</p> <p>Package A (Tender No. NRA N1 001200 – 2008/1)</p> <p>Package B (Tender No. NRA N1 001-200 -2008/2)</p> <p>Package E (Tender No. N1 003 120 - 2008/1)</p>	<p>WBHO Construction (Pty) Ltd</p> <p>and</p> <p>Murray & Roberts Limited (Concor Limited)</p> <p>(Concor is a subsidiary of Murray & Roberts)</p> <p>and</p> <p>Stefanutti</p>	<p>The project was the addition of lanes, construction of retaining walls, bridges and structure, as well as, various intersections on the southern sections of freeways around Johannesburg.</p> <p>WBHO reached an agreement with Concor and Stefanutti (whilst Concor and Stefanutti were in joint venture) on or about 2006 in respect of this project in terms of which the parties agreed to allocate the various packages amongst themselves and to exchange cover prices in this context. According to WBHO the agreement was not implemented.</p> <p>Package A was awarded to Group Five, Package B was awarded to WBHO and Package E was awarded to Group Five. The projects were completed in 2010.</p>

<p>SANRAL</p>	<p>Gauteng Freeway Improvement Project ('GFIP')</p> <p>Package A (Tender No. NRA N1 001200 – 2008/1)</p> <p>Package B (Tender No. NRA N1 001-200 -2008/2)</p> <p>Package E (Tender No. N1 003 120 - 2008/1)</p>	<p>Murray & Roberts Limited (Concor Limited)</p> <p>Stefanutti</p>	<p>The project was the addition of lanes, construction of retaining walls, bridges and structure, as well as, various intersections on the southern sections of freeways around Johannesburg.</p> <p>Concor in a joint venture with Stefanutti reached an agreement with WBHO on or about 2006 in respect of this project in terms of which the parties agreed to allocate the various packages amongst themselves. They further agreed to exchange cover prices to give effect to the allocation agreements</p> <p>Package A was awarded to Group Five, Package B was awarded to WBHO and Package E was awarded to Group Five. The projects were completed in 2010.</p>
<p>SANRAL</p>	<p>N1 North, N1 South and N17 Maintenance Contract</p> <p><i>(*NB* in the absence of further information, it is unclear whether the maintenance the roads in this project had a financial impact on the GIFP)</i></p>	<p>Murray & Roberts</p> <p>Group Five</p> <p>Basil Read</p> <p>Concor</p>	<p>The project involved the tolling and maintenance of N1 North, N1 South and N17 which was started in 2002 and the client for the Project was SANRAL. In this project Murray & Roberts, Group Five, Basil Read and Concor (prior to the merger of Concor and Murray & Roberts in 2006) agreed on a loser's fee arrangement.</p> <p>In terms of the agreement Group Five agreed pay Murray & Roberts and Concor a loser's fee in the South maintenance contract. The parties to this arrangement further agreed that Basil Read should win the N17 portion of the contract, and would therefore not be paid a loser's fee. In line with the collusive arrangement, Group Five paid Murray & Roberts and Concor a loser's fee after winning the N1 North and N1 South maintenance contract, while Basil Read won the N17 Maintenance contract.</p>

8.10.15 The companies that accepted the settlement offers were fined a collective penalty of R 1, 46 billion. The different individual penalties of the 15 companies range between 1% - 5% and 7 % of their 2010 annual turnover in the relevant sector. These fines are lower than the 10% that can be imposed as a penalty. The table below shows the collective fine that was individually levied against each of the construction companies:

Table 8.3: Bid Rigging contraventions and associated penalties⁶⁸

Firms	CIDB Category	No. of Contraventions being Settled per CIDB Category	Penalty as % projects being settled in fast track processes	Total Number of Projects being settled in fast track processes	Total penalty per firm (ZAR)	No. of rigged projects declared	Projects for which corporate leniency granted	Declared projects liable for settlement	Implicated projects being settled
Aveng	CE	14	7.00	17	306 576 143	21	12	9	8
	GB	3	2.25						
Basil Read	CE	7	4.40	7	94 936 248	8	2	6	1
Group Five	GB	0	1.00	0	-	25	25	0	0
Haw & Inglis	CE	6	4.13	6	45 314 041	8	2	6	0
Murray & Roberts	CE	11	6.10	17	309 046 454	12	5	7	10
	GB	2	1.70						
	ME	4	3.50						
Raubex	CE	9	5.40	9	58 826 626	9	0	9	0
Stefanutti	GB	7	4.40	21	306 892 664	15	3	12	9
	CE	14	7.10						
WBHO	CE	9	6.50	11	311 288 311	21	10	11	0

⁶⁸ Competition Commission Media Release dated 24 June 2013 (Appendix 2).

8.10.16 The fines that are paid by the firms that are found to have contravened competition laws are paid to the National Treasury. In this regard, it would be prudent for government to cooperate to alleviate the plight of the Gauteng motorists through the GPG and SANRAL approaching the National Treasury, to lobby for a portion of the administrative fines to mitigate and reduce costs for e-tolls.

8.10.17 It must be also noted that as a regulatory body the Construction Industry Development Board (CIDB) can also impose further penalties against the construction firms. In a media statement dated 25 June 2013 the CIDB welcomed the findings by the Commission and stated that paved way for it to begin its own processes. The letter stressed that contrary to media reports the CIDB had not decided on the nature of the sanctions that will be imposed on the firms. As the regulatory the CIDB can impose sanctions which include a fine up to R100 000, 00 per transgression; downgrading the company; and deregistration (renders firms unable to do tender for government contracts).

Available recourse

a) Claim for civil damages

8.10.18 Anti-competitive behaviour can be enforced through private action in the form of a claim for damages instituted by private individuals such as consumers, customers (class actions) or other businesses which were not members of the cartel. Private actions play an important role in the fight against cartels. Private enforcement of antitrust cases has been very rare in South Africa due to the 'difficulty in establishing the link between the loss suffered and the anti-competitive conduct'.⁶⁹ Other factors include lack of awareness, lack of documents and lack of resources.

8.10.19 Enforcement through civil actions is governed by section 65 of the Competition Act. Section 65(9) of the Competition Act provides that a party's right to claim civil damages only comes into existence after proceedings by the competition authorities. Accordingly,, a party who has suffered any loss or damage as a result of anti-competitive conduct that is prohibited in the Competition Act has a right to claim damages and a civil action for damages only follows after a competition law infringement has been proved in the Tribunal or the Competition Appeal Court ("CAC").

8.10.20 The procedural requirements for commencing a civil damages action are set out in the Competition Act. In terms of section 65(6)(b)(i) of the Competition Act a party who is entitled

⁶⁹ Neuhoff *et al op cit* 345.

to claim damages is required to file with the Registrar of the High Court a notice from the Tribunal or the CAC certifying that the conduct which forms the basis of the claim has been found to be a prohibited practice in terms of the Competition Act. In terms of section 65(7) of the Competition Act, this certificate constitutes 'conclusive proof of its content and is binding on a civil court. This has the effect of easing the burden of proof faced by the plaintiff since the plaintiff no longer has to prove that the defendant contravened the Competition Act.

8.10.21 In terms of section 65(6)(a) of the Competition Act a person who has been awarded damages in a consent order by the Tribunal is expressly excluded from pursuing a civil claim damages. This is in line with the common law which does not allow a party to recover what would amount to double damages.⁷⁰

8.10.22 A party's right to bring a claim for civil damages arising out of prohibited anti-competitive conduct comes into existence on the date of the Tribunal's determination or, the date of the CAC's final decision in the case of an appeal.⁷¹ However, it must be noted that in terms of section 65(8) of the Competition Act an appeal or review against the order of the Tribunal has the effect of suspending the right to commence a civil action from damages.

8.10.23 The collusive conduct that took place in the GFIP and other affected projects has already been proved before the Competition Tribunal. As an affected party SANRAL has a right to sue for damages to recover any loss that it suffered in these projects. Accordingly, SANRAL can institute a claim for civil damages against the construction companies that were involved in collusive tendering during the road construction. To that end, a team of experts comprising of lawyers, quantity surveyors, economists and/or actuaries, among others, would need to be convened for the quantification and recovery of the damages that were suffered.

b) Blacklisting of construction firms implicated

8.10.24 Following the Competition Tribunal's confirmation of the consent orders against the offending firms, questions arise as to how best to deal with the offending firms in the Supply Chain Management and procurement processes within the government. The CIDB is the competent organisation charged with grading of construction firms. In this regard consideration must be given on lodging a formal complaint by SANRAL to the CIDB on the implications of the conduct by the construction firms. Furthermore, the National Treasury can also blacklist firms from participating in government tenders.

8.11 Recommendations

8.11.1 In a letter dated 10 July 2013 to the Competition Commission in reaction to its findings on the collusive tendering in the construction sector, SANRAL stated that it was disturbed and outraged by the collusive conduct as the collusion was against public interest, as well as, to SANRAL's detriment and as such it can never be condoned. In the letter SANRAL also reserved its right to institute civil legal proceedings.⁷²

⁷⁰ Neuhoff et al op cit 344.

⁷¹ Section 65(9)(a) and (b) of the Competition Act.

⁷² Letter from SANRAL to the Competition Tribunal dated 10 July 2013 available <http://www.comptrib.co.za/assets/Uploads/Collusive-Tendering/SANRAL.pdf> accessed July 2013.

- 8.11.2 Furthermore, in terms of section 217 of the Constitution, SANRAL is required to contract for goods or services in accordance with a system which is fair, equitable, transparent, competitive and cost-effective. The collusive tendering by the construction firms not only eroded competition, but resulted in SANRAL contracting for goods and services, presumably on a price that was not “fair” or “cost effective” as required by the Constitution.
- 8.11.3 It is commendable that SANRAL is seen to be co-operating with the noble initiative by the National Department of Economic Development (NDED) which convened a meeting at the instruction of the Presidential Infrastructure Coordinating Commission (PICC) to engage government entities that were affected by the collusive tendering in the construction industry with the view of finding a suitable and coordinated manner to deal with construction cartelists, especially, in relation to blacklisting and instituting a civil claims for damages. However, each of the affected government entities has its own legislative obligations. Government entities are enjoined by legislation, such as the Public Finance Management Act, the Constitution and National Treasury Regulations to act in a certain manner when conduct of the nature engaged in by the construction firms occurs, which includes, blacklisting, restriction, civil litigation proceedings to recover and/or institution of criminal proceedings against the implicated companies and/or individuals.
- 8.11.4 In terms of section 65 of the Competition Act, a civil action for damages only follows after a competition law infringement has been proved in the Tribunal or the CAC. Accordingly, the confirmation of the consent orders by the Tribunal that the construction firms contravened the Competition Act enables an affected party like the SANRAL to sue or claim any civil damages. In light of the above, it is recommend that SANRAL must embark on the process of recovering damages from the construction companies involved. It is of paramount importance that the claim be instituted before it has prescribed. Prescription shall take effect after 3 years of the offence being admitted to and the Competition Tribunal having confirmed such consent orders.
- 8.11.5 As part of the civil recovery process SANRAL must remain alive to the possibility of an out of court settlement with the construction firms. In this respect it is recommended that the Premier may amongst other intervention, seek to persuade SANRAL to consider engaging the implicated construction firms to find an amicable resolution which would bring closure to the matter without incurring the high costs of litigation associated with a claim for damages arising out of a contraventions of the Competition Act.
- 8.11.6 It is also recommended that the NDoT, SANRAL and the GPG lobby National Treasury for the pro-rata portion of the administrative fine linked to the GFIP to mitigate and reduce costs for e-tolls by servicing the debt or settlement of the penalty fee for early termination of the ETC contract.
- 8.11.7 It is also recommended that the Premier should consider advising SANRAL to accept the Competition Commission’s invitation to train its procurement officers on early detection of the collusive behaviour and how best to put measures to avert such undesirable conduct.

8.12 Conclusion

- 8.12.1 It can be confirmed that the Premier is not bound by the conclusions and/or recommendations of the Panel.
- 8.12.2 In the spirit of co-operative governance, it is recommended that the Premier considers engaging the Minister and/or SANRAL on the conclusions and/or recommendations of the Panel's report for ease of implementation where found acceptable to the Premier.
- 8.12.3 Pursuant to the Panel's report, the Premier may in the interest of co-operative governance, initiate round table meetings with the relevant stakeholders to discuss the Panels' findings. Effective co-operation would require all interested parties to negotiate from a position of similar information. This position could be achieved by a privileged exchange of information between the identified stakeholders.
- 8.12.4 In the event that the above non-confrontational round table meeting occurs, access would be required to the following documents:-
- 8.12.4.1 the report of incorporation of SANRAL;
 - 8.12.4.2 the agreement in terms of the SANRAL Act that must be concluded by SANRAL with the Minister;
 - 8.12.4.3 all the agreements signed inter-governmentally, with ETC and sub-contractors;
 - 8.12.4.4 statistics pertaining to the current e-Toll registration;
 - 8.12.4.5 cost incurred for enforcement; and
 - 8.12.4.6 costs incurred for collection.
- 8.12.5 The above documents must be foundational to any negotiations and selection of the way forward. The Minister has to be lobbied to affect a solution that addresses the socio-economic problems effects caused by e-tolls.
- .
- 8.12.6 Legal action can only be brought with sight of the "relevant documents". To overcome the hurdle of the GFIP process being part of an executive decision process evidence of illegality, fraud or corruption will have to be found to render the actions of SANRAL void.
- 8.12.7 Engagement with the relevant stake holders and implicated firms needs to occur on the Competition issues raised.
- 8.12.8 Prior to consideration of any proposed legal action, internal remedies must be exhausted in terms of the provisions of the Constitution.

Informed by the legal considerations in this Chapter, Chapter 9 deals with five substantive cross-cutting issues, before the summary of recommendations in Chapter 10.

9 Cross cutting issues

9.1 International best practice: Pricing as a demand management measure

9.1.1 Introduction

This section provides an overview of some international case studies of cities that have used implemented pricing as some form of travel demand management within the urban transport system. Thereafter a table summarises the international best practice for road pricing as a tool within the TDM. The major justification for these projects are summarised below.

- a) Many of the projects are driven by limited road capacity and heavy travel demand, large number of private vehicles (Milan) which led to congestion.
- b) Environmental tax to drive and contribute to the climate change response (Stockholm, Milan, London).
- c) Funding source for Public transport projects as the money from the pricing is used to fund alternative routes (Stockholm), public Transport (London, Manchester, Milan, Edinburgh, Singapore, etc. and road maintenance (Manchester, Singapore), road construction (.LKW-MAUT-Germany)

9.1.2 Evidence and analysis

The main types of urban tolling process that exist, as a demand management tool, are directly relevant to the e-toll project include:

a) Congestion Pricing

Used in London, Singapore, Stockholm, Manchester and Edinburgh, this is defined as a system where use of roads is charged electronically as a travel demand measure usually demarcated by zones and/or cordons.

b) Highway Occupancy Tolls

Used In Ontario Highway 407, Canada, John F. Kennedy Memorial Highway (Interstate 95), USA, Fas Track at 91 express lanes, Orange County, California, USA, this is a system that charges single occupancy drivers for the use of specific lane.

Based on the setting of this switch, the electronic toll collection system automatically determines whether or not a toll should be charged, also taking into account variable HOV restrictions. Personal vehicles carrying more than a specified amount of passengers (typically two or three) are permitted to use the HOV lanes at a reduced toll (hybrid lanes) or for free (HOT lanes). Additionally, public transport vehicles are typically exempted from this toll

c) Emissions tolling Project.

Used in London and Milan, these are traffic pollution charge scheme with the aim of reducing the carbon emissions of vehicles. In London, it is restricted to commercial vehicles and exempts Public

Transport and fuel efficient commercial vehicles (Euro 3 & 4 vehicles), whereas in Milan, it is charged for all vehicles, irrespective of fuel efficiency.

d) Freight specific (electronic toll Collection system)

Used in New Zealand (called RUC), Switzerland (LSVA), Germany (LKW-Maut), Austria (Go-Maut), Czech Republic, Slovakia, Poland, and in four US states: Oregon, , the system is a distance based tax paid exclusively by heavy vehicles. In Germany, the tax is levied for all trucks using German highways, whether they are full or empty, foreign or domestic.

9.1.3 Critical success factors

- a) Cities like London, Milan, had good travel alternatives, which including walking, taxi, bus and subway services. In London, the number of public transport in the form of buses were increased
- b) Payments could be made at selected retail outlets, payment machines, kiosks, internet, banks, credit cards and cellular telephone messaging, any time during that day for most of the cities.
- c) Project should be time variable focused on peak and off-peak travel so as to spread and/or lower the peak travel. This should be linked to the costs, encouraging use of the systems off-peak. In Stockholm, tax is not paid on Saturdays, Sundays, public holidays or the day before public holidays, nor during the night time period (18:30–06:29).
- d) Simple projects that are easy to understand. Stockholm has a 6 month trial period for the project from 3 January 2006 and 31 July 2006 to allow the users of the project to understand it.
- e) The fines for the project are highly punitive and increase exponentially to promote compliance. In Sweden, once a fine is not paid, then authorities can automatically remove the amount from the offenders' bank account.
- f) Officers patrol the highways, checking vehicles and drivers to see if they have paid the toll or have the OBU installed for the mandatory toll collection systems.

