GAUTENG ON THE MOVE

Review, Development and Update of the Gauteng Provincial Land Transport Framework

Executive Summary for Draft PLTF Report

7 November 2022

EXECUTIVE SUMMARY

Chapter 1: Introduction

The Gauteng Province is the smallest province in South Africa, comprising only 1.42% of the total land area, but it also is the province with the largest number of residents. The population of Gauteng was estimated at 15.5 million in July 2020 and this was expected to increase to 15.8 million in 2021, which is close to 25.3% of the total South African population. Currently there is a yearly migration of 200 000 people into Gauteng. This growth is making Gauteng one of the largest urban agglomerations and city regions in the World.

Gauteng is the economic powerhouse of Southern Africa, producing 34% of South Africa's GDP and is currently the 7th largest economy on the African Continent. The sectors that are the main contributors to economic growth are business, financial and real estate services. The Gauteng economy was forecasted to grow at 4.7% in 2021 after a contraction of 8.2% in 2020. There currently is a divergence between economic and population growth rates. The City Region with the Gauteng Province at its core, has developed with rapid urbanisation. It includes the three Metropolitan Cities of Ekurhuleni, Johannesburg and Tshwane, the two District Municipalities of Sedibeng and the West Rand, as well as some municipalities in adjacent provinces. Transport moves freely across the municipal and provincial boundaries and this urban conurbation functions as a single functional transport area.

South Africa and the Gauteng Province has become part of the Global Village. The external environment has changed significantly over the past decade and several global forces are influencing and shaping the transport sector. Economic growth and rapid urbanisation are causing the ever-increasing demand for the movement of people, goods and services. Private vehicles are or remain the preferred mode of transport. This is leading to increased traffic congestion, pollution, road traffic accidents and a greater dependency on fossil fuels.

Climate change is one of the most significant threats to the future of humanity. The increased demand for travel has a very significant impact on the natural environment because of pollution and increased greenhouse gas (GHG) emissions, with general agreement on the transport sector's adverse contribution to this. The approach to planning, the transformation and development of the transport system need to mitigate this. Building resilience and contingency measures into the system, are crucial to also mitigate the adverse impact of climatic incidents, such as flooding and extreme weather conditions.

Other external factors to consider in the planning and development of the transport system are efficiency opportunities offered by the Fourth Industrial Revolution (4IR), the fall-out from the COVID-19 pandemic, increased geo-political instability, the impact of rising energy costs, unemployment, the cost of living and inflation. Cost of energy has led to a drive for less dependence on oil and gas as primary sources of energy and an acceleration in the deployment of other and more sustainable sources. This will continue to impact, but also benefit the transport sector.

Forces and developments within are also shaping the transport sector, in the way it is functioning, planned and developed. Key policy shifts are taking place. The White Paper on National Rail Policy have been adopted, which provides a basis for the transformation of both passenger and freight rail. Many significant changes have taken place with respect to public transport operations, with shifts from rail to road-based and minibus-taxis services, Mobility-as-a-Service (MaaS) and e-hailing services coming into existence. Slow economic growth is

also impacting on government's ability to funding of transport capital and operational expenditure.

The Gauteng Provincial Government (GPG) adopted Growing Gauteng Together 2030, a policy to address current realities and with the aim of alleviating poverty and inequality, to promote job creation, B-BBEE, support township economic growth and enhancing women and youth empowerment. In response, the Gauteng Department of Roads and Transport launched its Growing Gauteng Together through Smart Mobility Plan 2020-2025. This Plan intends to restructure the urban form, promote Gauteng as a freight logistics hub and data centric mobility, through building strong institutions. The Smart Mobility Plan is underpinned by the Provincial Government's Transformation, Modernisation and Re-industrialisation Programme (TMR). This is to be done through investing in key infrastructure within five strategic corridors, integration of all modes of transport and working towards a single public transport ticketing for the Province.

As prescribed in the Gauteng Transport Authority Act, 2019, Act 2 of 2019, the Transport Authority of Gauteng (TAG) was given the responsibility to develop a Provincial Land Transport Framework (PLTF) for the period 2022 to 2026. This PLTF was developed in terms of the National Land Transport Act (NLTA), 2009, Act 5 of 2009 and supporting Regulations on the Minimum Requirements for the Preparation of Provincial Land Transport Frameworks, 2011. In terms of provisions of the NLTA, a PLTF also must be developed within National Land Transport Strategic Framework (NLTSF), which guides land transport planning countrywide. The current NLTSF is for the period 2017 to 2022 and the National Department of Transport (NDoT) is in the process of doing an update to the NLTSF. Over-and-above minimum requirements, the PLTF aims at addressing realities unique to Gauteng, as well as external forces impacting on transport in the Province, to mitigate impacts as far as possible and exploit opportunities on offer.

Chapter 2: Process and Consultation

The NLTA 5 of 2009, and the Regulations relating to Minimum Requirements for the Preparation of Provincial Land Transport Frameworks (GN R825, 2011) emphasise the importance of stakeholder consultation during the review, development, and updating of a PLTF. Therefore, the stakeholder consultation process followed, focused on augmenting and confirming secondary data, as well as collecting stakeholder input at key milestones.

The Transport Authority for Gauteng (TAG) identified stakeholders[1] and key role-players[2] in compliance with the requirements of the NLTA. The stakeholder database comprised a total number of 134 entities representing different sectors of society, of which 47 entities have been identified as key role-players. The database has been categorised according to the representative sectors of society.

As part of the process to review, develop, and update the Gauteng PLTF, the TAG embarked on a series of primary workshops with key role-players and stakeholders. The TAG convened three key role-player workshops and a workshop with the wider group of stakeholders. The

[1] Stakeholders means public transport operators and other affected parties and includes organised bodies of persons, juristic persons having interest in transport planning and other government bodies having an interest in or affected by or affecting transport planning in the province.
[2] Parties who are: (i) tasked with the planning and implementation of transport frameworks, (ii) responsible for spatial planning and land use planning, (iii) responsible for land transport planning, (iv) affected by the Gauteng PLTF update, development, and review process, (v) critical to engage with during the project, and (vi) interested in, and can potentially influence, the project through participation and decision-making.

first introduced the project, obtained the key role-players' initial comments and input on the proposed consultation approach. The second workshop was to discuss the current realities and transport status quo and for key role-players to identify challenges, gaps and critical issues for consideration. The third workshop was a public consultation workshop with the broader stakeholder group, which also provided an opportunity for stakeholders to contribute, identify gaps and issues for consideration, and identify the top ten transport priorities for the Gauteng Province. The fourth workshop sought key role-player inputs on transport objectives proposed solutions and strategies.

In addition to the four primary workshops, several small group meetings or on-on-one engagement were convened with key role-players and stakeholders respectively, such as the metropolitan and district municipalities, state owned entities (e.g. Public Rail Agency of South Africa, South African Local Government Association, South African National Roads Agency (SANRAL) and Transnet), provincially owned entities (e.g. Gautrain Management Agency (GMA) and Gauteng Tourism Authority)), the Gauteng Taxi Industry (namely the National Taxi Alliance and the South African National Taxi Council), the Freight Forum and other non-governmental organisations, including the World-Wide Fund for Nature and South African Disability Alliance.

The public has been notified of the availability of the first Draft PLTF (this document) for public comment by means of publishing a notification in three provincial newspapers, placing site notices, hard copies of the Draft PLTF and executive summaries of the Draft PLTF at all the regional offices of the Gauteng Department of Roads and Transport in Gauteng, district, local and metropolitan municipalities, and the TAG's offices, distributing letters of notification to all the key role-players and stakeholders on the TAG's database, and posting the document to the Department of Transport's (DOT) website for people to access and download. The media adverts and letters included a link to the website address with an invitation for people to download the Draft PLTF. A copy of the Executive Summary of the Draft PLTF accompanied the letters that were distributed by email to key role-players and stakeholders on the database. In addition, the public, key role-players and stakeholders were invited to submit written comment on the Draft PLTF by either completing a comment form or sending an email to the PLTF Public Consultation Office.

