



MIDVAAL CBD

URBAN DESIGN FRAMEWORK

FINAL REPORT
May 2021



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1. INTRODUCTION AND BACKGROUND

1.1 Background

The Midvaal Local Municipality is located within the Gauteng Province and forms part of the Sedibeng District Municipal Area. As depicted in **Figure 1.1**, Midvaal is situated directly south of Johannesburg and southeast of Ekurhuleni. The northern parts of the Midvaal are largely centred on the R59 freeway, linking Midvaal to Ekurhuleni and Johannesburg in the north and Vereeniging in the south.

The primary urban conglomeration (refer to **Figure 1.2**) is centred on Meyerton, which abuts the R59 freeway. Vaal Marina is largely a vacation settlement situated on the Vaal Dam, which is located on the southern boundary of Midvaal. Midvaal is home of the Oprah Winfrey Leadership Academy for Girls which officially opened in January 2007, which is located in the Henley on Klip area, east of the Meyerton CBD.

1.2 Study Objectives

During January 2011 a Precinct Plan was compiled for the Meyerton CBD area. The Precinct Plan identified several functional areas within the CBD, amongst others the CBD Core Area, CBD Support Area, Residential Densification Area and the Institutional Precinct. It allocated various zoning categories to the individual properties and finally determined the Total

Incremental Development Capacity of the broader CBD which amounted to 46 347m² of retail, 134 267m² of office space and 2529 residential units.

Notwithstanding the guidance provided in the Precinct Plan, the CBD area still experiences incidences of urban decay and/ or stagnation, and it is constantly competing with other large activity nodes in the broader Sedibeng area for investment and/ or consumers.

Hence, it became apparent a more detailed analyse the CBD area in terms of aesthetics, functionality and efficiency is required, in order to ensure that the current obstacles/ constraints are addressed and to optimise the advantages/ opportunities for investors and/ or consumers.

In line with the study brief, the Meyerton CBD Urban Design Framework complies with the following requirements:

- Re-emphasising the regional importance of the Meyerton CBD within the larger Midvaal;
- Enhancing the multi-functional nature of the Meyerton CBD;
- Building on the objectives of the Council's policies, such as the R 59 Urban Design Framework, The Meyerton CBP Strategic Framework 2011, The Midvaal Nodal Policy and others;
- Strengthening the linkage between the CBD and the railway station as well as the linkage between the CBD and the Sicelo residential area across the freeway and railway line;

National

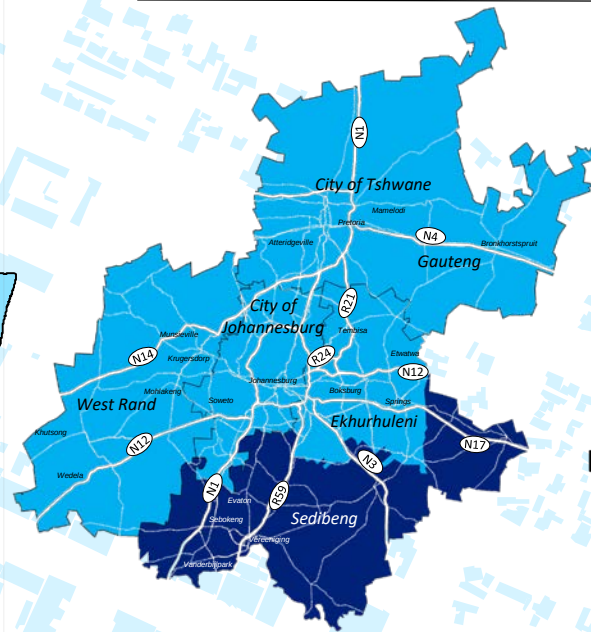
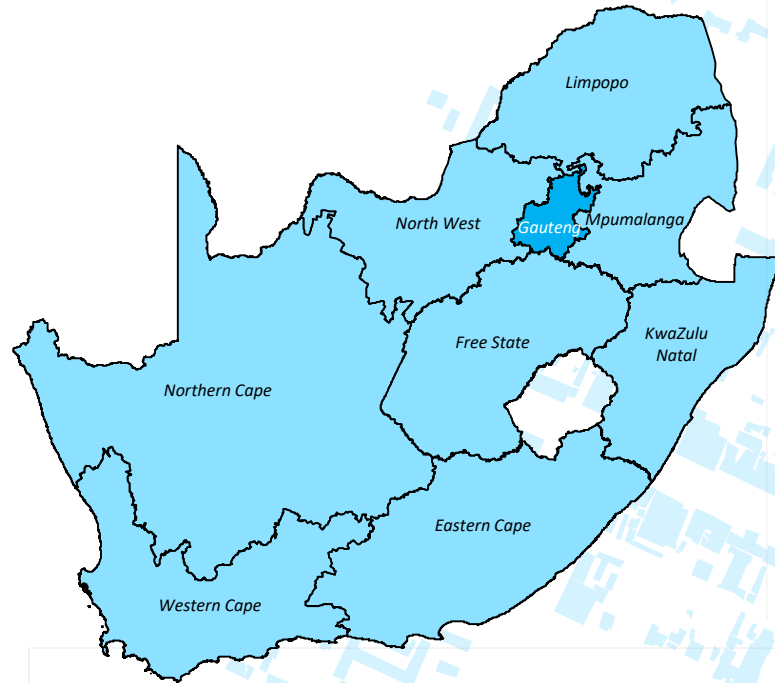
South Africa

Provincial

Gauteng



Regional Context



Local

Midvaal

District

Sedibeng

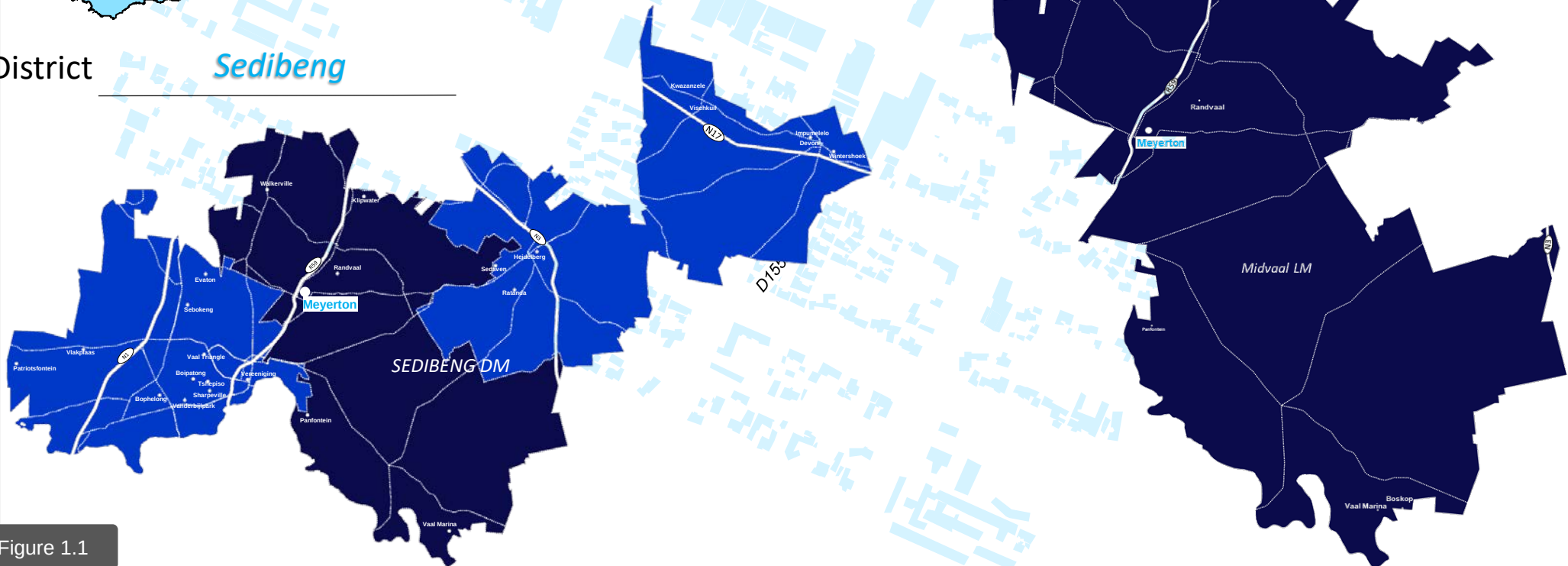


Figure 1.1

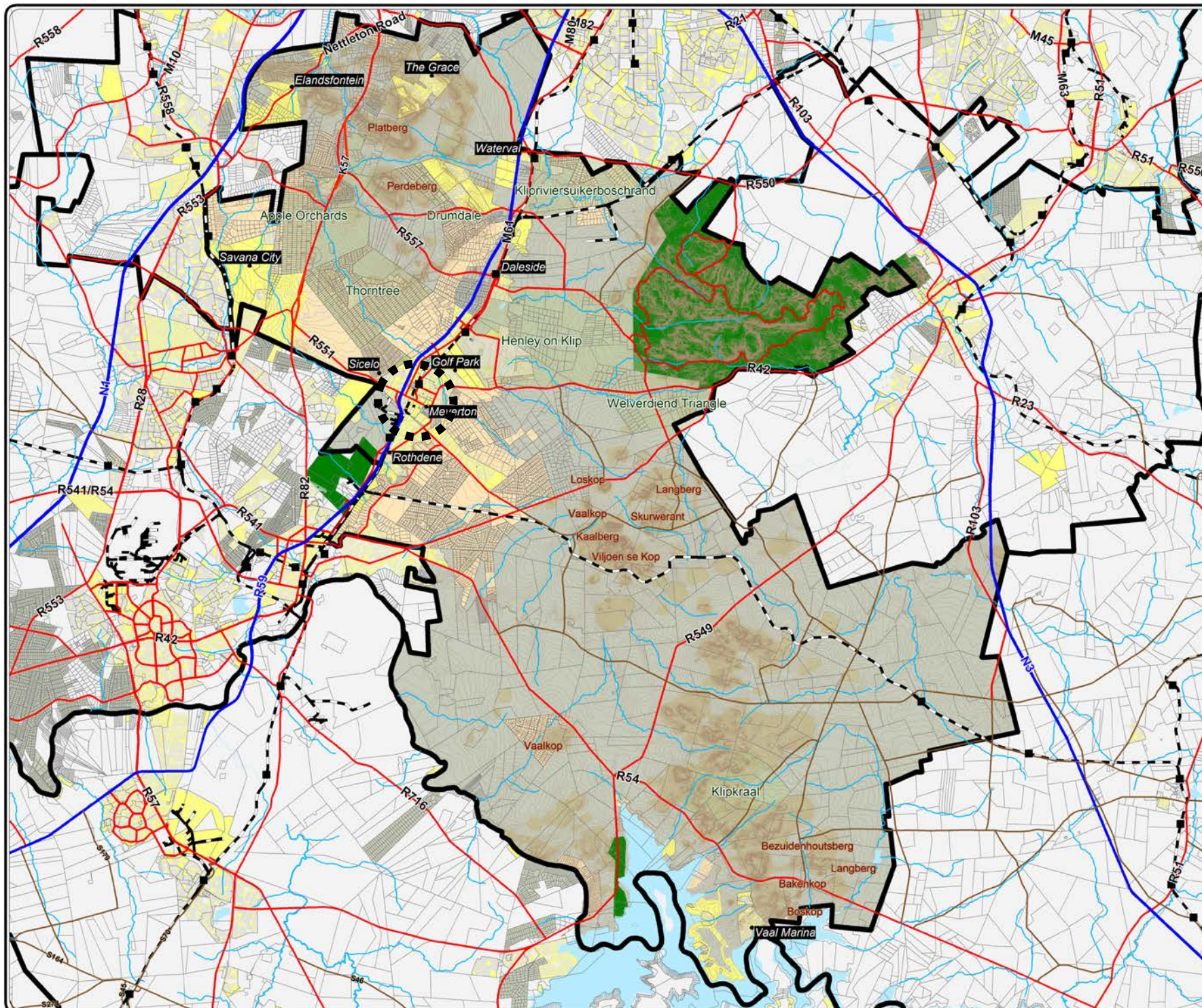
MEYERTON CBD URBAN DESIGN FRAMEWORK

Local Municipal Context

-  Midvaal Local Municipality
-  Ridges
-  Nature Reserves
-  Conservancies
-  Agricultural Holdings
-  Residential
-  Dams and Rivers
-  National Roads
-  Main Roads
-  Secondary Roads
-  Railways



Figure 1.2



- Developing Meyerton CBD as fully-fledged Transportation Hub with modal transfer node at its centre;
- Increasing the blend of economic activities to reflect the full spectrum of commercial and retail needs of a modern cosmopolitan society;
- Promoting higher urban densities, based on the optimal use of existing facilities and development of required facilities;
- Promoting the use of alternative modes of transport, including cycling and walking, to temper the dominance of the motor vehicle;
- Promoting human interaction in a safe and accessible environment conducive to creative expression;
- Focusing on human centred development with an emphasis on a clean and healthy environment;
- Encouraging the synergy between the first and second economy;
- Providing a vast array of public and private services within a consolidated relation.

The purpose of the Urban Design Framework for the Meyerton CBD is to provide guidance in terms of traffic planning and a “working document” which will guide the day-to-day development and revitalisation of the various functional parts of the CBD.

1.3 Study Area

The Midvaal CBD area is located in the central-southern parts of the Midvaal municipal area and more specifically within the R59 Development Corridor (refer to **Figure 2.1**). As graphically illustrated in **Figure 2.2**, the study area

is bordered by Carvalho Street in the north, Leyds Street in the south, Meyer Road in the west and Pierneef Boulevard (R551) in the east.

1.4 Methodology

Our approach and methodology in preparing the Meyerton CBD Urban Design Framework will be as per the following Phases and Activities as outlined in the Terms of Reference.

Phase 1 relates to the **Inception and Orientation** towards the project. During this phase the project team met with officials of the Midvaal Municipality to finalise the terms of reference, to ensure that all parties agree on the methodology to be followed, and to agree to the final deliverables to result.

Phase 2 of the project entails a literature study and multi-sectoral **situational analysis** unpacking the current situation within the study area. This phase is subdivided into two components: the first dealing with the **Regional Context** and the second with the **Local Context** within which the CBD functions. A detailed **Traffic Assessment Study** forms part of the Phase 2 assessment.

Phase 3 of the project involved the **Formulation of a Synthesis** based on the information collected as part of the Situational Analysis. As part of the Synthesis, development opportunities and constraints pertaining to the study area; highlight the factors that attract business or investments to the

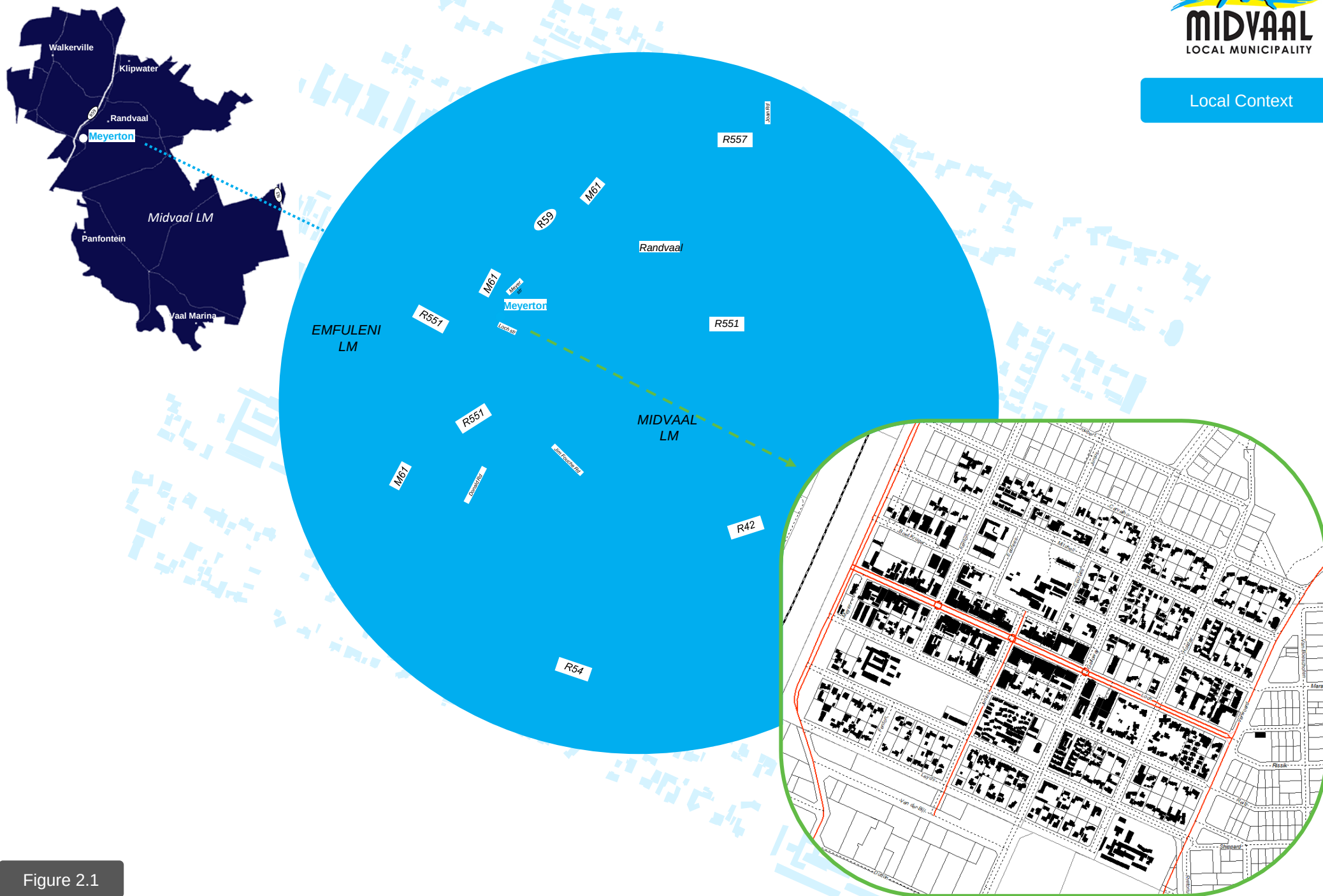


Figure 2.1

MEYERTON CBD
URBAN DESIGN
FRAMEWORK

Study Area

-  Study Area
-  Cadastral
-  Main Roads
-  Secondary Roads

Figure 2.2



area; but also, the factors that drive investment away from the area is identified.

Phase 4 of the project entails the **Development Objectives and the Urban Design Framework**. The objectives link strongly to the outcome of the Situational Analysis and Synthesis and specifically focus on the development issues identified, development opportunities, and challenges identified.

The detailed **Urban Design Framework** focuses on enhancing the structuring elements (incl. provisional road hierarchy, public parking etc.) public spaces and movement network, urban environment characteristics, sense of place and safety and security of the Meyerton CBD.

Phase 5 deal with the formulation **Policy Guidelines** for the Design Framework and **Phase 6** conclude with the Implementation / Operational Programme and Strategy.

2. SITUATIONAL ANALYSIS

2.1 Regional Context

2.1.1 Midvaal Spatial Development Framework, 2017

The Midvaal Local Municipality is one of three local municipalities located in the Sedibeng District Municipality, which constitutes the southernmost local authority in Gauteng Province (refer to Figure 1.1). It is furthermore bordered by the Mpumalanga Province (Dipaleseng LM) to the east and the Free State Province (Metsimaholo LM) to the south.

Wards and Regions

The Midvaal Local Municipality was established in 2000 when the town of Meyerton split from Vereeniging (Emfuleni Local Municipality) and joined five Rural Area Committees to create the new Midvaal Local Municipality.

The Midvaal LM is a Category B municipality as defined in the Municipal Structures Act and is divided into 15 wards as depicted in **Figure 3**. The rural south-eastern parts of the LM all form part of Ward 1, while the Suikerbosrant Nature Reserve is in Ward 4. The agricultural holdings, together with the R82 and associated settlements (in the west) fall within Wards 5, 6, 7 and 11. Finally, the urbanised area along the R59 freeway comprises Wards 2, 3, 8, 9, 10, 13, 14 and 15. Waterval to the north is part of ward 12. **Meyerton town is part of ward 14.**

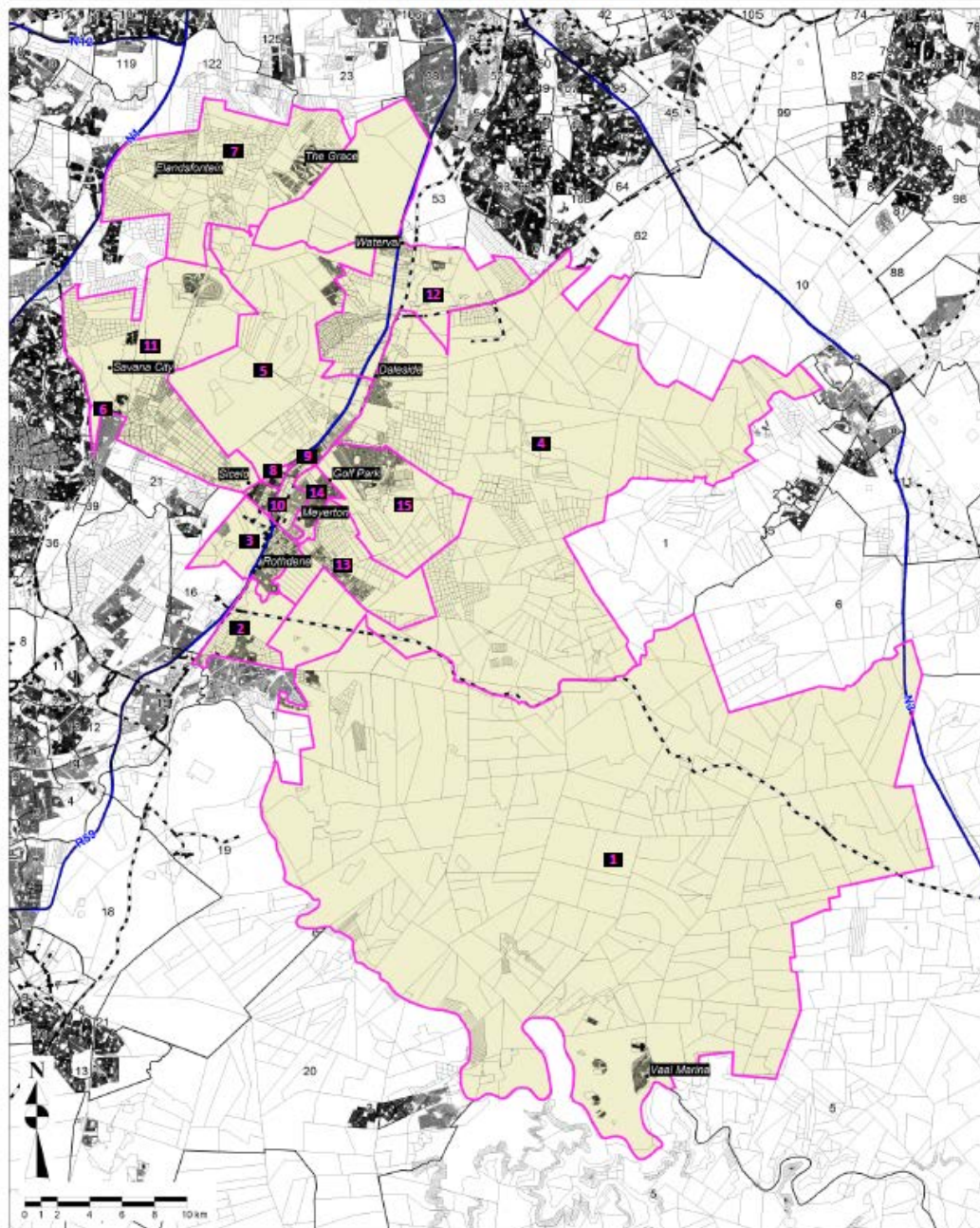
Land Use Composition and Distribution

The Midvaal LM is approximately 1722 km² in extent and is predominantly rural in nature (**Figure 4**). It comprises extensive commercial farming areas which cover approximately 50% of the total municipal area. There are several natural features impacting on land use development in the municipal areas including the Suikerbosrant Nature Reserve; the two clusters of ridges in the municipal area (north and south-east); the Vaal River and Vaal Dam to the south; and the Klip River running parallel to the east of route R59 through the central parts of the municipality.

Urban activities in Midvaal is mainly concentrated along the R59 freeway in the central extents of the municipal area while increased urbanisation pressure is also experienced in the De Deur area along route R82 to the west.

Meyerton town which includes Riversdal, Rothdene, Kookrus and Golf Park – represents the highest order urban complex in the Midvaal area and is located along the southern extents of route R59. Further towards the north along route R59 is Henly-on-Klip, Randvaal, Daleside and Waterval. This strip also comprises a large business and industrial land use component. The Vaal Marina represents the only urban development in the southern extents of the municipal area.

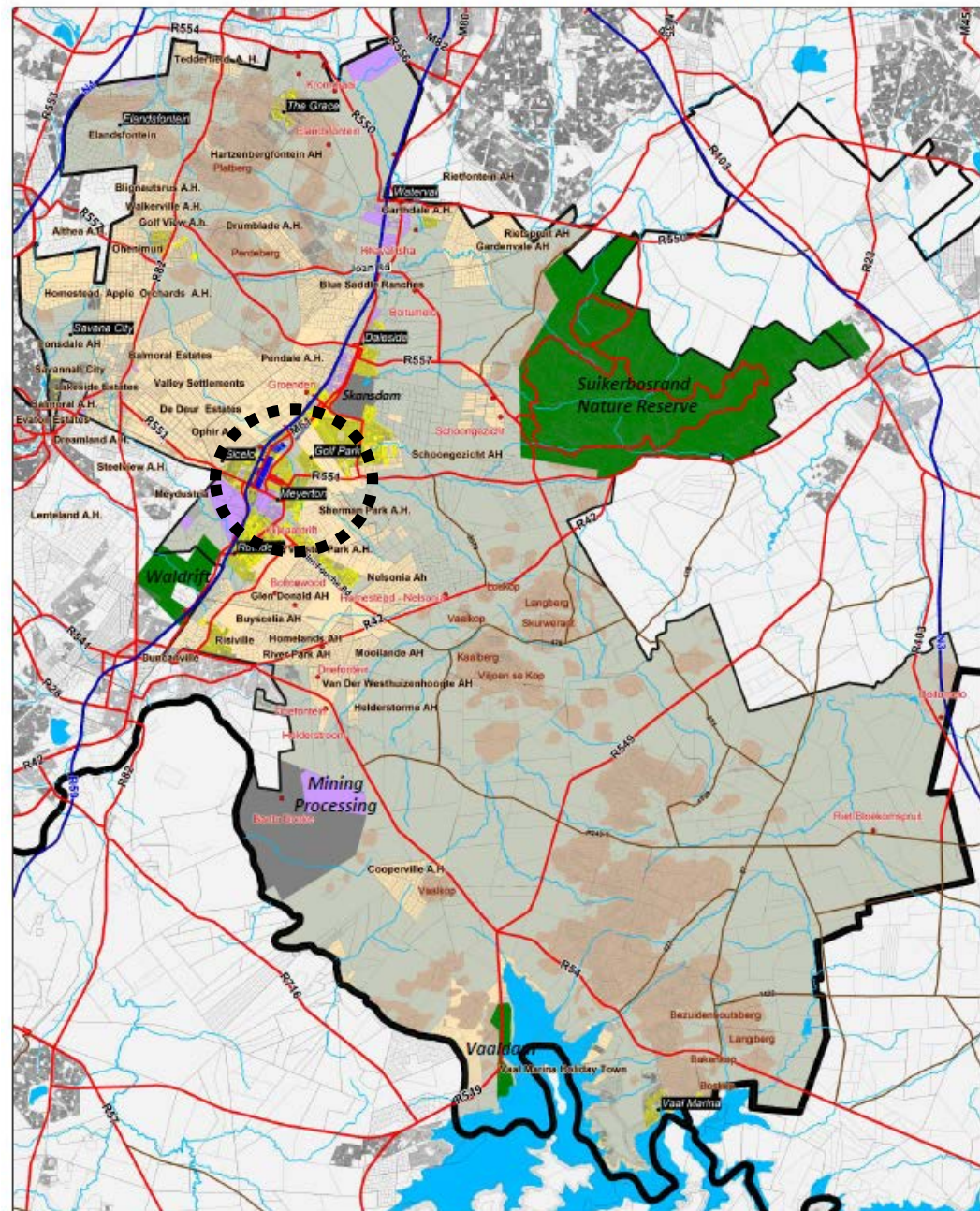
MIDVAAL SPATIAL DEVELOPMENT FRAMEWORK Institutional Context



Midvaal Local Municipality
Wards
Cadastral

Figure 3

MIDVAAL SPATIAL DEVELOPMENT FRAMEWORK Spatial Structure, Land Use and Road Network



Extensive Agriculture
Industrial/Commercial
Residential
Rural Residential
Existing Mixed Use
CBD
Mining
Ridges
Suikerbosrand Nature Reserve
Dams and Rivers
Informal Settlements
National Roads
Main Roads
Secondary Roads

Figure 4

To the west, several small nodal developments occur along route R82 which is a major local transport link between Vereeniging and City of Joburg. These nodes include De Deur, Ohenimuri and Walkerville, and Tedderfield. Savannah City is a new mega city development located adjacent to the north-west of De Deur and which is developed as a functional extension of the larger Evaton-, Sebokeng-Orange Farm residential complex located adjacent to the west thereof.

The key features and structuring elements identified as per the Midvaal SDF include:

- Midvaal has strong regional linkages to major economic cores like Johannesburg, Ekurhuleni and the Vereeniging-Vanderbijlpark complex. These include routes R59 and R82, and the Vereeniging-Germiston railway line.
- Midvaal is predominantly rural, with urban development predominantly consolidated along routes R59 and R82 in the north-western parts of the municipal area.
- Meyerton is the highest order town in the area with a relatively large business and a residential component. Smaller settlements and agricultural holdings in the surrounds act as service centres to the surrounding local communities.
- The strongest economic drivers in Midvaal are Manufacturing (29.5%), Financial and Business.

- The official backlog with regards to informal settlements and backyard units (according to Census 2011) was determined to be 5 546.
- The total housing supply of existing housing projects is calculated at 23 825 units comprising 8 858 middle- and high-income units and 14 994 subsidised units which is sufficient to meet current and projected demand beyond the year 2020.

The Midvaal SDF (refer to **Figure 5**) is based on a number of **Development Principles** associated with the various functional and structuring elements identified within the Midvaal area. These Principles form the individual layers which the SDF comprises, and these are incrementally consolidated to form one Integrated Spatial Development Framework for the Midvaal area. The ten Development Principles (and associated themes) are summarised below:

1	Environmental Management	To protect and actively manage the natural environmental resources in the Midvaal Municipal Area in order to ensure a sustainable equilibrium between agricultural, tourism, industrial/ manufacturing and mining activities, as well as urbanisation pressures in the area.
2	Agricultural Production	To facilitate and enhance agricultural production in the municipal area by actively protecting all land earmarked for agricultural purposes, and to target agricultural holdings for innovative small-scale farming and agro-processing.
3	Tourism Promotion	To promote tourism development through the active utilization of tourism resources available like the Vaal Dam, the Ridges Precincts, and the Nature Reserves in the area.
4	Corridor Development	To pro-actively plan, design and facilitate the establishment of a Development Corridor along the R59 freeway.
5	Nodal Development (Economic and Social Facilities)	To facilitate the development of a hierarchy of sustainable Activity Nodes in partnership with stakeholders to ensure equitable access to social infrastructure, and to promote Local Economic Development in the urban and rural parts of the municipality.
6	Movement Network	To capitalise on the strategic location of the municipality by way of regional and provincial linkages, and to establish an internal movement network comprising a hierarchy of roads which include a comprehensive public transport network and services.
7	Industrial, Commercial, Mining Activity	To promote the development of a diverse range of industrial, commercial and mining activities in the Midvaal area through partnerships with the private sector, and with a specific focus along the R59 Corridor and at the designated nodal points.
8	Human Settlement Development	To provide for a wide range of bonded and subsidised housing typologies and tenure alternatives within clearly defined Strategic Development Areas, and to continuously manage residential densification by way of the Midvaal Density Policy.
9	Compact City	To delineate an Urban Development Boundary to encourage consolidated urban development and to protect high potential agricultural land and sensitive environments.
10	Targeted Engineering Infrastructure Investment	To prioritise the bulk of short to medium term upgrading/provision of engineering services to nodal areas within the Urban Development Boundary.

The Development Principles and detailed Development Guidelines relevant to the Midvaal CBD Urban Design Framework is summarised as follow:

Primary Node: Core Area (CBD)

The first and most prominent activity node within the Midvaal municipality is the Core Area which represents the Midvaal CBD located in the central part of Meyerton. This is the largest and most comprehensive activity node within the municipal area and will act as the priority area for promoting the widest range of economic activities, as well as higher order social facilities and amenities in the municipal area.

Detailed Development Guidelines:

Primary Node: Core area (CBD)

The CBD area provides the highest residential and commercial densities in the municipal area and the greatest variety of services in the region. It is intended to have the character of a central business district. As a regional destination, a core area typically contains larger retail stores, entertainment, offices and a mix of higher density housing.

The CBD area is of a municipal-wide significance and can, therefore, develop a strong retail, entertainment and office component. The retail component can accommodate a regional shopping centre or 2 or more community shopping centres. Alternatively, the core area can accommodate a total and combined retail floor area of between 10,000m² and 60,000m². The viability of the retail figures given above needs to be validated through

a retail study that accompanies each individual application of retail land use rights within the municipal area.

The CBD area needs to provide higher-order community services that serve the entire municipal area. With regard to health care, the core area should provide the region's hospital(s), as well as other higher order and specialized medical facilities. Other community facilities to be provided in such a node include a large police station and emergency service centre. These facilities are all highest order facilities when compared to similar facilities provided in lower-order nodes.

The core area can provide recreation facilities that serve the municipal area, usually consisting of a stadium that forms the central facility within such a node. Such a recreational facility can serve as the base for regional sports clubs. In addition to the stadium, the core area should contain other highest order recreations facilities, such as a cricket oval, a swimming pool and a multi-purpose indoor sports centre.

The CBD area can also accommodate a significant higher-density housing component to enable a more vibrant nodal configuration. The Meyerton CBD is most probably the only area within Midvaal that is suited for the development of walk-ups and a higher-density housing option.

2.1.2 R59 Development Corridor Framework, 2011

The R59 freeway originates in the south of the City of Johannesburg at South Rand Road, north of the N12 freeway. It then passes through Alberton in the Ekurhuleni Metropolitan Municipality, past Meyerton in the Midvaal Municipality and Vereeniging and Vanderbijlpark in the Emfuleni Local Municipality, from where it crosses the Vaal River into the Free State Province and then runs to Sasolburg.

The K89 originates north of the Alrode industrial area at the intersection with Heidelberg Road. It runs through Alrode South, past Tokoza and joins up with the R59 in the north of the Midvaal area, from where it runs parallel to the R59 through the Midvaal area.

The railway line runs parallel to the east of the K89 through Alrode and Wadeville to Germiston Station, where all the main railway lines in Southern Africa converge. The railway line and K89 provide strategic linkages at the regional level and access to areas of economic opportunity.

Figure 6.1 depicts the proposed Development Framework for the R59 Corridor. The most salient features of the framework are described below:

Three **nodes** have been earmarked as designated development areas along the corridor. These are:

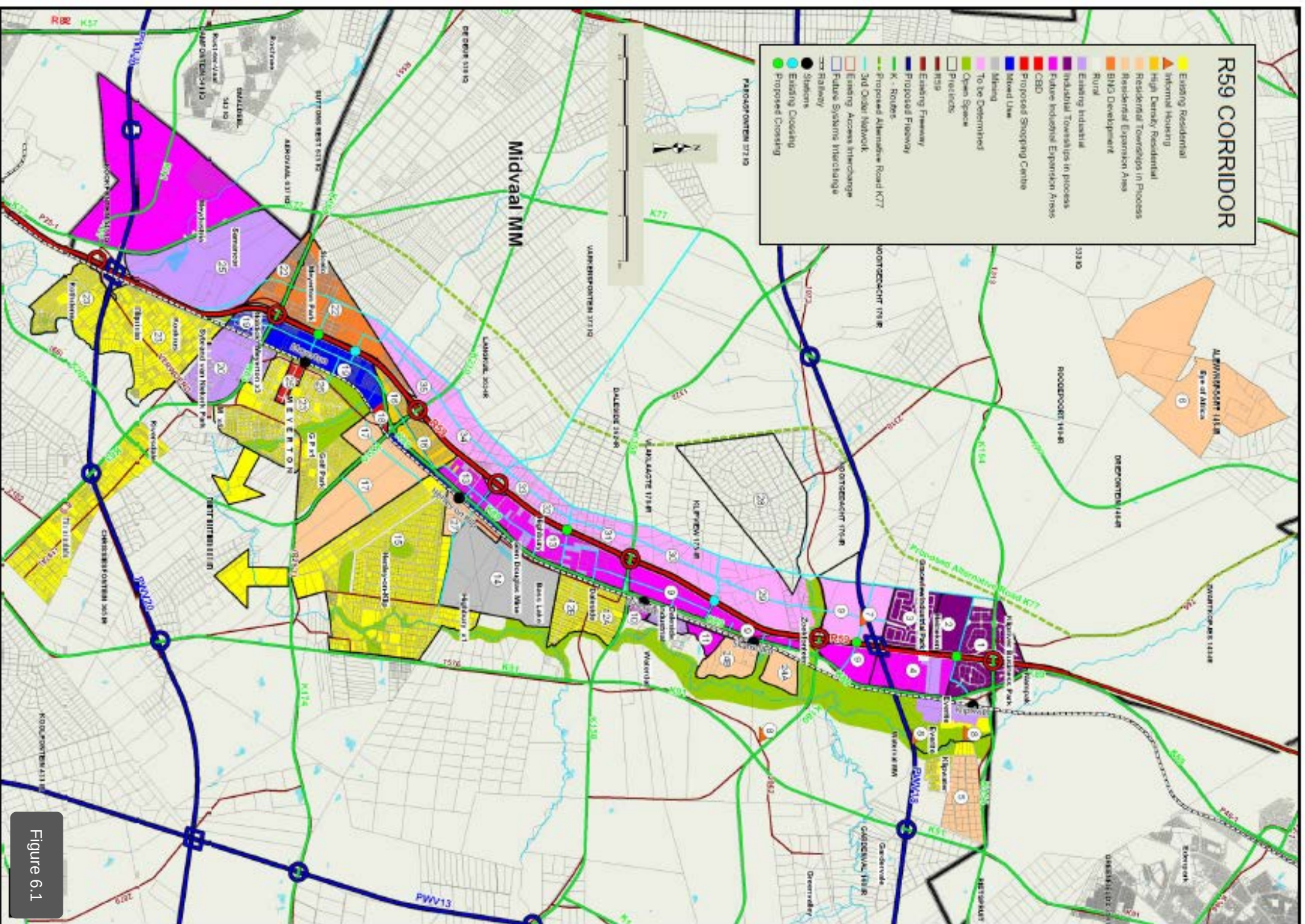
- The Nampak/Everite/Klipriver area to the north;
- Daleside/Witkop and Henley-on-Klip in the central part; and

- Meyerton and surrounds to the south.

The proposed clustering of land uses within the identified nodes are as follow:

Node	Proposed Uses
Nampak/ Everite/ Klipriver	Light industrial uses, mini-factories, offices, warehouses and commercial uses. This node is situated at the gateway of the corridor and should, therefore, be protected in terms of the types of uses and aesthetical appearance.
Daleside /Witkop and Henley-on-Klip	This area is proposed for commercial uses (such as transport uses), manufacturing, industrial uses and service industries for agriculture. Around Henley-on-Klip residential uses and hospitality uses in support of the tourism industry.
Meyerton and surrounds	This will be the primary node along the corridor, with a mix of land uses. This area can accommodate heavy industries, largescale manufacturing, commercial uses, retail, general business and urban residential uses.

The R59 fulfils the function of a mobility spine, while the K89 acts as an activity street to unlock development potential to the east of the freeway.



Specific guidelines are proposed for the development corridor, to enable co-ordinated development. The following guidelines are applicable to the Meyerton CBD (Sub-Area 4 as per the R59 Development Corridor Framework):

Sub-area 4: Area between the K210 (Meyer Street) and Johan le Roux Street off-ramp (Figure 6.2)

The area west of the R59 freeway is already compromised due to the existing informal settlement and proposed township establishment to upgrade this settlement. This area is earmarked for urban residential development, with densities ranging between 20 and 60 units per hectare, and holds enormous potential for short to medium term residential infill development. The surrounding agricultural holdings further to the west are earmarked for agricultural and rural residential purposes. Intensive agricultural activities should be promoted, or alternatively rural residential estates, to prevent urban sprawl.

The land situated between the R59 and Meyer Street is earmarked for mixed land use purposes. This includes urban residential uses, business as well as commercial and industrial uses. The goal should be to promote intensive development in this area, to support the effective use of the public transport system. Residential development should occur at medium to high densities (between 20 and 60 units per hectare), in support of the development corridor and the public transport system.

Apart from the densification and infill development opportunities located around the Meyer Street off-ramp and the large area earmarked for such purposes to the west of the R59 freeway, there is also an opportunity for higher density residential development on the government-owned vacant land parcels to the north-east of the Meyerton railway station.

