THE IMPACT OF THE PROPOSED GAUTENG FREEWAY TOLLING SCHEME ON GAUTENG MUNICIPALITIES

Final Report

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1. INTRODUCTION

The Gauteng Province's Executive Committee of the South African Local Government Association (SALGA) has resolved to investigate, at a strategic level, the impact of the proposed Gauteng freeway tolling scheme on Gauteng municipalities. The investigation serves to guide SALGA to respond, with more scientific reasoning, to the strategic questions relating to the likely impact of the proposed Gauteng tolling scheme on Gauteng municipalities. While the investigation needs to provide answers to the immediate implications for Gauteng road network tolling, the investigation should also provide some guidance to SALGA in respect of long term responses to similar future road network tolling approaches.

The need for the investigation is principally informed by the provisions of 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, it is important to understand the budgetary implications of the tolling scheme. Furthermore, in terms of the Act, expenditure must be within the limits of the amounts appropriated for in the approved budget, and be funded from a realistically anticipated revenues to be collected, uncommitted accumulated funds, or borrowed funds in case of capital projects. Multi-year capital projects, in particular, are required to reflect the total budget required to implement the entire project, and also reflect the revenue and cost implications of implementing the project. Without knowledge of the financial implications of the tolling schemes on municipalities, in particular, Gauteng municipalities may be implicitly spending unbudgeted funds to address the impact of the tolling scheme. Apart from budgetary considerations, there are other reasons why a study of this nature should be carried out, and some of the reasons are that:

- In terms of the National Land Transport Act (Act 5 of 2009), any form of built environment change that results in significant changes in travel demand and travel patterns is subject to a transport impact assessment. Therefore it is imperative that an impact assessment be undertaken for the tolling proposals. Furthermore, the person responsible for generating the impact must be liable for paying for the amelioration of the impact, if any.

- SALGA as a representative of municipalities, particularly in Gauteng Province, needs to have an informed position in respect of responding in formal forums, established for the purpose of stakeholder consultation, in relation to network tolling.

- SALGA needs to identify and exploit opportunities, if any, that arise from the tolling scheme.

2. SCOPE OF THE INVESTIGATION

The scope of the investigation is summarised in terms of the following terms of reference:

- Assess the extent to which tolling of the freeways to finance Gauteng Freeway Improvement Project (GFIP) will affect municipalities and municipal infrastructure.
- Assess the impact of tolling on municipal roads due to possible diversion from freeways.
- Assess the socio-economic impact on rate payers and their ultimate ability to pay for municipal services.
- Assess the impact of tolling on revenue generation capacity of municipalities, including revenue from traffic law enforcement.
- Identify alternative ways of mitigating the negative effects of tolling.

The investigation relies on readily available information and datasets, as well as stakeholder interviews.

3. CONTEXTUAL BACKGROUND TO ROAD NETWORK TOLLING

This section of the report provides the rationale for network tolling.

3.1. TRANSPORT OPERATIONAL NEEDS

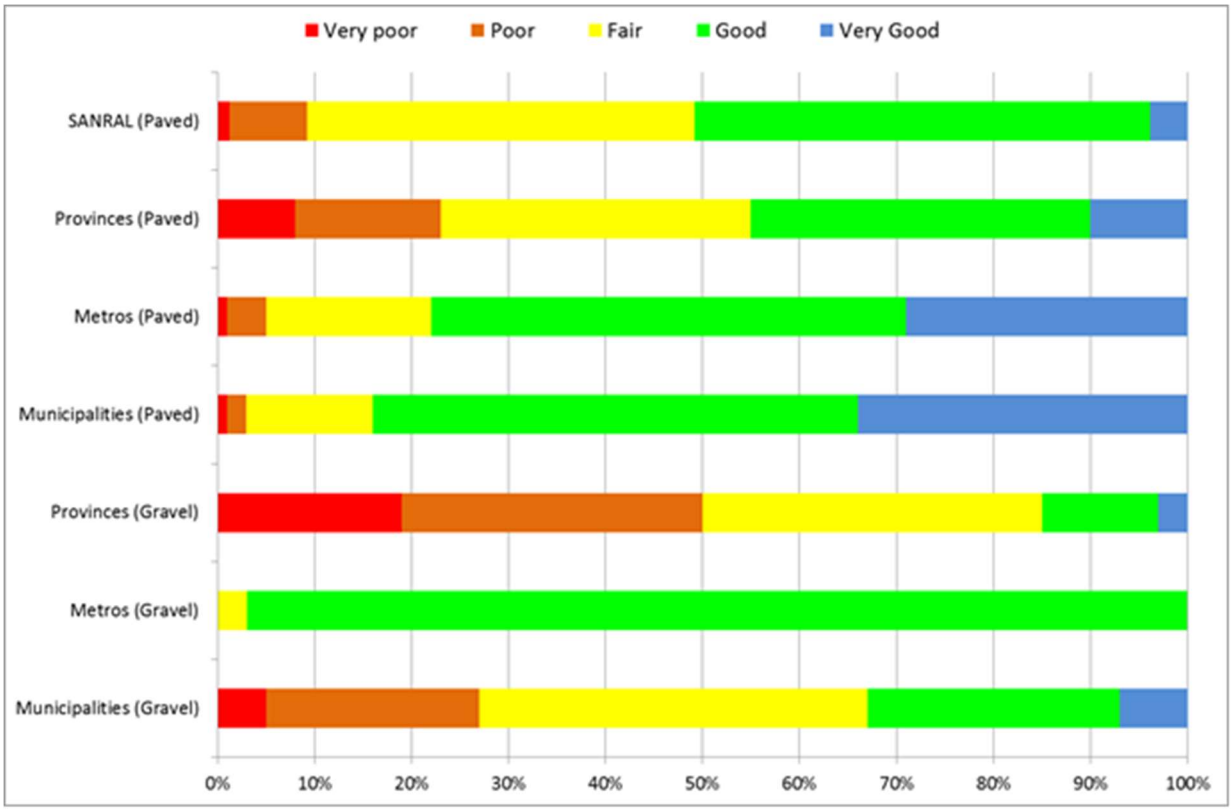
South Africa's proclaimed road networkspreadsover 606 978 km (SARF, 2010). The road network is managed separately by National government (3%), Provinces (30%) and Local government (67%). The entire national government managed network is paved, in contrast to only 26% of provincial and 22% of local government paved road networks.

The road conditions are based on a classification system, which categorises individual sections of roads as:

- **Very good:**Road is well constructed and maintained. It will have aresidual life of around 15 years with no further maintenance,or an indefinite life with proper maintenance.
- **Good:**Road is well constructed and maintained. It will have alife of around 8 years with no further maintenance, oran indefinite life with proper maintenance.
- **Fair:**Road shows some signs of deterioration but can be returnedto a "Good" condition if proper maintenance is done immediately.
- **Poor:**Road has failed and extensive maintenance is immediatelynecessary to salvage a road in this state. The road will deteriorateto "Very Poor" quickly if maintenance is delayed.
- **Very poor:** The road can no longer be maintained, but willbut willrequire major reconstruction to return them to a "Good" state.

Based on the above classification system, Figure 3.1 depicts the current state of roads in South Africa in terms of type of surface and road ownership. Many of the municipalities do not have proper and up to date road network asset management systems and therefore the data reflected may be outdated or reflective of municipalities keeping accurate records. What is notable, however, is that gravel roads are in a dire state relative to surfaced roads, and that provincial road networks in particular need urgent attention. Given the large absolute size of the municipal road network (including metros), a small proportion of “very poor” in the chart actually translates to an extensive network.

Figure 3.1: Estimated visual condition of South African road network



Source: Based on SANRAL (2011)

The road maintenance unit costs are summarised in Table 3.1. Applying the unit rates to the length and current condition of the networkshows that the maintenance of the current roads (excluding the development of new roads) is indeed resource intensive.