9.1.4 Lessons from Unsuccessful Projects

- a) Political will through the Mayors, elected candidates, make or break this project as it is used for electioneering. As a result Projects were canned through a referendum process for Edinburgh and Manchester. The Stockholm project was accepted through a referendum after a trial period of 6 months was implemented.
- b) The failure to achieve support for Projects was mainly attributed to: lack of adequate public transport, lack of consistent political will in investing in public transport before the project was initiated and a distrust of the motives of the authority.
- c) Projects need a charismatic and a powerful champion for the scheme, for example Ken Livingstone-London. The project Champion is better placed as a political head willing to see the project through. Likewise it's dangerous for the project detractors to have a face and a following politically.
- d) The timing of the project is important as a weak economy and depressed market growth condition determines the affordability and hence the acceptability of the project. Manchester project was rejected in 2008 during the global economic recession.

9.1.5 Discounts and Exemptions

- a) London Congestion charging exemptions include; motorcycles, licensed taxis, vehicles used by disabled people
- b) For the London congestion charging projects, some alternative fuel vehicles, buses and emergency vehicles, and area residents receive a 90% discount on annual passes. Motorists can purchase weekly, monthly and annual passes with modest (15%) discounts.
- c) In Stockholm, exemptions include; emergency vehicles, buses, diplomatic vehicles, disabled persons vehicles, military vehicles, hybrid or electric cars, motorcycles and mopeds, and foreign-registered vehicles
- d) Exemptions who have no alternatives than to use the system were also provided in Stockholm
- e) For the emissions tolling schemes; there is usually the unintended consequence of not reducing congestion. For example in Milan, the Eco pass congestion charge was re-introduced in 2012 charging all vehicles in the Milan area as, the original project in 2008 had exempted fuel efficient vehicles. In this case, residents adapted and bought fuel efficient vehicles and thus the car use and congestion was not abated in Milan

9.1.6 Impact of projects

- a) In Singapore, the charge has been successful in reducing the number of solo drivers and shifting trips from peak to non-peak times. Furthermore, Singapore's Congestion Zone has seen a 13% reduction of traffic during charging period. It has also led to a reduction of 24,700 cars driving during peak and a 22% rise of traffic speeds.
- b) In London, congestion was reduced dramatically and public transport schedules needed to be updated within two weeks as traffic had substantially reduced in the City centre. On the first day 190,000 vehicles moved into or within the zone during charging hours, a decrease of around 25% on normal traffic levels. Excluding 45,000 exempt vehicles, the decrease was more than 30%. Anecdotal evidence suggests journey times were decreased by as much as half. Around 50–60% of this reduction was attributed to transfers to public transport, 20–30% to journeys avoiding the zone, and the remainder to car-sharing, reduced number of journeys, more travelling outside the hours of operation, and increased use of motorbikes and cycles. Journey times were found to have been reduced by 15%.

9.1.7 Comparison of e-toll system and international best practice with Travel demand measures

Table 9.1.1: International best practice

International Best practice	GFIP Phase I adherence	Impact
Pricing methods should be cost effective to implement	Partial	Yes for tagged and registered users No for untagged users as costs incurred rely on an accurate E-Natis system, efficient postal services and convenient e-toll payment centres/ offices.
Pricing method should be convenient to users	Partial	Yes for tagged users as three options exist- pre-paid, debit order options No- untagged users penalised for: late payment (7 day grace period), rely on E-Natis system, proper vehicle license recognition system and efficient postal services.
Pricing methods should accurately reflect the costs imposed by each trip	Partial	True for tolled users per gantry Not true for untagged users who do not pay in the required time. Costs are highly punitive for late payments
Use time-variable tolls, with higher rates during peak periods and lower rates during off-peak periods, to reduce congestion	Yes	Toll fees vary between peak and off-peak. The scheme provides for off-peak discounts of up to 30% of the base tariff
Apply congestion pricing on existing roads, not just new facilities	Yes	All GFIP phase I roads are existing roads that were expanded to increase capacity
Price individual trips. Avoid significant discounts for frequent users as this contradicts TDM	Partially	Frequent users fee was capped for both tagged and untagged users even though system users do not feel this fee if the bills greater than 450 rand are received by system users
Encourage development of travel alternatives, including flexitime, ridesharing, transit improvements and bicycle facilities	No	Project was communicated as a stand-alone project and not a basket of projects to provide viable options. Only the Gautrain appeared through its advertising to provide an option for users
Integrate pricing with other TDM strategies that increase traveller choice and provide additional incentives to use alternative modes in the same area	No	Project was implemented as a stand-alone project as implementation of these alternatives are carried out by separate agencies
Insure that road pricing decisions are transparent, built on public participation and trust	No	Top –down approach to s for road pricing decisions were made and communicated to users, however they were informed based on willingness to pay surveys and in-house financial model
Address equity concerns by insuring that all groups receive benefits, either through rebates or improved travel choices	Partial	Scholar transport exempted but not communicated. Public transport with viable operating licenses exempted. No exemptions for; disabled, elderly, High-occupancy vehicles, green vehicles, weekend travel, etc.

Make prices as predictable as possible	No	Pricing appears to be complicated to the users as it changes per vehicle type, per gantry, per time of day per user type (tagged/ untagged).
--	----	--

9.2 Spatial planning

The establishment of South African cities was influenced by the apartheid segregation laws that restricted the majority of the Africans into dormitory towns along the urban periphery, devoid of any socio-economic amenities. The spatial planning of the apartheid city also reinforced the migrant labour system between the rural and urban, and dormitory towns with the economic nodes. The commuter rail was structured to support such policy directives and legislative frameworks on exclusion of the majority from the urban nodes and insistence on their preservation within the dormitory towns. The commuter rail being the public transport intervention that the apartheid government introduced to sustain labour supply from the rural areas, homelands and/or townships.

Rail infrastructure remains the backbone of spatial geography and influences land use development across localities, including settlement patterns as a result of routes established for both commuter rail and cargo goods. Although the layout of the national rail network is well developed despite the condition of its infrastructure, it remains mostly suitable for especially long distance travel, and daily commuting to work within the framework of an apartheid city – ferrying labour from dormitory towns to economic nodes. Commuter rail is the available public transport provided for by the State had its disadvantages on unreliability of services and safety although it has remained relatively affordable for the majority of the workers. There was an opportunity for the taxi industry to provide “outside-the-doorstep” transport services for most of workers commuting from the townships to the economic centres, and this has defined much of what currently accounts for public transport in South Africa.

The “spatial and demographic story” of South African cities is about creating linkages that support the needs and demands of rapid urbanization through transport infrastructure to achieve economic growth and trade across the regions, rural and urban boundaries.

However the current recapitalisation of rail infrastructure coupled by the implementation of the BRT systems across South African systems present a strategic shift in the public transport system for the future. The strategic shift representing implementation of various legislation including the NLTA, will redress the apartheid spatial development patterns, in support of high density and mixed use activities along the transport corridors to maximise access to opportunities and convenience of travel. Of significance in current transport investment are attempts to provide for an integrated transport system across South African cities, to ensure for optimum utilisation of current transport nodes for either rail and/or taxis as intermodal facilities providing a platform for further local economic development and growth, especially for small businesses.

Transport infrastructure in especially road and rail, is a permanent feature such as the housing footprint, influencing development decisions and also used as a tool to manage land use for the purposes of achieving the following:

- a) Mixed-use corridor development along major arterials to shorten travel distance to and from work;
- b) High density housing development along transport routes to provide sufficient population threshold for the sustainability of an integrated transport system;
- c) Integrated human settlements to maximise access to socio-economic opportunities.

There is therefore a need to close the distance currently travelled by those on the urban edge to work opportunities mostly located in the urban core.

The location of much of the urban population on the periphery perpetuates urban sprawl and the distance poses premium cost limitations for government to efficiently deliver on public services. It is in this regard that there needs to be co-ordination on new settlement patterns across spheres of government, to ensure that they are located within proximity to the economic nodes. The decision for human settlement developments since 1994 along the urban periphery was influenced by the cost and availability of land for development. This has since been mitigated by the strategic decision by government to influence land-use development along the transport corridors with the priority for mixed use activities, to counter the NIMBY⁷³ syndrome by most of the middle and upper income groups that made infill developments difficult, rendering low income human settlements to the urban edge.

However, the proposed construction of freeways as Phase 2 of GFIP will create linkages to the urban periphery essential in accomplishing the following objectives:

- a) Regional integration (through east-west, and north-south development axis).
- b) Facilitate ease of travel to work through transport corridors
- c) Create linkages to markets for township economies.
- d) Provide new opportunities for expansion of township businesses along designated public transport corridors on the new freeways.

Although the benefits of GFIP implementation in spatial integration through densification and mixed-use opportunities are recognised, these should not be threatened by a recent phenomenon developing within the Gauteng City Region, of the upper middle class choosing to locate in lifestyle estates, thereby increasing the unit cost of providing bulk infrastructure at low densities.

Notwithstanding the benefits on spatial linkages associated with GFIP Phase 2 implementation (i.e construction of the PWV9 for north-south connectivity), the implementation of e-tolls around what is termed the “ring-road” has unintentionally created a buffer for those travelling from the urban edge to the urban core for income opportunities. The tolled ring-road could be perceived as an exclusion mechanism and a potential tax for those from the urban periphery wishing to access and use roads within the ring-road. This could further isolate township businesses and make their linkages the mainstream economic activities tedious.

Although e-tolling was adopted as a funding mechanism to facilitate for implementation of GFIP, the location of the gantries would have to be reconsidered to the extent that they do not perpetuate the constructs of an apartheid city by excluding the majority from the urban periphery from access to the urban core for income opportunities. Some of the submissions from the public hearings included a flat rate or relocation of some of the gantries for the purposes of congestion management on some of

⁷³ NIMBY: Not-In-My-BackYard

the roads. This was too proposed as a measure to reduce the cost of the urban periphery to access and use the tolled highways.

Notwithstanding the above, the implementation of an integrated transport system, with GFIP as a component thereof, will facilitate for spatial integration across the Gauteng City region. An integrated transport system provides opportunities for:

- a) physical linkages through transport infrastructure and seamless intermodal operations across municipal boundaries;
- b) requires for the prioritisation of mass transit in commuter rail and the BRTs to facilitate for movement of people on designated public transport corridors;
- c) would facilitate for the migration of some of the freight vehicles to cargo rail, resulting in ease of congestion and damage to the highways.
- d) provides for the deconstruction of the urban built form through opportunities in infill developments and densification, necessary to sustain the viability of public transport interventions;
- e) makes delivery of bulk infrastructure and government services within densified settlements more cost-efficient,
- f) provides improved living conditions within integrated human settlements within close proximity to socio-economic amenities.
- g) Justify the implementation of user charge on the freeways as a mechanism to discourage single-private car usage and therefor congestion.

The above benefits of an integrated transport system is supported by government policies and legislation across the spheres of government, developed since the dawn of democracy in 1994, including the following:

- a) White Paper on Local Government
- b) Gauteng Spatial Development Framework
- c) National Framework for LED in South Africa, 2006 – 2011
- d) Integrated Sustainable Rural Development Strategy 2000
- e) The Accelerated and Shared Growth Initiative of South Africa (ASGISA)
- f) Regional Industrial Development Strategy

There has therefore been a deviation in implementation of government policy to achieve spatial integration through the physical constructs of transport infrastructure and human settlements, either through design or as a consequence of necessity. There is therefore a need to take stock of current implementation of various public policy frameworks, especially as it impacts on the “man on the street” in ensuring that it is consistent with local needs and priorities.

9.3 Integrated transport planning and implementation

A major cross-cutting theme running through the Panel's investigation was the need to locate the GFIP and e-tolls project within the context of an integrated transport system for Gauteng. This is one of the few points on which all consulted parties agreed. However there is widespread concern that the GFIP in its current form does not give sufficient life to this integration.

9.3.1 The need for an integrated approach

The need for an integrated transport planning approach is at the core of most of our national transport policies and plans. The National Development Plan sees the state as a capable navigator that will oversee a transport system that serves the interest of society; establish a holistic view of national transport realities; and prioritise, plan and provide basic infrastructure where needed.

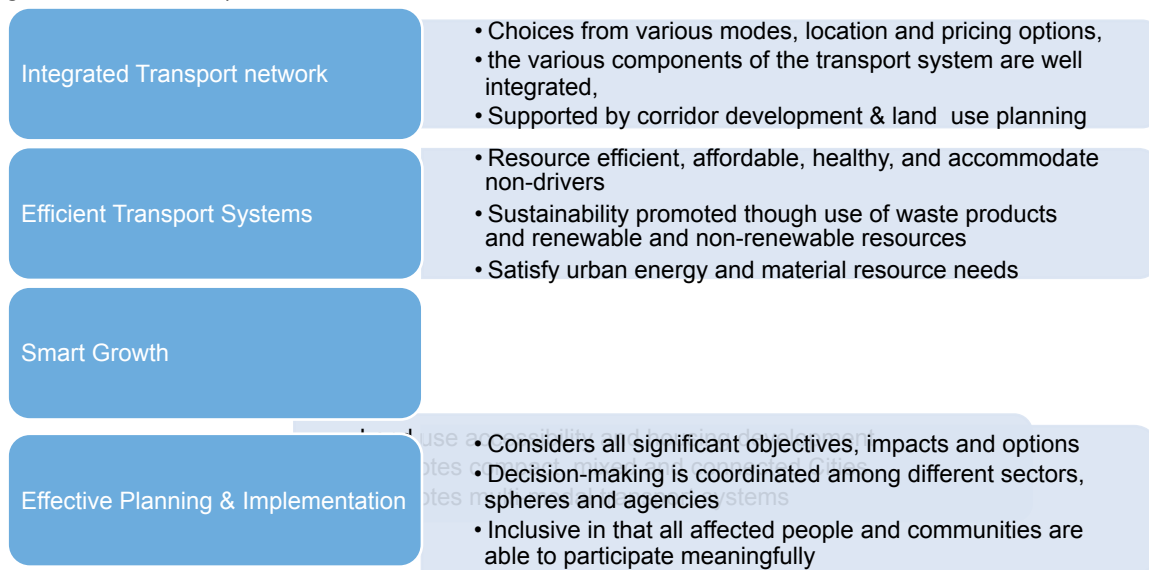
This integration should be reflected in all aspects of priorities, programmes, and strategic interventions related to the development of the transport network, including:

- a) Integration across space: To achieve improved access to economic opportunities, social spaces and services by bridging geographic distances affordably, reliably and safely (NPC, 2013), networks need to be integrated across administrative boundaries (e.g. across municipal boundaries within the Gauteng City Region). Planning and implementation structures should facilitate sharing of both benefits and costs across jurisdictions affected by a particular infrastructure.
- b) Integration across modes: A multimodal approach towards making transport more effective should include road investment, public transport investment and subsidy, land use strategies, and travel demand management, in a way that enables trade-offs to be made between investment in *different* modes in order to achieve an optimal balance of modes that would provide for lower overall mobility costs
- c) Integration across regulation, funding and pricing approaches: A coherent policy on funding and pricing across modes and sectors would focus not only on cost recovery, but also on achieving other objectives, such as changing travel behaviour, promotion of public transport use, environmental goals, and urban development (reducing urban sprawl, promoting densification), while offering users a reasonable set of choices in line with varying needs and preferences.
- d) Integrated across institutional structures: Entities responsible for different parts of the spatial system need to plan in a coordinated manner. This also includes departments responsible for housing, land use planning, and other infrastructure.
- e) Integrated over time: Infrastructure development is a long-term undertaking. Yet many government actions are aimed at short-term problem solving. A balance is needed to ensure a consistent movement is achieved towards a long-term vision supported by sustainable funding.

Present transport policy articulates this notion of integration in terms of a clear shift away from historical biases in favour of low-density, car-based development, towards more efficient land use, correcting past imbalances and reducing travel distance and time (White Paper on National Transport Policy, 1996). The White Paper further calls for the prioritisation of public transport over private transport, while the subsequent NLTA requires that transport infrastructure must be procured in a manner that prioritises public transport, especially in metropolitan areas.

Through the process of developing the GITMP, Gauteng has translated these principles into a set of drivers to guide transport development in the Province for the next 25 years (Figure 9.3.1).

Figure 9.3.1: Transport Investment Drivers



Source: GITMP 2013

Investment choices are already reflecting this shift in priorities. Over the past 5 years, national expenditure on public transport infrastructure has increased on average with 19,9% annually. A large part of this is being channelled to upgrading to the rail system (Gautrain, PRASA), recognising that rail is the backbone of the public transport system and the only system that can carry large volumes of passengers in concentrated corridors. About 38% of the national Public Transport Operational Grant (PTOG) allocation of R4.8bn is allocated to Gauteng (DoT submission to Panel, 2014). Most of this goes towards upgrading bus and taxi systems forming part of Integrated Rapid Public Transport Networks (IRPTNs), including the Bus Rapid Transit systems being rolled out in Johannesburg, Tshwane and Ekurhuleni.

