CHAPTER 5: TRANSPORTATION

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5. AMENDMENTS AND UPDATES

The Spatial Planning Division published its previous MSDF in 2012. This 2012 MSDF stated perfectly the analysis of the situation at the time of print. It gave a clear narrative of the public transportation which is available within the City and clearly expressed the arterials of importance, to ease the navigation through the City. There exists a difference between the preceding document and the current MSDF, one which sets a platform for rethinking the supply and demand of transport in the City. The current MSDF goes a step further by evaluating the regional patterns and trends and developing a series of interventions and strategies aimed at realising the long term transport vision of the City. It also lists the shortcomings of the transport sector, while making proposals and implementation strategies to achieve the proposals.

The current MSDF further makes proposals on the integration of land uses with the public transportation, talks on global issues relating to sustainability and creates a desired outcome of the public transport as a whole by evaluating public transport through a lens to establish the desired experience. Lastly the MSDF makes proposals on guidelines around the TOD Nodes, Mode Sharing, Parking Ratios, and Density Guidelines.
### 5.1 Informants of Key Data and Indicators

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<td>Transportation</td>
<td>GSDF Strategic Initiatives</td>
<td>GSDF strategic initiatives to align the transportation chapter with the Provincial plans to achieve integrated planning.</td>
<td>Gauteng Spatial Development Framework, 2030&lt;br&gt;Gauteng Integrated Transport Master Plan, 2013</td>
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<td>65% of residents in the City of Tshwane are</td>
<td>While this is the case, the reality is public transport is not accessible and convenient to most City dwellers</td>
<td>Draft National Development Plan, 2030&lt;br&gt;Comprehensive Integrated Transport Plan (CITP), 2015-2020</td>
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<td>Indicators of Current Transport Reality</td>
<td>Representation of the current transport realities as experienced by the City. Represented based on mode of transport, routes major public transport corridors, parallel competing modes</td>
<td>Comprehensive Integrated Transport Plan (CITP), 2015-2020</td>
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<td>PWV 9 fundamental for spatial transformation of the City</td>
<td>Critical corridor for the City to divert distribute traffic from the north of the City around the Tshwane CBD to Johannesburg.</td>
<td>National Transport Master Plan, 2050 Gauteng Spatial Development Framework, 2030 Gauteng Integrated Transport Master Plan, 2013 Comprehensive Integrated Transport Plan (CITP), 2015-2020</td>
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<td>PWV 2 and PWV 17</td>
<td>Strategic freight and mobility road link whose function is part of a strategic ring road for the Gauteng Province.</td>
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<td>Rail as the Backbone of Public Transport</td>
<td>Increased disruptions, degradation of rail infrastructure, service levels, delays and inaccessible service have turned</td>
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5.2 REFLECTING ON THE IDP

The MSDF needs to be a spatial translation of the IDP’S intended outcomes. Part of achieving this is through an understanding of how the IDP addresses matters around human settlements.

The *IDP Needs* are a section of the IDP document where a record of the submissions made by citizens with regards to community-identified needs for the foreseeable financial year/s. This information is collected during the annual public participation process of the review of the IDP.

The following is a reflection of the submissions that were made for the 2017-2021 IDP. Within the broader context of *sustainable* human settlements, funding towards community and social development services, housing, utility services, roads and transport are all relevant.

These departments and functions traditionally command the bulk of both the City’s own and grant funding. Prioritisation of ‘human settlements’ within the budget is not a challenge. What is pertinent is that the manner in which the budget is utilised yields the best possible and effective outcomes.

As much as human settlements are allocated a generous portion of the City’s budget, the need still outweigh the funds. It is therefore important that any opportunity to access international funding for various components of human settlements, though the inclusion and implementation of international goals and objectives for human settlements, are also sought.
5.3 NATIONAL PROVINCIAL AND LOCAL POLICY DIRECTIVES FOR

Policy Overview

Recent developments in the transportation sector at National, Provincial and Municipal level are significant and cannot be viewed in isolation from one another. It is thus of the importance that the Transportation section of the MSDF build on this interrelationship and continue to align with the policies, strategies and priorities of the transport sector as a whole.

5.3.1 NATIONAL VISION

NATIONAL DEVELOPMENT PLAN, 2030

In meeting the development objective, the National Development Plan provides the instrument in the long term direction and focus geared towards delivery. The critical areas of a successful City and the boost of its economy are based on the transport infrastructure networks and efficient operations to improve the cost of doing business while also improving access.

NATIONAL TRANSPORT MASTER PLAN, 2050

NATMAP 2050 was an attempt to address the high level long term planning for transport with a view to addressing the transport policy goals and therefore the socio-economic goals of government. It is suggested that the current transport legislative framework needs to be reviewed in order to ensure the proper integration of transport modes. It is stated that the biggest problem from a legislative point of view is that important principles contained in policies drafted and various pieces of legislation are not being implemented correctly.

5.3.2 PROVINCIAL VISION

GAUTENG 2055 VISION

It asserts Gauteng as the Gateway to Africa because of its globally competitive high end economy and strengthened City Region forged on cooperation, alignment and integration with a view to maximizing universal access, sustainability and job creation.

GAUTENG 25 YEAR INTEGRATED TRANSPORT MASTER PLAN

A response to the current transport challenges faced by the GCR, the Gauteng 25 Year Integrated Transport Master Plan has focus areas that contain a number of interventions that will be implemented in order to meet the vision of the province. The focus areas are specific to transport provision area:

- Land use classification in support of public transport
- Strategic public transport network
- Reinforcing passenger rail network as the backbone of the system
- Extending the Integrated Rapid and Road-based public transport networks
A Transport System Developed to Support a Sustainable City

Transport Mission of the City
“TO DEVELOP A TRANSPORT SYSTEM THAT POSITIONS THE CAPITAL CITY TO MEET THE ECONOMIC AND SOCIAL NEEDS OF ITS CITIZENS”

Transport Vision of the City
“A TRANSPORT SYSTEM DEVELOPED TO SUPPORT A SUSTAINABLE CITY”

5.3.3 City of Tshwane Vision
Tshwane Green Economy Strategic Framework
The framework tries to improve human well-being and social equity by significantly reducing environmental risks and ecological scarcities through a number of steps. The framework addresses green theme items that are important in the transportation agenda of the city. The following are some actions which the City begins to employ to address the role of transport in the green economy:

- Sustainable Transport and Improving Mobility – through improvement in the enabling infrastructure and access to greener transportation options in Tshwane.

CITY OF TSHWANE COMPREHENSIVE INTEGRATED TRANSPORT PLAN (CITP 2015-2020)
The CIPT proposed a vision and mission which addresses the transport needs in relation to socio-economic-environmental needs of the City by ensuring access, reduced travel times and costs, promoting integrated land use by means of transit orientated development, as well as promoting “green” transport initiatives.

- Capacity building in transport industry
- Freight transport
- Strengthening intermodal hubs
- Road Transport
- Travel Demand Management
- Mainstreaming Non-Motorised Transport
- Continued Provincial wide mobility

❖ Capacity building in transport industry
❖ Freight transport
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❖ Road Transport
❖ Travel Demand Management
❖ Mainstreaming Non-Motorised Transport
❖ Continued Provincial wide mobility
5.4 INTRODUCTION AND CONTEXT

Spatial divisions within the City of Tshwane are continuing to define the sparse pattern of development in some parts of the City. The vast majority of residents of the City spend an enormous amount of time and earnings on public transportation commuting between their homes which are a far reach away from places of employment. The spatial divisions again contribute to spatial inequalities within the City through inefficient land use patterns and high densities concentrated only in certain parts of the City. These primarily influence and contribute to travel demand patterns which might not have been necessary, had land uses been planned to generate economies within those areas; which would reduce the need for long-distance commuting. The chapter intends on highlighting the three spatial discontinuities in the urban fabric which present significant development potential and are the key areas of intervention towards achieving spatial transformation within the City:

- The Magalies Mountain Range, which fragments the City by dividing it into north/south;

- the concentration of jobs to the south of the Magalies Mountain Range further cementing the north/south segregation and;

- providing transportation services and economic opportunities to the marginalised of the Tshwane society (Region 7).

