## CONTENTS

### PART ONE: INTRODUCTION
1. Appointment 1
2. Background to the Project 1
3. Aim of the Strategy 1
4. Application of the Strategy 2
5. Structure of this Report 2
6. Process 2

### PART TWO: LEGISLATIVE AND INSTITUTIONAL FRAMEWORKS
1. Legislative Framework 3
2. Institutional Framework 4
   2.1 National Spatial Development Perspective 4
   2.2 Gauteng Spatial Development Framework 5
   2.3 Tshwane City Strategy 5
   2.4 Tshwane Metropolitan Spatial Development Framework (draft) 6
   2.5 Policy and Strategies 7
3. Summary of Key Legislative Directives 7

### PART THREE: RATIONALE AND OBJECTIVES
1. Point of Departure 8
2. Rationale 9
3. Objectives 9
4. Conditions 10
5. The Enemies of a More Compact and Efficient Tshwane 11

### PART FOUR: APPROACH AND PRINCIPLES
1. Approach: Smart Growth 12
2. Principles 13
3. Smart Growth and the Tshwane City Strategy 14

### PART FIVE: DENSITY ZONES AND APPROPRIATE DENSITIES
1. Introduction 15
2. Applying Relevant Densities 15
3. Defining the Density Zones 16

### PART SIX: DESIGN CONSIDERATIONS FOR HIGHER DENSITY HOUSING
22
### PART SEVEN: IMPLEMENTATION

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>31</td>
</tr>
<tr>
<td>2. Regional and Local Spatial Development Frameworks</td>
<td>31</td>
</tr>
<tr>
<td>3. Direct Public Investment and Budget Alignment</td>
<td>32</td>
</tr>
<tr>
<td>4. Incentives and Disincentives</td>
<td>32</td>
</tr>
<tr>
<td>4.1 Tools and Measures to Curb Development in a Specified Area</td>
<td>33</td>
</tr>
<tr>
<td>4.2 Tools and Measures to Stimulate Development in a Specified Area</td>
<td>33</td>
</tr>
<tr>
<td>5. Monitoring and Evaluation / Scorecard</td>
<td>34</td>
</tr>
<tr>
<td>6. Targets and Timeframes</td>
<td>34</td>
</tr>
<tr>
<td>7. Immediate Recommendations</td>
<td>35</td>
</tr>
</tbody>
</table>
PART ONE: INTRODUCTION

This section deals with the background to the project, the problem that the project seeks to address and the process that was followed in the formulation of the strategy.

1. Appointment

The City of Tshwane appointed the Department of Urban and Regional Planning, University of Pretoria in October 2004 to assist the City Planning Division (Metropolitan Planning Section) with the formulation of a Compaction and Densification Strategy for the City of Tshwane.

2. Background to the Project

The Tshwane Compaction and Densification Strategy is the second phase of a project aimed at addressing the need for densification and compaction within the City of Tshwane Metropolitan Area.

The first study, namely the Macro Perspective on Residential Densities and Compaction in Tshwane, was aimed at providing the City of Tshwane with information on trends and approaches around residential densification and urban compaction in the South African and international arena. Said study covers both local and international experiences and examples of approaches to residential compaction and densification and the intensification of non-residential uses.

3. Aim of the Strategy

The purpose of this study is to provide an integrated strategy for urban compaction and densification in Tshwane, in accordance with the directives from national and provincial legislation.

This strategy is aimed at addressing the structural composition of the metropolitan area as a whole from a densification point of view, rather than making any detailed proposals for densification in specific areas.

This strategy can also be seen as an attempt to give realisation to the Tshwane City Strategy, as far as issues related to urban form and residential development are concerned.

The central questions that the strategy aims to address are:

<table>
<thead>
<tr>
<th>Long Term</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>How can the intensification and densification of certain areas further the aims of the Tshwane City Development Strategy?</td>
</tr>
<tr>
<td>How do we best harness the existing development energy in the city at this point in time, given current constraints, to contribute to a compact and intensified city structure?</td>
</tr>
</tbody>
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4. Application of the Strategy

The Strategy is meant to guide and inform the structuring of the metropolitan area from a metropolitan (strategic) as well as regional point of view. It is therefore closely linked to the Metropolitan Spatial Development Framework (MSDF), and its application and interpretation should be dealt with similarly to that of the MSDF.

This strategy will only provide guidelines and norms for densification from a strategic point of view, which will inform and guide more specific densification proposals within the regional spatial development frameworks.

The Strategy intentionally does not make specific density proposals for the city (i.e. it is not a spatial framework), as such an exercise requires detailed analysis and understanding of various areas.

Regional Managers are expected to take the principles and guidelines set out in this document, adapt it to become context-specific within their specific regions and then translate it into proposals contained within the regional and local spatial development frameworks. This strategy should therefore not be used to evaluate specific land use applications.

This Strategy aims to guide planning, implementation and budgeting within the Municipality and various other stakeholders and clients e.g.

- Housing departments
- Decision-makers
- Public Transportation providers
- Property Developers

5. Structure of this Report

The report has seven parts. Part 1 introduces the background to the study, defines the problem and provides an indication of process was used. Part 2 provides a brief exposition of the legal and institutional framework on which the strategy is founded. Part 3 sets out the rationale and objectives of the strategy. Part 4 explains the approach toward metropolitan compaction and densification that forms the foundation of the strategy, as well as the principles that will be applicable to densification and compaction in Tshwane. Part 5 sets out and defines various density zones within the city, together with guidelines for the implementation of these zones. Part 6 provides design guidelines for higher density housing, while Part 7 sets out the implementation framework.