9.3.2 Evidence of a lack of integration

The above principles notwithstanding, the substance of many of the submissions during the Panel's consultations points to weak integration between the GFIP, as implemented, and other aspects of the transport system. Examples of this disconnect include:

- a) Misplaced strategic emphasis on road investment in the context of the need to build more sustainable cities. Given the policy shift, some submissions to the Panel queried whether investing R20bn in freeway upgrades is in keeping with prioritising more sustainable transport options, especially given the massive further investment needs of a deteriorated public transport system suffering from historic underinvestment. This not a straight-forward question to answer. The vast majority of daily travel takes place on the road network – the NDoT notes that 94 % of the 35 million daily motorised person trips recorded in South Africa are road based (DoT submission to Panel, 2014). The Gauteng ITMP similarly states that population and vehicle ownership will keep on growing, that “both the GDRT and the Metropolitan, District and Local Councils relied on the

GFIP network as the backbone mobility road network of the province”, and that “implementation of the proposed further phases of the GFIP road is essential” (GPG, 2013). If it is accepted that road network development is needed to accommodate growth, the question that needs to be asked is how this can be done in a manner that optimally leverages more sustainable travel and land use patterns. Two issues then become relevant: whether the user-pays principle as a funding method promotes an integrated, balanced transport system; and whether the manner in which the GFIP itself was implemented achieves this goal. As discussed elsewhere in this report, pricing road use at the point of use is considered internationally as an effective way of promoting sustainable travel choices, as long as users have the option of changing their behaviour (e.g. by changing modes or reducing non-work travel). Thus tolling could be an important part of a sustainable transport strategy, under the right conditions. As is argued below, however, the Panel believes that the manner in which GFIP was implemented failed to adequately leverage a shift towards more sustainable options.

- b) Claims that the supporting secondary road network is inadequate to offer viable alternatives to commuters tolled off the freeways. The suggestion by many organised formations and public submissions was that they saw no coordinated plan about how such alternatives would be developed over time. Transport experts pointed to a mismatch between the high quality freeways and underinvestment in secondary (supporting) metropolitan roads.
- c) Relatively widespread perceptions that viable public transport alternatives do not exist for many freeway users, as a mitigation measure for those tolled off the network. This view was expressed by many submissions from the public and organisations, as well as transport experts and SALGA on behalf of municipalities. This point was conceded by the 2012 Steering Committee which was established to address the concerns of stakeholders via a further consultative process. A work stream looked specifically at public transport alternatives available to affected motorists. It noted that various initiatives were underway to incrementally improve rail, bus and taxi services, and that “public transport alternatives do exist for motorists who may not be able to afford the tolling or do not want to pay toll fees” (DoT, 2012: 57). These alternatives consist inter alia of:
- Gautrain and its feeder/distribution bus services – while it is an alternative to some freeway trips, it is likely so for only a small fraction of freeway users due to the limited reach of the present network. The Panel’s traffic investigation suggested that tolls caused about 1,900 drivers (3,800 trips) to divert to Gautrain daily, which is less than half of one percent of all GFIP travel;
 - PRASA Metrorail services – services between Tshwane and Johannesburg (including the higher quality Tshwane Business Express), and between Ekurhuleni and Johannesburg provide some alternative to freeway use. These services are currently being upgraded to improve their service quality;
 - Bus services – metropolitan bus services (e.g. Metrobus in Johannesburg) provide some services on freeways or parallel routes, but these do not match the whole journeys of freeway users, and usually run at very low frequencies, making them very uncompetitive with the freeway/car option;
 - Bus Rapid Transit – the embryonic Rea Vaya system in Johannesburg is of limited size and the location of its current network makes it of limited value as a freeway alternative. In Tshwane and Ekurhuleni the first BRT routes are not yet operational.

- Taxi services – a limited number of taxi services operate on the GFIP freeway. Taxis provide better coverage of origins and destinations, but services are fragmented and generally of low quality, and unlikely to be considered attractive enough to be seen as viable alternatives to freeways.

Thus the Steering Committee report noted that several constraints might prevent motorists from actually using these options, including poor information, poor integration, safety and security, and slow speeds of public transport options. In mitigation, twelve routes were identified between major origin and destination points of freeway users, where dedicated bus services linked to park and ride facilities could provide new alternatives to freeway users. The Steering Committee noted that no funding has been set aside for such services, and that developing public transport further is a long-term undertaking for which, it was recommended, the work stream should continue to assist in the identified interventions. It is not clear that this has happened.

- d) The limited ways in which the freeway project, as implemented, has been used to leverage additional benefits for public transport and other sustainable modes. By zero-rating registered commuter public transport vehicles on the network, priority is indeed given to public transport in terms of costs, which is commended. However, it is possible to imagine that such a significant infrastructure investment could have been designed to deliver other benefits in terms of connectivity, travel time savings and reliability to public transport services or even high occupancy vehicles (HOVs). In fact, technical studies were undertaken at the time of project planning to investigate the feasibility of dedicating some lanes to HOVs and public transport vehicles. Difficulties in enforcement and technical feasibility of operating HOV lanes led to a decision to proceed without HOV facilities⁷⁴. However it is noted that such visible efforts would have helped to position GFIP in the public mind as not just a roads project, but as part of a system of interventions with a wider mobility and sustainability goal.
- e) Claims of diversion of heavy vehicles onto the secondary road network. The evidence here is not conclusive. In their submissions to the Panel several municipalities claimed that they were seeing more diversion onto their local road network as a result of e-tolls, and that this raises their road maintenance and management needs. The diversion of heavy vehicles, in particular, is of concern due to their disproportionate impact on secondary roads. However SALGA, in its submission, also concedes that the GFIP (without tolling) relieved traffic on municipal and provincial roads, in effect reducing road maintenance needs. These two findings are not in conflict with SANRAL's traffic models and planning, nor with the Panel's own traffic investigation (GIBB, 2014). However there is no agreement on which effect is greater – i.e. is there a net increase or decrease of traffic on municipal roads. Some cities feel that SANRAL should be responsible for mitigating the additional traffic impacts on local roads, such as the City of Johannesburg that is particularly concerned with the impacts on their own M1 and M2 (SALGA, 2013:26). Unfortunately in most cases municipalities do not have sufficient traffic counting records to argue their case

⁷⁴ Aurecon, "Integrating the Gauteng Freeway Improvement Project (GFIP) with Public Transport and Implementing Travel Demand Management (TDM) Measures", January 2011.

conclusively. The result is that, rather than identifying a potential problem head-on, agreeing on its magnitude and causes, and devising funding and management approaches to solve it – as one would expect in an effective institutional context – the various parties are locked in unproductive disagreements.

Taking all of these points into consideration the Panel finds that the evidence points towards a lack of sufficient integration of the GFIP/e-tolls project with other aspects of the spatial/transport environment. This has negative implications not only for its ability to contribute to effective and rational network implementation, but also to address spatial equity concerns and promote longer-term sustainability and spatial transformation objectives.

9.3.3 Causes of the lack of integration

In trying to understand the cause of this disconnect, the Panel noted that early conceptualisation of the GFIP project took place in the wider multimodal context. Gauteng’s “Proposal for a Gauteng Freeway Improvement Scheme” of 2006 followed from an intergovernmental committee process which was a joint effort between the NDoT, Gauteng Province, municipalities in Gauteng, and SANRAL. The scheme at the time envisaged a network of new freeways that would give more options to road users. Detailed work was also done on the feasibility of implementing dedicated HOV or public transport lanes on the freeway network.

Initial thinking was that the GFIS would be implemented via a Special Purpose Vehicle (SPV) consisting of Gauteng Province, the Metros, SANRAL, and the private sector. This would have enabled toll revenues to be shared with municipalities, for application to public transport upgrading and the maintenance of alternative roads, for instance. Yet there was a gradual climb-back from this position. In 2007 SANRAL reported⁷⁵ that the GFIP is “an example of co-operative governance ... being implemented through agreements with many role-players: the three metropolitan areas, the province and various private sector companies.” The project was reported as including “initiatives such as the High Occupancy Vehicle (HOV) lanes and BRT systems to improve traffic flow, particularly with respect to public transport,” in line with national transport policy. In 2008 and 2009, even after construction work on the GFIP started, SANRAL reported^{76,77} again that the freeway scheme would include high occupancy vehicle lanes “to contribute to the reduction of congestion”.

By 2011, while construction was nearing completion, SANRAL had retreated from the actual provision of HOV lanes to “*include[ing] space for dedicated high occupancy vehicle lanes*” in the design of the network⁷⁸. SANRAL added that it “*hope[s] that in the not-too-distant future public transport operators will avail themselves of this opportunity to expand low-cost mass road transport for Gauteng commuters.*” It is clear from this that SANRAL sees itself, correctly in terms of its legislative

⁷⁵ CEO’s Report, SANRAL Annual Report, 2007, pp.26-27

⁷⁶ CEO’s Report, SANRAL Annual Report, 2008, pp.32-33

⁷⁷ CEO’s Report, SANRAL Annual Report, 2009, pp.23

⁷⁸ CEO’s Report, SANRAL Annual Report, 2011, pp.6-7

mandate, as a provider of necessary road infrastructure and supporting systems – but that any specific plans to implement public transport solutions had been abandoned and were not seen as a part of its mandate. In fact the language used implies that at this stage no specific strategy existed on the side of provincial and municipal counterparts to make use of the HOV opportunity.

Between 2006 and 2011 several developments seem to have contributed to this retreat in the scope of the project. These include:

- a) Progress towards planning and deploying improved public transport systems was much slower than expected, due to a variety of factors including limited implementation capacity at municipal level; poor progress with overhauling the subsidised bus system at national level; slow translation of the public transport strategy into projects; and the late arrival of significant funding for public transport infrastructure from Treasury after 2009. In effect local and provincial government, with whom the constitutional mandate for public transport lie, were unable to perform this task adequately, causing SANRAL to proceed on its own. Furthermore, what investment there was did not help to reduce the demand for car use – NDoT acknowledges that “although expenditure on public transport increased dramatically over the past 10 years (R190 bn) there has not been a reduction in private vehicle usage” (DoT submission to Panel, 2014). This concurs with international experience, which indicates that significant public transport investment on its own is not enough to effect a shift towards more sustainable transport – it needs to be supported by more equitable pricing of road use.
- b) Concerns with the high toll tariff proposed for the GFIP toll roads forced SANRAL to consider ways of reducing its revenue targets, resulting in the scrapping of that part of the toll revenue that could have been used to improve public transport. In short, revenue sharing, over and above the required toll tariffs to cover debt, capital cost, maintenance cost and operational cost would have resulted in higher toll tariffs. It was thus decided to promote the use of public transport through toll tariff structuring (discounts or exemptions for public transport vehicles), rather than cross-financing. It was further argued that Treasury via NDoT was increasing capital expenditure on public transport in any case and that this was a preferable way of funding public transport.
- c) The creation of an SPV would have required supporting legislation. Existing legislation states that toll revenue may only be applied to a declared toll road, and cannot be used to cross-subsidise other infrastructure. Thus sharing of toll revenue with other parties, such as municipalities who would be responsible for implementing public transport, would have required new legislation. This was considered an arduous process: Gauteng Province had attempted (unsuccessfully) to implement their own toll legislation since 1998.
- d) Disjointed planning processes contributed to the failure to properly plan for the impacts of the GFIP and e-tolls on the provincial and municipal spheres of government. Municipalities were involved during the early processes of scoping, planning, and designing the GFIP, and some cities (e.g. Tshwane, Johannesburg) adopted formal council resolutions supporting it as a tolled scheme. Yet none of the municipalities had incorporated GFIP in their Integrated Transport Plans (ITPs) (SALGA, 2013). According to the NLTA the ITP is the legal instrument through which municipalities implement coordinated, developmental transport plans in their areas. The fact that

a major intervention such the GFIP/e-toll project fails to make it into municipal planning cycles is a cause of major concern and suggests that, in SALGA's words, "Gauteng municipalities are institutionally not ready to interface with GFIP" (SALGA, 2013:26).

- e) Failure of continuity between successive administrations at provincial and national levels. Several submissions to the Panel pointed to wavering support for e-tolls among ministers and officials over time. In addition, there seemed to be no effective and compelling vision at provincial level articulating of the type of spatial future Gauteng was building towards, how and why road improvements fit into this, and how trade-offs with other investments (e.g. Gautrain) were being managed in a holistic way. The completion of the ITMP process in Gauteng has slightly improved the situation, but the Panel fears there is still a vacuum, at least in the public mind, of an integrated plan.

All of the above factors speak to insufficient intergovernmental coordination, and severe implementation problems surrounding the integration with the GFIP and e-tolls within larger government processes. At a local level, there is concurrence with SALGA's pronouncement that "it is clear that the concept of integrated transport planning and management is effectively not practiced" (SALGA, 2013:27). At a provincial level, visionary guidance that ensured tolling issues are anticipated and effectively addressed – even if it meant stepping back on the extent of the GFIP project to keep better pace with the progressive provision of good alternatives – was lacking. At a national level, SANRAL elected to push ahead in line with its own road-building mandate in response to poor implementation ability amongst other government role players. This was, in a sense, a *realpolitik* response to an imperfect situation. However, in doing so SANRAL (as did other role players) failed to grasp fully the risks inherent in proceeding with a partial solution, especially given that the tolling project would impose significant costs on (some) citizens. It is clear that many of the negative impacts of GFIP/e-tolls reported during this Panel's consultations could have been avoided, or at least adequately mitigated, if the disconnect between the project and the larger integrated transport context had been avoided.

9.3.4 Recommendations for an integrated transport system

- a) Facilitate an ongoing intergovernmental forum, including local, provincial, national government, and SANRAL, aimed specifically at addressing the various issues raised by the GFIP/e-toll system, in whatever way it proceeds. Such a forum should inter alia (i) agree on, and facilitate, a method to monitor traffic patterns and diversions to the non-tolled road network; (ii) facilitate the implementation of mitigation measures and mobilise funding, for instance from the NDoT's road maintenance grant; (iii) coordinate implementation of priority public transport projects to address issues of alternatives for road users under charging; and (iv) ensure that future issues around road development in the province are properly included in local IDP and ITP planning processes. The process is also critically important for moving ahead with Gauteng's ITMP implementation, and should be driven at a high level, for instance by the office of the Gauteng Transport Authority envisaged by the ITMP.
- b) The Establishment of Intermodal Planning Committees (IPCs) on Metropolitan/Local Sphere of Government with the purpose of, amongst others, co-ordinating the planning and operation of all modes of public transport on local level is strongly recommended

- c) Identify priority public transport and/or HOV projects to serve as visible alternatives for freeway users who wish to switch from using the car. Such project(s) need to serve a symbolic value of (i) turning the public attention towards the wider issues at stake in the e-toll debate, namely sustainability and the need for a more balanced transport system; (ii) creating awareness that transport funds (including tolls) are used to promote alternatives and choices, rather than (as tolls are often perceived) charging for an existing facility only. Such project(s) should also be strategically integrated with the ITMP strategy and link optimally with other existing services such as Gautrain. It could be linked to specific incentives to get the message across, such as public transport discounts if people can prove (via their previous e-toll accounts) that they are electing to use public transport/HOV rather than driving.
- d) Within the SIP 2 and the GFIP Phase 2 projects, planned roads (PWV14 & PWV15) that have been earmarked as freight ring routes by the ITMP25, should serve as an alternative route so as to ensure that heavy vehicles use the outer ring roads to connect the three cities which are served by freight hubs, thus controlling heavy vehicle freight movement on the GFIP network and into the major cities. The proposal is that once these roads have been constructed, the tolls on heavy vehicles on the GFIP phase I network should be increased to act as a deterrent for heavy vehicles, but also increase the design life of the pavement. Road freight can be charged on a tariff basis based on a kilometer per tonne on freight vehicles. Freight charges however should facilitate growth in rail-freight, contributing to the Government's objective delivering social and environmental benefits by relieving road congestion and reducing air pollution
- e) Invest in appropriate skills and competencies to function in an integrated transport system with a focus on integrated planning, budgeting, and management.

9.4 Institutional arrangements

9.4.1 Transport Authority

Chapter 2 of the NLTA Act 5 of 2009 makes a case for the creation of an institutional arrangement that allows a municipality in its capacity as planning authority to prepare transport plans for its area. Gauteng has historically built a case for a joint Transport Authority for the three metropolitan municipalities and the two district municipalities as the transport infrastructure and operations interface across municipal boundaries. In 2007 the GPG set up the Gauteng Transport Management Authority (GTMA) to fulfil this purpose but legislatively failed to set up in terms of the requirement of the NLTA.

The GITMP further emphasized in its five year implementation plan, the establishment of an institutions in Gauteng to be tasked with the role of developing a holistic framework for transport and related planning, so as to:

- a) Encourage greater synergy and co-operation between all spheres of government and the various institutions involved with transport planning and operations in the province; and
- b) Ensure that the implementation of transport and monitoring its performance in achieving its goals and objectives

The GDRT has established a Gauteng Transport Commission comprising of the political principals in charge of transport (MEC's and MMC's) assisted by the Panel of experts to facilitate the implementation of the 5-year Gauteng Transport Implementation Plan (GTIP5) and the GITMP for joint planning and co-ordination aimed at improved transport service delivery, in providing a reliable, affordable, safe, accessible and sustainable transport system in this globally-competitive city region. Within the context of the impact study, the Gauteng Transport Authority has been highlighted as a requirement to solve the following challenges;

- a) There should be a transport authority with responsibility for managing dedicated funding and improving all modes of transport with priority attention to public transport
- b) There is currently ongoing public transport projects that are being implemented that need to be co-ordinated in terms of standards, guidelines, challenges and intercity transport linkages.
- c) The lack of co-ordination between departments and agencies with responsibilities that impact on transport, housing and land use planning issues.