An average of 65% of residents of the City of Tshwane are dependent on Public Transport. “It is no wonder transport is one of the core elements of a decent standard of living, as identified by the National Development Plan.”

The purpose of this chapter is to take a look at transportation at a glance, understanding the regional patterns and shortcomings of sector. In attempting to address the 2030 Planning horizon eradicate the spatial inequalities, the chapter will put forward some proposals, and make recommendations towards land use integration, nodal guidelines, the healthy streets approach through Non Motorised Transport, Environmental Protection and Management and mechanisms to support the Implementation of the strategy.
5.5 CHALLENGES AND SPATIAL VISION

5.5.1 Challenges Facing City Transport

Gauteng Province faces numerous challenges in the transportation sector. A brief synopsis of this can be seen when viewing the IDP Challenges that are faced by the sector. Further evidence of this and the factors which exacerbate the situation even further are the spatial divisions within the City which continue to define the sparse patterns of development.

Public Transport

- Commuter Rail provides inefficient and unreliable services due to aged infrastructure,
- Modernisation of PRASA/Metrorail services and existing infrastructure is underway

Non-Motorised Transport

- General lack of non-motorised transport infrastructure
- No dedicated Non-motorised transport funding mechanism

Freight

- Limited rail and terminal capacity to accommodate potential growth in the freight industry
- Currently new freight terminals are being developed (Tambo-Springs and Pyramid) and smaller container terminals phased out due to location in residential areas and limited opportunities for expansion

Airports

- Only two airports that facilitate international flights (OR Tambo and Lanseria).
- Need for a third international airport by 2037

5.5.2 Strategic Initiatives

The Gauteng Spatial Development Framework (GSDF) identifies several strategic initiatives that are focused on implementation within the next 5 to 10 years, which relates to urban structuring and priority action areas in Gauteng over the next decade. The strategic initiatives in the GSDF 2030 with particular focus on Tshwane are as follows:

- Rosslyn Growth Node (Automotive Industry)
- Mabopane / Hammanskraal (Rail Link Upgrade)
- Upgrade Tshwane Inner-rail loop
- Mamelodi (Urban Integration of Peripheral townships)
- Atteridgeville (Urban Integration of Peripheral townships)
Figure 1: Composite Spatial Structure
The GSDF has formulated a Spatial Development Vision together with Spatial Development Principles which will assist the Transportation Chapter of the MSDF to draw strategic long term direction.

The Spatial Development Vision particularly aims to create a connected space that provides for the needs of all who are born in or drawn to the province of Gauteng. A Gauteng which experiences economic growth through the connection of nodes and multi-modal activity corridors. These corridors an environment where people can walk, cycle and relax in public spaces. A Gauteng which has a range of public transport modes ensures affordable, province-wide interconnectedness and access to the full spectrum of economic, cultural and educational opportunities.

The Spatial Development Principles as proposed by the GSDF 2030 are represented as follows:

- Ensure connectivity between nodes and connectivity from surrounding areas (e.g. lower density neighbourhoods, major industrial zones or the rural hinterland) to areas of concentration, which implies a hierarchy of movement routes.
- Include investment in public transport along the key connectors to link various nodes.
- Incorporate connectivity to and through a green open system throughout the built environment.
- Address the spatial marginalisation of townships (and the overwhelming tendency to locate most government-funded housing projects on the periphery) through spatial integration and development of housing on well-located land parcels.
- Prevent further spatial fragmentation.
- Recognise secondary towns as part of the overall settlement and economic network of the province, with functional linkages between the urban conurbation and the hinterland.
In realizing the challenges which the City faces in the transportation sector and the spatial inequalities created by the lack of public transport modes which are efficient and affordable, this chapter of the MSDF wishes to adopt a strategic purpose which aims to address issues of transport integration and inclusion, reducing travel distances and creating safe movement and connectivity within the City.

**Strategic Purpose**

“A Transport System which provides access to educational, economic, and social facilities while and reducing travel distances by providing for the efficient, cost effective, safe and environmentally sustainable movement of people and goods within all of the City of Tshwane.”
5.6 THE CURRENT TRANSPORT REALITY

It is important to understand the spatial outlay of the City and the characteristics of the transport system in the City before various strategies to address these discontinuities are developed. The results are telling of a spatial fragmentation which requires an effort by to open the City to more opportunities from a transportation perspective. This section will not analyze the household travel survey which was a major data collection exercise commissioned for the Comprehensive Integrated Transport Plan (2015-2020) but will endeavor to surmise the data collected in 2014 and the results thereof, to understand and deduce a clearer spatial reality.

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<th>The main employment economies in the City include:</th>
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<td>□ CBD/Inner City</td>
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<td>□ Hatfield-Arcadia-Sunnyside</td>
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<td>□ Silverton-Waltloo, Pretoria West</td>
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<td>□ Rosslyn,</td>
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<td>□ Centurion.</td>
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<th>Marginalised Communities are clustered as such:</th>
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<td>□ Mamelodi (east)</td>
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<td>□ Olievenhoutbosch (south west)</td>
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<td>□ Atteridgeville (west)</td>
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<td>□ GaRankuwa-Mabopane-Soshanguve-Winterveld (north west)</td>
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<td>□ Temba-Hammanskraal (north).</td>
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<th>The main Retail and Office node functions are mostly concentrated as such:</th>
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<td>□ CBD/Inner City (2 946 500m2)</td>
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<td>□ Centurion CBD Strip (1 319 400m2)</td>
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The main industrial complexes are located at:

- Hatfield/Arcadia/Sunnyside (1 130 800m²)
- Greater Menlyn (620 000m²).
- Rosslyn/Klerksoord (near Soshanguve)
- Waltloo (near Mamelodi)
- Centurion Strip, Babelegi (near Temba)
- Pretoria West Industrial (near Atteridgeville)

Table 1: Current Spatial Reality
(Source: CITP 2015-2020)

5.6.1 Public Transport System: At a Glance

There are a number of nodes which form major centers of economic development and job opportunities and the synergies that exist between these nodes are what enable many of them to be sustainable. However those synergies cannot exist without efficient linkages between the nodes. Connectivity via the Integrated Rapid Public Transport Network (IRPTN) system effectively strings the city together. This network comprises both rail and road based rapid transit infrastructure. It includes all the major railway stations along the PRASA rail network as well as the current and planned Tshwane Rapid Transit Network (also known as the Bus Rapid Transit (BRT) or A Re Yeng), the Gautrain and proposed extensions. The spatial strategy of the MSDF seeks to promote densification along the IRPTN corridors and around the nodal points.

Current public transport services in the City have been influenced by the partisan spatial planning, characterised by long travel distances and travel times. While there are public transport services (rail and road based), they do not always meet the needs of customers adequately. This gave rise to a taxi industry that responded to the customer needs and as urban migration continued, so the taxi industry started to grow; largely in an unlicensed and uncontrolled manner. The road based public transport facilities, especially bus termini, bus stops and taxi ranks are inadequate and do not subscribe to promoting integration between modes. More importantly any new facilities or upgrades are based on addressing the basic needs of the customer and that of the operator, rather than creating an integrated
system of public transport which focuses on the needs of the commuter both first and last mile.

5.6.2 Minibus Taxi

The minibus taxi industry plays a pivotal role in providing public transport services that cover most areas of the City. Currently the taxi industry responds much quicker than other public transport modes due to their proactive response to demand. Furthermore, new residential and commercial developments approved by the City lack adequate public transport plans and implementation thereof. This weakness provides the taxi industry with opportunities due to the reactivity of the City. From the information available there are 36 taxi associations operating in the City of Tshwane. This information relates to registered public transport services and it is assumed that all vehicles are linked to valid operating licenses or permits.

