4. SPATIAL PLANNING DIRECTIVES

4.1 SPATIAL VISION

A Spatially Efficient Capital City that is Sustainable, Competitive and Resilient:

- Sustainability: Optimising the use of land through densification, infill and consolidation, resulting in a city with spatially integrated equal opportunities, correcting spatial imbalances, creating sustainable settlements and advancing social equity.

- Competitiveness: Instilling investor confidence by ensuring a well-managed quality built environment through enforcement of relevant legislation, maintenance and management of infrastructure and strategic investment in infrastructure focus areas targeting broad-based economic growth.

- Resilience: Being innovate and adaptable, whilst maximizing spatial opportunities and in turn maximizing economic growth opportunities through strategic investment decisions.

4.2 GAUTENG SPATIAL DEVELOPMENT FRAMEWORK

G2055 initiative is an initiative aimed at preparing the Gauteng City Region for a population of approximately 28 million people by 2055. The G2055 vision is for Gauteng to have a strong knowledge capital, be the hub of innovation to Africa, be a livable, prosperous, competitive, equitable, accessible and sustainable City region. The initiative is spatially addressed in the Gauteng Spatial Development Framework (February, 2011).

The Gauteng Spatial Development Framework (GSDF) proposes future spatial structure for the Gauteng Province and is clear on the fact that growth must be structured and directed; not merely accepted and accommodated, and thus informs and guides the Tshwane MSDF with specific regards to the location and nature of the physical development in the province.

The following five critical factors were identified in the GSDF:

- Contained urban growth

- Resource based economic development (resulting in the identification of the economic core)
- Re-direction of urban growth (stabilise/limit growth in economically non-viable areas, achieve growth on the land within the economic growth sphere)
- Protection of rural areas and enhancement of tourism and agricultural related activities
- Increased access and mobility.

The primary structuring elements identified within the GSDF are those of:

- urban mixed-use activity nodes
- open space and green system
- public transit and movement routes
- urban corridors and activity spines

4.2.1 NODE HIERARCHY

The GSDF defines nodes as being intense concentrations of activities, containing a mixture of uses such as retail, office, entertainment, community facilities and an adjoining residential component. A node can be oriented towards a local, neighbourhood, regional or city-wide community. The GSDF identifies a hierarchy of nodes that correspond with Tshwane nodes in the following manner:

<table>
<thead>
<tr>
<th>GSDF</th>
<th>MSDF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Node</td>
<td>Capital Core/ Tshwane CBD</td>
</tr>
<tr>
<td>Primary Node</td>
<td>Metropolitan Node</td>
</tr>
<tr>
<td>Secondary Node</td>
<td>Urban Core</td>
</tr>
<tr>
<td>Secondary Node</td>
<td>Emerging Node</td>
</tr>
<tr>
<td>Tertiary Node</td>
<td>Specialised Nodes</td>
</tr>
</tbody>
</table>

The GSDF further analyses nodes in terms of

- Function
- Economy/Land Use
- Intensity of Use
- Density
- Walkability/Extent
- Public Facilities
- Public Transport

4.2.2 OPEN SPACE AND GREEN SYSTEM

The GSDF open space and green system is informed by the provincial dolomite belts, soil fertility for purposes of agricultural activity, conservation areas, ridges, watercourses and heritage sites.
4.2.3 PUBLIC TRANSIT AND MOVEMENT ROUTES

The GSDF indicates that the existing rail systems and BRT routes should form the basis of the transport system for Gauteng for both freight and public transport. The GSDF further takes cognisance of the proposed extended/upgraded rail links, providing a commuter line that connects Mabopane to Hammanskraal and Hammanskraal to the Capital Core (urban structuring initiative), as indicated in the Tshwane MSDF. It also indicates that the proposed Tshwane inner-rail loop of the Tshwane MSDF would significantly increase urban consolidation potential as a well-located public, subsidized initiative.

4.2.4 URBAN CORRIDORS AND ACTIVITY SPINES

The GSDF defines an urban corridor as being the largest of the urban structure elements, consisting of a combination of structuring elements at the metropolitan and regional scale of the urban environment. It is typically a linear element linking two metropolitan nodes, showing that it is origin and destination driven (i.e. it goes from somewhere important to somewhere important). A corridor of this nature is complex in profile and the mix of uses, resulting in varying development intensity and a width.

On the other hand, an activity spine is a linear mixed-use element of urban structure containing an intense concentration of facilities which are all focused along a major transportation route. It is the focal point of an urban corridor or can be a separate element. The spine is traffic oriented, accessed through public and private transport. It carries various modes of traffic which give direct access to a range of high intensity land uses. Pedestrian movement in between passing trade characterizes the nature of the activity, supported by a strong residential component.

Major Regional Corridors identified are:
- N1 (Polokwane/Tshwane/JHB/Vaal/Bloem/Cape Town)
- N 4 (Rustenburg/Tshwane/ Witbank)

Major Provincial Corridor:
- R21 from Tshwane to OR Tambo International Airport

4.2.5 CONSOLIDATION AND DENSIFICATION

Given the comprehensive system of discernible urban corridors and public transport potential within Gauteng, consolidation of urban development should be concentrated around existing primary urban centers, urban nodes, and urban corridors and along urban activity spines.

4.2.6 GROWTH MANAGEMENT: URBAN EDGE

The primary growth management tool will be the urban edge. The urban edge is an urban management tool used to counter urban sprawl and unplanned expansion, encourage densification and protect natural resources within the city.
In 2011 decision was taken that the Provincial Urban Edge would no longer be implemented by Gauteng. Rather, that the edge should be managed by local municipalities themselves, to ensure an appropriate and contextual application of growth management.

To this end, the City of Tshwane will reflect strategic urban edge delineations within the Regional Spatial Planning Frameworks and other lower hierarchy spatial plans. Amendments to or deviations from the urban edge will be at the discretion of the municipality, subject to the merits of the specific application.

The concept of the ‘urban void’, as defined in the GSDF, is also important to note. The urban void comprises expansive areas (or discontinuities) within the urban system that remain or are under-and/or undeveloped for very specific reasons. These typically include extensive agricultural holdings and mining areas, as well as land used for military purposes. Some areas remain undeveloped due to their potential threat to human safety and health, for example unstable geotechnical conditions due to the formation of sink holes and previous mining activity, and industrial activity/production which prohibit urban development in close proximity to the industrial activity. Other areas may be developed over time as the urban system grows and expands and certain activities may be re-located and/or discontinued, creating opportunities for new development.

It is critical to remember is that the GSDF is a long term spatial framework and reflects the vision for 2055. On the municipal level, spatial planning will need to respond to the G2055 vision and GSDF within the local context in incremental stages providing more detailed spatial directives in short, medium and long-term plans.
Gautrain Stations
Freight stations
Passenger Stations

Urban edge delineation 2009

Urban nodes
Protected Areas/Natural Systems
Extensive general agricultural hinterland
Designated Agricultural Hubs
Urban consolidation zones

Rail network
Strategic Rail connectors
Gautrain Rapid Rail

Strategic Road connectors - New
Strategic Road connectors - Upgrade
Passenger Ring Rail

Freeway and Primary
Secondary
Tertiary

Future corridors
Urban development corridors
Future outer edge of urban development by 2055*
Existing mining settlements

Future urban consolidation within the urban edge
Rural centres
Residential Estates
Urban Edge for review
Waterbodies
4.3 THE NEW GROWTH PATH AND TSHWANE STRATEGIC INVESTMENT PLAN

In his inaugural State of the nation Address in June 2009, President Jacob Zuma identified the need to create decent work; expand on our investment attraction and job creation initiatives and to promote a more inclusive economy. The New Growth Path of 2010 knits together the Industrial Policy Action Plan (IPAP) as well as policies and programmes in rural development, agriculture, science and technology, education and skills development, labour, mining and beneficiation, tourism, social development and other areas. The spatial response to this Growth Path will encompass the identification of the following:

- Infrastructure focus areas
- Agricultural and agro processing focus areas
- Knowledge economies
- Rural management programmes to improve livelihoods and stimulate employment

But the ‘economic growth basket’ will require synergy among several building blocks. And given that many of these interventions towards an improved economy will happen in space, the spatial plan is imperative. Needless to say, the ‘spatial basket’ is also much wider, and the response will thus have to encompass a more complex tapestry which will be weaved together into a complementary and integrated strategy.

In March of 2011, the CoT approved the Tshwane Strategic Investment Attraction, Facilitation and Aftercare Plan (2011-2016). The purpose of the plan is to outline the City of Tshwane’s strategic and systematic approach to the investment promotion, attraction, facilitation and retention functions, with the view to increase investment volumes in the City which would have a direct impact on economic growth and development, as well as to increase the employment creation potential of the economy. The plan identifies the following as priority investment sectors for:

- Automotives and Components
- Tourism and Related services
- Agriculture and Agro-processing
- Aerospace and Defense technologies
- Mixed Manufacturing
- Research and Development
- Alternative and Renewable Technologies
- Business Process Outsourcing and Off-shoring
• Mining and Beneficiation

The Tshwane Investment Approach will consist of 3 phases:

PHASE 1: Framework Plan

• Adopt the Metropolitan Spatial Development Framework (MSDF) and the Regional Spatial Development Frameworks (RSDF), and align them to the Tshwane economic strategies

• Identify strategic land parcels for Greenfield and expansion investment projects

• Align infrastructure development plans to the inherent SDF investment opportunities

• Identify regional and sectoral comparative and competitive advantages

• Classify investment project categories to be prioritized and fast-tracked

PHASE 2: Pre-Investment Facilitation

• Investment mapping and planning (i.e. identification of source countries and targeting strategic multi-national corporations)

• Arrange business seminars and investment conference

• International investment marketing missions

PHASE 3: Development Facilitation

Leveraging of private sector funding through:

• Investment and business incentives

• Investment Attraction and Facilitation Plan

• Efficiency of planning

The relevance of the Strategic Investment Attraction, Facilitation and Aftercare Plan is critical in identifying areas for focused infrastructure investment in order to ensure continued growth in existing economic nodes and identification of new opportunity areas for economic growth.

The alignment or misalignment of existing nodal areas with investment sector areas will also guide the City as to where greater amounts of public funding is required, versus areas that already have huge private sector funding support.

Diagram 12 is a schematic presentation that indicates that the bulk of the City’s first order nodes (metropolitan nodes) are largely already spatially integrated with a number of our economic...
investment centres on a strategic scale. The city’s second order nodes (urban cores) are not.

In terms of the MSDF, urban cores have been identified as target areas for focused public intervention, on order to ensure that they develop into economic nodes of greater significance.