There will be key steps required to ensure that the Gauteng Transport Commission evolves into a Transport Authority with the legislative powers of a Transport Authority as set out in the NLTA. The recommendation of this study is that the province should fast track the implementation of the Single Transportation Authority with regulatory powers to manage the preservation, upgrading and extension of all transportation infrastructure, financed through a single Transportation Fund. The Transport Authority should be responsible for the determination and prioritization of the funding requirements and the eventual inter-modal allocation of available funds based on the ITMP25 and the municipalities ITP's and projects.

9.4.2 Transport Regulator

Regulatory bodies exist for the purpose of economic and social regulation, including balancing provider interests and consumer welfare, as well as fostering future innovation, so as to meet government policy objectives and development imperatives. Regulation includes reviewing costing and pricing mechanisms and regulating actual tariffs for a service. It also extends to monitoring and enforcement of regulatory decisions. In the case of transport, the role of the sector regulator would be to ensure that pricing is fair and equitable, across all modes of transport, in line with the specific sectoral, industry and service requirements.

The NDoT indicated in 2013 that it would be setting up the Single Transport Economic Regulator with the possible intention of merging various economic regulators for the following purpose:

- a) Regulation of tariffs across the transport sector
- b) Creation of an investment climate conducive for investment
- c) Protection of the public interest
- d) Regulation of quality of service

Some of the impacts that have created the need for the transport regulator include the following:

- a) The pricing structures are not transparent and users of the toll system do not understand the tariff structure build-up between the capital and operational requirements of the project.
- b) There is no clarity on the timelines required for the collection of the funds required to pay back the capital infrastructure for the GFIP 1 and the future phases of the GFIP project.
- c) The regulated process followed by the energy, communication and ports sector provides an opportunity for public participation to provide input through the hearings.
- d) The e-toll tariffs are not carried out through the traditional Concessionaire arrangement and thus for the GFIP network, the toll tariff have to be gazetted and implemented by the DoT.
- e) Freight Rail tariffs are not directly proportional to the damage and additional cost of the road.
- f) Equity imbalances and the exemption of classes of traffic that promote travel demand behaviour can be addressed.

Many of the proposed components of the study are relevant for the e-toll transport pricing regulation such that:

- a) The tariff pricing structures of the e-toll are reviewed by an independent authority and lessons and challenges from the energy, communications and the port sector regulators can inform the decision of the authority.
- b) The pricing continues to be governed through legislative and regulatory frameworks with predictable and equitable tariff structures be put in place.
- c) The distribution of toll revenue to integrated transport infrastructure investment is monitored and maintained.

The envisaged timelines that were promised by NDoT were that a study was being undertaken in 2013 with the aim to establish the legislative framework in 2014 that would allow for the setting up of the transport regulator.

From the perspective of the advisory Panel, the regulation of tariff structure and tariffs would address many concerns by providing a robust methodology, based on a clear set of principles and rules, to determine the optimal levels for the various tariffs. Furthermore, the process of tariff pricing and approval would be conducted by way of a more formalized public participation process that would promote equity.

9.5 Funding model

9.5.1 Analysis of funding arrangements

As is well known, the first phase of the GFIP project was financed using debt. Bonds were issued by SANRAL to raise money which was employed for construction purposes. This was in line with the idea that this was not going to be a concession in which private sector groups drive the project. Many other projects by SANRAL have successfully used this latter approach.

In a short space of time, SANRAL has established a good track record in the market. It has been active in the bond market for a little more than a decade. The first batch of long term bonds the organisation issued earlier is now coming up for maturity.

Financing projects such as roads using bonds is a relatively common practice around the world. Governments too resort to this method of financing as it is generally cheaper than using own equity to fund long term project which are anticipated to improve economic performance.

At the time the bonds were issued, SANRAL had a balance sheet which was capable of supporting the borrowing. Raising money in this way (issuing bonds) was the reasonable thing to do in the circumstances. Besides its balance sheet, rates were low at the time. It was the most propitious time to raise debt. Almost a decade on, rates remain rather low and support the decision to fund the GFIP using det.

Assuming that own equity was used, besides it being a costly form of funding, it would have taken several years to provide the finance necessary to construct the length of road that makes up the first phase of GFIP. This would have been the case even in the unlikely event that the government would have agreed to use all the money budgeted for roads on the first phase of GFIP. The money available for public roads is very limited.

A reasonable expectation is that if own money was used, government would have made a part of the money available over a longer period of time. This would have allowed for other roads to receive maintenance funding they so sorely require. There is also a crucial matter of incrementally constructing roads around the country.

All of these requirement exclude road maintenance which if the road is to remain of use to drivers just has to be catered for. A road with as many users as the GFIP road has benefitted users immensely by being ready so soon after the project started. Without debt, this would not have been possible.

Using debt to finance the road is not really contentious: what is - is the fact that SANRAL rather than the government raised the debt. If the government had raised the debt, some argue, that the repayments would be funded from taxes which government receive. This would obviate the need for paying for using the road. Toll fees are necessitated by the fact that SANRAL has no revenue with which to fund repayments.

While this argument seems to have merit, it disregards a fundamental fact namely that the borrowing capacity of the government is not without limit. It also has does not take into account there is a huge and growing amount which goes into paying interests on government debt. With the impending rise in rates, the amount needed to pay interest is going to have to increase too. Government finances are under severe pressure already as evidenced by the fiscal deficit.

In 1998 the government had the foresight in creating a balance sheet in SANRAL which could borrow independently has demonstrably helped in delivering wonderful roads over the last while. In the next period more roads such as have been built to be constructed to ease mobility around the country.

Incidentally, many of the roads which were built in the early 2000 will soon reach a stage when the involvement of private sector firms ends and they will revert back to the ownership of the state. This should be an exciting moment in the evolution of the delivery of roads in the country partly because the government of the day will have to decide how to proceed beyond that point with the financing those roads.

Over time, the balance sheet of SANRAL was built carefully and husbanded judiciously. It won the trust of investors to borrow on the back of a demonstrated ability to repay its debts. It is difficult to appreciate why this record should be brought to a stop especially in view of the fiscal difficulties the government is experiencing.

That said, if a commitment by central government to fund the road is obtained then a way should be found to repay investors and preserve the credibility in the market of SANRAL, for, there are many roads still to be financed in the country. There are voices which verged on calling for SANRAL to be put out of business. These are erroneous views as it is clear that the government with all the taxes it has is simply unable to finance road construction around the country.

Besides roads, there are endless other investment requirements which the government has to fund. Water, education health and housing require massive amounts of money. The sad story of persisting mud schools in the Eastern Cape, the inhuman lack of potable water and its corollary in the indignities piled on people without sanitation in the villages in Limpopo and inadequate and dysfunctional health facilities in Bushbuckridge all are waiting for investments from a government which has to do with less.

If central government says it cannot fund the debt incurred by SANRAL then the debt would have to be funded by revenue raised by SANRAL. There is no other source of revenue to finance payments.

An option which should be explored is to see if the Gauteng provincial government can fund the debt. Virtually all political parties in the province expressed themselves against the principle of raising revenue from users of the road to finance the debt raised by SANRAL. The provincial government can look into its own budget and ascertain if no money is available to be used for the purpose of settling the debt.

The provincial government receives funds which are not conditional grants, i.e. the province is not obliged to apply them in any specific area. The province should be urged to consider if these funds could be utilised for what political parties in the province are urging national government to do. The province would clearly have to consult with people in Gauteng to see if they would be ready to forego what those funds would have been used for.

If for whatever reason, funds given to the province unconditionally cannot be used to settle the debt, the provincial government can raise a provincial tax. The government can tax virtually anything; they can either create new taxes or increase existing ones. This is likely to upset those who will have to pay increased taxes. But this is the case with an increase in the fuel levy so favoured by all political parties in the province. No one group or organisation expressed itself re: why Gauteng tax payers should shield drivers from out of the province from paying tolls.

A popular tax is the fuel levy which the province can impose on the province. This should find favour with the many people who are said to be in favour of scrapping the tolls. As a provincial tax this levy would soon to be found to have obvious complexities such as the virtually killing fuel suppliers on the border of Gauteng with neighbouring provinces. No prizes will be given for guessing where people who have an option to buy fuel from an adjoining province will go if it is available cheaper elsewhere. The Western Cape provincial government was given permission to raise taxes using a provincial fuel levy. They didn't use this power. The Gauteng government would be wise to find out why this is the case.

Assuming all these problems are overcome, there remains a question of how exactly a provincial government can invest its money on a road which is owned by a different tier of government. This should not be an impossible problem to resolve but it must be resolved beforehand. Normally, transferring an asset from one tier of government to another takes some time but in this case if there is agreement maybe the process can be completed expeditiously.

What is certainly unlikely to work, at least in the manner envisaged by many, who spoke to the Panel, is the idea of a nationally imposed fuel levy. This idea posits that a fuel levy must be paid by all motorists in the country to finance the debt incurred on the GFIP. The beauty of this view, it is suggested is that it is cost free as the money will be turned to SARS which collects fuel levies already.

The weakness in this idea is that it allows one province to raise money nationally for infrastructure in that province. The country has agreed on a methodology to divide money raised in taxes at a national level. Care was taken in designing this method that it was fair and equitable. Why introduce inequity and unfairness via a special tax to advantage a single province? If an exception is made in respect of one province, it would have to be made for other provinces too. This may also lead to a situation in which provincial projects for which there is no funding locally are brought to life in the hope that they will be financed by the national government.

In an event a national fuel levy is introduced, the money so obtained must be paid into the national revenue account and divided among all provinces in accordance with existing protocols. This will retain the fairness and equity which undergirds the system. There is no justification for one province to use the national government to collect taxes around the country to finance a project in a single province.

Ditto the viewpoint about an increase in taxes to fund the debt. Nationally derived taxes of any description must go to the revenue fund. More important, the entire country must benefit from such taxes.

A tricky offer is one which was made by representatives of COSATU. They offered to donate the wages for a day by earned by workers who are members of the federation to fund the debt. This offer is very generous indeed and laudable. Much however still needs to be explained. The bonds are in the hands of investors right now. Anyone offering money would have to discuss the matter with investors to see if they want to sell their assets. If the answer is yes, the new owners of the assets must decide what they want to do with their bonds. They might decide to cancel them. In this case they will have to enter into discussions with SANRAL about further coupon payments which can be donated to SANRAL. If these discussions are settled amicably the road can be paid off quicker than anyone anticipated.

It was not clear if COSATU made this offer on condition the idea of toll roads is ended. The federation is aware that there exist other roads around the country which are tolled and that the road in question has further phases which will require funding too. Although COSATU and others expressed themselves in tones which suggested there was little love lost between itself and the leadership of SANRAL, it was far from clear if they want SANRAL to continue in business.

COSATU's offer is interesting in another way though. It touches on a question which should receive attention from the citizens of the country. The question is, should citizens not take pride in investing in infrastructure for the benefit of everyone? It is true that via the taxes which are paid citizens are indeed investing in their country. But these are clearly inadequate. Should those who use a particular service or good not be willing to collectively pay to finance the construction of expensive projects? There does not seem to be anything wrong with citizens investing in a project that is used by them.

In the same way that all who use electricity should fund the expenditure aimed at improving the supply of power, so too should those who receive water be charged for the service in order to expand it to everyone else. This is not a bad idea, is it?

Financing roads should be no different. Requiring payment for the use of road financed by debt does not amount to a swindle. Moreover, SANRAL does not distribute to private shareholder any of the money it receives. All monies received are invested back into roads.

An issue which arose in the course of the work of the Panel is a matter of foreign companies active in the GFIP project. The issue which bothered some is that revenue flows to these companies ended abroad. This it was argued is undesirable.

It is difficult to go along with this viewpoint. Surely if the idea of money flowing abroad is bad, it must be bad too for money to flow into SA. Once companies that are based abroad invest in SA, there will be reverse flows at some stage in the future. The unavoidable consequence of foreign investment is, there will be flows in the opposite direction when for example dividends (plus interest) are paid. These flows are not illicit.

In addition, laws and practices governing investment are tight enough to prevent abuse. If loopholes are identified, they should be plugged immediately. SA is not unique in handling foreign investment flows. Virtually every country in the world deals with this question. Foreign investor must be required to operate within the laws in countries in which they invest.

9.5.2 Differential payment schemes for e-tags and no e-tag

One of the aspects of the design of the e-toll system that appears to be particularly problematic is the differential pricing for e-tag holders and for non e-tag holders. If those road users who do not hold e-tags are not committing an offence, what is the justification in the design for charging significantly higher prices to non-holders. Let's consider the scenario that a road user chooses not to buy an e-tag because they use the roads infrequently. Then the non-holder is being discriminated against and is paying a higher price per kilometre and for the total journey, because they do not need to use the road frequently. Similarly, an e-tag holder pays a lower price per kilometre and for the total journey, because they need to use the road more frequently for economic reasons. Both these scenarios operate under conditions where buying an e-tag is not compulsory, but the frequent user is more likely to buy an e-tag. While there may be many reasons why the differential pricing would appear

logical from the administrative side of the table, it is highly unlikely that road users use or are even aware of the administrative logic. This is often the case in large bureaucracies, in which administrators assume that users operate according to administrative logic and are familiar with administrative rationales, designs and terminology, when in reality users are a very different community with different logics, rationales and terminology. The challenge is for administrators to bridge these differential logics.

9.5.3 Funding options

This section explores and presents various funding options. The approach that the Panel has taken is to put forward a menu of possible funding options for consideration. The identification of these options draws from the various submissions and presentations that have been received by the Panel, the various pieces of research considered by the Panel, and the Panel's own reflections. Various possible hybrid funding options are presented each, each incorporating different combinations of possible funding sources. All the funding scenarios indicated here and in the tables that follow in this section are specifically for GFIP 1; the commissioned report available in the Appendix also provides information on GFIP 2 and 3 and the GITMP.

9.5.3.1 Principles informing choice of funding sources

The Panel has adopted the following four principles which, it is proposed, should guide the decision as to how GFIP should be funded. In no particular order Efficiency; Fairness; Progressivity; Sustainability.

Efficiency

As much as possible of the revenue collected should go to the project being financed. There should be minimum 'leakage' of revenue to administrative costs associated with the collection of revenue. The funding mechanism should also not create inefficiencies and wasted time and/or resources for users and payers. This principle is important in ensuring that a project is financed in as cost-effective a way as possible, with minimal wastage of resources.

Fairness

In general, the financial burden of financing the project should fall primarily on those benefiting from it. Furthermore, there should be some positive relationship between the degree to which someone benefits and the degree to which they must contribute to financing it. (Note that this principle does not exclude exemptions for those who cannot afford to pay for it.) This principle is consistent with notions of social justice as well as with the 'user-pays' principle.

Progressivity

The proportion of income taxed should increase as income increases. (Tax refers here to any funding source.) This principle is important to ensuring that the better-off users bear a proportionately higher burden of financing the project. It is also based on the premise that high income earners are better placed to re-organise their budgets and reduce expenditure on some items, in order to pay for the project, than are low income earners, due to the much lower share of essential items in the budgets of high income earners.

Sustainability

A funding source should be sustainable, at least over the time period of financing the project. Sustainability has various aspects, including: macroeconomic sustainability; sustainability in the budgets of individual payers; the collection method should be technically and technologically sustainable; and political sustainability. Unless it is sustainable, a funding source will be unable to fully finance the project.

All four principles will not necessarily fully apply to each individual funding source in a hybrid funding model. However, all four principles should be followed as much as possible in the overall funding model, and should also guide the decision as to how to weight individual components in a hybrid model.

9.5.3.2 Funding sources

Possible funding sources have been considered by the Panel. Each of these has advantages and disadvantages, as shown in Table 1 in summary form, not necessarily comprehensively. Not all these sources are included in each of the funding options presented here.

The arguments around advantages and disadvantages of various funding sources should be taken into account in the presentation of funding options that follows. Placing different weights on the importance of these factors would lead to a preference for different options.

9.5.3.3 Funding options

The funding options listed are all hybrid models of various funding sources. There is a potentially infinite range of hybrid models. The five options set out in Table 2 are intended as indicative examples. It should also be noted that these models, and those that follow in this section, are not necessarily based on full and accurate information but on information available and on reasonable assumptions, so the figures should be taken as indicative rather than precise.⁷⁹ In each case, the table shows the percentage contribution of the various funding sources, some pertinent characteristics of the funding option, and disaggregated unit costs. For all the options listed in Table 2, unit costs are calculated on the bases of no off-peak e-tolls tariff discounts, and no e-tolls exemptions for low-income users.

⁷⁹ The calculations are based on the following assumptions and parameters. Figures shown here are for GFIP I, for which construction costs were R19.5b, with an additional R8 billion needed for future maintenance requirements. The project was financed through public sector capital market borrowings at an average bond yield of 9.58 per cent. Interest costs are therefore in the region of R2 to R3 billion. The combined project cost for GFIP I that must be repaid stands at approximately R31 billion. The repayment period modelled here is 10 years, but other repayment periods could also be considered. The projected traffic reductions are calculated using SANRAL's traffic estimates. E-toll administration costs were assumed to be approximately R500 million per annum.

