

# CHAPTER:

# 1

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## TSHWANE

Pretoria, the inner city region of Tshwane, a place of great significance, was established in 1855 to house the government of the dispersed Afrikaner communities of the Transvaal (Lemon; 1991: 67). The city later became the capital city of South Africa and today it is envisaged as “to become the leading international African capital city of excellence that empowers the community to prosper in a safe and healthy environment” (TICDRS; 2005: 5).

## EXISTING SPATIAL FORM

Unfortunately, the city is still in the process of achieving this vision, as it is a well-known fact that Pretoria, just as most other South African cities, has a spatial form that is highly inefficient, inequitable and unsustainable (CTSDS; 2007: 1).

The spatial form of Tshwane even today displays the typical characteristics of earlier urban planning policies which give the city a dual city status in which well-developed, affluent parts coexist with vast stretches of the poorly developed periphery, thus depriving the poorest people from any economic opportunities (CTSDS; 2007: 1).

The more affluent parts of this dual city are characterised by

- Low density sprawl
- Fragmentation of development
- Separation of functions that causes great distances between various urban functions and facilities (CTSDS; 2007: 1).

## NATURE OF THE PROBLEM

The above-mentioned characteristics imply that a lot of time and money is spent commuting to and from the city. This activity directly aggravates poverty, as city living is dependant on the use of private vehicles that many people can't afford. All these vehicles cause traffic congestion and pollution. This results in city streets being predominantly designed for vehicles. In turn this results in a public environment that generates few economic opportunities for small scale traders (CTSDS; 2007: 2).

## SOLUTION

In order to counteract this phenomenon and to achieve the vision of the city of Tshwane, numerous sets of legislation, policies and strategies from national to provincial level exist to address the spatial problems that characterise the city (CTSDS; 2007: 2).

If the goals set out in these documents can be met, a city would be created where

- the Public transport systems works and is supported by higher density development
- internal municipal processes are efficient and corruption free and create a good investment environment
- affordable housing in areas integrated with places of opportunity is available to people close to their jobs
- a balance is achieved between the environment, social needs and economic development (CTSDS; 2007: 2).

From the above it is obvious that the importance of the inner city is once again understood. As Dewar (1991:114) states, people come to the city to experience economic, social, cultural and recreational opportunities.

Unfortunately the problems of the dual city will not vanish overnight. The poor will still struggle to survive on the edges of the city, commuting to the inner city on a daily basis to experience all of the opportunities presented by the city. This complex problem faced by the city can only be solved by implementing various solutions and interventions.

One of the main interventions is public transport. As stated in the *Tshwane Spatial Development Strategy 2010 and beyond*, “the ability to travel from one place to another is a basic requirement of a successful metropolitan area.” It further states that all land use types cause the need to travel - from residents commuting between home and work to goods being distributed (CTSDS; 2007: 24).

One of Dewar's (1991: 114) concerns is that there is little use in providing opportunities in cities if these are only accessible to a limited number of people (those who own private transport). Croeser (2005: 12) further remarks that there is a definite need in South Africa to upgrade the public transportation system.

The movement system of a metropolitan area is very important as it ensures that people have greater

accessibility to jobs and social and recreational opportunities, while all these opportunities are accessible at a lower cost, in shorter periods of time and with more convenience (CTSDS; 2007: 24). This movement system also contributes to the linkage of Tshwane with the rest of the Gauteng urban region, which will contribute to Tshwane's attractiveness as an investment destination (CTSDS; 2007: 28).

The present traffic situation in Tshwane is characterized by extreme congestion. This is on the increase due to the peripheral urban growth that feeds the urban sprawl pattern. The insufficient public transport system diminishes the quality of the life of the urban citizen as time and money are wasted daily in travelling to and from places of opportunity (CTMMTDD; 2006: 1).

The *Integrated Development Framework of August 2007* states that the strengths of the existing system must be recognized and expanded. The existing system together with the proposed new Bus Rapid Transit system (BRT) will form the new inner city transport system (IDF; 2007: 77).

It is important to note that the new Bus Rapid Transit system won't replace the existing system, but supplement the systems already in place, thus ensuring the optimal use of existing and planned infrastructure (IDF; 2007: 77). The *BRT Planning Guide of June 2007* also mentions

that the planning and implementation of a BRT system can't be done in isolation, and that the most effective BRT systems are integrated with all the other transport systems (BRTPG; 2007: 6). After the completion of a scoping study conducted in 2007 (BRTOP; 2008: 2), the City Council of Tshwane gave the go-ahead for the new proposed Bus Rapid Transit system project. A full operational plan for implementing a road based public transport system for Tshwane was developed by the companies appointed, with the emphasis on providing a Bus Rapid Transit (BRT) system for the Tshwane metropolitan area. The companies involved were Advanced Logistics Group, S.A. (ALG, the Consultant), Namela Projects (Pty) Ltd and Transports Metropolitans de Barcelona, S.A. (TMB).