As illustrated in Figure 6.2 it will be important to provide for two crossings (bridges) across the R59 freeway between the K210 and the K164 access interchanges in order to facilitate/enhance local movement of people between the CBD, the mixed-use zone, and the railway station and taxi rank, and the surrounding residential areas.

To the west of the R59 freeway, the proposed third order route parallel to the freeway continues through the Meyerton Park area from where it passes through the Samancor site up to the K11 access interchange further towards the south.

The mixed-use strip of development between the railway line and the R59 freeway is already served by route K89 (refer to Figure 6.2) but the configuration of the network in the vicinity of the Meyer Street interchange still needs to be sorted out. To the east of the railway line, it should be seriously considered that Meyer Street be extended northwards in order to link up with Henley-on-Klip and to open up the agricultural land for the proposed future residential use.

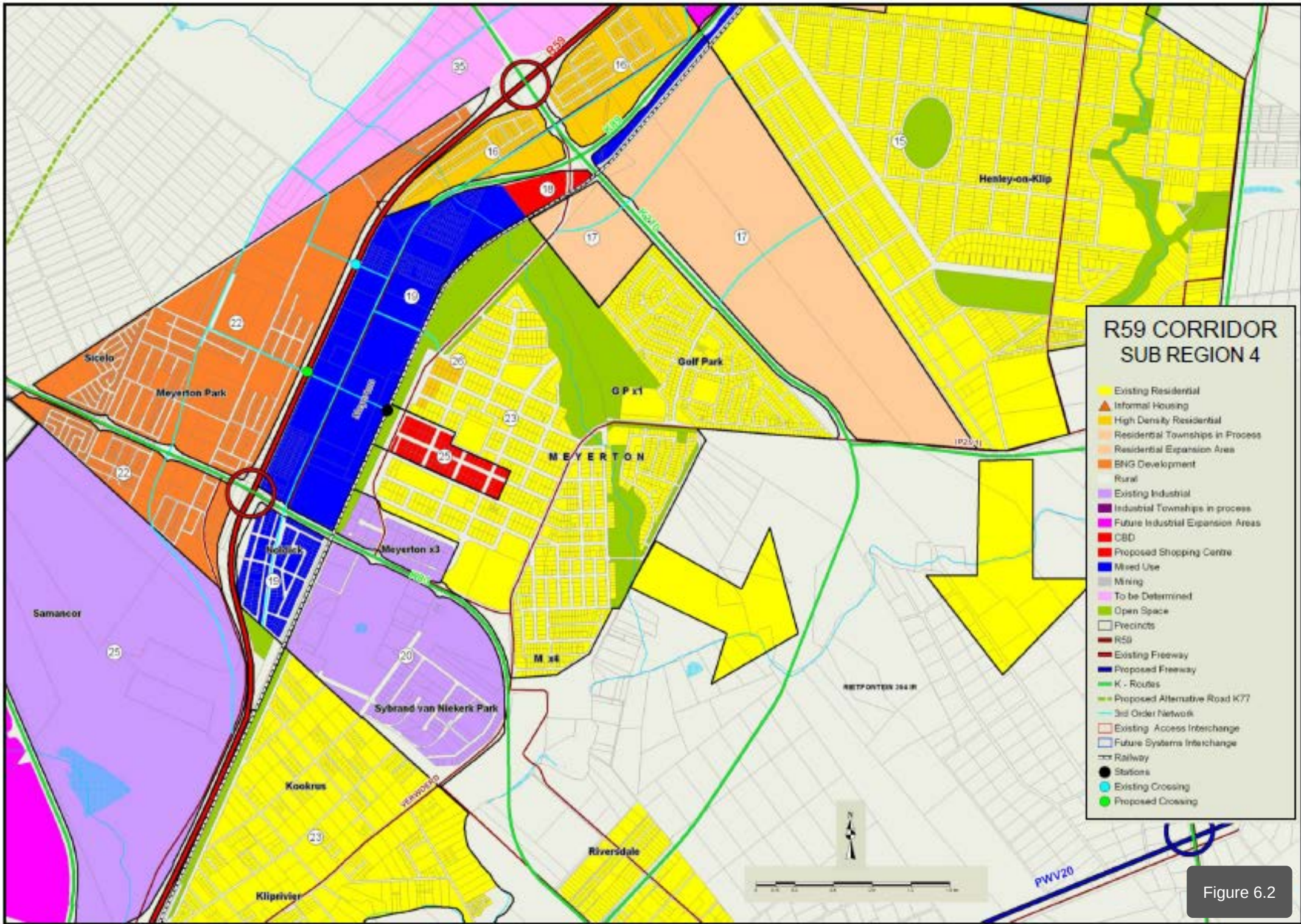


Figure 6.2

The Meyerton CBD is earmarked for retail and business uses, while infill development in the industrial area south of the CBD should be promoted. The revitalisation of the Meyerton CBD should be promoted. The remainder of Meyerton is earmarked for urban residential development.

2.1.3 Draft Midvaal Nodal Policy, 2019

The Midvaal Nodal Policy sets out to conduct a detailed analysis and investigation of the existing 13 nodes identified within the Nodal Policy 2011 in order to establish a need for the adjustment of the nodal boundaries.

According to the Draft Midvaal Nodal Policy 2019, Meyerton is the highest order settlement in the Midvaal area with a relatively large business, industrial and residential component. Accordingly, within the strategy, Meyerton is classified as a Primary Urban Node. It includes the townships of Sicelo, Golf Park, Rothdene, Kookrus and Riversdale as well as a number of industrial, commercial and business areas, amongst others also the Central Business District. The entire node is centred on the R59 (refer to **Figure 7.1**).

The Meyerton CBD can also accommodate a significant higher-density housing component to enable a more vibrant nodal configuration. The Meyerton CBD is probably the only node within Midvaal that is currently suited for the development of walk-ups and a higher-density housing option.

The Sicelo Neighbourhood Node (located to the west of the Meyerton CBD) as depicted in **Figure 7.2** comprises industrial activity to the north of Johan le Roux Drive and retail/commercial uses to the south thereof.

The area is, however, peripheral relative to the broader Sicelo area, and specifically it's future expansion areas which are all located further to the north thereof. The scale and nature of economic activities and services offered in this area are also more regional in nature as Johan le Roux Drive is the main link between the Meyerton Primary Node and the emerging Deur-Savanna City Primary Node to the west thereof.

Several large-scale housing initiatives are also planned/underway in the surrounding areas (refer to Erf 72, Erf 78, Erf 175, Two Blocks etc.).

It is recommended that the area around the intersection between the two priority pedestrian routes in Sicelo (Station Street and Bell Road) be earmarked as a future Neighbourhood Node. This could include a range of spaza shops and small-scale service industries aimed at serving the local community and to act as a means of empowerment to local enterprises.

The Sicelo Precinct Plan to be compiled for the area in the next year should provide more detail on the exact demarcation of the neighbourhood node and its functional relationship with the CBD.

MIDVAAL NODAL POLICY

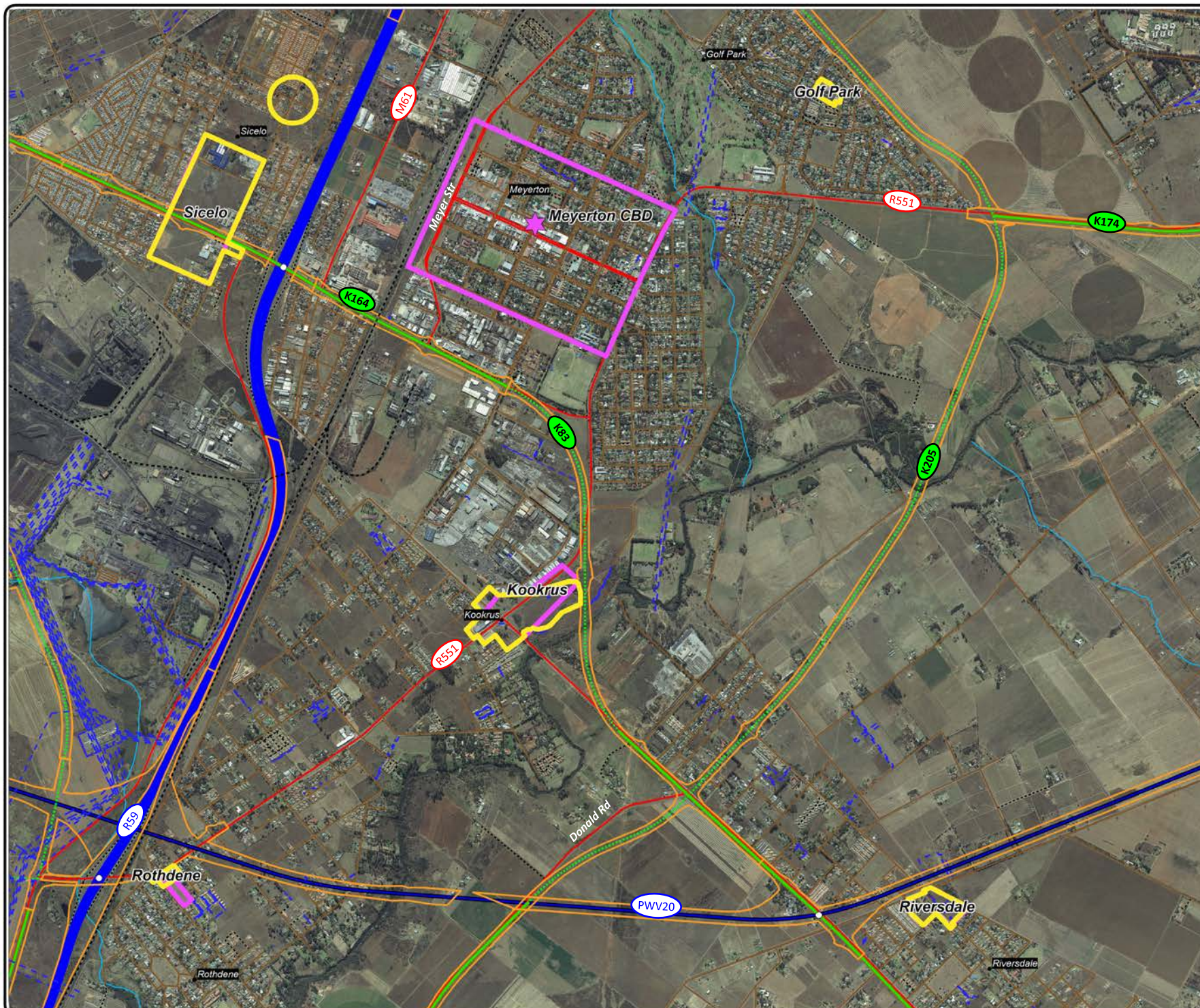
Sicelo, Kookrus, Riversdale
and Rothdene Nodes

-  Existing Nodal Boundary
-  Proposed Nodal Boundary
-  Cadastre
-  Dams and Rivers
-  Servitude
-  National Roads
-  Main Roads
-  Secondary Roads
-  Proposed K-Routes
-  Road Reserves
-  Railways

0 0.1 0.4 0.6 0.8 1 km



Figure 7.1





MIDVAAL NODAL POLICY

Sicelo Node

- Existing Nodal Boundary
- Proposed Nodal Boundary
- Proposed Future Node
- Cadastre
- Dams and Rivers
- Servitude
- Pedestrian Movement
- National Roads
- Main Roads
- Secondary Roads
- Proposed K-Routes
- Road Reserves
- Railways
- Priority Housing Areas

0 50 100 200 300 400 500 m



Figure 7.2

2.1.4 Demographic Profile

As shown in **Diagram 1** Midvaal is the smallest of the three local municipalities in the Sedibeng District, comprising 11% of the Sedibeng District population. The total municipal population in Midvaal grew from 95 301 in 2011 to 111 613 in 2016. This represents an increment of 16 311 from 2011 to 2016. The year-on-year growth for the total population for the past 5 years was 3.2% – representing 3 262 people per year (far above the District growth rate which stands at 0.8% for this period).

From the Midvaal gender and age distribution profile, it is evident that the local municipality has more Male residents (51.6%) compared to Female residents (48.8%), with the largest segment for both being aged 20-39 years. According to Census 2011, the highest population concentration within the LM is in and around Meyerton, representing 58.0% of the total population.

Diagram 2 indicates that the local population is predominantly a low to middle-income community. In terms of the Individual Monthly Income, it is evident that approximately 55.4% of individuals earn a monthly income of less than R800 per month (as per the food poverty line), which indicate high dependence on government grants. Assessing the Annual Household Income, it is evident that 57.6% of households within the Midvaal LM qualify for a housing subsidy (<R3500 p/m of R42 000 p/a).

Within the Midvaal LM, 42.5% of the population have not completed secondary education (up to Grade 12). But it is positive that 12.9% of the population has a form of tertiary education (degree/diploma).

According to Census 2011, approximately 55.6% of the total Midvaal economically active population (EAP), is employed, of which 73.2% of the employed population, is employed within the formal sector.

From the Midvaal tenure Status, it is evident that 30.4% of households occupy the property they reside in, rent-free, whilst 25.4% rent the property they reside in. The tenure profile correlates with the income profile and affirms a consumer market with a predominant demand for lower to lower-middle-end residential and commercial products.

2.2 Local Context

2.2.1 Study Area within the Local Context

As illustrated in **Figure 8**, the area west of the R59 freeway in this subarea consists of farmland which is used for farming purposes and a section of smaller agricultural plots adjacent to the freeway, namely Meyerton Farms, which are primarily used for rural residential purposes and peripheral uses.

There are numerous illegal uses in this area and considerable development pressure, but the infrastructure requires upgrading and owners cannot afford the service contributions. There are municipal services available to

Sedibeng District: Local Municipalities

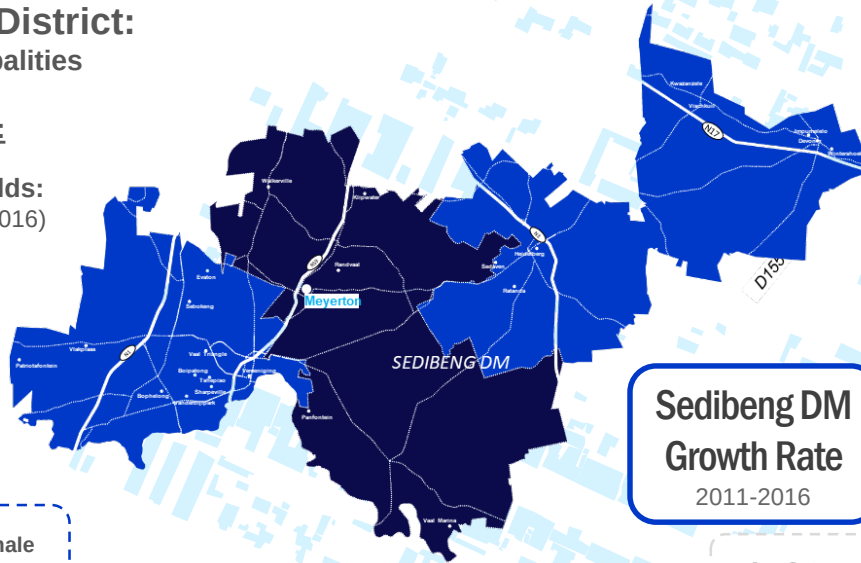
Sedibeng DM:

 **Households:**
295 294 (2016)

Avg. HH Size:
3.2 per/HH

**Sedibeng DM
2016**

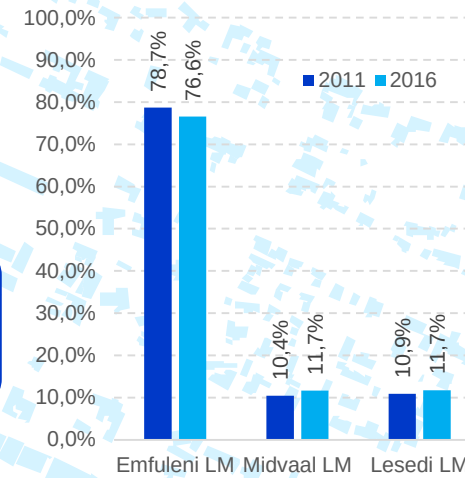
♂ Male 50%
♀ Female 50%



**Sedibeng DM
Growth Rate
2011-2016**

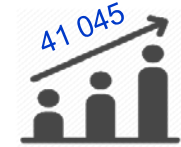
0.8%

Sedibeng Total Pop 2011-2016:



Sedibeng Population Growth: 2011-2016

2011:
916 484



2016:
957 529

Growth in LM's: 2011-2016

	2011-2016
Emfuleni LM	11 782
Midvaal LM	16 311
Lesedi LM	12 952
Sedibeng District	41 045

Midvaal Local Municipality

Midvaal LM:

 **Households:**
29 782 (2011)

Avg. HH Size:
3.2 per/HH

**Midvaal LM
2011**

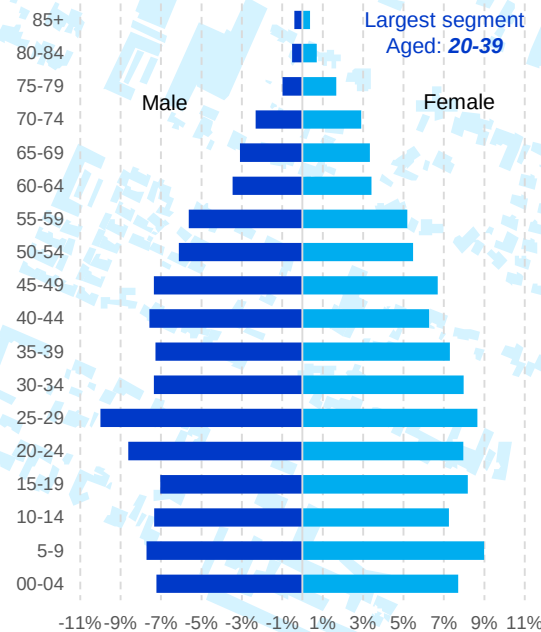
♂ Male 51.6%
♀ Female 48.8%



**Midvaal LM
Growth Rate
2011-2016**

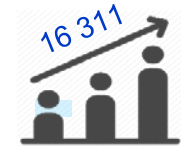
3.2%

Midvaal Age / Gender Profile (2016):



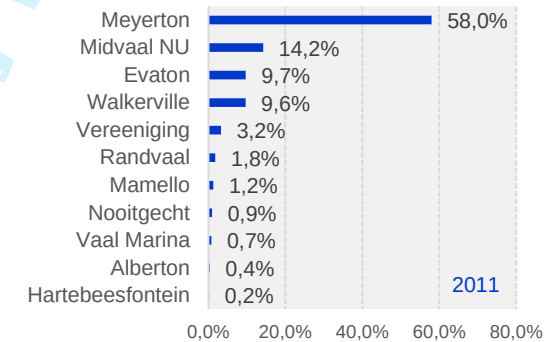
Midvaal Population Growth: 2011-2016

2011:
95 302

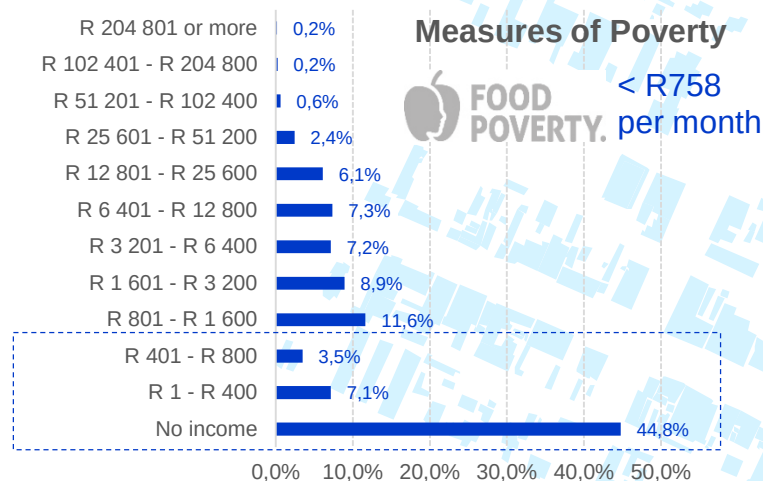


2016:
111 613

Midvaal Population Distribution:



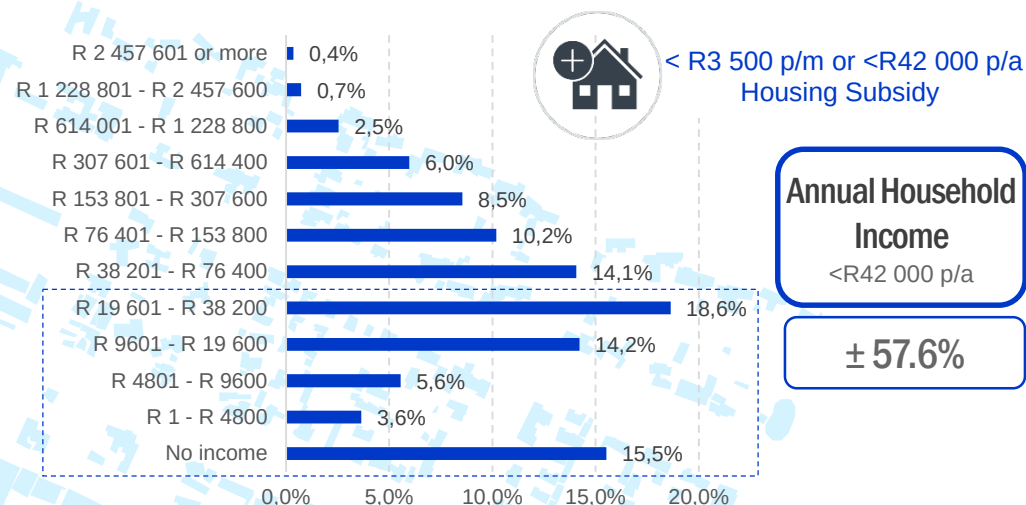
Midvaal Individual Monthly Income (2011):



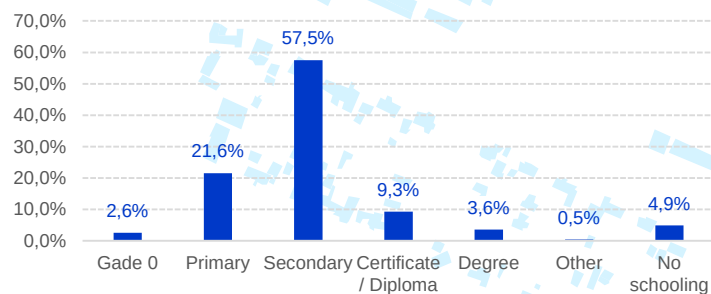
Individual Monthly Income
<R800 p/m

± 55.4%

Midvaal LM Annual Household Income: 2011 (%)



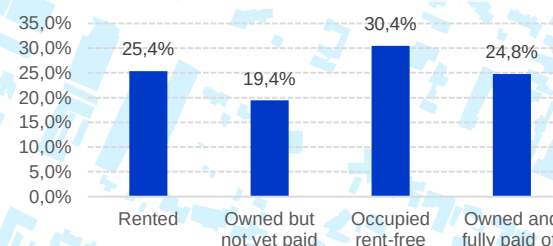
Midvaal Level of Education (2011):



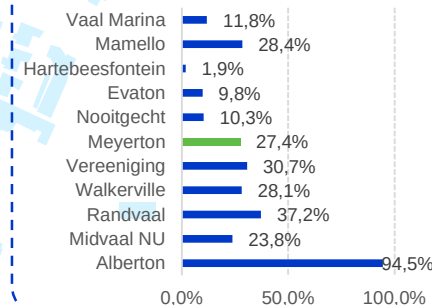
Tertiary Education

± 12.9%

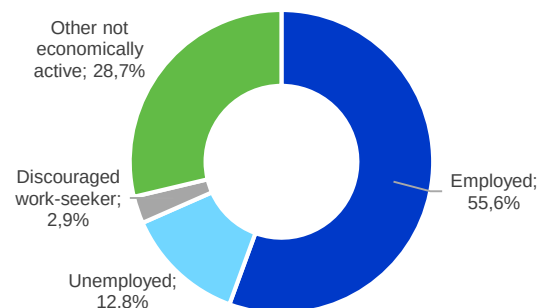
Midvaal Tenure Status (2011):



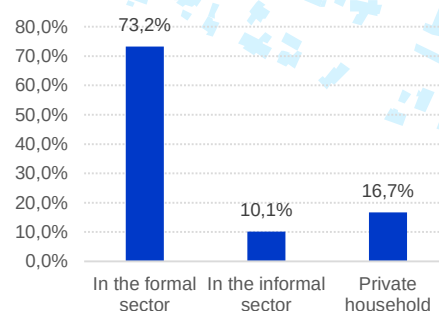
Midvaal Rental Status (2011):



Midvaal Employment (2011):



Midvaal Employment by Sector (2011):



Midvaal Dwelling Type (2011):

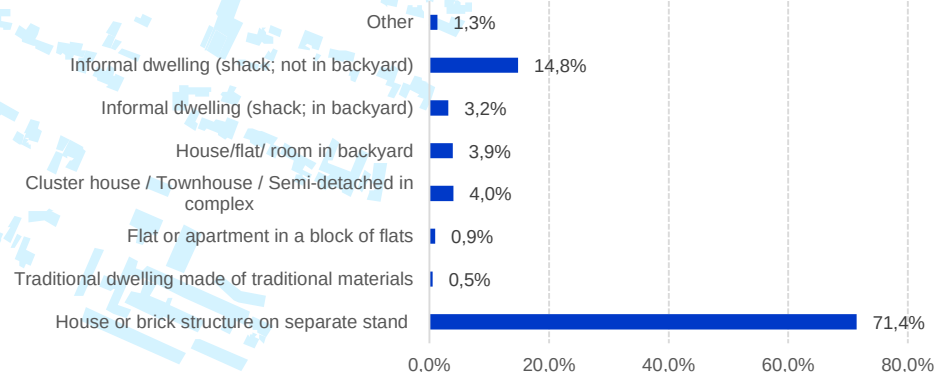




Figure 8

these plots, but upgrading would be required to accommodate extensive development.

There is a large informal settlement namely Sicelo⁽¹⁾ west of the R59 located adjacent to Meyerton Farms. The area east of the R59 is the core urban area of the Midvaal Local Municipality and includes the town of Meyerton with residential areas, CBD⁽²⁾, commercial and industrial uses. Unfortunately, these developments occurred prior to the development of the R59 freeway and therefore front onto the K89 and railway line, rather than onto the freeway.

There are three clearly distinguishable functional areas east of the R59.

- The first is the area between the R59 freeway and the K89. This area is used for urban residential development. There are various vacant properties available in this area, with infill development occurring sporadically.
- The second area is located between the K89 and the railway line. This area is developed with commercial and light industrial uses. The Meyerton railway station is also located in this area.
- The third area is located between the railway line and the Klip River and consists of the Meyerton Central Business District (CBD) and the adjacent residential area.

The Meyerton residential area can be described as an older, well-established residential area with large, single residential development. The Meyerton Golf Course forms a physical barrier between the main residential

area and the northern residential areas. This area is serviced by the municipal electricity network and there is sufficient spare capacity for further business and residential development.

2.2.2 Connectivity of the Study Area

(Source: Meyerton CBD Transport Impact Study 2019)

The study area (refer to Figure 8) is bordered by Carvalho Street in the north, Leyds Street in the south, Meyer Road in the west and Pierneef Boulevard (R551) in the east, and has limited connectivity to the west due to the railway line⁽³⁾ and Sybrand Van Niekerk Freeway⁽⁴⁾ restricting access.

The study area has two north-south links, consisting of Pierneef Boulevard and Meyer Road, linking the area to the broader road network. Meyer Road is linked to Sybrand van Niekerk Freeway (R59) in the north⁽⁵⁾ with an interchange and via Johan Le Roux Road⁽⁶⁾ also via an interchange. Johan Le Roux (planned K164) is currently the only high order road linking the study area to the west.

Lex Maximes Drive is the only other link over the freeway and Lily Road over the Railway line. Pierneef Boulevard connects the CBD to the areas east.

➤ **LOCAL ROAD NETWORK**

Almost all the streets in the study area are four-lane divided curbed streets with $\pm 32\text{m}$ road reserves. The only exceptions are (refer to **Diagram 3**):

- Pierneef Boulevard is a four-lane undivided street with a $\pm 44\text{m}$ road reserve. A short section of it, north of Loch Street is only $\pm 37.9\text{m}$ wide;
- Leyds Street, forming the southern study area boundary, is a single carriageway with curbing limited to the northern side (also $\pm 32\text{m}$ road reserve) (see Photo 1, Diagram 3);
- Half the section of Boet Kruger Street east of Eeufes Crescent is a single carriageway with the additional road reserve utilised for parks and parking;
- A one-way single lane ($\pm 12\text{m}$ road reserve) east to west between Gallaway and Fenton Streets, north of Loch Street (see Photo 1, Diagram 3);
- A one-way single lane ($\pm 12\text{m}$ road reserve) west to east running from approximately 160m west of Fenton Street to Gallaway Street (see Photo 1, Diagram 3);
- A one-way single lane ($\pm 12\text{m}$ road reserve) east to west between Fenton and Junius Streets, north of Boet Kruger Street (south of SAPD);
- Eeufes Crescent and Junius Street both single carriageways ($\pm 21\text{m}$ road reserves);
- Meyer Street starts as a four-lane undivided street at Leyds Street and changes to a divided street between Leyds and Shippard Streets up to

95m north of Carvalho Street. The GIS information indicates different road reserve widths for Meyer Street; at the narrow sections it is $\pm 52\text{m}$ wide and it goes up to 94.5m; and

- Fenton Street between Shippard and Leyds Street has no curbs.

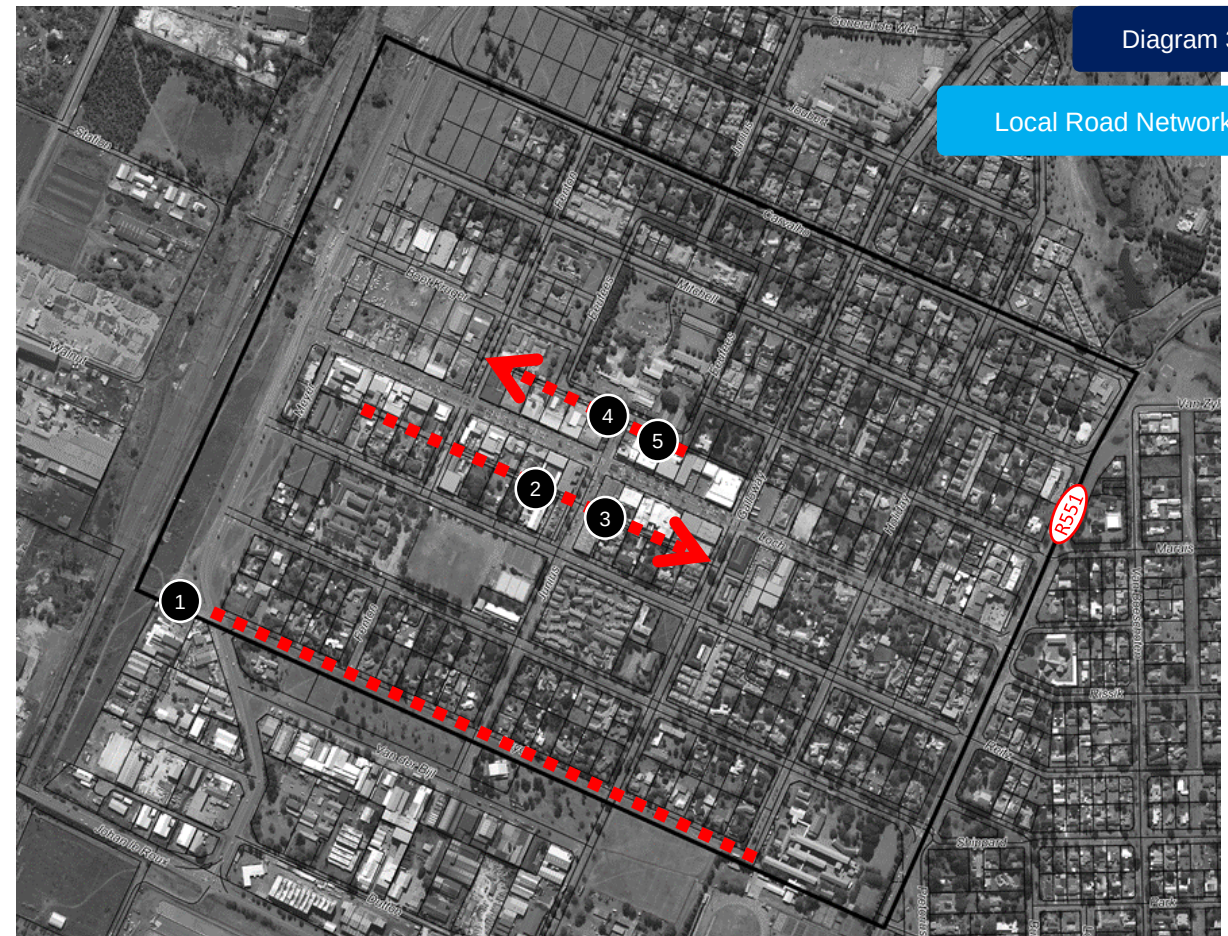
➤ **Traffic Demand and Peak Hour Traffic Flow**

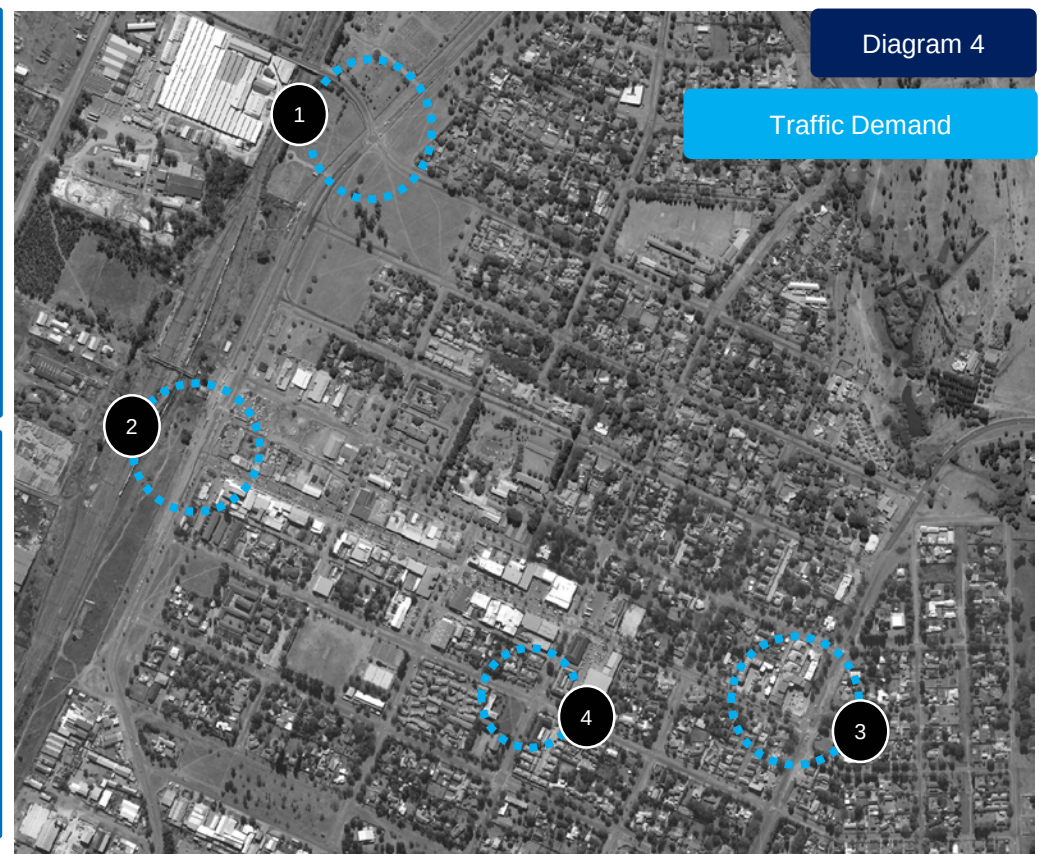
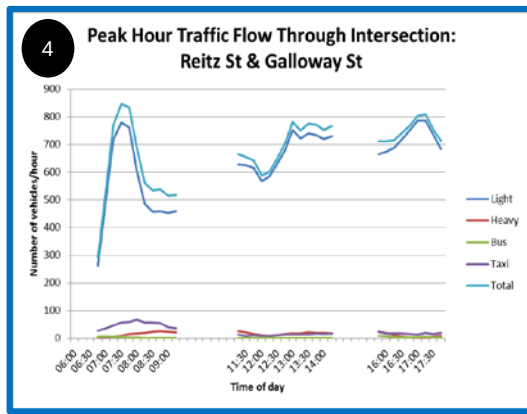
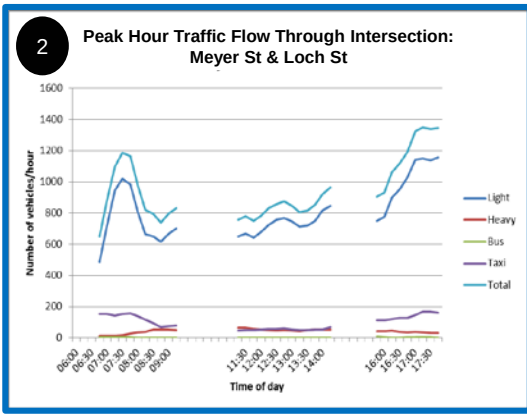
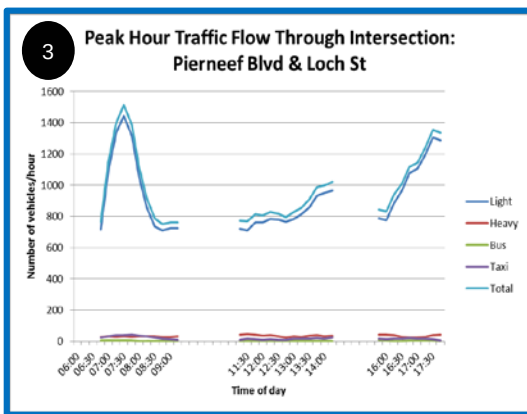
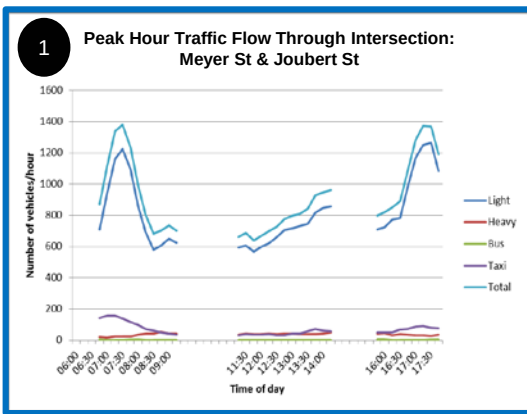
The existing traffic demand was obtained from traffic counts conducted on Wednesday and Thursday, 6 and 7 February 2019 between 06:00 and 18:00 (excluding 9:30 – 10:30 and 14:30 – 15:00). The existing peak hour traffic demand is depicted in **Diagram 4**. The included Graphs and Table depict the hourly traffic flow through the respective intersections surveyed.

From the surveyed traffic counts (as illustrated in Diagram 4), it is evident that in the morning between 07h00 to 08h00 and in the afternoon between 16h30 to 17h30 there is a significant increase in the traffic volumes at the recorded intersections.

The North-South AM / PM traffic volumes along Meyer Road, as indicated within **Diagram 5**, indicate primarily light vehicles accessing the CBD / schools during office hours, and leaving the CBD in the afternoon again.

In addition to the traffic counts, SANRAL has counting stations on some of the main roads in the area, refer to **Diagram 6**. From the SANRAL traffic counts, it is evident that the Johan Le Roux Road, which turns into Weiback Road (R551) on route to De Deur, carries a significant increase in traffic,

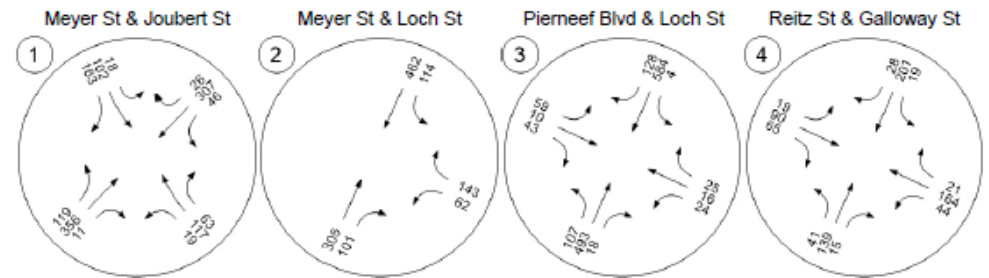




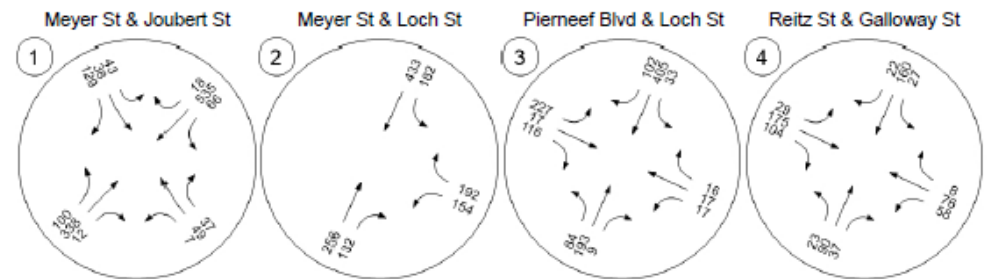
Increased traffic flow in morning and afternoon peak times is evident at all intersections surveyed.