Table 9.5.1: Arguments around advantages and disadvantages of alternative funding sources

	Arguments around advantages	Arguments around disadvantages
e-tolls	<p>Infrastructure already in place</p> <p>System allows for exemptions for public transport and vulnerable groups, and differentiated rates for different travel times</p> <p>Allows for congestion management and traffic diversion</p> <p>Consistent with direct user-pays principle</p>	<p>Low current compliance and difficulties in enforcing compliance</p> <p>Administration costs, both for system and for users</p> <p>Those living far from place of work due to apartheid spatial planning legacy pay relatively more</p> <p>System is considered complicated for users</p> <p>Variation in monthly costs for users</p>
National fuel levy	<p>System already in place</p> <p>Simple, cheap and efficient to administer</p> <p>Easy to get 100% compliance</p> <p>Consistent with broader user-pays principle</p> <p>Spreading the costs nationally reduces the cost per litre</p> <p>Those driving larger cars, who are generally better-off, pay relatively more</p>	<p>Those living far from place of work due to apartheid spatial planning pay relatively more</p> <p>Residents of other provinces who only have access to inferior roads pay for superior roads in Gauteng</p> <p>Not possible to exempt public transport, vulnerable groups, or differentiate rates for different travel times</p> <p>Those driving older cars, who are generally worse-off, pay relatively more</p> <p>Variation in monthly costs for users</p>
Provincial fuel levy	<p>Simple, cheap and efficient to administer</p> <p>Easy to get high rates of compliance</p> <p>Consistent with broader user-pays principle</p> <p>Those driving larger cars, who are generally better-off, pay relatively more</p>	<p>Those living far from place of work due to apartheid spatial planning legacy pay relatively more</p> <p>Encourages purchase of fuel from outside Gauteng by Gauteng residents, which is wasteful and could lead to closure of some Gauteng fuel stations</p> <p>May lead to a black market in fuel in Gauteng</p> <p>Gauteng residents not using GFIP roads subsidise users</p> <p>Not possible to exempt public transport, vulnerable groups, or differentiate rates for different travel times</p> <p>Those driving older cars, who are generally worse-off, pay relatively more</p> <p>Variation in monthly costs for users</p>

Table 9.5.1 (continued): Arguments around advantages and disadvantages of alternative funding sources

	Arguments around advantages	Arguments around disadvantages
Provincial license fees	Simple, cheap and efficient to administer No variation in monthly costs for users	Significant increases in provincial license fees could reduce car registration rates and/or encourage registration in other provinces Gauteng residents not using GFIP roads subsidise users If charged annually, large single amount could be unmanageable for some users; if charged monthly, administrative costs increase
National fiscus	Relieves the burden on Gauteng residents No variation in monthly costs for users	Diverts public resources from pressing needs Residents of other provinces who only have access to inferior roads pay for superior roads in Gauteng
Provincial fiscus (may be funded from various sources including fiscal savings and increases in provincial revenue; the advantages and disadvantages would vary somewhat by source)	Gives the GPG discretion in where the funding is sourced from No variation in monthly costs for users	Diverts public resources from pressing needs Gauteng residents not using GFIP roads effectively 'subsidise' users
Progressive income tax (national)	Progressive and equitable as high-income earners pay more No variation in monthly costs for users	Residents of other provinces who only have access to inferior roads pay for superior roads in Gauteng
Corporate tax (national)	Relieves the burden on households No variation in monthly costs for users	Can negatively affect investment Companies in other provinces who only have access to

		inferior roads pay for superior roads in Gauteng
--	--	--

Table 9.5.2: Examples of hybrid funding models

	Baseline	Option 1	Option 2	Option 3	Option 4	Option 5
Funding Sources						
e-tolls	100	50	50	80	50	50
National fuel levy	0	0	0	0	10	20
Provincial fuel levy	0	10	20	0	20	20
Provincial license fees*	0	10	20	20	20	10
National fiscus	0	0	0	0	0	0
Provincial fiscus or provincial taxes	0	10	10	0	0	0
Progressive income tax	0	10	0	0	0	0
Corporate tax	0	10	0	0	0	0
Total	100	100	100	100	100	100
Selected funding model characteristics						
Provincial/national split	100% provincial	100% provincial	100% provincial	100% provincial	90% provincial, 10% national	80% provincial, 20% national
Projected % reduction in traffic congestion on GFIP network	18.2	9.1	9.1	14.6	9.1	9.1
% of total financing burden falling on low-income**	0.4%	1.3%	2.4%	1.3%	2.7%	2.7%

Table 9.5.2 (continued): Examples of hybrid funding models

Unit costs (2015)						
e-tolls						
Class A1: bikes	0.33	0.17	0.17	0.26	0.17	0.17
Class A2: light	0.55	0.27	0.27	0.44	0.27	0.27
Class B: med/heavy	1.37	0.69	0.69	1.10	0.69	0.69
Class C: large/heavy	2.74	1.37	1.37	2.19	1.37	1.37
Nat fuel levy					0.015	0.03
Provincial fuel levy		0.05	0.1		0.1	0.1
Provincial license fees*						
Motorcycles		14	28	28	28	14
Motorcars		46	92	92	92	46
Minibuses		84	167	167	167	84
Buses		688	1376	1376	1376	688
LDVs		82	163	163	163	82
Trucks		895	1790	1790	1790	895
National fiscus						
Additional debt						
Provincial fiscus						
Budget vote cuts*		0.5%	0.5%			
PIT		0.02%				
CIT		0.02%				

Source: Derived from Townshend (2014)

Notes: (1) The figures in the first eight rows of the table show the percentage contribution to the costs of GFIP I from the various funding sources listed, summing to 100% in each case.

(2) The baseline scenario is the current model in which only e-tolls are sourced to finance GFIP I (excluding the contributions already made from the national fiscus).

(3) Provincial license fees, marked here with an asterisk*, can also refer to or include other flat fees levied on vehicles at provincial level, such as extra charges for roadworthy certificates, fees levied on cars based on their axle weights, and taxes based on tyres.

(4) ** Low-income households are classified here as those earning less than R3 000 per month; their estimated share of the total funding burden is highlighted here to specifically show the projected impact on poor households.

Additional funding sources proposed for consideration but not included in Table 9.5.2:

- a) Development levies
- b) Other proposals emanating from public consultations include sacrifice of a day's salaries, rates and taxes based on property values, prescribed assets, and congestion charges and parking fees

Tables 9.5.3 to 9.5.9 below show different scenarios for some of the individual funding sources included in Table 9.5.2 above. Table 9.5.3 to 9.5.7 show the e-tolls costs per kilometre for various contributions of e-tolls to the total funding costs, and under three different e-tolls models. Table 9.5.3 is for a flat tariff structure (no rebates or exemptions for low-income users, and no off-peak discounts); Table 9.5.4 is for a flat tariff structure with an exemption for low-income users and a 25% rebate for middle-income users; and Table 9.5.5 is for a tariff structure with an exemption for low-income users and a 25% rebate for middle-income users, as well as off-peak discounts. Table 9.5.6 shows the contributions from provincial vehicle licence fees under various scenarios, and Table 9.5.7 the same for a national and provincial fuel levy. In each table, the first column lists the range of possible contributions from that funding source, from 0% (no contribution) to 100% (all project costs funded through that funding source). Tables 9.5.3 to 9.5.7 can be read in conjunction with Table 9.5.2, as the tables that follow give further details and options for the structuring of each funding source for each level of contribution to the overall funding model, as shown for selected options in Table 9.5.2.

For example, from Table 9.5.4, it can be seen that for e-tolls to fund for example 50% of the total project costs and with the rebates indicated, e-tolls would need to be levied at R0.30/km for light vehicles. Similarly, Table 6 shows that if, for example, 50% of the project costs are to be funded through motor vehicle license fees in Gauteng, these fees would need to be R231 per light vehicle per annum. From Table 9.5.7 it can be seen that funding for example 50% of the total project costs through the national or provincial fuel levy would entail increases of R0.08/litre or R0.25/litre respectively. Note that these figures for fuel levies and vehicle license fees are calculated on the basis of all vehicle types, including minibus taxis, contributing and with these contributions being at a higher rate than those of light vehicles. Exempting taxis from an increase in fuel levy is logistically unfeasible. Exempting taxis from the increase in vehicle license fees (calculated here at R419 for taxis at a 50% contribution of vehicle license fees to total project costs) would push up the increases to vehicle license fees for other vehicle types under all funding scenarios.

These more detailed presentations are in no way intended to privilege these possible funding sources above others contemplated, the figures presented here are merely intended as indicative of the real levels of contributions and cost increases that would need to come from some funding sources under alternative funding scenarios.

As a baseline, Table 9.5.3 shows e-tolls tariff rates needed to fund a range of alternative contributions to total funding (as shown in the first column), with no rebates or exemptions and no off-peak discounts.

Table 9.5.3: E-toll flat rate tariff structure with with no rebates or exemptions

% of funds	Class A1 Motorcycles	Class A2 Light vehicles	Class B Medium	Class C Heavy
0	0	0	0	0
5	0,02	0,03	0,07	0,14
10	0,03	0,05	0,14	0,27
15	0,05	0,08	0,21	0,41
20	0,07	0,11	0,27	0,55
25	0,08	0,14	0,34	0,69
30	0,10	0,16	0,41	0,82
35	0,12	0,19	0,48	0,96
40	0,13	0,22	0,55	1,10
45	0,15	0,25	0,62	1,23
50	0,17	0,27	0,69	1,37
55	0,18	0,30	0,75	1,51
60	0,20	0,33	0,82	1,64
65	0,21	0,36	0,89	1,78
70	0,23	0,38	0,96	1,92
75	0,25	0,41	1,03	2,06
80	0,26	0,44	1,10	2,19
85	0,28	0,47	1,16	2,33
90	0,30	0,49	1,23	2,47
95	0,31	0,52	1,30	2,60
100	0,33	0,55	1,37	2,74

Source: Townshend (2014)

Various alternative changes to the structuring of e-tolls are considered to make this funding source more fully comply with the principles of equity, fairness, progressivity and sustainability. One such change is the introduction of exemptions and rebates for low- and middle-income users respectively (in addition to the public transport exemption). Consideration would need to be given to the optimal logistical implementation of such exemptions, for instance at the point of vehicle registration and/or linking with the SARS system. As an indicative illustration, Table 4 shows the e-toll rates that would need to be charged for a range of contributions of e-tolls to total project costs, with a full exemption for low-income users and a 25% rebate for middle-income users. This sort of restructuring of e-tolls would alleviate the negative impact on users who have relatively little disposable income but still have a private vehicle. It could potentially improve the progressivity and equitability of the system, while not substantially increasing the financial burden on high-income users since this group disproportionately use the freeways in any event.

Table 9.5.4: E-toll flat rate tariff structure under different funding scenarios, with exemption for low-income users and a 25 per cent rebate for middle-income users

% of funds	Class A1 Motorcycles	Class A2 Light vehicles	Class B Medium	Class C Heavy
0	0	0	0	0
5	0,02	0,03	0,10	0,14
10	0,04	0,06	0,19	0,27
15	0,05	0,09	0,29	0,41
20	0,07	0,12	0,38	0,55
25	0,09	0,15	0,48	0,69
30	0,11	0,18	0,58	0,82
35	0,13	0,21	0,67	0,96
40	0,14	0,24	0,77	1,10
45	0,16	0,27	0,87	1,23
50	0,18	0,30	0,96	1,37
55	0,20	0,33	1,06	1,51
60	0,22	0,36	1,15	1,64
65	0,23	0,39	1,25	1,78
70	0,25	0,42	1,35	1,92
75	0,27	0,45	1,44	2,06
80	0,29	0,48	1,54	2,19
85	0,31	0,51	1,64	2,33
90	0,32	0,54	1,73	2,47
95	0,34	0,57	1,83	2,60
100	0,36	0,60	1,92	2,74

Source: Townshend (2014)

In table 5, e-toll funding options are shown with a time-of-day discount for off-peak users. An important advantage of this would be a significant enhancement in the traffic management and congestion reduction capacity of e-tolls. Differentiating by time of day could incentivise off-peak travel, thereby spreading traffic volumes to a greater extent than at present and mitigating peak-time congestion. Furthermore, since the overall benefit/cost ratio is currently less favourable for off-peak users, a discounted structure could improve this ratio for off-peak users and make the system more fair and equitable. Table 5 shows one scenario of rates differentiated by time of day and what rates would be needed for a range of e-tolls contributions to total funding; alternative structures in which rates are more or less differentiated by time of day are of course also possible.

Table 9.5.5: E-toll tariff structure under different funding scenarios, with a time-of-day discount

% of funds	Class A1 Motorcycles		Class A2 Light vehicles		Class B Medium		Class C Heavy	
	Peak	Off-peak	Peak	Off-peak	Peak	Off-peak	Peak	Off-peak
0	0	0	0	0	0	0	0	0
5	0,03	0,01	0,04	0,02	0,11	0,05	0,22	0,10
10	0,05	0,02	0,09	0,04	0,22	0,10	0,44	0,20
15	0,08	0,04	0,13	0,06	0,33	0,15	0,66	0,30
20	0,11	0,05	0,18	0,08	0,44	0,20	0,88	0,40
25	0,13	0,06	0,22	0,10	0,55	0,25	1,10	0,50
30	0,16	0,07	0,26	0,12	0,66	0,30	1,31	0,60
35	0,19	0,08	0,31	0,14	0,77	0,35	1,53	0,70
40	0,21	0,10	0,35	0,16	0,88	0,40	1,75	0,80
45	0,24	0,11	0,39	0,18	0,99	0,45	1,97	0,90
50	0,26	0,12	0,44	0,20	1,10	0,50	2,19	1,00
55	0,29	0,13	0,48	0,22	1,21	0,55	2,41	1,10
60	0,32	0,14	0,53	0,24	1,31	0,60	2,63	1,20
65	0,34	0,16	0,57	0,26	1,42	0,65	2,85	1,30
70	0,37	0,17	0,61	0,28	1,53	0,70	3,07	1,40
75	0,40	0,18	0,66	0,30	1,64	0,75	3,29	1,50
80	0,42	0,19	0,70	0,32	1,75	0,80	3,51	1,59
85	0,45	0,20	0,75	0,34	1,86	0,85	3,73	1,69
90	0,48	0,22	0,79	0,36	1,97	0,90	3,94	1,79
95	0,50	0,23	0,83	0,38	2,08	0,95	4,16	1,89
100	0,53	0,24	0,88	0,40	2,19	1,00	4,38	1,99

Source: Townshend (2014)

The Panel also received submissions calling for certain gantries to be ‘switched off’, meaning the e-tolls collection of some of the gantries being terminated. Table 6 explores some funding implications of one scenario of terminating e-tolls at four gantries⁸⁰. These gantries are selected here for illustrative purposes based on public submissions as well as a consideration of income groups passing through different gantries; should this option be considered then a more comprehensive identification of suitable gantries could be undertaken. A comparison of tables 3 and 6 indicate that ‘switching off’ a small number of gantries does not significantly affect the rates that would need to be

⁸⁰ In the scenarios shown below, the four gantries are 17 and 28 (close to Soweto) and 24 and 25 (East Rand).

charged at other gantries under each funding option (% contribution of e-tolls to total funding), but the other rates do of course increase slightly.

Table 9.5.6: e-toll flat rate under different funding scenarios with 2 Soweto based gantries and 2 East Rand based gantries 'switched off'

% of funds	Class A1 Motorcycles	Class A2 Light vehicles	Class B Medium	Class C Heavy
0	0	0	0	0
5	0,02	0,03	0,07	0,14
10	0,03	0,06	0,14	0,29
15	0,05	0,09	0,22	0,43
20	0,07	0,12	0,29	0,58
25	0,09	0,14	0,36	0,72
30	0,10	0,17	0,43	0,87
35	0,12	0,20	0,51	1,01
40	0,14	0,23	0,58	1,16
45	0,16	0,26	0,65	1,30
50	0,17	0,29	0,72	1,45
55	0,19	0,32	0,80	1,59
60	0,21	0,35	0,87	1,74
65	0,23	0,38	0,94	1,88
70	0,24	0,41	1,01	2,03
75	0,26	0,43	1,09	2,17
80	0,28	0,46	1,16	2,32
85	0,30	0,49	1,23	2,46
90	0,31	0,52	1,30	2,61
95	0,33	0,55	1,38	2,75
100	0,35	0,58	1,45	2,90

Source: Townshend (2014)

The Panel has also heard views that the current monthly cap is too high, and calls for it to be lowered. Table 7 shows funding scenarios with an example of a R200 monthly cap for light vehicles, and what the implications of this would be for e-toll rates for different vehicle types and percentage contribution of e-tolls to total funding. It should be noted that these figures in particular are very preliminary and should be treated with caution; should this option be considered then further estimations would be needed in this regard. One of the limitations of the figures presented in Table 7 is that the total contribution of each vehicle class is the same as in the flat rate (see Table 3), such that the rates on medium and heavy vehicles are unchanged from Table 3. This means that, in order to have a R200 cap on light vehicles, the rates on light vehicles are shown as increasing significantly here; changing this assumption would spread the rate increases between vehicle classes leading to more limited rate increases for light vehicles. Since only a small proportion of light vehicles pay more than R200, it would be expected that this cap would have only a limited effect on rates for light vehicles.