6. Process

The following process was followed in the formulation of the Tshwane Compaction and Densification Strategy:

![Figure 1: Strategy Formulation Process](image-url)
PART TWO: LEGISLATIVE AND INSTITUTIONAL FRAMEWORKS

In this section, an interpretation is provided of the current legislative directive with regard to compaction and densification, and the proposed Tshwane Compaction and Densification Strategy is placed within the context of the Province and Tshwane’s existing strategic frameworks such as the Gauteng Spatial Development Framework, Tshwane Metropolitan Spatial Development Framework and the Tshwane City Strategy.

The document Macro Perspective on Residential Densities and Compaction provides a comprehensive overview of various acts and policies from national and provincial government that address the issue of urban form and growth, and the detail will not be repeated in this document.

1. Legislative Framework

There are a number of acts and policies from National and Provincial Government stretching across a range of sectors that provide directives or guidelines for the spatial and functional restructuring of the country’s cities. In summary, the key objectives that are pursued in the existing and proposed legal and policy framework are to:

- Integrate urban areas and overcome apartheid-induced segregation;
- Integrate land use and transport planning and ensure integration between public transport modes;
- Minimise urban sprawl and the adverse effects of transport and land development on the environment;
- Densify settlements and ensure filling in and mixing of land-uses in all land development and redevelopment actions/interventions;
- Improve the quality of housing and public infrastructure;
- Ensure responsive, effective, efficient and collaborative governance of settlements;
- Develop and strengthen public transport-orientated activity corridors; and
- Increase economic efficiency and productivity of urban form and functions.

Within the urban planning environment, two acts are particularly important when addressing the issue of compaction and densification, namely the Development Facilitation Act, 1995 and the Gauteng Planning and Development Act, 2003.

The Development Facilitation Act, 1995 stipulates that “policy, administrative practice and laws should promote efficient and integrated development in that they ... discourage the phenomenon of urban sprawl in urban areas and contribute to the development of more compact towns and cities”.

The Resource Document on the Chapter 1 Principles of the Development Facilitation Act, 1995 (published by the National Development and Planning Commission) explains this principle as follows:
“The concept of the compact town or city establishes an urban, as opposed to suburban or township, model as the dominant model of development. It does not deny the provision of lower density, larger plot houses for those who can afford it, provided that users pay fully for the full range of externalities associated with this form of development. Further, in terms of the principle of reinforcement, larger plot holdings should be used structurally to impact positively on higher densities, more intense, living conditions by providing places of visual relief.

The compact city takes as its starting point scaling settlements, in the first instance, to people moving on foot and, in the second, to the achievement of efficient public transportation. This does not mean ignoring the demands of motor cars: movement systems must be able to accommodate these as well. It does mean, however, that car movement is not maximised or prioritised.

The need to promote compaction and to combat sprawl suggests a number of types of actions.

- promoting smaller average site sizes: large lot sprawl is a major form of sprawl in South Africa
- encouraging dwellings to go up – to take walk-up forms
- promoting various forms of implosion or infill policies, where new growth is encouraged to occur within the existing urban fabric as opposed to beyond the existing edge.”

The Gauteng Planning and Development Act, 2003 provides a number of principles to promote spatial restructuring and development. Key amongst these is that the Province shall encourage development and land use which “… promotes the more compact development of urban areas and the limitation of urban sprawl and the protection of agricultural resources” and development that “results in the use and development of land that optimises the use of existing resources such as engineering services and social facilities… ”.

2. Institutional Framework

In order to ensure institutional credibility, the Tshwane Compaction and Densification Strategy must be informed by provincial and local strategic directives, such as the Gauteng Spatial Development Framework, the Tshwane City Strategy and the Tshwane Metropolitan Spatial Development Framework.

2.1 National Spatial Development Perspective

The NSDP was born out of a concern from National Government that national investment and development programmes are (i) not addressing the distortions of the past apartheid spatial economy and (ii) not aligned between various spheres of government.

The aim of the NSDP is therefore to –

- provide a better understanding of the South African spatial economy; and
- to provide normative principles for the reconfiguration of apartheid spatial relations through investment and development programmes.

The overarching theme or message throughout the NSDP is (i) that economic development in the country is crucial, (ii) that government should support economic development by directing fixed investment primarily to those areas where it can have the most benefit to the economy and (iii) that all spheres of government (horizontal and vertical) should align along the same development programmes in order to have the best combined effect.

The normative principles that form the basis of the NSDP state, inter alia, that future settlement and economic development opportunities should be channelled into activity corridors and nodes that are adjacent to or link the main growth centres.
Public transport is more efficient and transport costs are lower with corridor development, which may be more suitable due to the present fragmented form of South Africa’s cities and towns than any attempt at creating compact cities. The proposed transport corridors should help to integrate peripheral settlements through activity corridors stretching through to city centres (although not exclusively focused on the centre). It can be argued that higher densities should be located specifically along transport corridors and that more dispersed settlements could be discouraged through a reworking of the subsidy formulae and by changing the incentive and control systems governing urban land-use.

2.2 Gauteng Spatial Development Framework

The Gauteng Spatial Development Framework identified five (5) critical factors for development in the province (and by implication in Tshwane), namely:

- 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.

2.3 Tshwane City Strategy

The Tshwane City Strategy is a bold initiative by the City of Tshwane Metropolitan Municipality (CTMM) to influence the development path of the City over the next 20 years. The City Strategy introduces important implicit policy and emphasis shifts. These are required to shape an action agenda that has full impact on urban efficiency and the quality of life – specifically targeting the poor. The most important shifts are:

- From unfocused, low-impact public expenditure to focused high-impact public investment.
- From a concentration on individual household infrastructure to balanced investment in public benefit infrastructure and individual households.
- From a broad intention of compacting and integrating the apartheid city to a more sophisticated and strategic intervention package.
- From unsustainable patterns of infrastructure investment to an approach that balances growth and maintenance.
- From unproductive investments to investments with a multiplier effect.
- From being a development facilitator to directing development.