The first Draft PLTF will be available for public inspection and comment from Friday, 18 November 2022 until Friday, 13 January 2023.

Chapter 3: Transport Vision, Policy and Objectives

The current NLTSF for the period 2017 to 2022 was considered and interpreted in terms of the strategic direction provided for transport and to guide the policy direction taken in the PLTF. The policy directives, objectives and strategies provided in the PLTF are aligned with the NLTSF.

The White Paper on Transport Policy for Gauteng was adopted in 1997. Although the vision statement contained in the White Paper remains relevant, the transport system and environment have changed quite significantly over the past 25 years and new policy prerogatives are relevant as well as when considering planning and development of the transport system. In addition to the vision contained in the White Paper, several strategic papers were developed subsequently, relevant to transport. If read together, the combination of these papers provides an ultimate picture and overall vision for the transport system for Gauteng. The vision for transport in the Province provided in the 1997 White Paper is:

"An integrated transport system which satisfies the needs of the people while supporting and facilitating social and economic growth, improving the quality of life, and the development of all the people of Gauteng."

The Gauteng 25-year Integrated Transport Plan (ITMP25) was developed and approved in 2013. The ITMP25 provides a vision statement that augments the statement contained in the White Paper, namely:

"An integrated and efficient transport system in Gauteng that promotes sustainable economic growth, skills development and job creation, fosters quality of life, socially includes all communities and preserves the environment."

The Annual Performance Plan 2022/23 of the Gauteng Department of Roads and Transport also provides a supplementary vision statement, which states:

"To promote accessibility and the safe, affordable movement of people, goods and services and to render client-centred and developmental services in Gauteng."

The Gauteng Government more recently adopted Growing Gauteng Together 2030 (GGT2030) and the vision for the Province is:

"A seamlessly integrated, socially cohesive, sustainable and economically inclusive Gauteng City Region, A place of opportunity, supported by a growing economy, smart, innovation driven and sustainable industries, an accountable, responsive, transparent and clean government, and a healthy, active citizenry."

In response to the GGT2030, the Gauteng Department of Roads and Transport developed Growing Gauteng through Smart Mobility Plan 2020-2025. This plan contains various strategic statements that talk to the transport system in the short to medium term, namely:

"… to integrate public transport, build a smart transport infrastructure that leverages of available technology … prioritises rail as the backbone for the Gauteng's transport system … integrating all modes to make travel efficient for commuters … underpinned by technology and green transport, which includes non-motorised transport … to make Gauteng a freight logistics hub … and strengthen institutions".

The Gauteng Cabinet has also identified the need to place a greater emphasis on the development of townships, informal settlements and hostels (TISH). This may require a shift in focus towards availability of land, more investment in local roads, safety, security and law enforcement, as well as the upgrade of local public transport facilities.

Taking cognisance of all the vision statements, applicable policies, as well as the assessment of the status quo as set out in Chapter 4 and inputs received during the stakeholder engagement process described, the following objectives were identified for the purpose of developing the solutions and strategies put forward in the PLTF. The objectives are:

1. To integrate land use and transport effectively.
2. To coordinate and integrate public and private transport modes and services.
3. To conceptualise and plan the transport ecosystem to be integrated and seamless inclusive of infrastructure, facilities, modes of transport as well as transport services.
4. To promote affordable, sustainable and efficient public transport.
5. To regulate and control PT effectively.

6. To expand the opportunities of Private Transport modes to result in greater integration, efficiencies and minimise negative impact on congestion and the environment.
7. To minimise the negative effect of transportation on the environment.
8. To combat climate change and promote sustainable transport in line with international and national policy and prescriptions.
9. To disaggregate and understand the differentiated requirements of different categories of commuters and to focus solutions that are responsive to those requirements and which offer affordable, accessible, integrated, efficient and environmentally sustainable solutions for each category.
10. To consider transport solutions (infrastructure and operations) that are accessible to all and consider the needs of special categories of travellers (people with dis abilities, mobility impaired, the elderly, children).
11. To enhance transport safety management.
12. To provide, maintain and operate efficient transport infrastructure.
13. To operate state facilities and services effectively.
14. To ensure the acquisition of equitable funds for transport.
15. To manage and administer financial resources, manage fixed and movable assets and procurement functions, programmes and systems effectively.
16. To manage integrated information systems effectively.
17. To promote and implement the application of ITS and 4IR technology to address and assist in solving transport problems and challenges.
18. To manage consultation, communications and public relations functions and services effectively.
19. To enhance the governance, promote the transfer of skills and create the necessary capacity to efficiently plan, develop and manage the transport system in Gauteng.

The broader transport vision and objectives were used as a bases for developing and putting forward the solutions, strategies and projects contained in Chapters 5 to 14 of the PLTF, dealing with the respective components of the transport system.

Chapter 4: Transport Status Quo

The Gauteng Province Household Travel Survey Report 2019/20 indicated that there are approximately 11 million trips per day in the Province of which 3.4 million are done during the morning peak period (06:00 to 09:00). Most of daily trips are intra-municipal trips, with the highest being in the City of Johannesburg (CoJ) with more than three million trips per day. The purpose of most trips, is to travel to and from the workplace at 39%, followed by 11.3% education related trips. In terms of modal split, the walking as a primary mode, makes up 27.7% of trips, while using private vehicles is 32.3% and minibus taxis (MBT) 21.3% respectively.

Average commuting times have increased over the past years. On a typical working day travel time increased by 17% from 46 minutes in 2014 to 57 minutes in 2019. Overall average travel

time has almost doubled over the past 18 years. Associated with this, many more commuters choose to travel either earlier or later to avoid the peak.

Increasingly, more households in the Province have at least one member with a driving licence. Households without a licence decreased from more than 50% in 2000 to just over 46% in 2019. Nonetheless, the proportion of households without access to a private vehicle has increased to over 70% in 2019, from 66% in 2014.

The Province's vehicle population has grown from approximately 4.3m in 2011 to 4.8m in 2019.

Integrated Development

Gauteng is the densest province in South Africa, however, most people in the Province are concentrated in a few clusters. While some of these clusters are located close to core business areas in Johannesburg, Tshwane and Ekurhuleni, many of the clusters are located on the edges of the urban footprint. The densest 20% of the population lives on approximately 1% of the land area of Gauteng and the least dense 10% of the population lives on 90% of the Province's land area, which may be sparsely populated but comprises of residential areas and many other land uses and activities.

Taking into consideration that municipalities have limited budgets and are often fiscally strained the Gauteng Spatial Development Framework (GSDF) provides investment guidance through four (4) spatial targeting focus areas. Spatial imperatives identified in the GSDF 2030 (adopted in 2016) have been further developed into 16 Supporting Spatial Development Interventions (SSDIs). The spatial strategies, focus areas and SSDIs are aligned in the ultimate goal to coordinate, integrate and align the plans of the three (3) spheres of government as well as bring people in close proximity to areas of social and economic opportunity complemented by an affordable, reliable and safe public transport system. These directives provide guidance to three interventions: spatial reconfiguration, township economy revitalisation and infrastructure investments. The PLTF therefore aims to align its spatial priorities with national, provincial and local imperatives in order to ensure sustainable land use and transport integration.

Public Transport

According to the Household Travel Survey (HTS) of 2019, 42% of trips are undertaken makes use of public transport. Of the public transport trips, 88% is done using MBTs, 8% by bus and 4% by rail respectively.