Table 9.5.7: e-toll flat rate with R200 monthly cap under different funding scenarios

% of funds	Class A1 Motorcycles	Class A2 Light vehicles	Class B Medium	Class C Heavy
0	0	0	0	0
5	0,02	0,03	0,07	0,14
10	0,03	0,05	0,14	0,27
15	0,05	0,08	0,21	0,41
20	0,07	0,11	0,27	0,55
25	0,09	0,14	0,34	0,69
30	0,10	0,17	0,41	0,82
35	0,12	0,21	0,48	0,96
40	0,15	0,24	0,55	1,10
45	0,17	0,28	0,62	1,23
50	0,19	0,31	0,69	1,37
55	0,21	0,35	0,75	1,51
60	0,24	0,39	0,82	1,64
65	0,26	0,43	0,89	1,78
70	0,28	0,47	0,96	1,92
75	0,31	0,52	1,03	2,06
80	0,34	0,56	1,10	2,19
85	0,36	0,60	1,16	2,33
90	0,39	0,65	1,23	2,47
95	0,42	0,70	1,30	2,60
100	0,45	0,74	1,37	2,74

Source: Townshend (2014)

Table 8 shows the sort of increases in provincial vehicle licence fees under a range of contributions of this source to total funding. Provincial license fees can also refer to or include other flat fees levied on vehicles at provincial level, such as extra charges for roadworthy certificates, fees levied on cars based on their axle weights, and taxes based on tyres; specific cost increases for these other sources are not explicitly modelled here but are certainly options worth considering. While Table 6 shows the increases that would be needed for all vehicle categories, an exemption could also be considered for minibuses. This would mitigate increases in taxi fares for low-income consumers. For any given level of contribution to overall funding (as shown in the first column), increases in vehicle license fees for some or all other vehicle types would then need to increase commensurately to compensate for not increasing fees on minibuses.

Table 9.5.8: Increase in Gauteng vehicle license fees under the different funding scenarios, 2015

% of funds	Motorbikes	Motorcars	Minibuses	Buses	LDVs	Trucks
0	0	0	0	0	0	0
5	7	23	42	344	41	448
10	14	46	84	688	82	895
15	21	69	126	1 032	122	1 343
20	28	92	167	1 376	163	1 790
25	35	115	209	1 720	204	2 238
30	42	138	251	2 064	245	2 685
35	49	161	293	2 407	286	3 133
40	56	185	335	2 751	327	3 580
45	63	208	377	3 095	367	4 028
50	70	231	419	3 439	408	4 476
55	77	254	460	3 783	449	4 923
60	84	277	502	4 127	490	5 371
65	91	300	544	4 471	531	5 818
70	98	323	586	4 815	572	6 266
75	105	346	628	5 159	612	6 713
80	112	369	670	5 503	653	7 161
85	119	392	711	5 847	694	7 608
90	126	415	753	6 191	735	8 056
95	133	438	795	6 535	776	8 504
100	140	461	837	6 878	817	8 951

Source: Townshend (2014)

Note: Provincial license fees can also refer to or include other flat fees levied on vehicles at provincial level, such as extra charges for roadworthy certificates, fees levied on cars based on their axle weights, and taxes based on tyres.

Table 9 shows the increases that would be needed in either the national or provincial fuel levies, to make up a range of contributions to the project.

Table 9.5.9: Increase required in the national and provincial fuel levy under different funding scenarios, 2014

% of funds	National fuel levy	Provincial fuel levy
0	0	0
5	0,01	0,03
10	0,02	0,05
15	0,02	0,08
20	0,03	0,10
25	0,04	0,13
30	0,05	0,15
35	0,05	0,18
40	0,06	0,20
45	0,07	0,23
50	0,08	0,25
55	0,08	0,28
60	0,09	0,30
65	0,10	0,33
70	0,11	0,35
75	0,11	0,38
80	0,12	0,40
85	0,13	0,43
90	0,14	0,45
95	0,14	0,48
100	0,15	0,50

Source: Townshend (2014)

A central issue in consideration of payment methods is how widely the burden of paying for GFIP should fall. Naturally, the more widely the payment burden is distributed, the lower are unit costs for payers. This throws up issues of equity, related to how should foot the bill for GFIP. With e-tolls, unit costs are relatively high as it is only the direct users of the tolled freeways who pay directly. With a provincial fuel levy, the payment burden would be spread amongst all transport users in Gauteng, making the costs per person or per business lower, as even people who do not use the freeways at all would be forced to pay for them as would low-income users of public transport.

Linked to the above, is the distributional impact of individual funding sources and hybrid funding options. Any option including a fuel tax will be less equitable, and will have more negative effects on the poor, than would e-tolls, unless that negative distributional impact is outweighed by the inclusion of progressive income tax in the mix of measures and the funding of an effective integrated transport system that significantly improves the quality and affordability of public transport for the poor.

9.5.4 Recommendations

- a) A hybrid funding option should be adopted, in which GFIP 1 is funded through a combination of e-tolls and other funding sources.
- b) Consideration should be given to structuring the e-tolls component of the hybrid funding option in a way that is more equitable to low- and middle-income users, more simple and efficient, and at lower rates. Possibilities in this regard include: significantly lowering the monthly cap; lowering or eliminating the higher rates for non-tagged users; reducing tolls per gantry; ending e-tolls collection at certain gantries; introducing rebates or exemptions for low-income, or low- and middle-income users; increasing the off-peak discounts and/or introducing exemptions at certain times of day; introducing differential rates for different types of light vehicles in a progressive manner; and introducing rebates or exemptions for designated vulnerable groups such as disabled people.
- c) In selecting the hybrid option, cognisance should be taken of the principles of efficiency, fairness, progressivity and sustainability.
- d) Low income people in particular should be left no worse off in the funding option chosen than in the current situation.
- e) GFIP 2 and 3 could also be funded through a hybrid option. Should funding from a national funding source be sought for GFIP 2 and 3, this should be as part of an integrated funding solution for improving transport infrastructure across South Africa.

Section Three

Summary of recommendations

- a) Recommendations of interested and affected parties
- b) Detailed longer term recommendations of the Panel
- c) Immediate recommendations of the Panel

10 Summary of recommendations

10.1 Introduction

These recommendations are set out in three parts. The first part deals with recommendations that warrant consideration that emanate from the process of engagement with interested and affected parties. The second part draws together all the recommendations made in the report of the Panel, including recommendations that address the overall imperative of an integrated transport system. The third part comprises specific recommendations for discussion and agreement in intergovernmental processes to address the more immediate challenges in the short term.

Before setting out the recommendations this section sets out the meta-narrative for the report. What was the work of the Panel appointed to look into the socio-economic impact of GFIP and e-tolls and the related activities really all about? At one level it was about the implementation of a specific policy and programme (GFIP and e-tolls); at another level it was about the design and implementation of mega-infrastructure programmes with high levels of complexity; and at yet another level it was about the practice of democracy in South Africa in the early 21st century.

With respect to the GFIP and e-tolls programme:

The research and engagement activities of the Panel and the many stakeholder groups that participated, suggests the importance of scanning the multiple views of multiple players on an ongoing basis in order to address unforeseen weaknesses in programme design. It is often the case that *ex ante* consultation is insufficient for full programme implementation and that *ex post* contemplation is needed to reveal the broader dynamics and dimensions of the particular programme design, in this case the social and economic design of the programme. The process reveals the need for GFIP and the particular funding models and/or funding mix to be subject to regular review by the policy-maker and the implementer, in conversation with the broader society, creating structured opportunities for adaptation and flexibility. This would obviate continued challenges to a rigid model.

With respect to the design and implementation of mega-infrastructure programmes with high levels of complexity:

Government departments and agencies, policy-makers and implementing agencies, when taking on a large-scale, multi-billion rand project, often work from the assumption that planning will address all the potential complexity that could possibly emerge and that simply following the original plan will lead to successful outcomes. In reality, complex projects lend themselves to the emergence of issues and challenges that often defy the intentions of the planners, who have so carefully pursued a particular design. This leads to the requirement for the project and programme management of the complexity associated with such mega-infrastructure projects, an emerging field of management expertise that is not yet sufficiently well-understood or practiced.

Mega-infrastructure programmes are generally organised as an ecosystem of issues, rather than a simple programme. In the case of the GFIP, it is part of at least three ecosystems (i) GFIP as a multi-phase programme; (ii) building an integrated inter-modal transport system that promotes socio-

economic freedom and development; and (iii) an even broader ecosystem of transport and communications.

With respect to (iii) the transport and communications ecosystem, it should be noted that broadband electronic communications via fixed, wireless or mobile Internet is a 21st century alternative to land transport and must be considered carefully as a particular mode of social and economic communication that reduces the requirement to move physically from one place to another, while potentially giving a similar level of socio-economic impact to that of land transport.

This ecosystem view means that, while particular players may have a limited mandate to pursue particular objectives in terms of land transport, and may have no direct role in communications alternatives to transport, all these players need to create a platform for engagement where their goals and objectives overlap.

With respect to the practice of democracy in South Africa in the 21st century:

Democracy can create discomfort and in this particular case, it has. The practice of democracy includes society overturning carefully laid plans, new players emerging when not expected, and voices appealing loudly for alternatives and approaches. All activities of all stakeholders have been part of the democratic process pertaining to GFIP and e-tolls. Democracy has gained, nothing is lost.

10.2 Consultation recommendations

A complete record of submissions and proposals has been compiled. Proposals ranged from scrapping the gantries and selling them for scrap metal to considered and well-argued solutions to identified problems. Innovative and workable suggestions which require consideration by the responsible authorities are captured below:

Consultation:

- a) Comprehensive survey proposed to canvas views and suggestions
- b) Rigorously assess the consultation process, identify gaps if there were any, and address these
- c) A developmental state should be in partnership with the people and there should be social justice and buy-in to the solutions based on comprehensive consultation
- d) Debate should shift from “for” or “against” e-tolls to credible funding solutions with wider and popular support
- e) Government must continue to work with people in partnership and seek to persuade one another to find solutions that everyone finds acceptable
- f) Government should admit that it made a mistake and e-tolls should be scrapped
- g) Public inputs should be taken seriously and not be brushed aside
- h) Reframe the debate – a strategy for a set of interventions supported by communication
 - Discussion that any city without public transport will get more and more difficult to traverse has to happen
 - Explain and discuss the reasons for regularisation of the taxi industry
 - Develop public transport (noting that Gautrain has changed perceptions about public transport)
 - Lower the toll while implementing a three year programme of development of public transport and alternatives

Process to arrive at a solution:

- a) Solution will require swallowing some pride and compromises - call a truce and discuss
- b) Recognise that organised groups do not like e-tolls and that there are another 49 m South Africans and frame the debate differently - Are they in favour of urban congestion? Are they in favour of the poor being further marginalised
- c) Design an institutional solution
- d) Extremely negative consequences would flow from scrapping or maintaining e-tolls and shifting the focus and considering a modified system might be the basis for compromise. Proposed that to resolve the dilemma requires some form of compromise which would be in the interests of national and provincial government
- e) Get buy in for proposed solutions from NDoT, Treasury, Province and all metros and civil society
- f) There needs to be agreement between national and provincial government and sticking to the agreement
- g) Innovative engagement is possible to transform the debate on e-tolls – a functioning e-toll system clearly linked to public transport development supported by understanding of the reasons for the system to support a functioning city

Integrated transport planning and management system:

- a) Acknowledge that a failure of policy has occurred in that metropolitan freeways are being treated just like intercity roads. Gauteng freeways part of an *integrated transport network* and get buy-in – politically, institutionally, civil society, SANRAL, Treasury around a tolling policy that treats the freeway system in metros as an integrated public transport solution
- b) Gauteng developing into a megacity and there should be a transport authority with responsibility for managing dedicated funding and improving all modes of transport with priority attention to public transport
- c) Quantum leap needed to address all modes of transport holistically
- d) There should be a single system to fund and maintain all the roads, including the secondary and tertiary roads in the road network throughout the country
- e) Integrated transport planning tool needed and transport plans are prerequisite for Treasury to release funding
- f) Higher spending than ever before on transport infrastructure and transport institutional arrangements need to be in place for increased spending on public transport
- g) Create umbrella body for public transport
- h) Good road network is required and crucial for socio economic development and social inclusion
- i) Decent, safe, reliable public transport (within urban areas and long distance, bus and rail) should be in place with safe parking space for vehicles at points of public transport and this would be good for the environment
- j) Greater emphasis and state resources should be invested in affordable, safe and efficient public transport system with rail as a backbone, feeder BRT and well-regulated taxi operations
- k) Develop public transport in all corridors not just BRT
- l) Conditional grants proposed for BRTs, road safety, etc
- m) Close the gap on public transport information for all modes
- n) Creation of park and ride facilities to stimulate lift clubs
- o) Incentivise conversion to use of motorcycles to address congestion

- p) Heavy vehicles should not be allowed on the roads during peak hours and freight should be moved onto rail for long distance
- q) Use parking policy as a lever to promote public and non-motorised transport
- r) Increase off peak frequency for Gautrain
- s) Implementation should be in rural areas as Gauteng already has good roads
- t) Build R511 as an alternative
- u) Promote smart city principles of variable working hours and work at home
- v) Implement policies that are already in place
- w) Final report should refocus on transport policy issues

Traffic demand management and implementation system:

- a) There should be toll booths rather than e-tolls
- b) Develop HOV lane – buses, taxis and incentive of exemption from tolls for private HOVs
- c) Use system for traffic demand management and enforcement
- d) Gantries should be used for travel and incident management
- e) Apply user pay to trucks and heavy vehicles only
- f) Bring back axle weight limitation and make it prohibitively expensive for trucks to use the freeways
- g) Hybrid tolling solution proposed that raises funds to service debt with Treasury aligning toll revenue / compliance rates with increased allocations for public transport
- h) Make the supply chains competitive and do not penalise trucks but incentivise mobility of trucks out of peak with e-tolls
- i) Sort out public transport
- j) Enforce the law against those who refuse to pay e-tolls which requires leadership from politicians and show the public goodwill by addressing public transport NS and EW
- k) Paint HOV lanes and make these available for buses and change attitudes to get compliance for HOV lane
- l) Propose dedicated public transport lanes
- m) Improve accountability and transparency in SANRAL, including detailed billing to build confidence
- n) Tolls can be seen as an investment and an opportunity cost for roads in good condition but requires information and education
- o) All vehicles must have an e-tag with option of being able to recharge similar to prepaid electricity
- p) Get rid of the Devland/Diepkloof toll gantry.
- q) Reduce the costs on the ring road, that is N1 and N3 but keep costs on M1 and R24 as is. Reduction of about 20% should be enough.
- r) Spatial geography locks out the poor and proposals to deal with this - remove tolls South of Braamfontein and genuinely exempt all taxis
- s) Create an independent toll fee regulator

Rate:

- a) Use of a lower fee for a period of time proposed as a pilot
- a) Very low, different flat rates should be charged for different categories of cars and different categories of users
- b) Differentiated prices for expensive vehicles and different categories of users
- c) Different rates should be charged based on frequency of use and length of journey

- d) There should only be one payment per day for each gantry
- e) There should be fewer gantries and the amount should be lowered
- f) Specific flat rate proposed for occasional users and companies should pay for or assist workers who are regular users
- g) Offer discounts / loyalty programmes linked to a service as an incentive e.g. linking to Discovery
- h) The rate should be based on income levels
- i) Proposed that the tag should inform drivers of the amount at each toll
- j) Payment by businesses for their employees should be considered as a redistributive mechanism
- k) Remove e-toll charge when public transport is not available after hours
- l) Zero rate all passenger vehicles with a capacity of more than 7. That gets rid of the present situation where unregistered taxis are not exempt. The transport department would have to use other means to formalise the taxi industry.
- a) Time of use tariffs introduced with a higher fee from 6 am to 9 am and from 4 to 7 pm. Off peak tariffs could either be much lower or free. This would satisfy the freight logistics industry who generally avoid the highways during peak periods. It should also mean less pass through into inflation from the goods transport sector. Provide rechargeable tokens

Funding alternatives:

- a) Small additional tax
- b) Source funds from the fiscus nationally / provincially as good road infrastructure benefits the entire country – reduce benefits for government employees, utilise underspending, reduce waste
- c) Introduce a balanced road user levy for dedicated funding of transport infrastructure and communicate this clearly to the public
- d) Widen development levies, including options linked to construction of new infrastructure such as stations
- e) Small ring fenced fuel levy nationally / provincially
- f) An extra charge for roadworthy certificates, tyres, license disks
- g) Payment of a fee based on the weight of the car when licensing the car
- h) Release funds from MVA fund due to decrease in accidents and source from road advertising
- i) Funds should be collected by employers from employees based on the different rates of income tax with exemption for those who do not own a car
- j) Source funds from business rather than individual citizens
- k) Proposed that tax deductions be considered for payment of e-tolls by private car users as an additional travel benefit (companies can already claim e-tolls as an expense).
 - This would create efficiencies and would allow an income stream to fund roads in a national system
 - This would also incorporate considerations of equity and fairness
 - Allow integration of e-Natis and SARS information
 - The perverse effect of travelling a longer distance to work is unlikely
- l) COSATU willing to sacrifice one day salary (received no response to this)
- m) Funds could be raised through rates and taxes based on property values
- n) The funds being used for Gautrain can be used for roads
- o) Restore business confidence in government to invest in PPPs
- p) Provide agreed buy-out sum from the fiscus to service unalterable contracts

- q) Separate infrastructure cost from the admin cost and keep the e-tolls and use them to pay for the road and not the gantries
- r) Manipulate the tariff and zero rate categories of users
- s) Provinces should compete and if Gauteng can have a toll system that works and improves the economy of the province the other provinces will benefit from this and be able to follow suit
- t) Require greater efficiencies in movement of goods and people and government and private sector must mutually contribute

10.3 Detailed recommendations contained in the report

Part Two of the report sets out the detailed recommendations of the Panel reinforcing the objectives of the GITMP for an integration of the Gauteng transport system, prioritising public transport, which requires national, provincial and local government cooperation and the involvement of all stakeholders. This section of the report is a summary of the detailed recommendations at the end of each Chapter in Part Two

10.3.1 Political impact

The Primacy of Democratic Consent

Based on historical analysis of high-achieving democracies, it is possible to establish certain key conditions, or an optimal context for success in social development. One context that emerges is that these exist in each democratic society, mechanisms for the effective articulation of “voice”. The role of democratic politics cannot be ignored as a driving force behind public policy and public action.