In probably the most important shift, the CTMM will define its strategic role as initiating public investment to which private business can respond.

One of the fundamentals of the City Strategy is the restructuring of the urban environment in such a way that people’s lives are improved through better and more equal access to economic and social opportunities. Just as with the National Spatial Development Perspective, this implies a focussed approach to development around areas with opportunity, not only for economic development, but also for residential development.

Some of the issues related to densification that are clearly highlighted by the City Strategy are:

- Create places of opportunity that will support wide range of densification in places that benefit from access to concentrated public investment in services and infrastructure
- Create economic opportunities at important interchanges and nodes receiving clusters of social facilities and allow higher density residential development to grow around these places.
• Present alternatives to people whereby the advantages that different places can offer are optimised.

2.4 Tshwane Metropolitan Spatial Development Framework (draft)

It is the intention of the MSDF to restructure Tshwane’s 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 and along activity corridors.

In terms of the MSDF a number of Metropolitan Activity Areas, Corridors and Activity Spines are identified. Densification should specifically be focussed around these structuring concepts as first priorities of intervention. The purpose of such higher density residential development is to provide residential opportunities in environments that are high-intensity, mixed use, pedestrian friendly and primarily public transport orientated where a number of economic and social opportunities are available within a relatively compact geographical area. These areas should also be linked to Open Space Systems to support their viability. 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.

Densification in the suburban environment, out-side of the strategic locations, should take the form of –

• infill of vacant land within existing, established residential areas;
• managed subdivision of erven for detached housing and development of second-dwelling houses; and
• semi-compact and compact residential developments, provided that the level of densification is in line with the guidelines set by the RSDF and can be supported by the local infrastructure.

An important outcome of the metropolitan restructuring is to undo apartheid induced segregation, fragmentation and inequality. The continued creation of marginalised residential areas on the outskirts of the urban area is not an effective way to address unbalanced city growth.

Figure 2: MSDF Spatial Development Concept
2.5 Policy and Strategies

During the process of drafting the Tshwane Compaction and Densification Strategy, other existing policies such as the Housing Strategy for the CTMM (Draft) and the Densification Study for the Identification and Evaluation of Land for Institutional Housing Development, were considered.

Although none of these documents make any specific proposals with regard to densification, one of the central themes in each is that residential development, both private and institutional, should take place in a more focussed, sophisticated and efficient manner.

3. Summary of Key Legislative Directives

From the above, the following aspects are considered to be key directives for the Tshwane Densification and Compaction Strategy.

- Minimise unmanaged or unfocussed urban growth
- Create opportunities for the densification of existing low density areas
- Promote higher density and integrated environments with typical urban characteristics to balance suburban developments
- Ensure that residents have access to a range of choices with regard to housing typologies as well as locations
- Integrate residential development, movement systems, social facilities, employment opportunities and activity areas
- Focus residential densification around areas of opportunity (employment opportunity, activity areas, transport opportunities etc.)
PART THREE: RATIONALE AND OBJECTIVES

In this section the rationale behind and objectives of the compaction and densification strategy are discussed.

1. Point of Departure

It is widely accepted amongst urban restructuring advocacy groups and policy makers that the current local trends and the resulting spatial form has certain implications or consequences for the way in which our cities function. These consequences can be summarised as follows:

- Settlement patterns are grotesquely distorted with the poorest residents having to travel the longest distances, and wealthier people living closest to the most desirable economic and social opportunities;
- Cities are inconvenient and dysfunctional for the majority of citizens as they generate enormous amounts of movement with great costs in terms of time, money, energy and pollution;
- Provision of efficient and viable public transportation is almost impossible, because of the low densities and the dispersed location of activities. This contributes to the huge levels of traffic congestion experienced in and between cities;
- Installation and maintenance of engineering services is costly, which also has implications for the affordability of utilisation of services. Settlements on the periphery tend to place larger burdens on government expenditure for service provision;
- Large tracts of land with agricultural and amenity potential has been destroyed and this tendency shows little prospect of coming to an end;
- Poverty and inequality have been worsened because of travelling costs and lack of opportunity and choice; and
- For many, cities have become hostile places in which to live offering few economic, social, cultural, environmental or recreational opportunities.

As explained in the Resource Document on the Chapter I Principles, the aim of the legislative directive for compaction and the curbing of sprawl is not to convert our urban areas into a large uniform high density, compact zone, but rather to restructure the built environment in such a way that it becomes more efficient, more equitable and more convenient for its residents while at the same time promoting high quality living environments.

Most large cities, especially vast metropolitan areas such as Tshwane, are not uniform areas, but consist alternately of lines of concentration and areas of dispersement. Currently, the way in which our city develops unfortunately tends to favour dispersed development, and it is necessary to enhance the areas of concentration in order to correct the imbalance and to increase the total gross density within the existing built-up environment.

Compaction and densification is also not only a function of residential densities, but also of the location, intensity and typology of a range of urban functions and services.

One of the main goals of compaction and densification is to ensure that the standard of living that people enjoy will actually improve as a result.
Compaction and densification should therefore be viewed as a positive intervention in the urban structure.

2. Rationale

The rationale for densifying the city (i.e. increasing the gross overall density), stems from the following needs:

- managing the spatial growth of the city
- increasing efficiency and cost effectiveness
- increasing convenience and quality of life
- creating the necessary population thresholds for economic growth and healthy businesses in specific areas

It is important to understand that densification and compaction is not an end in itself, but a means to achieve an overall efficient, integrated and sustainable metropolitan area.

Densification should therefore not be done for the sake of densification, but to achieve a range of other goals.