However, there is an extremely large component of illegal operations operating in the City, which cannot be accounted for. The operational plan of the IRPTN aims to include a phased plan that will see the transformation of the minibus taxi services such that they eventually comply with the City’s overall IRPTN and transport plans (MSDF, 2012).

The map in below provides an indication of the all of the taxi routes that are currently serviced by minibus taxis within the City. The majority of services represent a radial type of service which has its centre at the CBD. However, there are other destinations and attractions such as zones that provide economic opportunities and job potential (for example Rosslyn, Menlyn, Centurion, Silverton). The desire lines tend to influence services along the main demand corridors that link these nodes.
The City is served by the following bus services:

- Subsidised bus services and managed by the Gauteng Province, and
- Tshwane Bus Services.

There are extensive bus routes operating throughout the City as well as from the neighbouring provinces of Mpumalanga, North West and Limpopo which generally operate in the morning and afternoon peaks. Tshwane Bus Services provides limited services which have not expanded into new developments in the City. Figure 3 below, provides an indication of the extent of all bus routes in the City.

**Tshwane Bus Services (TBS)** The TBS services tend to service the City and its adjoining suburbs. Until recently the service was associated with poor service levels, low ridership, aging fleet and not responsive to customer demand. However, TBS has recapitalised the fleet.

**Subsidised Bus Services**

These services were designed to provide transport services to dormitory township and homelands. This has created spatial distortions that have not yet been addressed from a land use and transport planning perspective. The current fragmented institutional arrangement limits the City in terms of planning and decision making in respect of these contracts. These contracts have not change significantly since 1997.

**5.6.4 RAIL**

The railway network should be the backbone of long-distance travel, within Tshwane, providing connectivity to surrounding municipalities and provinces. The City has extensive boundaries and a number of commuters who, due to unique circumstances and an undersupply of reliable public transport, traverse the length or breadth of Tshwane to commute from home to work and vice versa.

On the other hand, there are also a number of people that live within Tshwane but work outside of Tshwane boundaries (and vice versa) who require cost-effective means to commuting within the City.

While Tshwane has a comprehensive network of rail infrastructure, certain parts of it have been decommissioned, while others, including train stations, are in a dire need of maintenance. The perceptions around rail in Tshwane are not positive. It is therefore critical that planning for our trains and train stations is such that the standard of service offers a safe, attractive and efficient service that would even be used as an option by business commuters.

**RING RAIL**

The rail network in the Tshwane metropolitan area additionally comprises a circular system around the Inner City which is linked via feeder lines to communities on the periphery of the municipal area (e.g. Ga-Rankuwa, Mabopane, Temba, Soshanguve, Atteridgeville and Mamelodi). The ring rail network itself links with a number of activity nodes, including a variety of education, health, sport and recreation facilities, as well as a number of residential areas of all income groups.

The importance of the Capital Core cannot be overemphasised. The inner city still remains one of the most important employers in Tshwane. Thus, access to the inner city is vitally important for the
overall economic sustainability of the City. Along the existing rail infrastructure tracks, is the ‘ring-rail’.

The aim of the Ring Rail project is to optimally utilise the existing, centrally located rail infrastructure to enhance public transport in the metropolitan area through the integration of land uses and transport modes. The Ring Rail provides an ideal opportunity for densification and mixed-use development in the central part of the metropolitan area, and more specifically the roughly 1km influence area around the network. The ring-rail system will move a great number of people into the CBD.

Through the rationalisation of the IRPTN operational plan, other forms of public transport should support the feeder routes of the ring-rail.

**Figure 3: Ring Rail**
(Source MSDF, 2012)

**PRASA**

The main passenger commuter line in the City is provided by the Passenger Rail Agency of South Africa (PRASA). A Division of PRASA is the PRASA Rail Operations which manages the urban metro commuter service provided by Metrorail. Other services provided by PRASA in the City are the Tshwane Business Express from Tshwane to Johannesburg and the Shosholoza Meyl which provides long distance public transport together with the bus services of PRASA (Translux and City to City).

As part of the modernisation programme undertaken by PRASA, it has embarked on a major upgrade of its system that includes, amongst other things:

- New rolling stock;
- Improvement the signalling systems.
- Station upgrades;
- New upgraded train depots;
- Upgraded operational plans; and
- Re-focused timetables.

In Gauteng, PRASA has identified a “super-corridor” that is subject to priority in the modernisation process described above. The corridor in Gauteng links Mabopane-Pretoria-Centurion-Kempton Park-Germiston- Johannesburg- Naledi.

Some of the benefits of the modernisation and the new rolling stock include:

- Addressing the capacity shortages on the line;
- Alleviating the crush-loads being experienced on the Mabopane-Pretoria rail corridor; and
• Decreasing the travel time on this corridor by approximately 20 minutes.
The PRASA network, an illustration of which can be found in the Figure below, comprises of the following lines:
Mabopane - De Wildt - Belle Ombre – Pretoria
- The Mabopane line to the north is one of the demonstration corridors in the PRASA rail modernisation initiative due to the high volume of passengers that it carries (up to 65 000 per day).
- The PRASA plans for this demonstration corridor will prioritise the new rolling stock and new generation stations.

Pienaarspoort – Hercules & Pretoria
- PRASA has plans to use the Mamelodi to CBD line as the ‘proof of concept’ as part of the rail modernisation prior to rollout of the Mabopane demonstration corridor. It is envisaged that this would be Phase 1A of the ‘proof of concept’.

Saulsville - Pretoria
- The link to the CBD at Pretoria Station provides a continuous east-west link and this line would be Phase 1B of the ‘proof of concept’.

Eerste Fabrieke – Mahube Valley (Pankop)
- This line is presently a non-electrified Transnet Freight Rail line which is envisaged as a passenger line to serve Mahube Valley (Mamelodi). Two stations are planned on this line.

GAUTRAIN
The Gautrain is a premium rapid rail system that provides a commuter service line from Johannesburg and Tshwane (North-South) and to the O.R Tambo International Airport (East-West). It is a strategic development initiative that is aimed at economic development and job creation, over and above its benefits from a public transport perspective and the reduction in traffic pressure on major roads especially between Pretoria and Johannesburg. This commuter service links three important nodes in Tshwane namely Centurion, Pretoria CBD and Hatfield. As such, the Gautrain will have a major impact on the demarcated destination Gautrain stations in Tshwane, in terms of future development of these areas. These nodes are also complemented by Gautrain feeder bus routes.

The aim of the Gautrain Rapid Rail Link is to serve as a commuter link between cities and to enhance the accessibility to the major centres in Gauteng. It is envisaged that the Gautrain Rapid Rail Link will contribute to the development of the Gauteng Province by regenerating the Inner Cities, strengthening of existing nodes and infrastructure, and creating new growth areas.

The Centurion property market is has received investment since the development of the Gautrain station. In addition to this, the newly upgraded highways will make the Centurion area a more economically viable area to locate business enterprise, including increased accessibility to a potential workforce from areas south of Tshwane. The newly planned Tshwane International Convention Centre (TICC) and the Centurion Station is expected to influence property values positively in the area.

The Pretoria Station is situated in the inner city which is already formally established and forms the economic core of the metropolitan area. Pretoria Station is deemed to bring with it urban upliftment and revitalisation encouraging business, residential and tourism trips. In particular existing land uses must be improved and renovated and pedestrian links created ensuring safe passage for commuters.

The draft Precinct Plan for the Hatfield area aims to increase transit-oriented developments around the Gautrain station. These developments will benefit from the fast and reliable public transport
service, but will also contribute to increase the patronage of the Gautrain, particularly passengers that walk to the station. The other objective is residential densification. There is an international tendency of densification around public transport nodes, particularly metro and inter-city railway services such as the Gautrain. Increased densities of residents are a prerequisite of a viable and efficient public transport service and a policy of residential densification will support the feasibility of the Gautrain.