BRT is "a high-quality bus based transit system that delivers fast, comfortable, and cost-effective urban mobility through the provision of segregated right-of-way infrastructure, rapid and frequent operations, and excellence in marketing and customer service" (BRTPG; 2007: 11).

According to the City of Tshwane Metropolitan Municipality Transport Development Division, this BRT system will play the following role in the city

- "Support corridor development, which will lead to a more efficient city

- Improve the quality of life of citizens, as travel time will be significantly reduced
- Promote public transport in such a way that it becomes

the preferred mode, even of people who do own a motor vehicle

- Provide a proper feeding system for Gautrain, and in such a way contribute towards efficient public transport within the Province
- Provide proper access to Loftus, one of the 2010 World Cup venues
- Provide proper public transport access to growth points such as Menlyn, Brooklyn, Hatfield, Sunnyside and the CBD
- Provide fast and efficient transport to residents living in the northern areas, the declared 'area of preference' of the city" (CTMMTDD; 2006: 1).

Apart from the proposed BRT system the city is planning an inner city distribution system to help serve the transport nodes at Pretoria railway station, Bello Ombre railway station and the Bloed/Boom Street taxi rank (TSPTPN Appendix B; 2006: 1).

The benefits from the project are

- proper linkage amongst the various transport termini located around the city
- reduced walking distances
- reduction of congestion
- increased accessibility of major land uses within the CBD (TSPTPN Appendix B; 2006: 1).

FIG 1.1\_View of Tshwane inner city



## STUDY AREA

The *Tshwane Inner City Development and Regeneration Strategy of 2005* states that the inner city of Tshwane is made up of the following broad land-use districts where the inner core and Marabastad precinct represents the heart of the inner city and its capital city significance:

- An inner core of mainly office, retail, commercial and residential intensive development in a 2,5 km radius around Church Square
- Marabastad and its finely grained surroundings towards the north-western side of the inner city reminiscent of the city's historic African vibrancy and a zone of extensive urban decay
- The high density residential areas of Sunnyside and Arcadia on the eastern side
- A service industry zone of mostly smaller entrepreneurs towards the western side of the inner city (TICDRS; 2005: 2).