Creating an Enabling Environment for Inclusive Participation in Transport Policy Process: Mobilising the Poor to Mobilise Themselves

It is important that public resources be more effectively used. One way of responding to this question is to search for ‘best practices’, programmes in other countries that have found effective ways of eradicating poverty through specific strategies. This approach involves defining success in urban transport programmes, analysing effective programs to understand what made them effective and then using these effective mechanisms to identify strategies that can be effective in Gauteng. There is a recurrent problem in socioeconomic inequality eradication mechanisms: the intended recipients, the poor, tend to be politically weak, in the broad sense of the term, in relation to public agencies and the non-poor. The transport eradication programme can work better if the poor can increase their influence over the implementation stages through collective action of various kinds. This can be achieved by mobilizing the poor to mobilise themselves. Concerted effort should be made to positively stimulate, among the poor, the collective action that is needed to make the programme more effective, and counter efforts meant to frustrate collective action.

The Central Importance of the Implementation Phase

There are abundant ‘design level’ ideas about effective socioeconomic inequality alleviation interventions. There is a rich literature on, for example, decent employment through inclusive economic growth, skilled and capable workforce to support an inclusive growth path, sustainable human settlements and improved quality of household life, and responsive Local Government system.

Yet programme outcomes have been disappointing and what will work in Gauteng is needed. The outcomes of the programme in the province is likely to be decided in the 'implementation rather than the decision phases of policy-making.

The e-tolls Policy

Elements of the e-tolls policy should be reviewed as a matter of urgency, and, to avoid further protracted conflict, the process must be transparent, deliberative, and participatory

10.3.2 Economic impact

Further research is needed, focused on:

- a) Decomposing the aggregate cost and benefits of both GFIP and e-tolls accrued to both households and business;
- b) Spill over effects of GFIP and e-tolls on adjoining provinces;
- c) More innovative financing options for transport infrastructure that take into account the national development agenda.

It is recommended that:

- a) The process of engagement on major transport infrastructure projects should take into account the diverse experiences of perceived costs and benefits.
- b) Mechanisms be found to mitigate the high costs for poor households
- c) The funding of future transport infrastructure, and tariff determination, should take into account the economic impact on poor households in particular.
- d) The administrative burden of e-tolls, to both users and administrators, should be minimised.
- e) The manner in which tariffs are determined should be transparent and communicated clearly to the public.

10.3.3 Social impact

“When considering the current funding model of the GFIP as well as alternatives, we should consider the holistic transport funding policy and requirements of all road infrastructures in the country”. Whilst this is true, it is important to acknowledge the significance of GFIP as a local and global lesson at difference levels. This requires emphasis on design principles and approaches that place GFIP within an integrated transport system paradigm, with a transformative agenda that promotes:

- a) **Social inclusion:** The particular nature of the tolling of GFIP roads appears to have reduced opportunities for social inclusion, locking people into historical spatial arrangements defined by race and class. A major planning focus going forward should be to give attention to **promoting and sustaining social inclusion** in the future GFIP design and forms of funding, so as not to arrive at unintended consequences with respect to social inclusion.
- b) **Equity:** Similarly, social equity factors should form a key consideration in the continued design of GFIP and the applicable funding mix, so as to contribute to an improvement in social equity. Innovation that has social and economic characteristics requires regular review and adaptation to

local conditions. Thus, **social equity factors should form a key component to be integrated into the long-term design and financial re-visioning** for GFIP 1, and for GFIP 2 and 3, noting in particular the challenges highlighted by car owners, road users and the broader citizenry in this initial round of the GFIP innovation.

- c) **Sustainability:** It would appear that, from a social perspective, sustainability of a complex, long-term infrastructure development programme such as GFIP requires buy-in from car owners, road users and the broader community. Social sustainability is not just about getting car owners and road users to pay. It is about getting the provincial citizenry at large to adopt GFIP as its own, rather than as an imposition by government. To this end, a programme of **respectful and substantive communication for social sustainability** should be conducted, beyond the narrow confines of “how to pay your e-toll”.
- d) **Efficiency:** Innumerable instances of incorrect data with respect to cars incorrectly linked to persons, with respect to whether vehicles were in the province on the date of the billing or not, and other incorrect data has been presented. If e tolling is to continue in any form as one element in a broader funding mix, it will be **essential that the data collected by the e-readers at the gantries be analysed to be valid and reliable data**. Furthermore, efficiency must be visible with respect to reduction of paper and postage as inefficient and costly forms of billing. Forms of funding other than e-tolls, such as fuel levy or license fee, may have an advantage in being more efficient.
- e) **Administrative justice:** Administrative justice requires that affected and interested parties should have the right to be heard. There are a number of issues that arise in this respect. If e-tolling is to continue in any form as one element in a broader funding mix, then a key requirement is the **establishment of a well-defined dispute resolution mechanism and process**, where car owners and other road users who pay e-tolls can have disputed bills rapidly reviewed and corrected.
- f) **Good governance, intergovernmental relations and institutional structures:** The practice of intergovernmental relations should be significantly enhanced by negotiating and adopting **a structured and well-governed model of engagement incorporating all three tiers of government in Gauteng and SALGA**, as a long-term inter-governmental governing body for oversight of GFIP, its funding requirements and its social impact. Formal social impact studies conducted at regular intervals should be a requirement for good governance, as well as providing insight and guidance for the governing institutions as the infrastructure programme progresses.

Redress-oriented Recommendations include:

- a) Revise the e-toll funding model to accommodate serious gaps and negative social impact. The ITMP 25 states, “levying of tolls should be part of a holistic approach to road financing and has a role to play in a province such as Gauteng.” This consideration as part of a hybrid model has to be considered.
- b) GFIP Implementation Strategy Review with a Comprehensive Stakeholder Engagement for developing a commuter-centric integrated transport system with cost and benefit sharing models
- c) Legislative frameworks review to enhance cooperative governance for alignment and innovative financing
- d) Development of a Comprehensive Social Impact Plan with an objective beyond congestion reduction covering spatial dimensions, gender perspectives, and issues of disability

- e) Formulate and/or Consolidate Strategy and Funding Models and Plans for Integrated and Transformative Gauteng Public Transport. Incorporate Metro BRT (A Re Yeng, Tshwane Metro, Rea Vaya, City of Johannesburg, PRASA, Gautrain, etc.).
- f) Fast-track implementation of Gautrain Integrated Transport Authority
- g) Identify alternatives and mitigating measures and revise government response to social consequences accordingly
- h) Develop a social impact management and monitoring of social impact

The introduction of complex systems, such as advanced transport systems, requires effective monitoring and evaluation from commencement of the programme, in order to identify the practicability and workability of a particular policy or programme, thereby to inform minor or major adjustments as the system unfolds and matures. Regular or periodic monitoring and evaluation of social impact is as important as monitoring and evaluation of economic, political, legal or environmental impact. A few of the key social impact issues that emerged in the course of the consultations and the deliberations of the e-toll Panel were the need for heightened transparency and public accountability of governmental institutions; the requirement for clear, effective and respectful public communications; as well as the need for fair treatment of citizens by public office-bearers. The inference is drawn that social monitoring and evaluation should incorporate the basic foundational aspects of understanding the social impact of a particular complex system such as GFIP and e-tolls on road users who are required to pay, but should also incorporate the social impact of the governance of the particular system.

10.3.4 Environmental impact

Based on the major transport policies principles the sustainable mode of reduction in emissions is better done through reduced vehicle travel which can be implemented through the provision of an integrated transport system in Gauteng that focuses on Rail as the back bone of the transport network.

A fully integrated and sustainable system should allow travellers to choose from various modes, location and pricing options, particularly those that are resource efficient, affordable, healthy, and accommodate non-drivers. Furthermore, the various components of the transport system should be well integrated, such as pedestrian and cycling access to transit, and integrated transport and land use planning.

The coordination role that the GPG plays between agencies (PRASA, SANRAL), municipalities and relevant departments (Housing, Economic Development) in the planning and implementation of transport projects and initiatives, should be entrenched to ensure planning and implementation of an integrated transport system that reduces vehicle travel is realised.

Some of the proposed exemptions that encourage and further entrench the principles of TDM should be encouraged. This implies that the pricing mechanism of the e-tolls should:

- a) Directly support the: reduction in pollution (distance-based charges);

- b) Encourage sustainable transport systems (alternative fuel vehicles, all forms of public transport); and
- c) Promotes road user behaviour that reduces vehicle travel (car-pooling or ride-sharing).

10.3.5 Legislative and legal recommendations

- a) In a letter dated 10 July 2013 to the Competition Commission in reaction to its findings on the collusive tendering in the construction sector, SANRAL stated that it was disturbed and outraged by the collusive conduct as the collusion was against public interest, as well as, to SANRAL's detriment and as such it can never be condoned. In the letter SANRAL also reserved its right to institute civil legal proceedings.⁸¹
- b) Furthermore, in terms of section 217 of the Constitution, SANRAL is required to contract for goods or services in accordance with a system which is fair, equitable, transparent, competitive and cost-effective. The collusive tendering by the construction firms not only eroded competition, but resulted in SANRAL contracting for goods and services, presumably on a price that was not "fair" or "cost effective" as required by the Constitution.
- c) It is commendable that SANRAL is seen to be co-operating with the noble initiative by the NDED which convened a meeting at the instruction of the PICC to engage government entities that were affected by the collusive tendering in the construction industry with the view of finding a suitable and coordinated manner to deal with construction cartelists, especially, in relation to blacklisting and instituting a civil claims for damages. However, each of the affected government entities has its own legislative obligations. Government entities are enjoined by legislation, such as the Public Finance Management Act, the Constitution and National Treasury Regulations to act in a certain manner when conduct of the nature engaged in by the construction firms occurs, which includes, blacklisting, restriction, civil litigation proceedings to recover and/or institution of criminal proceedings against the implicated companies and/or individuals.
- d) In terms of section 65 of the Competition Act, a civil action for damages only follows after a competition law infringement has been proved in the Tribunal or the CAC. Accordingly, the confirmation of the consent orders by the Tribunal that the construction firms contravened the Competition Act enables an affected party like the SANRAL to sue or claim any civil damages. In light of the above, it is recommend that SANRAL must embark on the process of recovering damages from the construction companies involved. It is of paramount importance that the claim be instituted before it has prescribed. Prescription shall take effect after 3 years of the offence being admitted to and the Competition Tribunal having confirmed such consent orders.
- e) As part of the civil recovery process SANRAL must remain alive to the possibility of an out of court settlement with the construction firms. In this respect it is recommended that the Premier may amongst other intervention, seek to persuade SANRAL to consider engaging the implicated

⁸¹ Letter from SANRAL to the Competition Tribunal dated 10 July 2013 available <http://www.comptrib.co.za/assets/Uploads/Collusive-Tendering/SANRAL.pdf> accessed July 2013.

construction firms to find an amicable resolution which would bring closure to the matter without incurring the high costs of litigation associated with a claim for damages arising out of a contraventions of the Competition Act.

- f) It is also recommended that the NDoT, SANRAL and the GPG lobby National Treasury for the pro-rata portion of the administrative fine linked to the GFIP to mitigate and reduce costs for e-tolls by servicing the debt or settlement of the penalty fee for early termination of the ETC contract.
- g) It is also recommended that the Premier should consider advising SANRAL to accept the Competition Commission's invitation to train its procurement officers on early detection of the collusive behaviour and how best to put measures to avert such undesirable conduct.

10.3.6 Spatial planning recommendations

- a) The implementation of an integrated transport system as contained in existing government policy frameworks, with GFIP as a component thereof, to facilitate for spatial integration across the Gauteng City region
- b) Review of the current location of the gantries, to the extent that the e-tolls implementation reinforces apartheid spatial patterns by unintentionally creating a financial deterrent for those accessing the "ring-road" for income opportunities, thereby sustaining delinkages with the townships.

10.3.7 Integrated transport planning and implementation

- f) Facilitate an ongoing intergovernmental forum, including local, provincial, national government, and SANRAL, aimed specifically at addressing the various issues raised by the GFIP/e-toll system, in whatever way it proceeds. Such a forum should inter alia (i) agree on, and facilitate, a method to monitor traffic patterns and diversions to the non-tolled road network; (ii) facilitate the implementation of mitigation measures and mobilise funding, for instance from the NDoT's road maintenance grant; (iii) coordinate implementation of priority public transport projects to address issues of alternatives for road users under charging; and (iv) ensure that future issues around road development in the province are properly included in local IDP and ITP planning processes. The process is also critically important for moving ahead with Gauteng's ITMP implementation, and should be driven at a high level, for instance by the office of the Gauteng Transport Authority envisaged by the ITMP.
- g) The Establishment of Intermodal Planning Committees (IPCs) on Metropolitan/Local Sphere of Government with the purpose of, amongst others, co-ordinating the planning and operation of all modes of public transport on local level is strongly recommended
- h) Identify priority public transport and/or HOV projects to serve as visible alternatives for freeway users who wish to switch from using the car. Such project(s) need to serve a symbolic value of (i) turning the public attention towards the wider issues at stake in the e-toll debate, namely sustainability and the need for a more balanced transport system; (ii) creating awareness that transport funds (including tolls) are used to promote alternatives and choices, rather than (as tolls are often perceived) charging for an existing facility only. Such project(s) should also be strategically integrated with the ITMP strategy and link optimally with other existing services such

as Gautrain. It could be linked to specific incentives to get the message across, such as public transport discounts if people can prove (via their previous e-toll accounts) that they are electing to use public transport/HOV rather than driving.

- i) Within the SIP 2 and the GFIP Phase 2 projects, planned roads (PWV14 & PWV15) that have been earmarked as freight ring routes by the ITMP25, should serve as an alternative route so as to ensure that heavy vehicles use the outer ring roads to connect the three cities which are served by freight hubs, thus controlling heavy vehicle freight movement on the GFIP network and into the major cities. The proposal is that once these roads have been constructed, the tolls on heavy vehicles on the GFIP phase I network should be increased to act as a deterrent for heavy vehicles, but also increase the design life of the pavement. Road freight can be charged on a tariff basis based on a kilometer per ton on freight vehicles. Freight charges however should facilitate growth in rail-freight, contributing to the Government's objective delivering social and environmental benefits by relieving road congestion and reducing air pollution

10.3.8 Funding alternatives

- a) A hybrid funding option should be adopted, in which GFIP I is funded through a combination of e-tolls and other funding sources.
- b) Consideration should be given to structuring the e-tolls component of the hybrid funding option in a way that is more equitable to low- and middle-income users, more simple and efficient, and at lower rates. Possibilities in this regard include: significantly lowering the monthly cap; lowering or eliminating the higher rates for non-tagged users; reducing tolls per gantry; ending e-tolls collection at certain gantries; introducing rebates or exemptions for low-income, or low- and middle-income users; increasing the off-peak discounts and/or introducing exemptions at certain times of day; introducing differential rates for different types of light vehicles in a progressive manner; and introducing rebates or exemptions for designated vulnerable groups such as disabled people.
- c) All of the funding for GFIP I should be provincially sourced.
- d) In selecting the hybrid option, cognisance should be taken of the principles of efficiency, fairness, progressivity and sustainability.
- e) Low income people in particular should be left no worse off in the funding option chosen than in the current situation.
- f) GFIP 2 and 3 could also be funded through a hybrid option. Should funding from a national funding source be sought for GFIP 2 and 3, this should be as part of an integrated funding solution for improving transport infrastructure across South Africa.

10.4 Substantive recommendation of the Panel, for immediate implementation, to address short term challenges

As set out in this report, at the heart of the recommendations of the Panel is the paradigm shift from apartheid spatial and transport planning, as reflected in the GITMP.

It serves as a point of departure from apartheid spatial planning; land use and mobility; and ushers in an integrated and equitable transport value chain, where public transport has the highest priority. (Executive summary, p.7)

The GITMP is a detailed plan with identified short to medium term initiatives and a set of interventions identified for the longer term making up the 25-year plan. The strategic road network is one element of the integrated transport system which is essential to enable and sustain mobility and economic growth in Gauteng.

The Panel has observed that the timing and sequencing of interventions such as the recapitalisation of rail for commuters and freight; provision of alternative provincial and local road routes; planning and implementation of bus rapid transport systems; incorporation of a regulated taxi industry into the system transport for commuters; and implementation of traffic demand management measures to disincentivise the dominance of single driver private cars have not materialised simultaneously with the implementation of GFIP. However, the benefits of the implementation of GFIP should not be underestimated. Road infrastructure is a crucial driver of economic growth.

The Panel has also observed the dire macroeconomic position of the country and the pronouncements of the Minister of Finance and the MEC for Finance and Economic Affairs on the budget allocations nationally and provincially. It is in particular noted that there is already an intention to increase motor vehicle license fees as a source of general revenue. Even if the macroeconomic position of the country was to improve dramatically, there also remain competing demands on the fiscus, not least competing demands for other major infrastructure investment needs in the areas of water and energy in particular.