Table 3.1: Road maintenance unit costs

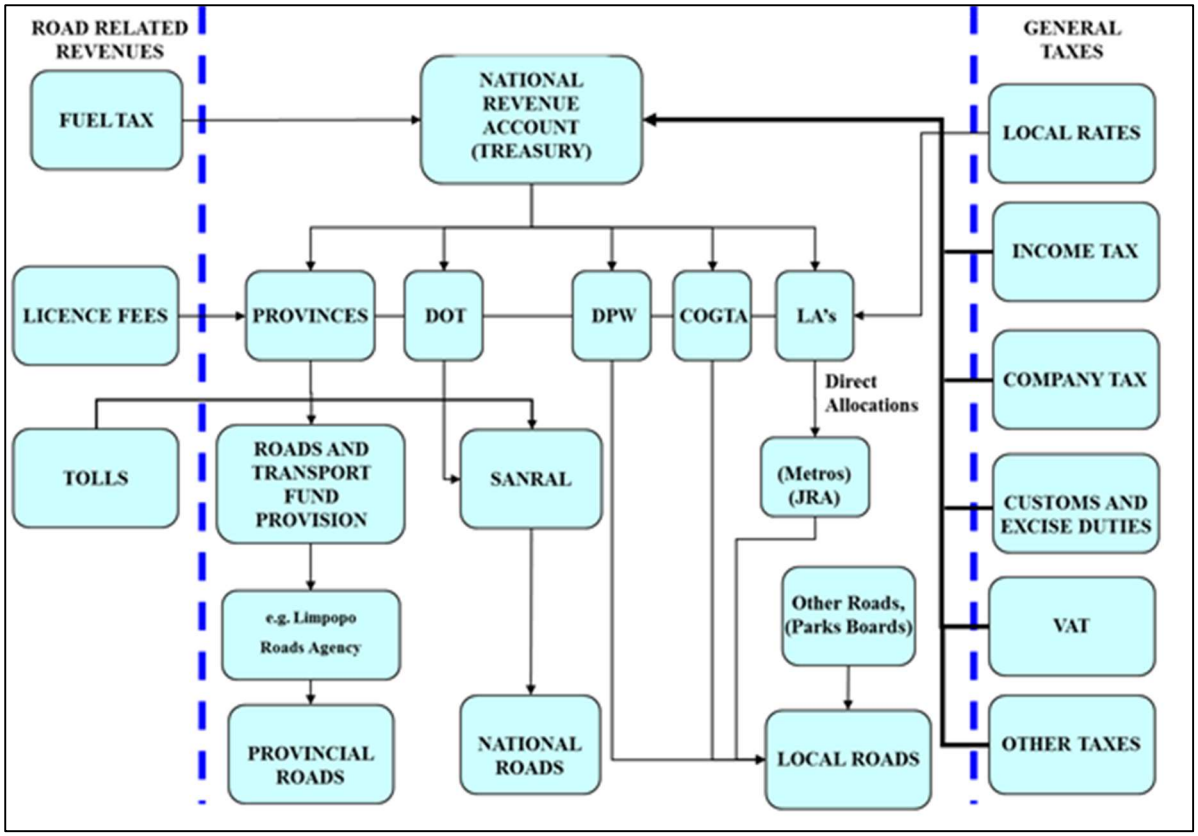
Type of road	Maintenance cost item	Amount
Paved roads	Routine maintenance cost/km/annum	R 40,000
	Periodic maintenance cost/km	R 900,000
	Periodic maintenance interval in years	10
	Rehabilitation cost per km	R 8,000,000
	Rehabilitation interval in years	25
	Overhead costs (% of total budget)	20
Gravel roads	Routine blading/km	R125
	Number of blades/annum	6

Type of road	Maintenance cost item	Amount
	Regraveling cost/km	R 200,000
	Regraveling interval (years)	8
	Upgrade to paved road/km	R 6,000,000
	Overhead costs (% of total budget)	20

Source: Taken from the Department of Transport published rates (DoT, 2012)

The current arrangement for roads funding in South Africa is summarised in Figure 3.2. Essentially, national roads are dependent on tolls and money appropriated from the national fiscus. Provincial roads are also dependent on the national fiscus and general revenue generated by the individual provinces. In Gauteng, while most of the provincial revenue is generated from vehicle licensing fees, it is nonetheless used for many other funding requirements. Municipal roads are funded from local rates and taxes, and some funds appropriated from the national fiscus. The sources of income for financing roads maintenance and development are finite and are used to fund other government priorities such as health, education, and welfare.This implies that while there are increased needs for the maintenance and development of road infrastructure, the funding is increasingly falling short of the requirements for good road network infrastructure. Also given increased social inequalities in the country, with a Gini coefficient of 0.7 (National Planning Commission, 2011), it is a basic requirement to strike a balance between addressing historical backlogs, including infrastructure, and investing in purely economic competitiveness oriented programmes. Investing in road infrastructure, also viewed against this backdrop, requires that a balance to be struck between the need to invest in developing and maintaining world class infrastructure and the addressing of dilapidated, and sometimes, non-existent road networks in many urban and rural areas.

Figure 3.2: Funding arrangement for roads in South Africa



3.2. LEGAL BASIS FOR ROAD NETWORK TOLLING

The South African national transport policy, in the form of White Paper on National Transport Policy, provides for the use of direct user charging for the use of transport infrastructure such as ports, railways, and roads (Department of Transport, 1996). For roads, the policy provides for the use of indirect road user charges such as fuel levy, as well as direct user charges in the form of tolling in cases where it is viable or appropriate.

Tolling of roads is further provided for in legislation, namely the South African National Roads Agency and National Roads Act (Act 7 of 1998) (SANRAL Act). Currently only sections of the national roads, representing 3% of the total road network, can be tolled. Of the 3,120km tolled road network, 1,832km is financed by the state and toll revenue, and 1,288km financed and managed through 30 year concession contracts (SANRAL, 2012). Prior to Gauteng urban tolls, therefore, only about 20% of national roads, which are primarily provided to serve the purpose of providing long distance mobility and to facilitate countrywide regional connectivity, were tolled, mainly along non-urban sections. Section 27 of the SANRAL Act clearly gives SANRAL to levy toll fees and also states that if any person liable for payment of toll fees in terms of the Act refuses or fails to pay the amount of toll that is due is guilty of an offence and punishable on conviction with imprisonment for aperiod not longer than six months or a fine, or with

both; andis liable, in addition, to pay to the Agency a civil fine of R1 000 (subjected to annual reviews).

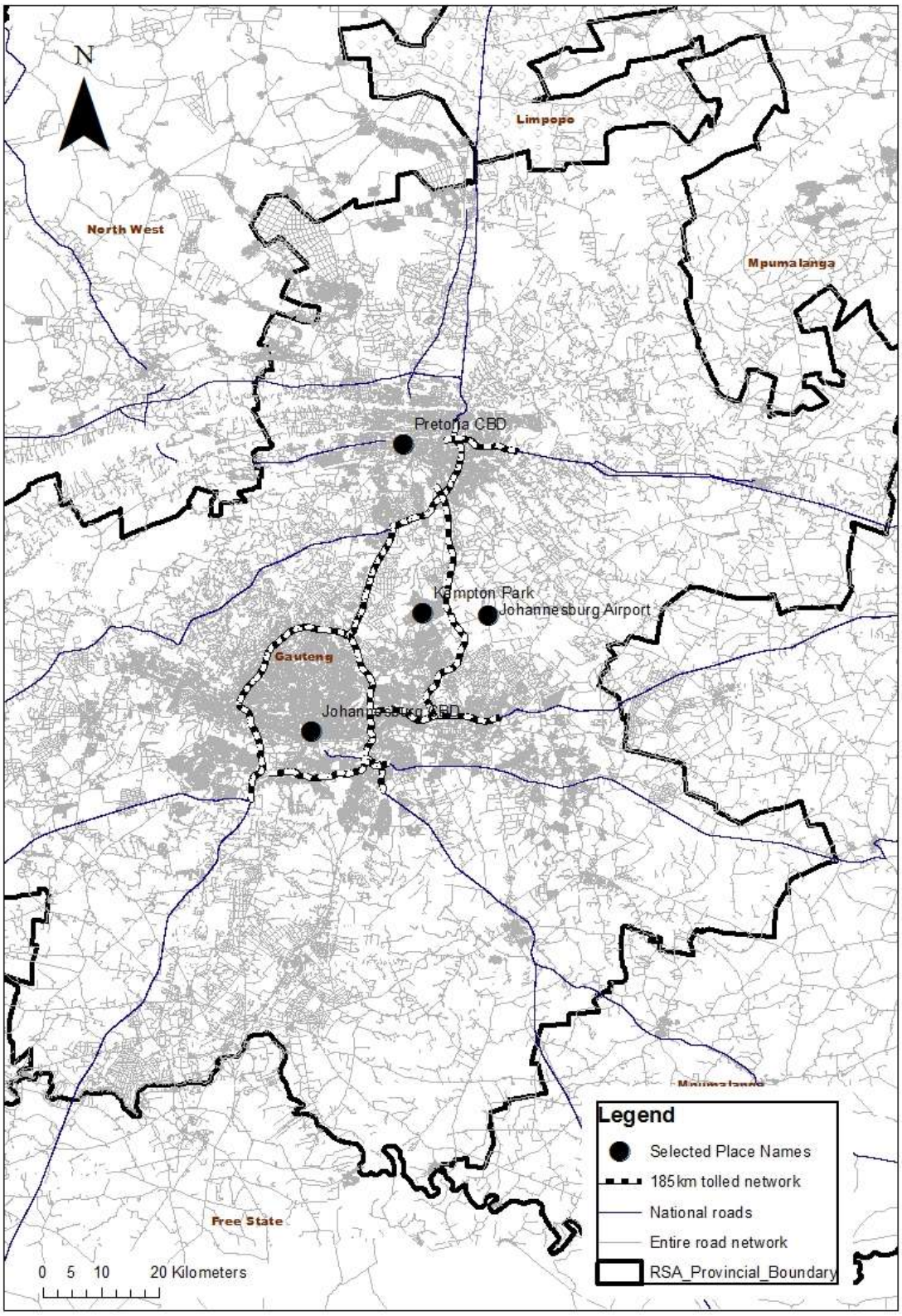
3.3. GAUTENG ETOLLING

Given the financial constraints to expand and maintain what was considered increasingly congested urban-based national road network, in 2005 the Minister of Transport announced phased proposals to toll the network, beginning with a 185km of existing national road network located in Gauteng Province, the economic heartland of the country. The entire 185km of the proposed tolled network runs in the urban areas of the cities of Johannesburg, Tshwane and Ekurhuleni, carrying the highest traffic flows of the entire national network. The announcement to toll the network was the first major decision in the history of the country to implement the policy of user-pays principle at a large scale on urban road networks. After the physical implementation of the tolling proposals on the 185km network in 2011, a large wave of public protests impeded the operational implementation of the tolls on grounds of poor public consultation, inappropriate solution concept, affordability, and double-taxation claims.