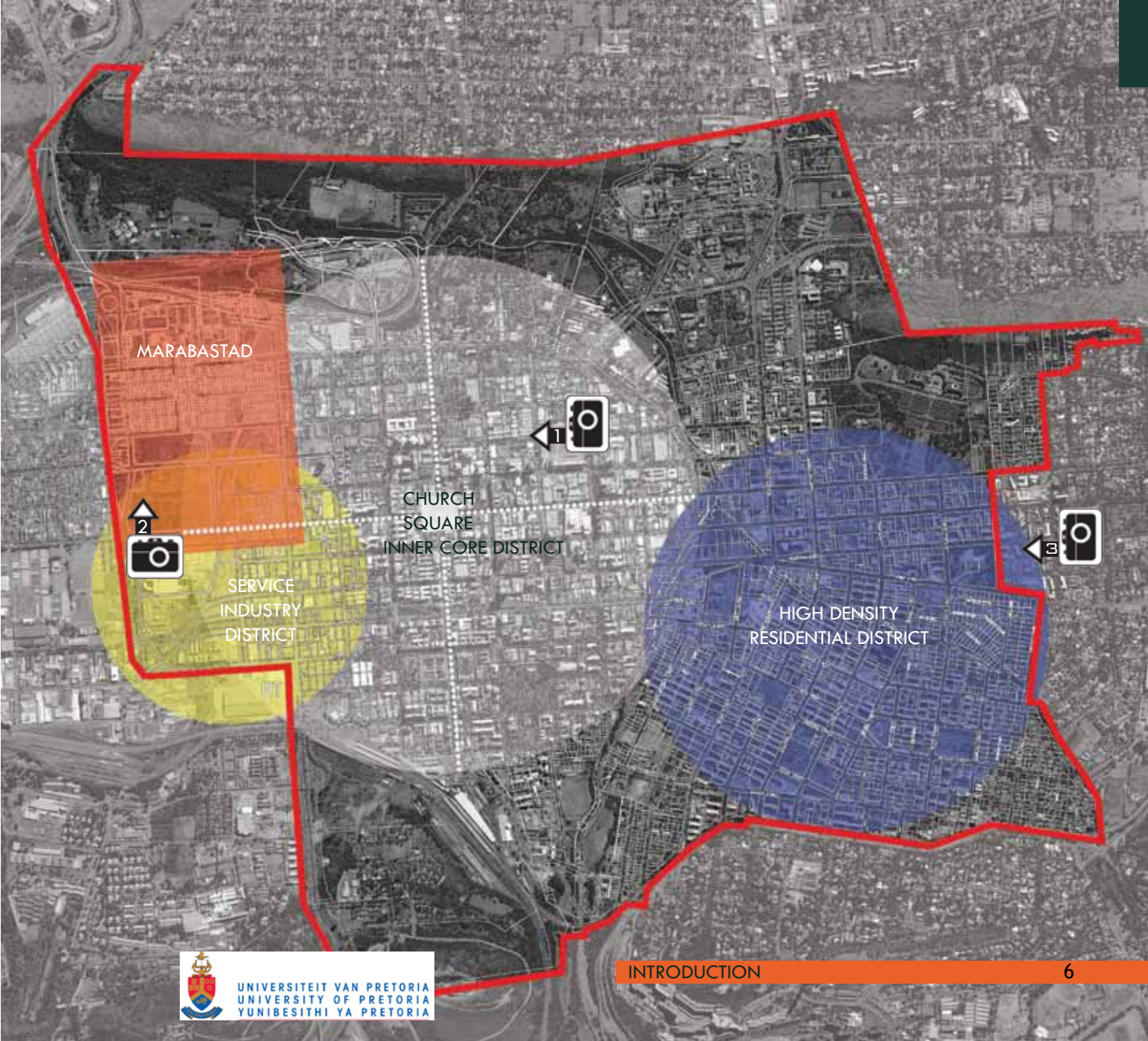
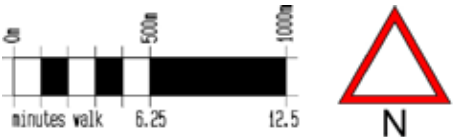
The *Tshwane Inner City Development and Regeneration Strategy* thus focuses its proposal on the inner city core and Marabastad as it is believed that the greatest impact can be achieved by concentrating efforts in these areas (TICDRS; 2005: 2).



FIG 1.5\_broad land use districts of the inner city region

The Tshwane Inner City Development and Regeneration Strategy of 2005 state that the inner city of Tshwane is made up of four broad land-use districts with the inner core and Marabastad precinct representing the heart of the Inner City and its Capital City significance.

-  \_INNER CITY REGION BOUNDARY
-  \_INNER CORE DISTRICT
-  \_HIGH DENSITY RESIDENTIAL DISTRICT
-  \_SERVICE INDUSTRY DISTRICT
-  \_MARABASTAD



The *Tshwane Bus Rapid Transit (BRT) Operational Plan* presented by Advanced Logistics Group on 24 April 2004 states that they adopted a layered approach for planning the proposed new network. The existing rail system will be at the top of the hierarchy of modes, followed by the BRT system, then the enhanced corridor and finally the feeder services (BRT Operational Plan; 2008: 4). During the planning of the system a number of corridors have been examined for the new BRT system, and the system for phase one is as follows

- Line 1: Bus Rapid Transit route between Mabopane and Pretoria Station
- Line 2: Bus Rapid Transit route between Belle Ombre Station and Mamelodi
- Line 1: Enhanced bus corridor on Church Street between Atteridgeville and Hatfield
- Line 2: Enhanced bus corridor on Church Street between DF Malan and Mamelodi
- Feeder routes to provide access to the BRT services (BRT Operational Plan; 2008: 4).

BRT terminals for phase one are proposed at the following sites

- Line 1: Mabopane Station and Pretoria Station
- Line 2: Belle Ombre Station and Mamelodi
- Depot facilities will be provided at the end of lines 1 and 2 at Mabopane and Mamelodi respectively (BRT Operational Plan; 2008: 4).

Because of Marabastad's significance in Tshwane and of the new proposed BRT system with its line 2 terminals planned to be located at the Belle Ombre Station, a transport interchange at the Belle Ombre train station in Marabastad was chosen as the topic for this thesis project.