The urban structure is mostly characterised by low density development and urban sprawl, with very little spatial transformation having taken place over the past 20 years. In many instances this has even been perpetuated by more recent developments and the way economic housing development had taken place, by positioning such developments at the urban periphery on cheaper land. The lack of spatial transformation, densification and in-filling impacts directly on the efficiency of public transport. Passengers must travel long distances, compared to more compact cities. Low levels of accessibility exist due to the inability of services to cover residential areas adequately and long walking distances are incurred to access services.

The quality of services is deteriorating with access and travel times continuing to increase, if the results of the 2014 HTS is compared with the survey done in 2019. Even prior to the COVID Pandemic commuter rail continued to lose market share and is struggling to recover post pandemic from near collapse. The rate of extensions of formalised public transport

networks, such as Gautrain and BRTs, is slower than anticipated mainly due to the availability of funding and funding priorities. This means that public transport is also becoming less attractive as a travel option to choice-users. The condition of public transport facilities and specifically taxi ranks have also deteriorated significantly over time due to lack of investment, proper maintenance and management.

The Pandemic also impacted adversely on all formalised public transport, with significant decreases in fare box revenue and the resulting sustainability of such services. Affordability of public transport to the user has decreased, with 60% of households spending more than 10% of disposable income on transport in 2019, compared to 55% in 2014.

The route structures of provincially subsidised bus services were introduced pre-1994 and municipal bus services are still reflecting the original route structures and have not been optimally integrated with other public transport. Scholar transport services subsidised by the Gauteng Department of Education also operate in isolation from other services. Most services are aimed at commuters traveling to and from work during peak hours, with limited services during off-peaks catering for non-work trip purposes. Universal access and catering for needs of the mobility impaired also needs a lot of attention to make public transport a viable option for them.

Coordinated planning of public transport networks, covering the whole City Region and providing for provincial wide mobility and an Integrated Public Transport Network (IPTN) crossing municipal and provincial boundaries, is less than optimal. Planning, funding and financial support is fragmented across three spheres of government, considering commuter rail, bus and other services. More coordination and integration are required. A more uniform approach to providing funding support, subsidies to public transport and a fare policy are required.

Security and safety of passengers remain a challenge, especially with respect to access and the First and Last Mile (1LM) part of the public transport passenger journey. This also includes issues around Gender Based Violence. The general lack of, or adequate and convenient non-motorised infrastructure also contributes to this.

The MBT market share of work trips increased from 71% in 2014 to 88% in 2021, according to the respective HTSs. The functioning and efficiency of the Provincial Regulatory Entity (PRE) resulted in a severe backlog in disposing with operating licence applications. The process of renewing licences remains a bone of contention to the taxi industry.

The MBT industry operates in an economically regulated environment and as such require an operating license to legally transport passengers for financial gain. The applicable Regulations for the issuing of operating licenses was Gazetted in 201. The Province has established a Provincial Regulating Entity (PRE) that deals with the issuing of new operating licenses and the conversion of area-based permits to route based operating licenses.

There is a grave concern amongst the Gauteng Taxi Industry regarding the backlog that exists with the issuing of operating licenses.

The taxi industry remains the only public transport mode that does not receive an operational subsidy from Government. The substantial increase in the price of fuel over the last two years, combined with the substantial increase in the price pf new tyres as well as regular increases to parts and maintenance of the vehicle, has put the industry under more financial pressure that it has ever been. This combined with the fact that salaries and wages of their target market

has not kept up with inflation over the past two years, makes it very difficult for the industry to increase their fares on a regular basis. The economic slowdown since 2019, with many companies losing down and workers losing their jobs has also impacted on the traditional taxi industry market.

The industry is left behind when it comes to investment in infrastructure for the industry. The majority of grant funding is earmarked towards the IPTN which up to now has focussed mainly on the planning, construction, implementation and operation of the BRT systems. The provision of facilities for the taxi industry focussed mainly on lay-byes and formal taxi ranks at local authority level. The unprecedented growth in the industry has put pressure on the existing facilities as the demand for ranking and holding space has outstripped the provision. The design of the taxi ranks has not kept up to date with latest design technology in terms of materials used and energy efficiency.

A Taxi Summit was convened between the MEC and officials and representatives from the taxi industry in Gauteng from 24-25 July 2019. The strategic objectives agreed at the summit related to:

- Work within the existing government regulatory framework;
- Modernise the MBT industry;
- Uphold and work with the road safety prescripts;
- Corporatise and empower the mini-bus taxi industry, and
- Eradicate violence, fraud and corruption.

The challenges faced by the taxi industry, as identified at the summit are:

- Taxi wars that require the law enforcement agencies and judiciary to act decisively on crimes committed in the industry;
- High level of corruption, maladministration and toxic management practices in the issuance of operating licenses;
- Lack of reliable, accurate and consistent data withing the industry;
- Minimum and/or lack of training and reskilling operators;
- Bad driving methods, poor conditions of vehicles and driver behaviour;
- Poor working conditions of taxi drivers;
- Lack of unity;
- Industry operating far below capacity, and
- Too many illegal operators.

e-Hailing services has become a reality and plays a significant role in, not only transporting people traveling to work, but more so for business, social and tourism purposes. The fact that no clear regulatory regime is in place for MaaS operations and e-hailing services is further contributing to the tensions and conflict in the public transport environment.

Sustainable Transport

South Africa is a signatory to the Sustainable Development Goals[3] (SDGs) as set out in the 2030 Agenda for Sustainable Development which seeks to eliminate extreme poverty and reduce inequality whilst protecting the planet. The National Development Plan (NDP) which predates the SDGs is recognised as being significantly aligned with the SDGs. Transport has a role to play in the realisation of many of the SDGs with specific relevance to Goal 11 – Sustainable Cities with Transport having a particular Target Indicator 11.2 which aims that, by 2030, all citizens will have access to safe affordable, accessible, and sustainable transport systems through expanded public transport. In addition, special attention should be paid to the travel needs of those in vulnerable situations including women, children, persons with disabilities and older persons[4].

South Africa is also a signatory to the Paris Agreement[5] which seeks to limit global warming to below 1.5^{O} Celsius above preindustrial levels requiring CO_2 emissions to be reduced by 45% by 2030 and to Net Zero by 2050. As part of this commitment SA revised its Nationally Determined Contribution[6] (NDC) in 2021 increasing upper limit emissions reduction to 510Mt and 420Mt by 2025 and 2030 respectively. At 10.8% nationally and up to 40% in cities transport's contributions reduction targets towards GHG emissions require adjusting to contribute towards achieving these targets.

Key issues that sustainable transport planning has a significant role to play in addressing include:

- The current sprawling urban form of low densities and long travel distances which contribute significantly towards the inefficiency and unaffordability of transport;
- The limited integration of transport and land use and urban planning processes;
- Walking, whilst the primary mode of travel, along with cycling and public transport should form the departure point for all transport planning this is not the de facto case;
- Transport infrastructure and systems are not and have not previously been designed for Climate Change impacts and resilience and current approaches may lock out required changes, and
- Greater efficiencies in vehicle usage and non-motorised transport to reduce GHGs has not been optimised.

Sustainable Transport allows the basic access and development needs of individuals, companies and society to be met safely and in a manner consistent with human and ecosystem health, promotes equity within and between generations, is affordable and efficient thus has a key role in addressing the resilience and adaptation requirements of climate change and achieving social justice. It is also a crosscutting discipline that underpins all aspects of transport planning and delivery.

[3] https://sdgs.un.org/goals
[4] https://unhabitat.org/sites/default/files/2019/05/sdg_11_synthesis_report_web2_0.pdf
[5] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement
[6] https://www.gov.za/speeches/statement-virtual-cabinet-meeting-14-september-2021-20-sep-2021-0000

Although there are extensive legislative, policy and strategic documents at international, national and provincial levels that both recognise and require sustainable transport little impact has been achieved thus far.