The proposed urban tolling scheme (first phase), referred to as the Gauteng Freeway Improvement Project (GFIP) comprised upgrading of the existing 185km of freeway road network in the form of lane additions, pavement rehabilitation, interchange upgrades, and incorporation of road safety related features such as lighting. The actual tolling mechanism is in the form of an automated open road tolling, comprising some 42 tolling points placed 5 to 14km apart. The toll tariff recognises three classes of vehicles, namely light, medium and heavy vehicles, and also provides for vehicle subclasses.

The proposed tolled network, depicted in Figure 3.3, is the first major urban tolling scheme in South Africa. The project was financed through public sector capital market borrowings with initial costs of R19.5 Billion (Department of Transport, 2012). The tolls are planned for implementation on a ring road surrounding the City of Johannesburg, as well as freeways connecting major urban centres in Gauteng Province.

Figure 3.3: Geographical depiction of the location of the proposed tolled network



3.4. TIMELINE OF EVENTS IN RESPECT OF IMPLEMENTATION OF ETOLLS INB GAUTENG

The history of the project can be summarised as follows:

- **Initiation:** The open toll project was given a go ahead by parliament in 2007 with the understanding that the cost of the systems would be recovered from the users. This followed years of debates within government circles in Gauteng Province on how to implement user-based road charges.

- **Initial stages:** Following preliminary system planning, the state produced a report for use in public consultation forums in September 2006.The Minister of Transport announced the project in October 2007, as a project that will “help ease traffic congestion in Gauteng's freeways”.

- **Construction:** The construction officially started in June 2008.

- **Accelerated implementation:** The implementation of the GFIP was accelerated by the need to provide sufficient transport infrastructure for the 2010 FIFA World Cup in South Africa. However, most of the construction was completed in 2011.

- **Tariff announcements:** From the planning stages of the project, the tariff for light passenger vehicles was generally announced as 50 cents/km. In February 2011 the tariffs were officially announced, which included discounts for users with system approved transponders for automated toll collection (e-tags), reduced off-peak tariffs, and discounts for valid public transport operators. A light passenger vehicle with an e-tag would pay 49.50 cents per kilometre, and the one without it would pay 66.00 cents per kilometre. Following an initial public outcry, the state decided to postpone the implementation of the system pending the results of a government appointed task team to review the tariff structure. In August 2011 reduced tariffs were announced which included exemption of public transport operators, and a tariff of 40.00 cents per kilometre for compliant light passenger vehicles. Following an even more intense public outcry, and calls for civil disobedience, the tariffs were reviewed once more resulting in 30 cents per kilometre for compliant light passenger vehicles, with planned implementation date of 30 April 2012. Furthermore, for light passenger vehicles with e-tags, the monthly cost was capped at R550 per vehicle. Following the final gazetting of the tariffs on 19 November 2013, tolling became operational on 03 December 2013 with the tariffs summarised in Table 3.2 for the different classes of vehicles, showing further tariff reductions. The scheme provides for off-peak discounts of up to 30% of the base tariff. In addition, qualifying users pay capped tariffs indicated in Table 3.2. The kilometre based tariffs are estimated from the actual distance travelled (which may differ from SANRAL tariff design) and the corresponding amount charged for the road sections travelled on the network.

Table 3.2: E-toll tariffs

Vehicle class	Network estimated base Tariff (R/km)	Network estimated e-tag tariff in peak period (R/km)	Gazetted capped tariff for qualifying users (R)
A1Motor cycles	0.33	0.17	250
A2 Light vehicles	0.54	0.28	450
B Medium heavy	1.36	0.70	1 750
C Heavy Vehicle	2.72	1.41	3 500

- **Organised protest:** On 28 April 2012 organised business won an urgent court interdict to delay the implementation of the tolling system pending a thorough review. This action followed a protest march organised by the largest trade union federation, namely Congress of South African Trade Unions (COSATU), on 17 April 2012, against the implementation of the system on grounds that the system would impose extra financial burden on motorists, especially those who “have no choice but to use their cars” for commuting purposes, and result in “economic apartheid” in that roads will only be used by the few wealthier people. Calls for civil disobedience for non-payment of tolls heightened following final implementation of the system on 03 December 2013.
- **Legal challenges:** Following the awarding of an urgent interdict in April 2012, the state successfully retaliated with a constitutional court appeal against the interdict, which it won. The state also won subsequent legal challenges leading to the implementation of the tolling system. Further legal actions were being mooted by various formations after the implementation of the system.

4. SUMMARY OF IMPACT ANALYSES ALREADY CARRIED OUT

Some impact studies were subsequently conducted by the state, firstly a social impact analysis and secondly an economic impact analysis. The social impact analysis emphasised the benefits that tolling would have on reducing road traffic congestion, and in turn result in improved quality of family life where families would have increased contact time (Department of Transport, 2012). The study also indicated that for the

tolling scheme to be successful, a reliable and safe public transport system needs to be provided, supplemented by change in societal behaviour in respect of shifting from private to public transport (Department of Transport 2012). The economic impact analysis revealed that the project was based on “sound economic logic” in that on the basis of Cost: Benefit ratios, Internal Rate of Return and Net Present Value, the upgrading of the Gauteng road network in the manner conducted, and at a 50 cents/km tariff for light passenger vehicles, was warranted (Department of Transport, 2012). In one of the calculations, it was estimated that for every Rand of initial capital expenditure as well as on-going maintenance over the life of the infrastructure, society would benefits by R8.40. The main cost savings were reduced road accidents, reduced fuel costs, and reduced travel times. An affordability assessment component of the study revealed that the cost to the total economy of Gauteng province was 0.34% of Gauteng’s GDP, and that at a household level the toll revenue would be 0.43% of “gross disposable income”. On the basis of the impact on the price of consumer goods, the study showed that costs of living increased by between 0.13 and 0.15% and therefore the scheme is not inflationary. Other project benefits included the contribution that the actual construction and maintenance would have on employment creation and overall economic growth.

Public engagement was relatively low key. For example, only 82 representations were received for the toll declaration process in 2007 (Department of Transport, 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.

The impact analyses carried out showed the gross net benefits of the urban tolling scheme. However, there are a number of shortcomings of the impact analyses that supported the tolling of existing urban roads. Some of the critical ones are that:

- 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.
- 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.
- 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.
- The costs of secondary road impact were not explicitly quantified and taken into account in the cost: benefit analyses.
- 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.