ADVANCED LOGISTICS GROUP

FIG 1.6\_ Advanced Logistics Group logo

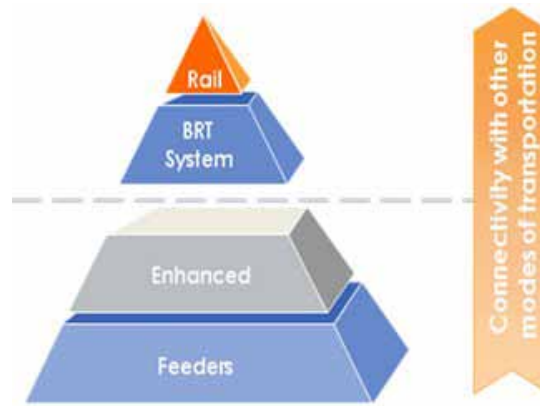
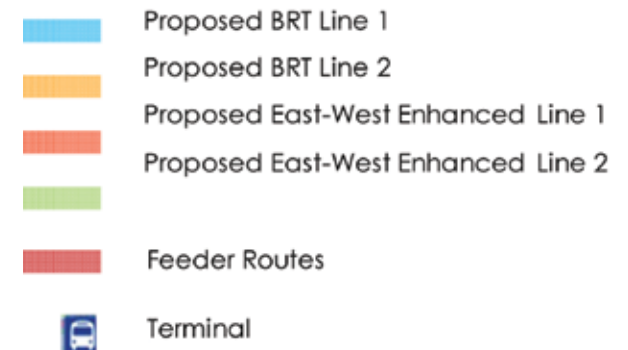


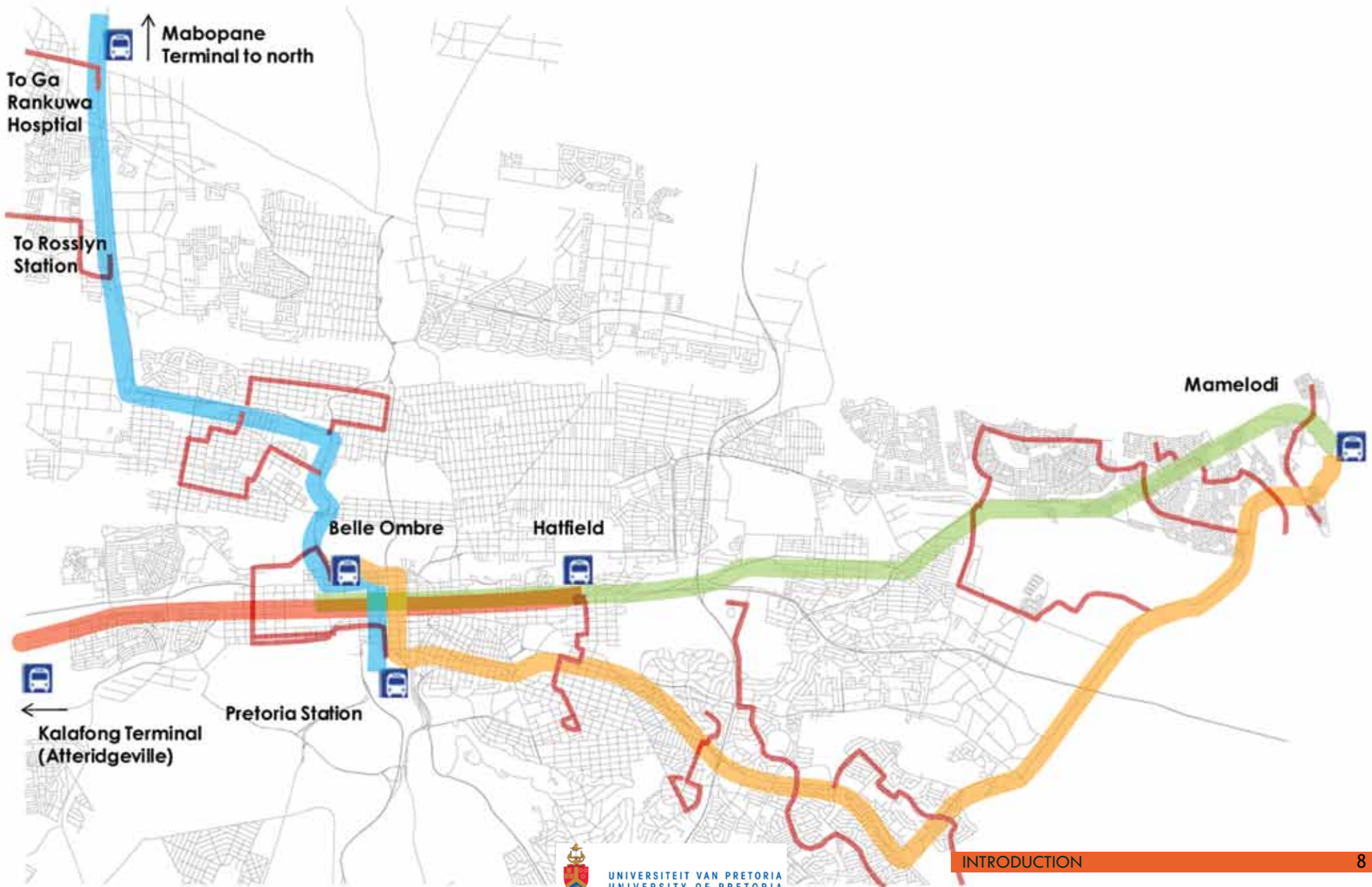
FIG 1.7\_ Layered planning approach of BRT