The Panel therefore supports the policy position on funding principles set out in the White Paper on National Transport Policy (1996), and carried through in all subsequent policy and strategy documents:

- a) User pay provision for “economic” infrastructure and operations which provide a measureable economic or financial return through the use of, for example, fuel levy and tolls for roads
- b) Contribution from the fiscus for infrastructure and operations which provide social benefits which cannot or should not be paid for by users e.g. public transport

As set out in section 3.7, infrastructure policy and projects should to be guided by principles of efficiency, equity, sustainability and social acceptability. In the absence of adequate funding from the national or provincial fiscus funds must be found for payment for GFIP Phase 1 as well as for commencement with GFIP Phase 2 and 3. In addition funds must be found for other transport infrastructure investment needs in Gauteng and in the country. The current maintenance need for the national network is an additional R 65.8 billion per annum and there is a backlog of R 91.7 billion required for gravel road surfacing.

The Panel has considered all representations, arguments for and against e-tolls and alternative options. These options are discussed in detail in different chapters of the report and the advantages and disadvantages of the main options, as presented to the Panel, are summarised in the scenarios below:

Scenarios	Arguments around advantages	Arguments around disadvantages
As-is	<ul style="list-style-type: none"> • Infrastructure and management system is already in place • System allows for exemptions for licensed taxis, buses, scholar transport and peak & off-peak rates (for tagged users) • Allows for congestion management and traffic diversion • Consistent with direct user-pays principle • Tagged users have various payment options 	<ul style="list-style-type: none"> • Limited alternatives for public transport • Reliance of public transport system on private taxis • Low levels of compliance and difficulties in enforcing compliance • Public defiance of e-tolls • High administration costs, both for system and for users • Those living far from place of work due to apartheid spatial planning legacy pay relatively more • System is considered complicated for users • Variation in monthly costs for users
Fuel levy solution	<ul style="list-style-type: none"> • System already in place • Simple, cheap and efficient to administer • Easy to get 100% compliance • Consistent with broader user-pays principle • Spreading the costs nationally reduces the cost per litre • Those driving larger cars, who are generally better-off, pay relatively more 	<ul style="list-style-type: none"> • Those living far from place of work due to apartheid spatial planning pay relatively more • Residents of other provinces who only have access to inferior roads pay for superior roads in Gauteng • Not possible to exempt public transport, vulnerable groups, or differentiate rates for different travel times • Those driving older cars, who are generally worse-off, pay relatively more • Variation in monthly costs for users • Inflationary element created by the fuel levy solution has an impact on the economy

Scrapping E-tolls	<ul style="list-style-type: none"> • Costs to lower income households and businesses would be scrapped • Appease the people who are against the E-tolls • Will improve confidence in political leadership in listening to its constituents. • Democracy-in-action 	<ul style="list-style-type: none"> • Promotes civil disobedience • The debt and current ETC contract remains unpaid • Credit rating of SANRAL and South Africa based on its ability to raise and pay off debt from markets will be negatively affected. • Inconsistent with the user-pays principal • Promotes increased car use dependency
Hybrid Solutions	<ul style="list-style-type: none"> • They provide a basket of options • Allows the province to be involved more closely in the GFIP project • Provides sustainable funding options that can assist with future transport projects • Provides an opportunity to set up a joint committee from various spheres of government to coordinate the GFIP and funding for future transport projects. 	<ul style="list-style-type: none"> • The collection of funds from various options can be inefficient. • Most of the hybrid solutions take money away from the social services budget • Some options need political buy-in and in some cases legislation review

The Panel is of the view that elements of the e-toll project should be reviewed and its immediate recommendations are:

a) A mixed source of revenue streams

Given the pressure on the fiscus, a mixed source of revenue streams is recommended for repayment of the debt for GFIP Phase 1, as well as raising the necessary funding for other transport infrastructure needs including GFIP Phase 2 and 3. Options in this regard have been set out in Section 9.6. Debt financing (as opposed to equity) was used for GFIP Phase 1, which is an important option for raising funds for infrastructure cheaply. It is also worth noting that infrastructure investment is the responsibility of the people of South Africa and not just the business of the state. The proposed sources of revenue to contribute to the debt repayment and raise future funding may include:

- A reasonable portion of funding from the provincial fiscus sourced from goods and services budgets of departments, without impacting on service delivery budgets. This would demonstrate commitment from the GPG to investment in transport infrastructure as a driver of economic growth
- A reduced cap e-toll accompanied by exemptions for progressivity and traffic demand management instruments to incentivise behavioural change, bearing in mind that a model of single driver private cars is simply unsustainable.

- A ring fenced national fuel levy for the benefit of investment in a national integrated transport system, as part of the total road network, and prioritisation of public transport which could GFIP Phase 2 and 3.
- Increasing and ring fencing the cost of road advertising along the toll routes
- Ring fencing a portion of any increase in motor vehicle license fees for investment in transport infrastructure and progressively increasing the fee for increased axle weight and luxury vehicles
- Increasing fees for tyres
- Recovery of funds from the construction industry in the quest to mitigate costs

The option of a fuel levy for Gauteng may not be advisable due to the complexity of implementation, the likelihood of cross border refuelling in the event of application of a fuel levy at the pump.

The option of increased corporate and personal income tax may not be advisable in view of the competing demands on the fiscus, and the announcement in the Medium Term Budget Policy Statement of the intention to increase taxes. However a progressive personal income tax could be contemplated to shift the burden for infrastructure investment to the wealthy.

b) Traffic demand management

A single driver private car model⁸² resulting in increased congestion and gridlock, together with the adverse climate change impacts of urban transport are simply unsustainable. Analysis of evidence and recommendations on management of traffic demand are set out in Chapters 4, 5, 6 and 9. Substantive proposals include:

- Revisit proposals of retrofitting one or more lanes on sections of the tolled routes for HOV vehicles of 3 passengers or more. An option of increase law enforcement to achieve voluntary compliance at the point of passage under dedicated lanes at each gantry point could also be considered
- Implementation of park and ride schemes to facilitate car pooling and bus transport, and facilitating the establishment of highly-visible public transport services specifically aimed at providing alternatives to tolled routes
- Immediate introduction of a single ticketing system to facilitate easy use of existing public transport
- Greater differentiation of the tariff at peak to spread the peak and reduce congestion
- Greater differentiation of tariffs to incentivise behavioural change to fuel efficient and low engine capacity vehicles
- Immediate establishment of a traffic authority

⁸² The weighted average occupancy of vehicles in Gauteng is 1.26. Source: GDRT, November 2014, Derived from *“Gauteng Strategic Road Network Review: Transport Demand Modelling, Evaluation and Prioritisation, May 2010”*,

c) Social impact and exemptions

The legacies of apartheid spatial planning has indeed resulted in a disproportionate financial burden on the lower income households who have no option other than private transport, who live in the periphery and travel longer distances from home to work. The cost of heavy reliance on taxis with limited bus and rail access requires an improvement on the social impact strategy and exemptions. There are additional categories where removal of the financial burden of e-tolls is warranted. Substantive proposals include:

- Complete exemption for low-income vehicle owners⁸³ based on presentation of reasonable evidence. Most desirable would be to link the e-NATIS vehicle ownership information to the SARS database.
- Complete exemption for HOV vehicles including taxis, scholar transport, registered vehicles of people with disabilities and vehicles of NGO's doing charitable work. The implication of this is that the e-tolls administration should not be used as a proxy for regulation of the taxi industry
- Consideration of switching off gantries for periods of time over weekends to allow unhindered movement for religious, cultural and family reasons

d) Administration of e-tolls

The Panel is cognizant of the major opposition to e-tolls in their current form, amongst others due to the perceived overhead costs of administration. However, the GFIP Steering Committee established in 2011 found, in benchmarking international best practice, that the overhead costs of administration was no exorbitant. It should also be borne in mind that the administrative costs decline with economies of scale and therefore are artificially high at present. The alternative of a fuel Levy is indiscriminate with respect to immediate equity impacts on low, medium and high income households. Substantive proposals include:

- Issuance of a tag to all vehicle owners at the time of motor vehicle license renewal to facilitate full realisation of the Intelligent Transport Systems capability. It would be desirable for the tag to be credited with the capped fee for the first month to avoid any risk of penalties arising from non-payment and to allow the user to become familiar with the capabilities of the tag.
- Clear communication of a single system for reloading of the tag similar to a pre-paid electricity metre or cell phone which is familiar to users
- Determination of a flat rate per gantry and elimination of all "alternative tariffs" to remove complexity and the accompanying disputes due to variable discounts
- Removal of all penalty fees to remove the additional administrative burden
- Removal of all postal administration and the accompanying overhead administrative costs of postal billing
- Subject to a balance with other traffic demand measures, switching off gantries that provide access to low income areas and/or where viable alternative routes do not exist.

⁸³ This would cater for students at tertiary institutions who do not have access to public transport

- Implementation of a plan for payment of arrears for all non-compliant users based on actual usage at the e-tagged rate and without application of penalties.

e) Consultation and communications

The Panel acknowledges that there have been numerous previous consultation processes. By its nature, consultation can never be exhaustive and nor will it result in 100% consensus. The Panel has also observed that the opposition to e-tolls has taken place in a heightened political climate accompanied by a massive civil disobedience campaign. Whilst the underlying sentiments of the campaign, including the anger and frustration about perceived and real lack of consultation, complexity of the system, billing problems, conflicting information from various sources and pressure on household incomes, the Panel can see no justification for the campaign, which sets unsustainable precedents and threatens democracy and social cohesion. The campaign of non-payment must also be weighed up against the evidence of payment of R 678 m by 1.2m users in the 6-month period 3 December 2013 to 31 May 2014.

The substantive recommendation of the Panel is that there should be a process of engagement between national, provincial and local government to decide on changes recommended by the Panel, and thereafter to communicate these changes to all interested and affected parties in the most direct manner possible. This would require commitment from political parties to communicate with their constituencies as per their undertakings in their submissions to the Panel; face to face engagement with major organised formations who made representations to the Panel; provision of information to all vehicle owners through the motor vehicle license registration system; and implementation of a public communication strategy and plan.

10.5 Conclusion

As set out in the foreword to the National Development Plan – Our Future, Make it Work – the Panel trusts that its advice will assist the Premier in

...uniting South Africans, unleashing the energies of its citizens, growing an inclusive economy, building capabilities, enhancing the capability of the state and leaders working together to solve complex problems...

National Development Plan, 2013, p 1

11 Bibliography and References

- Airshed (2014). *Air Quality Specialist report as part of the E-Toll Impact Assessment Report*. Airshed Planning professionals, Pretoria
- Becker, FA and Vanclay, F (2003). *International Handbook for Social Impact Assessment: Conceptual and Methodological Advances*. Cheltenham: Edward Elgar Publishing Limited, Cheltenham, UK
- Bond, P. (2012). *Politics of Climate Justice: Paralysis Above, Movement Below*. University of Kwazulu Natal Press
- Castells, M. Susser, I (ed.). (2002) *The Castells Reader on Cities and Social Theory*. Blackwell Publishers.
- Crozier, M. J. Huntington, S. M. Watanki, J. (1975) *The Crisis of Democracy: Report on the Governability of Democracies to the Trilateral Commission*. New York: New York Planning Press.
- Committee of Transport Officials (2014). *South African Road Network: Condition and Budget Needs 2014*. SANRAL, Pretoria.
- Department of Environmental Affairs (2014). *Gauteng's E-Tolling and Sustainable Development: A brief discussion on how the high-tech tolling of Gauteng's highways contributes to sustainable development*. Department of Environmental Affairs, August 2014.
- Department of Transport (1996). *White Paper on National Transport Policy*. Department of Transport, August 1996
- Department of Transport (1998). *Moving South Africa*. Department of Transport, 1998
- Department of Transport (2010). *National Transport Master Plan: NATMAP 2050*. Department of Transport, December 2010
- Du Plooy (2014). *Mobility Performance Analysis of the Ben Schoeman Freeway: before and After GFIP, South African Transport Conference (SATC), July 2014*
- Department of Roads and Transport (2012). *Gauteng Provincial Government*. (2013). *Gauteng Provincial 25-year Integrated Transport Master Plan: 5-year Transport Implementation Plan*. Gauteng Provincial Government.
- Gauteng Department of Roads, Transport and Public Works (1998). *A Toll Road Strategy for Gauteng*. Gauteng Provincial Government, April 1998.
- GIBB (2014). *Traffic Modelling, Investigation of the Gauteng E-Tolling System User Benefits report*, GIBB Consulting Engineers, November 2014
- Goodin, R.E. (1992) *Green Political Theory*. Cambridge: Polity Press.
- Gutman, A. (ed). (1994). *Multiculturalism*. Princeton, New Jersey: Princeton University Press,
- Howlett, M. Ramesh, M. (1995). *Studying Public Policy: Policy Cycles and Policy Subsystems*. Oxford University Press.

- Lipsky, M. (1980). *Street-Level Bureaucracy: Dilemma of the Individual in the Public Services*
- Jennings R and Everatt D (2014). *Business Survey: Attitudes to and experience of GFIP and e-tolls*. Gauteng City Region Observatory, November 2014
- Jennings R and Everatt D (2014). *Desktop research: A resource document for the E-tolls Advisory Panel*. Gauteng City Region Observatory, November 2014
- Lipsky, M. (1980). *Street-Level Bureaucracy: Dilemma of the Individual in the Public Services*
- Litman, T (2005). *Transportation Cost and Benefit Analysis; Techniques, Estimates and Implications*, Victoria Transport Policy Institute. <http://www.vtpi.org/tca>
- Litman, T (2007). *Evaluating Public Transit Benefits and Costs, VTPI*. <http://www.vtpi.org/tranben.pdf>
- Litman, T (2014). *Pricing Methods, Techniques for collecting Road, parking and vehicle fees*. Victoria Transport Policy Institute, <http://www.vtpi.org/tdm/tdm83.htm>
- McIntyre, A. 1998. *Whose Justice? Which Rationality?* Notre Dame, Indiana: University of Notre Dame Press.
- Merleau-Ponty. (1994) *Humanism and Terror*. Boston: Beacon Press.
- Malikane, C (2014). *Impact of the GFIP and E-Tolls: Input-Output and SAM Analysis*. November 2014
- Misra, V (2011). *Social Impact Assessment Methodology*. Accessed November 2014, <http://www.cgg.gov.in>
- Moody's Investors Service. *Credit Opinion: South African National Roads Ag. Ltd (The)*. Pretoria, November 2014
- Naidoo, R (2013). *E-toll Roads: Analysing a Case of Collective Disengagement in an e-Government Project*. Pretoria, University of Pretoria
- National Planning Commission (2012). *National Development Plan 2030*. The Presidency, Pretoria.
- NEMA (1998). *The National Environmental Management Act No. 107 of 1998 of South Africa*
- NLTA (2009). *National Land Transport Act No 9 of 2009, The Republic of South Africa*
- OECD Territorial reviews: *The Gauteng City-Region, South Africa*. OECD, Paris, 2011
- Outhwaite, W. (ed.). (1996). *The Habermas Reader*. Cambridge: Polity Press.
- Oyen, E. et al (2002). *Best Practices in Poverty Reduction: An Analytical Framework*. London: Zed Books
- Rawls, (1993) *Political Liberalism*. New York: Columbia University Press
- Ramoroka, T (2014). South Africa's E-toll System and the African Working Class Motorists: The Re-emergence of the Socio-Economic Exclusions of the Apartheid Urban Settlements. *Mediterranean Journal of Social Sciences*. Vol 5 (15): 49 – 54

SALGA (2013). *The Impact of the Proposed Gauteng Freeway Tolling Scheme On Gauteng Municipalities*. SANRAL (2013). *Annual report South African National Roads Agency, 2013*

Saleth, R. M. Dinar, A. (2004) *The Institutional Economics of Water: A Cross-Country Analysis of Institutions and Performance* Cheltenham, UK: Edward Elgar

Scruton, R. (2012). *Green Philosophy: How to Think Seriously About the Planet*. London: Atlantic Books.

Sneed 1977; Barnett 2002; N. Crawford 2002; Finnemore, 2003

Standish, B; Boting, A. (2004) *The Institutional Economics of Water: and Marsay A Cross-Country*(2010). *Economic Analysis of Institutions and Performance* Cheltenham, UK: Edward Elgar

Scruton, R. (2012). *Green Philosophy: How to Think Seriously About the Planet*. London: Atlantic Books.

Sen, A. (1999) *Development as Freedom*. Oxford: OxfordGauteng Freeway Improvement Scheme. UCT Graduate School of Business, University Press

Seidman, S. (1994) *Contested Knowledge: Social Theory Today*. 4th ed. Blackwell, London

South African Government. (1996). *The Constitution: Chapter 2: Bill of Rights*. Pretoria: Republic of South Africa Cape Town and ARUP Strategic Economic Solutions, Cape Town.

South African Government. (1996). *The White Paper on Stats SA (2014) National Transport Policy. Household Travel Survey*. Pretoria: Republic of South Africa. Stats SA

Townshend, M (2014). *Funding alternatives for the Gauteng Freeway Improvement Project*. November 2014

Vanclay, F (2012). *New Developments in Social Impact Assessment*. Accessed November 2014, <http://www.uef.fi>