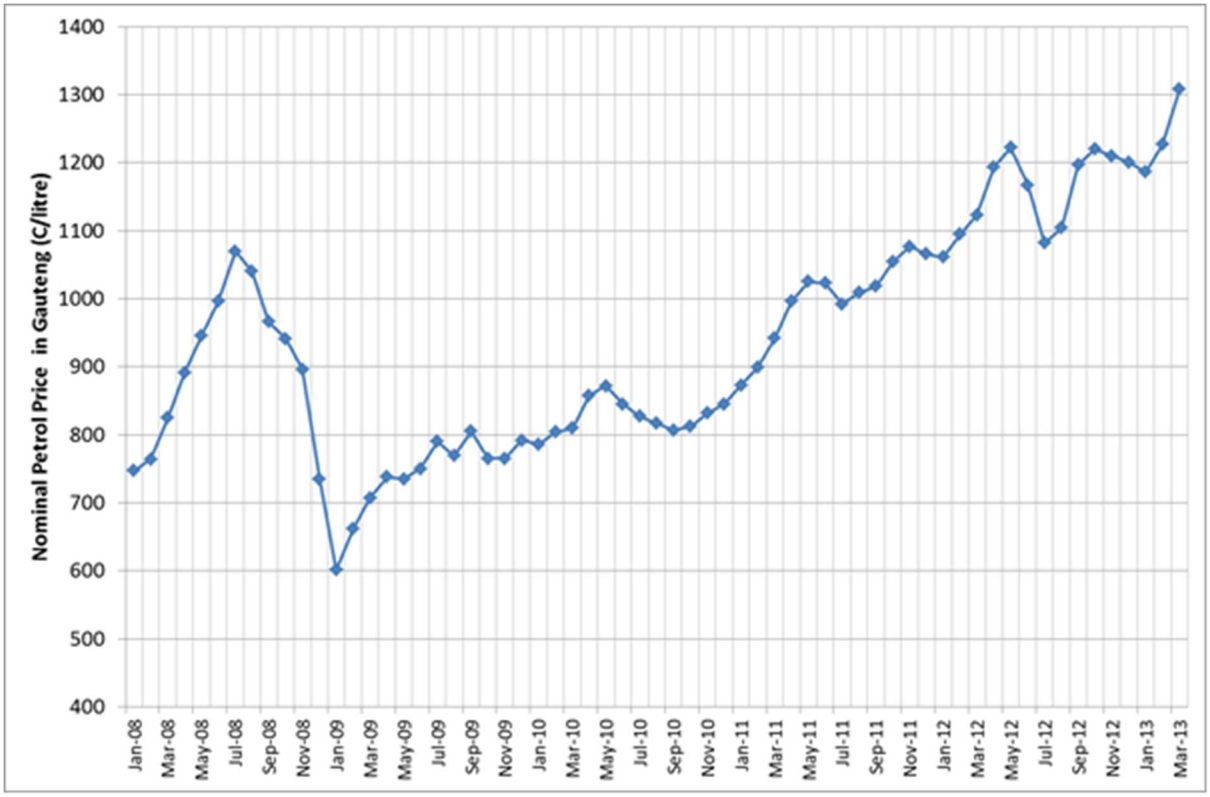
5. IMPACT ASSESSMENT

This section of the report provides an impact assessment of the proposed tolling scheme from different perspectives.

5.1. COMPARISON WITH FUEL PRICE HIKES

In order to put the proposed tariffs in perspective, comparison is made between the proposed toll tariffs and fuel price changes. Figure 5.1 depicts monthly fluctuations in inland fuel prices (petrol) over the period June 2008 to March 2013. Based on current fuel prices, an average typical car costs R1.30 per km in fuel costs. For every R1 increase in fuel prices, the car operating costs increase by about 10 cents per kilometre. Therefore, a toll tariff of R0.54/km is equivalent to fuel price increase of R5.40/litre. Crudely, this increase is approximately equivalent to a change in historical fuel prices between June 2009 and May 2012 in Figure 5.1.

Figure 5.1: Fluctuations in inland fuel price changes



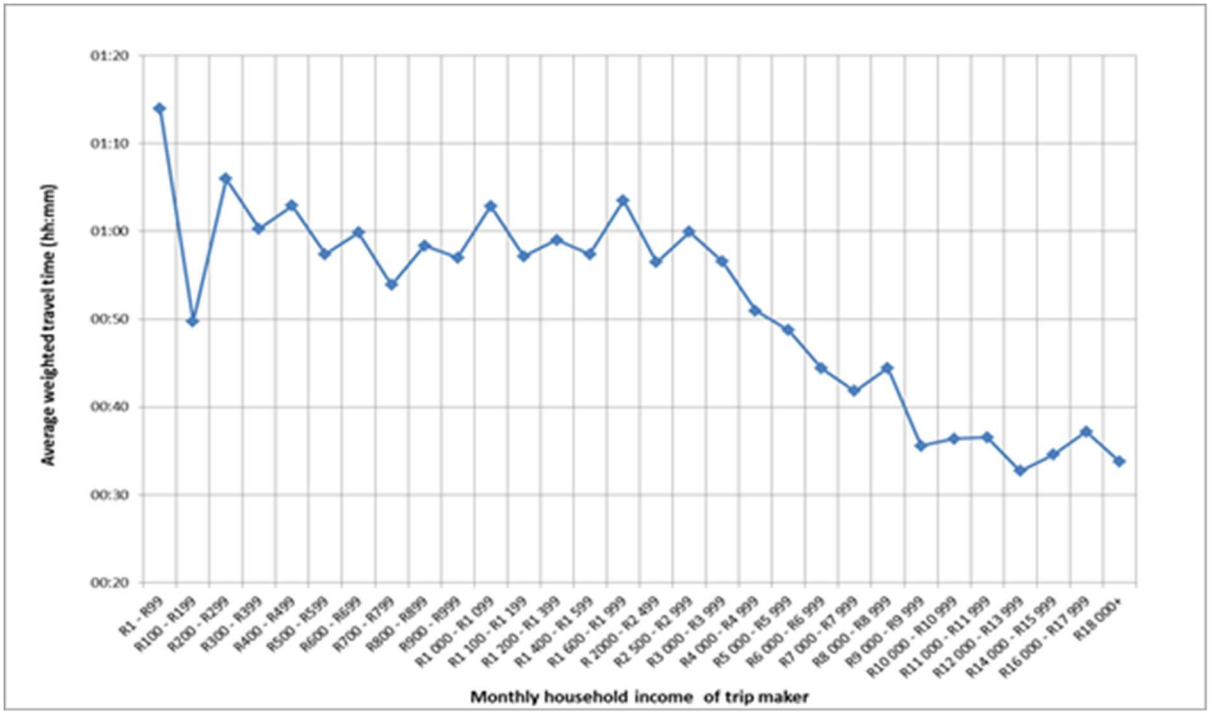
5.2. SOCIO-ECONOMIC AND SPATIAL MOBILITY IMPACT

The province of Gauteng undertook a household travel survey in 2002. It is currently the only comprehensive household travel survey in the province from which detailed impact assessment can be made. Using the survey data, and based on the daily trips before 9:00am, the inter-city trips undertaken between the three main cities, affected by the tolling scheme, namely Johannesburg, Tshwane and Ekurhuleni, were estimated.

Figure 5.2 shows the relationship between average one-way journey travel times and the household incomes for the above trips, from which it is evident that travellers from high income households are more likely to travel for shorter periods than travellers from lower income households. In fact, whereas a traveller from high income household takes an average of 32 minutes, it could take a traveller from a low income household as much as 75 minutes. The travel pattern illustrated in Figure 5.2 is characteristic of apartheid planning legacy in which lower income households, particularly Black Africans, are located further away from economic opportunities. The travel pattern illustrated in Figure 5.2 implies that lower income households are more likely to travel longer distances than higher income households, and consequently pay relatively more for tolls if using private transport. This certainly could be viewed as a penalty to lower income households for a spatial planning legacy created by the state. There is, however, no conclusive evidence to indicate exactly how different income

groups make use of the route network. Such evidence would require a carefully designed empirical study. Although most of the lower income households do not have access to a car, the ones that do would be disproportionately affected. In fact,Burger et al (2004) argue that although affluent Black Africans have urbanised more recently than their White counterparts, they have asset accumulation deficit, and this in turn remains a major hindrance towards middle class consumption patterns by Black people.

Figure 5.2: The relationship between commute travel time and household income



A further impact analysis is presented in Table 5.1 based on data collected by Statistics South Africa in the most recent household income and expenditure survey (StatsSA, 2012). In this table, the households are divided into income deciles, from low income (decile 1) to highest income (decile 10). For each income decile average monthly income is indicated as well as the probability of a household income decile owning a car. The disposable income is the difference between the average income and all the monthly household expenditures such as food, clothing, education, health, and transport. On average, lower income households already have an expenditure deficit. In fact, the deficit occurs up to income decile 5, implying that 50% lowest income households already spend more than they earn. Assuming one car per household, two trips (forward and return), and an average one way distance of 30km, the toll expenditure as a percentage of disposable income for 54 cents/km tariff and a capped R450/ month tariff are provided for each income decile. With a 54 cents/km