Street	Location	Direction	Am Peak Hour	Pm Peak Hour
Loch	East of Meyer	East	215	314
		West	205	346
	West of Pierneef	East	112	360
		West	251	203
Pierneef	North of loch	North	577	436
		South	716	540
	South of Loch	North	618	286
		South	651	538
Reitz	East of Galloway	East	174	308
		West	233	121
	West of Galloway	East	229	142
		West	124	239
Galloway	North of Reitz	North	179	127
		South	248	209
	South of Reitz	North	195	150
		South	310	322

Scenario 1 - AM

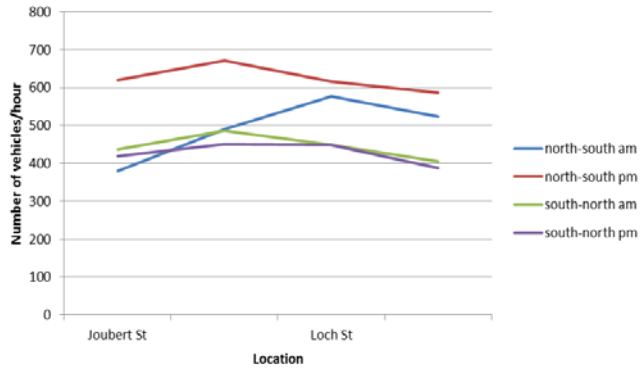


Scenario 1 - PM

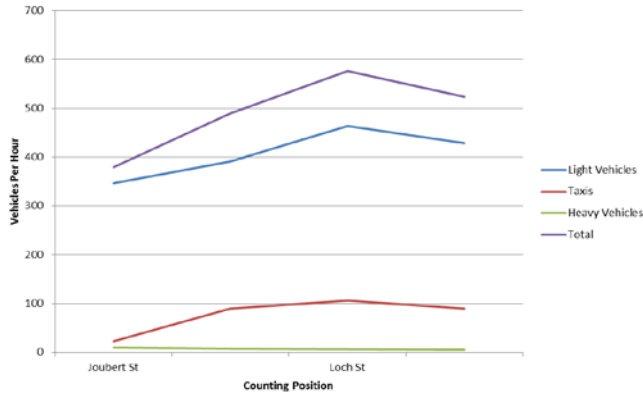




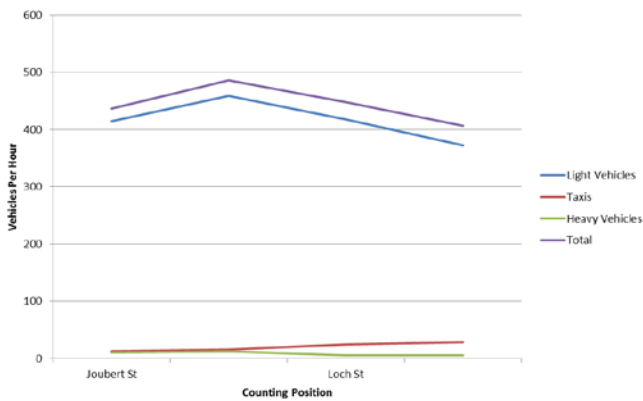
A.m and P.m Peak Hour Traffic Flow Along Meyer Street



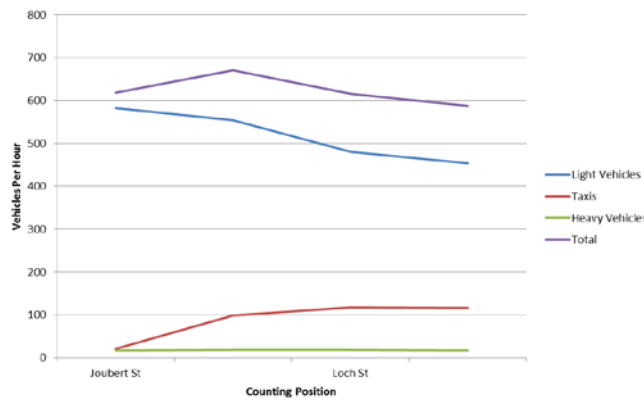
Morning Peak Hour Traffic Flow Along Meyer Street (North-South)



Morning Peak Hour Traffic Flow Along Meyer Street (South-North)



Afternoon Peak Hour Traffic Flow Along Meyer Street (North-South)



Afternoon Peak Hour Traffic Flow Along Meyer Street (South-North)

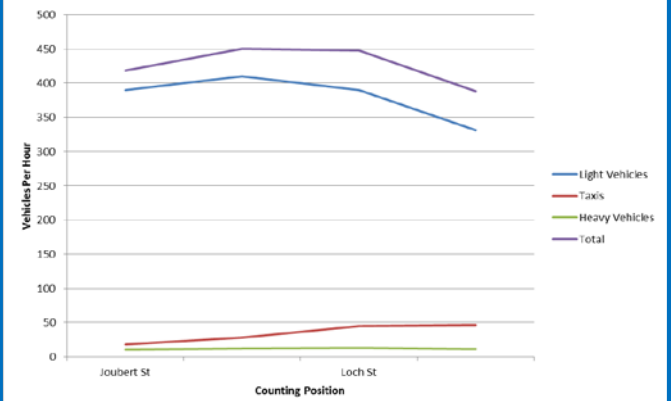
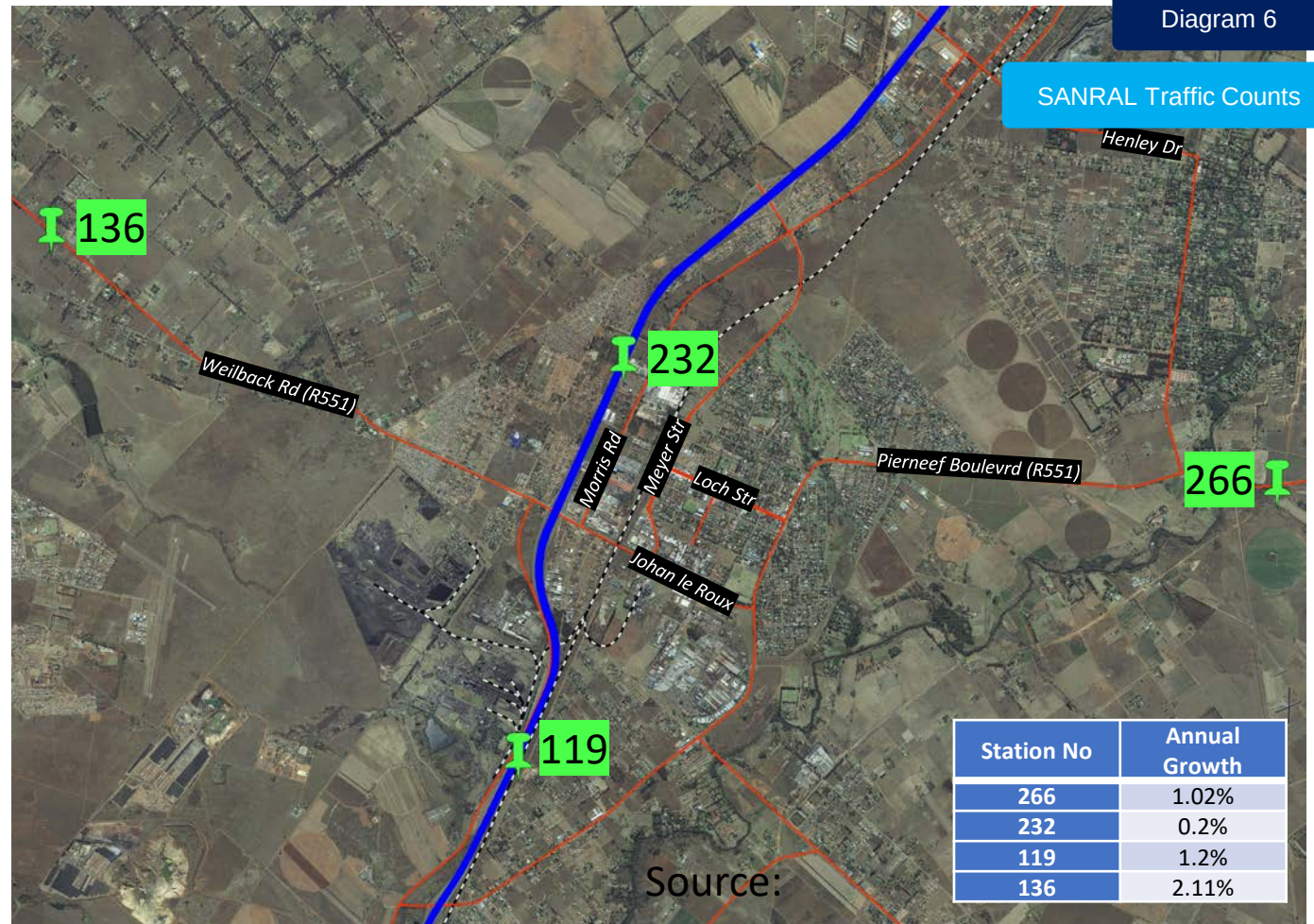


Diagram 6

SANRAL Traffic Counts

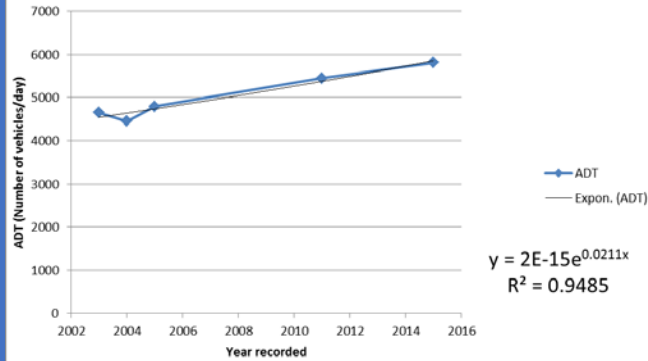
Station no:	Year	ADT
266	2009	2887
	2011	3209
	2013	2879
	2015	3204
232	2007	6419
	2008	6668
	2009	5194
	2010	5427
	2011	6993
119	2015	6060
	2004	5004
	2007	6286
	2008	5645
	2009	4607
136	2011	6868
	2013	5663
	2015	5923
	2003	4648
	2004	4454
	2005	4798
	2011	5452
	2015	5808



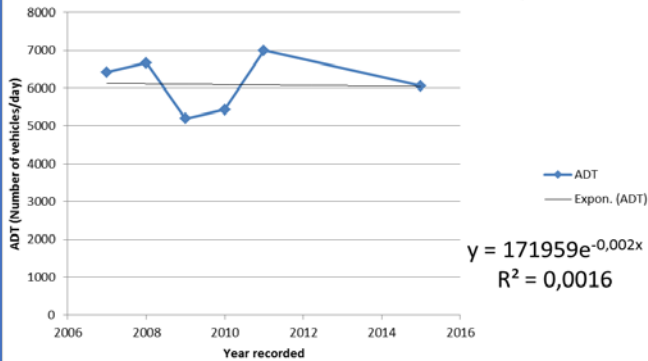
Source:

Station No	Annual Growth
266	1.02%
232	0.2%
119	1.2%
136	2.11%

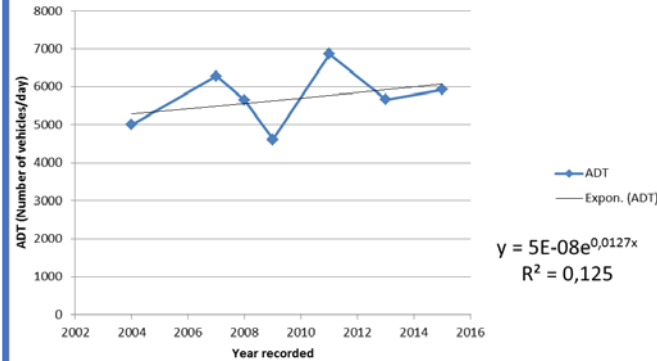
ADT RECORDED ALONG ROAD R59
(STATION 136 - SOUTH OF MEYERTON)



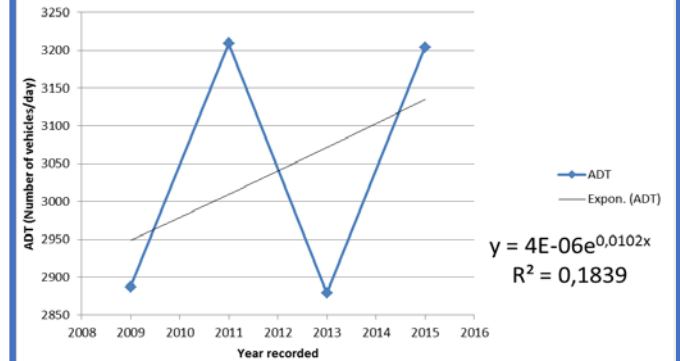
ADT RECORDED ALONG ROAD R59
(STATION 232 - NORTH OF MEYERTON)



ADT RECORDED ALONG ROAD R59
(STATION 119 - SOUTH OF MEYERTON)



ADT RECORDED ALONG ROAD R551
(STATION 266 - EAST OF MEYERTON)



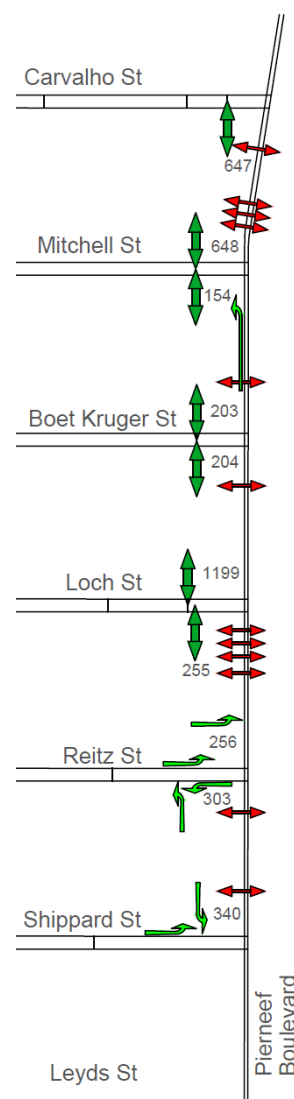
with an annual growth of 2.11% (measured from 2003 – 2015) compared to the other connector roads. The traffic demand on the R551 is likely to increase with the proposed Savana City Development.

➤ Access Management

With most of the road network provided with median islands, all accesses along it is left-in left-out, limiting the impact on the traffic flow. Median islands are opened at specific locations to allow turning movements. The only streets with limited access (access management) are:

Meyer Street	No access along Meyer Street with the following exceptions: • left-in to filling station and • access between Boet Kruger Street and Loch Street
Pierneef Boulevard	• No access should be allowed to individual properties. • There is no access from the eastern side.

There are however accesses along it from the western side. The access arrangements along it are depicted in the schematic drawing:



The current access arrangements are as follows:

- No access between Johan Le Roux and Shippard Streets;
- Access to residential houses (Erven 303 and 340), main accesses to both are off Shippard and Reitz Street respectively;
- Business on Erf 256 north of Reitz Street – left-in on Reitz and left-out on Pierneef Boulevard
- Erf 255 (Nursery School on southern half) mountable curbing with paved road reserve for the full length of the property;
- Erf 1199 north of Loch Street (Shopping Centre) – no access off Pierneef Boulevard (access limited to Loch Street with median island break provided, access $\pm 41\text{m}$ from stop line);
- Erf 204 south of Boet Kruger Street (Business Centre) – access off Pierneef Boulevard and access off Boet Kruger Street with opening in median island $\pm 84\text{m}$ from Pierneef Boulevard;
- Erf 203 (residential) north of Boet Kruger Street – main access off Boet Kruger with median island break. Mountable curbing is provided alongside the left turn lane for easy access off Pierneef Boulevard;
- Erf 154 (Business Centre) south of Mitchell Street – left-turn lane with left-in off Pierneef Boulevard. Main access off Mitchell Street with median island break provided;
- Erf 648 north of Mitchell Street – access off Pierneef Boulevard seems to be closed with parking provided for 6 vehicles, main access off Mitchell Street directly opposite access of Erf 154;
- Erf 647 (Filling Station) – full access off Pierneef Boulevard and off Carvalho Street (median island opening).

➤ Public Transport and Non-Motorised Transport (NMT)

Taxi Rank

There is one taxi rank facility located within the study area, along Meyer Street, opposite the railway station (refer to **Diagram 7**). The taxi rank serves a few destinations and is well utilised. The taxi rank provides 7 lanes with a loading capacity of 6 per lane. The taxi rank has limited holding space for taxis. Many taxis were spotted holding at various locations. There are large open space areas available close to the rank making scattered holding easy for taxi operators

From time series aerial photos, it is evident that the number of taxis within the holding areas has increased significantly – on 4 July 2018 the number of taxis holding on the land adjacent to the rank was 40 with another 12 further away. On 4 Feb 2019, 50 taxis are counted holding on the land adjacent to the taxi rank and 20 further away.

Other Facilities

Other public transport related facilities, including bus/taxi lay-byes, shelters at bus stops, truck lanes etc. are available and summarised in **Diagram 8**.

Current Peak Bus and Taxi Demand

The current morning and afternoon peak hour bus and taxi demand obtained from the traffic surveys are depicted in **Diagram 9**.

➤ Pedestrian Movement and Cycling

There are various pedestrian crossings throughout the study area as indicated in **Diagram 10**, with the schematic drawing (in blue) representing pedestrian crossings. The majority of the pedestrian crossings are located in Loch Street. Loch Street is very pedestrian friendly with wide paved sidewalks (refer to Diagram 10 - photos) with the parking areas provided forming a buffer between the pedestrians and on-street vehicle movement. A section of paved pedestrian route is provided along Meyer Street in close proximity to the taxi rank and railway station.

There are pedestrian crossings provided at the schools, in addition to the one in Mitchell Street in the proximity of the Midvaal Municipal Buildings and one in Meyer Road between the taxi rank and the rail station (refer to **Diagram 11**).

In addition to the formalised pedestrian crossings and paved sidewalks (primarily along Loch and Meyer Streets), numerous informal pedestrian and cycle routes are visible from Google Earth Images. **Figure 9** graphically represents the main informal pedestrian/cycle movement, which clearly indicates two main lines of movement, to and from the Meyerton CBD and Sicelo. The primary movement is along the R551⁽¹⁾ (Johan Le Roux Rd) and the secondary movement from the CBD⁽²⁾/ Taxi rank and railway station, across the existing railway bridge, along Station Road, with an unsafe crossing over the R59, as the route continues further north-west into Sicelo.

1

Taxi Rank Next to Meyer Road

1

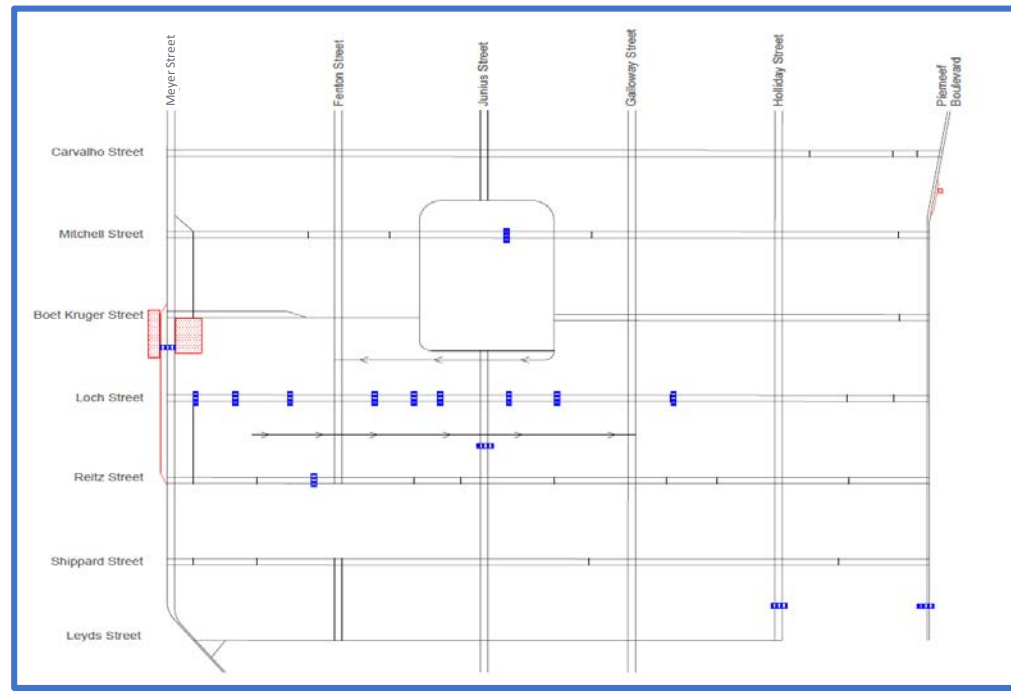
Taxi Rank Next to Meyer Road

Diagram 7

Public Transport Facilities

Diagram 7

Public Transport Facilities





Bus/taxi lay-by next to the taxi rank



Shelters for public transport users next to Meyer Road close to station



Lane for trucks next to station (also used by taxis)



Pedestrian bridge over railway line at station

Extended bus/taxi lay-by next to Pierneef Boulevard with shelter

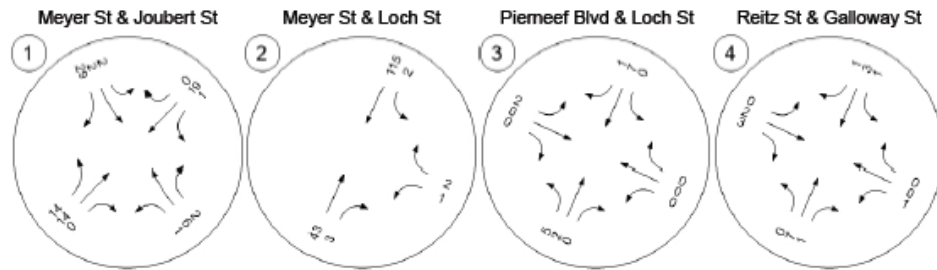


Diagram 8

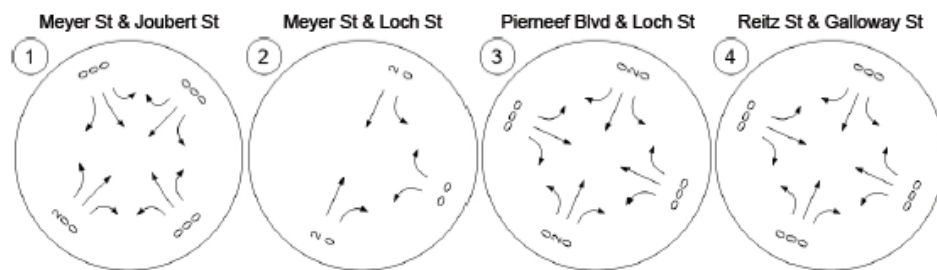
Other Transport Facilities

Existing Afternoon Peak Hour Traffic Demand - Public Transport

Mini-bus Taxis

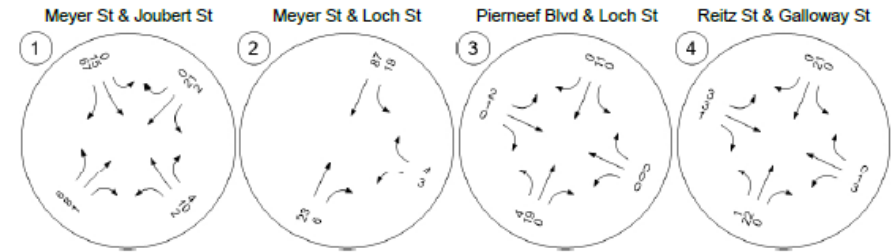


Busses

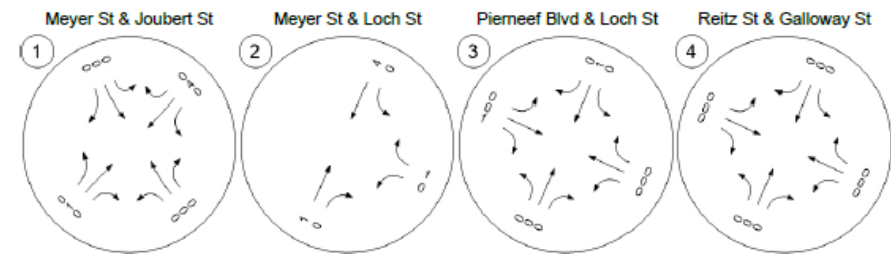


Existing Morning Peak Hour Traffic Demand - Public Transport

Mini-bus Taxis



Busses



Major taxi routes based on the survey information depicted on aerial photo:



Major bus routes based on the survey information depicted on aerial photo:

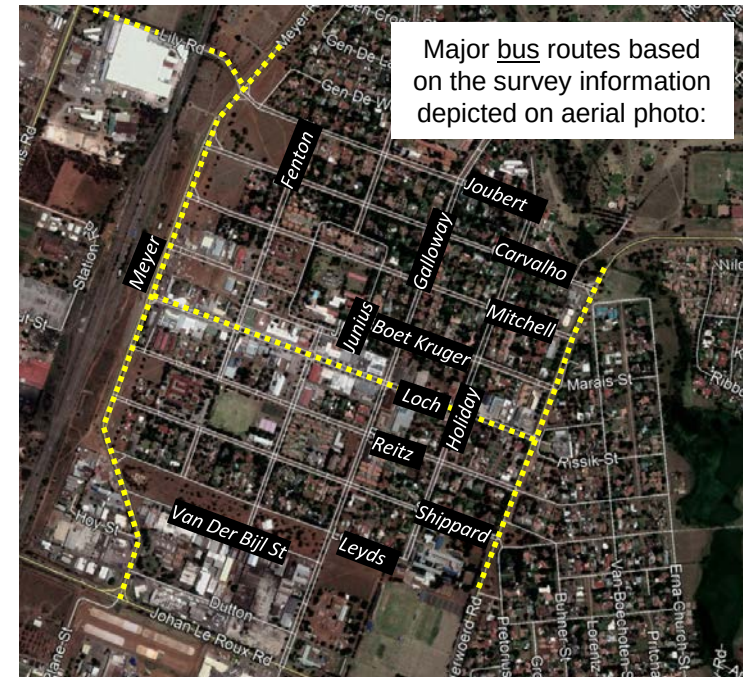


Diagram 9

Public Transport Traffic Demand (AM/PM)

Intersection	A.m. peak hour (No of taxis)	P.m. peak hour (No of taxis)
Meyer Street and Joubert Street	135	91
Meyer Street and Loch Street	142	163
Galloway Street and Reitz Street	55	19
Verwoerd Street and Loch Street	37	17

Intersection	A.m. peak hour (No of busses)	P.m. peak hour (No of busses)
Meyer Street and Joubert Street	5	2
Meyer Street and Loch Street	6	4
Galloway Street and Reitz Street	0	0
Verwoerd Street and Loch Street	2	2

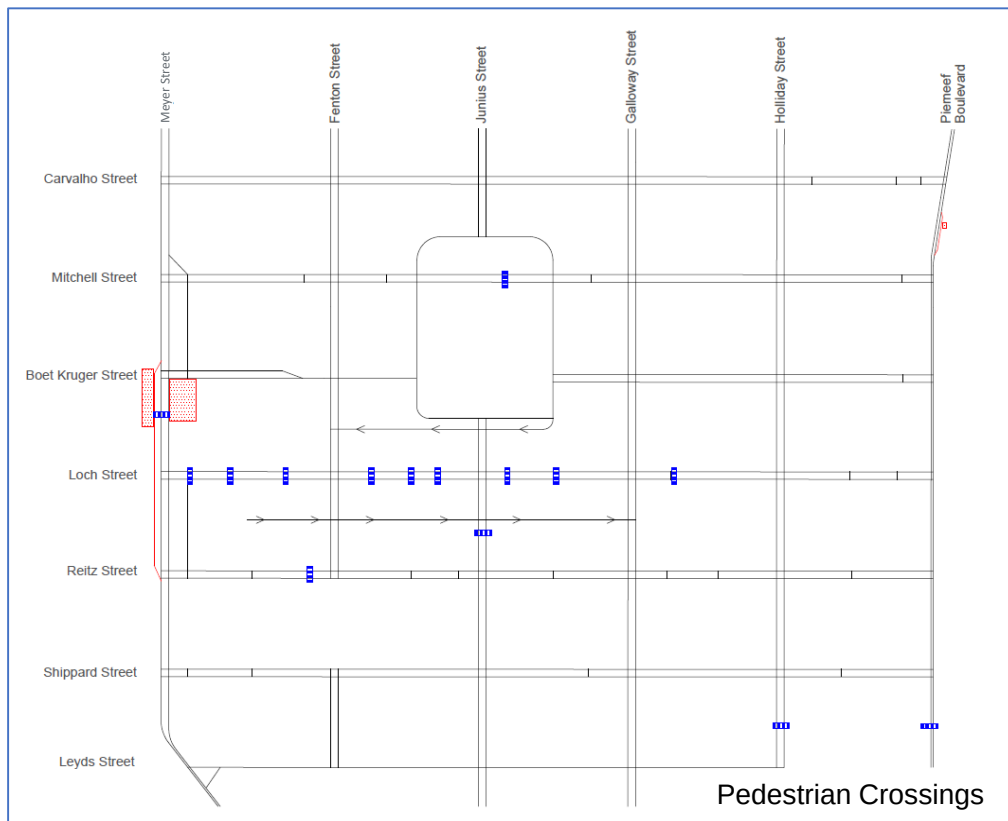


Diagram 10

Pedestrian Crossings
(Primarily Loch Street)

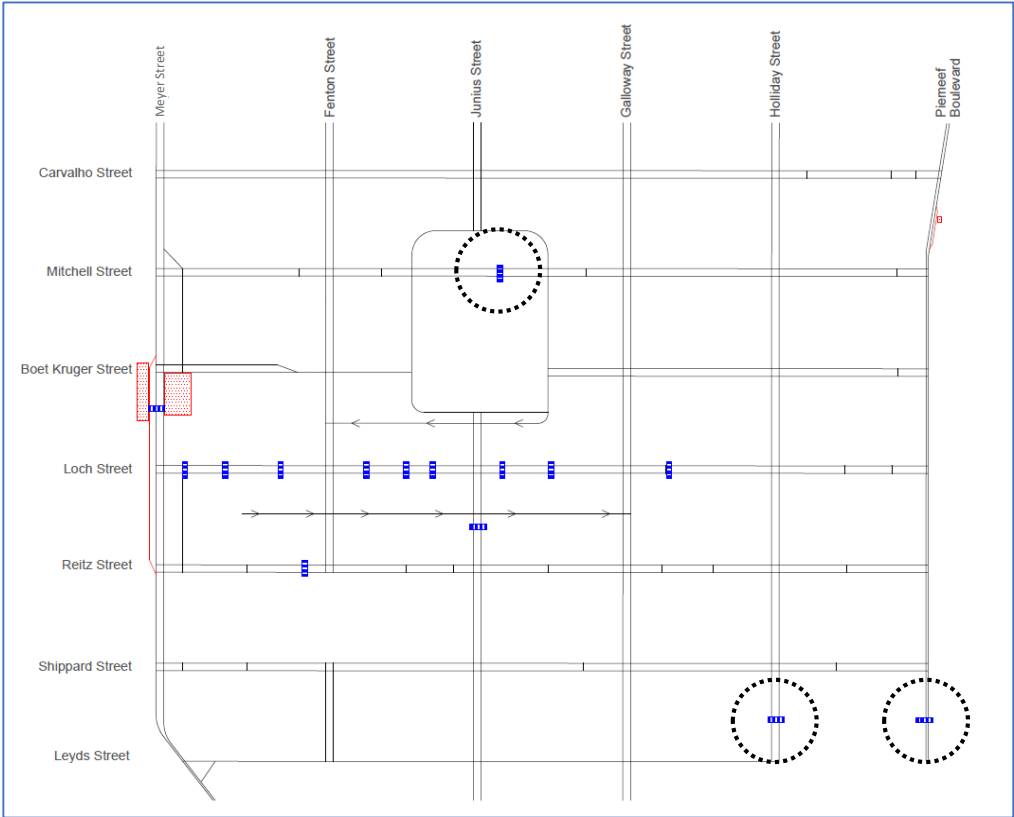


Diagram 11

Pedestrian Crossings
at Schools

➤ Parking

A detailed public parking assessment was undertaken as part of the Traffic Impact Study. The current parking supply is depicted in **Diagram 12** and summarised in **Table 1**. From the assessment the following parking bays are confirmed:

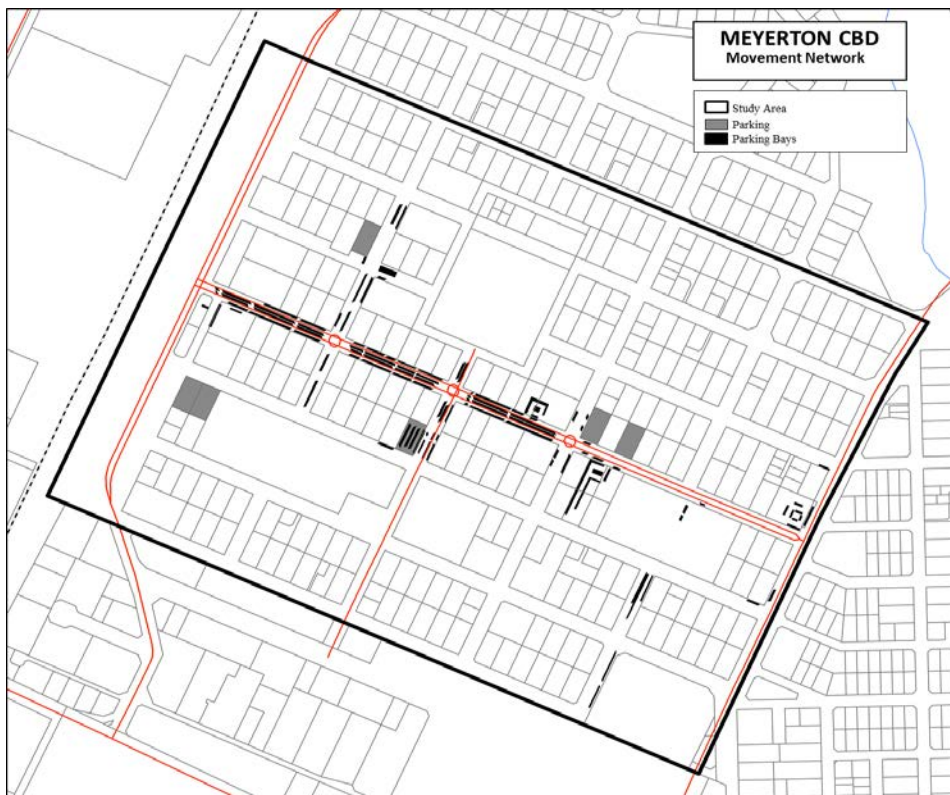
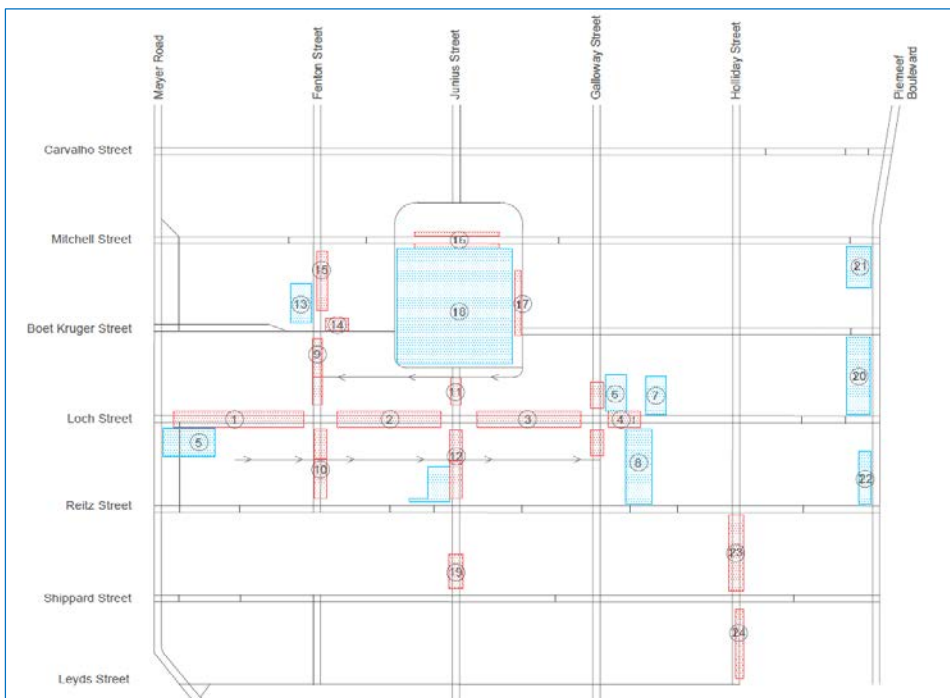
- 875 parking bays are provided on Loch Street
- 178 parking bays are provided on Fenton and Junius Streets

Based on a time series analysis (2015 to 2018) of Google Earth images a fairly consistent parking demand (50 to 60 % of the demand) is evident. As confirmed by the engineering division of Midvaal Municipality, it is expected that the month end Fridays and Saturdays to be the highest demand. The on-street parking bays were well utilised, with almost no demand for the two parking areas situated on Erf 243 and Erf 245.

Table 1: Location of Parking Areas

Location No	Next to	Location description	Number of parking bays
1	Loch Street (on-street)	Between Meyer Rd & Fenton St	186
2		Between Fenton St & Junius St	156
3		Between Junius St & Galloway St	200
4		Between Galloway St & Holiday St	16
5	Loch Street (on-site)	KFC & Erf 1068	40
6		Erf 243	80
7		Erf 245	70
8		Erf 170, 163 &169	127
9	Fenton Street (on-street)	Between Boet Kruger St & Loch St	68
10		Between Loch St & Reitz St	26
11	Junius St (on street)	Between Boet Kruger St & Loch St	24
12		Between Loch St & Reitz St	60
13	Boet Kruger & Fenton Streets (on-site)	Shopping Centre c/o Boet Kruger & Fenton Streets	30
14	Boet Kruger Street	Parking area in road reserve for Meyerton Magistrate's Court	20
15	Fenton Street (on-street)	Between Mitchell St and Boet Kruger St (SAPD and Magistrate's Count)	39
16	Mitchell Street (on-street)	Between Eeufees Crescent	40
17	Eeufees Crescent (on-street)	Between Mitchel St & Boet Kruger St	17
18	On site Eeufees Crescent	On site Midvaal Municipal Offices	138
19	Junius Street (on-street)	Disa Pre-Primary School	76
20	Pierneef Boulevard (on-site, road reserve compromised)	Between Boet Kruger St and Loch St	118
21	Pierneef Boulevard (on-site)	South of Mitchell	40
22	Pierneef Boulevard (on-site, road reserve compromised)	Business north of Reitz Street	28
		Mountable curbing Erf 255 (nursery school)	-
23	Holiday Street (on-street)	South of Reitz Street next to church	85
24		Between Shippard St and Leyds St for Secondary School Dr Malan	47
Total			1731

On Street Public Parking Distribution



Parking next to the school along Reitz Street takes place on the median and along the road as depicted in the Google Earth area photo.



Although there is a drop-off and pick-up area next to the school in Shippard Street vehicles were observed parking next to the school in the street.

MEYERTON CBD Pedestrian Movement and Open Space

- Study Area
- Open Space
- Pedestrian Movement
- Pedestrian Crossings
- Pedestrian Bridge Crossing
- Rivers

Sicelo Community Hall and Sports Fields

Meyerton Golf Club

Community Swimming Pool

Meyerton Sports Club

Limited cycling was observed within the study area. Although, apparently there are community members cycling from Sicelo via Johan Le Roux Road towards the CBD. There is no provision for safe cycling / pedestrians crossing over the railway bridge on Johan Le Roux Rd.

There is limited provision for pedestrian walkways over the Sybrand van Niekerk Highway and no sidewalks along Johan Le Roux Road:



Rail bridge - Johan Le Roux Road



Bridge over Sybrand van Niekerk (Johan Le Roux Road)

Figure 9

2.2.4 Areas of Decay

The area surrounding the taxi rank and railway station show visible signs of decay. The railway bridge is also showing signs of rust and require maintenance.

2.2.3 Open Space / Recreation Network and Landscaping Elements

There are several land parcels identified as open space within the CBD, although few are developed as recreational/active spaces (refer to **Figure 10**). The Meyerton Golf Club is located on the north-eastern boundary of the study area, with some outdoor gym apparatus and a jungle gym located on the south of Pierneef Boulevard opposite the golf course. A community swimming pool and landscaped open space area is located centrally at the Municipal offices.

The Meyerton Sports Club (including the Knights United Sports Club, Meyerton Bowling Club, Meyerton Rugby Club, Parkrun and Canoeing) is located approximately 2km south of the CBD (refer to Figure 9).

Landscaping elements (refer to Figure 10) is optimally utilised within the Meyerton CBD, especially along Loch Street, with the repetition of the traffic circles with landscaping/landmark element on each of the traffic circles.