The planned Integrated Public Transport Network (IRPTN) (further discussed under in chapter 5- Movement and Connectivity) will be an important intervening measure to address this misalignment. The relevance of the Strategic Investment Plan is to stimulate economic growth in Tshwane. The IRPTN will address the spatial disjunctures of economic growth by:

- Improving access to economic opportunities, social spaces and services by bridging geographic distances, affordability, reliably and safely.
- Stimulating economic development by supporting the movement of goods from points of production to where they are consumed, thereby facilitating regional and international trade.
- Integrating labour markets through strategic linkages.
DIAGRAM 6: SCHEMATIC REPRESENTATION OF PRIORITY INVESTMENT SECTORS AND ECONOMIC GROWTH CENTRES
4.4 TSOSOLOSO PROGRAMME

4.4.1 BACKGROUND

The social and economic re-development of South African townships has been identified as a national priority. The Neighbourhood Development Partnership Grant (NDPG) is an initiative by the National Treasury Department that seeks to address development issues within townships. It was announced in the budget speech (15 February 2006) by the then Minister of Finance as a conditional grant to municipalities through the Division of Revenue Act (DORA). Its intentions are to stimulate and accelerate investment in poor, underserved residential neighbourhoods (townships) by providing Technical Assistance (TA) and Capital Grant (CG) for municipal projects, through an allocation of about R 10 billion over a ten year period for around 100 initiatives country-wide.

The NDPG program was established with the objective of leveraging private sector investment thereby stimulating social and economic potential within townships. It plays a key role in unlocking resources and initiating the property developments required to transform target areas into vibrant and economically functional neighbourhoods that are pleasant to live in and provide residents with access to shops, markets, recreational and community facilities as well as public transport. The overall aim of the NDPG is to support municipalities to design and implement projects, within the context of overstretching Township regeneration strategies. Municipalities are urged to submit applications for TA and CG for projects that meet the set-out criteria stipulated in the program toolkit.

The City of Tshwane (CoT) submitted an application for NDPG funding in May 2006 based on the Tsosoloso Program Concept. The application was accepted and the NDPG funding was awarded in November 2006. The CoT obtained supporting Council resolution in January 2007 for the Tsosoloso program, as per required in the NDPG funding conditions.

The primary aim of the Tsosoloso programme is to create vibrant, quality spaces focusing on nodes of economic potential to act as catalysts for development. This includes, but not limited to developing squares, trading facilities and intermodal transfer facilities in largely dormitory areas, as well as the clustering of civic and social facilities around areas of potential to increase the economic viability of the areas and so attract and maintain private sector investment.

Through the NDPG, CoT aims to create places of opportunity through the clustering and integrated design of public facilities to unlock economic opportunities within the former Township areas, also referred to as urban cores in the context of this MSDF. Urban cores are further discussed in chapter 5 of this document. There are five key points of action of the Tsosoloso Programme namely:

1. Creation of community activity centres and focal points (including town centres and urban cores),
2. Strengthening of activity linkages (activity spines and streets),
3. Transformation of transport interchanges into civic termini,
4. Enhancement of the pedestrian environment, and
5. The enrichment of the quality of the public environment with public art and green structures (trees).

The implementation of Tsosoloso-related projects is heavily dependent on the approval of Business Plans submitted by the City to National Treasury.

The following nodes have been identified and prioritised for long-term focus and overall implementation of the programme:

<table>
<thead>
<tr>
<th>Township/Catchment Area</th>
<th>Node/Precinct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mamelodi/Nelmampius</td>
<td>1. Eerste Fabrieke Station Node</td>
</tr>
<tr>
<td></td>
<td>2. Solomon Mahlangu Precinct (Denneboom Station)</td>
</tr>
<tr>
<td></td>
<td>3. T-Section Node</td>
</tr>
<tr>
<td>Atteridgeville</td>
<td>4. Saulsville Station Node (includes: Saulsville Station, Atteridgeville Station, CBD and resorts)</td>
</tr>
<tr>
<td>Mabopane/Soshanguve</td>
<td>5. Mabopane Station</td>
</tr>
<tr>
<td></td>
<td>6. Soshanguve South x14 (Klip-kruisfontein)</td>
</tr>
<tr>
<td></td>
<td>7. Hammanskraal/Temba Node</td>
</tr>
<tr>
<td></td>
<td>8. Olivienhoutbosch Node</td>
</tr>
<tr>
<td></td>
<td>9. To be determined</td>
</tr>
</tbody>
</table>

### 4.4.2 INTEGRATION WITH FORMER METSWEDING NDPG NODES

During late 2010, the former Metsweding Municipality initiated the implementation of its NDPG Programme. Three nodes were identified for purposes of the programme:

- Refilwe (in the former Nokeng Tsa Taemane)
- Zithobeni (in the former Kungwini)
- Enkangala (in the former Kungwini)

It is due to the fact that these three urban cores have been recently added to the City of Tshwane that the specific focus precincts within the catchment areas are yet to be determined.
4.5 SPATIAL POLICY

Growth management is a spatial concept that encompasses all aspects that ensure efficient, optimal and sustainable development of the physical environment. A key principle of this concept is smart growth. The smart growth principle guides development such that resources and services are provided in such a manner that they meet the demands of the affected population over the long-term.

Nodes are those parts of the city where development should be focused. The widest variety of services and opportunities should be provided at nodal points, at degrees relative to their nodal status.

The urban edge will, as a growth management tool contributes to the achievement of strategic objectives by conserving valuable environmental areas which would otherwise be compromised by development, and by promoting the use of existing infrastructure through redevelopment, infill development and densification within the edge, thus achieving development that is sustainable. The urban edge also encourages the agglomeration of economies within the edge, encouraging scattered secondary or emerging nodes to develop into consolidated primary nodes as opposed to leapfrog development. The edge also ensures the protection of land- an exhaustible resource- by encouraging Brownfield developments instead of Greenfield developments.

Due to the high cost of providing bulk infrastructure in low density areas, urban sprawl should be discouraged. It is imperative that available infrastructure within the nodes are used optimally. This requires densification and intensification of land uses through compaction and infill developments. Transit-oriented development will optimise the potential and infrastructure capacity of nodes while combating urban sprawl through movement between and connectivity of focus areas of development.
4.5.1 COMPACTION AND DENSIFICATION

The urban environment is characterised by qualities that are essential in terms of equity, liveability and sustainability, such as diversity, choice, uniqueness, sense of place and opportunity.

It is the intention of the MSDF to restructure our fragmented, inequitable and inefficient urban form to create a more equitable, efficient and environmentally and financially sustainable urban dispensation in line with current legislation and policy.

The compaction and functional integration of the city are normative directives from national level, and implies:

(1) higher density urban development,

(2) greater mixing of compatible land uses and

(3) focussed concentration of high-density residential land uses and intensification of non-residential land uses in nodes, around transit stations (such as the Gautrain, BRT, Rail and other formalised intermodal transport facilities (See chapter 5 discussion of the spatial economy of transport planning) and along activity corridors.
Corridors and Activity Spines are identified and described in the following sections. Intensification should specifically be focussed around these structuring concepts as first priorities of intervention.

Densification goes hand-in-hand with this approach to intensification and is also structured around the Metropolitan Activity Areas, Corridors and Activity Spines. The purpose of such higher density residential development is to provide residential opportunities in environments that are high-intensity, mixed use, pedestrian friendly and supported by public transport where a number of economic and social opportunities are available within a relatively compact geographical area. These areas should also be linked to the Tshwane Open Space System to support their viability. The increase in residential densities will result in the reduction of private recreation and entertainment space. Special attention should, therefore, be given to the creation, design and management of public spaces as well as communal and social facilities (e.g. parks, sports fields, educational facilities etc.) in areas where higher densities are developed.
4.5.1.1 DENSIFICATION

The main objectives of residential densification and compaction are to:

- minimise/reduce the footprint of the city
- prevent the destruction of valuable agricultural land
- reduce pressure for the development of open spaces and environmentally sensitive land due to the optimal use of available land; providing choice in terms of housing typologies
- improve the viability of public transport
- improve the efficiency of urban areas - increased convenience for the residents of the city in terms of improved access to goods, services and job opportunities as well as a reduction in travelling times, cost and distances
- improve use of service infrastructure
- increase the marketability of the city and
- reduce inequality

The programme for densification and the endeavour to reach the set objectives should be measured against a set of conditions or reservations, which ensure that densification occurs in a positive manner and does not occur without proper regard to the impact it may have on the way in which people live and the city functions.

These conditions are:

- **Structural environment:**

  Densification should take place in a focussed and logical manner which can assist in transforming the current ambiguous/amorphous urban form into an area with an identifiable spatial logic and identity. Economic restructuring will benefit from promoting spatial access to economic opportunity and promoting job creation via the multiplier effect associated with building medium density housing stock.

- **Choice in housing options:**

  Balance and diversity in the range of housing options, densities and typologies to serve in the needs, desires and income abilities of all the residents of the city should be ensured. One of the major problems with the establishment of residential areas in the CoT is that these areas more often than not are merely housing estates and not neighbourhoods in the true sense of the word. This applies to both middle income and lower income areas. For example, we see the bland environments that are being created by the RDP housing schemes, but the lack of true neighbourhood creation is also very evident in the middle income areas.
• **Diversity:**

The population in a metropolitan area is highly heterogeneous. Planners involved in planning the compaction and densification of the city will clearly need to recognise this multiplicity of users and trips that metropolitan areas generate. A standardised, one-size fits-all approach to densification in different parts of metropolitan areas will not do. Densities will be informed by the desirability and appropriateness of specific densities at the related locations. Densities will range from low to high. Some areas may have a mix of densities, while others will have consistent densities throughout.

• **High quality environment within a liveable city:**

Densification should bring about a positive change in the liveability and urban structure of the city. Compact, well-planned cities tend to be more liveable. Aspects such as low environmental quality, monotonous urban landscape and overcrowding, which can be the result of “one-sided” densification, should be prevented.

The principles and sub-principles for densification are as follows:

• **Appropriate higher density housing opportunities at appropriate locations must be provided for all income groups**
  
  o A range of housing opportunities and choices should be provided

• **Social integration must be promoted throughout the metropolitan area**

• **Densification must contribute to the overall structure and functionality of the metropolitan area in that it takes place in a balanced, focussed and structured way:**
  
  o Densification should be concentrated around specific strategic areas
  
  o Density levels should be linked to the functional characteristics of various parts of the city
  
  o Densification and compaction must be applied in such a way that diversity and unique spatial characteristics are maintained within the city
  
  o Density should relate to the surrounding area

• **Specific areas of opportunity or need for restructuring should be identified (areas that should not be densified for specific reasons should also be identified)**
  
  o Areas of opportunity should posses real current or future potential for growth and development and such potential should also be desirable from a restructuring point of view
  
  o (Re-) development should be promoted within existing built-up areas as an antidote to greenfield developments.
• Open space, farmland, natural beauty, critical environmental areas, and cultural assets should be preserved and enhanced.