Sustainable transport requires a systems-based approach, incorporating the avoid (reducing the need to travel or transport goods and includes reducing urban sprawl), shift (changing the mode of travel or transport) and improve (utilising technological improvements to reduce energy use and emissions) where walking, cycling and public transport are given priority in any land use and transport planning is recognised as the necessary approach to be adopted.

Current planning approaches are primarily focussed on the Green Economy aspects of Sustainable Transport seeking a reduction on GHG emissions through alternate energy sources and technological improvements with limited focus on the reducing the need to travel and encouraging mode shift.

Non-motorised Transport

Walking as a primary means of travel still remains one of the predominant modes of transport, at 27.7%. Cycling as a commuting mode is also growing continuously, although no recent statistics on the percentage modal share are available.

The current dispersed and low-density urban development results in long walking distances and do not make it very conducive for people to walk as a preferred means of travel, unless no other option is available or affordable. The challenge is then how to create a “smart”, compact and walkable City Region, often referred to as the “15 Minute City”. Stronger integration between land use and transport planning is required to shorten travel distances and to make non-motorised transport (NMT) a more viable option.

Road reserves do not always adequately provide for all uses, such as NMT, and other services and utilities. In many instances sidewalks do exist along roads albeit frequently of low quality, but very little is available by way of infrastructure and facilities for cyclists. Except for development around BRT stations, very little investment is focussed on non-motorised transport infrastructure at public transport nodes. This also hampers the promotion of public transport as a mode of choice.

Road infrastructure design standards, especially along provincial roads in urban areas, do not adequately cater for NMT. Motorised modes are largely only catered for and not the cross-sections as a whole and the full reserve width. The design standards applied often were appropriate to roads in rural areas, but with urbanisation and development these have now changed to roads within urban environments.

Urban design frameworks don’t adequately provide for safe and convenient NMT facilities. Sidewalks are not well lit and Universal Access needs of people are mostly not adequately accommodated.

Developer bulk service contributions for the upgrade of infrastructure are mostly targeted at increasing accessibility for motorised private vehicles, with very little attention to NMT needs.

Transport infrastructure

The Provincial Road network is 272 821km, the metros amount to 66 143km, municipalities amount to 256 903 km and un-proclaimed roads amount to 131 919 km. Gauteng Province has the lowest percentage of the SANRAL road network which is 3.6% (807 km) of the SANRAL road network.

According to the Gauteng Province Department of Roads and Transport Road Assets Management Plan (RAMP) 2021/22, the Province is responsible for a road network consisting of approximately 5 600km of roads (4 328km surfaced and 1 271km gravel roads). 33% of Gauteng provincial roads are classified as arterial roads, 27% as distributor roads, 33% as collector roads and the remaining 7% as principal and access roads. The Gauteng provincial road network includes 676 bridges and 428 major culverts.

Gauteng Province has a planned strategic road network which was developed over time. It consists of a grid of Freeways (PWV roads) and main arterials (K-routes). According to the Gauteng RAMP 2021/22, 76% of the paved road network is in a good to very good condition and 4% is in a poor to very poor condition.

According to the City of Ekurhuleni (CoE)'s CITP 2014, the majority of the CoE paved roads are in good condition, whilst most of the unpaved roads are in poor condition. Very Good and Good amounts to 72% of the network while 2.2% is classified as Poor to Very Poor. This information was based on the CoE pavement management system data conducted in 2012.

The City of Tshwane (CoT) Metropolitan Municipality consist of a road network that amounts to approximately 9 667.6 km of roads. According to the CoT Comprehensive Integrated Transport Plan (CITP), the paved roads amount to approximately 69% and unpaved roads amounts to 31% of the road network. The CoT's Pavement Management System of 2017 indicated that 73% of the network is classified as Very Good to Good and that 9% is Poor to very Poor.

According to the CoJ's SITPF 2013, the CoJ Road network is 9 324 km in extent. According to the CoJ's Pavement Management System (Surveys conducted in 2008), approximately 72% of the road network is in very good to good condition, and 20% of the network is in poor to very poor condition.

The Sedibeng District Municipality (SDM) consist of 1 408 km of road network. Midvaal local municipality amounts to 44.9% of the SDM road network; Lesedi local municipality amounts to 34.3% and Emfuleni local municipality amounts to 20.8% of the SDM road network.

The West Rand District Municipality (WRDM) consist of 2128 km of road network (1511km paved and 617km unpaved). Mogale City local municipality amounts to 41% of the WRDM road network; Rand West City local municipality amounts to 39% and Merafong local municipality amounts to 20% of the WRDM road network.

Gauteng also boasts 921km of rail that is the responsibility of Transnet and PRASA.

Freight Logistics

Freight transport is mainly conducted by road in Gauteng, while rail transport is used for bulk materials over long distances, such as the iron ore or coal lines. Air cargo is concentrated at OR Tambo International Airport although some smaller volumes are handled at airports such as Lanseria and Wonderboom.

Sustainability imperatives require that more rail friendly freight needs to be shift from road to rail although the relatively short distances in Gauteng might make it difficult to offer viable rail services within Gauteng. However, more road freight traffic on the corridor between Gauteng and Durban should be moved to rail. Hence the development of intermodal container terminals in Gauteng needs to be developed with suitable access roads to ensure efficient connectivity with industrial zones.

Challenges with freight logistics include overloading as well as road safety and security of both drivers and loads. It is important that safe staging areas as well as truck stops should be developed to protect equipment and drivers and reduce the negative impact of trucks on the road infrastructure.

Transport Management

The status quo of Intelligent Transportation Systems (ITS) in the Province of Gauteng is dealt with next. This was addressed in two ways, the first being a review of current documentation on ITS planning and deployment within the Province and an overview of current ITS implemented and associated initiatives. The current context of various policies and plans were reviewed, namely the Gauteng 5 Year Integrated Transportation Master Plan, the Gauteng 5-year Transport Implementation Plan, and the Gauteng PLTF of 2010–2014. The overall status of these documents is that technology and ITS applications are mentioned throughout each, but requires an updated for more recent applications that were introduced over the past few years since the documents were written. The five Integrated Transportation Plans (CoT, CoJ, CoE, Sedibeng, West Rand) were reviewed and highlights provided, with the overall status being outdated with respect to the development of various technologies that have transpired over recent years. Furthermore, the Growing Gauteng Together Through Smart Mobility 2030 document was also reviewed as a key document, containing the latest strategic vision with regards to Smart Mobility for the Gauteng Province.

With respect to the ITS and technological initiatives currently active in the Gauteng Province, a summarised review is provided. The main initiatives listed are the Bus Rapid Transit (BRT) systems, the Gautrain, the Gauteng Freeway Management System, various Management Centres, Johannesburg Roads Agency initiatives, Gauteng Open Road Tolling (GORT), Initiatives of Toll Concessions for freeways, the DoT/SANRAL Transaction Clearing House (TCH), Provincial Smart Mobility Department Initiatives, MaaS and E-hailing.

Some challenges and opportunities were identified from a ITS and technological perspective, namely Provincial-wide coordination, Digital footprint expansion, opportunity for an Advanced Public Transportation Management System and a MaaS platform, Piggy-backing on current deployments, Training and Education, Awareness of 4IR and Technology applications, Principles regarding planning & implementation, Seamless transport, Integrated Corridor management, and Data sharing principles. One of the key priorities of the Province is reaching the vision of One Province One Ticket, and some key requirements are not yet in place to achieve this that should be dealt with.

Some future considerations to take note of during the development of technological implementations include the passenger journey, city planning and infrastructure, data-driven mobility, safety and inclusion, and delivery and distribution.

Tourism

Gauteng has 4.3 million tourist day trips and 3.1million overnight trips, according to Gauteng Tourism Agency (GTA).