➤ Informal Trading Activity

Informal Trading activity in the CBD takes places largely at the western end of Loch Street and Meyer Street, close to the Meyerton Station, taxi rank and smaller business shops. Informal trading activity along Loch Street occurs between Meyer Street and terminates at Fenton Street. Informal trade is mainly conducted in informal trading structures either in a form of tents or goods displayed in the open without any structure.

At both public transport facilities (taxi rank and train station), informal trading activity fronts onto Meyer Street for purposes of gaining visual exposure from the main road.

2.3 Land Use Composition and Distribution

The CBD functional area, as depicted in **Figure 11**, was established around a grid-like road network which extends across seven east-west orientated streets, including Carvalho, Mitchell, Boet Kruger, Loch, Reitz, Shippard and Leyds; as well as six north-south orientated streets, comprising Meyer, Fenton, Junius, Galloway, Holiday and Pierneef Boulevard (R551). The CBD comprises of 32 individual blocks and on average the blocks are about 120 meters by 250 meters in extent. The CBD extends about 1 km from north to south (Carvalho Street to Leyds Street) and 1.3 km from east to west (Pierneef Boulevard to Meyer Road).

From the building footprints, as illustrated in **Figure 12**, it is evident that the grain of the built environment is fairly fine along the peripheral parts of the CBD, becoming more coarse (high building coverage per erf) towards the

MEYERTON CBD Open Space and Recreation Network

- Study Area
- Open Space
- Pedestrian Movement
- Pedestrian Crossings
- Pedestrian Bridge Crossing
- Rivers

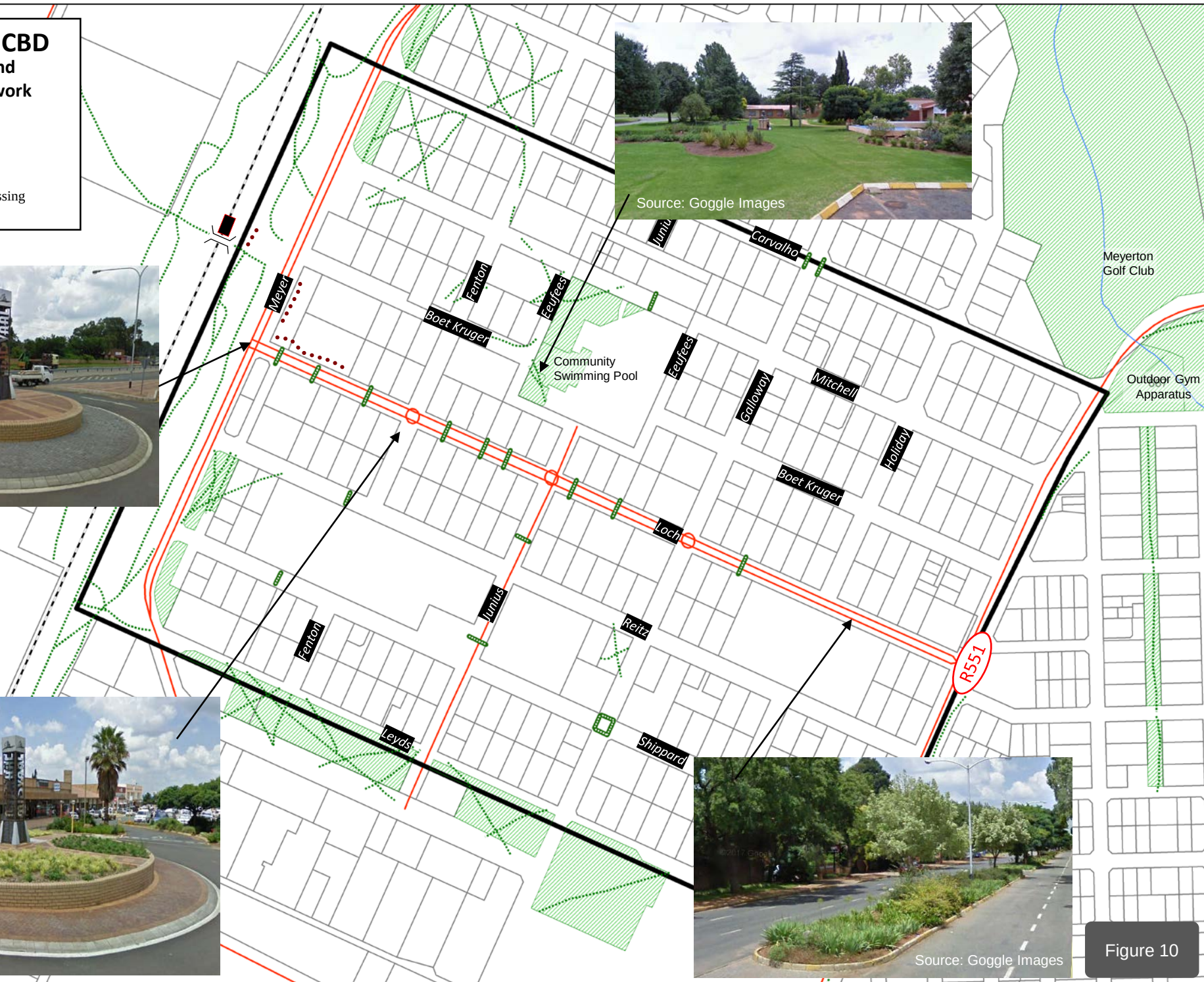


Figure 10

MEYERTON CBD

CBD Functional Area
(Blocks)

Blocks



Figure 11

MEYERTON CBD

Building Footprint and Building Height

- Study Area
- Ground Floor
- 1st Floor (2 storey)
- 2nd Floor (3 storey)
- Main Roads
- Secondary Roads
- Railways

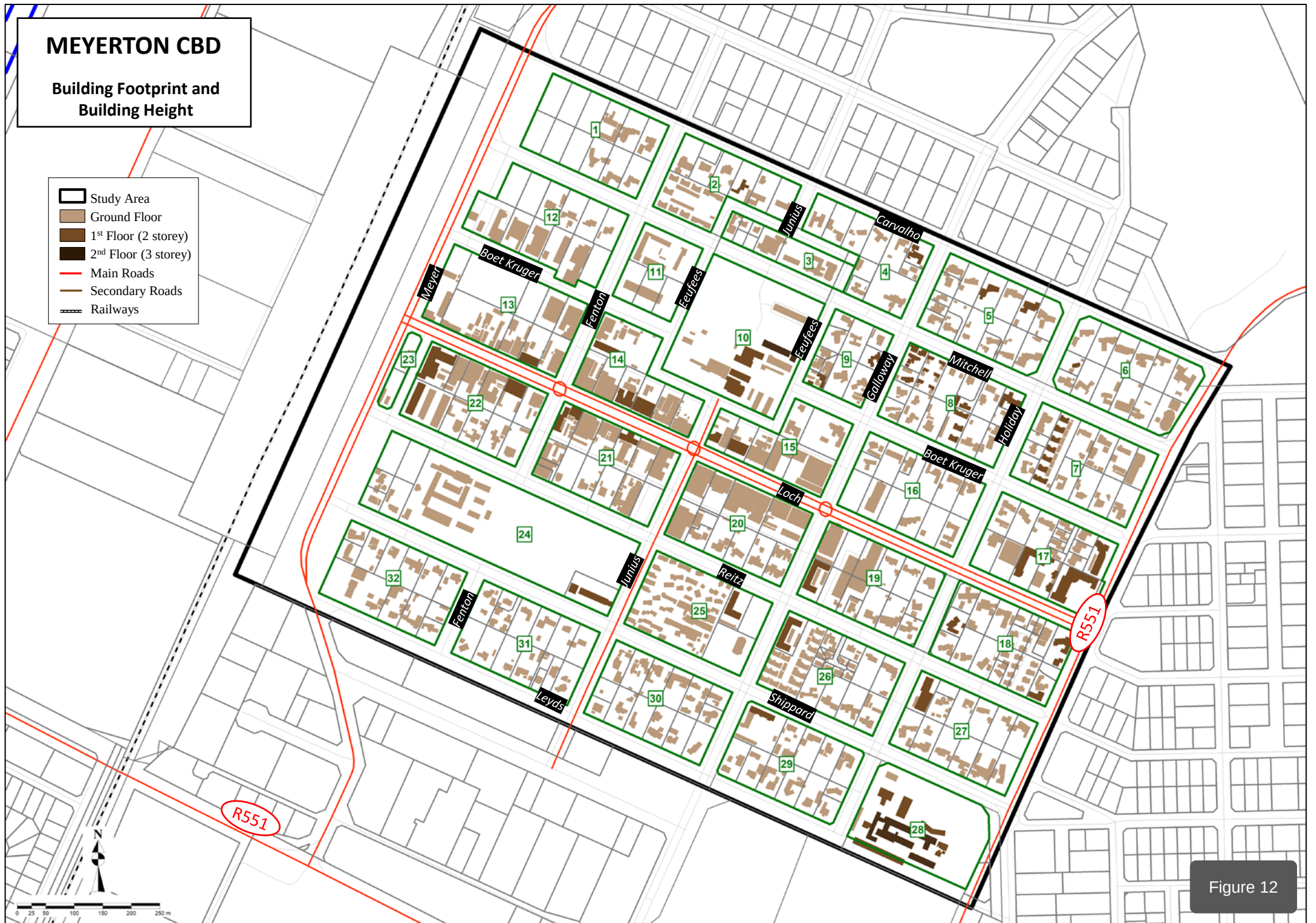


Figure 12

central parts (especially along Loch Street). The variation in building height follows a similar pattern to the footprints, whereby it is evident that the multi-story buildings are primarily located within the core area of the CBD (primarily along Loch Street).

The CBD core area can be divided into three functional areas in terms of its role and functional (evident from the footprints and land use survey). **Figure 13** graphically represents the three functional areas, described below:

Functional Area 1	- Functional Area 1 borders Boet Kruger Street to the north, Fenton to the east, Reitz to the South and Meyer to the west. - The area is primarily characterised by smaller retail stores, hair salons and fast-food outlets, focusing primarily on the “bag shopper” market segment due to the close proximity to the Taxi rank and Railway station, with commuters accessing the town via public transport.
Functional Area 2	- Functional Area 2 borders Boet Kruger Street to the north, Junius to the east, Reitz to the South and Fenton to the west. - The area is primarily characterised by bigger retail stores, clothing outlets and restaurants. This area serves as a transitional area between the “bag shopper” market segment and the “private vehicular shopper” market segment.

Functional Area 3



- Functional Area 3 borders Boet Kruger Street to the north, Pierneef Boulevard (R511) to the east, Reitz to the South and Junius to the west.
- The area is primarily characterised by bigger anchor retail outlets, clothing stores and niche stores located within small shopping centre configuration with dedicated parking.
- In addition, home offices are located within the eastern section of the functional area.

2.3.1 Land Use Composition

Figure 14 depicts the existing land uses of the Meyerton CBD at erf level as captured during a land use survey conducted in February 2019. The following are the main features evident from this figure:

- There is a well-defined business precinct located along Loch Street, extending from Meyer up to Galloway Street.
- From Galloway eastwards to road R551, Loch Street is characterised by new smaller shopping centres and mixed uses operating from houses. These are mostly in the form of home offices.
- There is a well-defined and structured institutional precinct in the central-northern part of the CBD which holds the municipal offices, town hall, library, post office, magistrates court, police station and clinic.

MEYERTON CBD

Functional Areas

- Functional Area 1
- Functional Area 2
- Functional Area 3



Figure 13

MEYERTON CBD

Current Land Use (2019)

- Study Area
- Dwelling
- Cluster Housing
- Flats
- Education
- Municipal / Government
- Police Station
- Religion
- Medical
- Animal Clinic
- Old Age Home
- Retail
- Commercial
- Filling Station
- Motor Industry
- Office
- Home Enterprise
- Parking
- Taxi Rank
- Vacant Erf
- Vacant Building
- Under Construction

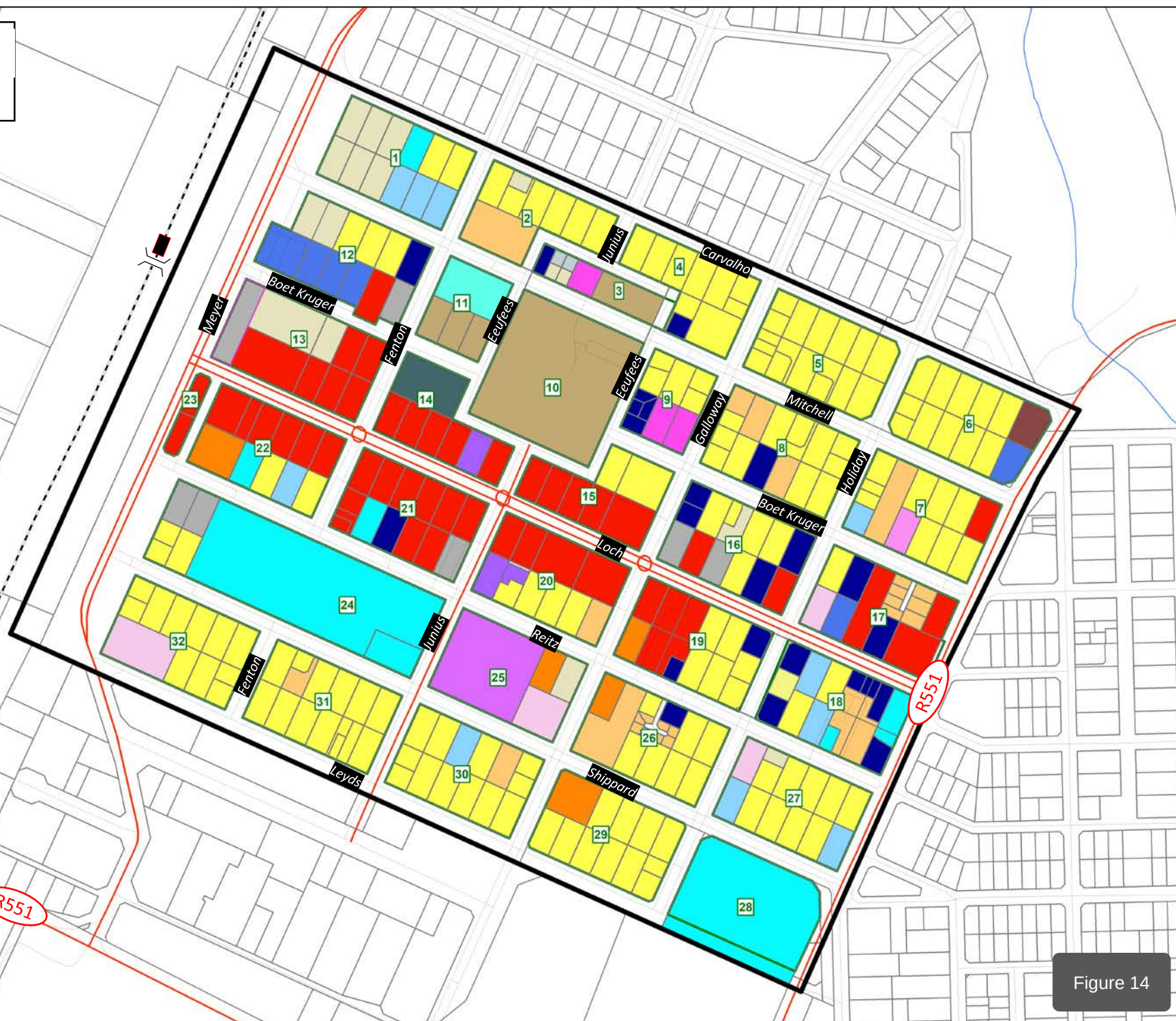


Figure 14

- There are a number of medical uses (clinic, medical consulting rooms etc) located along the north-eastern border of the institutional precinct.
- Several offices and home offices also occur in the residential area to the north-east of the CBD along Boet Kruger Street.
- To the south along Reitz and Shippard Streets, several flats (2 storeys) are located in close proximity to the CBD.
- The major public transport facilities (railway station and taxi rank) are located in close proximity to one another at the western entrance of the CBD on the corner of Meyer and Loch Streets.
- A fairly large concentration of vacant erven exists in the north-western section of the CBD along Meyer Street and up to Carvalho Street. The vacant properties are currently utilised as holding areas for the Taxi rank.
- Loch Street is well pedestrianised with fairly wide walkways, greenery, public benches, planters etc.
- The narrow strip of land around between Reitz and Leyds Streets mostly comprises residential use with the primary and secondary school as well as an old age home located in this precinct. The Meyerton X3 industrial area and Fire Brigade Service borders onto this precinct to the south.

Table 2 and **Diagram 13** reflects the floor area per land use of the CBD as derived from the land use assessment. The floor area is calculated from the building footprints. The land use distribution per block is graphically illustrated in **Figure 15**.

From the floor area per land use, it is evident that dwellings have the highest floor area take-up, (69 381m²), followed by retail (61 557m²) and then cluster housing, flats and the old age home (37 935m²) within the CBD. Medical (2 310m²) and religion (4 107m²) related land use have the lowest take-up within the CBD.

Table 2: Land Use Floor Area

Land Use	Floor Area (m ²)	Percentage (%)
Dwelling (single residential)	69 381	26,1%
Retail	61 557	23,1%
Cluster/ Flats/ Old Age Home	37 935	14,3%
Education	26 348	9,9%
Office	24 690	9,3%
Other	16 273	6,1%
Government	16 266	6,1%
Motor	7 198	2,7%
Religion	4 107	1,5%
Medical	2 310	0,9%
Total	266 066	

MEYERTON CBD

Land Use Distribution

-  Study Area
-  Dwelling
-  Cluster Housing/Flats/Old Age Home
-  Retail/Hardware
-  Motor Industry/Filling Station
-  Office/Home Office
-  Government/Institutional
-  Medical
-  Education
-  Religion
-  Other

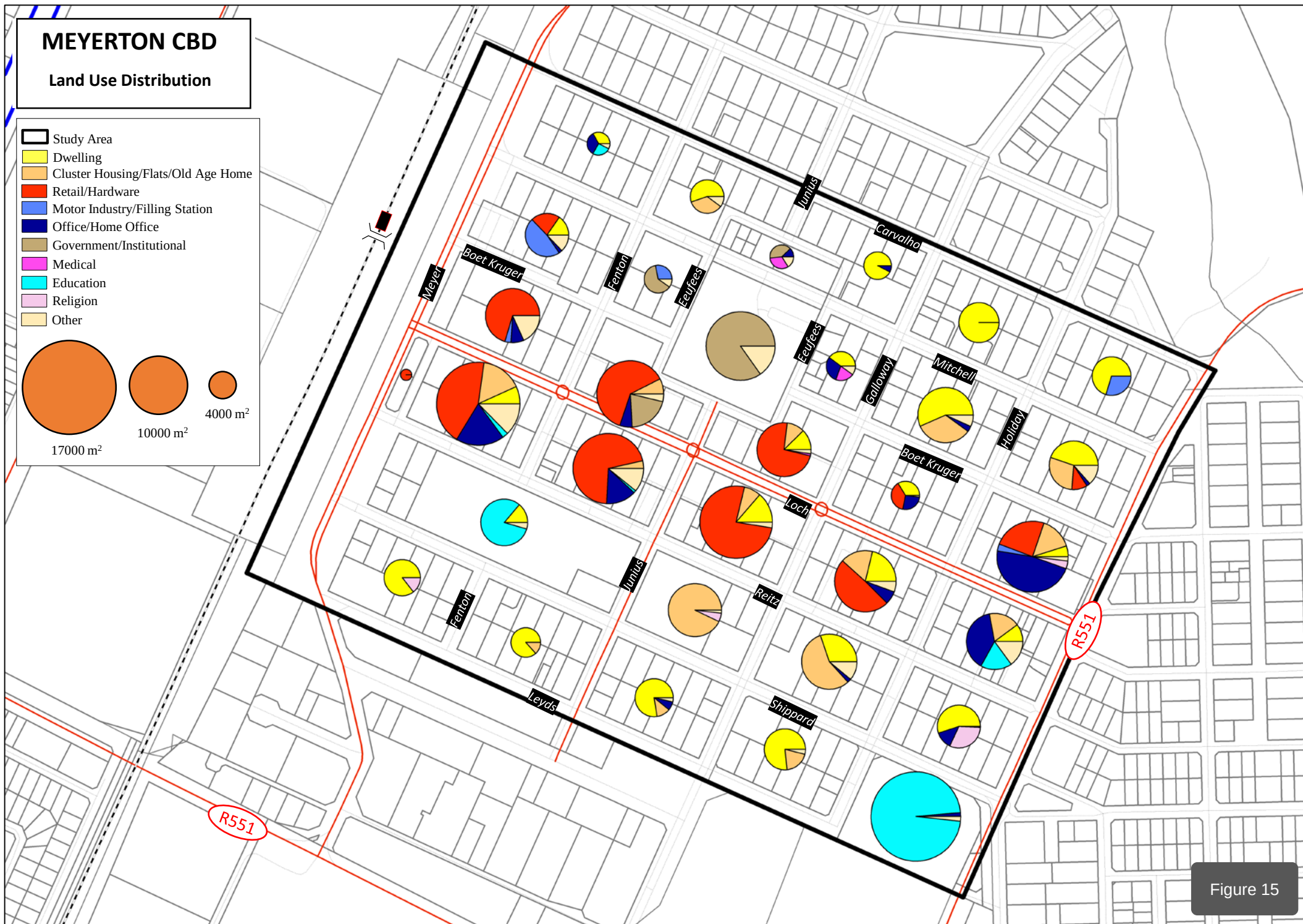
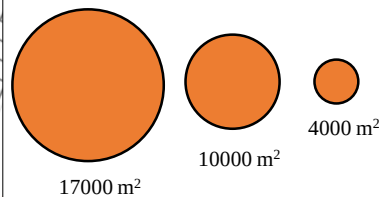


Figure 15

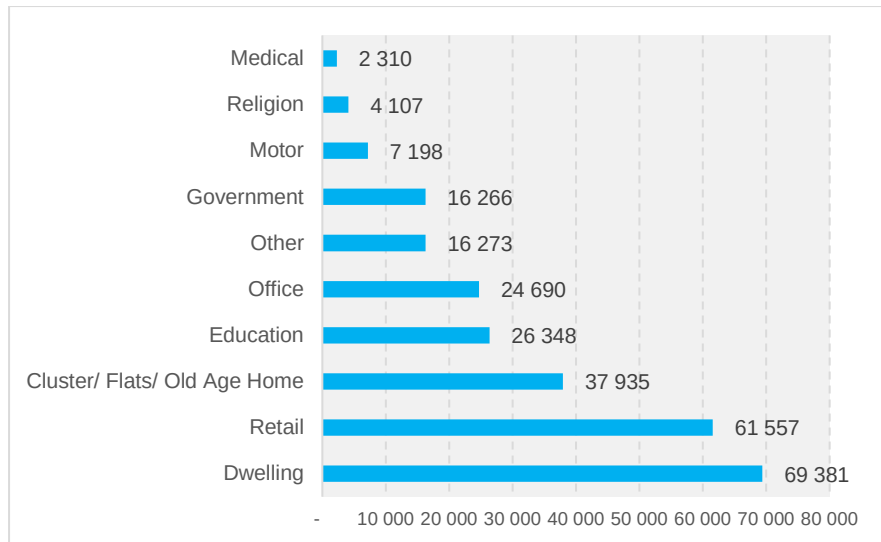
Diagram 13: Floor Area (m²) per Land Use**Land Use Per Floor**

Figure 16 reflects the distribution of land use at ground floor level in the Meyerton CBD. Several spatial trends are prominent in this regard:

Ground Floor:

- Retail related land uses is primarily concentrated along Loch street.
- Home office land uses is primarily located along Loch street between Galloway to the west and Pierneef Boulevard to the east.

- The single residential and cluster housing is primarily located on the peripheral areas of the CBD (towards the north and south).

Ground Floor +1

Figure 17 reflects the distribution of land use on the GF+1 level in the CBD, with the following main trends emerging:

- The primary land use on the first floor is flats, cluster housing, educational or offices. The office land use is primarily along Lock Street.

Ground Floor +2

From **Figure 18**, it is evident that the only buildings within the CBD with a ground floor +2 are the School (High School DR Malan) located within Block 30 and the municipal buildings located within Block 10.

The following section provides a detailed assessment per main land use category.

2.3.2 Retail and Related Land Use

From **Figure 19** it is evident that retail and hardware is mainly clustered in the central parts of the CBD area along Loch street, with to smaller retail outlets located north of Boet Kruger Street.

Figure 20 illustrates the corresponding building footprint of the various retail and hardware facilities and services throughout the CBD area. From the footprints, it is evident that the retail offering west of Junius Street is smaller

MEYERTON CBD

Ground Floor Land Use

-  Study Area
-  Dwelling
-  Cluster Housing
-  Flats
-  Education
-  Municipal / Government
-  Post Office
-  Religion
-  Medical
-  Animal Clinic
-  Old Age Home
-  Retail
-  Commercial
-  Filling Station
-  Motor Industry
-  Telecommunication
-  Office
-  Home Enterprise
-  Parking
-  Taxi Rank
-  Vacant Building
-  Under Construction



Figure 16

MEYERTON CBD

Ground Floor +1 - Land Use

- Study Area
- Dwelling
- Cluster Housing
- Flats
- Education
- Municipal / Government
- Telecommunication
- Religion
- Office
- Under Construction

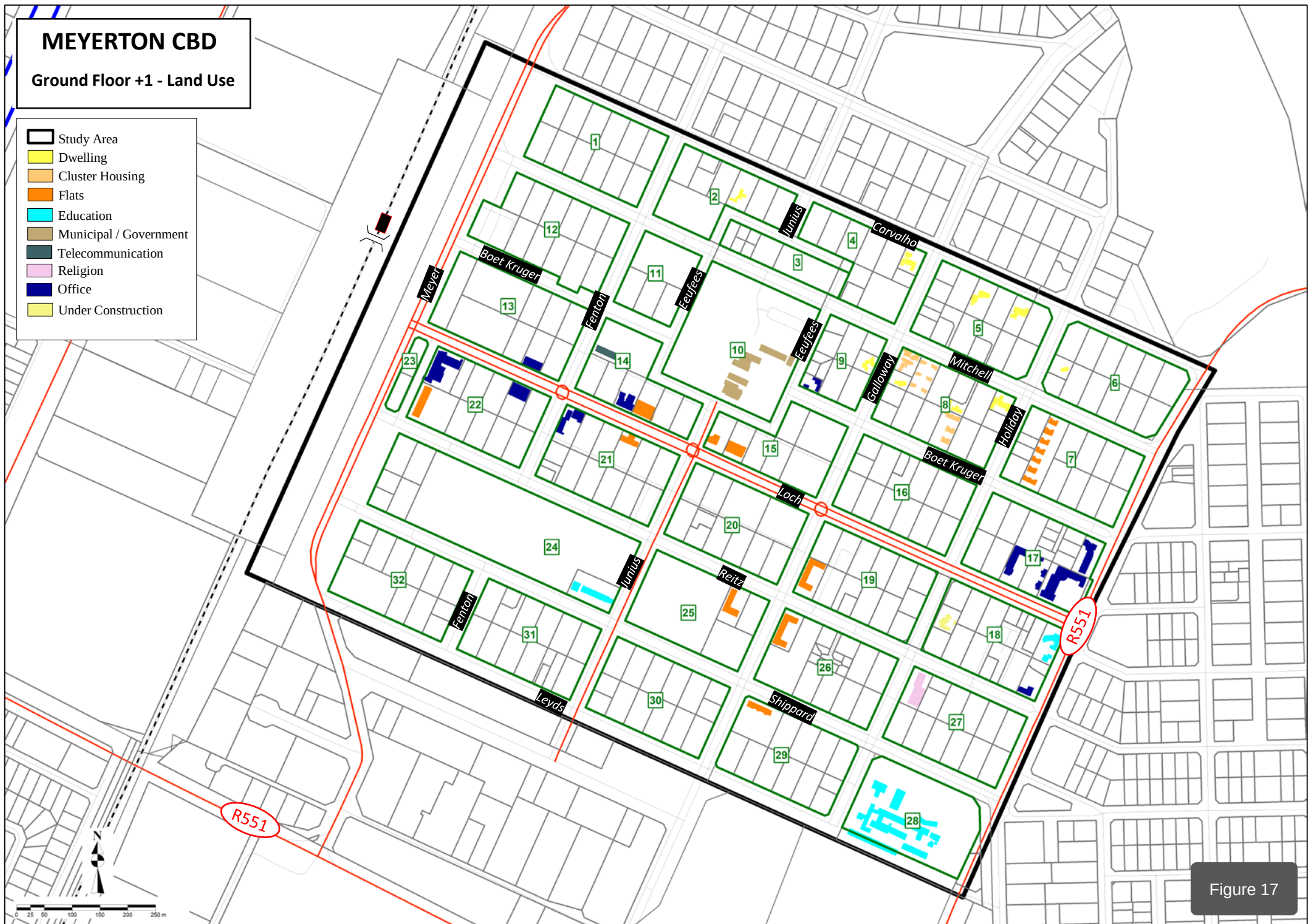


Figure 17

MEYERTON CBD

Ground Floor +1 - Land Use

- Study Area
- Dwelling
- Cluster Housing
- Flats
- Education
- Municipal / Government
- Telecommunication
- Religion
- Office
- Under Construction

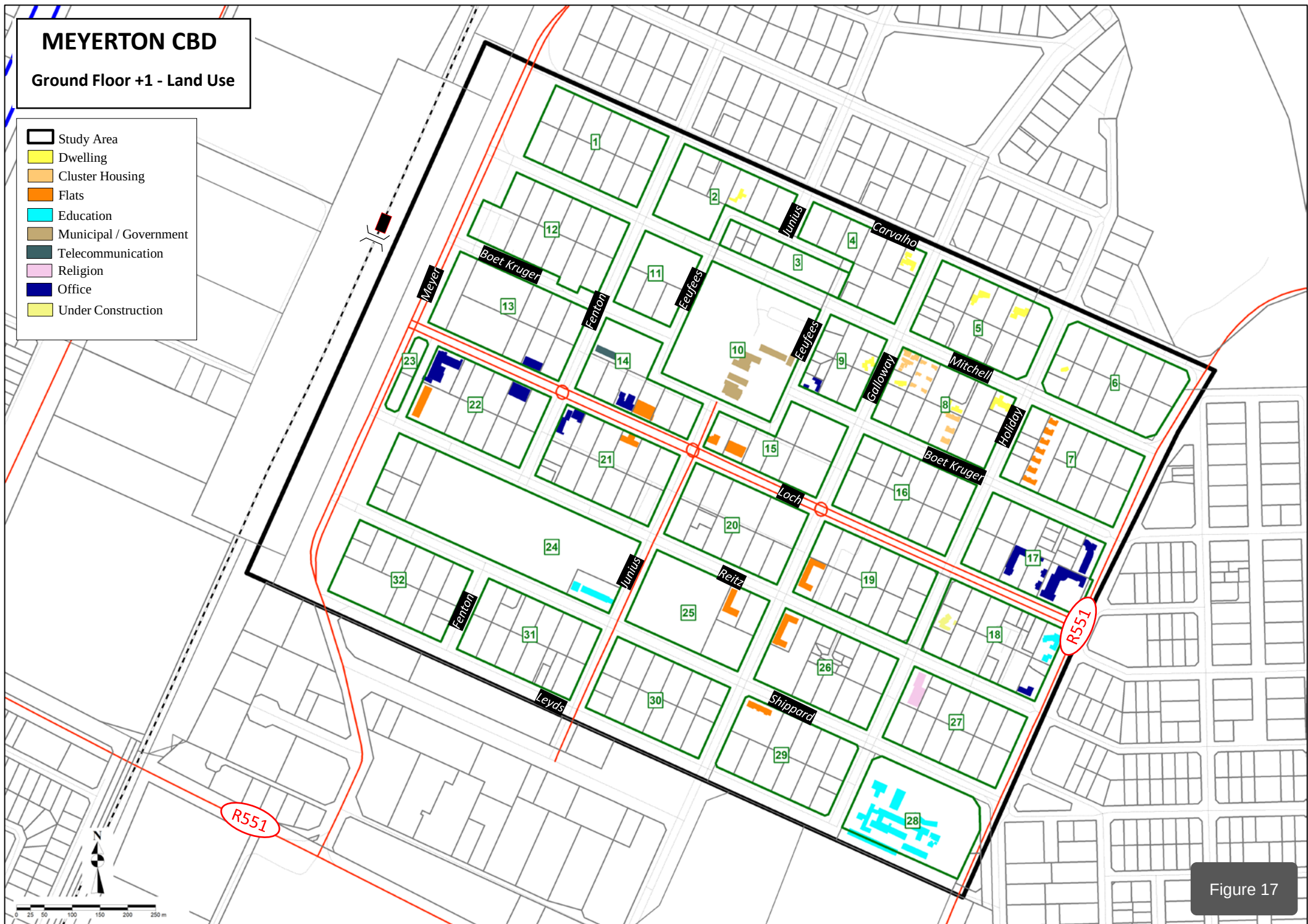


Figure 17

MEYERTON CBD

Ground Floor +2 - Land Use

- Study Area
- Municipal / Government
- Education

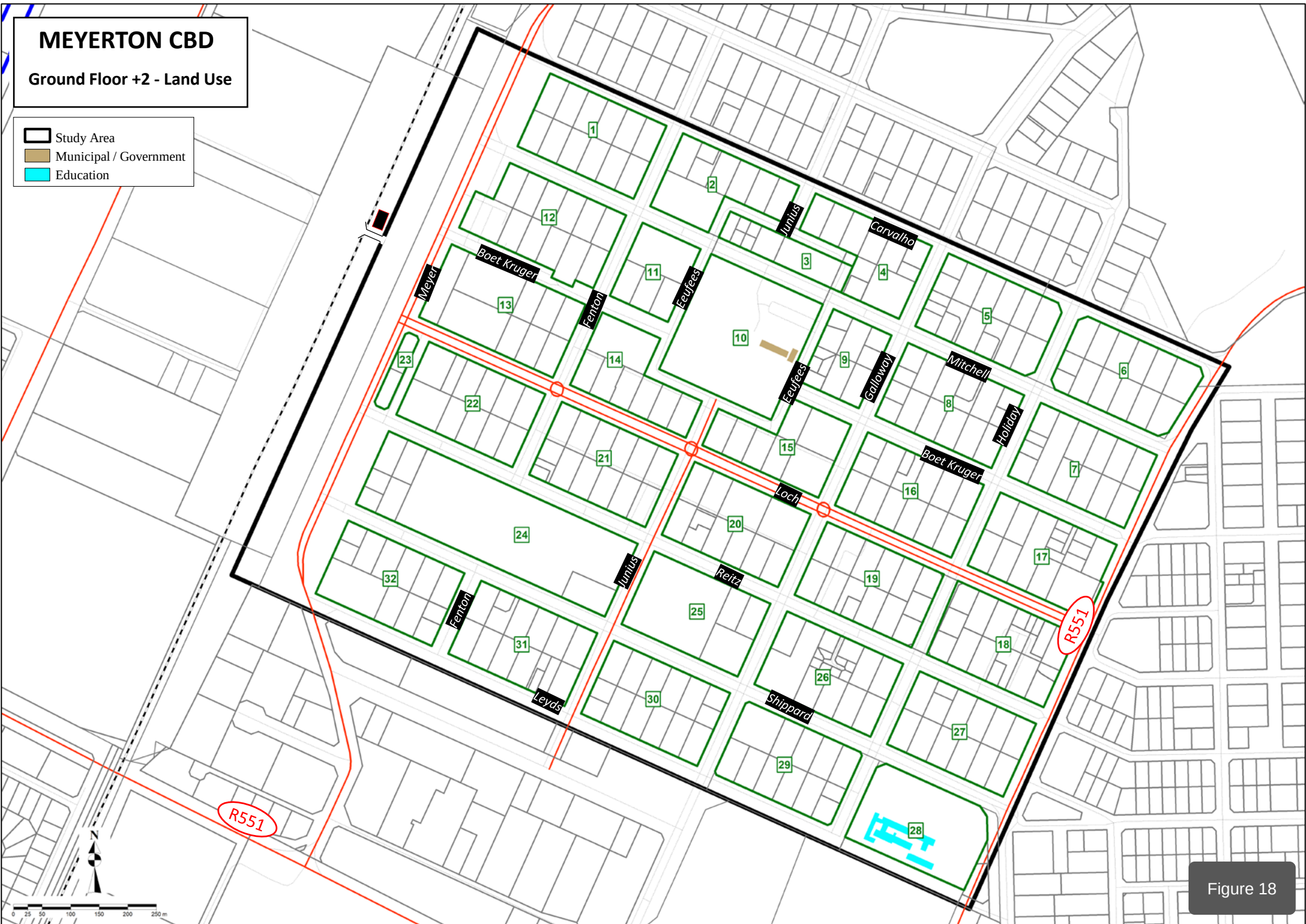
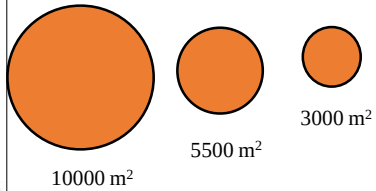


Figure 18

MEYERTON CBD

Retail Land Use Distribution

- Study Area
- Retail
- Hardware



Block m²

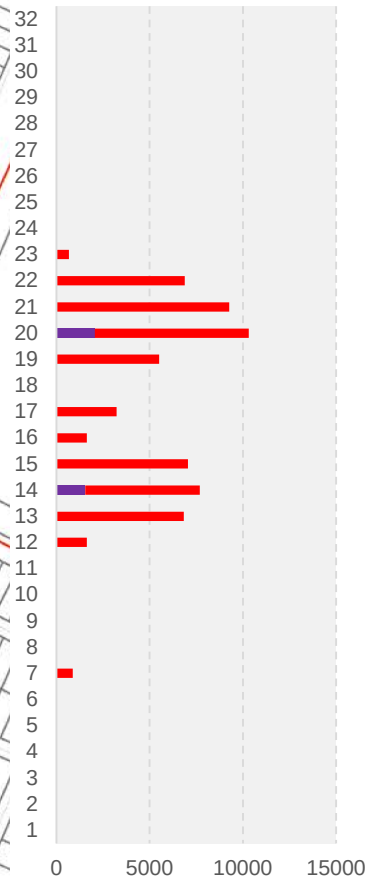


Figure 19

MEYERTON CBD

Retail Footprint Distribution

- Study Area
- Retail
- Hardware



Figure 20

outlets clustered together, whilst the larger outlets are located to the east of Junius Street.

2.3.3 Office and Related Land Use

Figure 21 graphically illustrates the Office land use distribution, representing Office, Home Office, Institution and Government/ Municipal land uses. It is evident that the Government/ Municipal precinct (clustered in the north-western section of the CBD) represents the largest office related floor area within the CBD. The largest office concentration is located in Block 17, representing 6 248m².

From the Office land use distribution footprints (refer to **Figure 22**) it is evident that the offices have a smaller and more dispersed footprint pattern, predominantly centred along Loch Street and the Government Precinct. Home offices are clustered south-west of Loch street.

2.3.4 Residential and Related Land Use

The Housing Land use distribution represents Dwellings, Cluster Housing, Flats and the Old Age Home. From **Figure 23** it is evident that the Old Age Home represents almost the entire land use of block 25. Flats are predominantly located along Loch street and Galloway street.

Figure 24 represents the Housing land use footprints. It is evident that the housing land use is a fine grain, primary towards the outwards the northern

and southern boundary of the CBD. Whilst the flats have a larger footprint. The cluster housing in the CBD is developed at an average density of 20-22 dwelling units per ha.

2.3.5 Motor Industry Land Use Distribution

The motor industry and related land use is the third smallest land use within the CBD, although worth noting. From **Figure 25** it is evident that the more related industry is primarily located on the outer western and eastern boundary of the CBD, along the main movement roads, Pierneef Boulevard and Meyer Street. A cluster of the motor industry and related land use is located at the Taxi rank.

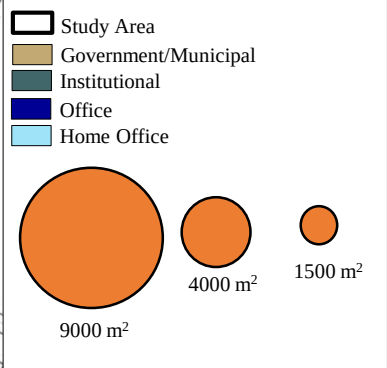
From **Figure 26** it is evident that the motor industry related land uses has relatively large footprints.

2.3.6 Land Use Change 2000-2019

As stated earlier, a comprehensive land use study was conducted in 2011 as part of the Midvaal CBD Precinct Plan (core area and interface zone) (the land use was captured based on the 2009 aerial photograph). It is valuable to assess the change in land use from 2011 to 2019 in identifying development trends. **Table 3** (see overleave) indicates the land use captured 2011 (which is graphically illustrated in **Figure 27**), compared to the current 2019 land use (which is graphically illustrated in **Figure 28**).