• Areas targeted for densification should be well served by public transport, or have the possibility to be well served by public transport in future.

• Areas targeted for densification should be treated as whole environments, with investment in infrastructure, landscaping, open spaces and social facilities ideally preceding higher density developments
  o The development and retention of quality living environments should be ensured, which means that indiscriminate application of densification should be avoided.
  o Mixed land uses in areas earmarked for densification should be promoted
  o Developments should promote safety and security in an area

Residential densification and compaction should be aligned with the principles of smart growth. The Compaction and Densification Strategy of 2005 identifies four general density zones within the municipal area. The principles of the Compaction and Densification Strategy have been practically applied within the Regional Spatial Development Frameworks. The densities that are applicable in specific RSDFs are a function of the local context and factors such as:

• Location and prominence within the city
• Accessibility
• Socio-economic characteristics - lifestyles, household sizes, level of urbanisation,
• Special attributes (e.g. historical or cultural heritage)
• Existing infrastructure
• Long term prospects
• Current level of public transport
• Site characteristics
• Environmental Considerations
• Land availability and costs vs. opportunities for redevelopment.

The following Key Density Zones (area-specific elaborations to be found in RSDFs) are identified in the Densification Strategy, which are:

Concentration zones:
  ➢ High Density Zone
  ➢ Transit Oriented Zones
Linear Zones:

- Development Corridor
- Activity Spine

Suburban Densification Zones

- Low Density Zones
- Restructuring Zones

4.5.1.2 CONCENTRATION ZONES

Under this classification, reference is made to locales directly influenced by transportation or concentration of economic activity.

*High Density Zones*: The High Density Zones are the primary focus areas for high density, medium to high-rise residential developments. Characteristics of these zones are those found in major metropolitan urban centres. These locations have developed into places accommodating a whole range of urban activities, from economic activities, ranges of services, entertainment and a choice of housing on an intense scale. Medium to high rise office and apartment blocks are found in abundance and space is at a premium. Most transport routes converge onto and radiate outwards from this zone. Thus it becomes an area of confluence with a great mix of land use.

*Transit Oriented Zones*: Transit Promotion Zones refer to those nodes that are centred on transportation nodes or facilities, such as stations, highway interchanges and other modal inter-changes. Transit Promotion Nodes could be part of High Density Zones or Corridors where such zones also incorporate a major transport facility.

4.5.1.3 LINEAR ZONES

Linear zones refer specifically to high activity areas that are located along major mobility routes. The mobility routes usually carry high capacities of traffic to areas such as Zones of Concentration and Transit Oriented Zones and thus encourage the feasibility of public transport.

A distinction must be made between linear developments where there are limited access (i.e. a high mobility function) and high levels of access (i.e. a high activity function).

*Activity Spine*: Describes a major axis/transport route that runs through the city. A mix of public and private transport will be prevalent on such routes and a mix of land uses will be the dominant trend. This provides linkages between nodes and in so doing it also attracts development. In such areas there is a need to densify as there is usually a high demand for residential, office and retail space. Access is good for on street facilities.

*Development Corridor*: It signals the development occurring along a major transport route, for instance a freeway or a rail system. Direct access to features lining the corridor is restricted with the number of stops of public transport being further apart from each other. There is a stronger correlation
between the development and its surrounding environment than there is with the corridor itself. Points of concentration of higher density development must occur around the public transport stops and interchanges.

A development corridor should consist of a package of key structuring elements, namely:

- A distinct road hierarchy
- Mobility spines
- Activity Spines
- An open space system
- Connected nodes (may vary in type and size) and
- A defined start and end

4.5.1.4 SUBURBAN DENSIFICATION ZONE

Such zones develop in existing low density areas where there is potential for moderate densification through sub-divisions, second dwelling houses and cluster housing developments, especially in areas that are close to places of employment, major retail centres and prominent transport routes.

4.5.1.5 LOW DENSITY ZONES:

Such zones are typified by mono-functional suburbs, which play host to mostly high income earners, and comprises mostly of large stands with single dwelling houses. Access to public transport is limited to that which serves domestic workers in the area. Privately owned motor vehicles constitute the major flow of traffic. Retail centres are often not in close proximity to such zones and there is little or no mix of land uses present. A typical location would be peripheral areas but could also include areas more centrally located but with special circumstances/characteristics.

4.5.1.6 MULTIPURPOSE FACILITY CLUSTERS

In order to support compaction and densification strategies, nodal areas (see chapter 5- Nodes and Activity Areas) should, as far as possible, incorporate multipurpose facility clusters. This will be especially critical in nodes that are anchored by inter-modal transit facilities and where transit-oriented development occurs. Large numbers of people arrive at such nodes from different origins, thus increasing the need for versatility of services and facilities available for a large and varied heterogeneous population. This is an example of implementing the economy of density.

A multipurpose facility cluster is a multifaceted facility under one roof or more, which offers a range of services such as social services, recreation, health, and other economic activities, in one location. Multipurpose facility clusters are generally located together with structural elements of urban settlements (at a transport stop/interchange, urban square, market, sports field, etc).
The advantages of establishing multipurpose facility clusters are:

- Convenience, as all services are located at a central point, allowing people to accomplish more tasks in a single journey, equating to savings in both time and money
- Reduction in the cost of providing public facilities through the sharing of resources, equipment and land
- Exposure for public facilities and encouragement of their use
- Integration of different communities
- Reduction of inequalities in the provision of facilities
- Provision of greater security
- Offsetting of transport costs

**DIAGRAM 7: EDUCATIONAL FACILITY CLUSTER**

*Source: Leggett et al 1977*
DIAGRAM 8: COMPATIBILITY MATRIX FOR MULTIPURPOSE FACILITY CLUSTERS

Source: CSIR, 2000
4.5.1.7 ENemies of a More Compact and Efficient Tshwane

Certain current development trends in the city can be seen as directly opposing the aims and objectives for compacting and densifying the city, and are critical issues that need to be addressed. These include:

- Over-emphasis on single erf-single house developments
- Low coverage and low height restrictions
- Too few functional and attractive communal open spaces and recreational facilities in strategic areas to support higher density housing
- Large parking areas around commercial developments that take up much of valuable land
- Uncoordinated focus areas for development and infrastructure investment (dispersed densification and intensification attempts)
- Inefficient public transport systems
- Pedestrian unfriendly nodal areas
- Perceptions that high density housing is merely there to house the lower income groups and cannot support a more affluent life-style
- Lack of incentives for developers who are prepared to go “up-and-under” (increased height and basements)
- Provision of low cost and social housing in outlying parts of the metropolitan area
- Low emphasis on redevelopment and regeneration, with a strong emphasis on Greenfield development
4.5.2 THE GREEN ECONOMY OF SPATIAL PLANNING

Current economic models have to be questioned. As people die of poverty the world goes on to produce record gains on global stock exchanges. Greed to maximise profits at the expense of ordinary people is unsustainable and cannot be ignored.

The South African economy is predominantly carbon based – energy is generated by coal. With current development trends, economic growth will equate to carbon growth. In order to become sustainable, the South African economy has to decouple from coal and carbon and follow a carbon neutral economy.

The Green Economy is about survival, to solve / address environmental, economic and social problems in order to create a sustainable long term solution. In order to maintain the level of profits required by big business, new innovation in technology will be critical, so as to ensure similar or equal product output, with minimal carbon output.

The broad application of the Green Economy concept relates to sustainable development in all its forms and covers six main areas:

- Renewable Energy
- Green Buildings
- Clean Transportation
- Water Management
- Waste Management
- Land Management

Land use management is an important aspect of spatial planning, and assists in addressing global concerns such as climate change.

Climate change will impact future urban spatial patterns, growth, and development. The world’s population is migrating to cities; one-half of the global population is already urbanised. It is predicted that by 2030 at least 61

[WHY WE ARE CONCERNED ABOUT CLIMATE CHANGE]

Over the past 100 years, the average temperature on Earth has increased by more than half a degree Celsius. The 1980s and 1990s were the warmest decades on record, and the 20th century was the warmest in the past 1000 years.

All predictions are that the warming will continue. Scientists around the world predict that average global temperatures are expected to rise by 1.4°C to 6.4°C over the next century.

To put that in perspective, today’s average global temperatures are only about five degrees warmer than they were during the last Ice Age.]
percent of the world’s population will be living in cities. Cities of the developing world will absorb 95 percent of all urban growth and will be home to almost 4 billion people, or 80 percent of the world’s urban population.

As we begin the second decade of a new century, more than half of the world’s population lives in cities and urban centres. Urban settlements are the lifelines of today’s society. They serve as nations’ economic engines, centres of technology and innovation and function as living examples of our cultural heritage. But inherent in the important roles they play in society are the consequences of their success: cities can also generate new risks. Particularly at risk are the increasing number of informal settlements- more than 800,000 slum dwellers around the world today- and the social inequality which creates little incentive to invest in safer infrastructure and safety nets, and environmental degradation (Wahlström, 2010).

Given the inextricable link connecting urbanization, urban poverty and climate change, the way in which the world’s growing cities are planned and managed will largely determine the pace of global warming.

“Climate change is no longer a distant possibility but a current reality. Global temperatures have recorded unprecedented increases. The length and timing of seasons are changing. The frequency and severity of floods and cyclones accompanied by rising sea levels are increasing. In short, climate change has become one of the defining challenges for policymakers, industry, and civil society in this century, and is a development, investment, economic, and social issue, which affects most sectors.” Mr. Keshav Varma, Sector Director, Urban, Water, and Disaster Management Unit, The World Bank.

The world is at a unique moment in time. Three major processes are coming together: urbanization, decentralization and the rise of domestic capital markets. The way cities are managed to deal with their growth and the increase of their vulnerabilities is very important in this context.

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“In North America, this small change in average temperatures was enough to melt the vast ice sheets that once covered much of the continent. A rise in the overall temperature of the earth affects the climate in regions around the world in different ways. Rising temperatures will cause: Droughts, Heat waves, More forest fires, Melting icecaps, Increased sea levels, Floods and More severe storms. These changes in weather, sea levels, and land use patterns are collectively called Climate Change. Climate changes will affect: Agriculture, Wildlife and the Economy.”

(Conservation Corps of Newfoundland and Labrador)
The most adverse impacts of climate change are likely to be in urban areas where people, resources, and infrastructure are concentrated. The responsibility to respond to climate change impacts and consequences will fall onto city governments and their communities. Therefore a strong local commitment and organization is required influence behavioural and technological change to reduce carbon emissions and the consequences of climate change and regional threats they represent. The response to climate change impacts are in their essence urban governance and management issues.