3. Objectives

The broad goals of spatial interventions in the Tshwane metro are to (1) develop sustainable human settlements and (2) rectify the apartheid imbalances in the access to, and the ownership of wealth. This closely links up with the broad goals of the Tshwane City Strategy, namely

- Creating a better life for all
- Establish Tshwane as a successful urban economy

Densification is an important tool or means to achieve the above goals, as it addresses the question of where people live and how close they are to opportunities.

The objectives of densification and compaction in Tshwane (i.e. why do we want to increase the gross density of the metropolitan area), are:

- **Minimising/Reducing the Footprint of the City**
  Cities transform natural land and alter the ecosystems in which they are located in a magnitude of ways. This in itself warrants a concerted effort to limit the impact on the affected area of land, as well as the ecosystems involved.

- **Preventing the Destruction of Agricultural Land**
  Urban sprawl often eats into areas of high-value, very well located agricultural land in close proximity to urban markets. In many developing countries urban agriculture also provides employment and food security to the urban poor. This resource has to be protected from urban intrusion.

- **Improving the Use of Public Transport and Facilitating Pedestrianisation**
  One of the key means of improving the use of public transport is increasing residential densities in nodes and along public transport corridors, which has major implications for the way in which cities are being built and managed. The other is greater integration between the various entities involved in land use and transport planning.

- **Improving the Efficiency of Urban Areas**
  More compact cities increases general accessibility, the level of convenience with which people can conduct their daily lives and reduces costs in terms of time, money and opportunity cost, both for local government as well as for its citizens. More compact cities in which infrastructure investment is planned are more efficient than cities in which this is not the case.
• **Reducing Inequality**
  One of the objectives of intervening in the form and density of development of urban areas is to ensure greater access of all, especially the poor, to the benefits and opportunities of urban living – something that the current fragmented, separated city works against.

• **Increasing the Marketability of the City**
  The physical urban environment of a city, including its quality and liveability, plays a major role in its competitiveness. In addition to this the message that potential investors get from a city that seems under control and functions well is that it is well planned and managed in an integrated way.

  The aim is to ensure a density of development that can facilitate sustainable economic development, job growth and income generation.

• **To adhere to legislative directives**
  A wide range of acts and policies have been brought forward by national government urging local authorities to address the issue of sprawl and urban form. However, in practice, very little has been done to address these legislative directives.

4. **Conditions**

The program 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 any regard to the impact it may have on the way in which people live and the city functions. These conditions are:

• **Structural approach**
  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

• **Ensure choice in housing options**
  Ensure 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.

• **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.

• **Ensure a liveable city with high quality environments**
  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 urge for more sustainable urban forms could lead to standardised urban space, which should be avoided at all costs.
5. The 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 some of the critical issues that need to be addressed. These include:

- An over-emphasis on single erf-single house developments
- Low coverage and low height restrictions
- Too few functional and attractive communal open space and recreational facilities in strategic areas to support higher density housing
- Large parking areas around commercial developments that take up a lot of valuable land
- Uncoordinated focus areas for development (dispersed densification and intensification attempts)
- Inefficient public transport system
- 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)
- The provision of low cost and social housing in outlying parts of the metropolitan area
- A low emphasis on redevelopment and regeneration, with a strong emphasis on Greenfield developments.
PART FOUR: APPROACH AND PRINCIPLES

In this section the approach and principles that forms the foundation of the Tshwane Compaction and Densification Strategy is explained.

1. Approach: Smart Growth

Throughout the world, different approaches and tools are used to manage the physical growth of cities (refer to “Macro Perspective on Residential Densities and Compaction).

Because of the sheer size of the metropolitan area, as well as the fact that the metropolitan area comprises a large number of distinct areas with special identities, histories, socio-economic characteristics as well as unique sub-cultures, it is impossible to apply a single density or even a single densification approach to the metropolitan area. Not only will a single approach not be feasible, it may lead to a banal environment lacking diversity and choice.

The Resource Document on the Chapter I Principles of the Development Facilitation Act, 1995, also makes it clear that the legislation does not require cities to apply one standard high density norm to the entire metropolitan area, and that it favours a healthy balance between high density and low density developments.

It is proposed that the City opts for a “Smart Growth” approach. Smart Growth is not a single approach, but rather a collection of urban development strategies aimed at reducing sprawl and promoting growth that is balanced and fiscally, environmentally and socially responsible. Smart Growth tries to promote growth and development in areas with optimal opportunity, and offers an antidote to the sprawl that has resulted from unlimited low-density development further and further away from the city centre.

Smart Growth is therefore not a densification approach or strategy per se, but rather a holistic way of looking at growth and development, i.e.:

- It leverages new growth and development to improve existing areas of opportunity
- It promotes redevelopment of existing areas rather than abandoning existing infrastructure and facilities only to rebuild it farther out
- Smart growth is “town-centre”, transit and pedestrian oriented
- It promotes the mixing of retail, commercial and housing uses
- It favours brownfield as opposed to greenfield developments

In short, “Smart Growth” can be explained as “doing the right thing in the right place in the right way”.

The City of Tshwane therefore recognises that on the one hand there is a very definite need to increase residential densities in the city as whole, and more specific in certain strategic locations, and on the other hand there is a need to maintain the protection of existing unique or special low density areas and to provide new low density developments as part of the range of choices available in the city. The aim is to find a balance between these two needs through the application of specific principles in specific locations.
Smart growth is development that serves the economy, the community, and the environment. It changes the terms of the development debate away from the traditional growth/no growth question to "how and where new development should be accommodated."