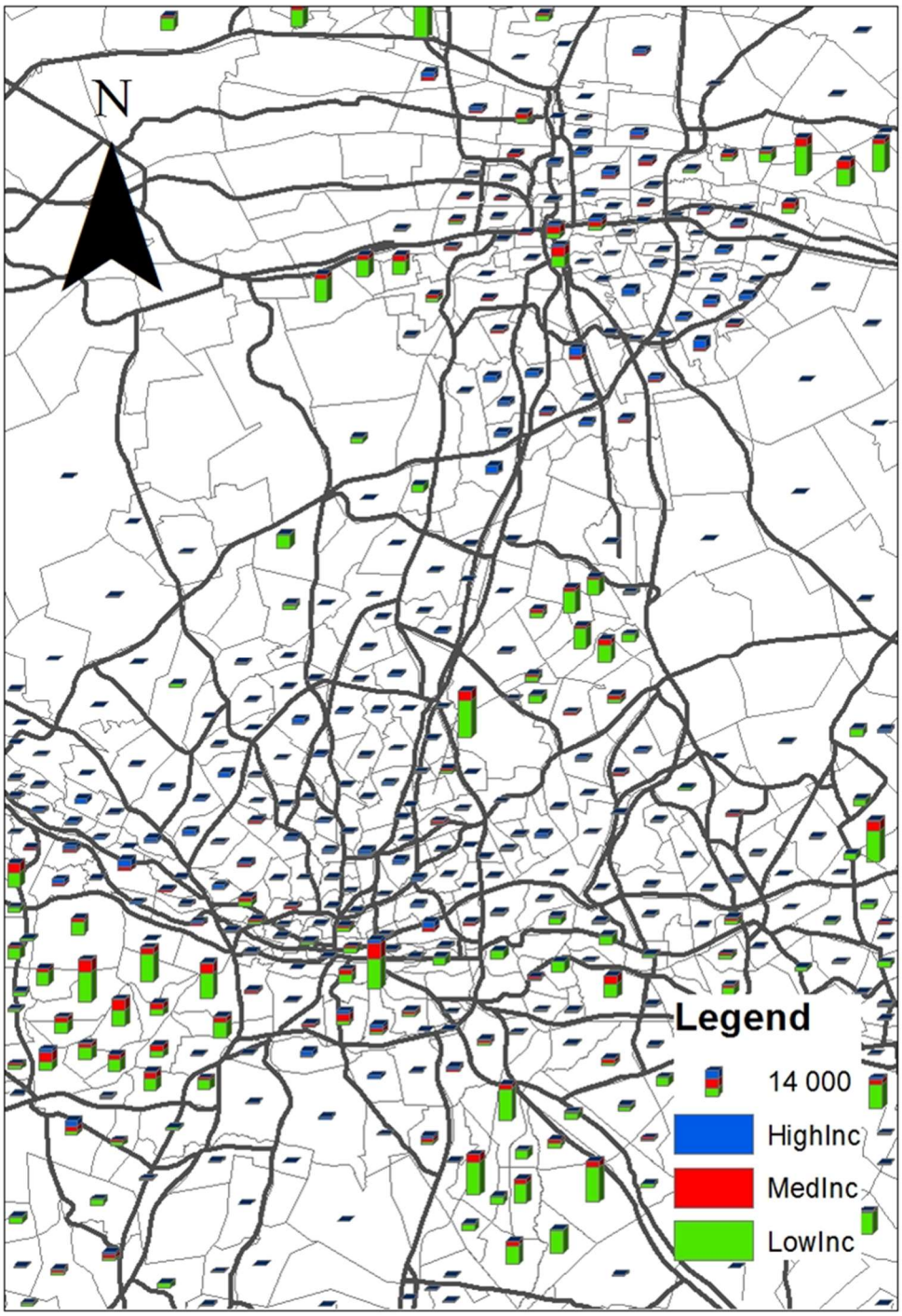
tariff income, decile 9 spends 94% of net disposable income on tolls, and with the tariff cap of R450/month the same income decile spends 65% of income on tolls. The only income deciles that are only marginally affected are income deciles9 and 10, representing the 20% highest income earning households, spending an average of up to 14% and 10% respectively for 54 cents/km and R450/month tariffs.

Table 5.1: Toll impact analysis in terms of household income deciles

Income deciles	Average monthly Income (Rand)	Household car ownership probability	Disposable income (Rand)	Toll expenditure as percentage of disposable income (54 cents/km)	Toll expenditure as percentage of disposable income (R450/month cap)
Decile 1	396	-1 462	3.7	-44%	-31%
Decile 2	1 119	-1 028	4.8	-63%	-44%
Decile 3	1 694	-898	6	-72%	-50%
Decile 4	2 354	-615	7.9	-105%	-73%
Decile 5	3 195	-272	10.8	-238%	-166%
Decile 6	4 409	180	16.2	360%	250%
Decile 7	6 464	688	26.8	94%	65%
Decile 8	10 444	1 712	45	38%	26%
Decile 9	19 130	4 606	71.2	14%	10%
Decile 10	50 398	17 390	93.7	4%	3%

The spatial distribution of income deciles is depicted in Figure 5.3, relative to the freeway network. In Figure 5.3, low income refers to income deciles 1 to 4, medium income to deciles 5 to 7, and high income deciles 8 to 10. Notable is that high income household are located the closest to the freeway network and lower income households further away from the network.

Figure 5.3: Spatial distribution of household income deciles

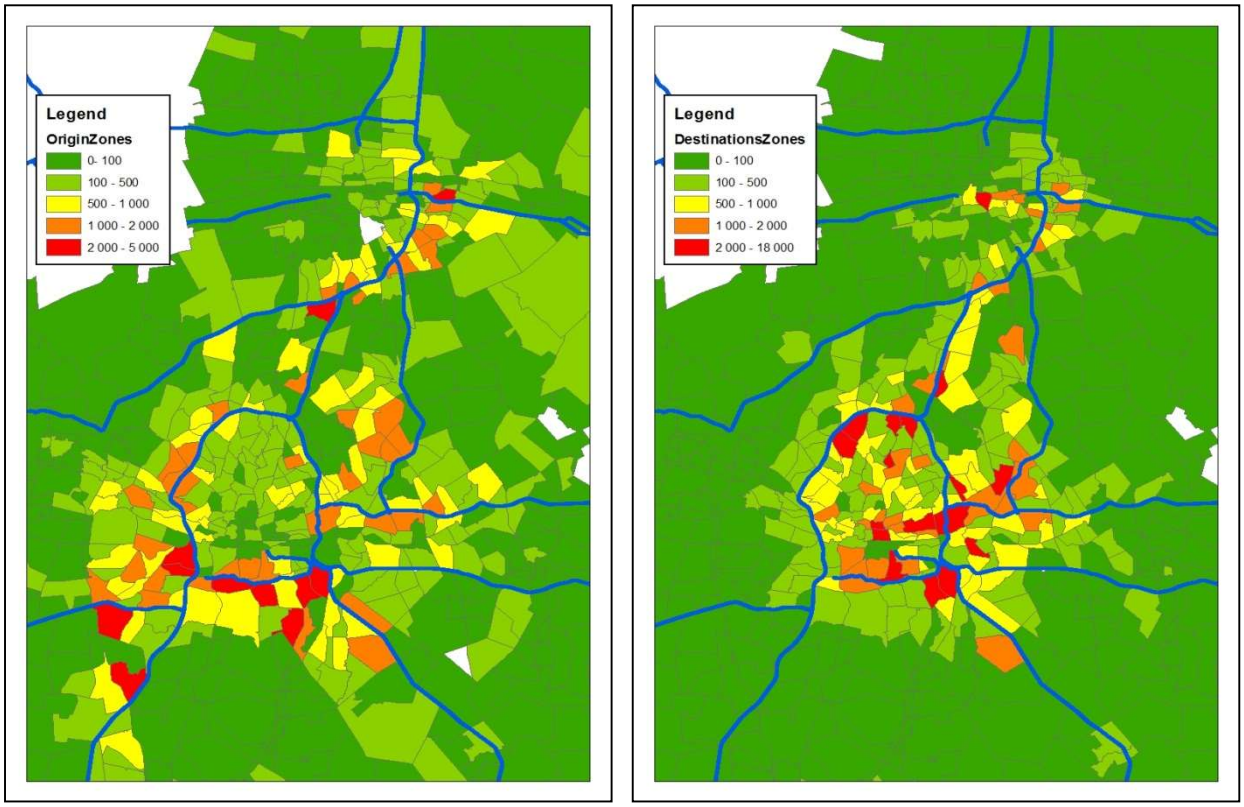


On the basis of the 2002 household travel surveys, the province of Gauteng has developed an aggregate strategic network based transport model. The model was primarily developed for assessing road network proposals in the province, in response to travel demand changes for the period 2000 to 2025. This transport model was used in this report to assess the morning peak hour travel patterns of travellers making use of the proposed tolled road network using the link-user equilibrium assignment routine in Emme/3 software. The results are presented in Figure 5.4 in which the year 2010

volumes of car-based trip origins and destinations of tolled network users are shown. It is observed from this travel pattern that:

- Trip destinations are more spatially concentrated than trip origins. Nonetheless, the scattered nature of trip destinations (mainly non-residential land uses) is also evident.
- There is a many-to-many relationship between the trip origins and destinations, implying that a large proportion of people travel from many places to many other places.
- The tolled network is used by both travellers in the vicinity of the network and further away from the network. However, people who live closer to more attractive destinations (for example within the Johannesburg ring road) do not use the tolled network as much as those further away from these attractive areas.

Figure 5.4: Trip origins (left) and destination zones (right) for car-based trips making use of the tolled network



The above travel patterns illustrate the absence of distinct origin-destination mobility corridors. This implies that it may be initially expensive to provide public transport network that adequately services this travel pattern.

The national household travel survey carried out in 2003 made an assessment of the reasons why household members do not use specific modes of public transport. Figures 5.5 to 5.7 summarise the main reasons disclosed by household members for

not using buses, trains and minibus taxis respectively, being the primary modes of public transport in South Africa. The main reason common among all the three modes is the unavailability of the services at place of residence. This is followed by preference for a car as opposed to public transport. Figures 5.5 to 5.7, in fact, show that availability, relative to other service quality attributes, is the main reason for not using public transport. This may crudely imply that if public transport was available, most of the household members would use it.