MEYERTON CBD

Office Land Use Distribution



Block m²

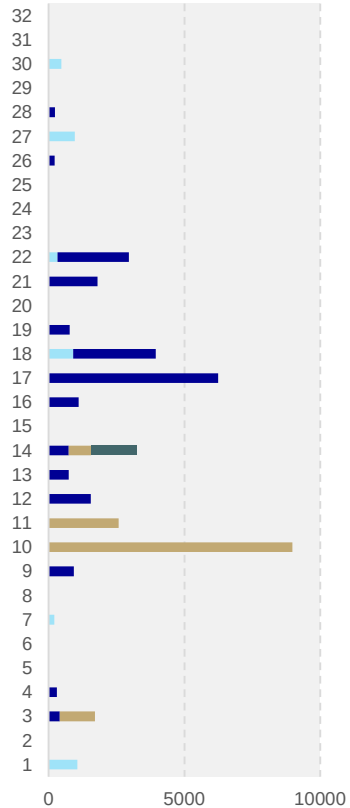
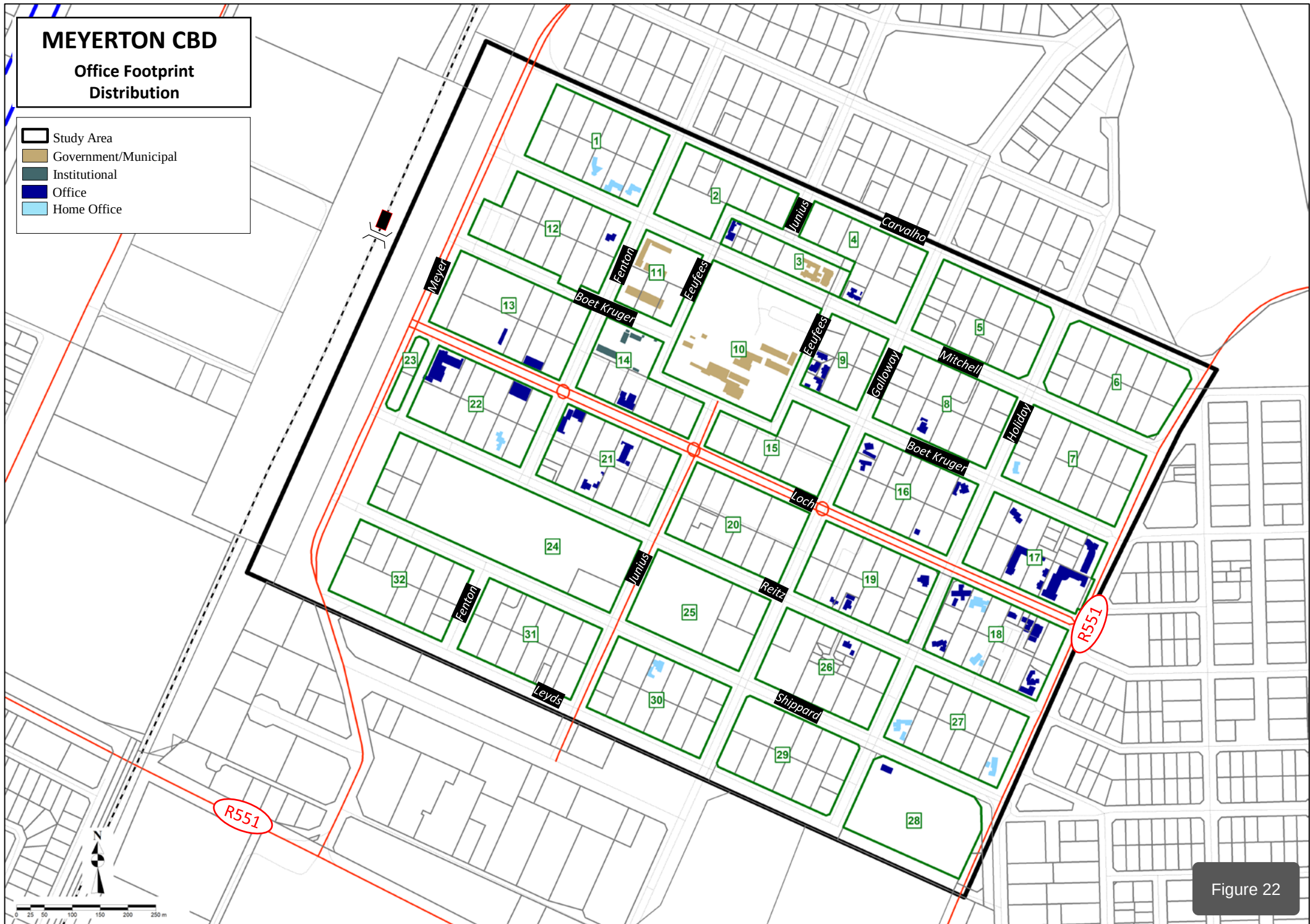


Figure 21

MEYERTON CBD

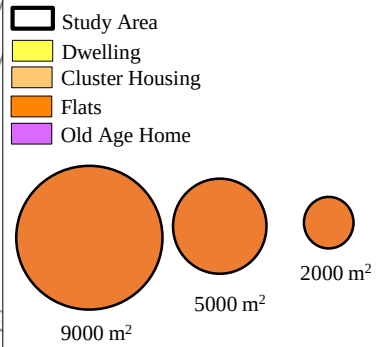
Office Footprint Distribution

- Study Area
- Government/Municipal
- Institutional
- Office
- Home Office



MEYERTON CBD

Housing Land Use Distribution



Block m²

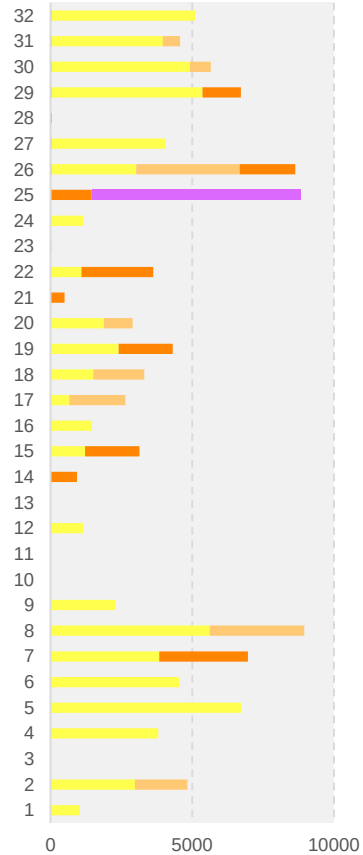


Figure 23

MEYERTON CBD

Housing Footprint Distribution

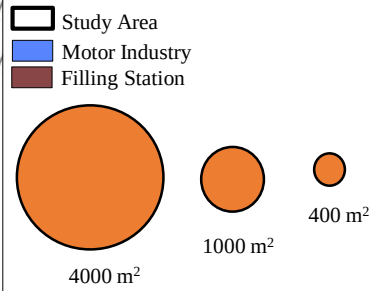
- Study Area
- Dwelling
- Cluster Housing
- Flats
- Old Age Home



Figure 24

MEYERTON CBD

Motor Industry Land Use Distribution



Block m²

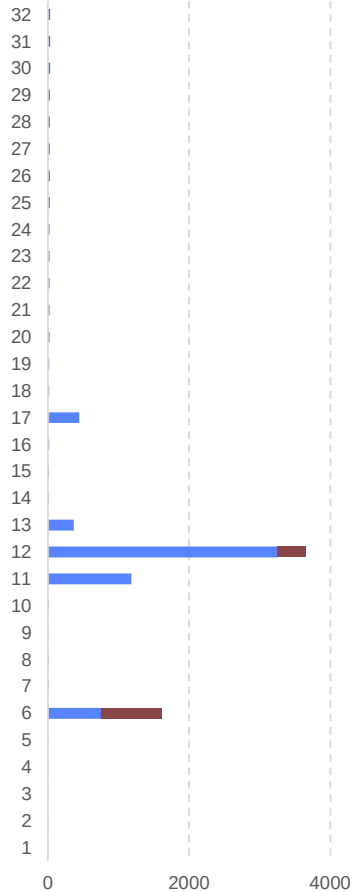


Figure 25

MEYERTON CBD

Motor Industry Footprint Distribution

- Study Area
- Motor Industry
- Filling Station



MIDVAAL LOCAL MUNICIPALITY

MEYERTON CBD PRECINCT PLAN

LAND USE

- Residential
- Medium Density Residential
- Flats
- Rural Residential
- Old Age Home
- Business
- Mixed Use in House
- Office in House
- Banks
- Educational
- Medical
- Religion
- Filling Station
- Hardware
- Fire Station
- Industrial
- Telkom
- Motor Industry
- Parking
- Taxi Rank
- Municipal / Government
- Cemetery
- Storage
- Agriculture
- Regional Open Space
- Golf Course
- Vacant
- Existing Freeway
- Railway
- Meyerton Station
- Pedestrian Bridge

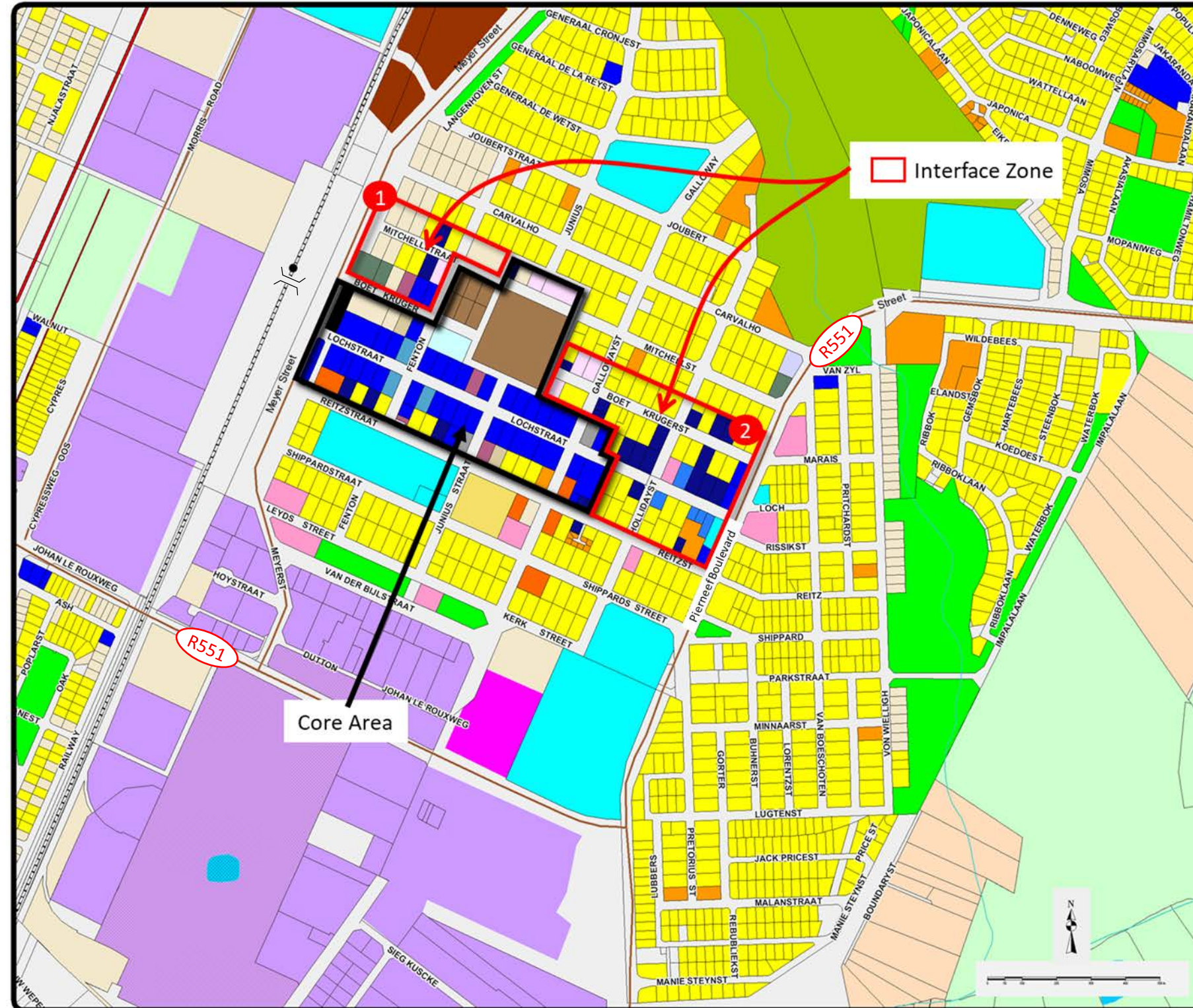


Figure 27

MEYERTON CBD

Current Land Use (2019)

-  Study Area
-  Dwelling
-  Cluster Housing
-  Flats
-  Education
-  Municipal / Government
-  Police Station
-  Religion
-  Medical
-  Animal Clinic
-  Old Age Home
-  Retail
-  Commercial
-  Filling Station
-  Motor Industry
-  Office
-  Home Enterprise
-  Parking
-  Taxi Rank
-  Vacant Erf
-  Vacant Building
-  Under Construction

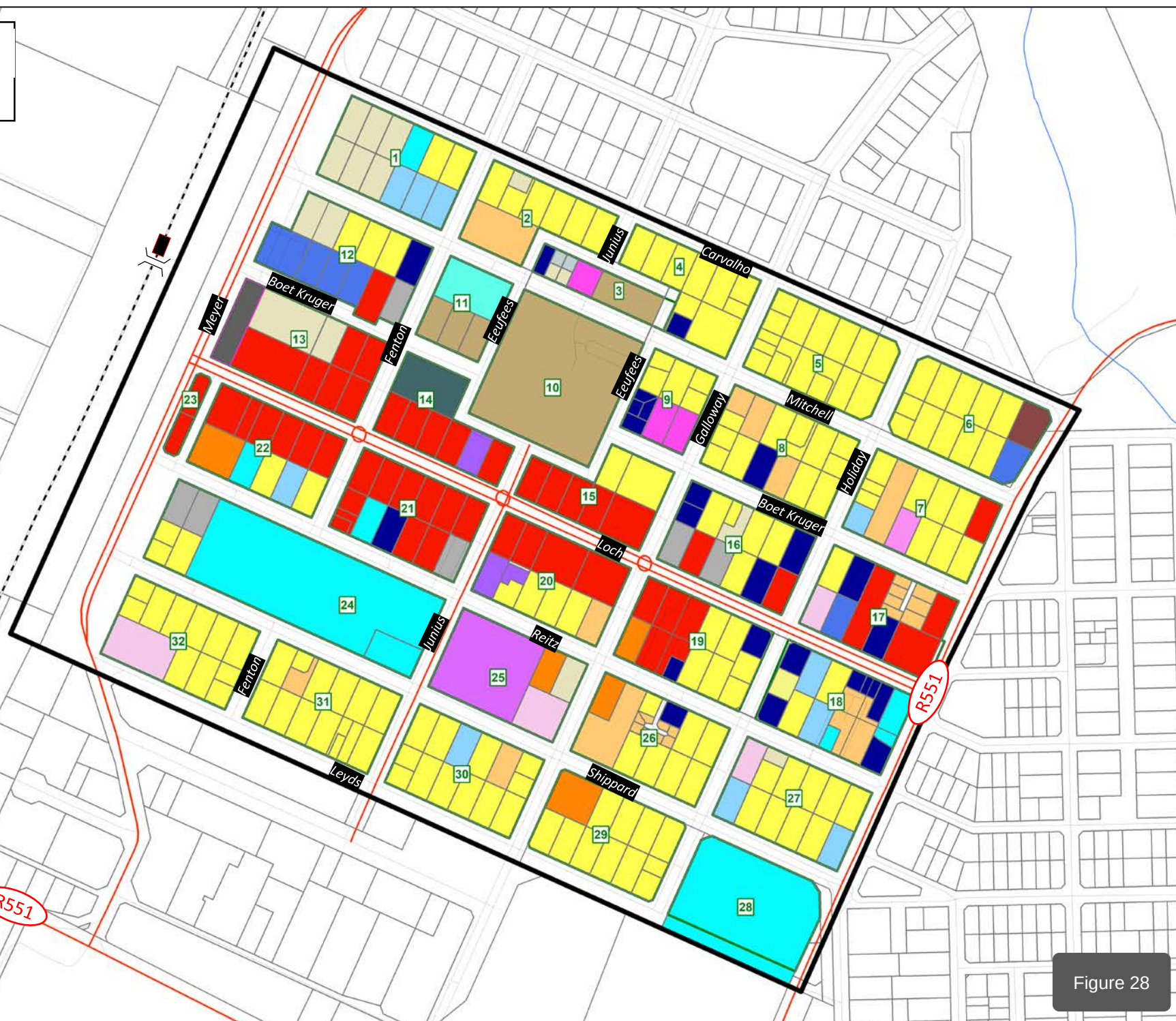


Figure 28

The land use change for retail/services and office/medical/municipal is summarised in **Table 4**, including retail and office floor areas calculated for the year 2000.

Table 4: Midvaal CBD (core area and interface zone) Growth in Floor Area (m²) 2000-2019

Name	Retail/Services Floor Area (m ²)			Office/Medical/Municipal Floor Area (m ²)		
	2000	2010	2019	2000	2010	2019
Midvaal CBD	40 864	52 572	62 046	19 929	33 491	45 288
Increment	2000-2010	2010-2019	Total Inc	2000-2010	2010-2019	Total Inc
Midvaal CBD	11 708	9 474	21 182	13 562	11 797	25 359
Increment p.a.	2000-2010	2010-2019	Total Inc	2000-2010	2010-2019	Total Inc
Midvaal CBD	1 171	1 053	1 115	1 356	1 311	1 335

Source: Measured from 2009 and 2019 Aerial Photography, Land Use Surveys, Plan Associates, 2010, 2019

Table 3: Midvaal CBD Precinct Plan (core area and interface zone), 2011-2019

Township	Retail/Storage	Offices	Medical doctor consulting rooms/clinic	Filling Station and /Motor Industry and Related Uses	Municipal / Government	Hardware Storage / Sales	Taxi Rank	Houses	Medium Density Residential	Flats	Education	Religion	Under construction	Vacant Building	Total
MIDVAAL CBD PRECINCT PLAN 2010/11 (MEASURED FROM 2009 AERIAL PHOTOGRAPHY)															
Core CBD	49 374	1 756	2 165	2 541	15 458	4 079	855	2 204	1 390	9 040	0	0	0	0	88 862
Interface Zone	3 198	12 326	1 785	0	0	0	0	15 571	1 728	0	873	446	0	0	35 929
TOTAL FLOOR	52 572	14 082	3 951	2 541	15 458	4 079	855	17 776	3 117	9 040	873	446	0	0	124 791
MIDVAAL CBD PRECINCT PLAN 2019 (MEASURED FROM 2019 AERIAL PHOTOGRAPHY)															
Core CBD	56 402	7 203	1 063	354	19 983	3 616	280	2 928	1 022	8 773	1 021	0	0	227	102 871
Interface Zone	5 645	15 679	1 360	5 080	0	0	0	11 345	7 659	278	1 913	460	851	1 322	51 591
TOTAL FLOOR	62 046	22 882	2 423	5 435	19 983	3 616	280	14 273	8 680	9 051	2 934	460	851	1 549	154 463
MIDVAAL CBD PRECINCT PLAN GROWTH 2010-2019															
Core CBD	7 028	5 447	-1 102	-2 187	4 524	-463	-575	724	-368	-267	1 021	0	0	227	14 009
Interface Zone	2 446	3 353	-425	5 080	0	0	0	-4 227	5 931	278	1 040	14	851	1 322	15 663
TOTAL FLOOR	9 474	8 800	-1 527	2 893	4 524	-463	-575	-3 503	5 563	11	2 060	14	851	1 549	29 672

Source: Measured from 2009 and 2019 Aerial Photography, Land Use Surveys, Plan Associates, 2010, 2019

Note For comparative purposes the following were assumed:

Parking areas included in main use

Home enterprises included as part of office

Municipal clinic measured as part of Municipal/Government (2019)

Taxi Rank Retail measured as part of Retail (2019)

Remarks: Decrease in Medical and Taxi rank only because of change in definition

Retail / Services:

It is evident that the retail/services increased from 40 864 in 2000 to 52 572 in 2010 to 62 046 in 2019. Over the total increment, the retail/services increased by 21 182m², translating into an incremental growth of 1 115m² per annum over the past 2 decades, representing a very positive and continued growth within the CBD.

Office / Medical / Municipal:

The office/medical/municipal floor areas increased from 19 929 in 2000, to 33 491 in 2010 to 45 288 in 2019. Over the total increment, the office/medical/municipal uses increased by 25 359m², translating into an incremental growth of 1 335m² per annum over the past 2 decades. The office/medical/municipal land uses increased slightly more compared to the retail/services uses over the same period. Similarly, to the retail/services, the office/medical/municipal land uses increased annually, representing positive and continued growth within the CBD.

2.3 Current Approved and Latent Zoning Rights

The Midvaal Land Use Scheme was reviewed and updated during 2016. **Figure 29** graphically represents the current zoning as per the updated

scheme. Accordingly, for the Midvaal CBD, the Retail, Office and Residential Potential Rights were calculated from the existing Zoning and Land Use as summarised in **Table 5**.

In calculating the latent potential, the distinction is made between Low and High probability of redevelopment. Low Probability entails land parcels that are already developed according to zoning, but not to full extent, whilst High Probability land parcels represent vacant/underutilised erven.

From Table 5, based on the high probability scenario, it is evident that the Meyerton CBD has latent potential for an additional 13 980m² retail floor space, 48 942m² office floor space and 632 dwelling units.

Figure 30 graphically represents the land parcels identified having latent potential in terms of Residential 1, 2, 3 Zoning and **Figure 31** graphically represents the land parcels identified having latent potential in terms of Business 1, 2 Zoning.

Midvaal Land Use Scheme - Zoning Map



Figure 29

MEYERTON CBD

Residential: Latent Rights

Study Area

Land Use

- Dwelling
- Cluster Housing
- Flats
- Education
- Religion
- Medical
- Old Age Home
- Retail
- Motor Industry
- Office
- Home Enterprise
- Parking
- Vacant Erf
- Vacant Building

Zoning

- Residential 1
- Residential 2
- Residential 3
- High Probability Latent Rights



Figure 30

MEYERTON CBD

**Business:
Latent Rights**

Study Area

Land Use

- Dwelling
- Municipal / Government
- Medical
- Retail
- Motor Industry
- Office
- Home Enterprise
- Commercial
- Parking
- Taxi Rank
- Vacant Erf
- Under Construction

Zoning

- Business 1
- Business 2
- High Probability Latent Rights



Figure 31

Table 5: Midvaal CBD: Retail, Office and Residential Potential Rights calculated from existing Zoning and Land Use

Probability for Redevelopment	Potential Rights			Existing			Latent Potential		
	Retail	Office		Retail	Office		Retail	Office	
	m ²	m ²	Units	m ²	m ²	Units	m ²	m ²	Units
Core CBD									
-High Probability	7 707	16 009	94	1 886	949	0	5 821	15 060	94
-Low Probability	46 920	74 327	469	53 422	5 464	32	6 502	68 863	437
Total CORE	54 627	90 335	562	55 308	6 413	32	681	83 923	530
Interface Zone 1									
-High Probability	4 220	6 330	129	2 031	-	3	2 189	6 330	126
-Low Probability	3 074	4 611	59	3 078	-	22	4	4 611	37
Total Interface Zone 1	7 294	10 941	188	5 108	-	25	2 185	10 941	163
Interface Zone 2									
-High Probability	6 133	29 366	172	2 213	4 889	7	3 920	24 477	165
-Low Probability	4 106	10 959	138	3 249	5 634	22	858	5 326	116
Total Interface Zone 2	10 239	40 326	310	5 461	10 523	29	4 778	29 803	281
The remainder of Study Area									
-High Probability	2 050	3 075	351	-	-	104	2 050	3 075	247
-Low Probability	2 146	3 219	165	1 938	848	54	208	2 371	111
Total Outside	4 196	6 293	516	1 938	848	158	2 258	5 446	358
Total									
-High Probability	20 109	54 780	746	6 129	5 838	114	13 980	48 942	632
-Low Probability	56 246	93 116	831	61 686	11 946	130	5 441	81 170	701
TOTAL FLOOR	76 355	147 896	1 577	67 816	17 784	244	8 539	130 112	1 333

Source: Based on Business 1/2 and Residential 1/2/3 zoning, March 2019

Note: High Probability: Vacant/underutilised erven

Low Probability: Already developed according to zoning, but not to the full extent

2.4 Trip Generation Based on Current Land Use

A trip generation analysis for the Meyerton CBD was undertaken based on the current land use as described in Section 2.3. The core area excludes Education and Religion and was therefore also excluded for the purpose of the exercise. The trip generation rates obtained from *COTO TMH 17 Volume 1 South African Trip Data Manual* is applied.

The operation of priority-controlled intersections is acceptable when the following conditions are met for each individual turning movement:

Table 6: Performance measures priority-controlled intersections

Period	Maximum Volume/Capacity	Minimum Level of service (TRB 2004)
Normal 15-minute peak	85%	D

For signalised intersections, the following will apply:

Table 7: Performance measures for signalised intersections

Period	Maximum Volume/Capacity	
	Left-turn/through	Right-turn
Normal 15-minute peak	90%	95%

Where these conditions cannot be met, the conditions are acceptable when the following parameters are met on each approach:

Table 8: Performance measures for signalised intersections

Period	Maximum Volume/Capacity		Minimum Level of service (TRB 2004)	
	LT & ST	RT	LT & ST	RT
Normal 15-minute peak	95%	100%	D	E

Note: L – Left-turn, T – Through, R – Right-turn

The peak hour trip generation for the respective land uses is depicted in **Table 9**.

Table 9: Peak Hour Trip Generation Rates Applied

Peak hour	Dwelling	Total Housing	Total Retail	Total Motor	Total Office	Total Gov	Medical
A.m.	1/unit	0.75 /unit	0.6/ 100m ²	2.3/ 100m ²	2.1/ 100m ²	2.1/ 100m ²	8/ 100m ²
P.m.	1/unit	0.75 /unit	4.5/ 100m ²	2.3/ 100m ²	2.1/ 100m ²	2.1/ 100m ²	8/ 100m ²

Based on the above the expected weekday morning and afternoon peak hour trip generation for the current land use core area are depicted in **Table 10**.

Table 10: Expected Peak Hour Trip Generation Base Year / 2019

Peak hour	Dwelling	Total Housing	Total Retail	Total Motor	Total Office	Total Gov	Medical	Total
A.m.	459	379	369	158	518	342	185	2,411
P.m.	459	379	2,770	166	518	342	185	4,819

From the latent zoning rights assessment, it is evident that the CBD has ample development potential within the CBD to accommodate future retail, office and residential demand.

2.5 Synthesis

From the traffic impact and land use assessment, it is evident that the Meyerton CBD is well utilised during the day, with a variety of retail and office related land uses, with parking located on both sides of Loch Street. Within the CBD core area, office space is provided on the first floor of some multi-storey building located along Loch street, with most of the home office conversions located towards the eastern side of Loch street.

The time series land use assessment indicates a gradual positive growth in the retail and office floor area within the CBD.

3. DEVELOPMENT OBJECTIVES AND URBAN DESIGN FRAMEWORK

In line with the Midvaal 2011 CBD Precinct Plan and the Draft Midvaal Nodal Policy 2019, it is important to confirm the typical characteristics and requirements for a Node in general, and for the Midvaal CBD Area before formulating the development objectives.

3.1 Nodal Development / Spatial Targeting

Spatial targeting is a growth management tool whereby resources are focused on and consolidated in selected areas through a coordinated approach and in response to identified development opportunities.

This would find expression in the concept of “priority settlements/settlement hierarchy” and/or “*nodal development*” which are premised on the notion that there is a greater return on public investment in and to areas with economic potential (however limited) – where the resultant critical mass could act as catalyst to private sector activity – than areas without economic potential. The intention is also to promote efficient land utilisation and promote sustainable development patterns limiting encroachment onto high potential agricultural land in surrounding areas.

Hence the identification of priority areas to promote and consolidate public and private investment spending is fundamental to the IDP and budgeting process of the Midvaal Local Municipality”.

Fundamental characteristics of Nodal Development include:

- Design elements that support pedestrian environments and encourage transit use, walking and bicycling;
- A transit stop which is within walking distance (generally 400m) of anywhere in the node;
- Mixed uses so that services are available within walking distance;
- Public spaces, such as parks, public and private open space, and public facilities, that can be reached without driving; and
- A mix of housing types and residential densities that achieve an overall net density of at least 20 units per hectare.

Nodal areas that are well-developed, foster more compact communities and neighbourhoods which has a number of social, environmental, health and economic benefits. The Meyerton CBD poses the potential to include a Transit Orientated Development initiative, which promotes pedestrian-friendly environments and Smart City components in line with the Fourth Industrial Revolution. These initiatives should form part of the Nodal Development concept for the Meyerton CBD. Refer to **Diagram 14** for a brief summary on TOD's, **Diagram 15** indicated Pedestrian Friendly Environments and **Diagram 16** is a summary of the Smart City Components.

TRANSIT ORIENTATED DEVELOPMENT

Transit-oriented development (TOD) is a planning and design strategy that assist in promoting urban development that is compact, mixed-use, pedestrian- and bicycle-friendly, and closely integrated with mass transit by **clustering jobs, housing, services, and amenities around public transport stations**.

Land use and transportation integration form the backbone of an efficient urban structure. It not only ensures the cost-effective operation of the region's public transportation system, but it also tends to limit urban sprawl by concentrating urban development at higher densities close to public transportation routes. In addition, it creates a better relationship between areas of residence and employment, which can lead to shorter commuter distances and a better two-way use of transport infrastructure.

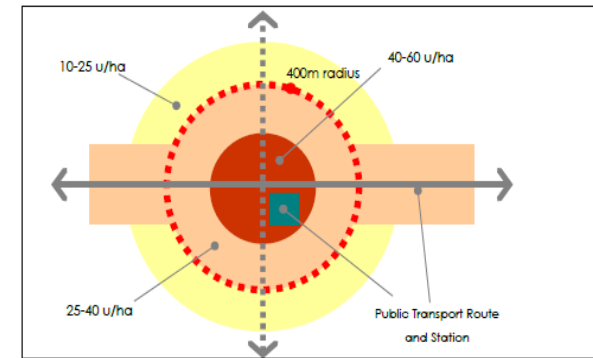
The key to successful land use and transportation integration is obtaining higher land use densities at transit stations, such as commuter railway and bus stations. These are the points where access is obtained to the public transport systems and attempts should thus be made to optimally use these strategic locations. This can be done by locating higher-density land uses around these transit stations. **This is known as Transit Oriented Development (TOD), which is essentially a node that is centred on a transit station.** These higher-density land uses need to be located within walking distance of the transit station, which is generally accepted to be 400m from a station. This distance can also be considered the peripheral boundary of a TOD. In general, the elements that make up a TOD are:

- Walkable design with pedestrians considered the highest priority means of movement.
- A commuter rail station or bus station or taxi rank as the central feature of the TOD.
- A mixture of land uses in close proximity, including office, residential, retail, and community uses.
- Higher-density, high-quality housing development within a 4-10 minute walk radius (400-1000m) surrounding the transit station.



Diagram 14

TODs can essentially be implemented in one of two ways: TODs located within an existing township, forming part of a brownfield development, and TODs forming part of a new town development.



TODs located within an existing township will involve the development of vacant stands that are within walking distance of a transit station with TOD-related uses, such as retail and higher-density housing. TODs located within existing townships are ideal for use as part of urban renewal initiatives.

Key to the development of TODs is the manner in which land uses within TODs are integrated with the public transportation system (bus or taxi) serving these TODs. This will involve creating pedestrian-friendly environments within TODs, using pedestrian walkways and public squares, and using these pedestrian environments as the link between the public transport stations and the surrounding land uses. A grid road and pedestrian network best suits pedestrian movement within TODs.



Image source: WRI Ross Center for Sustainable Cities

PEDESTRIAN-FRIENDLY ENVIRONMENTS

Diagram 15

The aim of nodal development must be, amongst others, to improve upon the existing urban form. This is achieved by creating vibrant nodal areas and adjacent neighbourhoods where the majority of **residents can walk** to meet their basic daily needs and have access to public transportation for longer distance trips. Thus, such nodes can be defined as 'a place with convenient, safe, and pedestrian-oriented access to the places people need to go to and the services people use nearly every day: transit, shopping, schools, parks, and social activities, that is near and adjacent to housing'.

Developing **walkable nodes** are intended to maintain a sense of place that is locally-oriented and is less reliant on outside sources for support. In order to effectively promote vibrant, walkable nodes, it is important to understand the elements that make up this kind of node and understand how those elements can be promoted.

There are three key areas that contribute to the concept of a walkable node: **distance**, **destination**, and **density**. In addition to the physical requirements necessary for a thriving walkable node, a **sense of place** and **unique nodal characteristics** are key contributing factors. There is simply not one nodal solution that can be applied throughout a municipal area. Thus, in order for a node to become a successful node, it is necessary to ensure that the implementation of the node involves a multifaceted approach that includes community inputs.

In order to implement a walkable nodal structure, it would be necessary to focus on nodal areas that currently lack walkable characteristics and set definitive short-term and long-term goals to achieve this. These goals would be the first steps to comprehensively coordinate existing and future planning efforts to achieve walkable nodes.

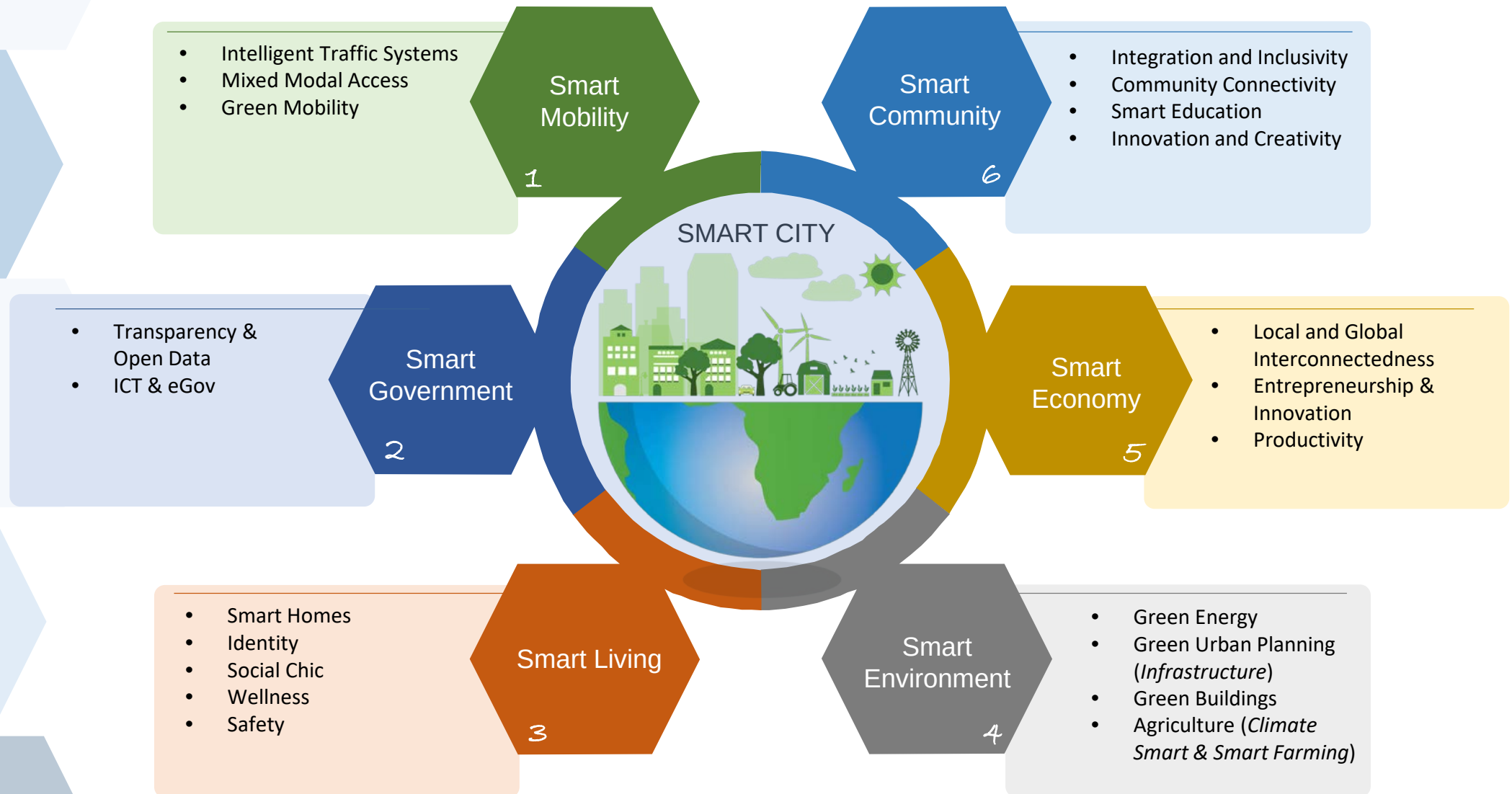
Ultimately, a walkable node will only be successful if it becomes a place where people want to be. In this regard, it is important to understand that each community will have unique needs and preferences with regard to the nodes that serve them. These unique preferences can be identified by examining connections to public transit, identifying local destinations, such as grocery stores, entertainment, and services that are important to everyday life, and exploring the walkability of the streets and sidewalks. These will provide guidelines for aligning efforts to develop walkable nodes with community needs and preferences.

The pedestrian core area typically contains retail uses, such as grocery stores, restaurants, coffee shops, a video store, dry cleaners, beauty salon, etc. Radiating outward from the pedestrian core area are office uses, such as dental/medical, law offices, insurance and banking and travel agencies. Light service industries can also occur in the core of the business area, while larger industries and warehouses are located in a separate designated industrial area outside the business node.



Image source: Google Images

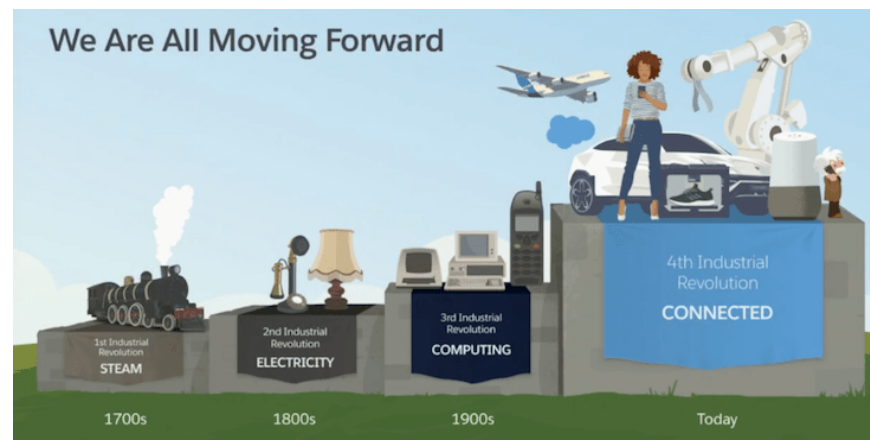
SMART CITY COMPONENTS



Information Box: Fourth Industrial Revolution

The Fourth Industrial Revolution is a way of describing the blurring of boundaries between the physical, digital, and biological worlds. It's a fusion of advances in artificial intelligence (AI), robotics, the Internet of Things (IoT), 3D printing, genetic engineering, quantum computing, and other technologies. It's the collective force behind many products and services that are fast becoming indispensable to modern life.

The Fourth Industrial Revolution is paving the way for transformative changes in the way we live and radically disrupting almost every business sector. It's all happening at an unprecedented, whirlwind pace. The Smart City components form the basis for accommodation technological changes brought on by the Fourth Industrial Revolution.



As indicated earlier as per the Draft Midvaal Nodal Policy, “the Meyerton CBD can accommodate a significant higher-density housing component to enable a more vibrant nodal configuration. The Meyerton CBD is probably the only node within Midvaal that is currently suited for the development of walk-ups and a higher-density housing option which should be accommodated within the TOD node”.

3.2 Meyerton CBD Area and TOD Node

The Meyerton CBD Area is of a municipal-wide significance and can, therefore, develop a strong retail, residential, entertainment and office component. The Midvaal Urban Design Framework 2019 builds on the Midvaal CBD Precinct Plan of 2011 to enhance and strengthen the existing function of the Midvaal CBD.

The CBD area needs to provide higher-order community services that serve the entire municipal area. With regard to health care, the CBD should provide the region's hospital(s), as well as other higher order and specialized medical facilities. Currently, the municipal clinic is located within the government precinct, with several general practitioner medical rooms and dental rooms dispersed within the CBD area.

Other community facilities to be provided in the CBD include a large police station and emergency service centre. These facilities are all highest-order facilities when compared to similar facilities provided in lower-order nodes. It is acknowledged that the Meyerton fire station is located just outside of

the CBD study area, along Johan Le Roux Road and a local police station is located within the government precinct.

The CBD Area can also accommodate a significant higher-density housing component to enable a more vibrant nodal configuration. The Meyerton CBD is most probably the only area within Midvaal that is suited for the development of walk-ups and a higher-density housing option."

The strategic location of the taxi rank and railway station serving as the public transport commuter entry point to the CBD to the east, whilst also being the pedestrian link for Sicelo to the west, the node lends itself to be developed as a Transit Orientated Node in future. The TOD will allow for better integration of the CBD with the community of Sicelo and aligns with the proposed Sicelo Node as per the Draft Midvaal Nodal Policy 2019.

A development application has been lodged with the Midvaal Municipality for the (re)development of the portion of land adjacent to the Taxi Facility, between Boet Kruger and Loch street. In line with the proposed CBD Plan and proposed TOD node, development option C is the preferred option (refer to **Diagram 17**) as it will complement and strengthen the overall TOD node.