The major ports of entry to the Province are not well served by public transport, except Gautrain at ORTIA. The lack of information and signage provides challenges for tourists to access general public transport as a mode for tourism travel. Therefore, tourists large rely on car rental services, private operators and e-hailing services to travel within the Province.

71% of tourists travel to and within Gauteng to visit friend and family, 12% for business purposes and 9% for holidays.

The Backlog with the disposal for operating licence applications and licence renewals of tourism transport operators was close to 2 years at start of 2022 and this is a major challenge.

Monitoring

Monitoring and review of specific key performance indicators as required by the NLTSF is currently not done properly. This is evident in all planning authorities and in the dormancy of the Gauteng Freight Databank. This is also apparent in the lack of any information regarding comparative analysis of the extent to which the key performance indicators have changed over time.

Problems, Issues and Gaps

An analysis of the transport status quo in Gauteng, discussions and inputs received at the various stakeholder and key role-player workshops, as well as further one-on-one sessions enabled the identification of problems, issues and gaps. The following are the Top 10 issues identified by stakeholders to be addressed as part of the PLTF (in no particular order of importance):

1. Increased traffic congestion, pollution and the environmental impact of transport;
2. Integration of economic, land use and transport planning and to optimally coordinate this across sectors, different spheres of government and municipal boundaries ("these must be done under one roof");
3. Affordability and accessibility of public transport to users in general and the attractiveness of such services to choice-users;
4. Decline in public transport services and facilities, modal optimisation and integration;
5. Barriers to entry for new entrants in providing formalised and subsidised public transport services;
6. Safety and security and the protection of travellers and transport infrastructure and lack of integration with security service providers to address this;
7. Lack of adequate non-motorised transport infrastructure and facilities and universal access for people with disabilities and the mobility impaired;
8. Lack of Mobility as a Service (MaaS) solutions that offer efficient integrated and responsive solutions to commuters needs to contribute to them making changes to their transport choices and behaviours;
9. Road freight movements, the impact the Strategic Road Network due to over-loading, on inner cities operations because of parked trucks and the cost of the "last mile" (point of public/freight transport up to the private dwelling/business);
10. Strengthening Regulatory Oversight, and
11. Additional and new funding sources, as well as the lack of a "platform" conducive to partner and leverage private funding.

Other important issues that were discussed and received attention during the stakeholder engagements were, how to best provide for non-motorised transport needs, how to create a

smart and walkable South African city and how it could be applied to all spheres of government within the framework of existing regulations. The management of available transport data and the utilisation of information for the planning, development and management of the transport system also received attention. Further, a critical issue was for due consideration to be given as to how the PLTF will be enforced.

From the process of one-on-one engagements with the Gauteng Taxi Industry, a key player in providing public transport services and therefore be to be consulted on planning, the following matters were highlighted:

- Regulation of the industry should be pragmatic and not detrimental to the economically active workforce, coupled with the concern on the backlog in the disposal of operating licence applications;
- Affordability of services to users, the sustainability of operations and the lack of adequate financial support to the industry;
- Consideration of separate or high-occupancy vehicle lanes to be available for use by MBTs in congested areas;
- Generally, the state of taxi ranks is deteriorating to unacceptable levels;
- A fit-for-purpose approach when it comes to the transition to e-vehicles and sustainable transport, and
- Outcomes of the taxi summit held at the end of 2019 and the recommendations made by the respective task teams to be recognized and included in the PLTF.

Chapter 5: Integrated Transport Plans

In terms of the NLTA, Chapter 2, section 11, municipalities are responsible for the improvement of the transport system within their jurisdiction and to prepare Integrated Transport Plans. An Integrated Transport Plan (ITP) is a component of the Integrated Development Plan (IDP) for a municipality. It is prepared in terms of the guidance provided within the PLTF, which provides the overarching framework for the development and/or updating of ITPs. These plans need to be developed and updated in terms of the Minimum Requirements for the Preparation of Integrated Transport Plans, 2016. These regulations were gazetted in terms and Sections 36(1) and (2) of the NLTA and requires municipalities to update their ITPs.

In the minimum requirements it also distinguishes between various types of municipalities and the aspects to be addressed in their respective plans, depending on the type.

TYPE 1 - Planning Authorities required to prepare CITP and CoE, CoJ and CoT are classified as Type 1 planning authorities.

TYPE 2 - Planning Authorities are District Municipalities which must prepare District Integrated Transport Plans (DITP). DITPs to be prepared in Gauteng are for the two (2) type 2 planning authorities, namely Sedibeng District Municipality (SDM) and West Rand District Municipality (WRDM).

TYPE 3 - Planning Authorities are local municipalities who are to prepare a Local Integrated Transport Plans (LITP). The local municipalities in Gauteng are Emfuleni Local Municipality, Lesedi Local Municipality, and Midvaal Local Municipality in the Sedibeng District Municipal area, and Mogale City Local Municipality, Merafong City

Local Municipality, and Rand West City Local Municipality located within in the West Rand District. Local Integrated Transport Plans (LITPs) must be integrated into DITPs.

ITPs are prepared for a five-year period. A new ITP must be prepared every five years (overhauling of the Plan). On an annual basis (Annual Update), selected aspects must be are to be updated. These updates would inter alia include updated project lists and budgets, which then makes up the Transportation components of the annually updated municipal Integrated Development Plans (IDPs).

The most recent CITP for CoE is for the period 2013 to 2017. It is a comprehensive document meeting all requirements. The vision, goals and objectives are aligned with the National and Provincial agendas. Since the completion of this CITP in 2017, CoE has also done a Roads Master Plan in 2018, Integrated Public Transport Network Plans and Corridor Operational Plans in 2021.

The CoJ, started in 2012 with their ITP for the period 2013 to 2018, where they followed a slightly different approach. Instead of a single document, it was developed in a few documents. The first was the Strategic Integrated Transport Plan Framework (SITPF). It is a very thorough and comprehensive plan (Roadmap) with progressive policies and strategies. It took a long-term view on Transportation. CoJ has since conducted various other planning studies, area/precinct wide ITP's, Operational Plans and Corridor studies in support of the SITPF.

The latest CoT CITP covered the period 2015 to 2020. The CITP is a comprehensive plan and it is compliant with the minimum requirements. CoT has commenced in December 2021 with the update of their CITP and the project will run over three years. CoT is updating the Transport Register, the Spatial Development Framework (SDF), Public Transport Plan and their Transport Infrastructure Strategy. It is also proceeding with its Freight and Logistics Strategy, Funding Strategy and Implementation Plan.

The DITPs for Sedibeng and West Rand District Municipalities were completed in 2019 and covers the period 2019 to 2024, with assistance from the Gauteng Department of Roads and Transport. Both Plans are comprehensive documents and meet all requirements. Vision, Goals and Objectives in-line with National and Provincial strategies and prerogatives. Projects are identified which would assist with the economic growth of the respective districts, but no budgets or timeframes re given. Some base data is also dated. The LIDPs of the local municipalities are also integrated into the DITPs of the two districts.

Chapter 6: Integrated Development Framework

Taking into consideration that municipalities have limited budgets and are often fiscally constrained, the GSDF provides investment guidance through four spatial targeting focus areas. Spatial imperatives identified in the GSDF 2030 (2016) have been further developed into 16 SSDIs. The spatial strategies, focus areas and SSDIs are aligned with the aim to coordinate, integrate and align the plans of the three spheres of government as well as bring people in close proximity to areas of social and economic opportunity complemented by an affordable, reliable and safe public transport system. The integrated development strategies therefore aim to align its spatial priorities with national, provincial, and local imperatives in order to ensure sustainable land use and transport integration.