Smart Growth answers these questions by simultaneously achieving:

- Healthy communities -- that provide families with a clean environment. Smart growth balances development and environmental protection -- accommodating growth while preserving open space and critical habitat, reusing land, and protecting water supplies and air quality.
- Economic development and jobs -- that create business opportunities and improve local tax base; that provide neighbourhood services and amenities; and that create economically competitive communities.
- Strong neighbourhoods -- which provide a range of housing options giving people the opportunity to choose housing that best suits them. It maintains and enhances the value of existing neighbourhoods and creates a sense of community.
- Transportation choices -- that give people the option to walk, ride a bike, take transit, or drive.

Many studies show that a more balanced pattern of growth may benefit the environment. Smart growth developments can minimize air and water pollution, facilitate brownfields cleanup and reuse, and preserve open space. [http://www.epa.gov/smartgrowth](http://www.epa.gov/smartgrowth)

2. Principles

The principles and sub-principles which will guide densification and compaction within Tshwane are as follows:

- **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**
  - Densification should concentrate around specific strategic areas
  - Density levels should be linked to the functional characteristics of various parts of the city
  - Densification and compaction must be applied in such a way that diversity and unique spatial characteristics are maintained within the city
  - Density should relate to surrounding land uses

- **Appropriate higher density housing opportunities at appropriate locations must be provided for all income groups**
  - Create a range of housing opportunities and choices
  - Social integration must be promoted throughout the metropolitan 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)**
  - 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
  - (Re-) development should be promoted within existing built-up areas as an antidote to greenfields developments
3. **Smart Growth and the Tshwane City Strategy**

The Tshwane City Strategy focuses strongly on the principles of directing investment, development and energy to areas of opportunity, of clustering investment around certain nodes, by enhancing choice, by enhancing quality of life and providing people with access to economic and social opportunity.

The approach of Smart Growth is most appropriate within the context of the City Strategy, as the principles set out above in essence address the question of restructuring the city around areas of opportunity, and bring people closer to those opportunities, while at the same time promoting high quality living environments.
This section will deal with specific density zones and their respective characters

1. Introduction

In line with the principles of ‘Smart Growth’ of providing for density diversity and a range of densification efforts around strategic locations in the city, the strategy have identified four general density zones within the municipal area that can be applied to areas with varying characteristics and density.

This chapter will provide guidelines for each of those zones in terms of general characteristics, density, typologies and urban design guidelines.

Under each zone, certain pre-requisites for the restructuring of such zones are also identified, i.e. those minimum requirements that need to be put in place before densification attempts can be made successfully.

2. Applying Relevant Densities

Density can be measured in a number of ways, namely:

- **Site density** refers to the density on a specific site excluding public roads and public open space (units/hectare).
- **Net residential density** refers to the density of a specific area including half the width of adjacent roads and any adjacent open space.
- **Gross residential density** refers to the density of a specific site including the neighbourhood land occupied by local facilities such as schools, local shops and open space (units/hectare).
- **Overall residential density/town density** refers to the density of the entire town and its facilities (units/hectare).

“It is important to note that net density is always higher than gross density. Whereas net density can be increased almost ad infinitum by decreasing the size of units and erven and increasing the height and coverage of buildings, the increase in gross density is limited by facility and space standards. By increasing the number of people in an area, more facilities such as schools, streets and open space are needed, thus taking up more space and lowering the gross density. In South Africa gross density is typically 40% to 50% lower than net density because of high layout standards, such as the width of roads and the size of schools. Gross density can be increased by lowering space standards and by sharing facilities such as sports fields.

In order to understand density in both its environmental and human aspects, three types of density measures must be analysed. These can be summarised as follows:”
### Source: Development of an Integrated Urban Corridor Assessment and Strategy Development Process for Transport Authorities and Provinces: National Department of Transport

Achieving a balance between sustainable urban growth and density warrants detailed inspection of localities as different localities render the need for different densities. Rather than specifying specific densities for each zone, certain density typologies are proposed for the various zones.

The actual densities that will be applicable in specific areas will be a function of the local context and factors such as:

<table>
<thead>
<tr>
<th>DENSITY MEASURE</th>
<th>DESCRIPTION</th>
<th>UNIT OF MEASURE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building density</td>
<td>The intensity at which buildings are developed</td>
<td>• Dwelling unit/hectare</td>
<td>Easiest to control and use in land use planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Floor area ratio</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Coverage</td>
<td></td>
</tr>
<tr>
<td>Occupancy density</td>
<td>The rate at which the floor space within buildings is occupied</td>
<td>Floor space rate (m²/person)</td>
<td>Low income areas tend to have higher occupancy densities than high income areas, irrespective of building densities</td>
</tr>
<tr>
<td>Population density</td>
<td>The number of people per unit area</td>
<td>Population/hectare</td>
<td>Can differ dramatically from building density, depending on occupation density</td>
</tr>
</tbody>
</table>

3. **Defining the Density Zones**

The four key Density Zones are:

- **Concentration Zones**
  - High Density Zone
  - Transit Promotion Zones

- **Linear Zones**
  - Development Corridor
  - Activity Spine

- **Suburban Densification Zones**

- **Low Density Zones**

- Functional linkage to and distance from opportunity (node, station, economic area and surrounding land uses.)
- Location and prominence within the city
- Desired or planned character of the area
- Accessibility
- Socio-economic characteristics
  - Lifestyles
  - Household size
  - Level of Urbanisation
- Special attributes (e.g., Historical, cultural or aesthetical heritage)
- Existing infrastructure
- Long term prospects
- Current level of public transport
- Site characteristics
- Environmental Considerations
- Land availability and costs vs. opportunities for redevelopment
The conceptual image shows the linkage between the density zones future change can be accommodated. Any type of development should not restrict the future dynamics in an area.

### 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 and are centred around nodes of metropolitan importance.

Characteristics of this zone are those found in major urban centres. These locations have developed into places accommodating a whole range of urban activities including economic activities, services, entertainment and a choice of housing opportunities 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. Herein also lies two areas of contrast, that being areas which are mainly focused on public transport and the areas which are centred around major retail nodes and cater for privately owned motor vehicles.