3.2 Development Objectives

Following from the Situational Analysis and directives contained in the Draft Midvaal Nodal Policy, the following Development Objectives are proposed for the Meyerton CBD area:

- To further enhance the multi-functional character of the CBD in order to maintain its status as the primary activity node within Midvaal and the surrounding region.
- To differentiate between the various functional areas in the CBD in order to encourage functional specialisation and to accommodate local needs in various parts of the CBD.
- To promote a strong residential component in the core CBD area.
- To cater for all transport and movement needs in the CBD area (public/private, local and regional) and promote the integration of inter-modal transport facilities.
- To strengthen the linkage between the CBD and the railway station as well as the linkage between the CBD and the Sicelo residential area across the freeway and railway line.
- To maintain existing, and improve future internal and external movement systems in and around the CBD.
- To optimally utilise the economic development potential of land located along some of the major routes in/around the CBD.

3.3 Urban Design Framework / Development Proposals

As highlighted above it is important for the Midvaal Municipality to enhance and strengthen the existing function and nodal significance of the Midvaal

GLA Type	Name	Area	Comments
----------	------	------	----------

COMMON

COMMON	PUBLIC ALBUT	75 m ²	
COMMON: 1		75 m ²	

LETTABLE

LETTABLE	SHOP 1	1500 m ²	ANCHOR 1
LETTABLE	SHOP 2	100 m ²	
LETTABLE	SHOP 3	100 m ²	
LETTABLE	SHOP 4	90 m ²	
LETTABLE	SHOP 5	50 m ²	
LETTABLE	SHOP 6	50 m ²	
LETTABLE	SHOP 7	100 m ²	
LETTABLE	SHOP 8	250 m ²	
LETTABLE	SHOP 9	150 m ²	
LETTABLE	SHOP 10	100 m ²	
LETTABLE	SHOP 11	125 m ²	
LETTABLE	SHOP 12	125 m ²	
LETTABLE	SHOP 13	125 m ²	
LETTABLE	SHOP 14	250 m ²	
LETTABLE	SHOP 15	125 m ²	
LETTABLE	SHOP 16	125 m ²	
LETTABLE	SHOP 17	125 m ²	
LETTABLE	SHOP 18	325 m ²	
LETTABLE	SHOP 19	70 m ²	
LETTABLE	SHOP 20	278 m ²	
LETTABLE	SHOP 21	60 m ²	
LETTABLE	SHOP 22	60 m ²	
LETTABLE	SHOP 23	318 m ²	
LETTABLE	SHOP 24	95 m ²	
LETTABLE	SHOP 25	100 m ²	
LETTABLE	SHOP 26	150 m ²	
LETTABLE	SHOP 27	505 m ²	
LETTABLE	SHOP 28	60 m ²	
LETTABLE	SHOP 29	60 m ²	
LETTABLE	SHOP 30	420 m ²	
LETTABLE	SHOP 31	1000 m ²	ANCHOR 2
LETTABLE: 31		6990 m ²	

SUPPLEMENTARY

SUPPLEMENTARY	DELIVERY AREA	450 m ²	
SUPPLEMENTARY: 1		450 m ²	

7515 m²

MEYER ROAD

Existing Taxi Facility

Rentable Area Legend

- COMMON
- LETTABLE
- SUPPLEMENTARY

ERF 1071

ERF 1058

Service Lane

LOCH STREET

CBD. In order to achieve this, the municipality must ensure that the CBD is as inclusive as possible in terms of the range of land use activities, services and housing options it provides. All of this must be managed and facilitated in line with what is compatible and what not.

Figure 32.1 graphically illustrate the proposed land use and TOD concept for the Meyerton CBD. **Figure 32.2** graphically illustrate the Meyerton CBD in more detail, applicable to the land use proposals, as described below:

3.1.1 CBD Area (Study Area) and TOD Node

The activity spine between the two mobility routes consisting of Meyer Street to the west and Pierneef Boulevard on the eastern side of the CBD is well established with numerous potentials still available for redevelopment to

take place. It is therefore proposed that the current business development on both sides of Loch Street to be intensified.

The development capacity for the CBD is calculated based on two scenarios. The first development scenario (refer to **Table 11**) is informed by the historic (re)development trend as evident from 2000 and projected up to 2030. The second development trend (refer to **Table 12**) is based on an optimistic (re)development projection for the same time period.

MEYERTON CBD

Proposed Land Use and
TOD Development

Midvaal Nodal Policy (2019)

- Sicelo Proposed Node
- Sicelo Proposed Future Node

Meyerton Precinct Proposals (2019)

- Single Residential
- Residential Densification
- Institutional
- Municipal / Government
- CBD Core Support Area
- CBD Core Area
- Proposed BNG Development
- Main Pedestrian Movement
- Pedestrian Bridge

Land Use / Interpreted Land Use

- Dwelling
- Cluster Housing
- Flats
- Education
- Municipal / Government
- Police Station
- Religion
- Medical
- Animal Clinic
- Old Age Home
- Retail
- Commercial / Industrial
- Filling Station
- Motor Industry
- Office
- Home Enterprise
- Parking
- Taxi Rank
- Vacant Erf
- Vacant Building
- Under Construction
- Open Space / Recreation
- Agriculture
- Railway Station

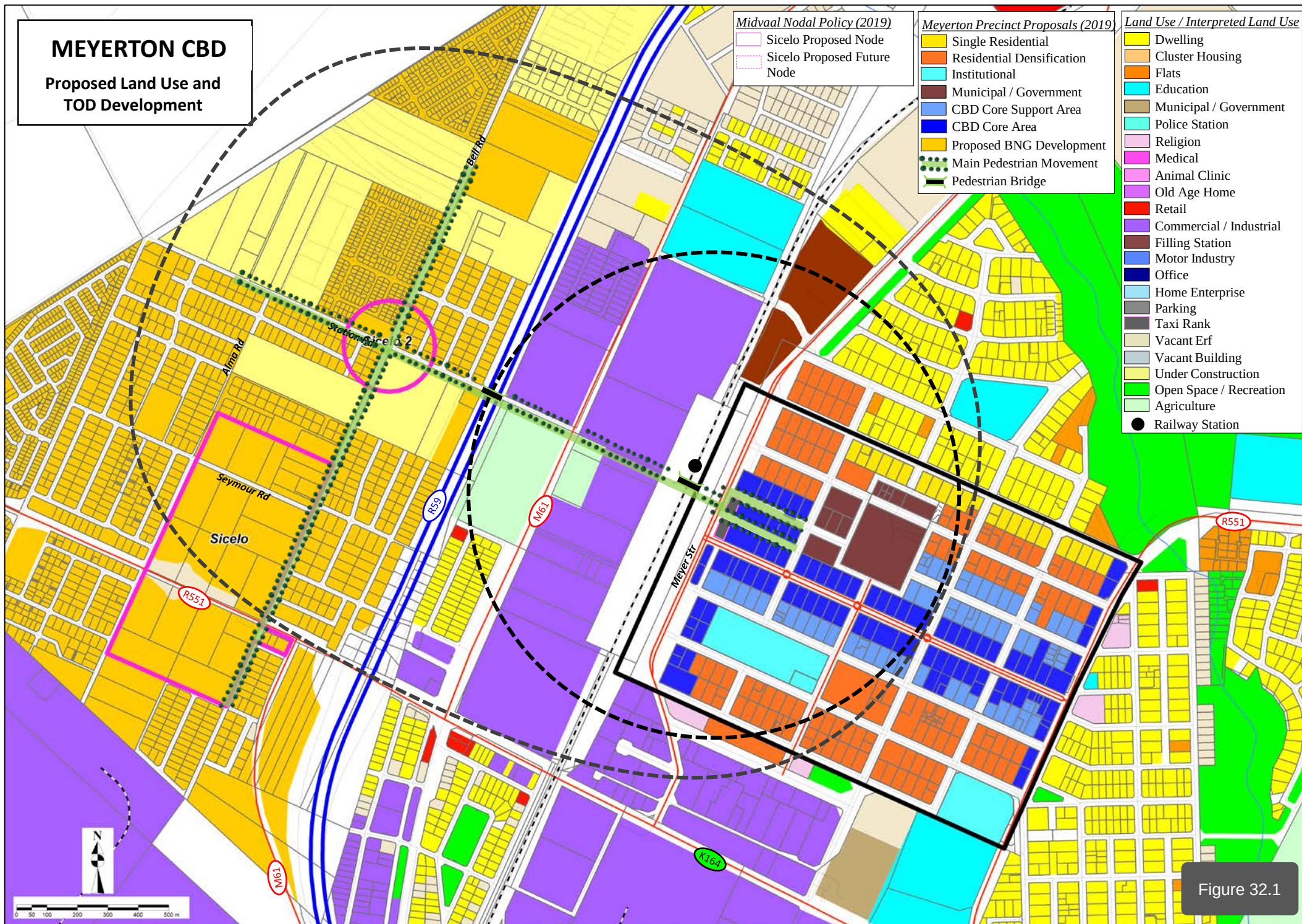


Figure 32.1

MEYERTON CBD

PROPOSED DEVELOPMENT

Land Use / Interpreted Land Use

- Dwelling
- Cluster Housing
- Flats
- Education
- Municipal / Government
- Police Station
- Religion
- Medical
- Animal Clinic
- Old Age Home
- Retail
- Commercial / Industrial
- Filling Station
- Motor Industry
- Office
- Home Enterprise
- Parking
- Taxi Rank
- Vacant Erf
- Vacant Building
- Under Construction
- Open Space / Recreation
- Agriculture
- Controlled Access
- Railway Station

Meyerton Precinct Proposals (2019)

- Single Residential
- Residential Densification
- Institutional
- Municipal / Government
- CBD Core Support Area
- CBD Core Area

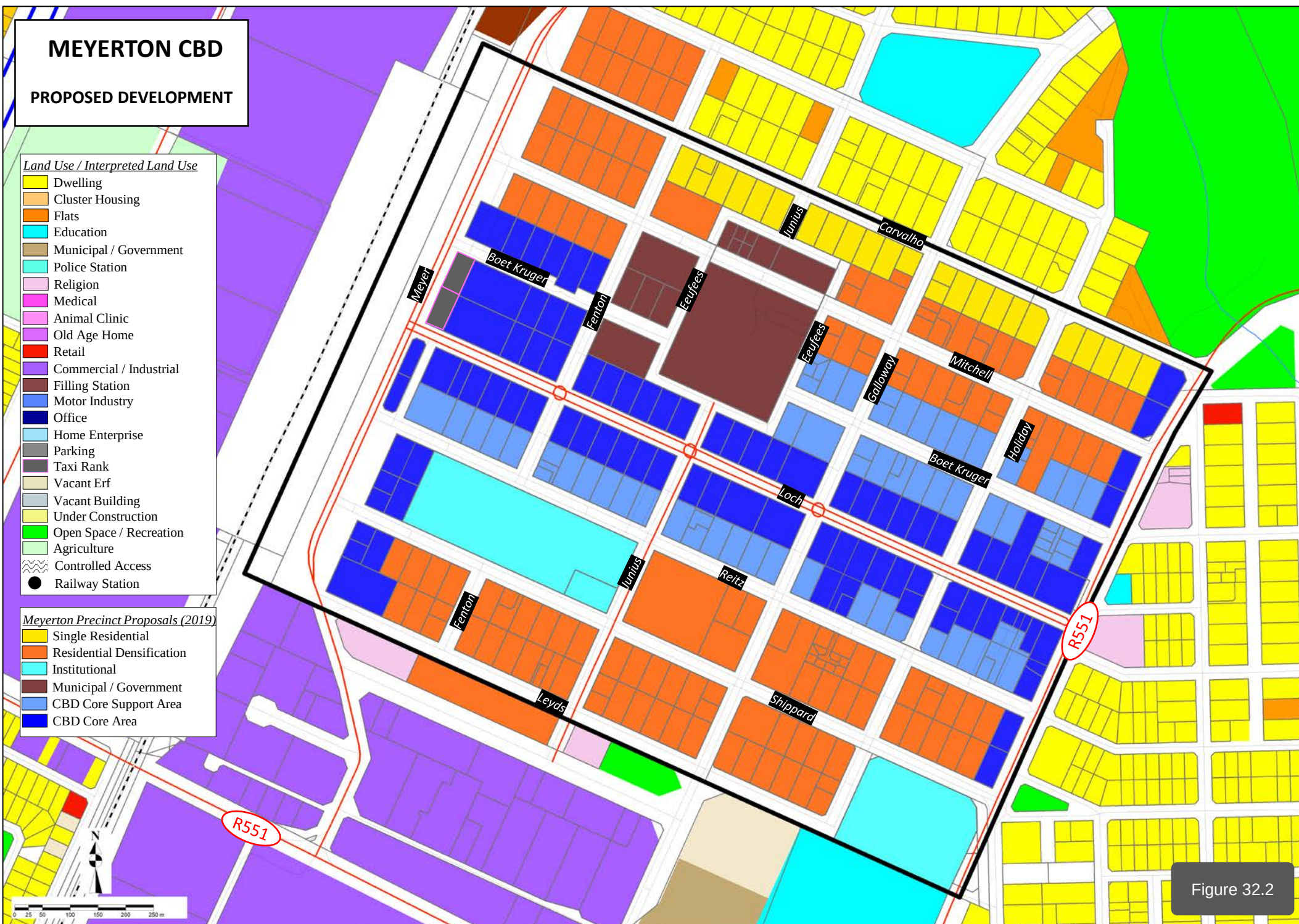


Figure 32.2

Table 11: Midvaal CBD Trend Scenario Projections, 2000-2030

Type Land Use	Historic		Current	Projection	Increment		Increment	
	2000	2010	2019	2030	2000-2010	2010-2019	2019-2030	2000-2030
Number of Dwelling Units		352	459	590		107	131	
Retail/Services Floor Area (m ²)	40 864	52 572	62 046	75 000	11 708	9 474	12 954	34 136
Office/Medical/Municipal Floor Area (m ²)	19 929	33 491	45 288	60 000	13 562	11 797	14 712	40 071

Type Land Use	Increment p/a				% Growth p/a			
	2000-2010	2010-2019	2019-2030	2000-2030	2000-2010	2010-2019	2019-2030	2000-2030
Number of Dwelling Units	-	12	12			3,0%	2,3%	
Retail/Services Floor Area (m ²)	1 171	1 053	1 178	1 138	2,6%	1,9%	1,7%	2,0%
Office/Medical/Municipal Floor Area (m ²)	1 356	1 311	1 337	1 336	5,3%	3,4%	2,6%	3,7%

Table 12: Midvaal CBD Optimistic Scenario Projections, 2000-2030

Type Land Use	Historic		Current	Projection	Increment		Increment	
	2000	2010	2019	2030	2000-2010	2010-2019	2019-2030	2000-2030
Number of Dwelling Units		352	459	727		107	268	
Retail/Services Floor Area (m ²)	40 864	52 572	62 046	85 442	11 708	9 474	23 396	44 578
Office/Medical/Municipal Floor Area (m ²)	19 929	33 491	45 288	73 614	13 562	11 797	28 326	53 685

Type Land Use	Increment p/a				% Growth p/a			
	2000-2010	2010-2019	2019-2030	2000-2030	2000-2010	2010-2019	2019-2030	2000-2030
Number of Dwelling Units	-	12	24			3,0%	4,3%	
Retail/Services Floor Area (m ²)	1 171	1 053	2 127	1 486	2,6%	1,9%	3,0%	2,5%
Office/Medical/Municipal Floor Area (m ²)	1 356	1 311	2 575	1 790	5,3%	3,4%	4,5%	4,5%

Assumption: Dwelling Units: 15% of Incremental Development Potential realise (42% of high probability latent rights)

Retail: Full Incremental Development Potential realises

Office: 20% of Incremental Development Potential realise (58% of high probability latent rights)

From **Scenario 1 Midvaal CBD Trend Scenario Projections** it is evident that the total incremental development per annum was fairly constant with an annual increase of 1 171m² of Retail / Services floor area from 2000 to 2010 and 1 053m² from 2010 to 2019, representing an annual growth rate of 2.6% and 1.9% respectively. Office/Medical/Municipal floor area increase by 1 356m² from 2000 to 2010 and 1 311m² from 2011 to 2019, representing a growth rate of 5.3% and 3.4% respectively.

In line with this positive growth trend evident over the past two decades, Scenario 1 therefore propose that for the time period 2019 to 2030 the following number of dwelling units, retail and office floor area can be developed within the Meyerton CBD:

- 131 Dwelling units - representing a per annum growth rate of 2.3%
- 12 954m² Retail / Services floor area - representing a per annum growth rate of 1.7%, and
- 14 712m² Office / Medical / Municipal - representing a per annum growth rate of 2.6%.

From **Scenario 2 Midvaal CBD Optimistic Scenario Projections** the projected per annum growth rate is adjusted upwards. It is therefore proposed that for the time period 2019 to 2030 the following number of dwelling units, retail and office floor area can be developed within the Meyerton CBD:

- 268 Dwelling units - representing a per annum growth rate of 4.3%
- 23 396m² Retail / Services floor area - representing a per annum growth rate of 3.0%, and

- 28 326m² Office / Medical / Municipal floor area - representing a per annum growth rate of 4.5%.

Figure 33 graphically represent the identified properties which has high development potential to be redeveloped as per the Zoning Categories indicated in **Table 13**:

Table 13: Meyerton Town Planning Scheme Definitions 2019

Zoning	Primary Land Uses Permitted
Residential 1	Dwelling House, Street
Residential 3	Dwelling Unit, Flats, Town Houses, Street
Business 1	ATM, Bakery, Bank, Bar, Botanical Garden, Confectionary, Conference Centre, Dry Cleaners, Drive-Thru- Restaurant, Dwelling Units, Flea Market, Fish Monger, Funeral Parlour, Garden Centre, Gymnasium, Hotel, Internet Café, Launderette, Liquor Enterprise, Motor Sales Market, Offices, Place of Amusement, Place of Entertainment, Place of Instruction, Place of Public Worship, Place of Refreshments, Residential Building, Service Enterprise, Service Industry, Shop, Showroom, Social Hall, Spa/ Hydro and Wellness Centre, Street, Supermarket,
Business 2	Bakery, Confectionary, Crèche, Drive-Thru-Restaurant, Dry Cleaners, Gymnasium, Home Enterprise, Internet Café, Launderette, Place of Instruction, Place of Refreshment, Private Club, Residential Building, Service Enterprise, Service Industry, Shop, Spa/ Hydro and Wellness Centre, Street, Supermarket

MEYERTON CBD

Development
Potential

Study Area

Residential 1
Residential 3
Business 1
Business 2



Figure 33

Latent Potential (refer to Section 2.3)

With the realisation of Scenario 1, the total developable capacity as per the latent potential will not be taken-up for either the number of dwelling units, retail/services nor offices/medical/municipal within the next 10 years.

With the realisation of Scenario 2, the total developable capacity as per the latent potential, will not be taken-up for either the number of dwelling units nor office/medical/municipal developments within the next 10 years. Only the retail/services floor area as per the latent potential will be take-up within the next 10 years.

Later Potential based on High Probability for the entire CBD	
Dwelling units	632 units
Retail / Services	13 980 m ²
Office / Medical / Municipal	48 942 m ²

With specific focus on the TOD node and activity spine along Loch Street, it is proposed that Council favourably consider the approval of mixed uses in this area where retail activities are located on the ground floor level; and these are supported by office and/or residential development on the upper storeys. As a principle it is also suggested that Council should allow development up to four storeys high within the Midvaal CBD.

It is further proposed that the proposed developments be allowed to develop in-line with the current zoning development controls of Business 1:

- F.A.R – 3
- Height – 4 storeys
- Coverage - 80%
- Parking provision should be managed as per Annexure A of the document.

3.1.2 Residential Densification

As indicated in the Midvaal Precinct Plan 2011, it is very important to specifically protect the residential integrity of the strip of land to the south of Reitz Street and up to the Meyerton X3 industrial area. The importance of this strip of residential development between the industrial area and the CBD is based on the fact that it currently holds both a primary and secondary school, as well as an old age home and a number of medium to higher density residential units which are important supplementary uses to the CBD area.

If non-residential uses erode the residential character of this area it may develop into a mixed use (business, commercial and even light industrial) precinct with an isolated primary and secondary school, as well as an old age home located in the midst of this activity area. Such development will also impact negatively on the viability of the CBD which is directly adjacent to the north as it will reduce the number of people residing within walking distance from it.

Therefore, and as illustrated on Figure 32.2, it is suggested that Council should allow for residential densification to take place in the strip of land on both sides of Mitchell Street, as well as both sides of Shippard Street located to the south of the CBD, including Leyds Street (redevelop single residential as higher density cluster housing / flats catering for mixed income). The medium density housing should be developed at 60 dwelling units per ha and in the discretion of the municipality up 80 dwelling units per ha. The proposed medium density residential developments should provide all parking on-site.

Medium to high-density residential development in these areas will create an effective buffer to the future expansion of the Midvaal CBD area. The increased number of households residing close to the CBD area will also enhance the economic viability of the CBD, and allow opportunities for the development of public transport systems, and support the Transit Orientated Development proposed for the Meyerton CBD area.

A important proposal in this regard is the development of medium density GAP / bonded housing (3-4 storey walk up) within the TOD node, with specific focus on the vacant land located in the north-western quadrant of the CBD between Boet Kruger and Carvalho Street and parallel to Meyer Street. The increased number of units will contribute to the buying power within the CBD and enhance the activity in the area with more families residing within the CBD.

Residential densification can thus be a significant contributor towards the strengthening of the Midvaal CBD in line with the objectives pertaining to nodal points as contained in the Draft Midvaal Nodal Development Policy (refer to section 2.1.3 above).

3.1.3 Institutional / Municipal Precinct

It is proposed that the institutional precinct of the Midvaal CBD, to be maintained in the current position. This precinct must retain/add all the higher order government functions like a magistrate's court and additional social services.

The Midvaal CBD plan proposes that the southern portion of the municipal stand and a section of Eeufees Street be earmarked for office development (**Figure 34**). The proposed portions of land will create two land parcels: precinct 1 and 2. Diens Avenue North that runs parallel to Eeufees Street can substitute the portion of Eeufees Street that is earmarked for the development. The staff parking in the south western corner will need to be consolidated with the existing staff parking in the north eastern corner of the site. The relocation of the staff parking will free up a functional portion of land that can complement the portion of Eeufees Street earmarked for development. The open space along the western boundary of the site can also be fully utilised and should be equipped with park furniture.

The southern entrance to the Town Hall and Library will need to be closed and access will be from the current northern access. A sperate access

MEYERTON CBD

Proposed Redevelopment of Municipal Property

- Redevelopment Areas
- Open Space
- Roads
- Residential / Office Development
- Parking
- Entrance



Figure 34

should also be provided along the western boundary to allow people to access the swimming pool and open space.

Table 14 below provides an indication of the development potential for the two precincts. It can be noted from table 14 that the redevelopment of the two precincts can either yield 6871 office space or 69 dwelling units with an average size of 100m².

The southern boundary of the site can be utilised for on-street parking and landscaped open space.

Table 14: Erf 151/1053: Additional Development Rights

Precinct	Area (m ²)	Height	Coverage	FAR	Potential Floor Area (m ²)
Precinct 1	3 129	4	40%	1.6	5 006
Precinct 2	4 505	4	40%	1.6	7 206
Total	7 634				12 212

3.1.4 Movement and Road Classification

The movement network has the capacity to accommodate the existing land uses and estimated demand as per Table 5 which is the base for the development forecasts.

The capacity of the network will come under strain if the Trend Scenario (Table 11) materialises and the Pierneef Boulevard and Loch Street interchange will need to be upgraded to a traffic signal to allow for optimum traffic flow as per the Illustration in **Diagram 18**.

The Optimistic Scenario Projections (Table 12) may result in the following intersections not performing at optimum levels:

- Meyer Street and Joubert Street
- Pierneef Boulevard and Loch Street

Pierneef Boulevard and Loch Street will require a traffic signal which is already a requirement for the Trend Scenario. Meyer Street and Joubert Street will require 45m right-turn lane on north-western approach (see Illustration)

Figure 35 presents a proposal on a road classification and the proposed traffic control measures for the study area.

Meyerton CBD area is unique with all the duel carriageways and the normal road classification definitions are not applicable. It is however important to identify some roads where mobility should be protected to afford the motorist easy and quick access into and out of the study area and specifically the CBD area. The following is proposed:

Intersection 3: Pierneef Boulevard Road and Loch Street

Scenario 2: Intersection layout



Scenario 2: Intersection layout



Operating conditions:

Weekday (a.m.)				Weekday (p.m.)			
V/C	LOS	Delay	Queue length	V/C	LOS	Delay	Queue length
0.422	B	12.9	40.8	0.379	B	13.0	23.6

This is currently an all-way stop.

The intersection cannot operate at acceptable levels of service and the following upgrade is proposed:

- Traffic signal.

With this, the intersection as well as the individual movements on each approach operates at acceptable levels of service during both peak hours.

Intersection 1: Meyer Street and Joubert Street

Scenario 2: Intersection layout



Scenario 2: Intersection layout



Operating conditions:

Weekday (a.m.)				Weekday (p.m.)			
V/C	LOS	Delay	Queue length	V/C	LOS	Delay	Queue length
0.748	D	25.3	51.8	0.861	D	31.8	102

This is currently an all-way stop.

The intersection cannot operate at acceptable levels of service and the following upgrade is proposed:

- 45m right-turn lane on north-western approach.

With this, the intersection as well as the individual movements on each approach operates at acceptable levels of service during both peak hours.

MEYERTON CBD

Proposed Major Roads / Traffic Control

-  Study Area
- Road Classification
-  Major Arterial
 -  Minor Arterial
 -  CBD Roads
 -  Service Roads
- Traffic Control
-  Traffic Signal
 -  Traffic Circle
 -  Partial/Marginal



Figure 35

Pierneef Boulevard & Meyer Road (Blue):

Major Arterial, mobility route, preferably no full access to individual properties, partial and marginal access can be considered in terms of TRH 26, no on-street parking.

The provision of a median island can be considered along Pierneef Boulevard to allow only left-in left-out to existing businesses.

Meyer Street

With the current intersection spacing all the intersections cannot be signalised or provided with traffic circles. Traffic circles are proposed at the following intersections:

- Loch (existing);
- Shippard Street; and
- Carvalho Street.

Pierneef Boulevard:

The traffic volumes on this road will require the implementation of traffic signals in future. With the current intersection spacing all the intersections cannot be signalised and only the following intersections are proposed:

- Loch Street
- Shippard Street; and
- Calvalho Street

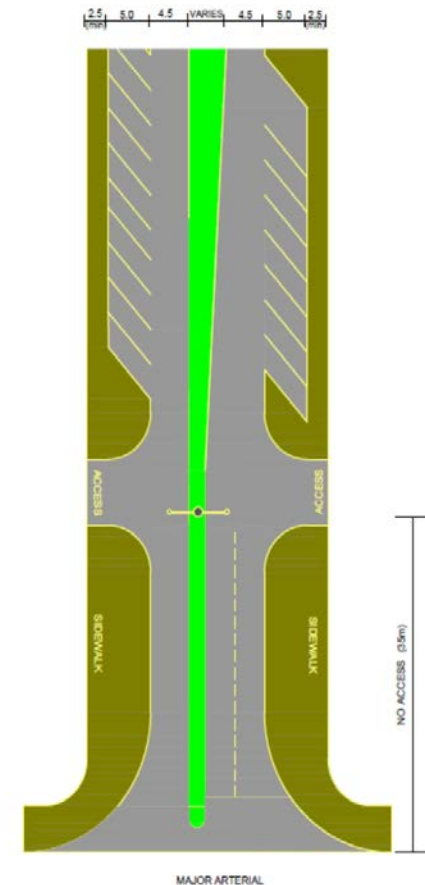
With regard to Lines of No Access the following is proposed at all the intersections of connecting streets to Meyer Street and Pierneef Blvd (Major arterials). Major Arterial roads, preferably 35m from the road reserve boundary of the major arterial road along the connecting road.

Shippard, Carvalho and Galloway Streets (Red):

Minor Arterial, provide mobility to the CBD, access limited to left-in left-out with no on-street parking, two-lane dual carriageway to be retained.

There is already on-street parking provided along the two sections of Galloway Street both sides of Loch Street. No more on-street parking should be allowed along it to protect mobility.

Although there is a drop-off and pick-up area next to the school in Shippard Street vehicles were observed parking next to the school in the street. The



provision of sufficient on-street parking along Reitz Street and Junius Street should address this.

Shippard, Carvalho and Galloway Streets (Red)

Traffic circles at the following intersections:

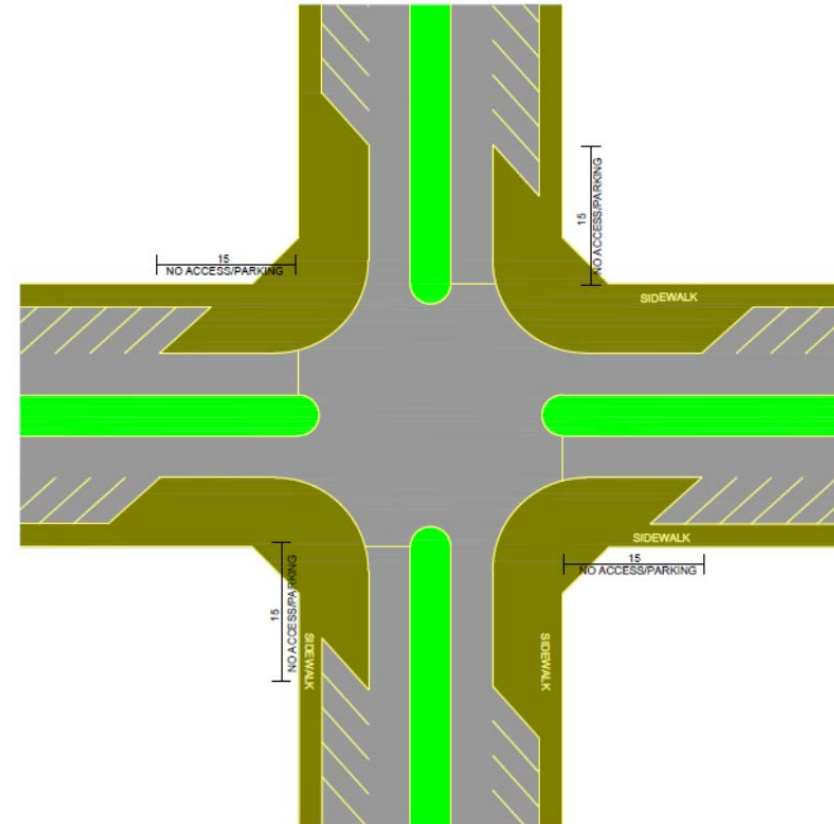
- Galloway Street and Shippard Street;
- Galloway Street and Carvalho Street;

CBD Roads (Green)

The concept implemented along Loch Street and sections of Fenton Street and Junius Street can be extended to all the other streets in the CBD, excluding the major and minor arterials. An amended layout is discussed in the parking section of the report (**Annexure A**).

A section of Junius Street and Holliday Street is also included due to the existing on-street parking provision in these sections of the streets. Traffic circle is proposed at the intersection of Holliday Street and Loch Street.

Lines of no access of 15m from the stop line on all approaches should be maintained.



3.1.5 *Transit Orientated Development Key features*

Graphically illustrated in **Figure 36**, it is proposed to develop two landmark pedestrian and cycle bridges (at the railway line and the second over the R59 freeway) to connect the community of Sicelo directly to the broader Meyerton CBD area. It is further more proposed that the connector route be developed as activity spine as following:

- Develop Station Road between the Sicelo node and the Meyerton railway line as a pedestrian / cycle friendly activity spine, with seating, trees, dust bins and formalised informal trade along the route.
- Cycling lanes should be established along Station Road and Mitchell Street towards the municipal office and community clinic.
- Provide cycle rails at the Meyerton Station and at the cluster of community facilities along Mitchell Street.
- It is proposed that the road fronting on to the Beehive Development and formalised linear business activity should be widened as to the transfer to the Meyerton CBD and therefore consists of a wide variety of local businesses.
- Public art the local economic empowerment area close to the Meyerton Station.

3.1.6 *Small- Medium Micro-sized Enterprise (SMMEs)*

Small-Medium and Micro Enterprises (SMME's) initiatives are catalyst to improving local economic growth and advancing communities level of affordability for their basic needs, particularly in areas encountering low-

income rates and limited job opportunities. Midvaal CBD predominantly caters to formal businesses and minimal attention to individuals participating in the informal economy is to some extent omitted for the provision of adequate trading facilities.

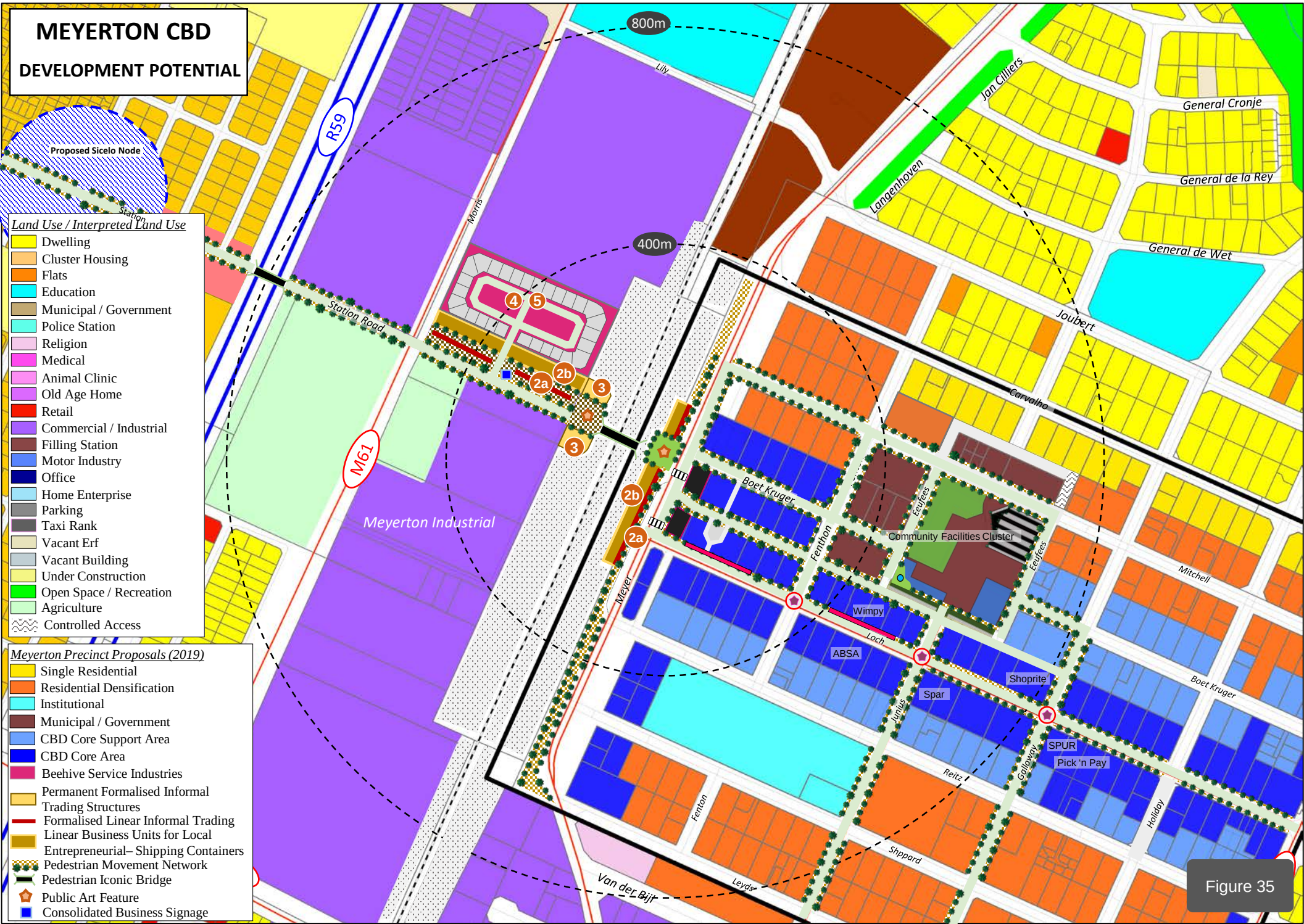
The Meyerton Station is an important entry-point to Sicelo Township, Meyerton Industrial and the CBD, and as a result, the area experiences high volumes of pedestrians. In line with the TOD concept, upscaling of emerging business is proposed at Meyerton Station to cater for a variety of business needs, as reflected on **Diagram 19**. Below briefly describes the different levels on emerging business that are illustrated in diagram 19.

▪ **Level 1**

Informal trading business in a form of selling perishable or non-perishable goods, and informal motor repair businesses are being conducted without adequate formalised informal structures. This is the typical character of the informal start up businesses similar to those existing at the taxi rank facility.

▪ **Level 2**

Formalised informal trading structures in this level are very basic. Level 2a structures are temporary and narrow in size, and are provided with shelves on which goods may be displayed, see photographs also on **Diagram 20a**. These structures may be placed adjacent another along pedestrian desire lines where space is limited. Level 2b structures are also in a form of temporary structures with narrow sized units that comprises a lockup roller door to secure goods overnight. This level of formalised informal trading



DEVELOPMENT APPROACH TO INFORMAL TRADE

Diagram 19

Retail

Manufacturing/ Service Industry

Level 1 - Lack of Formal Structure

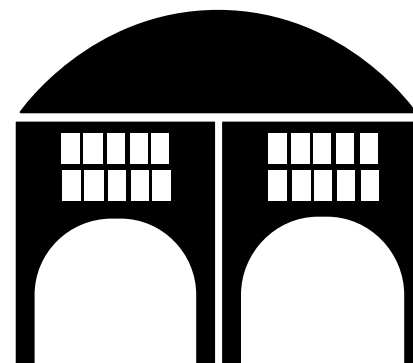


1a Trade of goods along roadside

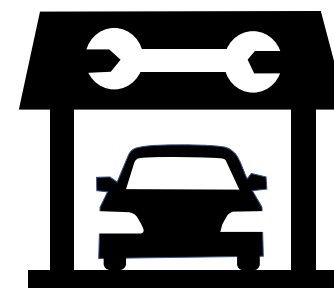


1b Services and sales along roadside

Level 4 - Service Industry/ Small-Scale Commercial Bee-Hive

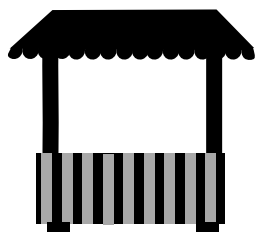


4 Service Industries - Warehouse

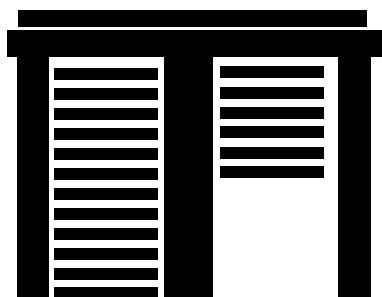


Formal business eg. workshop

Level 2 - Small-scale Formalised Structure

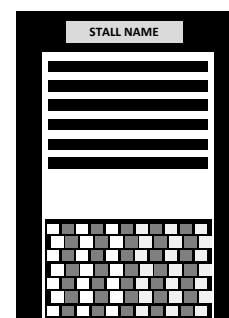


2a Temporary stalls, with display shelves

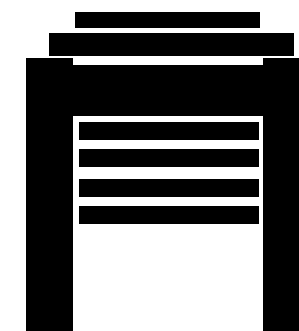


2b Narrow Local Entrepreneurial Business Units

Level 3 - Medium-scale Formal Business Structure



3 More comprehensive stalls (eg. Including bench, lock-up option, services etc)



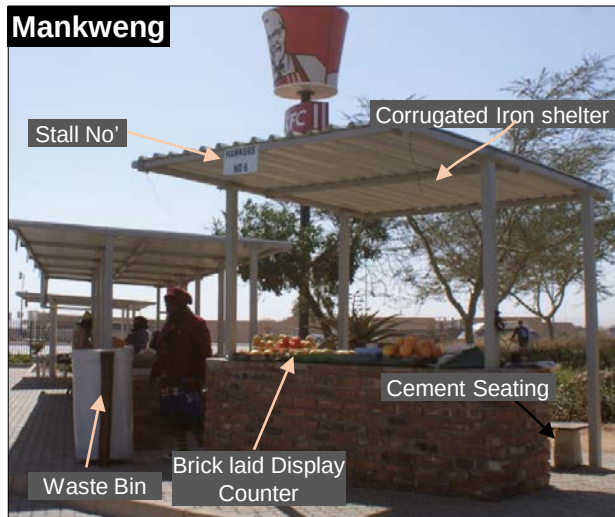
Larger Business Units

FORMALISED LINEAR LOCAL BUSINESS STRUCTURES

Diagram 20a

LEVEL 2a - Formalised Linear Informal Trading Structures

Mankweng



Bronkhorstspuit CBD



Pretoria - Hatfield



Level 2b – Linear Shipping Container for Local Entrepreneurial Business



structures may be utilized by start-up business entrepreneurs along pedestrian movement desire-lines, (see Diagram 20a).