Figure 5.5: Reasons why commuters do not use bus

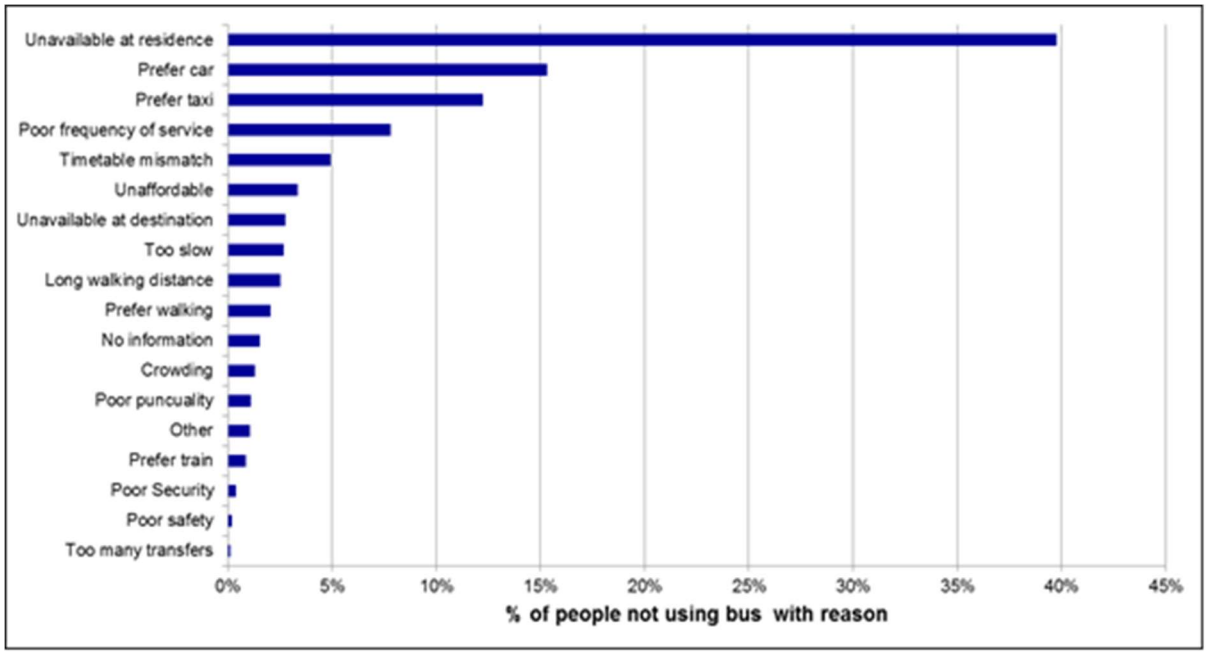


Figure 5.6: Main reason for not using trains

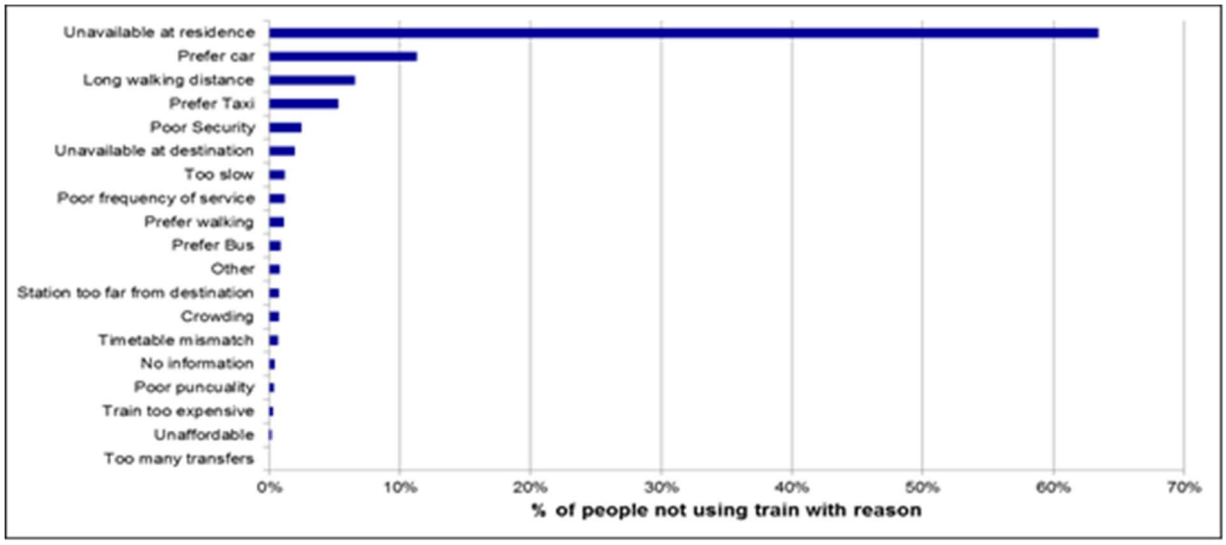
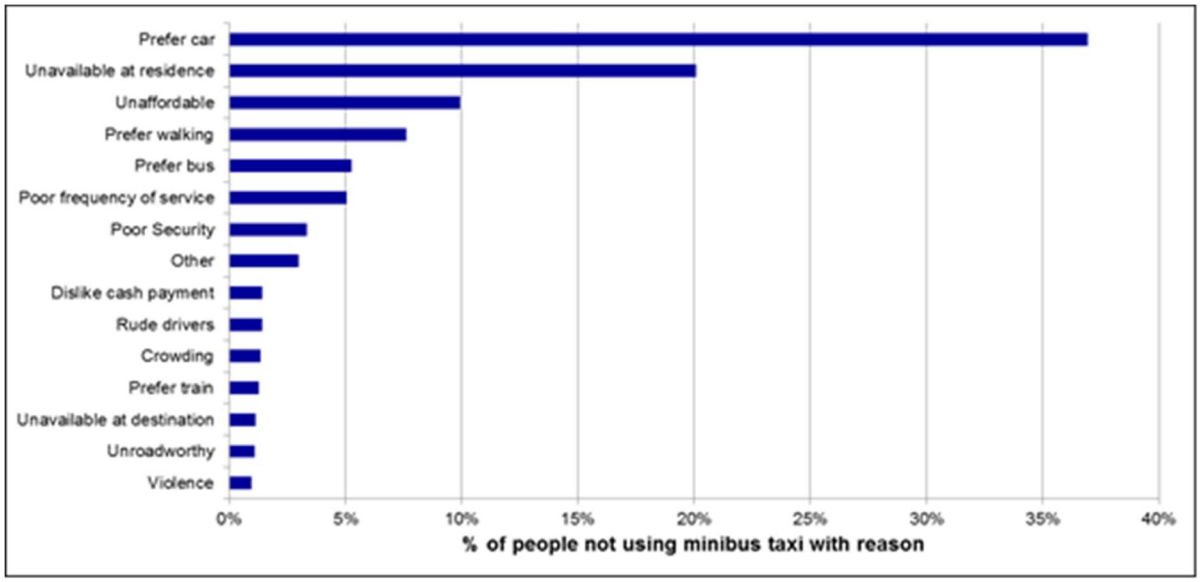
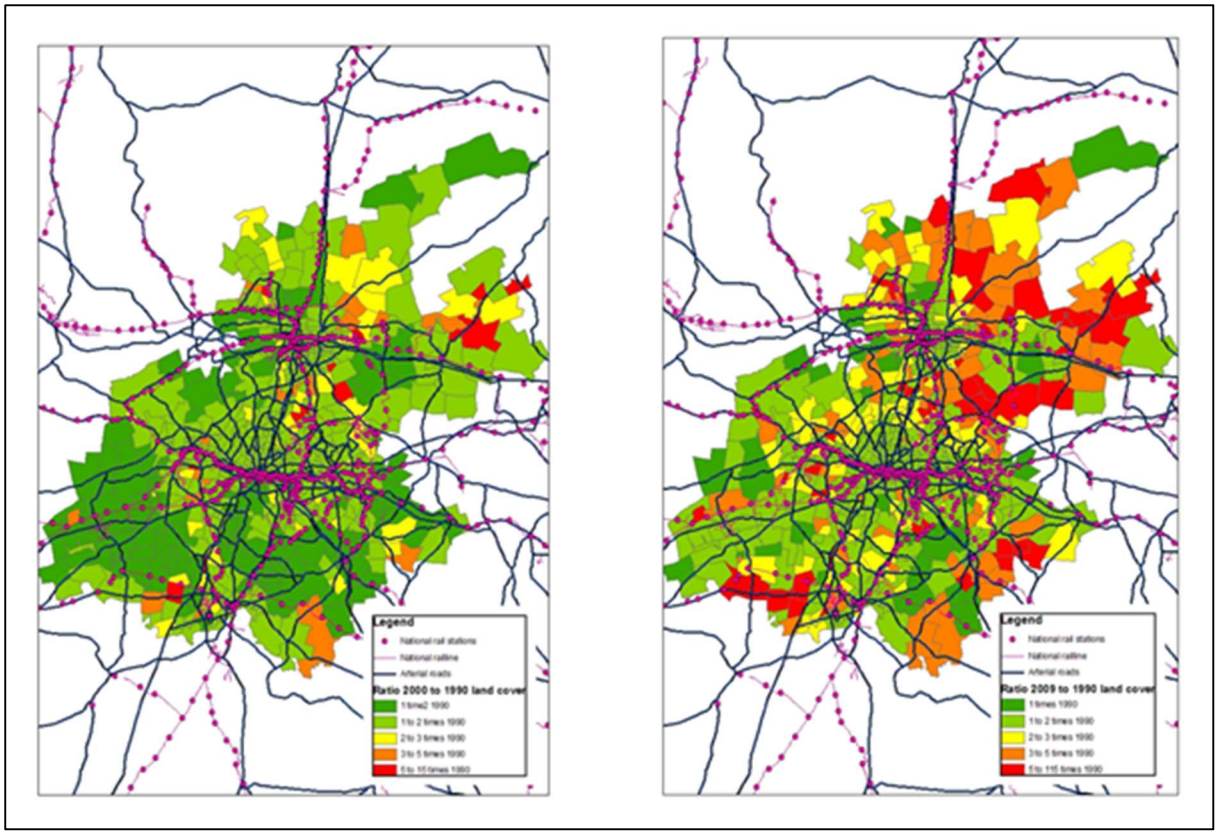