Another facet to this zone would include high density residential development around specific focussed development areas, such as around educational or research institutions/campuses or large scale employment areas.

The High Density Zones need to be further developed into an intense and active gathering of activities that create a sense of concentrated urbanity. They need to be upgraded in order to attract people and investors to them by integrating the public and private transport network and proactively managing the development in their zone to create a legible and stimulating lattice of activities.

**Figure 3: The Concept of Density Zones**

The various density zones can not be read in isolation of each other, but may in many cases be interlinked to each other (e.g. a concentration zone and a development corridor).

It should also be borne in mind that the city is a dynamic entity, with various areas changing their function and character over time. The density zones should therefore be demarcated in such a way that

Transit Promotion 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.

In the case of public transport facilities, these zones make for a hub of activity thus inducing high volumes of frequent pedestrian traffic within a walkable distance from the transport facility.

It must be stated that under this category there exists a range of nodes differing in needs and scale, e.g. those playing a significant role in a provincial/regional scale and those which are limited to a metropolitan significance.

High density residential developments within close proximity to these transport facilities bring users of these services closer to the facility, and also increase the feasibility of the transport service.

Depending on the significance of the transport facility, housing typologies may range from high- to medium rise apartments to walk-ups and duplex developments.

Pre-requisites for the Concentration Zones:
- Urban design qualities that support the integrated urban character of these areas
- Upgrading of engineering services
- Pedestrianisation and cycling facilities
- Inter-modal transfer facilities at train stations should be upgraded.
- Mixed land uses
- Social and recreational facilities to support the increased residential population

Linear Zones

For the purpose of the densification strategy, 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 our Zones of Concentration and Transit Orientated 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**

Activity Spine attempts to describe 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.

Because of the activity function of these routes, public transport is able to make more frequent stops, with the result that higher density developments can typically take place in a more continuous form.

Typical housing typologies that will be appropriate within the Tshwane context along both development corridors and activity spines are medium to low rise apartment buildings, walk-ups and duplex residential developments.

Because of the fact that public transport such as buses are not the transport mode of choice in many parts of the city, the number of routes that are earmarked as such in the short term must be restricted to a few strategic routes. Concentration of higher density development along a few routes rather than scattering these developments along a large number of routes will increase the feasibility of upgrading the bus service along those few dedicated routes. Public transport routes between nodes that are suitable for redevelopment and densification should be identified and detailed land use plans with accompanying higher density proposals together with incentives to ‘make it happen’, prepared for these areas.

**Development Corridors**

Development corridors signal the development occurring along a major transport route, for instance a freeway, a major transport route and a rail system. Direct access to features lining the corridor is restricted with the number of stops of public transport 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.

**Pre-requisites:**
- high quality efficient public transport system and facilities
- appropriate level of engineering services

**Suburban Densification Zones**

Suburban Densification Zones are those existing low density areas where there is potential for moderate densification through subdivisions, second dwelling houses and cluster housing developments. This zone makes for good application in areas that are close to places of employment, major retail centres and prominent transport routes.

Higher densities (such as second dwellings, duplex developments, walk-ups and low-rise apartments) should be promoted around local nodes, social facilities and open spaces/recreation facilities. Densities should be increased by incentivising/allowing higher density redevelopment and infill (especially government-subsidised housing) along major transport routes and in nodes at densities up to 80 units/hectare. By locating higher densities in suburban areas around these activities not only does it increase the accessibility to these functions but also increases the feasibility of these functions/activities themselves.

Areas of subsidised housing should be required to accommodate a mixed range of densities within their development so as to detract from their current monotonous environments.

Public transport connections should be set up between suburbs and should provide strong linkages to the Activity Spines and Development Corridors.
In the case of locating next to active developed open spaces/recreation facilities higher density housing should be required to address and interact with the open space so as to enhance its use and views from the housing development. The suitability of densification adjacent to natural open spaces should be determined by environmental impact assessments.

Pre-requisites:
- Existing engineering service infrastructure should be able to carry the higher densities
- Public transport connections should be set up between suburbs
- Pedestrian and cycling access to local nodes and social facilities
- Sufficient capacity of collector roads in the area for more traffic

Low Density Zones
This zone is typified by mono-functional suburbs, which play host to mostly high income earners, and comprises mostly 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.

Although these zones have a definite place within the overall density structure in Tshwane, they should be considered to be the exception rather than the rule.

Pre-requisites:
- Provisions should be made to ensure that new large-scale developments in the periphery do not lead to low quality, monotonous environments

Figure 5 below provides a schematic representation of the density zones and their relationship to various density typologies.
Figure 5: Density Zones Approach
In this section design guidelines are provided for higher density housing

For many years, the only question that governed higher density housing was the actual density of the development. In practice however, design considerations should be considered as much more important, as very high densities could, through appropriate design and environmental integration, be much more desirable developments than lower densities without appropriate design. It is therefore important that the design aspects in future receive just as much, if not more, attention during the consideration of development applications for higher density developments.

These guidelines have been developed so that the planning system can promote well-designed high density residential development in activity centres and other strategic redevelopment sites that are close to public transport.

The guidelines are structured around five design elements:

- Urban Context
- Building Envelope
- Building Layout and Design
- Streetscape
- Open space and Landscape Design

Under each element there are general objectives to be considered.

Each objective has a corresponding set of design suggestions that will generally achieve a good design response.
Element 1: Urban Context

Objective 1: Ensure buildings respond creatively to their existing context and to agreed aspirations for the future development of the area.

Consideration 1.1: Assess the character of an area by including the following:
- Environment
- Street details
- Buildings and rhythm
- Connection to public realm
- Architectural character
- Social and economic activity
- Cultural identity

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.