Climate changes are attributed to rising greenhouse gases (GHGs) emanating from human activities. These include: urbanisation, land use change, deforestation and land conversion from agricultural use.

According to the Stern Review (2006) scientific evidence substantiate that climate change is a serious global threat which demands an urgent response. The Review concludes that the benefits of strong, early action on climate change considerably outweigh the future costs.

4.5.2.1 TSHWANE’S CURRENT URBAN FORM

Tshwane is a very large and dispersed metropolis featuring numerous problematic characteristics:

- **Low density sprawl**, which is based on an anti-urban ethic of the free-standing house on a plot (In the case of lower income housing this means housing estates generally located on the periphery)
- **Fragmentation**, which means that the 'grain' of development is coarse, with isolated (introverted) pockets (or cells) connected by roads (and freeways) and frequently separated by buffers of under-utilised open space
- **Separation of functions**, which means that land uses, public facilities (urban elements), races, income groups are all separated by great distances

The combined implications of the above on the lives of the majority are disastrous:

- Much time-consuming and expensive commuting is necessitated, which aggravates poverty (and inequity) in society
- City living has become over-dependant on the private car - which the vast majority cannot afford
- Increasing numbers of private cars result in traffic congestion and increases pollution
- The nature of roads results in environments which generate few opportunities to which small-scale economic operators can respond
- The system is inefficient and wasteful of scarce resources, such as land, energy and finance
The present patterns of development result in extensive environmental destruction.

A further implication is that Tshwane is becoming increasingly inefficient and hence unsustainable spatially. More residents are becoming ever more dependent on private transport, which is also becoming increasingly expensive. The majority of the city’s residents have no option other than to rely on inadequate public transport which is also becoming more expensive and unsafe, with the consequence that many opportunities and facilities are inaccessible to them. Servicing costs are drastically increasing as distances increase and the city has difficulty even maintaining existing infrastructure.

The City has to weigh these conflicts against the future direction and development of the City of Tshwane and therefore has an obligation to take a long term view. The objective of redevelopment projects is to create a better future for all residents of the entire metropolitan area. Traditionally, the road with the least conflict was the preferred option when dealing with redevelopment conflicts. The net result was short term solutions, aimed at satisfying vested interests.

The current spatial reality and the correction thereof is something the city has to actively pursue. Already, a great deal of investment has been committed to better the lives of people that are living at the edges of the city. However, if the city wants to effectively tackle the consequences of inequality, the root of the problem and not the symptoms, has to be addressed.

The true solution will only come in the form of a gradual change in the spatial form - away from separation and segregation to a system that embraces the concepts of accessibility, equality, sustainability and connectivity. Now, more than ever, the time has come to reconnect the city to its people so that its energy can be harnessed to enable people to live with dignity and pride.

The current single dwelling car dominated urban landscape has to adapt toward more compact higher density areas to sustain public transport. The current generation, as a consequence of climate change, has to forfeit current land use models and urban development traditions to create a sustainable urban model in the interest of future generations.

We must change how we live as a city and region, and as communities and neighbourhoods, households, and individuals. We know that greater change must start now, but the “what, where, when and how fast” of change continues to be determined. Our city’s footprints are powerfully determined and influenced by our patterns of density, design and land use. A well-designed, compact city is an efficient, sustainable and vibrant city. A denser city uses less energy, provides easier access, promotes public health, and is more affordable than a less dense city.

Cities will need to become more aware of the impact that their consumption patterns have on other regions and ecosystems. A
sustainable city will also need to acquire accountability and responsibility for increasing consumption patterns. Cities may work towards responsibility by adapting a policy to reduce, recycle, and re-use consumed goods. Some cities may go as far as implementing user fees in order to control unsustainable consumption patterns.

Urban sprawl is a key driver of environmental decline – it has a significant impact on the city's unique and rare biodiversity, and it places increasing pressure on its infrastructure – an already overburdened resource.

4.5.2.2 PROMOTION OF THE GREEN ECONOMY THROUGH SPATIAL PLANNING

Compaction and densification

Urban density is a key part of the solution; but it is not a one-size-fits-all solution. Higher-density settlement is closely associated with reduced greenhouse gas emissions per person. The growth of Tshwane should be directed inwards, towards the City’s nodes, with the highest densities being directed towards the Metropolitan nodes, mixed-use activity spines and specialised activity zones. Built-up areas should not be allowed to extend further outwards beyond the urban edge where it contributes to urban sprawl.

Greater residential density allows for more and better transportation choices, including mass transit, biking, and pedestrian trails. Such densities also improve the walkability of neighbourhoods and access to services and amenities while decreasing sprawl and the consumption of land. Density depends on both dwelling unit size and household size.

Parking Requirements

Current parking requirements especially for retail and office developments encourage private vehicle use and detract from the potential to create the threshold required to support an efficient public transport system. Development within nodes should be done with a view towards transit-oriented development, minimising provision for private vehicles. Parking requirements of the city should begin to fall in line with current land use policies as espoused in the MSDF and RSDFs.

Mixed use developments that support Sustainable Human Settlements

Increased residential densities are needed within business nodes in order to promote more affordable housing (facilitating accessibility to economic opportunities and decreasing travel costs).
Reduce private transportation – move towards public transport

Urban sprawl is still an urgent problem. Compact, mixed-use, transit-served neighbourhoods have dramatically lower emissions per person – as much as half or less per capita of sprawl developments.

Green Buildings

Green buildings (also known as green construction or sustainable building) refers to a built structure and process that is environmentally responsible and resource-efficient throughout a building's life-cycle: from siting to design, construction, operation, maintenance, renovation, and demolition. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort.

Although new technologies are constantly being developed to complement current practices in creating greener structures, the common objective is that green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment by:

- Efficiently using energy, water, and other resources
- Protecting occupant health and improving employee productivity
- Reducing waste, pollution and environmental degradation
Incorporating Greenery within the Urban Environment

Vertical Gardens, also interchangeably referred to as living walls, living roofs, green walls, vertical gardens, vertical landscapes, vertical plantscapes, vegetated walls, green roofs and living roofs. This is a term that can refer to various forms of built structures that incorporate greenery/vegetation either partially or totally. It is usually done either on the façade or roof of the built structure.

Urban Parks, one of the most famous of which is Central Park in Manhattan, are an ideal solution to provide a sustainable green lung even within a densified urban area.

4.5.3 SUSTAINABLE HUMAN SETTLMENTS

The term ‘sustainable human settlement’ refers to a spatial concept that has two areas of emphasis: 1) human 2) sustainable

“The human-centred approach emphasises that a central purpose of planning is to ensure that the developmental needs and activities of people living in settlements are catered for and, in particular, that opportunities for people to achieve their full potential are maximised through their own efforts. This approach, rather than being purely cost- or technology-driven, is people-driven and democratic” (CSIR, 2000). It makes such settlements socially, politically and economically sustainable. But there is also the dimension of environmental sustainability.

The environmental approach “recognises that natural systems interact in highly synergistic ways, which must be respected if breakdowns in them are to be prevented. Human actions on the landscape, such as settlement-making, must thus be sensitive to ecological processes. Therefore, rather than imposing settlement development on the environment, this approach emphasises design with nature, thereby creating synergy between man-made and ecological systems” (CSIR, 2000).

Of human settlements, the NDP says the following:

“Settlement patterns should meet the needs and preferences of citizens, taking into account broader social, environmental and
economic interests. Travel distances need to be shorter. This means ensuring that a larger proportion of workers live closer to their places of work, and that public transport is safe, reliable, affordable and energy efficient. It means building denser and more liveable cities and towns” (National Planning Commission, 2011).

The NDP targets for 2030 are for:

- More people living closer to their places of work
- Better quality public transport
- More jobs in or close to dense, urban townships

The sustainable human settlements concept is akin to the concept of nodal development in that it both aim to provide a range of services, amenities and residential options in an integrated location. Thus citizens are given the choice to work, live and play with reduced need and cost for travel. Avoidance of low density sprawl responding positively to climate change by reducing the carbon footprint and consolidates the area in which services (including infrastructure) are provided, resulting in a high level of service and convenience. The sustainable human settlement concept also requires that densification, compaction and infill serve as a foundation for the mixed income, mixed land-use, mixed housing option.

One of the more recent terms to describe one form of a sustainable human settlement is the “20 Minute Neighbourhood”. Quite simply put, this is a neighbourhood in which all required services and facilities are to be found no further than a 20 minute walk from where one lives. The goal of a 20 minute neighbourhood is to encourage pedestrianism over the use of private vehicles (See Diagram 9).

As in many other South African Cities, the geography of human settlements in Tshwane is sprawled and unequal in terms of both level and quality of development and also in terms of opportunities. The spatial restructuring of this inefficient city will require focussed and unwavering application of sound planning principles over the medium to long term.

As of March 2011, the CoT was given Level 2 Housing Accreditation. Level two accreditation status gives municipalities the responsibility to approve and manage housing construction programmes and ensure and technical quality assurance. In the past, the authority for this rested primarily with provincial governments (South African Government Information, 2011). This accreditation will assist in ensuring the Tshwane housing is aligned with the City’s strategic objectives.

The sustainable human settlements concept largely focuses on where people live, and is thus related to housing.
The housing landscape is a challenging one, as it is influenced by the spatial spread of communities throughout the city, whether the settlements are formal or informal, legal or not. The nature of settlements that arise out of poverty often means that they are located far from economic opportunities and areas targeted for integration and densification.
Hence, designing communities where it’s easy not to drive is one of the best ways of encouraging an efficient, sustainable society.

20 minute neighborhoods attempt to accomplish this goal by ensuring that all of the necessities of life are no more than a twenty minute walk away from home.

Workplaces, shops, entertainment and green spaces are all within walking distance.

And public transportation systems can connect any number of these neighborhoods together.

But hauling around hundreds of pounds of metal, plastic, glass and rubber just to transport a few people is clearly inefficient - and unsustainable.

Even though I haul around slightly less and get better mileage?

Not to mention the thousands of acres of pavement required to make personal transportation possible.

This kind of planning sets up communities where it’s easy to live sustainably. Actually, the 20 minute lifestyle tends to make people healthier and happier, so many people prefer to live this way.