FIG 1.8\_Proposed BRT routes for Tshwane

Key features of the proposed BRT corridors include:

- Links priority townships such as Soshanguve and Mabopane to the north and Mamelodi to the east to the city centre and other key centres such as Menlyn, Hatfield and Rosslyn.
- The two lines overlap between Belle Ombre Station and Pretoria Station to provide optimal service through the CDB area.
- Serves Loftus Stadium, a 2010 World Cup venue.
- Provides links to key rail stations and the Gautrain project.
- High demand throughout corridor, in particular along the R80 corridor.
- Transit mall stations in Church Square with reduced mixed traffic access and parking.
- Bus Rapid Transit to have priority in Paul Kruger corridor in alignment with ReKgabisa precinct planning between Boom Street and Pretoria Station with reduced mixed traffic lanes and access, reduced parking and improved pedestrian amenity (BRTOP; 2008: 5).







## Route Characteristics - BRT Line 2 Alternative 2

- Directly links CBD economic hub with Sunnyside, Menlyn Park and key population area of Mamelodi.
- Directly links CBD and 2010 World Cup venue at Loftus Stadium.
- Ease of construction through Skinner Street.
- Central route through Sunnyside.
- Existing public transport demand between CBD and Mamelodi: estimated at 6000 pph.
- Exclusive Right-of-Way lanes due to demand and to facilitate optimal journey times and allow for configuration of median bus-ways and median stations.
- Passing lanes to facilitate express and limited stop services.

FIG 1.9\_BRT line 2 characteristics

System Overview	Line 1	Line 2	Combined
Total Corridor Length	37.3km	33.2km	67.6km
Dedicated Bus Lanes (both directions)	74.6km	66.4km	135.2km
Number of Stations	17 Stations + 2 Terminals	36 Stations + 2 Terminals	47 Stations + 4 Terminals
Average Station Spacing	1.960m	870m	1.320m

FIG 1.11\_BRT system overview

### Pros

- Provides improved CBD access and links through Paul Kruger / Boom Street and Church Square "Capital Core Anchors" (IDF).
- Aligns with Re Kgabisa with focus on full length of Paul Kruger corridor.
- Direct links to Pretoria and Belle Ombre Stations.
- Direct links to Gautrain Station at Pretoria Station.
- Fewer lane kilometres of infrastructure required.
- Allows for the two BRT lines to overlap between Belle Ombre Station and Pretoria Station along the length of Paul Kruger providing maximum service to this key corridor and maximum transfer points between the two lines.

### Cons

- Not as conducive to accessing Hatfield node.
- Physical constraint at railway bridge overpass on Walker Street.
- Slightly higher potential difficulty to construct via Boom – Paul Kruger – Walker Street route than D.F. Malan – Skinner Street.
- Less central route through Sunnyside.