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.
### Element 2: 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>Consideration 1.1: 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>
<tbody>
<tr>
<td>Objective 2: To ensure new development is appropriate to the scale of nearby streets, other public spaces and buildings.</td>
<td>Consideration 2.1: 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.</td>
</tr>
<tr>
<td></td>
<td>Consideration 2.2: Set back upper levels of tall buildings to help create a pedestrian scale at street level and to mitigate unwanted wind effects.</td>
</tr>
<tr>
<td>Objective 3: To respond to existing or preferred street character</td>
<td>Consideration 3.1: Don’t set back buildings from the street in retail areas or where consistent street edge needs to be reinforces, except where creating a new public space is an integral part of the development proposal.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Objective 4: To ensure areas can develop with an equitable access to outlook and sunlight.</td>
<td>Consideration 4.1: Consider the possible future development of adjoining sites and allow, as best as possible, an equitable spread of development potential throughout the site.</td>
</tr>
<tr>
<td>Consideration 4.2: Orientate new building to optimise sunlight and amenity for dwellings, private open spaces and adjoining public spaces</td>
<td></td>
</tr>
<tr>
<td>Objective 5: To maximise informal or passive surveillance of streets and other public open spaces whilst also protecting the privacy of properties.</td>
<td>Consideration 5.1: 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.</td>
</tr>
</tbody>
</table>
**Element 3: Streetscape**

Because of their generally larger site sizes, built form and frontage widths, higher density residential buildings have a 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 setting.</th>
<th>Consideration 1.1: 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>Objective 2: Closely integrate the layout and occupation patterns of new development with the street.</td>
<td>Consideration 2.1: Locate active ground floor uses along the street perimeter of new development to increase the safety, use and interest of the street. Consideration 2.2: Avoid creating blank walls, large service areas, car parking, continuous garage doors or dense planting to ground level street frontages of new developments. Consideration 2.3: Screen or disguise above-ground parking areas in new development from the street. Consideration 2.4: Accentuate and identify building entrances by providing good visual and physical connections between the street and the lobby spaces.</td>
</tr>
<tr>
<td>Objective 3: Avoid creating inactive frontages as a result of fencing private open spaces.</td>
<td>Consideration 3.1: 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>
</tr>
</tbody>
</table>
## Element 4: Building Layout and Design

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>Consideration 1.1: 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>
</table>
| Objective 2: To optimise the layout of buildings in response to occupant’s needs | Consideration 2.1: 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.  
Consideration 2.2: 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 value. |
| Objective 3: To promote buildings of high architectural quality and visual interest. | Consideration 3.1: Design various building elements (roofs, entrances and corners) to suit the different ways they will be viewed by surrounding activities. |
| Consideration 3.2: 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. |
| Objective 4: To provide safe and convenient access between car parking areas and pedestrian access to buildings. | Consideration 4.1: 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. |
| Consideration 4.2: Design car parks to assist orientation and way-finding within either the parking garage or to entrances of units. |
**Objective 1: To ensure access to adequate open space for all residents.**

- **Consideration 1.1:** Ensure private open spaces (balconies, terraces, and courtyards) are usable and provide reasonable levels of amenity and privacy.
- **Consideration 1.2:** Clearly distinguish between private and public spaces by accordingly designing access and landscaping.

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

- **Consideration 2.1:** Consider the availability of recreational spaces and facilities and the potential demands for them and provide facilities that are absent or under-supplied.
- **Consideration 2.2:** Design spaces which are usable in a range of weather conditions at various times of the year.
- **Consideration 2.3:** 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).
<table>
<thead>
<tr>
<th>Consideration 2.4: Open space should:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Be substantially fronted by active ground floors including building entries.</td>
</tr>
<tr>
<td>• Provide an outlook for as many dwellings as possible</td>
</tr>
<tr>
<td>• Be designed to protect any natural features on the site or immediately adjacent to the site.</td>
</tr>
<tr>
<td>Be accessible and useable</td>
</tr>
<tr>
<td>Consideration 2.5: Orientate balconies, terraces and communal open space to optimise access to sunlight.</td>
</tr>
</tbody>
</table>
PART SEVEN: IMPLEMENTATION

In this section guidelines for the implementation of the principles of densification are provided.

1. Introduction

The densification and compaction strategy implies an intervention into the current way in which the city is developing. Intervention in complex systems – to know what to do where and when – is however a process fraught with dangers of dead ends and unintended consequences.

Urban Planners and local government have long been accused of being experts at drafting plans, but lacking in the ability to implement those plans. It is therefore important for this strategy to provide guidelines for the practical implementation of the principles set out in this document, i.e. – how do we ensure that the proposals made in this document realise in the city?

Developmental role of local government means that government needs to lead the way in the implementation of its plans. Planners within the local authority should not only deal with densification in a re-active manner (i.e. dealing with densification proposals), but also in a pro-active manner through planning, budgeting and the implementation of pilot projects.

The aspects that will be dealt with in this chapter are:

- The role of Regional Spatial Development Frameworks
- Direct Public Investment and Budget Alignment
- Incentives and Disincentives
- Monitoring and Evaluation
- Targets and Timeframes

2. Regional and Local Spatial Development Frameworks

The first point of business when implementing the strategy for the compaction and densification of the metropolitan area, is to have clear regional spatial development frameworks that identify the various density zones throughout the metropolitan area. Such proposals should be made on the basis of detailed analysis of the various areas, their location as well as functional position within the metropolitan areas, as well as current and future potential.

Where required, such as in the case of the urban cores, more detailed urban design frameworks should be drafted to guide public and private investment.