To ensure the viability of these stations, the areas around the stations will have to comprise of a specific land use mix (with a strong emphasis on residential development) at a specific intensity and density with a strong focus on pedestrians and inter-modal transfer facilities. They will also have to comply with specific urban design requirements. Local Spatial Frameworks and Precinct Plans for and around these areas will guide the implementation of development here. The development of the rapid rail (Gautrain) towards the south linking with the economic centres of Johannesburg and the Airport is a major step in a strategic change in direction from a predominantly private vehicle transport system to creating an appropriate alternative in the form of a public transport system over the long term.

The Gautrain is a working example a mode of transport employing an intelligent system through the use of its electronic ticketing system at both the Gautrain stations and on the Gautrain buses. A detailed description of passenger rail services in the City can be found in the Commuter Rail Strategy in Section 7.6.5 of the CITP, 2015-2020.

The Gautrain project team is currently investigating the possibility to extend the Gautrain line within the City to include a line from Irene to Mamelodi. From a strategic spatial planning perspective, and in view that the proposed extensions are in close range of the Menlyn area, which is a metropolitan node, the extension is supported.

5.6.5 Major Public Transport Corridors

In identifying major public transport and development corridors the approach taken by the CIPT, 2015-2020 was to ensure that such corridors coincide with those identified in the Metropolitan Spatial Development Framework, 2012 and that the all 7 Regions of the City are adequately covered. Nine (9) corridors were identified based on the previous MSDF and key public transport routes. The corridors do not consist of a single road but of multiple routes that serve major origins and destinations. This information is valuable in the current revision of the MSDF as it begins to illustrate and highlight the true movement patterns of commuters within the City. The corridors include all modes of transport (road and rail) and certain corridors cut across more than one region.
<table>
<thead>
<tr>
<th>NO.</th>
<th>CORRIDOR</th>
<th>REGION</th>
<th>MAJOR ORIGINS</th>
<th>LOCATION</th>
<th>ROUTE (MAIN ROADS)</th>
</tr>
</thead>
</table>
| 1   | North (N)      | 2          | - Hammanskraal  
- Sinoville  
- Temba                                                                  | CBD      | N1, R101                                |
| 2.  | North East (NE)| 5          | - Rayton  
- Cullinan  
- Kwagafontein  
- KwaMhlanga  
- Moloto  
- Zonderwater | CBD      | R573                                    |
| 3.  | East (E1)      | 6 & 7      | - Bronkhorstspruit  
- Ekangala                                                              | CBD      | R513, R104 and N4                        |
| 4.  | East (E2)      | 6          | - Mamelodi                                                               | CBD      | M8, M10, M12, M14                        |
| 5.  | South East (SE)| 6          | - Pretoria East                                                         | CBD      | M30, M6, M11, M9                         |
| 6.  | South (S)      | 6          | - Centurion                                                             | CBD      | R21, R101, M18, N14                      |
| 7.  | South West (SW)| 3 & 4      | - Olievenhoutbosch  
- Laudium  
- Thatchfield                                                           | CBD      | R55                                     |
| 8.  | West (W)       | 3          | - Atteridgeville  
- Saulsville                                                            | CBD      | R104, N4, R514, Maunde Street             |
| 9.  | North West (NW)| 1          | - Ga-Rankuwa,  
- Mabopane  
- Winterveld  
- Soshanguve                                                         | CBD      | M35, R80, M17                           |
North Corridor (N)
The main road based public transport routes associated with the North corridor are found on the N1 and R101. The routes and passenger facilities associated with the route that may be used by the holders of operating licenses for the route are illustrated in the Figure 7.13 below:

Current Demand vs Future Demand

The current demand for taxi type services on the corridor during the AM peak hour is 3697 and the future demand is 4235. This results in a potential increase in demand of approximately 14.6%.

Analysis of Supply vs Demand
According to the counts the maximum passenger supply/capacity currently (2013) provided on this corridor is approximately 2276 seats and the model shows a base demand of 3697. The difference in the current supply and current demand appears to be very high (62%).

**Figure 4: Taxi Zone: North Corridor**

**North East Corridor (NE)**

The main road based public transport route associated with the North East corridor is found on the R573 (Moloto Road). The routes associated with the route that may be used by the holders of operating licenses for the route are illustrated in the Figure 7.14 below:

**Current Demand vs Future Demand**

The Travel Demand Model from the Feasibility Study for the Moloto Development Corridor (Department of Transport, 2014) was used as the model generated for the purposes of the CITP for this corridor. According to the aforementioned model the current demand for public transport on the corridor during the peak period is +/- 41 246 and the future demand is +/- 47 838. In the region of 10% of these commutes are made using...
taxi type services with the rest being made by bus (with minimal private vehicle usage). From the current demand to the demand in 2020 there is an increase of approximately 16%. As the trip lengths and trip times are long it should be noted that taxi type services are an inappropriate mode for this corridor.

**Figure 5: Taxi Zone (North East Corridor)**

**East Corridor (E1)**
The main road based public transport routes associated with the East corridor are found on the R513, N4 and R104. The routes and passenger facilities associated with the route that may be used by the holders of operating licenses for the route are illustrated in Figure 7.15 below.

**Analysis of Supply vs Demand**
According to the cordon counts completed, the supply of taxi type services operating on this corridor is 1542. The base demand for the corridor is low at this stage as it incorporates mainly peri-urban/rural areas with the small town of Bronkhorstspruit.
The main road based public transport routes associated with the East (Mamelodi) corridor are found on the M8, M10, M12 and M14 along with the Metrorail service running from Greenview & Mamelodi Gardens to Pretoria Station via Koedoespoort. The Metrorail service can be accessed from the following stations along the corridor (Greenview: under construction and Mamelodi Gardens to Pretoria Station). The routes and passenger facilities associated with the route that may be used by the holders of operating licenses for the route are illustrated in the Figure 7.16 below:
Current Demand vs Future Demand

The current demand during the AM peak hour is 19,298. The future demand is 16,881. This means that there is a potential decrease in demand of approximately 12.52%. The possible reason for the decrease in the demand for taxi type services is a result of the introduction of the BRT (Line 2) on the M12. The circumstances in which operating licenses authorising the operation of public transport should be allowed (recommendations). There is a potential decrease in the demand of 12.52% (from the current demand until 2020) as a result of the planned BRT.

Analysis of Supply vs Demand

It was found that there is an adequate supply of taxi type services on this corridor to meet the current demand (19,035 / 19,298).

Figure 7: Taxi Zone (East (Mamelodi) Corridor)

South East Corridor (SE)

The main road based public transport routes associated with the South East corridor are found on the M30, M6, M11 and M9. The routes and passenger facilities associated with the route that may be used by the holders of operating licenses for the route are illustrated in Figure 7.17 below.

Current Demand vs Future Demand
The current demand during the AM peak hour is 3770 and the future demand on these key routes is 1682. The decrease of approximately 55% in the demand for taxi type services on this corridor can be attributed to the introduction of Line 2 of the TRT on large sections of Lynnwood Road and Atterbury Road (M6 & M11). The planned TRT (Line 2) will reduce the need for taxi services along the key routes identified. As a result there will be a need to reduce the number of taxis on this route through an industry transition process.

**Analysis of Supply vs Demand**

It was found that the supply of taxi type provides a maximum capacity of in the region of 3633 and the current demand is approximately 3770 (This creates a minor potential undersupply which can be accommodated by nine 15 seater minibus taxis). However, when the TRT is introduced there may be a shift of passengers from this mode to the TRT creating an oversupply of taxi services.

**South Corridor (S)**

The main road based public transport routes associated with the South corridor are found on the R21, M18, N14 and R101 along with the Metrorail service running from Pinedene station to Pretoria Station. The routes and passenger facilities associated with the route that may be used by the holders of operating licenses for the route are illustrated in Figure 7.18 below.
Current Demand vs Future Demand

On this corridor the current demand during the AM peak hour is 12,018 increasing to 19,729 by 2020. This means that there is a potential increase in demand of approximately 64%.

Analysis of Supply vs Demand

Based on this analysis there may be a need to issue additional operating licenses for services on this corridor.