FIG 1.10\_BRT line 2 pro's and con's

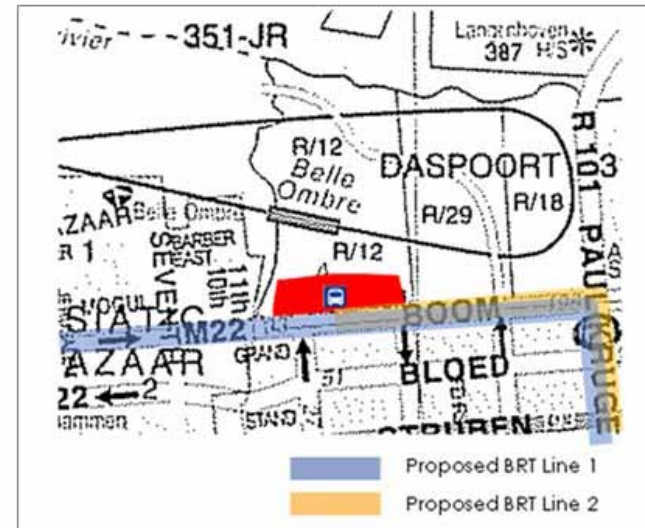


FIG 1.12\_Terminal position of Line 2 identified by the BRT Operational guide

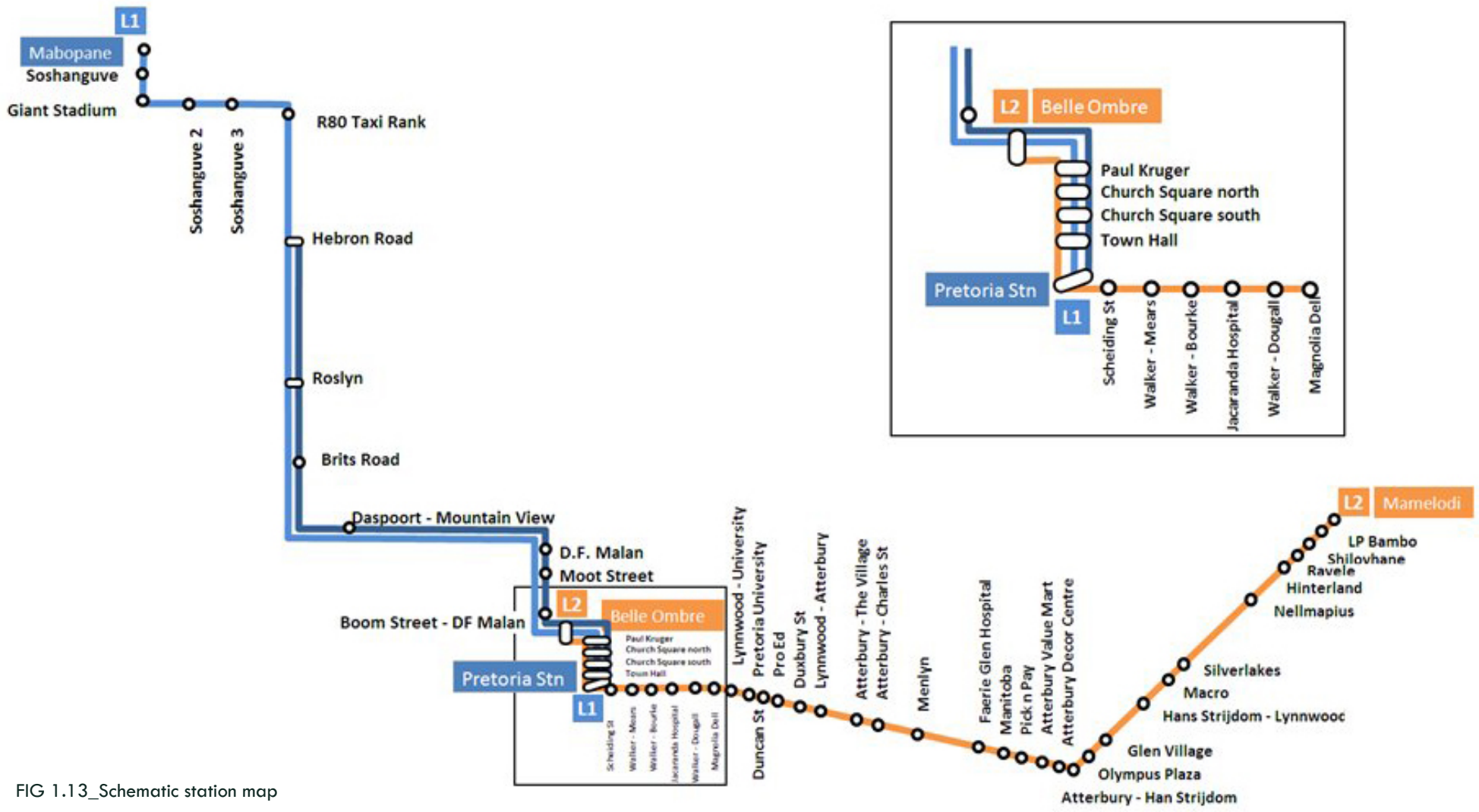


FIG 1.13\_Schematic station map