Figure 5.7: Main reasons for not using minibus taxis



The many-to-many travel pattern, together with the perceived general unavailability of public transport services, implies that network tolling leaves many travellers with no option but to pay tolls. Under these circumstances, tolls will not be perceived as a mobility management instrument, but rather a pure income generation tool, especially where an old pre-existing network is tolled. This is further exacerbated by development patterns in the province. For example, Figure 5.8 shows changes in built-up area in the province for the period 1990 to 2009. What is evident from the figure is that most of the development has been towards the periphery of municipalities.

Figure 5.8: Development patterns in Gauteng



5.3. POTENTIAL TRAFFIC DIVERSIONS

It is difficult to conclusively estimate the likely impact of diversions. This is because most of the travel data in the province is available only for the morning peak period, and also very little origin-destination data exists for heavy vehicles. Additional surveys would need to be carried out to be able to estimate the probability of diversions. In fact, SANRAL would be in a position to accurately estimate the actual diversions from time series monitoring of vehicle number plates as well as time series road traffic counts.

Nonetheless, the existing provincial transport model was used to estimate potential traffic diversions (limited to passenger cars), assuming that the value of time is equivalent to 50% of the wage rate. Figures 5.9 and 5.10 summarise the outcomes of the modelling exercise, first without tolls but with the road upgrades (Figure 5.9) and with tolls and upgrades (Figure 5.10). The following is notable:

- Without tolling, the freeway improvement scheme has generally improved operating conditions on municipal roads.
- Tolling has some notable impact on provincial roads, as well as municipal roads, although not severe in the peak.
- Tolling increases peak vehicle hours by 7%.Relative to national network, vehicle km increases are 11% and 17% on provincial and municipal roads respectively.

This in turn has increased budgetary implications for provinces and municipalities on road traffic management.

Figure 5.9: Traffic load without tolling

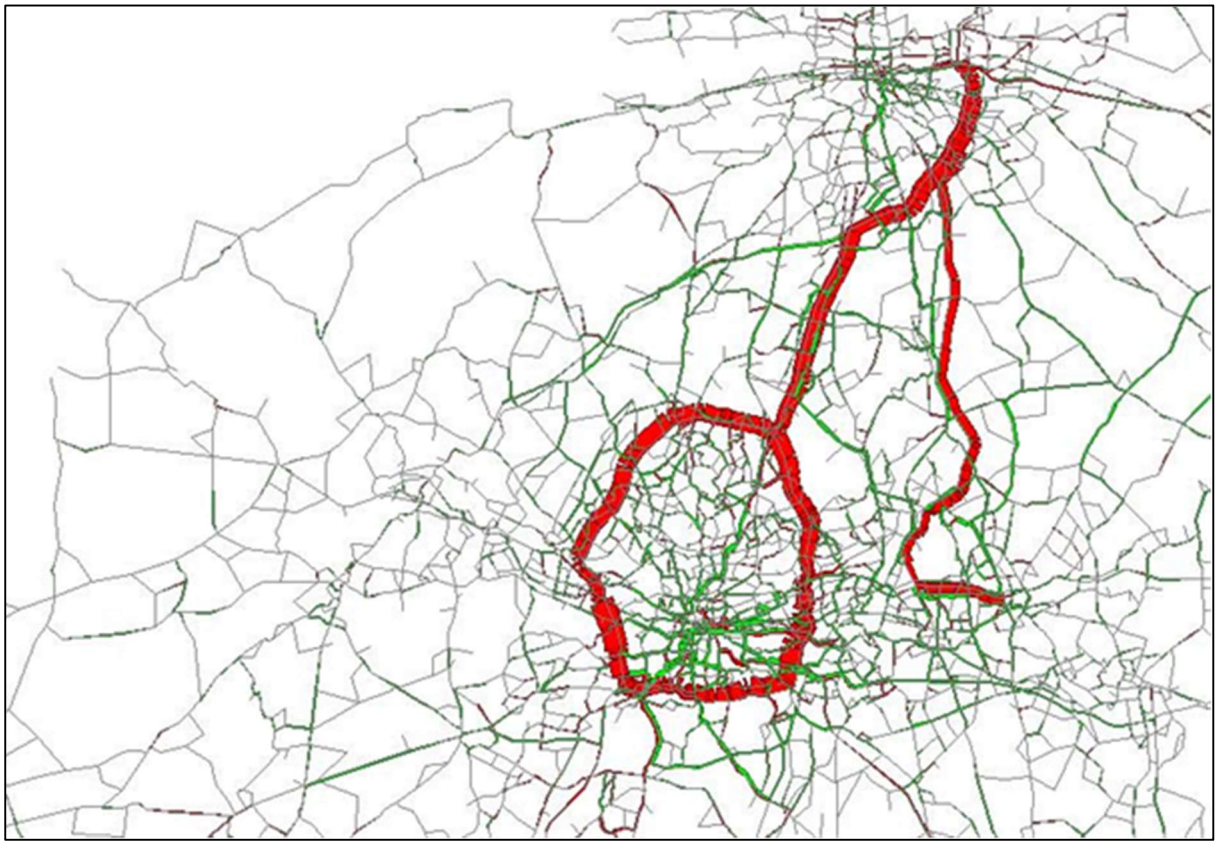
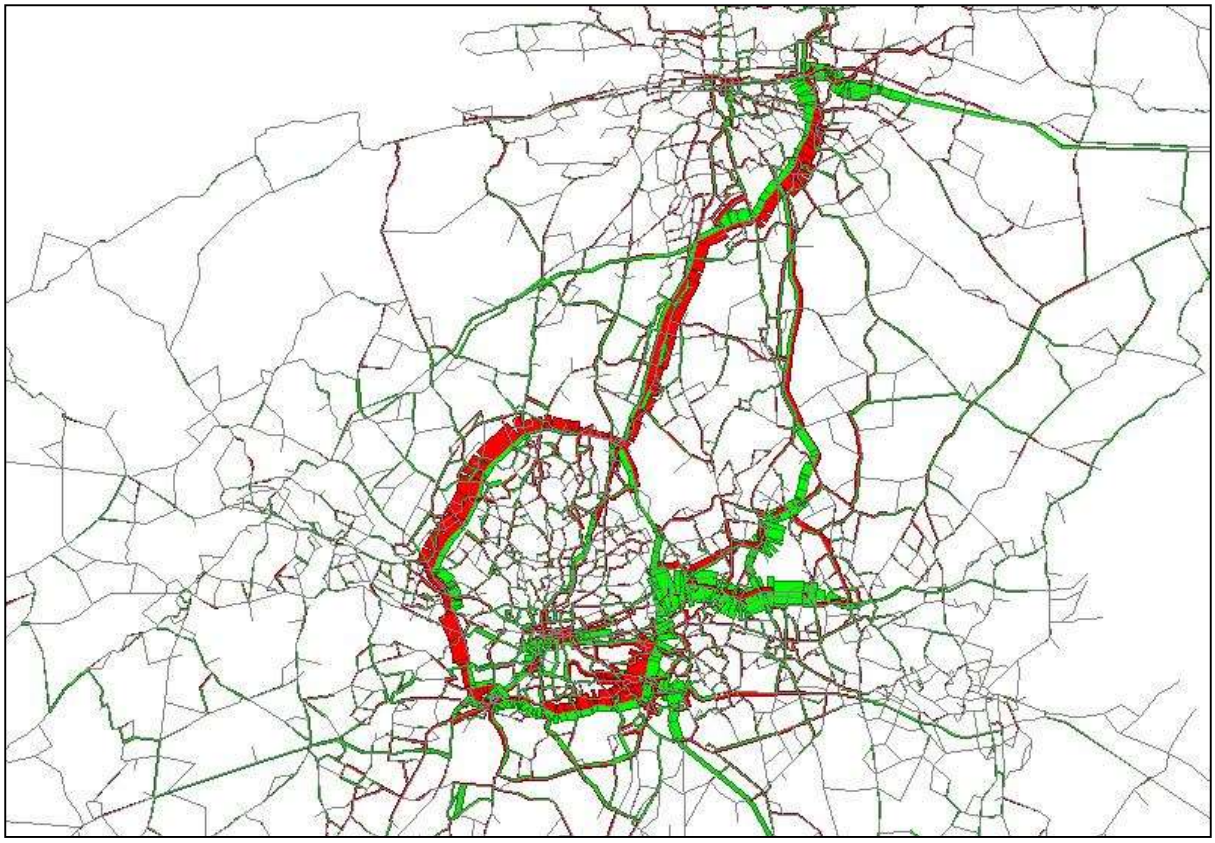