▪ Level 3

This level of formalised business structures comprises permanent and structures that are typically larger in size to accommodate for increased business activity. Due to the volume of business in these structures, Level 3a includes features such as lock-up rollers doors for over-night storage, and may include water services and a shared basin between traders, (see examples of photographs on **Diagrams 20b and 20c**). The business units attached to one another on Level 3 are utilised for more comprehensive retail businesses such as electronic repair services, internet cafes and photocopy services, kiosk, lock-smith services, (see photographs on **Diagram 20b**). Due to the services provided within the unit, they also allow for food preparations in a form of a local restaurant, (see on Diagram **20c**).

▪ Level 4

Lastly, Level 4 depicts formal permanent business structures in Bee-Hive business structures that are typically utilised for service industries/ small scale commercial, see illustrations on Diagram 18 and photographs on **Diagrams 20d and 20e**. Level 4 structures accommodates businesses relating to motor service repairs and spare part sales; scarp yard; welding; building materials/ hardware; woodwork crafting; storage facility, etc. This type of business activity should be encouraged in the industrial area west of

Meyer Station where it will enable entrepreneurs involved in repairs and crafting services and those distributing larger quantity of goods.

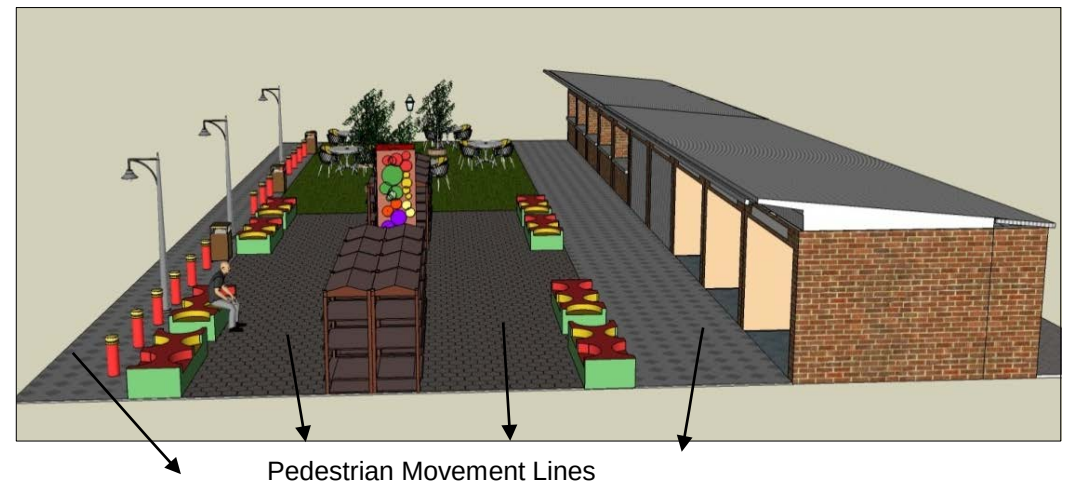
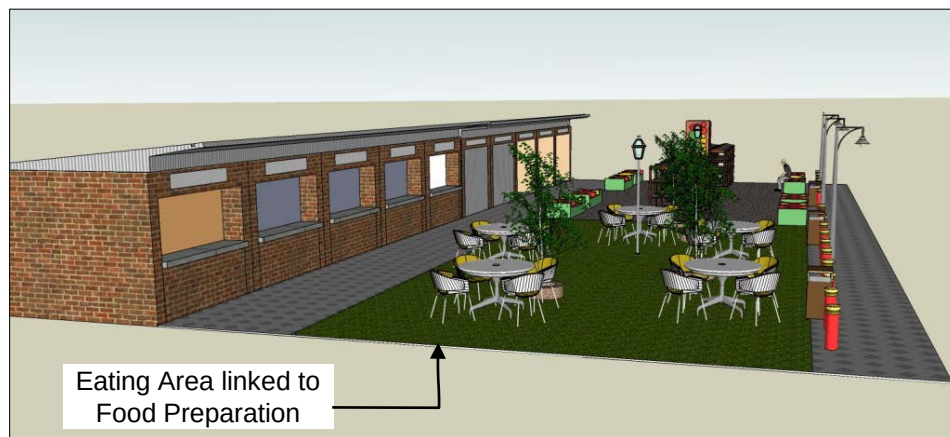
It is proposed that Level 2 formalised linear informal trading structures as reflected on Diagram 20a, be erected along Meyer Street close to the taxi rank and Meyerton Station, and across the railway line along Station Road, to accommodate for the selling of small-scale goods along main pedestrian movement network, refer to Figure 34. The provision of shipping containers divided into business units should be placed also along Meyer Street and Station Street to allow for the upscaling for entrepreneurs from linear formalised informal trading structures to medium-scale business unit.

The immediate area across the railway line, should be encouraged for level 3 type of businesses structures on either side of the pedestrian bridge. Level 3 structures allow for retail businesses that require larger trading place than level 2, and holds advantages of services such as water and electricity as reflected on diagrams 20b and 20c.

It is proposed that a hard-public space in a form of a public square be developed between level 3 business structures, to allow for pedestrian permeability between the Midivaal CBD to Sicelo. A public art feature with durable seating furniture should be provided within the public square to allow for social interaction and relaxation.

Level 3 - Conceptual Design - FORMALISED PERMANENT INFORMAL TRADE STRUCTURES

Diagram 20b



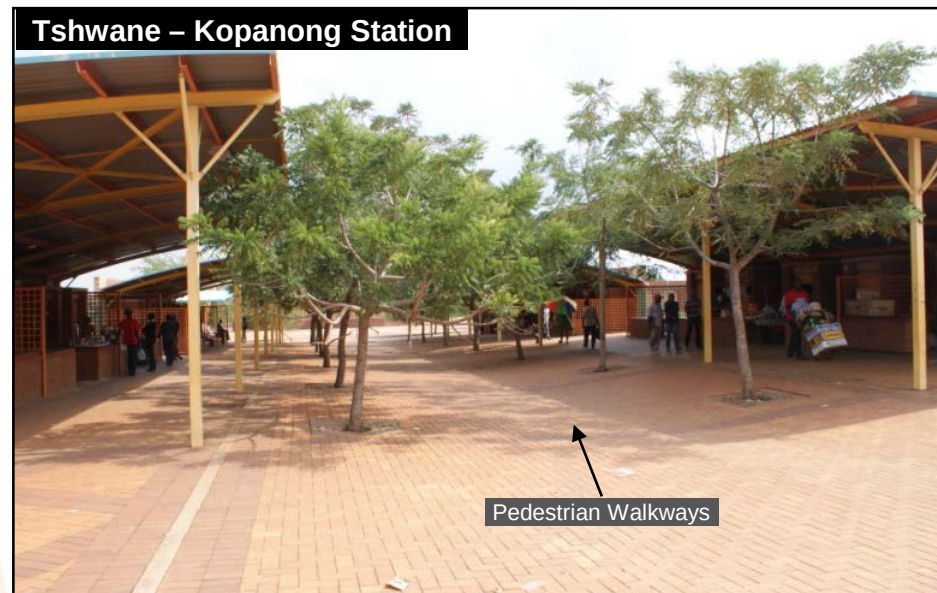
Level 3 - FORMALISED PERMANENT INFORMAL TRADE STRUCTURES

Diagram 20c

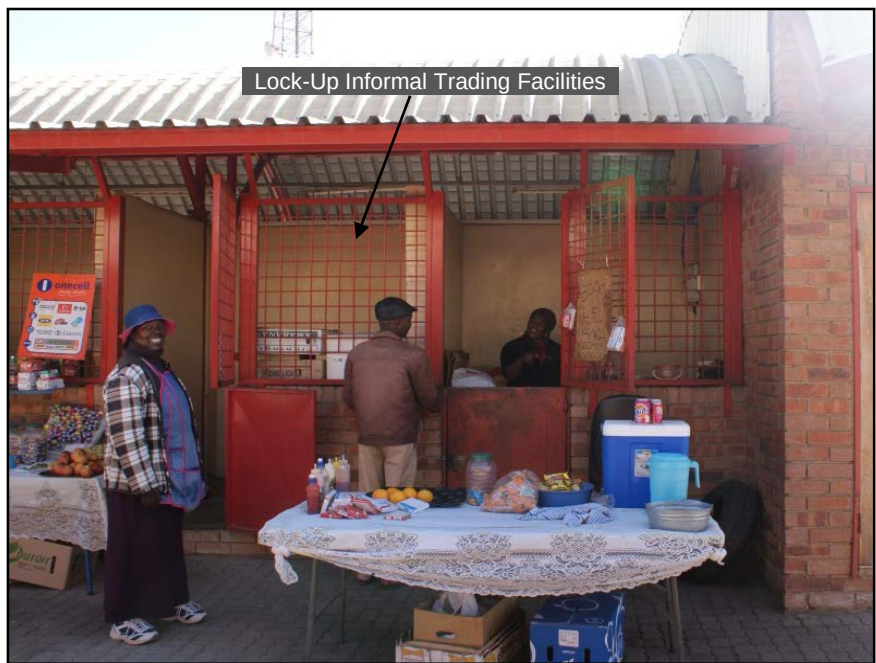
Polokwane - Mankweng



Tshwane – Kopanong Station



Lock-Up Informal Trading Facilities



Lock-up D storage Facility

36 Shared water basin

Display Counter





Mangaung Bloemfontein Motor Repair Services



Service Industry Units



Repairs Workshop



Service Industry Units

SMME INFRASTRUCTURE – BEEHIVE UNITS



SUBDIVIDED WAREHOUSE UNITS



Beehive development to accommodate varying artisan employment opportunities such as welding works; motor repairs and the sales of spare motor parts; computer repairs, etc. Linked to the beehive development, a signage entrance illustrating the types of businesses within the development should be placed along Station road (refer to Diagram 20d and Diagram 10e).

As means to enhance the public environment within the CBD core, specially along Loch Street. It is suggested that the concept of a '*Parklet*' be encouraged along Loch Street, between Fenthon Street⁽¹⁾ and Galloway Street⁽²⁾ in order to make provision for small-scale businesses like informal traders within the CBD area close to the major retailers' anchors, and in within the parklet space additional public seating.

As illustrated on **Diagram 21**, the 'Parklet Concept' requires the removal of two or three on-street parking bays which are then converted into a comfortable designated public pocket between the street and pedestrian walkways. As reflected, a parklet takes the form of an enclosed public space/ micro-park within an on-street parking zone.

The concept is lucrative within business areas, as it encouraged people to socialise close to the adjacent businesses while it also adding-value to the

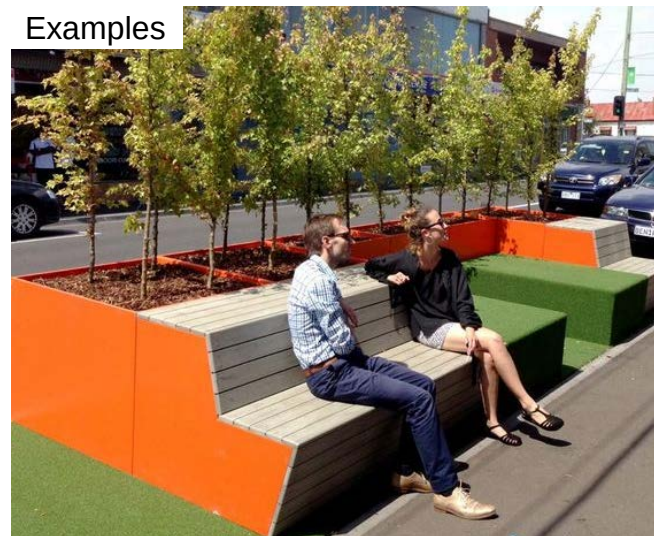
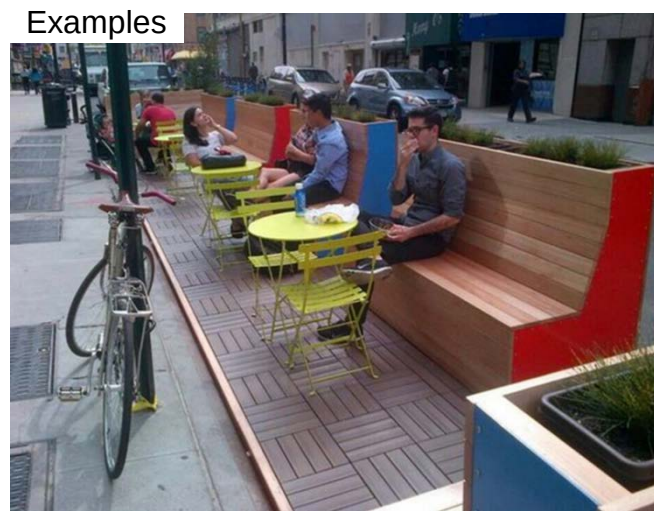
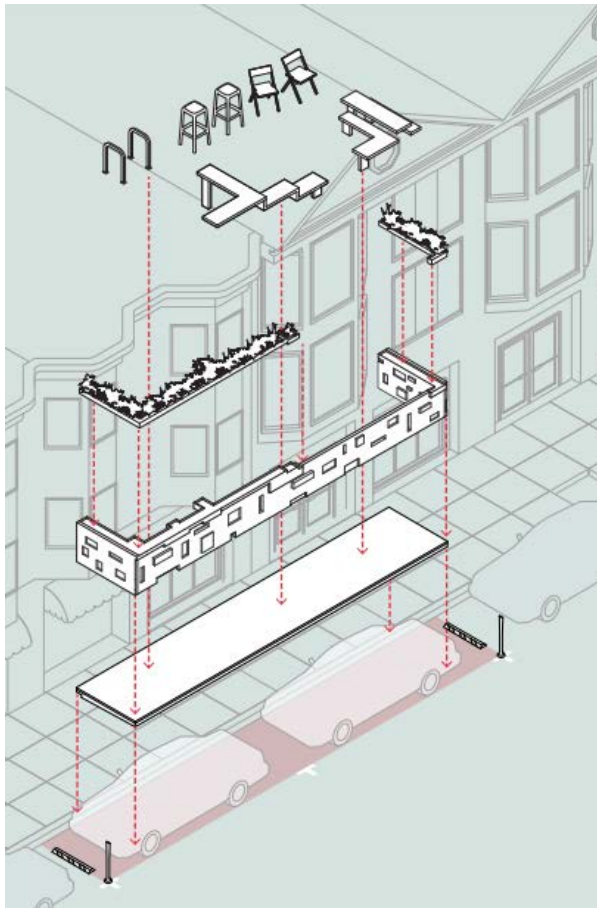
visual aesthetics of a place in terms of creating public friendly environments and sociable spaces, and 'boosts the eyes of street' notion of public safety. The internal design of the 'parklet' should preferably cater to the needs of the community, and specifically for the Midvaal CBD, it is proposed that the parklet area be erected to serve as additional seating area for the general public and should accommodate for informal trading activity along Loch Street in a form of the formalised linear informal trading structures. The parklet areas should also be equipped with a Wi-Fi capabilities.

In line with the Midvaal Local Municipal Draft By-law on Informal Trading all informal trading should adhere to the bay-laws in terms of:

- Trading of allowed goods only
- Trading should take place at / within approved designated areas
- Traders require a trading permit.

Furthermore, it is proposed that dedicated public orientated areas be placed with a Wi-Fi-hot spots specifically at the following areas;

- Municipal offices,
- Loch Street at the Parklet Area,
- Meyerton Station and SMME Area



Source: San Francisco, Parklet Manual, version 2.2

Why Parklets?

- Enhances the image of a place and streetscape to be creative, vibrant, liveable, enjoyable;
- Pedestrian Safety;
- Encourages non-motorised transportation (provides spaces for wheelchair users, cycling racks)
- Low-cost maintenance;
- Creates a balance between pedestrians and vehicular movement;
- Supports local business as they attract pedestrian movement.

4. URBAN DESIGN GUIDELINES

The following section outlines the Urban Design Guidelines relevant to the Meyerton CBD.

The detailed **Urban Design Framework** focuses on enhancing the structuring elements (incl. provisional road hierarchy, public parking etc.) public spaces and movement network, urban environment characteristics, sense of place and safety and security of the Meyerton CBD based on the following Design Principles:

- Design Principle 1:** Promote Mixed Land Use
- Design Principle 2:** Increased Residential Density
- Design Principle 3:** Promote Compactness
- Design Principle 4:** Promote Access and Permeability
- Design Principle 5:** Invest in the Public Realm
- Design Principle 6:** Provide a Quality Pedestrian Environment
- Design Principle 7:** Build a Positive Identity (Place-making)

Following is a brief description of each principle and related development objectives.

4.1 Design Principle 1: Promote Mixed Land Use *Refer to Diagram 22*

The Meyerton CBD is characterised by functional grouping of different land uses into functional clusters. For example, most retail uses are located along Loch Street, as a linear development, whilst the office and home office related land uses are located within the eastern section of the CBD. More diversity and mixing of land uses can be accommodated, especially within the proposed TOD node.

A TOD requires a balanced mix of uses capable of generating ridership at different times of the day (ideally 24 hours). Places to work, to live, to learn, to and other businesses that attract, facilitate and make use of pedestrian movement, while upper floors accommodate offices and/or apartments.

Objective: Encourage mixed and diversified land uses – preferably vertically.

The following policy measures are proposed to achieve the above objective:

- Encourage vertical mixing by allowing mixed use development within the current zoning scheme.
- Allow for conversion of multi-story buildings to include a residential component.

Design Principle 1: Promote Mixed Land Use

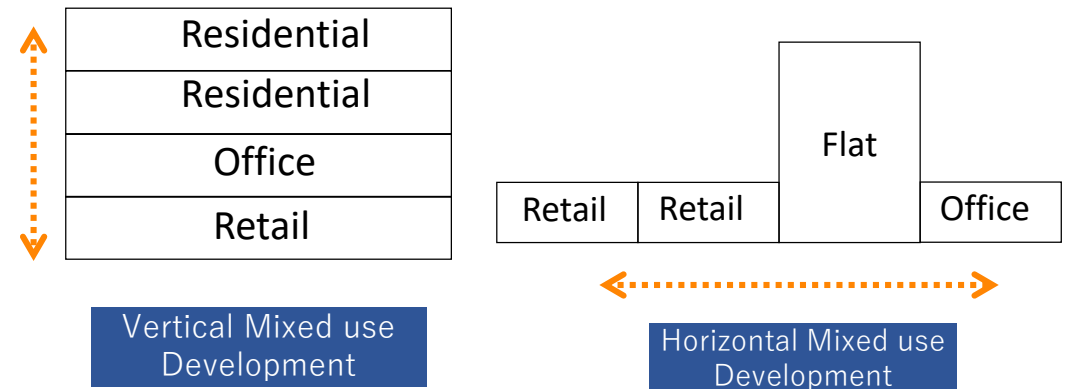
DIVERSITY OF LAND USE

WHY Diversity of Land Uses?

- Offers **Opportunity, Choice and Convenience**;
- Make more **Efficient Use of Land**;
- Intensifies the urban structure;
- Create a strong **Neighbourhood Character** and sense of place;
- **Reduces the consumption of valuable/non renewable resources** eg. agricultural land on the outskirts of urban areas.
- Enables walkable and bike-able environments;
- Reduces transport costs.

HOW?

- Concentrating a combination of land uses within a space;
- Maximise Synergy and Minimise conflict between land uses;
- Promote Housing Typologies;
- E.g. Encourage Horizontal or Vertical mixed use developments;
- E.g. Parking lots: Public Space and Informal Trading.



VERTICAL MIXED USE BUILDING



- **Formal Retail** on the Ground Floor, **Office** on Second Floor and **Residential Apartments** on Upper Floor



- **Emerging local business** on the Ground Floor and **Residential Apartments** on Upper Floor

- Allow for the inclusion of informal trade within the CBD along Loch Street

Informal Trade

The pavement design along Loch Street consist of 2.5m x 2.5 blocks and in certain areas the paving block are 2 blocks and 4 blocks deep (see picture).



The proposed informal trading structures can therefore be placed within the already demarked blocks and managed accordingly. (See **Sheet 1** illustrates the incorporation of informal trade along the wide sidewalks

and **Sheet 2** how the informal trade can be incorporated along the narrow sidewalks.)

4.2 Design Principle 2: Increased Residential Density and Social Mix

Refer to Diagram 23

Compact and dense residential developments allow for more people, potential public transport users, to live conveniently close to public transport stops/stations. They also ensure a critical mass of people needed to sustain the local economy, i.e. the abovementioned mixed land use. The highest residential densities should be located closest to the transport stop/station. The overall safety of the CBD is improved as additional people work and stay within the CBD.

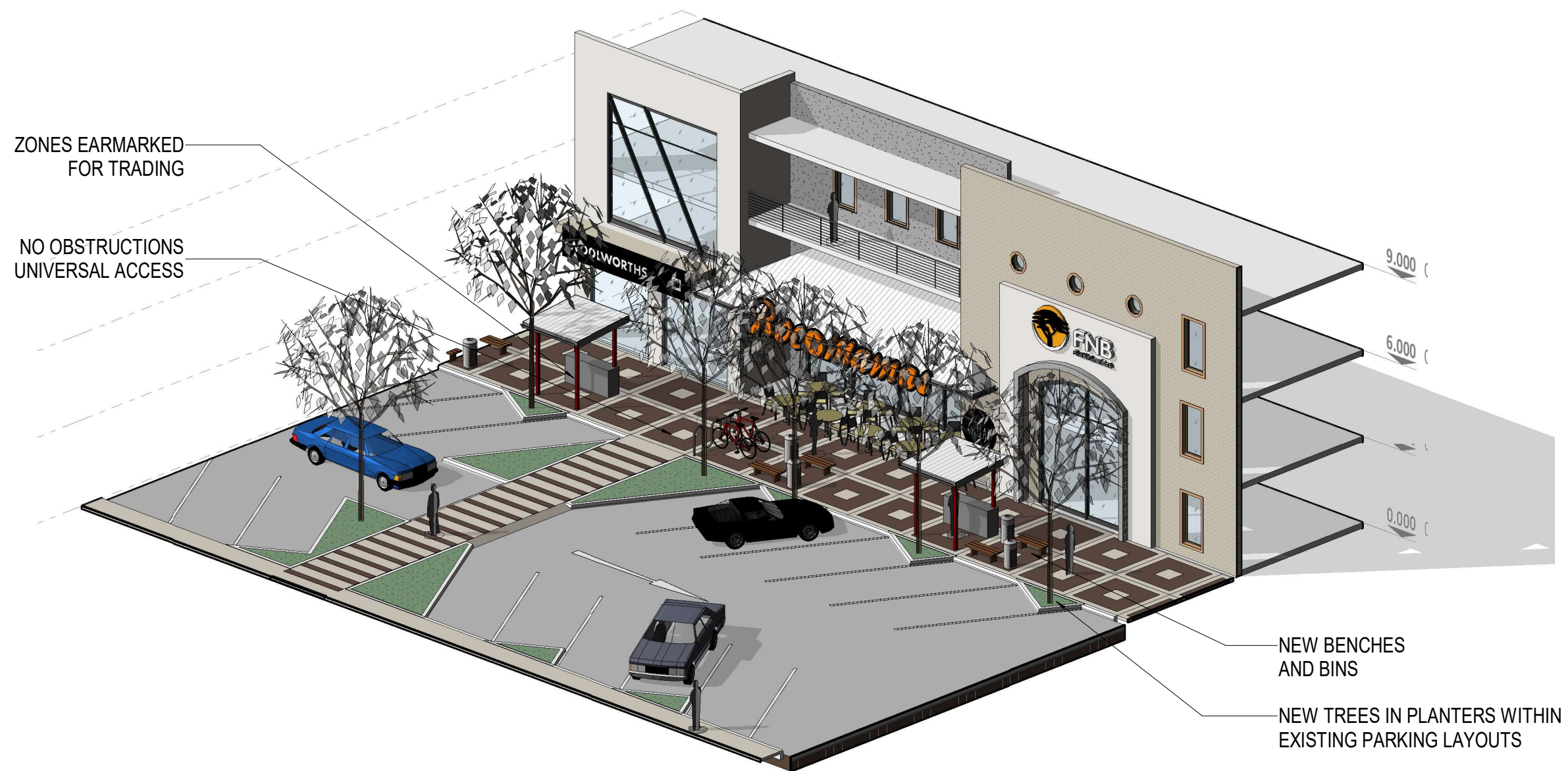
In addition, it is important that a range of housing types and affordability levels are provided for within a CBD and specifically within the TOD node to bring people of diverse ages, races and incomes together and into daily interaction.

Objective: Encourage the establishment of diversified housing options within the CBD / TOD

The following policy measures are proposed to achieve the above objective:

- Residential densities on the transitional areas (north and south of the Loch Street business strip) should be increased.





Design Principle 2: Increased Residential Density and Social Mix

MEDIUM DENSITY DEVELOPMENT

WHY Medium Density Development?

- **Stimulates the Business Activity** of the City as people reside in close proximity.
- **Contributes to Creating Safety** on the City Streets after hours, e.g. eyes-on the street.
- Increases a **Sense of Belonging and Place Identity**,

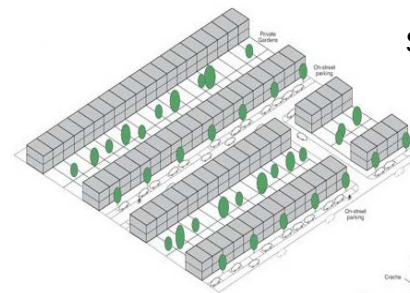
HOW?

- Increase residential densities **close to Retail and Public Transportation, and along Main Roads**;
- **Wrap** excessive **public open space** with housing (make it safer)
 - Use public space as **‘front door’**
 - Use housing instead of fences
 - By fronting housing onto public realm; and
 - Having footpaths along boundaries.

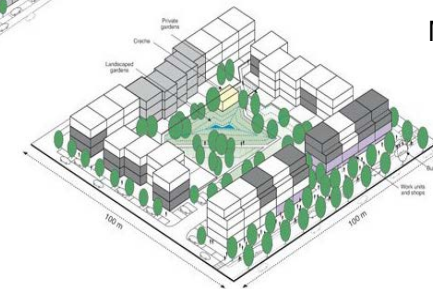
MEDIUM STOREY SOCIAL HOUSING



EXAMPLES:



Single Storey Cluster Housing



Multi-Storey Housing

- Establish hard and soft public spaces to be utilised by residence situated within the CBD.
- Promote the development of higher density residential developments, preferably 4-storey walk-ups and BNG funded developments (TOD node).
- Encourage the conversion of unutilised multi stories / office building to residential units.

4.3 Design Principle 3: Promote Compactness

Refer to Diagram 24

Meyerton CBD is currently still being utilised as a destination as most retail and office functions are still located within the CBD. Numerous modes of transport converge on the western edge of the CBD and add feet moving through the CBD. To ensure the continued utilisation of the CBD as a destination, compactness should be promoted. Measures need to be introduced to prevent leakage of activities from the CBD to ensure that the highest order retail and businesses are in the CBD.

Objective: Maintain the status of the Meyerton CBD as the primary activity node to the city and the surrounding region.

The following policy measures are proposed to achieve the above objective:

- Limit development of all decentralised retail and office nodes in the surrounding area in accordance with an approved development plan,

addressing development capacity, access, market considerations etc. (aligning with the Draft Midvaal Nodal Policy).

- Limit the conversion of dwelling houses into dwelling house offices located outside of the CBD area and outside of the proposed development area.
- Increase densities along mayor development corridors (Loch Street) within the CBD core.

4.4 Design Principle 4: Promote Access and Permeability

Refer to Diagram 25

The establishment of development / activity corridors allow for a wider range of different-sized enterprises and activities to co-exist with a high degree of complementarity. Pedestrian accessibility is equally important, as most retail and related services are primarily focused on pedestrians.

Objective: Introduce measures to improve the accessibility within the Meyerton CBD

The following policy measures are proposed to achieve the above objective:

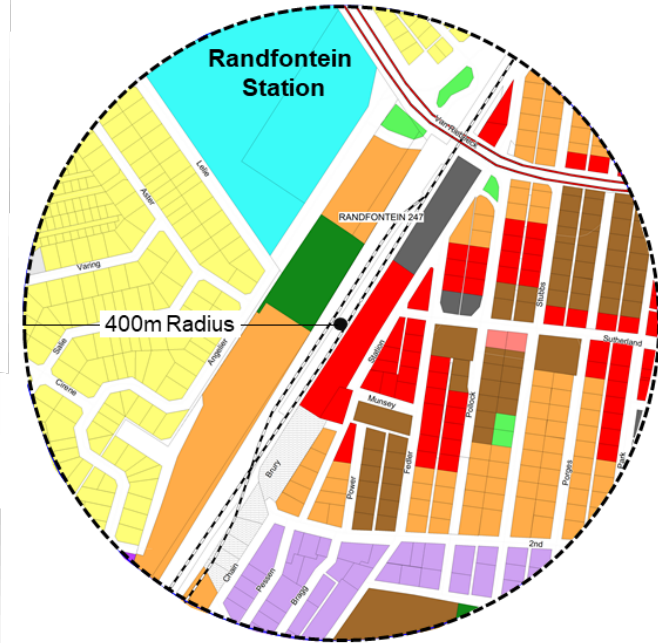
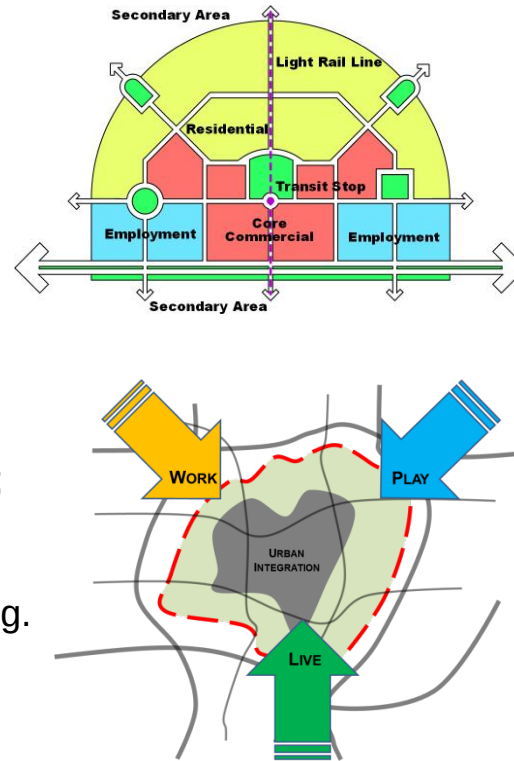
- Manage vehicular access within the core CBD, especially within the proposed TOD Node at the railway station and taxi rank, as there are main pedestrian generators.
- TODs must be highly accessible and permeable for all (pedestrians, bicycles and vehicles) in order to
 - Ensure that the stop/station is easily accessed,

Design Principle 3: Promote Compactness

COMPACT DEVELOPMENT

WHY Compact Development?

- Encourages development to be **CLUSTERED** around public transport;
- Defines and **strengthens the City Centres**.
- **Discourages** possibility of new unconnected centres;
- Dilapidated buildings and public spaces can to be **Revitalised/ Re-Used** for other functions;
- Creates **a focal node** that is accessible without driving.
- Effective use of services provided in the City.



HOW?

- Foster **Intensity** of development;
- Promote **housing typologies** close to economic node;
- Maximise on **pedestrian accessibility**, and not mobility;
- Variety of land Uses within the node;
- Roads should be continuous;
- Facilitate efficient and effective public transport services;
- **Create a One-Stop Destination:** retail, housing, service point, community & social space).

Intensify the urban fabric



Design Principle 4: Promote Access and Permeability

ACCESS AND PERMEABILITY

WHY access and permeability?

- A high level of accessibility increases the viability and appeal / ease of use of a CBD

HOW?

- Routes should be **continuous**
- Create **activity corridors**
- Create **functional linkages**, maximising **accessibility** not mobility
- Integrate **pedestrian movement** with **economic activity**
- Facilitate efficient and effective **public transport** services



Encourage Activity Corridors



Pedestrian Priority
facilitates easy
Access



Establish hierarchy of roads

- o Facilitate intermodal transfer; and
- o Attract, support and service economic activities which are essential for the achievement of the necessary land use mix
- o Allow for the “spill-over” of existing business onto the public realm

Business within the CBD should be allowed to extend their store space onto the sidewalks. Shops situated along the wider sidewalks where the 2.5m blocks are 3 -4 blocks wide should be allowed to extend onto the sidewalks (see **Sheet 3**). The initiative should be extended to any place of refreshment to create a more vibrant CBD.

4.5 Design Principle 5: Invest in the Public Realm

Refer to Diagram 26

Investment in the public realm is closely related to the Creation / Establishment of a Quality Pedestrian Environment and Building a Positive Identity (Place-making). These elements should be viewed in combination.

The public realm is the “face” of a city; the public realm influence people’s perceptions of a CBD and in turn their utilization or non-utilization of a CBD. It is therefore of critical importance to invest in the public realm of a CBD. Several design elements need to be incorporated to improve the physical environment in the CBD.

Objective: Introduce measures to improve the overall visible appeal and image of the Meyerton CBD

The following policy measures are proposed to achieve the above objective:

A design framework can be expanded on for the CBD and TOD node related public spaces (streets, sidewalks, boulevards, public transport modal transfer points, parking lots, squares and parks) to ensure standardized public realm interventions. Specific aspects to be addressed and standardised within the framework are lighting, street names, refuse bins and seating etc. These elements are to a large degree is currently visible within Loch Street.

- **Public Transport Stops**

- o Clearly define public transport stops through lay-by’s, signage (such as route maps and time tables), and lighting.
- o Provide waiting facilities at these stops, which should include seating, shelter, litterbins, lighting, drinking water and toilets (if feasible).

- **Parking**

- o On-street parking along the activity corridor along Station Road should be limited and pedestrian / cycling movement.
- o Only if necessary, parking along secondary roads should be designed to provide parking bays at a 45° angle, instead of parallel parking as per the Traffic Study.



Design Principle 5: Invest in the Public Realm

PUBLIC ENVIRONMENT & SIGNAGE

WHY Public Environment?

- Increases surrounding land value if well maintained;
- Stimulates an inclusive social Interaction of the diversity of groups;
- Boosts healthy communities and creates a positive image of a place, and
- Creates a sense of belonging.

WHY Signage?

- Gives a clear navigation through the City.

HOW?

- Design **Multi-functional public spaces that will** attract people;
- Incorporate public open spaces to community facilities and retail, close to medium residential.
- Build comfortable and clean public environments, e.g. public seating, bins.
- Street names and Gateway Signage
- Historic Features and Public Art



In support of the **Public Realm** design principle, trees should be planted along the centre of Loch Street and along the sidewalks where the setback of the buildings are further back. **Sheet 4** provides a cross section of Loch Street.

- **Signage**

- o Proper signage adds to the legibility of the CBD and helps the user to orientate oneself. Signage should therefore be regulated to ensure appropriate utilization of signage.
- o The uncontrolled erection of signage, banners and billboards adds to visual clutter causing the brain to become overloaded with stimuli.
- o Rationalise signage and develop clear guidelines for signage and advertisements in the CBD.
- o Signage should be standardised (as described by the overall public realm framework) to add to the character the CBD desires to establish.

- **Street Furniture**

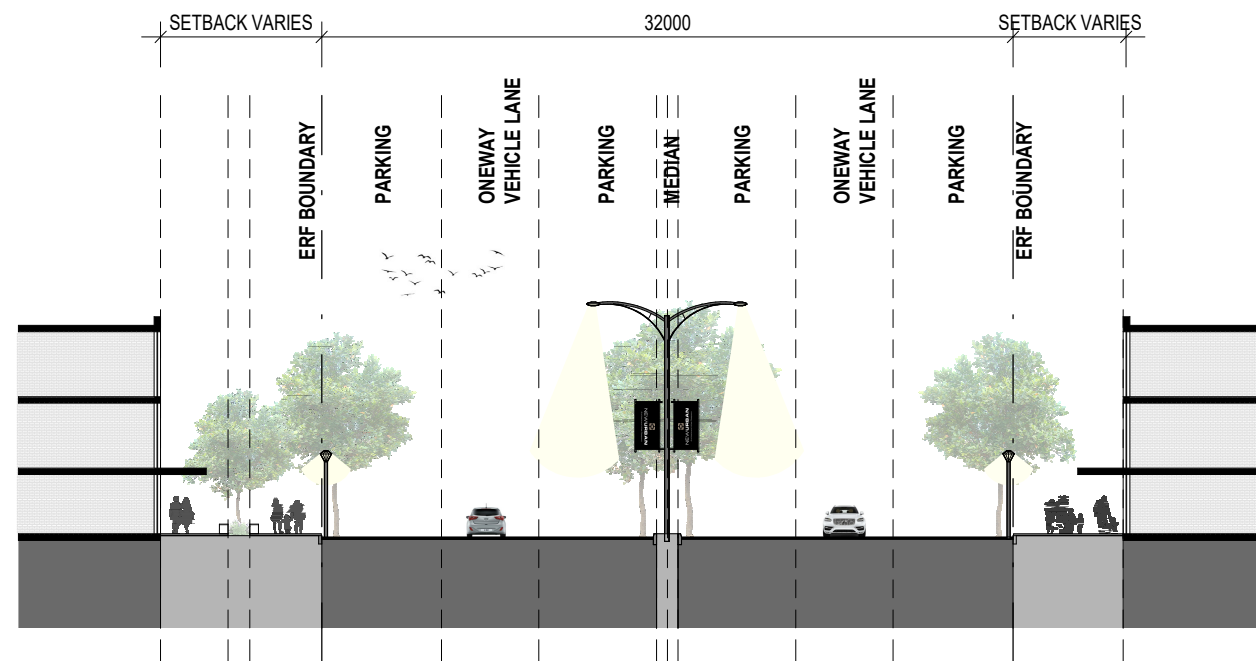
- o Install street furniture along the major pedestrian routes and public transport node to make these areas more legible and pedestrian friendly.
- o A general palette should be developed and applied throughout the CBD (as described in the overall public realm framework).
- o WIFI hotspots should be established at designated street furniture areas / parklet areas

- **Public open space**

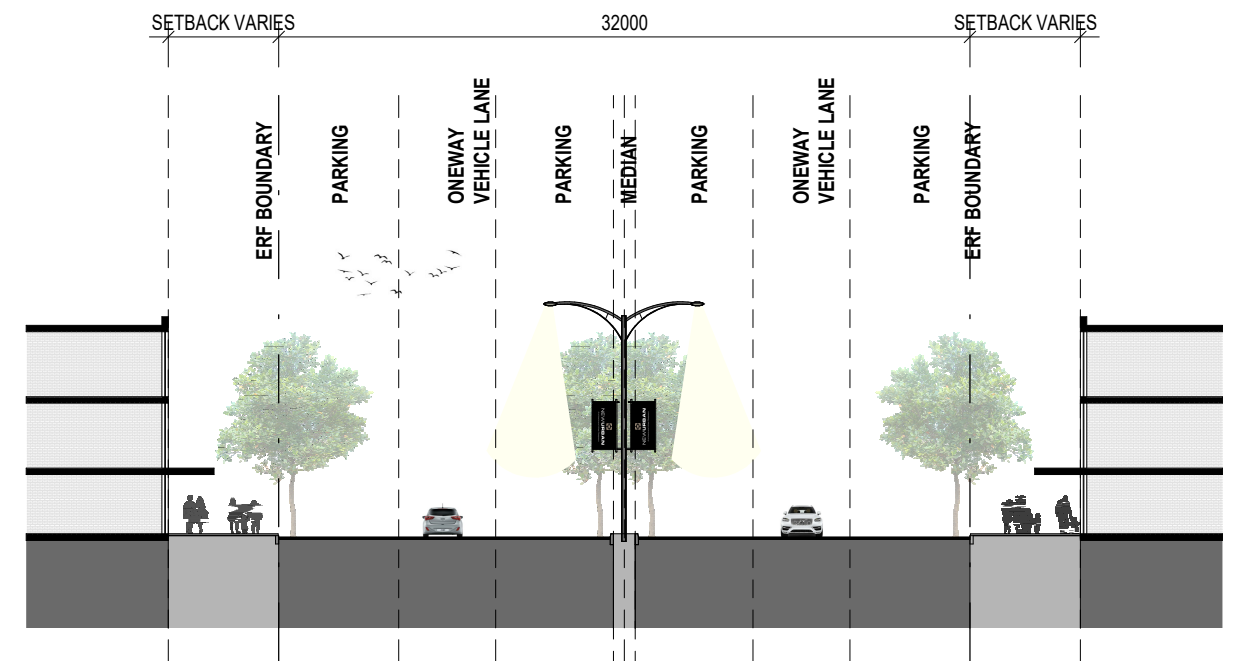
- o Improve the public parks / open spaces within the CBD in support of the residential component.
- o All public open spaces should be provided with adequate lighting and should be visible from the surrounding streets and land uses, to improve security. Street furniture, such as bollards, benches, trees and drinking fountains should be provided. There should be public toilets at the open spaces or at land uses in close proximity thereof.
- o Complimentary uses should be considered to ensure optimal utilisation public open space. This could include uses such as coffee shops, restaurants, conference centres, arts and craft markets or similar uses permitted by the municipality. These uses should only be permitted with the consent of the municipality and should not limit public access to parks and recreation areas.