I’ll admit, I prefer it most in the spring.
Any interventions around the housing programme of the City will need to address the multi-dimensional dynamics that influence how individuals and households choose to (or are forced to) settle. Due to our chequered settlement landscape, a number of areas need to be addressed:

4.5.3.1 INFORMAL SETTLEMENTS

An informal settlement, also known as a squatter camp, is a slum settlement (usually illegal or unauthorized) of impoverished people who live in improvised dwellings often made from scrap materials. In South Africa, informal settlements are primarily the product of biased spatial planning, which fuelled unequal distribution of wealth and opportunity. While informal settlements used to be found on the periphery of towns and cities, they are now to be found within urban areas themselves, as urban areas are where most economic opportunities exist. Because informal settlements are not guided by spatial planning and related processes, they often do not have proper sanitation, electricity or water services.

Since 1994, the South African Government has been chasing an ever-growing housing backlog through various public housing initiatives. As it is unlikely that the supply will ever meet the demand, alternative interventions are required. These include informal settlement upgrade and formalisation of existing informal settlements.

4.5.3.2 INFORMAL SETTLEMENT UPGRADE

Also known as in-situ upgrading, the basic intent of this intervention is to improve the quality of living environment for informal settlement dwellers without relocating them. If possible, relocation is avoided in order to avoid disruption of established community life and moving people far away from where they may have already managed to find work.

Informal settlement upgrade involves provision of roads and bulk infrastructure. Where possible, the existing layout is re-configured to ensure ease of access and efficiency.

4.5.3.3 FORMALISATION OF INFORMAL SETTLEMENTS

 Formalisation of an informal settlement is ideal when the informal settlement is appropriately located in terms of sound spatial planning principles (access to public transport, work opportunities, infill and compaction compliant, etc.) and are thus capable of becoming viable human settlements.

The formalisation process is as follows:

- Registration of the township and its inhabitants on a township register;
- Town Planning processes, which include environmental and geotechnical surveys, township establishment (design, layout plan, demarcation of stands, allocation of stand
numbers and street names, registration of the township in the Deeds Office, proclamation of the township; allocation of title deeds to residents)

Once a township is proclaimed, services can be provided.

### 4.5.3.4 RELOCATION OF INFORMAL SETTLEMENT DWELLERS

In some instances, an informal settlement may be located on dolomitic land that may collapse into sinkholes, on toxic mining dumps, alongside much polluted watercourses, or below the flood-line in locations prone to flash floods. In these cases, relocation is unavoidable. In other instances an in situ upgrade of densely packed settlements may require more appropriate demarcation of plots/even and therefore de-densification. This may mean that only a portion of the residents currently living there can continue to be accommodated when the settlement is formalised.

(City of Johannesburg, 2006)

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### 4.5.3.5 SOCIAL HOUSING

Social housing is an intervention by government to provide affordable housing to low-income groups. While the provision of social housing has long been a part of government’s policy, it was soon noted that that the spatial allocation of social housing was still propagating the apartheid spatial form: the housing backlog was, and still is, quite daunting. This meant that large numbers of houses would need to be provided within a very short space of time. The most affordable land was land found in peripheral areas.

**Inclusionary housing** is an intended intervention to address social housing needs. Inclusionary housing is a principle whereby a social housing component is included within new higher-income developments. The City is yet to develop a policy around this matter.

Another intervention is that of restructuring zones. The purpose of **restructuring zones** is to contribute to the economic, social and spatial restructuring of South African cities in order to correct the dysfunctional ties currently experienced by bringing lower income people into areas where there are major economic opportunities and from which they would otherwise be excluded; by promoting a mix of races and classes and by promoting spatial access to economic opportunity and promoting job creation.

Restructuring via social housing seeks to achieve three main dimensions of restructuring:
• Spatial restructuring by bringing lower income people into areas where there are major economic opportunities (both with respect to jobs and consumption) and from which they would otherwise be excluded because of the dynamics of the land market on the one hand and the effects of land use planning instruments such as minimum erf sizes. What needs to emphasised here is the primary meaning of spatial restructuring as it is used in social housing policy. Indirectly social housing as understood here contributes to spatial restructuring by increasing densities and compacting growth, thereby ensuring that the poor are not pushed out to marginal locations at the edge of the city.

• Social restructuring by promoting a mix of different racial groups.

• Economic restructuring by promoting spatial access to economic opportunity and promoting job creation via the multiplier effect associated with building medium density housing stock. Thus, all CoT restructuring zones were identified within a 20km radius of the inner city, which has been identified as area of most work opportunity.

It should be stressed that the primary dimension and meaning of restructuring, in this context is economic opportunity and access. The CoT has identified 8 provisional restructuring zones, the details of which are available in Annexure 1. It is important to note that these zones were identified prior to the merger with Metsweding. Future social housing should be primarily located close to work opportunities (possible and feasible) identified as metropolitan cores in terms of the MSDF and defined in chapter 5 of the document.

In 2011, the CoT Department of Sustainable Human Settlements completed an audit of the zones in order to determine land ownership, feasibility for residential development and alternative strategic intentions of available land by the CoT. This audit complemented a number of other studies into the various parcels of land with potential for residential development.

The results identified 4099 hectares of strategically located vacant land that could be considered for future residential densification and infill purposes within a 20km radius of the inner city. All of this will be subject to detailed precinct planning and technical investigations.
# Outcome of Vacant Land Audit for Residential Use and Proposed Housing Typologies

(Source: CoT Sustainable Human Settlements Department, 2011)

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<th>AREA (ha)</th>
<th>NUMBER OF UNITS (Social, CRU and Fully Subsidised)</th>
<th>BONDED UNITS</th>
<th>TOTAL UNITS</th>
<th>GROSS DENSITY (du/ha)</th>
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<td>5 - 10km</td>
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**TSHWANE METROPOLITAN SPATIAL DEVELOPMENT FRAMEWORK 2012**
4.5.3.6 SPATIAL GUIDING PRINCIPLES FOR SUSTAINABLE HUMAN SETTLEMENTS

With regards to the housing component of sustainable human settlements, the following spatial guidelines should be applied:

**INFORMAL SETTLEMENT UPGRADES AND RELOCATION**

- Existing informal settlements that fall outside of the urban edge should not be provided with in-situ upgrading. They should rather be relocated.
- Informal settlements should only be relocated to areas that geotechnically sound and do not fall within a flood line.
- Compaction, infill and densification should serve as key guiding principles for both in-situ upgrading and relocations.
- Informal settlement management plans should incorporate landscape planning.

**SOCIAL HOUSING**

- Housing should provide a range of typologies within strategic nodes in order to address both social and economic restructuring.
- Housing typologies should allow for diversity and significant densification in order to address the green economy of spatial planning.
- Brownfield development is preferable to greenfield development in order to achieve infill development, compaction and rejuvenation of decaying areas (where applicable).
• Housing location should be targeted towards significant places of work opportunity, i.e. metropolitan nodes and primarily and urban cores
• Housing developments should include the provision of or be located next to safe and efficient linkages with space for pedestrians and cyclists
• Housing location should be well planned to ensure connectivity via public transport to other places of significance in the metropolitan area
• Urban design, landscaping and streetscaping should be incorporated in housing schemes (see section 4.5.8)
• Social housing should be an effective component of sustainable human settlements i.e. providing or being located close to social amenities and facilities
• Mixed-use residential buildings should be implemented where possible, allowing for an optimal use of all available resources, supporting transit-oriented development and providing a sustainable living environment (see chapter 5- Movement and Connectivity for more information on transit oriented development). Transit-oriented development supports the concept of the 20 Minute Neighbourhood.
4.5.4 RETAIL DEVELOPMENT

Retail is one of the most dynamic urban land uses/activities of our cities, towns and rural areas. The Retail Sector is a significant catalyst for urban development in Tshwane. Shopping centres have influenced and changed the spatial direction in many areas e.g. Menlyn Park Shopping Centre, Centurion Mall and the Kolonade Shopping Centre in Montana, Hatfield Plaza in Hatfield and Brooklyn Mall in Brooklyn. The development of these shopping centres initiated substantial redevelopment and new development within the vicinity of their trade areas.

In fact, while the economic activity of all of the metropolitan nodes of the city may initially have been anchored by retail developments (with the exception of Hatfield which was additionally anchored by the University of Pretoria), over time the nodes have progressed to encompass additional diverse economic activity to the extent that the metropolitan nodes can serve all or most required needs (work opportunity, shopping, education, medical, residential, entertainment) of residents within or near that node.

The City of Tshwane accepts that demand for retail space is mainly driven by consumer characteristics and profiles, population numbers and growth and the level of disposable income per sub-area, while the success of the retail sector is very much a function of economic conditions on the macro and micro level, changes in shopping behavior, new retail formats, changes in the rest of the urban environment as well as shopper preferences. Lifestyles play an important role in what goods and services consumers purchase.

As with all development in the city, retail development should comply with the requirements of sustainable, efficient, equitable, convenient and attractive environments. In the case of metropolitan nodes and urban cores, all developments should, as far as possible within the specific context, additionally respond to public transport-oriented development, within the ambit of sustainable and efficient development.

The City will evaluate retail applications in line with the objectives of the Long Term Strategy of the CoT, Metropolitan Spatial Development Framework and the Tshwane Retail Strategy, most recently approved in 2007.

These should be contextualised and interpreted on local level, and are reflected in the Regional Spatial Development Frameworks for this purpose.

The following provides a brief summary of each of the spatial strategies:

- **Renewal Strategy:** In many instances retail facilities have become outdated, the increase in passing traffic has created a problem and in many instances parking facilities are inadequate. The revitalisation, upgrade and improvement of these areas should be encouraged. Once a particular
• **Maintenance strategy**: In certain cases shopping centres have become outdated and routine maintenance no longer effective and the upgrading or the redevelopment of the centre imperative. A maintenance strategy will mainly be applicable in already built up areas.

• **Expansion strategy**: The change and growth in consumer demand in a particular area as well as new retail offerings will ‘force’ landlords to expand their existing retail facilities or to include new retail types. This is especially applicable in the case of regional and super regional centres, but can also be relevant for existing business clusters. Most regional centres continuously expand to make provision for internal growth and to accommodate new retail concepts or trends. Cognisance should be taken of this particular need. This growth will mainly be driven by the already proven success of a particular centre, its location and the needs of the market.

• **Infill strategy**: In this instance reference is made to infill in already built up residential areas where retail has been lacking or undersupplied. This type of development will then capitalise on an existing market and will prevent major outflows from a particular area to other shopping destinations. It is important to note that once the area is sufficiently serviced, the Infill Strategy must be replaced by the Maintenance and Expansion Strategies, and where new growth occurs, the Follow-the-roofs strategy.