An understanding of the interrelationship between land use and transport has influenced the development of a vision, objectives, focus areas and strategies for the successful and sustainable integration of land use and transport that the PLTF aims to support and promote. These focus areas additionally aim to respond to and support the most recent provincial

priorities as indicated by cabinet. To achieve this, the Province needs to follow a PLAN, CREATE and IMPLEMENT approach that should guide development and its discourse within the different spheres of government. "PLAN" focusses on elements that need to be considered and planned for, to create enabling environments. "CREATE" addresses the development of specific mechanisms or tools and "IMPLEMENTATION" deals with actions to be executed. Following the above approach, the following focus areas and strategies are proposed for the integration of land use and transport within the PLTF.

To enable sustainable land use and transport integration in the Province, the PLTF proposes the following focus areas:

- Coherent and sustainable urban development – which addresses the fragmented urban structure and dispersed pressure on service delivery and transport systems;
- Accessibility, connectivity, and mobility – which addresses the inability of many people to access economic and social opportunities;
- Resilience, which looks at incorporating adaptability into land use and transport planning, and
- Good governance, which addresses institutional arrangements and processes that will strengthen land and transport integration.

Chapter 7: Public Transport

This chapter provides information of the public transport strategies and initiatives of provincial significance and emanating for the respective CITPs that aim to promote and improve public transport.

Based on the public transport status quo and the problems issues and gaps described in previous chapter, the following focus areas were identified to be addressed through public transport strategies:

- Public Transport and Land Use Integration;
- Provincial-wide strategic integrated public transport network (IPTN), also considering network continuity across municipal/provincial borders, integration between public transport modes and the role of modes;
- Quality of public transport, addressing aspects such as accessibility, reliability quality of services, quality facilities and Universal Access of facilities and vehicles;
- The devolution of the rail function;
- Passenger Safety and Security;
- Regulation of road-based modes and services, and
- Affordability (to users, government and operators), funding and subsidies.

Public transport linkages to new developments and existing and high density and major nodal developments, with in-filling along IPTN corridors and TOD development needs to be enabled, pursued, and promoted. The Provincial-wide IPTN needs to be confirmed, including key cross-border corridors as part of the GTIMP25 update. Nodes of Provincial Significance need to be

identified and ToD strategies be developed for each of these. A Modal Integration Working Group or similar structure need to be established to promote this.

The provisions of the National White Paper on Rail Policy need to be implemented, which as a start will include a due diligence study and consultation and agreement on the terms and conditions of such devolution. The commuter rail corridors need revitalisation through discussions and coordination with PRASA, including revitalisation of areas of impact around key stations in collaboration with municipalities. Approvals and funding for the expansions and first phase of the extensions to the Gautrain Rapid Rail needs to be unlocked.

Through collaboration with all spheres of government, there needs to be agreement on consolidation of operational subsidies, targeting of beneficiaries and appropriate subsidy allocation mechanisms. This should culminate in an integrated strategy for equitable subsidising and providing financial support to public transport with the aim to improve affordability and enhance sustainability of public transport services. The integration of public transport ticketing and payment systems should be formalized through the "One-ticket-one-province" initiative.

The quality of formalised public transport will be enhanced through agreement on appropriate services norms and standards and through concessions/contracts that include performance regimes. Restructure, rationalise and integrate the Public Transport Operations Grant (PTOG) bus services into the IPTN(s) needs to be finalised in consultation with the affected metropolitan municipalities and also with due consideration of cross-border travel.

The condition of road-based public transport facilities and specifically taxi ranks, is often not acceptable and is generally deteriorating. The Province will, through liaison with municipalities, strive to obtain agreement on common minimum standards for public transport facilities and associated amenities, as well as the management and maintenance of such facilities. It will work with the municipalities on a framework for funding the necessary upgrades and maintenance regimes.

A public transport safety and security strategy will be developed through engagement and coordination with all stakeholders, including the security sector and municipalities. Increase usage of technology and data through e g CCTV cameras to increase visibility and monitoring of public transport spaces.

The GDRT will develop a strategy to improve the functioning of the PRE, to reduce backlog in disposing with operating license applications and renewals. It will also further assist the GTI with the implementation of the recommendations of the Gauteng Taxi Summit and its task teams.

Chapter 8: Non-Motorised and Sustainable Transport

Sustainable Transport is the planning and provision of transport systems and infrastructure that is a catalyst to and supports sustainable spatial, social and economic development safely and affordably whilst reducing inequality, minimising environmental impact and ensuring intergenerational equity.

Key issues driving the need for sustainable transport are sprawling settlement patterns, the current focus on car centric planning, the affordability and safety of travel and climate change.

Developing a sustainable transport system approach is premised on the "ASI" approach of:

- "AVOID" – reducing the need to travel or transport goods through changing urban form and integrated mixed use planning;
- "SHIFT" – changing the mode of travel through encouraging NMT, enabling public and shared transport, shifting freight from road to rail and pipeline, and
- "IMPROVE" – technology improvements that reduce both energy consumption and support the shift to green / renewable energy for propulsion.

With long run horizons Sustainable Transport is crosscutting across all sectors of transport and urban and land use planning and requires incorporation into all ITPs, programmes and projects to ensure that longer term requirements are not locked out. Thus significant commitment and effort is required to ensure:

- Stronger integration between land use and transport planning in order to address urban sprawl;
- That all transport systems designs consider climate change risks and incorporate sustainable transport principles, and
- Life cycle cost benefit analyses that include social and environmental cost are required for all projects.

As walking is the primary mode of travel for the majority of residents and, being fundamental to sustainable transport planning walking and cycling should, along with Public Transport, form the basis for all transport and urban and land use planning.

Addressing safety and security and incorporating Universal Access principles based on the complete streets approach an NMT Policy and Strategy should be developed for Gauteng and ITPs should develop NMT strategies.

A key aspect of sustainable transport is improving the efficiency and optimal utilisation of existing and/or preferred modes of transport where Shift is unlikely. The use of technology to Improve this is an untapped opportunity through a greater focus on Mobility as a Service (MaaS) which offers flexibility, convenience and affordable alternatives to private vehicle ownership and usage of the 1-commuter-per-vehicle type. This can improve the impact on reducing congestion, emissions of GHGs and generally reduce the extent of the need for transport infrastructure required to serve higher private vehicle ownership and usage.

A key aspect is a communication campaign to raise awareness of the need for sustainable transport and its role in addressing climate change and social justice.

Chapter 9: Transport Infrastructure Strategy

South Africa, and Gauteng Province, faces many developmental obstacles, including infrastructure bottlenecks, and economic and social challenges such as unemployment, poverty, and inequality. Economic infrastructure, including the road network, is one of the key levers for economic growth. Road infrastructure has the potential to deliver a higher economic return on investment than any other single type of infrastructure. Road transportation is an important industry in the economy, yet various challenges inhibit the sector's contribution to South Africa's economic and social developmental objectives. One such challenge is the implementation of road infrastructure projects, where increased road use, low investment, and poor maintenance have led to higher transportation costs and transport bottlenecks.

The effective design, construction and maintenance of roads is crucial to a well-functioning and prosperous modern economy. Roads also play a role in meeting societal needs for connection and mobility in ever-expanding human settlements, and their construction and on-going maintenance provide opportunities to address social challenges like unemployment. With mounting concerns over climate change and air pollution, the role of roads needs to shift away from serving predominantly private vehicles and road-based freight, toward supporting more integrated mobility systems centred on walking, cycling and public transport.

To enable and continue the economic growth of Gauteng, The PLTF proposes the following Road Infrastructure strategies in line with five (5) focus areas:

Transport Planning

- Protection and Development of Gauteng (Provincial) Strategic Road Network;
- Protect and Maintain Mobility also considering Accessibility;
- Facilitate mobility continuity across municipal and provincial boundaries;
- Transport Demand Modelling by making use of Big Data (Floating Car Data), and
- Transport planning to also focus on transport infrastructure for non-motorised transport including walking and cycling.