South West Corridor (SW)

The main road based public transport route associated with the South West corridor is the R55. The routes and passenger facilities associated with the route that may be used by the holders of operating licenses for the route are illustrated in Figure 7.19 below:

Current Demand vs Future Demand

The current demand during the AM peak hour is 5,468, possibly increasing to 7,442 by 2020 (+36%).

Analysis of Supply vs Demand
It is clear that there is a discrepancy between the supply and current demand figures and as a result a comparison between the modelled base and future demand was used to determine whether there is a need to grant additional operating licenses on this corridor.

**West Corridor (W)**

The main road based public transport routes associated with the West corridor are found on the R104, R514, N4 and Maunde Street along with the Metrorail service running from Saulsville station to Pretoria Station. The routes and passenger facilities associated with the route that may be used by the holders of operating licenses for the route are illustrated in Figure 7.20 below:

**Current Demand vs Future Demand**

The current demand during the AM peak hour is 19 595. By 2020 the demand will be in the region of 25 469, a potential increase in demand of approximately 30%.
Analysis of Supply vs Demand

Due to the level of difference between the supply and current demand amounts no conclusion on the potential under/oversupply can be made.

North West Corridor (NW)

The main road based public transport routes associated with the West corridor are found on the M35, R80 and M17 along with the Metrorail service running from Mabopane station and De Wildt Station through to Pretoria Station. The routes and passenger facilities associated with the route that may be used by the holders of operating licenses for the route are illustrated in Figure 7.21 below.

Current Demand vs Future Demand
The current demand during the AM peak hour is 19,595. By 2020 the demand will be in the region of 25,469, a potential increase in demand of approximately 30%, which may be addressed by the extension of the R80.

**Analysis of Supply vs Demand**

Due to the level of difference between the supply and current demand amounts no conclusion on the potential under/oversupply can be made.
5.6.6 Public Transport Services Operating Parallel with each other (Competing for the Same Market)

Buses and taxis can be found on each of the main corridors (bus: red / taxi: green). Rail services operate on the East, South, West and North West corridors. Each of these modes attracts different customers according to their needs and financial situations. The occurrence of transport services operating in parallel with one another is further shown in Table 7.14 and is expanded upon in the Operating License Plan per corridor.

<table>
<thead>
<tr>
<th>CORRIDOR</th>
<th>MAIN ROADS</th>
<th>SERVICES ON CORRIDOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>North (N)</td>
<td>N1, R101</td>
<td>Taxi, Bus</td>
</tr>
<tr>
<td>North East (NE)</td>
<td>R573 (Moloto Road)</td>
<td>Taxi, Bus</td>
</tr>
<tr>
<td>East (E1)</td>
<td>R513, R104, N4</td>
<td>Taxi, Bus</td>
</tr>
<tr>
<td>East (E2) (Mamelodi)</td>
<td>M8, M10, M12, M14</td>
<td>Taxi, Bus, Rail</td>
</tr>
<tr>
<td>South East (SE)</td>
<td>M30, M6, M11, M9</td>
<td>Taxi, Bus</td>
</tr>
<tr>
<td>South (S)</td>
<td>R21, M18, R101, N14</td>
<td>Taxi, Bus, Rail</td>
</tr>
<tr>
<td>South West (SW)</td>
<td>R55</td>
<td>Taxi, Bus, Rail</td>
</tr>
<tr>
<td>West (W)</td>
<td>R104, R514, N4, Maunde Street</td>
<td>Taxi, Bus, Rail</td>
</tr>
<tr>
<td>North West (NW)</td>
<td>M35, R80, M17</td>
<td>Taxi, Bus, Rail</td>
</tr>
</tbody>
</table>

Table 3: Competing Public Transport Services

5.6.7 Major Public Transport Facilities

The following Major Public Transport Interchanges exist in the City of Tshwane:

- Denneboom Interchange Tsamaya road, Mamelodi West.
- Mabopane Interchange - K217 Road.
- Belle Ombre Interchange - c/o Potgieter & Boom Street.
- Kopanong Interchange - Soshanguve South Ext 14.
- Pretoria Station; and

- Wonderboom Station.
- Erasmus terminus (bus).
- Marabastad terminus.
- Soshanguve Station; and
- Wonderboom / Pretoria North Station
5.7 THE INTEGRATED RAPID PUBLIC TRANSPORT NETWORK (IRPTN) LANDSCAPE

The City has embarked on the planning and implementation of the IRPTN, a mass transit system, which will complement the backbone of the network especially integrated with other transport services and aims to serve the public transport needs of all commuters within the City. The Tshwane IRPTN consists of all the public transport related routes and modes including rail, bus, minibus taxis, metered taxis and non-motorised transport (NMT) in the City. A Re Yeng is a Bus Rapid Transit (BRT) system consisting of five identified phases of the IRPTN trunk routes and supported by feeder and distribution routes.

Figure 7.22 below, shows the total IRPTN and the BRT total system and the phasing of the implementation thereof. The IRPTN has been designed provide wide coverage and access to activity nodes within the City, improve accessibility and movement for passengers, contribute to the reduction of travel costs for commuters support economic development by enabling commuters to access their places of employment and be of a high quality, safe, reliable and convenient for the commuters of the City of Tshwane.

However, the system has experienced a slow implementation and roll out, with only line 1A (Tshwane CBD to Rainbow Junction), line 1B (Rainbow Junction to Kopanong) and line 2A (Tshwane CBD to Hatfield) being implemented and operational. It is evident that the expectations of the BRT system have not been met; which has an impact on the spatial structuring of the City; from a strategic spatial planning perspective. Furthermore the slowed implementation has the implication that the vast stretches of the populace which are in need of a public transport service remain poorly serviced and economically, socially and educationally excluded.

As mentioned in the earlier sections of the Chapter, in areas where public transport our public transport network is not yet at a stage where’re all communities are adequately provided for, the minibus taxi continues to fulfill an important role which should otherwise be integrated into a complete IRPTN network. Key to the function of the IRPTN is the modal transfer facility, selecting appropriate mode of services and eliminating competing or parallel services. During the time that this MSDF is being drafted, the City is in the process of adopting an Optimisation Strategy which desires to integrate all transport planning within the City, implement a cost effective and cost sustainable system, improve customer experience and continually monitor the system for its betterment.

Investment in mass transit, as required by the IRPTN, has the potential to restructure the way our City grows. Investment in the system will allow that regardless of a commuter’s location in the City, equal access for all residents to nodes, economic activity, social and educational resources will be provided for. Further the City has approved guidelines for densification and intensification along the BRT lines and around stations, which are promotes the development of inclusionary housing along public transport routes and is a catalyst for investment.

The development of the IRPTN would include certain rail corridors. The key rail corridors of the IRPTN due to the high volumes are:

- Mabopane line running southwards to Pretoria Station.
- Mamelodi line to the CBD.

As rail must be the ‘backbone’ of public transport in the City, the planned BRT that runs in parallel to rail must be seen to add additional capacity instead of being direct competition.
Figure:
5.8 FREIGHT LANDSCAPE IN TSHWANE

5.8.1 The primary freight generators:

- Heavy industrial areas (Mittal, PPC and Transnet workshops at Koedoespoort and Capital Park).
- Light industrial areas (small scale manufacturing and warehousing).
- Container terminal(s).
- Fuel tanks (Waltloo).
- Automotive manufactures.
- Distribution centres, SAB, ABI Coka Cola and the fresh produce market.

Most of the industries lie linearly from West to East in the CBD. Rosslyn on the North West, Temba/ Babalegi on the far North and Centurion on the South are located close to the N1 and N4 freeway network.