• **'Follow-the roofs'/ new growth areas strategy**: This strategy focuses on new growth areas and the provision of retail facilities once a certain threshold level of houses and disposable income is reached. In the case of a ‘follow the roofs’ strategy, timing is of critical importance. Should a centre be built too soon the retail performance will be low and casualties, especially amongst the smaller tenants, will be high. Further growth in an area should also be such that the trade area of the proposed centre will fill up sooner rather than later. This strategy will not support leapfrog development nor motivation for development on the back of speculation, and the concept of infill development is critical.
- **Nodal strategy**: Nodal or urban core strategy is applicable where larger retail facilities will create agglomeration advantages for complementary retail facilities. Urban and Metropolitan cores are those nodes or urban centres that fulfil a city wide function. These nodes are not stagnant and will expand over time. It is important that these agglomeration nodal developments take place in close proximity of small to super regional centres. Different types of retail facilities are on offer and not all can be accommodated in a traditional shopping centre. The best locational advantages of these complementary retail facilities are in close proximity to the existing regional centres. Other types of retail nodes where agglomeration benefits could be created could also be established. The agglomeration effect is created by the catalytic nature of regional centres. The node will grow to include a variety of facilities and to reach a stage where the required tenant mix reaches the necessary critical mass.

- **Modal interchange strategy**: This type of facility depends mainly on the nature of the commuters, the area as well as the different transport modes used. Land uses in these areas should be focussed on transport orientated developments, with retail focussing on convenience for the relevant commuter target market.

### 4.5.4.1 RETAIL CATEGORIES

Within the Tshwane context, retail developments can be categorized as follows:

- Spaza Shop
- Filling Station Stores
- Neighbourhood Centre
- Regional Centre
- Super Regional Centre
- Wholesale Retail

- **Spaza Shops**

This is an *informal retail facility* that first developed in the townships as a result of the lack of formal retail facilities in the area. Such stores are now also opening in the suburbs. This phenomenon mainly occurs in the *low and middle-low socio-economic areas*. The premises consist mainly of a converted garage, a room in the house or small separate structure on the erf. The reasons for existence of this type of facility are mainly two fold namely: the lack of convenient grocery shopping facilities in the area or economic conditions where a household decides to open a small store to earn an income. In terms of the Tshwane Town Planning Scheme of 2008, a spaza shop is a
primary land use right known as a home enterprise for some residential properties. The zoning certificate of the property (which can be obtained from the Municipality) will indicate whether this is a primary right or a land use requiring consent from the Municipality.

- **Filling Station Stores**

  This retail facility located at filling stations and consists of a small store offering a variety of **mainly daily purchased consumer goods** (e.g. cool drinks, sweets, bread, milk and cigarettes, representing ±80% of all purchases). The distinguishing factor here is that the store is operated by filling station personnel only and the store is mostly operated on a 24-hour basis. The main distinguishing factor here is so-called "**express convenience**". Many of these stores nowadays offer take-away products, bakery facilities and lately small Woolworths Food stores. Ready-made food is a key aspect of express convenience. These stores also offer parking and a 24-hour secure environment. Filling station stores, as with filling stations, can be found in all nodal typologies and outside of nodes.

- **Neighbourhood Centre**

  The main function still remains express convenience complemented with other convenience products. The success of these centres is mainly determined by the strength and attraction of the anchor tenant, availability of parking, a good, accessible and safe location, and the rest of the tenant mix to supplement the rest of the centre.

  This is the retail facility aimed at the suburban level with a **larger impact than the local convenience centre**. Such a facility could also be housed in a single building or a number of buildings located in close proximity to each other to provide a single destination. The size of these centres is normally between ±4 000m² and ±12 000m². Neighbourhood centres can be found in all nodal typologies. Within metropolitan nodes and urban cores, these centres should be clustered in single multi-functional buildings in order to support the principles of transit-oriented development.

- **Regional Centre**

  The role and function of these centres are to satisfy the needs of a large primary and secondary catchment area. The support from the tertiary trade area normally varies between 10% and 15%. These centres are also supported by a strong **working component** in the immediate vicinity of these centres mainly because of first and second order nodes created by the development of these centres (agglomeration benefits). These centres also offer a wider entertainment component to attract people especially at night.
This is a very large retail facility offering a very wide variety of stores, appealing shopping atmosphere, sufficient parking facilities and a significant entertainment component. The size of these centres is normally between ±50 000m² and ±100 000m². Regional centres should be located in metropolitan and urban cores.

- **Super Regional Centre**

A few super regional centres have developed over the last couple of years in all our major metropolitan areas. The role and function of these centres is to provide retail facilities city-wide for the region as well as a national and international market. The city-wide support is very important in this case. These centres offer a very wide tenant mix, entertainment, services and the latest retail concepts.

This is a very large retail facility offering the widest possible variety of stores, appealing shopping atmosphere, open and under cover parking facilities and a large entertainment component. The size of these centres is normally over ±100 000m². Menlyn Shopping Centre is one such centre. Super regional centres should be located in metropolitan nodes and urban cores.

- **Wholesale Retail**

These facilities should supplement other retail offerings in a particular node or sub-node. These centres should not duplicate and compete with adjacent/nearly regional and super regional centres. The aim must be to complement facilities in a regional centre. The emphasis is on good products at affordable prices. Most of these centres also offer a strong food/grocery component. The function therefore is destination as well as convenience driven.

The value centres are mostly occupied by traders requiring large space and are destination orientated. An example is Makro. The size of a value centre ranges from ±10 000m² to ±50 000m².

The following will form part of the evaluation criteria for retail applications:

- Whether the category of the proposed development is appropriate for the location
- Whether the proposed retail development is in line with the applicable Regional Spatial Development Framework
- Whether the proposed development contributes towards the objectives of transit-oriented development
- Whether accessibility to the proposed development is catered for by public transport
• Whether the proposed development makes provision for public transport (e.g. drop-off bays, parking for public transport, safe access of public transport users from transportation to shopping centre);
• Whether the proposed development caters for informal trade in an integrated and formal manner
• How the proposed development adds value to the aesthetic quality of the built environment
• How the proposed development affects the natural environment

4.5.4.2 RETAIL IN URBAN CORES

It is important to look at retail development within urban cores relative to other parts of the city in context. The retail developments in urban cores are not developed to the same level as in other parts of the city due to the inequitable development policies of the past. Nonetheless, retail activity does serve as an economic activity within urban cores, albeit not to the same extent as in the metropolitan cores which have a long history of favourable development policies.

Within the current context of the city’s development policies where equal opportunity is promoted, it is also important to note that retail development, as with many other economic activities, is largely a function of the private sector. The private sector is market-driven, which means that it responds to demand and consumer characteristics. At the same time, the consumer will seek out very specific retail typologies depending on their specific characteristics as a consumer. This supply-demand relationship between developer and consumer will remain a permanent state of affairs. At present, the extent of retail development has largely catered for consumer groups mostly found within urban cores. Previously, due to a lack of private transport and expensive public transport, low-income earners were compelled to source their needs from small localised township retailers. Lower priced goods available at township shopping centres or establishments offered not only the variety of goods available, but also allowed goods and services at more affordable prices.

But the population profiles throughout the city are changing as it becomes more integrated spatially, socially and economically. These new population dynamics require that access is given to the upwardly mobile of the former township areas so that spending within the retail arena or urban cores can be directed inward to contribute towards further developing the urban cores. Those that move up the social and income ladder that previously preferred to shop outside townships in upmarket malls (known as ‘outshopping’) may to a large extent start redirecting their expenditure to township malls if upmarket retail developments are increasingly brought into the urban cores. The importance of increased, high quality retail development within urban cores is thus two-fold:

• Equitable access to retail opportunities
Economic stimulation by redirecting spending that might otherwise leave the urban core back towards the core to increase development

While retail development is driven by the private sector, the city has a role towards facilitating the ease with which developers invest in the urban cores. This especially relates to service infrastructure and supporting development policies. Through the NDPG programme public initiatives will support private funding within urban core areas.

**4.5.5 RURAL MANAGEMENT**

The NDP 2030 highlights the importance of rural areas, reminding us that *despite population shifts from rural to urban areas, the health and wellbeing of the entire population still depends on rural goods and services—food, water, minerals, energy, biodiversity, natural and cultural experiences, labour and land—* and this will become increasingly clear in the next few decades, as resources become more constrained.

The NDP recognizes that rural areas are usually divided into different types of villages, towns and informal settlements in commercial farming areas and former homelands. This calls for differentiated interventions that are sensitive to the context of each individual rural area, and avoiding the one-size-fits-all approach.

The NDP further indicates that *infrastructure unlocks the development potential of rural areas. Appropriate levels, form and location are important, given that infrastructure investment is less cost effective in lower density areas with small economies. The question is not whether infrastructure should be provided, but what levels and forms of infrastructure should be provided, where it should be located and how it should be funded.*

The CRDP is premised on a proactive participatory community-based planning approach towards rural management. The programme aims at being an effective response against poverty and improving food security by maximizing the use and management of natural resources to create vibrant, equitable and sustainable rural communities, by contributing to the redistribution of 30% of the country’s agricultural land, improving food security of the rural poor, creating of business opportunities, decongesting and rehabilitating of over-crowded former homeland areas, and expanding opportunities for women, youth, people with disabilities and older people who stay in rural areas.
4.5.5.1 TSHWANE CONTEXT

The urban edge delineates urban areas. This includes pockets within the Bronkhorstspruit, Cullinan, Rayton and Ekandustria/Ekangala, areas.

In addition to urban areas, one also finds:

- **Future urban areas**: Areas that have been identified as suitable for urban development in the short to medium future. These areas are identified based on need (development pressure, logic of an area to expand and being, in line with growth management principles of compaction, densification and infill). Availability of services / infrastructure, environmental sensitivities and geological constraints must be taken into consideration. Certain rural areas may fall into this category.

- **Management Areas**: Areas that are neither demarcated as ‘urban’ nor identified for ‘future urban development’; often characterised by cultivation and very low densities (rural character), or with environmental sensitivities forming part of larger ecological biospheres. Minimum engineering services and infrastructure for the applicable densities and land uses must be available. Urban development will not be permitted in these areas. Certain rural areas fall within this category.

There are examples of developments that were approved and developed inconsistent with the Urban Edge. Going forward, these developments and areas need to be evaluated against the backdrop of sound town planning principles and the smart growth concept.
Areas identified as Future Urban Development zones in terms of former planning for the Metsweding area, but not in line with growth management principles (in turn there is no indication of the possibility of infrastructure being provided for in the short to medium term), will remain as Future Urban Development areas but retain a rural character until such time that basic services can be provided. These areas still need to be managed as rural areas with specific guidelines contained in the different RSDF’s.

As soon as the areas earmarked and these specific areas have been serviced, they will be excluded from the Rural Component and will form part of the urban fabric of the city.