TODs require comfortable, safe, interesting and attractive pedestrian environments (urban spaces) as people would be reluctant to walk from their homes, offices or shops to the public transport stop/ station through uncomfortable, dangerous, boring and ugly streets. Quality of a pedestrian environment depends on:

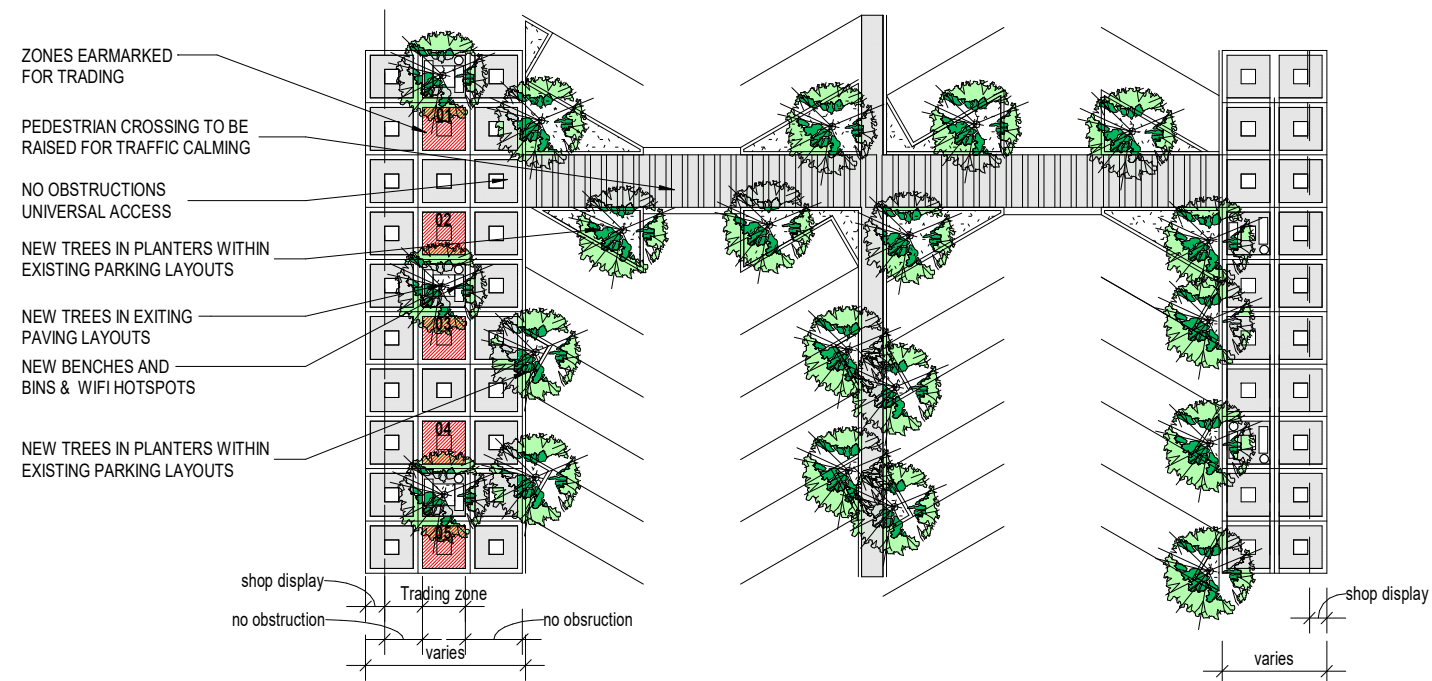
- area layout (a network of public rights-of-way) and the degree to which it facilitates pedestrian movement and activities;
- interface between the public space and surrounding private properties and the degree to which it (a) ensures spatial definition or sense of



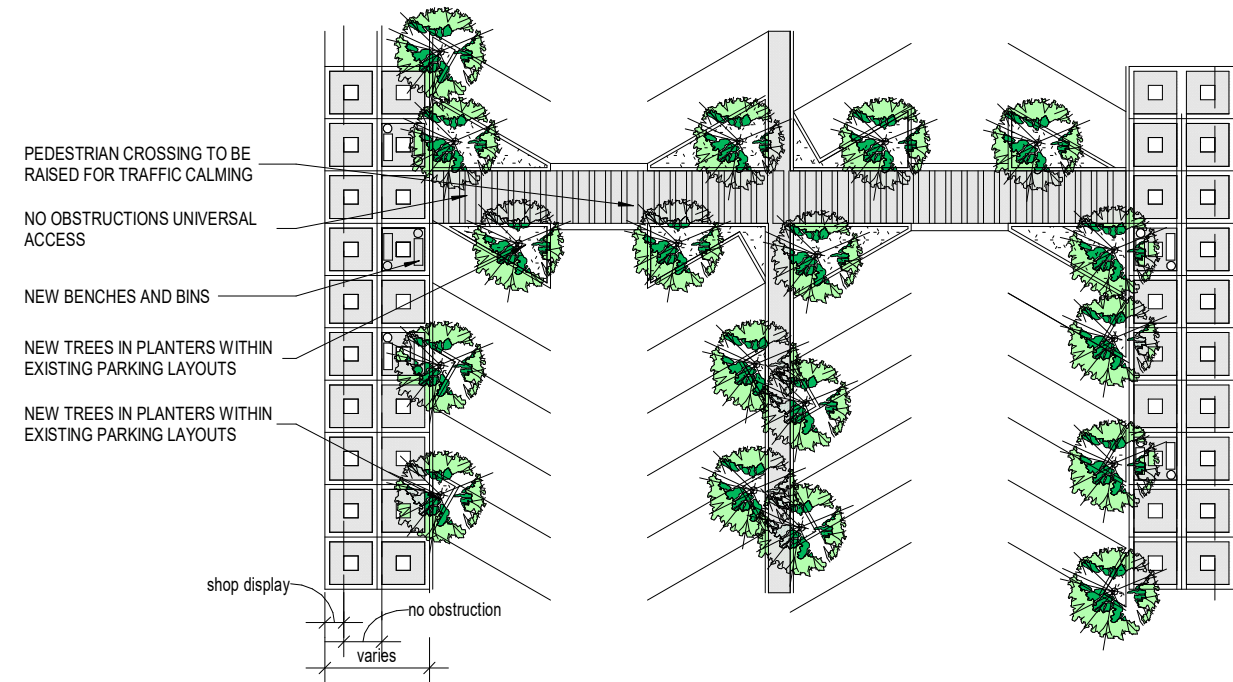
**32m ROAD RESERVE SECTION
WITH INFORMAL TRADING ZONES**



**32m ROAD RESERVE SECTION
WITHOUT INFORMAL TRADING**



**32m ROAD RESERVE PLAN
WITH INFORMAL TRADING ZONES**



**32m ROAD RESERVE PLAN
WITHOUT INFORMAL TRADING**

enclosure; (b) improves safety by allowing for 'eyes on the street' and (c) stimulates the intellect and senses of the passers-by;

- streetscape/ landscape design and the degree to which it contributes to the usability, comfort, safety, and aesthetic appeal of the public space.

Sheet 5 provides an illustration how the informal trade can be integrated with the pedestrian movement from the train station to the taxi rank and towards Loch Street. The trade structures should be placed along the main pedestrian movement.

4.6 **Design Principle 6: Provide a Quality Pedestrian Environment** *Refer to Diagram 27*

The creation of quality pedestrian environments link strongly with the investment in the public realm.

The western section of the CBD is predominantly utilised by pedestrians, the TOD design should therefore primarily focus on people, not cars. The main pedestrian movement is centred around the taxi ranks, proposed Station Street activity spine and along Loch Street.

Objective: Introduce measures to improve the pedestrian environment of the Meyerton CBD

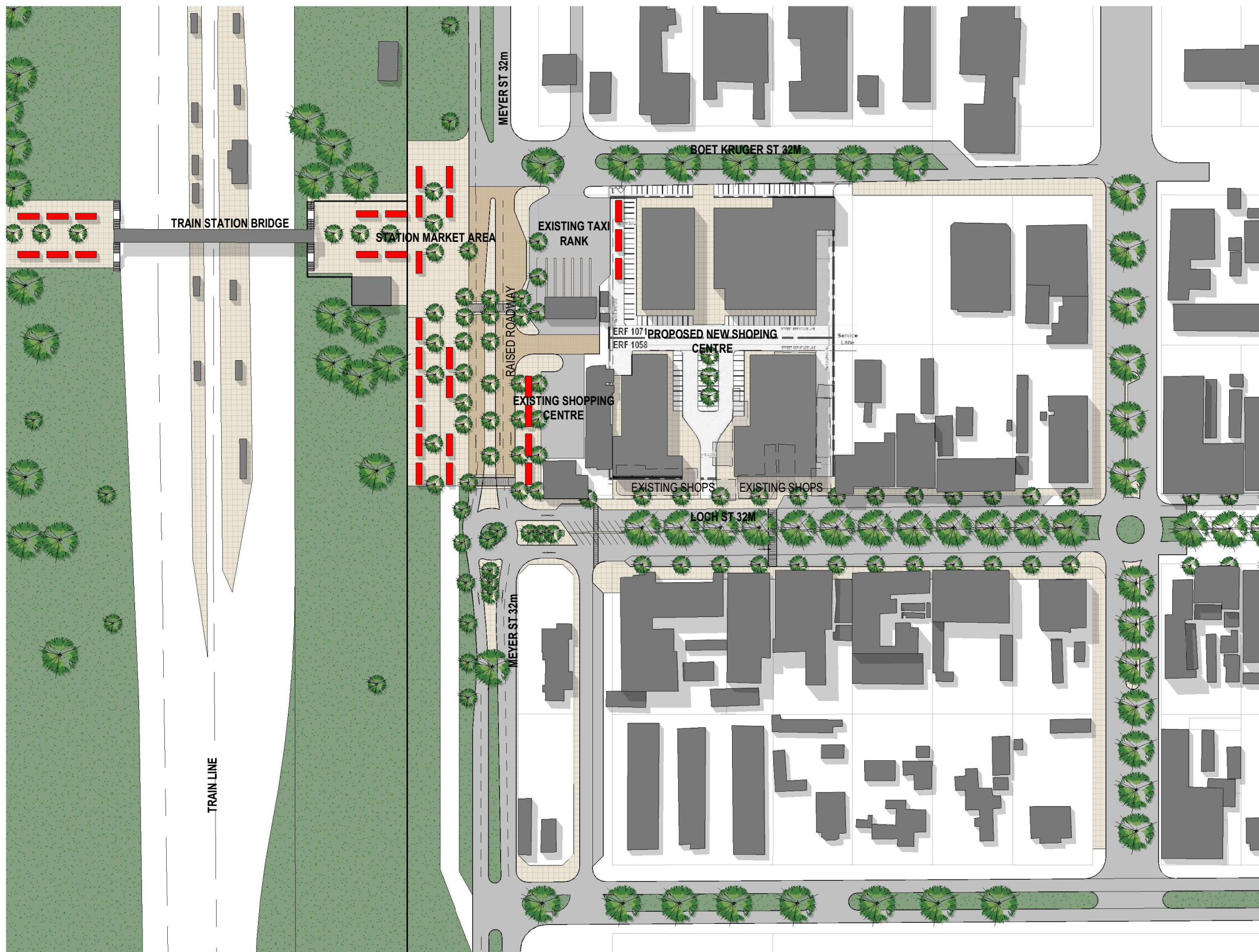
The following policy measures are proposed to achieve the above objective:

- **Sidewalks**

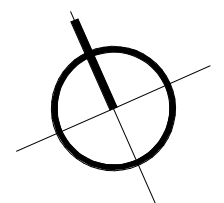
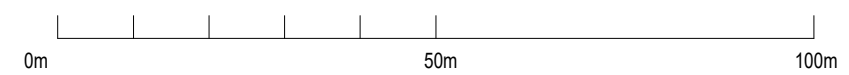
- o Retain and plant trees on sidewalks to provide shade for pedestrians and create a unifying edge to all developments. These trees should form a unifying element throughout the CBD and should define street edges.
- o Promote the use of transparent fences (e.g. palisades) along roads to create safe environments for pedestrians and cyclists (i.e. prevent dead street fronts).
- o Pave sidewalks with uniform small unit pavers in patterns to improve overall environmental quality and ensure uniformity throughout the CBD.
- o Sidewalks should be well-defined by edging and bollards.
- o Pedestrian appropriate street lighting should be provided to add to the safety of sidewalks.
- o Proper signage should be provided at pedestrian level to enhance the legibility of the CBD.

- **Mid-block Crossings**

- o Strengthen pedestrian linkages by means of mid-block crossings, arcades and safer intersections.
- o These crossings should be paved / painted in a similar manner as intersections, to provide for traffic calming and safe pedestrian crossings. These crossings should also be marked with appropriate signage and bollards.



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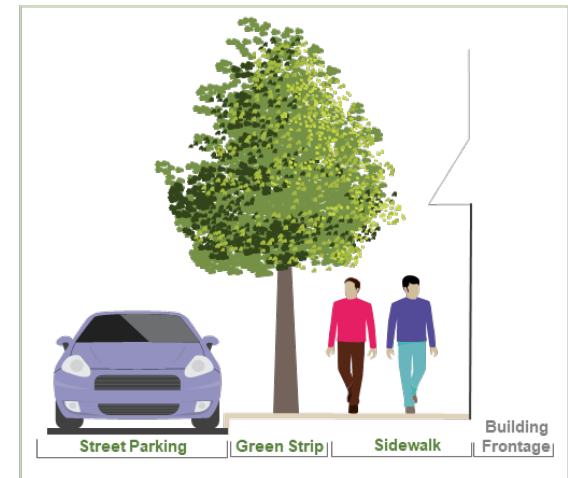
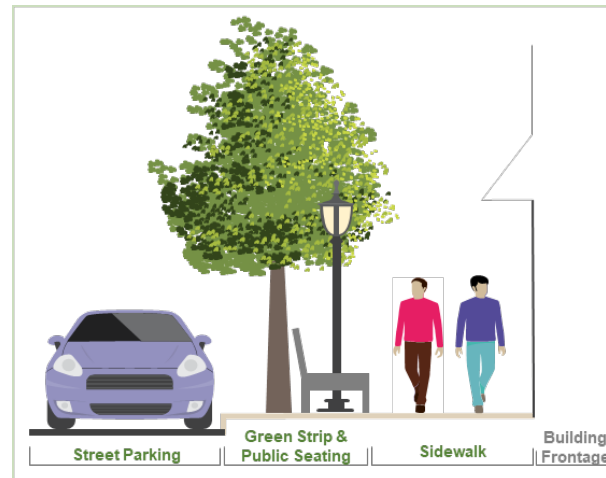


Design Principle 6: Provide a Quality Pedestrian Environment

DEFINE PEDESTRIAN MOVEMENT

WHY Pedestrian Movement?

- Helps to **reinforce identity**;
- **Sustainable and healthier** means of travel;
- Connects pedestrians with the environment they inhabit;
- Creates a sense of belonging and place identity;
- Encourages the protection of pedestrians from vehicular movement.



PUBLIC SPACE ELEMENTS

HOW?

- Design pedestrian walkways to connect people to areas of opportunity;
- Avoid buildings to overlook on the street to enhance the safety of pedestrians, (e.g. avoid the blank walls of buildings from the street view);
- Design streetscapes to be wide-enough to allow for pedestrian movement (meters);
- Design streetscape with texture paving, human-scale street lighting, shading area and outdoor seating furniture.
- opportunities, community facilities.



Defined Pedestrian Walkways



Durable Street Furniture beneath trees



Vegetation

- **Pedestrian / Cycle bridge**

- o Two landmark pedestrian cycle bridges need to be developed along Stations street, across the railway line and freeway to provide safe access to the community of Sicelo to the CBD.

4.7 Design Principle 7: Build a Positive Identity (Place-making)

Refer to Diagram 28

The creation of a positive identity for the CBD links strongly with investment in the public realm.

Meyerton CBD has a unique established identity, which need to be strengthened by informing additional imageability elements.

Objective: Introduce measures to improve the identity of Meyerton

The following policy measures are proposed to achieve the above objective:

- **Landmarks**

- o Landmarks should be strengthened at the main entry point into Meyerton to announce the CBD.
- o The landmark elements utilised on the traffic circles should be repeated through the CBD, and included in the TOD design.

- **Streetscape**

- o Create a strong standardised image and streetscape in the CBD using design elements such as similar trees, light poles,

bollards, refuse bins, seating, paving and signage to promote the identity of the CBD.

- o A simple, flexible theme for paving and other elements will contribute positively to the legibility of the CBD and start a recognizable 'language' for identifying public transport pick up points, pedestrian crossings, arcade entrances, etc.

5. URBAN MANAGEMENT AND MAINTENANCE

The Midvaal Local Municipality has to balance the diverse needs of all the stakeholders in the CBD which ranges from business to government, commuters, public transport operators, hawkers etc. These need to be managed within the ambit of the Municipality's responsibility to create a public environment conducive to attracting private investment and growth in the CBD. Private investment will only materialise if investors have confidence in the municipality's ability to effectively manage and maintain the public space (including sidewalks, streets, street furniture, lighting, and engineering services, and to keep the area attractive, clean and safe and the land uses well managed.

There are various mechanisms that the Municipality could use to manage and maintain the urban environment as explained in the sections below.

Action 1: Establishment of a CBD Manager's Office

Design Principle 7: Build a Positive Identity

POSITIVE IDENTITY

WHY identity?

- Fosters ownership and responsibility
- Increases legibility
- To instil a feeling of 'place' and of safety

HOW?

- Define entrances/ **gateways** to the CBD
- Establish **landmarks** & Improve/ expose existing ones to increase legibility
- Promote **cultural identity**
- Manage **public realm** well to create a strong, positive image
- Give **public buildings** visual dominance
- Consciously **improve** and link **natural open spaces** e.g. through tree planting
- Define and protect **edges** of the CBD, public spaces, main routes, boulevards, green open space etc
 - - Build up to the **building line**
 - - **Animate** the edge (no 'blank' walls, permeable views)



Enhance Soft Open Spaces



Landmarks linked to History / Function



Artistic Landscape – Enhances Place Identity



Themed paving along primary movement lines



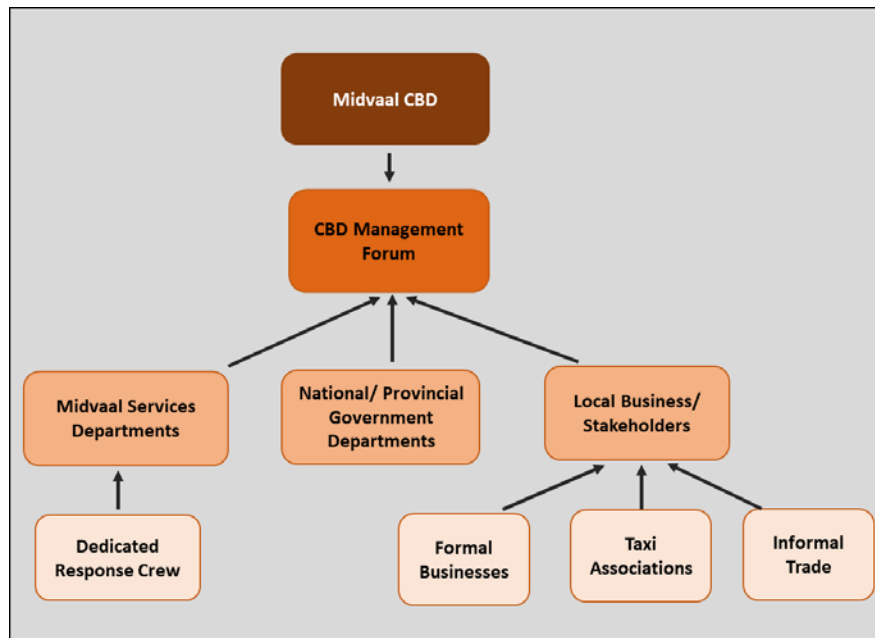
Artistic Features - Theme



Define Gateways

The objective of this action is to ensure that a person within the Midvaal Municipality be assigned responsibility for the day to day management of the Midvaal CBD area specifically. This office should have the authority/ responsibility to respond whenever problems are reported in any part of the CBD, and it should act as the central point to coordinate, align and direct all issues, initiatives and enquiries between the public and Council, and between Council and external stakeholders within the CBD. **Diagram 29** below indicates the proposed coordination structure.

Diagram 29: Midvaal Coordinate Structure



The mechanism/ vehicle for interaction between the Midvaal CBD Manager and local stakeholders would be the Midvaal CBD Management Forum. The establishment of such a structure will seek to improve communication between Council and CBD stakeholders and ensure that problems are timeously identified, reported, and responded to.

Some of the important stakeholders that should be involved include the South African Police Service, Public Works, PRASA, SANRAL, various government departments, businesses and service industries in the study area, the taxi industry, informal trade etc. This would also assist in ensuring cooperation and alignment between all the relevant stakeholders in the area.

Action 2: Establishment of Communication/ Complaints System in CBD Manager's Office

The establishment of a central Communication/ Complaints System for the CBD is critical towards successfully implementing the Urban Design Framework. Such system could serve to register all complaints about maintenance problems, safety and security issues, illegal refuse dumping in the area, and divert these to the relevant line function departments for speedy response.

It could also serve to monitor progress regarding dealing with problems, once registered.

Action 3: Joint Service Agreements with External Stakeholders

There are various external public and private stakeholders who are responsible for delivering services and infrastructure within the study area. Important role players in this regard include, amongst others, the Gauteng Provincial Roads, PRASA, SAPS, the Department of Health which looks after hospitals and health services and facilities, and the Department of Education which is responsible for the schools and other educational facilities within the municipal area. The Municipality needs to sign Memorandums of Understanding/ Service Level Agreements with all these institutions in order to ensure that the facilities under their jurisdiction are at all times properly maintained and managed in order to collectively contribute towards the Midvaal CBD Urban Design Framework. Funding can also be obtained from these institutions to support the programme wherever their line functions are involved.

Action 4: Minimum Basic Service Levels Commitment (Internal)

The purpose of this action is to ensure that all service departments within Midvaal CBD reach common agreement and commitment on the minimum levels of service to be achieved and maintained within the CBD. Typical aspects that should be part of such an agreement are refuse removal, stormwater management, cleaning services, grass-cutting, policing, landscaping, land use management, by-law enforcement, infrastructure provision and maintenance, as well as public property management and maintenance.

This initiative can be done in-house between the relevant departments and the proposed Midvaal CBD Manager, and programmes should be consolidated into a specific CBD section in the Midvaal IDP (refer to Action 5 below).

Action 5: Special Precinct: Mini IDP/ Joint Maintenance Scheduling Programme/ Budget

It is essential that all line functions simultaneously/ continuously deliver maintenance services in the CBD in order to ensure maximum impact and the optimum utilisation of available resources. This can be done by way of a “mini-IDP” for the Midvaal CBD area which highlights the range and sequence/ scheduling of maintenance/ upgrading projects to be delivered by various service departments within the CBD.

This “mini-IDP” will comprise a list of actions/projects to be implemented, also indicating the programming / phasing of each to ensure proper alignment. The joint maintenance scheduling programme will, for example, ensure that a pavement is repaired immediately after an underground sewer/ water pipe had been replaced.

Action 6: Private Property Management – Neglected Buildings

The Municipality should continuously monitor the state and quality of private properties in the CBD area. This will enable it to respond pro-actively to problems by implementing legal processes and procedures to ensure that the properties are upgraded, redeveloped and/ or well-maintained.

Action 7: Monitoring and Review

The Midvaal Municipality should ensure that monitoring and evaluation processes continuously assess the implementation of the CBD Urban Design Framework. Throughout the process, inadequacies should be documented and be addressed through constructive feedback and experience with all relevant stakeholders.

The monitoring and review processes should be designed in a manner that will allow the Midvaal CBD Manager to regularly gauge progress in respect of the timeframes or time-bound, quantitative and qualitative indicators.

It is envisaged that regular review of the Urban Design Framework will be done to engage all the stakeholders about progress on the one hand, and their respective involvement on the other. This will also ensure that stakeholders realise that urban renewal/ maintenance is a long-term process which requires continuous monitoring and evaluation (and amendment) to ensure that all objectives are met.

The monitoring and review process should be done in the following way:

- Line function departments within the Midvaal Municipality should submit periodic progress reports to the CBD Manager detailing progress made in terms of the implementation of the projects, programmes and actions they are responsible for.
- The CBD Manager should conduct periodic assessments to determine to what extent the aims and objectives of the Urban Design Framework are being met. Necessary adjustments should be made to ensure that the implementation programme is brought on track.
- The CBD Manager should periodically report to the Mayoral Committee on the progress made with implementation, whether the projects and programmes have the desired outcome, to what extent the overall aims and objectives are met, and what adjustments are required.

Action 8: Visible Policing and Support Services

Visible policing fosters a sense of safety amongst users of the CBD. It is especially necessary at known hot spots of crime, places of repeated by-law infractions and traffic bottlenecks. Visible patrols are similarly required during peak periods along major pedestrian movement lines and around transport nodes. The same applies to public open spaces such as parks and squares throughout the day. This will require a significant increase in police resources for on-the-ground policing.

It is therefore important for the Midvaal LM to enter into Service Level Agreements for the Midvaal CBD with the South African Police Services.

The possibility of involving Private Security Companies in this initiative could also be investigated in future.

The main areas where visible policing should be included within the CDB are:

- Along the main pedestrian movement lines (Loch, Meyer, Junius and Station Streets and around the taxi rank and Meyerton Station.
- Additional patrols should be included in the public open spaces / parks – Municipal Park and open space at the c/o Carvalho and Pierneef Boulevard.

Action 9: CCTV and Other Crime Prevention Mechanisms

The upgrading of the CCTV network will assist in reducing incidents of crime and enhance perceived safety and security on the streets, although CCTV cannot replace the sense of safety fostered by a police officer visible on the street.

CCTV is mainly utilized as measure for urban management and by-law enforcement, traffic management and crime prevention. CCTV cameras are mainly fitted at traffic lights and other strategic locations.

The private sector could also be involved by way of public/private partnerships in order to co-fund or sponsor the installation of such systems in 'hot spot' areas.

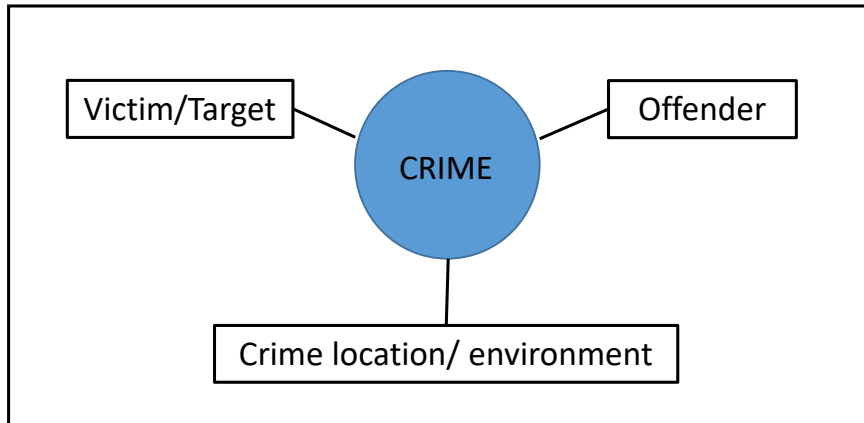
The CCTV network should be expanded to include the Meyerton Station and pedestrian movement south along Meyer Street and Junius Street.

Action 10: Design-out Crime and Provision of Street Lighting

Crime Prevention through Environment Design (CPTED) identifies the link between criminal activity and spatial planning, urban and architectural design, and the use and management of the physical environment. Research conducted by the CSIR indicates that three basic elements needs to be present in order for criminal activity to take place, namely: (1) the **offender**, (2) the **victim/target** (vulnerable), and (3) the **environment** or **crime location** (the physical location where criminals are unlikely to be caught / favourable environment) (see Graph 3 below).

To ensure a sense of safety, visibility of the street from adjacent buildings should be maximised; public spaces should be designed to provide for unobstructed views; and adequate lighting of streets, public spaces, and parking areas should be provided. Activities on the street and in public spaces should be encouraged in order to create feelings of safety and security. A high level of maintenance to keep the city centre clean and well organised also increases both physical and psychological comfort.

L Paumier

Graph 3: Basic Elements of Crime

Source: Three Basic Elements Diagram extracted from the CPTED compiled by the CSIR

In order for criminal activity to take place the third element of location / physical environment plays a significant role as the location needs to be conducive or favourable for the offender to commit a crime. Such environments normally comprise vacant pockets of land, unkempt spaces, areas in decay, isolated environments which lack “eyes on the street” and areas without proper street lighting.

The inclusion of proper lighting within the CBD will aid in preventing incidences of crime. As priority projects, it is essential to include lighting at:

- All major public environments within the CBD – public transport nodes / public parks and open spaces / informal trade areas etc. with specific focus on the western parts of the CBD where the highest volumes of pedestrian movement is noted

- Along main roads and pedestrian routes in the CBD. As indicated in the status quo (**Figure 10**), the main pedestrian movement is along the following streets:
 - o Meyer Street;
 - o Station Road;
 - o Leyds Street;

Action 11: By-Law Enforcement Capacity Building Campaign

Many residents, store owners and informal trades alike are unaware of by-laws informing permitted and / or restricted conduct within the CBD. With proper education of current by-laws in place, a zero-tolerance approach of enforcement can follow.

The aim of this campaign would be to make people aware of the existing by-laws and what by-laws are intended to achieve. Such a campaign could also include an amnesty period for transgressors, and could make available procedures for legalising existing contraventions during the amnesty period.

An awareness strategy could include the following notifications:

- A series of articles on municipal by-laws to be included as a newsletter in the monthly service accounts of households and businesses.
- Signage boards with the relevant by-law information can be placed at public transport hubs and along main pedestrian movement spines.
- Informative workshops can be held with informal traders, taxi operators, shop owners, etc.

Action 12: Implement By-Law Enforcement Programme

Once stakeholders are capacitated, enforcement of by-laws can follow. Proper by-law enforcement should ensure that law and order is restored in the study area, with specific focus on the following aspects:

- illegal land uses

- illegal/ unlicensed informal trading
- signage and advertisements
- illegal/ unsafe/ neglected building structures
- illegal settlement
- traffic control.

If efficiently implemented, this initiative will also go a long way towards changing general human behaviour and increasing investor confidence in the Meyerton CBD and surrounds.

6. IMPLEMENTATION PROGRAMME

The following table summarise the implementation programme according to the proposals and actions identified within the Midvaal CBD Urban Design Framework.

PROJECTS	RESPONSIBILITY	TIME FRAME			COST	MAP REFERENCE
		SHORT	MEDIUM	LONG		
LAND USE						
Promote and facilitate the development of precinct 1 and 2 at Erf 15/1053 (Municipal Office Erf). Land identified to be redeveloped should go out on tender to be redeveloped in line with the development proposals and guidelines highlighted within the Urban Design Framework.	Midvaal LM	X			In House	1
Develop the public open space on the western side of the municipal offices and install the necessary public furniture – benches, drinking fountains.	Midvaal LM	X			R1 million	1
Facilitate and manage mixed land use development with the CBD Core and CBD Support Area.	Midvaal LM	X	X	X	In House	
Promote and allow residential densification within CBD.	Midvaal LM	X	X	X	In House	
Promote the redevelopment of properties within CBD with high latent rights.	Midvaal LM	X			In House	
Facilitate the establishment of the Beehive Industries at Meyer Station.	Midvaal LM		X		In House	2
Informal Trading / Micro-retailing Formalization - Create an informal trading database which should be regularly updated, in order to manage and monitor the activity of informal traders in the CBD. - Provide a variety of formalised informal trading structures to accommodate	Midvaal LM	X	X		R 1.5 Million	3

MEYERTON CBD

COMPOSITE MAP

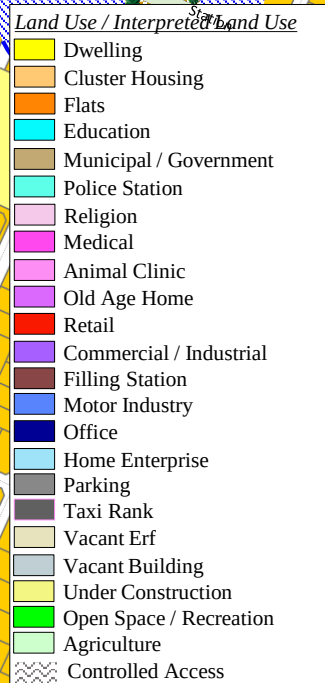


Figure 35

different scales of informal trading businesses. - Construct ablution facilities, seating area and public soft/hard spaces close to formalised informal trading activity.						4
PUBLIC ENVIRONMENT AND ROAD NETWORK						
Construct pedestrian link and pave (asphalt) road from Sicelo to Meyerton CBD along Station Road.	Midvaal LM / Gauteng Province	X (Synchronise construction with the construction of the pedestrian bridge across the R 59)			R 6 million	5
Construct pedestrian bridge over R 59 to link Sicelo and Meyerton CBD	Gauteng Province / SANRAL	X			R 20 million	6
Refurbish pedestrian bridge across railway line at Meyer Station. Pedestrian bridge should allow for disabled and cyclists	Transnet	X			TBC	7
Construct Parklet areas within CBD – along Loche Street between Meyer and Galloway Street	Midvaal LM		X		R 400 000	8
Install Wi-Fi network at Public Transport facilities (Meyer Station and Taxi Rank) and proposed parklet areas	Midvaal LM		X		R 1.5 million	9
Construct pedestrian pavement along Diens Avenue North (service Road) – from Meyer Street to Municipal Offices	Midvaal LM		X		R 3 million	10
Upgrade Diens Avenue North (service Road) – from Meyer Street to Municipal Offices	Midvaal LM	X			R 6 million	11
Develop public open spaces on western and eastern side of Meyer Station	Midvaal LM / Transnet		X		R 1 million	12

Construct traffic circle and public art feature at the intersection of Holiday and Loch Street	Midvaal LM		X		R 1.5 million	13
Extend CCTV camera coverage to cover taxi rank, Meyer Station and pedestrian bridge across railway line	Midvaal LM and Transnet	X	X		TBC	14
Provide pedestrian orientated (human scale) street lighting primarily along Station Road towards Sicelo	Midvaal LM		X (Synchronise construction with the construction of the pedestrian bridge across the R 59)		R 2 million	15
Construct bike rack facility in Diens Avenue North across municipal offices and SPAR, Pick n Pay and Shoprite	Midvaal LM		X		R 500 000	16
Install traffic light at Loch and Pierneef Boulevard	Midvaal LM			X	TBC	17
Install traffic circles at the following intersections: • Meyer and Shippard • Galloway and Shippard • Loch and Holiday	Midvaal LM		X		R 1.5 million per circle	
Commission detail design of on-street parking along Reitz Street between Meyer Street and Pierneef Boulevard in Urban Design Framework	Midvaal LM	X			R200 000	18
ENGINEERING INFRASTRUCTURE						
Maintain, upgrade and develop existing and additional engineering infrastructure to accommodate proposed infill development, densification and expansion.	Midvaal LM	X	X	X	In House	
Incentives • Identify all incentives and investment programmes relevant to the CBD of Meyerton – municipal, provincial and national government programmes • Document all incentives and investment programmes in a user guide / manual focused at investors, with relevant contact	Midvaal LM	X	X	X	In House	

information within the guide for any additional enquiries						
Promote all incentive and investment programmes relevant to investors						

ANNEXURE A

A1 ON STREET PARKING

The current road network layout provides an opportunity to extent the provision of parking within the current road reserve to promote business within the CBD area. It is however important to note the following (COTO TMH 16 Volume 2: South African Traffic Impact and Site Traffic Assessment Standards and Requirements Manual):

“On-street parking has a significant impact on road safety as well as the capacity of the road system. According to Transportation Research Board (2003), the prohibition of on-street parking can lead to a 30% improvement in traffic flow and a 20% to 40% reduction in collisions. In a review of literature on the impact of on-street parking on accidents, Box (2001) found that kerb parking makes an unduly contribution to accidents, ranging from about 40% of total accidents on two-way major streets to 70% on local streets. Higher proportions have been found on one-way streets.

Due to the significant impact of on-street parking on capacity and road safety, such parking may only be allowed on streets where such parking can be provided with a reasonable degree of safety.

I

n terms of this manual, on-street parking is only allowed on Urban Class 4 and 5 roads where the following requirements and conditions are met:

- The road must be a destination for vehicular traffic and not carry through traffic.
- The total traffic volume on the roadway (in the two directions) should not exceed a maximum of 1000 vph during any hour.
- Speed control measures must be introduced to limit operating speeds to a maximum of 50 km/h.
- The longitudinal gradient of the road is less than 5%.
- Where parallel parking is provided, the lane adjacent to the parking bays must be at least 4.0m and preferably 4.5 m wide.
- A demarcated paved parking bay with a width of 2.2 m must be provided.
- Sufficient sight distances must be available at accesses and at pedestrian crossings. Sight distances may not be blocked by parked vehicles.
- Arrangements must be in place for the management of the use of the on- street parking.

- i) The parking is only aimed at providing convenient short-term parking for patrons and not to replace on-site parking for tenants, residents or long-term visitors.
- j) On-site parking requirements may not be reduced due to the on-street parking provision, except where it can be guaranteed that the parking will never be removed for whatever purpose.

The above requirements can readily be met on Class 4a and 5b residential roads where provision should be made for visitor overflow parking on the road verges. The road reserve widths of such roads must be sufficient to accommodate such parking. However, paved demarcated parking bays are not required.”

In terms of the road classification the roads in the CBD (Green) can be used to provide on-street parking. The Existing Concept **(Parking A)** implemented along Loch Street is depicted in the Google aerial photo below.

Existing parking along Loch Street



The cross section of this however requires the utilisation of the entire road reserve from boundary to boundary and there is no space for pedestrian walkways. On street parking in the median on both side and the impact on traffic flow and pedestrian movement needs to be address.

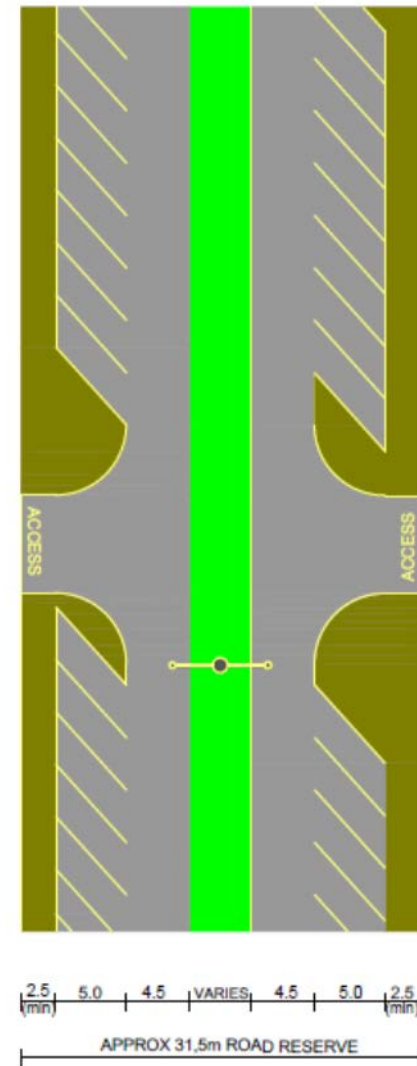
Two concepts are proposed for the remainder of the roads in the CBD.

The first is the Edenvale Concept **(Parking B)**, see section of a road in Edenvale CBD depicted in the Google aerial photo below.

Concept B - Edenvale Concept



The second is an amended layout (**Parking C**) of the one used along Loch Street as depicted below.



The conceptual Parking B and C are proposed for all the roads in the CBD.

Reitz Street forms the boundary between the business and residential area in the CBD, on one side is business zoning and on the other side of the road, high density residential and a school. The traffic should be separated from the school and Parking B can address this.

Parking along Reitz Street along the school



Parking relaxation

The Development of a Land Use Scheme for the Midvaal Local Municipality states the following:

“The on-site parking and loading requirements for developments are set out in the Table: On-site Parking and Loading requirements, hereunder. The municipality may, at its discretion, either decrease or increase the requirements contained in the table for specific developments”

Based on the current land use data, the total parking demand for the block between Boet Kruger Street, Meyer Street, Pierneef Boulevard and Reitz Street is 5 328 parking bays. This was calculated from the land use audit figures and applying the Midvaal Land Use Scheme Parking Requirements. The requirement is substantially higher than the current parking supply in this area. The current provision works during the weekdays but on weekends we noticed a very high utilisation.

Research worldwide indicates that there is no magic figurer that can be applied to determine a parking requirement. Each node or precinct or city centre has its own unique challenges and parking supply and demand this must be monitored and managed. Parking relaxation in nodes can be considered, there are three important considerations:

- The responsibility lays with the Authorities to provide additional parking somewhere else if the parking demand exceeds the supply, this will come at a cost to the authority;
- The Authority must have access to land to establish such a parking area; and
- The developer must determine if the development will be economically viable and marketable with a lower parking requirement.

Parking requirements from various local metropolitan councils address parking requirements in zones depending on the accessibility to nodes around stations, bus routes, BRT Routes, Gautrain bus routes and taxis ranks. The area within a 500m radius walking distance from a public transport node is regarded as such a zone. Within this zone parking relaxation of 20% to 50% is supported. Outside this zone no parking relaxation is supported but shared parking can be considered.

In this instance the following can be considered:

Interface Zone Around the Taxi Rank

This zone is located next to the station with a bus and taxi route along Meyer Street. The 500m walking distance will define the area around the taxi rank.

Parking requirement:

- Consider up to 50% of the requirement
- Applicant to motivate the parking relaxation

Rest of the CBD area

Parking requirement:

- 100% of the requirement.
- Shared parking can be considered
- Applicant to motivate the parking relaxation