5.8.2 Constraints experienced by freight generating facilities:

- Limited capacity to expand.
- Located in the CBD and in or close to residential areas.
- Limited road access.
- Limited rail access.
- Rail access through commuter rail network.
- Distribution through the CBD during peak hours.
- Safety risk.
- Environmental risk.
- In most instances the facilities are old and will reach the end of their life cycle within the next few years.
5.9 REGIONAL PATTERNS AND TRENDS

This section deals with the regional patterns and trends in passenger transport, based on the Tshwane Household Transport Survey, undertaken by the City in 2013. While the data captured may be six (6) years old and may have changed slightly, the focus is on the broader impact of passenger transport on the movement of commuters. Information in this section will be represented graphically as far as possible as a statistical representation method, to show the comparisons and trends which develop within the Regions.

The population distribution, drawn from the THTS is a necessary data tool, highlighting the spread of households across the City.

The role of the private car and its position as a preferred mode of travel, has been discussed in the Road Network section above. However as much as this is the dominant preference, it should not be ignored that the vast majority of Tshwane commuters are economically marginalized and are predominantly lower income earners and thus cannot afford a private car as a means of travel.

The areas of Wallmannsthal AH, Mamelodi, Eesterust, Nellmapius, Hammanskraal, Ekangala, Soshanguve, Tshwane Far East, Tshwane North East, Tshwane Far South East, Bronkhorstspruit and Tshwane Far South West which are spatially and economically marginalized form the lower quantile of the City’s economy.

Region 4 is characterized as the City’s predominantly medium to upper income, together with Region 3 and Region 6 are structured around transport connectivity links and are more inclined to have at least one private car available to them as a mode of transport.

**Note:**
Region 1, Region 6, Region 3 and Region 2 have highest population numbers. Region 5 and Region 7 have the lowest population numbers.
Of the 33% with access to a private car, the majority is in Region 4, followed by Region 3 then Region 6.

<table>
<thead>
<tr>
<th>Region</th>
<th>Work Related</th>
<th>Education</th>
<th>To go Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20%</td>
<td>24%</td>
<td>48%</td>
</tr>
<tr>
<td>2</td>
<td>19%</td>
<td>26%</td>
<td>48%</td>
</tr>
<tr>
<td>3</td>
<td>27%</td>
<td>20%</td>
<td>46%</td>
</tr>
<tr>
<td>4</td>
<td>32%</td>
<td>18%</td>
<td>43%</td>
</tr>
<tr>
<td>5</td>
<td>27%</td>
<td>23%</td>
<td>48%</td>
</tr>
<tr>
<td>6</td>
<td>27%</td>
<td>22%</td>
<td>43%</td>
</tr>
<tr>
<td>7</td>
<td>23%</td>
<td>30%</td>
<td>43%</td>
</tr>
<tr>
<td>Total City</td>
<td></td>
<td>23%</td>
<td>46%</td>
</tr>
</tbody>
</table>

**Table ..........**

The table above gives a fair amount of insight into the reason why people in Tshwane travel. It is rather unexpected that the largest proportion of trips are made to return home. This indicates that a large proportion of the population is has migrated to Tshwane for reasons of employment and education and frequently travel home. This is followed by travel to work and lastly travel to education facilities or institutions.

A third of all trips made within the City are made by NMT. This is largely in the rural reaches and the spatial outskirts of Region 7, Region 5 and Region 2 where passengers do not have any choice in public transport and therefor have to walk. This is however not limited to rural Tshwane. Other parts of the City, albeit to a lesser degree, also use NMT to access services within the City.

The proportion made by Public, Private and Non Motorised Transport is similar. This can be evidenced in the table below.
The Public Transport is used widely in the majority of the City with the most use in Region 1 and the least use in Region 6. A third of all trips in the City are made by private transport with the majority of those trips being attributable to Region 4 and Region 3.
5.10 TRANSPORT SHORTCOMINGS
Tshwane, the Administrative Seat of the South African government and home to diplomatic embassies and consulates, has an impressive concentration of academic, research, science and technology institutes...

Its diversified offering make it a truly attractive Capital City within which people can live, work and play. Its diversity also shows through the bloodstream, as the home to people from all over the continent and beyond.

Transport networks form an important pillar in spatially defining a city - unlocking housing potential, connecting communities, opening up the economy and generally enhancing the city’s competitive edge in the face of the global economy. To the 35.5% of public transport users, the Tshwane public transportation system has added value to their lives, however in many ways the system and its networks is falling short of doing so.
DEVELOPMENT OF THE STRATEGY

In order to contribute to the Strategic Purpose the Spatial Discontinuities which affect the City need to be addressed.

The Proposals which follow take bold steps to endeavor to achieve this.
5.10 PROPOSALS AND INTERVENTIONS

The transportation chapter of the MSDF has taken a position to evaluate the regional patterns and develop a series of interventions and strategies aimed at realising the long term transport vision of the City. It also lists a series of interventions and strategies to achieve the proposals. The Strategic Purpose formulated by the document aims to contribute to access to employment, social and economic inclusion and reduce travel distances by providing for the efficient, effective, safe and sustainable movement of people and goods within all of the City of Tshwane will be the echo through all proposals and interventions.

The Development of the Transportation Strategy through the series of proposals that follow, is a medium to long term Transportation Strategy for the City, spanning over the entire planning horizon of the MSDF. It can be interpreted that, to achieve the Strategic Purpose which aims to eradicate the Spatial Discontinuities which affect the City. The following Spatially Targeted proposals are critical drivers for change.

5.10.1 FREIGHT AND LOGISTICS PROPOSAL

Transportation of freight is a vital element in planning for prosperity. A fundamental prerequisite for growth is the expansion of trade. However, it is the transport linkages that enable the exploitation and development of natural and human resources. Therefore, a region that has an inefficient and ineffective transport sector, would find it extremely difficult, if not impossible, to trade competitively. A region that is well equipped to receive, sort and rapidly deliver goods and services cost effectively will profit considerably from these abilities. Logistic inefficiencies severely retard competitiveness and as a result encourage the transfer of economic activity to more favourable locations.

Tshwane CITP, 2015

It is clear from the statement above that in order to achieve economic efficiency in the movement of goods, planning for the transportation of freight, handing and the resultant distribution thereof is vital for the City’s economy. The primary freight generators in the City include Heavy industrial areas (Mittal, PPC and Transnet workshops at Koedoespoort and Capital Park; Pretoria West), Light industrial areas (small scale manufacturing and warehousing), Container terminal(s), Fuel tanks (Waltloo), Automotive manufactures, Distribution centre (SAB, ABI Coca-Cola and the Fresh Produce Market).
Planning for freight is especially true in the case of Tshwane, where Government and Transnet have identified Strategic Infrastructure Projects (SIP) which will have a direct impact on the development of the area. The development of the Pyramid South intermodal facility, Freight link into Rosslyn, the existing Rosslyn Automotive, and the Freight Ring Rail are key drivers for the proposal of Freight as a Spatial Target.

Gauteng as a province is the second highest contributor to logistic costs in South Africa. One of the biggest challenges in South Africa will be to provide sufficient road and rail capacity in the next 25 years, considering the fact that the capacity expansion programmes at the port of Durban mainly make provision for container terminals and an automotive terminal which directly affect Tshwane. The historical shift of freight from rail to road resulted in greater congestion on roads an increased maintenance and upgrading costs. Aggravating congestion in urban areas is the location of freight/intermodal terminals within built-up urban areas, although plans for new terminals may alleviate this problem. However, crucially, the existing rail network does not have sufficient capacity or terminals to supply the current and future demand nor to accommodate the required shift of freight back to rail.

THE PROPOSAL: PWV 2 / PWV17 / RING ROAD LINK TO OR TAMBO LOGISTICS HUB

All points mentioned in the paragraphs above create an opportunity for the City plan and elevate the freight function to greater national and international heights. Through the Rosslyn Automotive and the Pyramid South Intermodal Hub the City may critically influence the position of its intermodal freight offering as one of the fastest growing commodities in South Africa. The freight terminal has the potential to generate two to three million heavy vehicle trips per annum. The PWV 2 / PWV 17 is a strategic Freight and Mobility Road identified by the Gauteng 25 Year ITMP. Its function is part of a strategic ring road for the Gauteng Province. Tough discussions on the focus for movement freight are centered on the move from road to rail, the existing rail network does not have sufficient capacity or terminals to supply the current and future demand. It is for this reason that the MSDF proposes the Rosslyn Automotive and the Pyramid South Intermodal Hub be a strategic link to the OR Tambo Logistics hub to re-entrench the Gauteng City Region model through the prioritization of the PWV 2 / PWV 17 Ring Road and the Ring Rail proposed by the Gauteng 25 year ITMP.