As a result of the merger between Metsweding District Municipality and the former City of Tshwane, the City now has a significant rural component. The rural areas should be developed:

- To enable people living in the region’s villages to have better access to a comprehensive range of services
- To provide an alternative living environment to the region’s people who either lack access to arable land, or who are largely dependent on migrant remittances or both.
- To promote the development of the province’s economic potential in rural areas
- To reduce the imbalances in the provision of infrastructure and services between districts and localities within the province.
- To Create options for social mobility if desired

The chief principle is to increase accessibility of rural people to basic services in support of survival strategies in the first instance and, in the second, to establish a base from which to start engaging more in productive activities. Given limited resources, policy should provide for basics for survival to all existing settlements, but no provision for additional settlement growth. Localities with some economic potential should receive higher levels and a wider range of services/facilities.

4.5.5.2 AGRICULTURE IN RURAL AREAS

The GSDF identifies Agricultural Hubs within regions 2, 5, and 7, all with varying degrees of agricultural potential. A further agricultural hub is These regions incorporate the largest part of the rural areas of Tshwane.

Agricultural land use encompasses purposes normally associated or reasonably required in connection with agricultural purposes and agri-villages. Dwelling units must be related to the agricultural use of the property. “Community Agricultural Centres” are “Agricultural
Project Areas” that have been planned to include a range of agricultural activities, including agricultural product beneficiation. Land specifically identified as high potential farmland for productive and sustainable commercial agriculture (i.e. the cultivation of crops, rearing of livestock, extensive game farming, as well as processing of agricultural products should be protected from development and suburban encroachment. These areas are highly suitable for agricultural use and must not be seen as mere vacant land waiting for development. The availability of water is however an important factor for the viability of this activity. Because of the above, the subdivision of high potential farmland should not be readily permitted, except in special circumstances. It is possible that smaller farm portions could also be viable for intensive agricultural purposes, and if subdivision is necessary to facilitate this, it should be supported.

In these cases the subdivision applications must be clearly linked to business plans to support such intensive farming enterprises. Activities and structures within these areas shall be restricted to

- extensive/intensive commercial agriculture
- farm stalls and home industries
- accommodation for farmers and farm workers;
- and
- hospitality facilities secondary to the farming activity.

Agriculture is a function of both food security and economic growth.

Agriculture, if implemented sustainably, is an important tool in ensuring food security. Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active healthy life” (CoT Integrated Food Security Policy).

In 2008, the City of Tshwane finalized the “Integrated Food Security Policy”. This was approved in 2009. The Policy documents the threat of increasing poverty across an ever growing Tshwane population and the challenge of ensuring food availability under these circumstances. The policy indicates that the problems associated with food insecurity specific to the CoT can be attributed to the following determinants:

- Food availability
- Food accessibility
- Inadequate safety nets
- Food safety and nutrition
- Weak information management system

Strategies to overcome these challenges include the following:

- Promoting food production and trade (urban and peri-urban agriculture)
- Promoting income generation and job creation
- Building adequate safety nets including basic services, food bank, etc
- Promoting food safety and nutrition

In 2009, a draft discussion paper: “An Integrated Agricultural Development Support Strategy” has been developed. The purpose of the document is to trigger strategic thinking among stakeholders and champions of the City. The strategy and its implementation focus on the following:

- Food security and poverty eradication
- Empowerment of the farmer and increased incomes
- Promotion of agro-diversification including value addition and trade
- Sustainable Partnerships
- Sustainable agriculture

In 2009, the former Metsweding Municipality developed the “Agricultural Development Strategy and Implementation Plan”. The plan illustrates that the area is well endowed in natural resources, with a good climatic regime for agricultural production. The implication is that a wide range of crops can be grown in the area, but the problem is that there is a limited amount of high potential agricultural land available. Parts of regions 6 and 7 have a high potential for crop enterprises and livestock enterprises due to the large extent of arable land in the area. Region 5 is characterized by a savannah biome and has significant game farming in the area. This makes beef production less attractive and more risky due to the potential risk of disease transfer between livestock and game. However, there is better potential for goat rearing or mixed farming in the area. (Source: Metsweding Agricultural development Strategy and Implementation Plan, 2009).

An important aspect of this agricultural strategy is to begin to understand that agriculture is not an activity that exclusively occurs in peri-urban, peripheral or rural areas. In view of the fact that the most rapidly growth populations of the world are concentrated in urban areas, the concept of ‘urban agriculture’ is highly appropriate
and necessary. Urban agriculture can be defined as the growing of plants and the raising of animals for food and other uses within and around cities and towns. It also includes related activities such as the production and delivery of inputs, and the processing and marketing of products.

Looking forward, an integrated Agricultural Strategy, incorporating all new regions of the CoT will need to be developed.
Diagram 10: Potential Agricultural Hubs as identified in the GSDF
4.5.6 THE URBAN EDGE

The urban edge, as indicated in the GSDF is a theoretical line that is drawn around a space and delineates the boundary within which a certain intensity of urban development can take place. The purpose of the urban edge is to support growth management principles which require densification, intensification and infill in order to be successfully implemented.

The urban edge contributes towards the achievement of the strategic objectives by conserving valuable environmental areas, which would otherwise be compromised by urban growth, and promoting the use of existing infrastructure through urban renewal, infill development and densification within the edge, thus achieving development that is sustainable.

The spatial concentration of communities through densification will allow for a more efficient use of social facilities and infrastructure.

The urban edge thus informs the municipal budget preparation for the allocation of projects.

The concept of the ‘urban void’, as defined in the GSDF, is also important to note. The urban void comprises expansive areas (or discontinuities) within the urban system that remain or are under-and/or undeveloped for very specific reasons. These typically include extensive agricultural holdings and mining areas, as well as land used for military purposes. Some areas remain
undeveloped due to their potential threat to human safety and health, for example unstable geotechnical conditions due to the formation of sink holes and previous mining activity, and industrial activity/production which prohibit urban development in close proximity of the industrial activity. Other areas may be developed over time. As the urban system grows and expands, certain activities may be re-located and/or discontinued, creating opportunities for new development.

4.5.6.1 BACKGROUND

The guidelines and statutory requirements for urban management growth stem from two pieces of legislation. The Development Facilitation Act of 1995 which advocates for the development of compact towns and cities, whilst the Municipal Systems Act of 2000 requires municipalities to compile their Integrated Development Plans with the Spatial Development Framework as the core component.

The Gauteng Provincial Administration drafted the first Gauteng Spatial Development Framework in 1999 in response to national directives and local development conditions. The exploitation of our natural resources has made it apparent that drastic measures needed to be introduced in order to preserve our environment for future generations. The Gauteng Spatial Development Framework contains initiatives that strive to ensure necessary changes and improvement to the living environment. As part of the first draft of the framework, the Gauteng urban edge was proposed. The urban edge is an urban management tool used to counter urban sprawl and unplanned expansion, encourage densification and protect natural resources within the city.

Each local municipality within the Gauteng province was requested to delineate a municipal urban edge and incorporate it into Spatial Development Frameworks and other planning strategic documents to contain the outward growth of urban areas and to facilitate the restructuring and spatial integration of urban areas. The Gauteng urban edge was approved in 2001 following a submission to the Provincial cabinet and was rendered as binding to all provincial departments and municipalities.

Following this, municipalities were annually given an opportunity to propose amendments to the delineation of the Gauteng urban edge. The proposals were then considered by the Department of Gauteng Provincial Government and workshops are conducted with municipalities, after which recommendations were made to the MEC for Economic Development for approval.

In March 2007 the first stage of the review process led by the Gauteng Department of Economic Development’s IDP unit, made a call to municipalities to submit proposed amendments to the edge. Subsequent to that, the Gauteng urban edge 2007/8 was approved and new calls for proposed amendments were made. The guiding principles for the revision of the urban edge were based on the following:
• Conservation of Environmental Resources – specifically conservation areas, heritage sites, open space and sensitive areas;
• Optimum utilisation of engineering services and community facilities. These services are not only expensive to install but specifically expensive to operate and maintain. The high capital and maintenance costs of development in peripheral areas thus need to be considered carefully. Particularly the availability of bulk services within an area should be considered.
• Optimisation of public transport systems with resultant reduction in pollution (air, noise, etc) and travel time and cost;
• Prevention of urban decay. By drawing a boundary around the existing urban area development is focused inward, resulting in all opportunities being explored, especially the regeneration of decaying areas.
• Promotion of opportunities for redevelopment, infill development and densification. The conservative approach to expansion also results in opportunities for infill development being explored. As well-located land is often more expensive and vacant land in the urban area often has high levels constraints, higher densities are considered as these result in a higher yield.
• Creating affordable cities for residents - shorter travelling distances (costs) and efficient use of infrastructure. The long term cost to end-users in terms of commuting costs and obtaining goods and services not available in peripheral areas often outweigh the short term cost of cheap land;
• Upgrading/re-use of infrastructure rather than expansion. Proper maintenance and upgrading of existing infrastructure is more cost-effective than expanding and thus creating more maintenance costs;
• Restructuring of the Apartheid city – growing Gauteng into a global city region which is internally coherent and externally competitive;
• Improving economies of scale - more people/km² imply more business opportunities and efficient use of community facilities.
• Develop a sustainable urban region through promoting equitable access to basic services, the protection of natural and cultural resources, and an urban form that supports greater efficiencies in land use and service provision as contemplated in the Gauteng Spatial Development Perspective.
Tshwane submitted proposed amendments in August 2008. The proposals were approved by Province in June 2009. In October 2009 Tshwane submitted proposals with regard to the amendment of the Provincial Urban Edge for the period of 2009/10. The proposals were informed by a hierarchy of plans, which includes the MSDF and RSDFs in the different areas. The new provincial urban edge amendments were approved by Province in July 2010.

In 2011, the decision was taken that the Provincial Urban Edge would no longer be implemented by Gauteng Provincial Government (specifically the Department of Economic Development), but rather be managed by local municipalities themselves, to ensure an appropriate and contextual application of growth management.

To this end, the City of Tshwane will reflect urban edge delineations within the RSDFs and other lower hierarchy spatial plans. The MSDF is a strategic document that indicates a spatial vision that spans 20-30 years, whereas the urban edge may be amended more regularly than just once during that interval. Amendments or deviations to the urban edge will be at the discretion of the municipality, subject to the merits of the specific application in terms of the spatial directives discussed in this document, the spatial directives of the applicable RSDF and the availability of service infrastructure.

4.5.7 GROWTH MANAGEMENT BOUNDARY

The Growth Management Boundary is the difference between the urban edge and the limit (boundary) of a future urban area. Areas identified as ‘exurbia’ can often be affected by this concept. A future urban area is an area that has been identified as suitable for urban development in the short to medium future. These areas are identified based on need (development pressure, logic of an area to expand and being in line with growth management principles of compaction, densification and infill). Availability of services / infrastructure, environmental sensitivities and geological constraints will inform the time at and extent to which the urban edge can be extended towards the growth management boundary.