Infrastructure Design

- Maintain and Improve Road Design Standards to be more cost-efficient and sustainable;
- Review cross-section design to allow for all modes of transport and utility space in the right of way reserve (Embrace complete street principle with specific reference to adequately accommodate for pedestrians), and
- Ensure and apply Universal Access Design principles.

Construction and Implementation

- Continue with multi-year programme for the construction of new roads and upgrade of existing roads guided by a review of the existing and planned road network;
- Expand the provision of cost-efficient transport infrastructure for non-motorised transport in support of the Shift from motorised transport over time;
- Formation of partnership with Municipalities on implementation of major arterials and other roads especially in disadvantaged areas;
- Maintain High Quality Control Practices during construction, and
- Support Contractor Development programmes.

Infrastructure Maintenance

- Maintain Provincial Road infrastructure to the Highest Standards as required by The Road Infrastructure Strategic Framework for South Africa (RISFSA);

- Forming partnership with municipalities on the maintenance of major arterial and other roads especially in disadvantaged areas, and
- Supporting contractor development programmes.

Operations/Systems/Tools and Cross-cutting Elements

- Update and Maintain Pavement Management Systems to ensure effective maintenance as per RISFSA;
- Implement more cost-efficient solutions for transport infrastructure build and maintenance to optimise usage of funds available;
- Active physical protection of road reserves from illegal invasion;
- Review and update Travel Demand Management Strategy;
- Activate/Establishment of Inter-governmental Coordination Structures dealing with Transport Planning and Implementation;
- Integrated data repository to ensure exchange and sharing of information and documentation, and
- Traffic Safety; support the RMTC to achieve reduction in fatalities and accidents and participate in the coordination and implementation of Traffic safety initiatives and programmes.

Chapter 10: Freight Logistics

Economic and social development of South Africa depends to a large extend on the level and cost of mobility within the supply chain to ensure that raw materials, work-in-process and finished goods are delivered on time and at reasonable cost. Transport is one of the most important and costly logistics functions performed in the supply chain of freight, both on the inbound and outbound side. The traditional view of transport is that it is a derived demand, based on some form of land-use development or economic activity that generates or attracts passengers or freight. However, it is also true that freight transport induces development, where existing transport infrastructure such as roads, railways, ports and intermodal terminals attract potential developers.

This report covers the objectives and system characteristics of freight transport, the status quo of freight logistics with specific reference to road freight, rail freight, air freight and pipelines. It includes reference to Gauteng logistics hubs and progress of GDRT with implementation of their freight plans. It also covers some user experience as well as a summary of problems and issues in the freight logistics sector. A very high-level summary is given of the status of freight logistics according to the Integrated Transport Plans of the respective planning authorities.

Freight logistics strategy is covered in a separate chapter and addresses strategic objectives in the focus areas of freight logistics demand, network, infrastructure, operations, legislation, and implementation. Several freight logistics issues that needs to receive attention are listed under these strategic objectives.

In conclusion, the report suggests that the focus of the Gauteng Province should be on overload control management, freight logistics hubs and truck-stops as well as freight routes

for abnormal loads and dangerous goods and an additional focus and priority of the Shift from road to rail for freight transport.

Chapter 11: Transport Management Strategy

The chapter on Transport Management Strategy deals with high-level, strategic, road transportation measures to ensure the optimum and safe movement of people and goods. Some of the deficiencies that were identified in the management of the transport system is that there are gaps with regards to the digital footprint coverage of public transport, the unavailability of transport data from a single platform, the expensive and onerous nature of the typical four-step process transportation models, the fare management integration gap, and the gap created by the lack of integration between various mobility partners. The focus, therefore, was placed on three areas, namely that a data centric approach should be adopted for mobility, that a smart approach should be adopted towards public transport involving the provision of infrastructure and technology, and a smart approach towards the road system by improving the quality of mobility to users. These three areas and the solutions for each follow closely the guidelines set out in the Growing Gauteng Together Through Smart Mobility 2030 document, paving the way for the Province's Smart Mobility vision.

A total of seven strategies were addressed from a data centric mobility perspective. These include the expansion of transport data digitalisation, establishing the required digital infrastructure, some infrastructure automation measures, and a readiness for vehicle automations including connected and autonomous vehicles (CAV). Furthermore, another strategy includes harnessing the extensive amount of mobility data available that could lead to data services such as real-time monitoring and management of transport network and the creation of a MaaS platform. The last two data centric mobility strategies include the planning and equipping of a Transport Data Centre for the management of transport data and operations of the centre, as well as adapting the way transport demand models are set up by putting a greater emphasis on including mobility (big) data into the models. Open data is becoming a valuable resource around the world and creating opportunities around this within the transport environment could hold great benefits for both operators and passengers. It is important, however, that the relevant regulations be put in place for this.

Four strategies are outlined from a smart public transport perspective. The first is the pursuit of the vision of "One ticket, one province" by requiring the integration of fare media, transit data, and fare collection for Public Transport services into a central fare management system. The smart public transport environment requires expansion of its digital footprint, that would lead to the enabling of an integrated fare management system (IFMS), as well as Advanced Public Transport Management Systems (APTMS). The latter is the third strategy that will address the lack of integration of public transport. The last strategy involves the enhancement of traveller information and making this available through an Advanced Traveller Information System on easily accessible applications.

From a smart roads perspective, six strategies were identified. These include increased utilisation of the Freeway Management System, improved Arterial Management through piggybacking on the Freeway Management System, virtual weigh stations in combatting overload control, Integrated Corridor Management initiatives, improving safety through managed lanes on the highway and average speed over distance (ASOD) monitoring, and the effective use of Traffic Incident Management Systems.

A key aspect of sustainable transport is improving the efficiency and optimal utilisation of existing and/or preferred modes of transport where Shift is unlikely. The use of technology to

Improve this is an untapped opportunity through a greater focus on Mobility as a Service (MaaS) which offers flexibility, convenience and affordable alternatives to private vehicle ownership and usage of the 1-commuter-per-vehicle type. This can improve the impact on reducing congestion, emissions of GHGs and generally reduce the extent of the need for transport infrastructure required to serve higher private vehicle ownership and usage.

With regards to these strategies, there are some cross cutting factors that need to be considered throughout, namely safety and security, especially cybersecurity, some organisational and coordination factors, as well as training and education.

In line with the strategies mentioned, various projects emerged that would advance the Gauteng Province from a Transport Management Perspective. These are the establishment of a multi-functional data centre, increased digitisation expansion through a compiling a Digitalisation Strategy, the identification and implementation of an integrated corridor management pilot project, and the planning and implementation of a public transport management system.

Chapter 12: Tourism Transport

It is essential that adequate transportation should be provided for the growth and development of tourism. There are, however, some challenges that need to be addressed for this growth to take place. Some of the tourism challenges identified are, the backlog in issuing operating licences to tourism operators, the inadequate provision of transportation links to the two international airports situated in Gauteng, lack of access to intra-provincial public transport, safety and security issues, and alignment of various stakeholders around tourism. Some of the key tourist transport focus areas that were identified are industry alignment, infrastructure development, operational improvement, and information sharing.

Six tourism strategies were identified that would help combat the aforementioned challenges. The first is the coordination of the transport function within tourism between the Gauteng Department of Roads and Transport and the Gauteng Tourism Authority. Surveys are required for benchmarking tourist needs entering the major airports so that the necessary links may be established, and the backlog with operating licences needs to be addressed. The fourth strategy is ensuring that appropriate payment methods and products be available to tourists, and the fifth deals with the development of a smart tourist platform, starting with an operational concept. Lastly, the incorporation of Tourism Transport in Provincial and Local planning would help address the lack of institutional alignment.