Other road projects which have been identified to realize the freight plan are:

- K99 (from the N4 West to provide access to the Pyramid terminal from the South);
- K6 (to provide connectivity between Rosslyn and Pyramid);
- K14 (to provide connectivity to Rainbow Junction and Pretoria North);
- PWV 17 (also provides access to the PWV 5 into Midrand and Johannesburg);
- PWV 9 (as a critical corridor between the N14 and N4 West to divert traffic from the north around Tshwane CBD).
Gauteng SDF 2030: Integrated Transport Master Plan 2013 - Freight Transport Network and Airports

Legend
- Gauteng Province
- Built-up area

Airports
- International
- Local

Freight terminals
- Automotive
- Freight terminal
- Freight terminal / Future

Class 1 Freight Routes
Other Freight Routes
Ring Rail Concept
Future Rail Freight Line

Source:
Gauteng Integrated Transport Master Plan 2013

Date created: Tuesday, 08 March 2016
Author: Willem Badenhorst (MandalalGIS)
Email: willem@mandalagis.co.za
Coordinate System: Gauteng TM
Projection: Transverse Mercator
Datum: Hartebeestpoort 1994
5.10.2 RAIL AS THE PUBLIC TRANSPORT BACKBONE

The public transport in South Africa is marred by a general dissatisfaction by commenters. The public transport system is not sufficiently customer centric resulting in poor service levels, delays, inaccessible service, and is generally unsafe. It does not reflect the world-class aspiration of the NDP 2030 of an integrated passenger transport system and access to opportunities for all (NAPMAP 2050). With the introduction of the IRPTN, the hope was for a more integrated public transport system which would enable users to access and enjoy seamless movement through the various modes of transport, enjoy a shorter travel distance, enjoy a safe and reliable service and further bridge the spatial inequalities of the spatial form. This has not been achieved.

PRASA in their MTREF 2019/20 Corporate Plan have correctly put it: Transportation cuts across the economy, environmental sustainability, spatial transformation, global connectivity, state capability, social cohesion and health.

Where people live and work matters a great deal to the function of a city. Living far from employment, with poor access to basic services and low levels of participation in the economy and spending the entire earning on public transport is a recipe for a dysfunctional society. Through the years and the degrading rail infrastructure, the road mode of travel has enjoyed a larger share of the market over rail mode of travel. This is not without its consequences because the unhealthy competition of the road transport mode has led to the mini bus taxi monopolizing the market over the bus services, particularly in urban commutes, due to the versatility and reach of the mini bus taxi. The minibus taxi industry however faces the challenge that it is an unregulated informal system which does not fit into the City’s operational plans.

PRASA’s financial performance and service offering is at an all-time low. The service, reliability, predictability and safety is on a continual decline. Adding to the challenges is the rail operations which have over the years seen a sharp decline in passenger patronage from 646 million passenger trips to recorded in 2009 to 472 million in 2012, a stark 34% drop in performance. The financial year of 2016/17 had a drop to 372 million passenger trips and this decline continues.
PRASA’s Turn Around Strategy

PRASA has adopted a turnaround strategy, employing the following objectives to reach its goal:

<table>
<thead>
<tr>
<th>The Objective</th>
<th>The Deliverables</th>
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<tr>
<td><strong>Objective 1:</strong> Improve the customer experience</td>
<td>Customer centricity throughout operations</td>
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<td><strong>Objective 2:</strong> Improve the rail performance</td>
<td>Rail operations and Rail engineering</td>
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<td><strong>Objective 3:</strong> Re-align support functions to achieve an efficient rail business</td>
<td>ICT, Supply Chain Management, Human Capital, Financial Efficiencies</td>
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<td><strong>Objective 4:</strong> Modernise the rail system through the R173 Billion Investment Programme</td>
<td>Rolling stock fleet renewal programme, train manufacturing activities, local factory development, signaling programme, depot management, 120km/H perway programme</td>
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**Objective 5:** Expand rail networks and services through regional/provincial corridor expansions and introduction of new services

<table>
<thead>
<tr>
<th>Hammanskraal – Pretorail Rail Corridor</th>
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<td>Moloto Rail Corridor</td>
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**Other Planned Service Offerings**

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<th>Light Rail Solutions</th>
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<td>High Speed Project</td>
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<td>Integrated Ticketing (new ticketing system which negates with other modes)</td>
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**THE PROPOSAL: HAMMANSKRAAL - PRETORIA RAIL CORRIDOR**

The Hammanskraal to Pretoria Rail Corridor was served by a limited passenger train service until 1987. Due to long commute time this service became unpopular with commuters. Based on the recommendations of a study done by the Department of Transport and the Council for Scientific and Industrial Research (CSIR) in 1986, the service was terminated towards end of 1987. Vast majority of commuters travel by bus. Hammanskraal is situated approximately 40km to the north of the City, which renders it isolated from the rest of the City; especially since it separated by large expanse of agricultural land.

Pre-feasibility studies done in 2004 and again in 2010 found that the passenger train service could only be viable if the parallel competing bus service is terminated. The RSDF and GSDF have identified Hammanskraal as an activity node and it is pivotally in need of major road and rail
networks to be constructed and/or upgraded as a top priority. The National (NT) Treasury has approved funding for the development of Hammanskraal area as part of the Tsosoloso Programme, on condition that PRASA commits itself to the reintroduction of the train passenger service.

Through the prioritisation of rail as the backbone of public transportation in the north of the City, Spatial divisions within the City which continue to define the sparse pattern of settlement will be minimised. The MSDF has elevated the prioritisation of Rail as the backbone of public transport and this is one of the key priorities in order to abolish spatial discontinuities.

**THE PROPOSAL: MOLOTO RAIL CORRIDOR**

The Moloto Rail Corridor is an imperative project for Tshwane to elevate rail as the backbone of public transport. The Moloto Rail Corridor involves a new integrated multi-modal transport system that is to serve as a spine and catalyst for economic development connecting Gauteng, Mpumalanga and Limpopo. The Minister of Transport gave a mandate for the project in 2006 and indicated that it must be treated as part of the priority corridor strategy of the national Passenger Rail Plan.

The project is a joint inter-governmental initiative consisting of the Department of Transport, PRASA and the provincial governments of Gauteng, Limpopo and Mpumalanga. The district municipalities of Nkangala, Sekhukhune and Metsweding and Tshwane Metro also form a part of the initiative. This initiative was initiated due to various passenger public transport problems that have developed incrementally over time.

In addressing the transport challenges, the Department of Transport has introduced a three pronged-approach:

1. Optimise the current service design of the contracted bus services;
2. Address the current road infrastructure and improve road safety; and
3. Implement a range of transportation solutions with rail transport forming the backbone of a transport oriented development solution.
In terms of the rail initiative, PRASA concluded a feasibility study in October 2014 that confirmed rapid rail as the preferred long term transport solution for the corridor. PRASA established a Project Management and Implementation office and submitted a Treasury Application approval to NT for project funding considerations.

The MSDF has elevated the prioritisation of Rail as the backbone of public transport and this is one of the key priorities in order to achieve spatial restructuring.

**Interventions for Rail as the Backbone:**

With the aim of achieving this priority, certain interventions are required. They are listed as follows:

- Prioritise rail services in all transportation documents;
- Develop clear proposals for integration between rail and other modes of public transport;
- Redevelop PRASA stations;
- Promote better land use integration with railway development
- Promote densification to strengthen high volume travel
- Promote high connectivity between provinces
- Make rail train more attractive and safer to the commuter.