Growth Management boundaries and future urban areas will be indicated in Regional and Local Spatial Development Frameworks.
Diagram 11: Schematic and hypothetical illustration of a Growth Management Boundary.
4.5.8 URBAN DESIGN AND QUALITY OF ENVIRONMENT

The public realm incorporates those spaces that we spend more than half our time in. The importance of the quality of the built environment may not be obvious, but is still important for the overall efficiency of both the urban and rural environment. Urban areas, though, seem to be more susceptible to negative impacts of environmental deterioration such as urban decay.

The management of the quality of the environment is important for the following reasons:

- **Environmental Impact**: the quality of the built environment will have important implications for the natural environment. Urban design largely deals with the quality of the built environment that is vital for preserving the natural environment.

  Urban and architectural design, in particular, can both have a significant impact on reducing the negative effects of climate change if implemented on a large scale. This would require an entire city to take on a formal policy that incentivises green buildings.

- **Competitive Edge**: the image that a city presents has ripple effects not only nationally but internationally. Physical features may influence investor confidence. There is also a strong relationship between technological changes in the economic production and structural changes in the quality and production of urban spaces.

  Thus, immediate associations can be made as to the level of sophistication of a particular city based on the quality of its environment.

  When seeking a competitive edge in the global arena, one has to ask what it is that makes a ‘successful’ city. A successful city is reliant on the synergy among several building blocks. One of these building blocks is physical renewal. As Nicholas Brook says: “The physical regeneration of cities – the renewal of its buildings and infrastructure – is almost invariably a key part of any successful urban strategy. In many cases the renewal of a key area of the city acts as a focus for national and international attention as well as generating civic pride and the ‘buzz’ that the city is on the move ...”, (Stafford, 2006).

  The quality of the physical environment can also be an indication of the City’s commitment to urban management, which is also an indication of the city’s commitment to the protection of various investments (both public and private) including service infrastructure. Again, this is a matter that influences investor confidence.

- **City Image**: an important factor determining why people choose to visit, invest in or relocate to a particular place is the "atmosphere" or the "cultural identity". Tourists now look for the "local culture" of places rather than a visit a particular art gallery, monument or place.
of natural beauty alone. Also a desirable location, good educational facilities, a friendly, caring community, a healthy and safe environment, good quality housing, and a competitive, stimulating local atmosphere are essential for business development. Therefore the "image of the local community" is becoming more significant to attract investors and tourist to that area. It is imperative to create a sense of pride for the residents of a city. When striking up a conversation with a stranger seated next to you on an airplane, does that person respond: I’m from – you fill in the name of the city – and expect you to immediately recognize their city and to have a positive image of, if not envy for, that community. This factor is nearly impossible to quantify – but I think we all know it when we see it and relish it when we have it. “I’m proud of my community and let me tell you why!” (Stafford, 2006)

The following table encompasses a number of considerations for urban design and a quality environment in Tshwane:
### URBAN CONTEXT

A comprehensive understanding and appreciation of context and the balancing of neighbourhood character and strategic planning objectives must be the starting point for any design. This requires an understanding of a proposed development and its relationships to the surrounding public setting, neighbouring properties and any strategic issues relating to the site.

<table>
<thead>
<tr>
<th>Objective 1: Ensure buildings respond creatively to their existing context and to agreed aspirations for the future development of the area.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration 1.1: Assess the character of an area by including the following:</td>
</tr>
<tr>
<td>- Environment</td>
</tr>
<tr>
<td>- Street details</td>
</tr>
<tr>
<td>- Buildings and rhythm</td>
</tr>
<tr>
<td>- Connection to public realm</td>
</tr>
<tr>
<td>- Architectural character</td>
</tr>
<tr>
<td>- Social and economic activity</td>
</tr>
<tr>
<td>- Cultural identity</td>
</tr>
</tbody>
</table>

Consideration 1.2: Ensure a development is consistent with the strategic location of the site.

Consideration 1.3: Consider the likely location, size and expected impact of future development and possible uses nearby when designing new developments.
**BUILDING ENVELOPES**

Building envelopes – the location of buildings on their lot, their height and overall shape – can affect neighbourhood character, sunlight to adjoining buildings and open spaces, privacy, the quality of spaces inside the building, sense of pedestrian scale and amenity in nearby streets. Higher density development means increasing the overall volume of building envelopes.

<table>
<thead>
<tr>
<th>Objective 1: To ensure that the height of new development responds to existing urban context and neighbourhood character of the area.</th>
<th>Reinforce valued aspects of existing neighbourhood character (historic and cultural fabric) unless a new character needs to be created to achieve planning policies for the area.</th>
</tr>
</thead>
</table>

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**TSHWANE METROPOLITAN SPATIAL DEVELOPMENT FRAMEWORK 2012**
<table>
<thead>
<tr>
<th>Objective 2: To ensure new development is appropriate to the scale of nearby streets, other public spaces and buildings.</th>
<th>Relate building height to street width and intended character. Urban centres are characterised by a strong sense of enclosure with street spaces that are generally lined by buildings set along the front property boundary.</th>
<th><img src="image1.png" alt="Image" /> Set back upper levels of tall buildings to help create a pedestrian scale at street level and to mitigate unwanted wind effects.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective 3: To respond to existing or preferred street character</strong></td>
<td>Buildings should be built up to the sidewalk to reinforce the definition and importance of the street, except where creating a new public space is an integral part of the development proposal.</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Objective 4: To ensure areas can develop with an equitable access to outlook and</strong></td>
<td>Consider the possible future development of adjoining sites and allow, as best as possible,</td>
<td><img src="image3.png" alt="Image" /></td>
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<tr>
<td>sunlight.</td>
<td>an equitable spread of development potential throughout the site.</td>
<td>Orientate new building to optimise sunlight and amenity for dwellings, private open spaces and adjoining public spaces</td>
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<tr>
<td><strong>Objective 5: To maximise informal or passive surveillance of streets and other public open spaces whilst also protecting the privacy of properties.</strong></td>
<td><strong>Use level changes, especially living-areas and balcony spaces elevated above the street level, to allow views from residential units onto adjacent public spaces while controlling views into these units.</strong></td>
<td></td>
</tr>
</tbody>
</table>
### STREETSCAPE

Because of their generally larger site sizes, built form and frontage widths, higher density residential buildings have significant part to play in the comfort and usable qualities of the streets they edge.

<table>
<thead>
<tr>
<th>Objective 1: Create walkable areas within safe and interesting public settings.</th>
<th>Maintain and extend street networks to create a closely spaced and interconnected street system in areas where higher density buildings are proposed so as to encourage pedestrianisation between activities.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective 2: Closely integrate the layout and occupation patterns of new development with the street.</strong></td>
<td>Locate active ground floor uses along the street perimeter of new development to increase the safety, use and interest of the street.</td>
</tr>
<tr>
<td></td>
<td>Avoid creating blank walls, large service areas, car parking, continuous garage doors or dense planting to ground level street frontages of new developments.</td>
</tr>
<tr>
<td></td>
<td>Screen or disguise above-ground parking areas in new</td>
</tr>
<tr>
<td>Objective 3: Avoid creating inactive frontages as a result of fencing private open spaces. A cooperative, rather than defensive, design approach is encouraged when adjacent uses are compatible</td>
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<td>-----------------------------------------------------</td>
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<tr>
<td>Use low height, transparent or partially open fences to create an impression of openness and permeability. If the site is fenced in, a palisade fence should be used for at least 75% of the length of the site. Solid boundary walls should be placed where it is critical to provide for privacy or private outdoor spaces.</td>
<td></td>
</tr>
</tbody>
</table>
**Site design and building form** refer to the arrangement of buildings, space and landscape within a site. They involve the careful consideration of building scale and form, movement patterns and external spaces. The interrelationships between these, rather than their individual characteristics will largely determine the effectiveness of the design.

<table>
<thead>
<tr>
<th>Objective 1: To provide a range of dwelling sizes and types in higher density residential developments</th>
<th>Design for a mix of dwelling types, particularly in larger residential developments (e.g. to suit single people, family groups of varying sizes, students, the elderly, and people on low to moderate incomes).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 2: To optimise the layout of buildings in response to occupant’s needs</td>
<td>Design the internal layout of higher density residential development to suit the site and surroundings as well as the needs of its occupants. Generally layouts should seek to maximise desirable orientations. Check layout of residential apartments for practicality and flexibility. The usefulness of apartments can be reduced by room sizes and shapes that are too small in relations to their intended uses. These problems may significantly reduce the flexibility of their use and detrimentally affect their long term</td>
</tr>
</tbody>
</table>
Objective 3: To promote buildings of high architectural quality and visual interest.

Design various building elements (roofs, entrances and corners) to suit the different ways they will be viewed by surrounding activities.

Consider materials as an integral part of the design response. High quality materials that withstand the effects of weathering and wear are important to the value of the building over the long term.
<table>
<thead>
<tr>
<th><strong>Objective 4:</strong> To provide safe and convenient access between car parking areas and pedestrian access to buildings.</th>
<th>Parking areas should be broken up in small parcels and spread over the site. A break of at least 5 meters (soft landscaping or dwelling unit intruding and overlooking the space) should be established between two parking pockets.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design car parks to assist orientation and way-finding within either the parking garage or to entrances of units.</td>
<td></td>
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</tbody>
</table>
New development should contribute to the creation of private and public open spaces that are accessible, attractive, safe and comfortable for their users.

**Objective 1: To ensure access to adequate open space for all residents.**

<table>
<thead>
<tr>
<th>Ensure private open spaces (balconies, terraces, and courtyards) are usable and provide reasonable levels of amenity and privacy.</th>
</tr>
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<tbody>
<tr>
<td>Clearly distinguish between private and public spaces by accordingly designing access and landscaping.</td>
</tr>
</tbody>
</table>

**Objective 2: To ensure common or shared spaces are functional and attractive for their intended users.**

<table>
<thead>
<tr>
<th>Consider the availability of recreational spaces and facilities and the potential demands for them and provide facilities that are absent or under-supplied.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design spaces which are usable in a range of weather conditions at various times of the year.</td>
</tr>
</tbody>
</table>
Ensure that there is a dominant presence of natural permeable surfaces within high density developments to mitigate increased storm water run-off (geological conditions permitting)

Open space should:

- Be substantially fronted by active ground floors including building entries.
- Provide an outlook for as many dwellings as possible
- Be designed to protect any natural features on the site or immediately adjacent to the site.
- Be accessible and useable
- Orientate balconies, terraces and communal open space to optimise access to sunlight.