Chapter 13: Funding Strategy and Implementation Programme

The position taken in the ITMP25 is supported in that inadequate funds needs to be allocated to transport infrastructure and operations, especially to preserve assets. Stable sources of funding are required, and transport budgets should be **doubled in the short-term** and increased to **4 times** the current funding levels over the next **25 years.**

Summaries of both the priority provincial planning and implementation projects and budgets, as well as municipal transport projects of provincial significance taken from ITPs are provided in this chapter (as far as such information could be accessed).

In addition, this chapter also provides several funding principles related to the basis for funding over the Project Life Cycle, the prioritisation of projects for funding, the user-pay principle, affordability and sustainability of public transport services and cost-efficiency, efficiency, quality and safety.

During budgeting and the prioritisation of projects for funding the financial viability and economic feasibility should not be only the consideration, but also their socio-economic impact. Cost Benefit Analysis (CBA) is essential to projects with a capital expenditure (CapEx) value > R1bn and CBA should achieve at least Ratio > 1 to be considered for funding and to proceed. The CBA should attempt full life cycle costing and hence match the 'investment term' to the period of economic benefits flowing from a project. Benefits and costs that accrue to users, funders, operators, and general society should be considered. "Going Green" and the enhancement of sustainability is an important consideration. Promotion of land use restructuring and investment in inter-modal facilities needs to receive priority. Maintenance requirements of public roads needs to be prioritised in line with the maximum percentage of network that is in poor and very poor condition.

It is confirmed that there is government acceptance of the user-pay principle to be applied to infrastructure upgrades, expansions, road network extensions and maintenance and this is also generally applied to formalized public transport, but the extent of user pay contributions should be linked to affordability of fares.

Several funding strategies are also proposed. With respect to incentivising appropriate development to take place in relation to key public transport corridors and nodes, p provincial funding is to be made available to assist local authorities to provide and upgrade bulk infrastructure along IPTN corridors and nodes. The development of regulations is proposed to incentivise private developers to develop in right area with due consideration for NMT linkages to IPTN and within the special economic zones, by means of for example lower parking requirements for ToD and rebate on rates and taxes for developments in close proximity to public transport corridors and nodes. This will also be to get public developers to specifically address public transport accessibility.

Aligned with the strategy on financial support to public transport discussed previously, a strategy for providing financial support to public transport and strengthen existing subsidy allocation mechanisms by introducing incentives to operators.

The norms and standards that meets minimum user needs/requirements need to be confirmed with a view of affordability and ability for Government to be able to fund:

- public roads development and maintenance, and
- public transport quality, affordability and safety (i.e. BRT infrastructure and facilities).

Similarly, consideration should be given to the development of a strategy on the equitable application of user-pay principle for the provision, upgrade and maintenance of transport infrastructure and facilities, taking the lessons learnt from e-tolls into consideration.

The feasibility of additional and new sources of funding needs to be studied, considering the following potential new sources:

- Partnerships for inter-governmental and with private sector cooperation;
- Opportunities offered by international funding agencies and do project submissions in terms of published criteria, with specific reference to "green" funding;
- Conditional Grants;
- Expansion of private sector involvement through other credit instruments;

- Extension of development levies;
- Widening of the user-pay principle;
- Infrastructure funding through the Office of the President;
- Licenses, levies and taxes;
- Value capture at public transport facilities;
- Advertising rights and revenue related to PT facilities and contracted PT services vehicles';
- Municipalities to be encouraged and assisted to pursue funding available for local projects, and
- Greater conceptualisation and promotion of the benefits, multiplier impact and reduction of negative impacts of transport (e g congestion, GHG and environment) certain transport projects to leverage funding required.

Bi-lateral agreements need to be pursued between public sector owners of land and potential public sector users of land for the development of stations, facilities and associated amenities and developing a framework for dealing with funding of TOD's.

The focus and deployment of bulk services contributions for transport infrastructure by private developers should be done to address transport as a whole, including public and non-motorised transport and not just the addition of road lanes and upgrading of intersections for private vehicles.

Chapter 14: Monitoring

The NLTSF proposes a practical approach for measuring progress with the implementation of the PLTF, that includes proper monitoring and review of specific key performance indicators (KPIs). The purpose of the transport indicators is to ensure a balanced view at the national, regional and local levels of the critical role of transport services in reducing poverty, facilitating growth and contributing to achievement of key development targets and sustainability.

This report covers these issues in a separate chapter on monitoring and includes a list of key performance indicators in line with national key performance indicators set out in the NLTSF, a report on how and to what extent the key performance indicators set for the Province in the NLTSFF have been met, and a report on how and to what extent the key performance indicators set in the previous years' PLTF have been met.

It was decided to propose the development of a dashboard for presenting these KPIs where progress and/or challenges with the respective KPIs can be seen in summary. Such a dashboard needs to be populated with appropriate KPIs and some categories were suggested within which the indicators should be measured, including the transport network, freight logistics, public transport, road safety, sustainable transport, technology adoption, law enforcement, financial stability and transport policy. Potential KPIs have been presented under each of those categories.

Chapter 15: Coordination Structures and Measures, Liaison and Conflict Resolution

Chapter 3 of the Constitution (sections 40 and 41) provides for and promotes co-operative government. The responsibilities of the three spheres of government are set out in the Constitution, mainly in Schedules 4 and 5, and in section 11 of the NLTA.

At national level there is MINMEC, a Ministerial Committee between the Minister and provincial MECs responsible for transport matters as well as the Committee of Land Transport Officials (COLTO) as a coordination structure between the Director-General of the NDoT and the provincial heads of department. The Province will participate actively in these structures and other coordinating structures at national level.

In the Province there is a provincial coordinating committee between the MEC and Members of Mayoral Committees of the municipalities known as the MEC/MMCs Transport Forum. The Transport Technical Working Committee (TTWC) is a structure for technical coordination between provincial and municipal officials responsible for transport. The TTWC has sub-committees dealing with rail, freight, public transport and driving licences.

TAG has been established by the Gauteng Transport Authority Act 2 of 2019 and in terms of section 12 of the NLTA as a coordinating, as well as executive structure. Among other things, TAG must foster co-operation and coordination between public transport authorities and operators in the Province and must develop an integrated transport system.

TAG will play an active role in establishing appropriate coordinating mechanisms in the Province and will consider establishing formal coordinating structures. The MEC/GDRT and TAG in collaboration with the municipalities will negotiate and decide on more specific functions to be allocated/delegated to TAG.

The GMA Act 5 of 2006 provides that the GMA must liaise with and promote co-operation between government structures in all three spheres of government in relation to the Gautrain project

At municipal level, the three Metros must each establish an Intermodal Planning Committee (IPC). Municipalities may establish land transport advisory boards (LTABs). (Sections 15 and 16 of the NLTA). The GDRT and/or TAG will actively engage with municipalities and with IPCs and LTABs and similar structures to ensure effective coordination and co-operation as required by the legislation, policy and guidelines.

As regards bus contracts, the GDRT has signed an Intergovernmental Authorisation Agreement (IGAA) with all municipalities as contracting authorities which provide among other things that the GDRT is willing to enter into tendered subsidised bus service contracts in terms of section 42 of the NLTA. These contracts will be taken over later by the municipalities. The Province has also recently established the Public Transport Integration Committee as a sub-committee of the abovementioned TTWC to coordinate between the Province and municipalities on public transport issues.

The MEC will consider making regulations under section 10 of the NLTA on coordinating structures and procedures.

As required by the NLTA, the Province and/or TAG will make themselves available to assist and capacitate municipalities within the limits of available resources and in line with the prevailing legislation.

Dispute that may arise between the relevant organs of state will be dealt with in terms of the Intergovernmental Relations Framework Act (IGRFA)13 of 2005, within the spirit envisaged in section 41 of the Constitution.