**5.10.3 OPENING TSHWANE THROUGH THE PWV 9**
Tshwane forms part of a larger Gauteng City Region and its economy is closely connected to the spatial economy of the neighbouring municipalities and also nationally as part of the economic engine of the country. From that perspective, the idea of “REOPENING TSHWANE” through one of the most spatially significant routes which intend to connect the areas of opportunity in the city to other areas of economic significance, is critical.

The peak hour bottlenecks identified in urban metropolitan areas are attributed primarily to the lack of high-quality, reliable public transport services as an alternative to private car use. A spatial analysis of the City, looking at where the highest densities of people currently reside, versus their distance from work opportunities, was done. The analysis identified several routes which are important to address the spatial disconnect but the MSDF places its emphasis on the PWV9/ Western Bypass (north), the missing link in the west and north of Tshwane. Without this link, large areas of our city remain marginalised in terms of access to areas of opportunities, and lack support for the latent development potential of the west and north.

The PWV 9 from Soshanguve to Johannesburg is of key importance as a Spatial Restructuring tool for ensuring greater connectivity and enabling a balanced Gauteng wide spatial network. Its function outweighs being a mobility corridor, rather the construction of the PWV 9 will be such that commuters from the northern parts of the City can have a direct access to Centurion-Midrand-Sandton economic areas without having to transact with the congestion of the inner city. This has further benefits for the Northern freight node of Rosslyn-Pyramid South-Wonderboom Airport as the economy can be reached “just-in-time” which further strengthens Tshwane’s competitiveness and enhances the development.
5.10.4 WONDERBOOM AIRPORT A GREAT OPPORTUNITY

Gauteng’s airports include OR Tambo International Airport (ORTIA), Lanseria, Wonderboom, Grand Central and Rand Airport. ORTIA and Lanseria are the only two airports with facilities to accommodate international flights. The South African Air Force has two air force bases in Gauteng: Waterkloof Air Force Base and Zwartkops Air Force Base, which are both located in the south of Tshwane. To satisfy the long-term demand (beyond 2037) for aviation in Gauteng, a second international airport will be required at some stage. A feasibility study needs to be done to select and reserve a site for this airport. Such a study would need to consider airspace management, land availability, environmental impact and accessibility. Given the rate of expansion of the province, once a site has been selected, the land needs to be protected. City airports (e.g. Lanseria and Wonderboom) could also be developed further to alleviate the usage of ORTIA by smaller aircraft. The need for a dedicated cargo airport has been a topic of discussion for some time. More than 90% of all air cargo is transported in the bellies of passenger aircraft, and a maximum of four dedicated cargo aircraft depart per day from ORTIA. In 2012, worldwide cargo grew by only 0.2% with an average load factor of 45.2%. The International Air Travel Association (IATA) forecasts a growth in air cargo of 1.4% per annum over the next five years, with an average load factor of 50%. Therefore, Gauteng does not need a dedicated cargo airport in the short to medium term, and probably also not in the longer term (GDRT, 2013).

– GSDF 2030 -
5.10.5 TRAVEL DEMAND MANAGEMENT AND NON MOTORISED TRANSPORTATION PROPOSAL

With rising car ownership poor quality public transport connectivity and coverage and the absence of real opportunities for modal shift and use, pressure is mounting on the road network’s ability to accommodate increasing levels of single-occupant vehicle (SOV) trips in urban areas in particular. The problem is exacerbated by. In addition, the road network continues to be expanded without consideration as to how best to integrate land use and transport planning to slow down the pace of road network expansion to accommodate growing demand. The result is an increase in road-based traffic congestion, unacceptable levels of air pollution, and a reduction in human productivity.

Lessons from elsewhere in the world suggest that transport demand management (TDM) is a useful tool in conjunction with land use management (LUM) and transport supply management (TSM) to manage effectively the unabated growth in vehicular traffic. TDM is a general term for strategies that increase overall system efficiency by encouraging a shift from SOV trips to non-SOV modes or shifting car trips out of peak periods by influencing driver behaviour. In the main, TDM measures aim to influence travel behaviour for the purpose of reducing and/or redistributing travel demand.

In South Africa, there are no national policies/plans/guidelines to provide strategic direction to the role of TDM in transport planning or to indicate how and when it should be implemented. A comprehensive TDM policy to guide all spheres of government in terms of the full set of measures that are available and where and how these measures should be implemented, considering local site-specific circumstances, appropriate thresholds for implementation and the roles of and linkages between TDM, LUM and TSM, does not exist. TDM is incentivised in the integrated city development grant and is supported in the cities support programme. This only provides for metropolitan municipality support where it matters most. However, metropolitan municipalities rarely define a full package of TDM measures or actions over a 5-year period. Limited attempts by district municipalities and municipalities are made to strategise the implementation of TDM measures and to integrate or combine such measures with TSM and LUM ones.

There is a public and industry misconception that TDM involves only hard measures such as road pricing, congestion charging and e-tolls when the toolkit, in fact, also contains a variety of soft measures. TDM measures are politically and publicly unpopular because, at present, TDM is communicated poorly and is sold on its own merits instead of its value within a wider, more balanced package of measures, including LUM and TSM. Most TDM measures are cost-effective overall but too modest to significantly impact overall travel patterns. Hence, their inclusion in a wider package of measures is essential. The consequences of the lack of a national TDM policy have resulted in ever-increasing traffic congestion, rising CO2 emissions, infrastructure expenditure, mobility and urban sprawl, all of which impact negatively on the economy. Not having a national policy position also exposes the government to debates that distract from a spirit of cooperative governance and holistic decision-making. These
considerations also imply that land use and transport policy integration has not been effective enough and that modal split objectives in IRPTNs have not been met.

There is national recognition that TDM must become a core strategy at the local and provincial levels of government. A comprehensive set of guidelines and policy is required. The emphasis on policy development should be to keep the expansion of the road network to a minimum and to focus on improving the quality and the application of demand management mechanisms.

**STRATEGIC DOCUMENTS REQUIRED TO REALISE MSDF TRANSPORT VISION:**

<table>
<thead>
<tr>
<th>Document</th>
<th>Guideline / Description</th>
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<tr>
<td>Modal Integration Strategy</td>
<td>A strategic document required to realise the need for modal integration throughout the City, in an attempt to curb parallel operating modes competing for the same market share</td>
</tr>
<tr>
<td>Transit Oriented Development Strategy</td>
<td>A strategic document which will support the concept of sustainability of the use land through densification, infill, consolidation and spatial integration.</td>
</tr>
<tr>
<td>Travel Demand Management Strategy</td>
<td>In conjunction with land use management and transport planning, a strategic document is required to manage effectively the unabated growth in vehicular traffic, by influencing driver behavior and modal choices of the commuter.</td>
</tr>
<tr>
<td>Node Intensification Strategy</td>
<td>A strategy required to determine the ideal land use mix and intensification around a node or TOD station.</td>
</tr>
<tr>
<td>Density along Public Transport Strategy (Road and Rail Based)</td>
<td>A strategy is required to guide the growth and densification of development and human settlements along the IRPTN lines, both road and rail based.</td>
</tr>
<tr>
<td>Parking Strategy</td>
<td>Parking strategy is required to determine the national and international standards on parking provision particularly in TOD, Nodal areas and along IRPTN Trunk routes.</td>
</tr>
</tbody>
</table>
Gauteng SDF 2030: Integrated Transport Master Plan 2013 - Class1 Roads

Legend
- District Municipalities
- Gauteng Province
- Built-up area

Current and Planned Road Network
- Class1 Existing
- Class1 Future 2025
- Class1 Future Planned
- Class1 Extension Alternative

Source:
Gauteng Integrated Transport Master Plan 2013
Date created: Monday, 07 March 2016
Author: Willem Badenhorst (MandalaisGIS)
Email: willem@mandalaisgis.co.za
Coordinate System: Gauteng TM
Projection: Transverse Mercator
Datum: Hartebeestpoort 1994