Figure 5.10: Traffic loading after tolling



Without a heavy vehicle origin-destination data it is difficult to estimate the heavy vehicle diversions. However, it is know that heavy vehicles are typically about 3% of the road traffic, but more pronounced as a proportion of the traffic in the evening by a factor of four to five. Also, heavy vehicles are the ones mainly responsible for accelerated road deterioration. The damage caused by traffic has been found to be governed by the fourth power law, implying that doubling the load is equivalent to increasing the damage by 16. A small diversion of heavy vehicles can therefore reduce the life of a road significantly. It is important therefore to especially monitor the diversionary behaviour of the heavy vehicles in order to plan properly for road maintenance.

6. CONSULTATON WITH AFFECTED MUNICIPALITIES

One-on-one meetings were requested with municipalities in the province The following is a summary of their views in relation to the tolling scheme.

- **City of Tshwane:**The City supported the scheme through a formal council resolution. However, the City is of the view that SANRAL must implement mitigation measures if it becomes evident that the scheme impacts severely on

road network. The City also sees the scheme, in its entirety, as opportunity to implement western by-pass (PWV 9).

- **City of Johannesburg:** The City supported the scheme through a formal council resolution. However, the city wanted to explore the principle of revenue sharing in order to benefit public transport. Originally, the city made recommendations that the addition of new lanes on the road network must be in the form of dedicated High Occupancy Vehicle lanes. The city has put a condition that, if it becomes evident that the Network upgrading impacts negatively on the Local Road Network, SANRAL should take mitigating measures to alleviate the impacts. The city expressed particular need to monitor the city's road network to determine the negative impacts of traffic diversion especially the M1 and M2 roads.

- **City of Ekurhuleni:** The City of Ekurhuleni does not have a formal council resolution on the matter. However, through a study carried out by the city, indications are that the tolling scheme has a net benefit to the city from a traffic flow perspective. The city has indicated that SANRAL promised to provide road network monitoring data, and report on the extent of traffic diversions.

- **West Rand District Municipality:** West Rand municipality does not have a formal council resolution on the matter. However, some information exchange took place between SANRAL and the municipality during initial GFIP planning phases. The municipality is not opposed to the GFIP scheme and would particularly like to see the scheme increasing regional accessibility of the municipality, particularly the extension of the N17 road. The municipality, however, expressed concerns about the impact of the tolling system on the mining industry, which forms the economic backbone of the municipality.

- **Sedibeng District Municipality:**Sedibeng District Municipality does not have a formal council resolution on the matter. Furthermore, the municipality has not undertaken any study to assess the likely impact of the tolling system to the municipality. However, the municipality is concerned about the likely impact of the tolling scheme on traffic law enforcement operations.

What became clear in all the interactions with the municipalities is that none of the municipalities had incorporated GFIP in their Integrated Transport Plans (ITPs). Legally, ITPs are supposed to be the only instruments through which municipalities make formal interventions in their respective transport system and budget accordingly. The absence of GFIP considerations in approved municipal transport plans indicate that Gauteng municipalities are institutionally not ready to interface with GFIP. Apart from the City of Tshwane, the municipalities also indicated that their road network asset management systems are either incomplete (e.g. without traffic counting

programme), outdated or non-existent. Road network asset management systems are supposed to be used by the municipalities to proactively plan and implement such things as road network routine maintenance and network upgrades. The general absence of up to date road network management systems implies that the municipalities are generally not in a position to indicate the baseline condition of their road networks prior to the tolling system becoming operational, making it difficult to isolate the impact of the tolling system.

Engagements were also carried out with SANRAL, from which SANRAL indicated that:

- A traffic monitoring system has been put in place to quantify diversions. Indications are that after SANRAL network updates there has been net diversion to the national network prior to the tolling system becoming operational.
- Most of the tolled road network users are in higher income categories. Also, most users will pay a small proportion of the maximum monthly tariff.
- Very little road network capacity is being added by municipalities. This in turn puts pressure on national network, where national roads are increasingly being used for localised traffic.On the contrary, national roads are primarily provided for national/long distance traffic.
- Public transport is being accommodated by exempting it from tolls. Parallel to this, treasury investments in high capacity public transport is addressing public transport backlogs.
- Municipal emergency vehicles are exempted from the tolls.
- Municipal traffic law enforcement will not be barred from carrying out enforcement on the tolled network and therefore their revenue from law enforcement will not be negatively affected.
- If toll tariffs are set too low, the newly added road capacity will be taken up too quickly by traffic because users will be less sensitive to the costs.

Based on the inputs received from the municipalities and SANRAL it is clear that the concept of integrated transport planning and management is effectively not practiced. SALGA in particular needs to take the lead to ensure that municipal integrated transport planning and management becomes a reality to ensure maximum access and mobility for people and goods and not just vehicles.

7. CONCLUSIONS

The report investigated the impact of the proposed tolling scheme on Gauteng municipalities. The impact was in the form of social impact, mobility options and traffic diversions.

The report illustrated that there is limited funding to finance the maintenance and development of roads in South Africa. Tolling as a revenue stream for financing roads in South Africa is supported by transport policy and legislation.

Based on a macro-level impact assessment undertaken by the Department of Transport, it is estimated that the proposed Gauteng tolling scheme will not have a significant impact. However, an assessment based on net disposable income revealed that only travellers from the 20% highest income earning households are not severely affected by the scheme. Furthermore, the general unavailability of public transport, as indicated by households in the province, is an impediment for using the scheme as a mobility management instrument.

Although no sufficient data was available to conclusively assess potential diversions, indications are that there will be significant diversions of traffic to provincial and municipal roads. Heavy vehicles are of particular concern since a small diversion of heavy vehicles can result in disproportional impact on the life of the road and subsequent maintenance requirements.

The municipalities are not in opposition of the tolling scheme. However, the municipalities require SANRAL to ameliorate the impact once it is found that the diversions have a significant impact on municipal infrastructure and transport operations. Therefore, for SALGA, it is important to establish and facilitate an intergovernmental forum that will ensure that the impact of the tolling scheme is formally addressed.

8. RECOMMENDATIONS

The following recommendations are made in the light of the findings:

- SALGA and municipalities must formally work closely with SANRAL to monitor the traffic diversionary impactfollowing the system being made live. It is recommended that monitoring should be over a period of not less than three years after the system has become live.

- Municipalities would also need to design and implement new traffic management plans in response to GFIP, especially for the off-peak periods, which will have some budgetary implications. These plans must be an integral part of the municipal integrated transport plans.

- Municipal integrated transport plans must incorporate e-tolling in network designs, including making explicit considerations for areas grossly underserved by public transport.

- There is a risk that tolling revenue may not be sufficient to even cover GFIP costs, therefore revenue sharing may be impossible. Therefore municipalities must make a case for increased Division of Revenue Act (DORA) share to fast-track sustainable transport interventions in line with provisions of MFMA. Municipalities in particular must have up to date quantified estimates of transport service delivery backlogs in order to make this case.

- SALGA must make a national case for person- and goods-based corridor capacity design as opposed to vehicle-based capacity designs. By so doing, in the long term, SALGA should encourage SANRAL and municipalities, and other critical stakeholders such as Transnet and the Passenger Rail Agency of South Africa, to start designing networks in terms of maximising access and mobility for people and goods and not just vehicles.

- Many of the municipalities, even cities, are without proper integrated transport plans and network asset management systems. Without these tools municipal transport service delivery becomes severely affected. SALGA must take an active role in ensuring that municipalities are properly resourced for transport service delivery.

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