Spatial Development Frameworks should however not only identify the areas for densification, but should also point out the pre-requisites for densification in those areas, the priority in terms of budget and public investment, and the incentives required for public investment.
Regional Managers will be responsible to apply the density zones in their regions as part of the Regional Spatial Development Frameworks, and adapt the density zones with due consideration of the determinants set out in Part 5. The ideal density and scale of residential development in a specific area should be determined by the local context. Regional SDF’s must:

- determine the desired future character of a specific area
- identify the strategic locations for densification within a region;
- provide guidelines and standards for densification within the strategic locations; and
- provide guidelines and standards for densification within the suburban environment.

Generally in South Africa there are negative perceptions with regards to high-rise, high-density dwelling units, as it deprives the individual/family from a private recreation space. It is therefore very important for Regional Managers to include extensive public participation processes in the implementation of their spatial frameworks so that not only do the public have a chance to mitigate negative impacts of high density developments but also so that they may begin to understand the positive spin-offs and rationalisation of densification.

3. Direct Public Investment and Budget Alignment

In order to achieve the correct urban system and environment that is conducive to the concept of compaction and densification, local and provincial government will have to invest extensively in aspects such as –

- the upgrading of public environments
- the provision of social and recreational facilities in high density areas
- the provision of an efficient, high-quality public transport service in specific focus areas
- the provision of social housing in previously disadvantaged areas which have the potential to be developed as integrated, higher density residential areas.
- the provision of engineering infrastructure to support higher densities

Direct public investment is also essential to provide a fertile environment for private investment to take place in.

Through the spatial development frameworks, and through a process of prioritisation in accordance with the City Strategy, the budget should be aligned in such a manner that local government is able to address certain parts of the city over time, and create the correct environment for the desired private development to take place.

4. Incentives and Disincentives

Once the Regional Spatial Development Frameworks clearly sets out the spatial distribution of the various density zones, public investment has taken place and a system of good governance has been established, the next question is how to harness and direct existing and potential development energy in such a way that the ultimate goal of a sustainable and efficient metropolitan area can be achieved.

The answer lies in a collection of incentives and disincentives that can be implemented, and which is predominantly the responsibility of local government to activate and support. How these incentives and disincentives will/could apply in Tshwane is a matter that needs to be decided by Top Management, as this requires a principle decision on how the municipality will conduct its business with regard to certain types of developments.
4.1 Tools and Measures to Curb Development in a Specified Area

Placing a Moratorium on new rights
Provincial and metropolitan government could place a moratorium on the approval of new rights for land-uses such as retail, offices and low-density residential developments in areas on the periphery and too far from the CBD. Statements to this effect could be taken up in the IDP and Spatial Development Framework and given effect through the Land Use Management System.

Parking control: less places and higher charges
This instrument can be used to frustrate developers from developing in certain overheated suburban nodal locations. Income derived from parking fees can also be used to improve the public transport system.

Tolling roads
Tolls are typically charged to enable the construction and maintenance of roads, and to influence travel behaviour by making trips longer, more costly and more frustrating. This tool could also be used to encourage the use of public transport and frustrate the development of private motor car-focused suburban development. In the longer run it may also prompt private motorcar commuters into moving closer to their places of employment.

Suspending infrastructure provision in areas on the periphery
In many states in the USA, local governments have the power to, via their comprehensive, long range plans, indicate areas in which infrastructure will not be provided over a 15-20 year period. This can also be done by using an urban containment measure very similar to the urban edge, viz. that of demarcating ‘Urban Service Boundaries’ beyond which no public infrastructure will be provided, thus forcing developers to invest closer to the strategic areas.

4.2 Tools and Measures to Stimulate Development in a Specified Area

Fast-tracking land development applications in areas close to the urban centre
Special provisions can be made by the authority concerned for the fast-tracking/streamlining of land-use applications in areas demarcated for densification. Town planning schemes in the Metropolitan area should be amended to allow for a simpler advertising process.

Transfer of Development Rights (TDR)
Used in conjunction with a set of incentives, local governments have used TDR to ensure the transfer of existing rights from areas where further development is not desirable, to areas where it is desired. It could for instance be used to stimulate development in nodes in former townships and along transport corridors.

Providing Inexpensive, Serviced Land in Specified Areas
A local authority could offer lease/sell land (owned by the council, or by acquired by expropriation) in an area in which it would like to stimulate development at very reasonable rates to stimulate mixed land use development and/or development at higher residential densities.

Relaxing Land-Use Controls in Specified Areas
Town planning schemes and building regulations could be amended to allow for higher densities and mixed land-use zones in for instance the CBD and nodes in inner city areas.

Providing Incentives
Developers could also be enticed into developing housing at higher densities through tax credits. Tax-exemptions could also be issued to finance high-density housing additions to non-residential developments. “Incentive zoning”, whereby developers are given special rates on property taxes or engineering services, could also be used to stimulate the development of desired land uses in dedicated areas. Incentives should be focussed on:

- New high density mixed land-use residential developments;
• Mixed land-use Brownfield redevelopments at high densities;
• Mixed land-use developments throughout the city; and
• Corridor-focused development.

5. Monitoring and Evaluation / Scorecard

The envisaged outcomes and appropriate performance indicators of the proposals and strategy developed by the City need to be clearly spelt out and performance of officials measured against the indicators on an annual basis. Reports to Council should be prepared on progress in this regard. Performance indicators in this regard should at least include the following:

- How many additional hectares of land on the periphery of the existing built environment have been used for Greenfield developments over a period of time?
- How many additional people are using public transport?
- Do people have a clear sense of place/mental image of the city in terms of its structure?
- What is the ratio’s between the number of units within each housing type?
- How many people live in which housing types?
- What is the average length (time) of trips between home and work for residents?
- What is the portion of income spent on travelling by various groups of the population?

6. Targets and Timeframes

The objectives of compaction and densification in the City of Tshwane obviously aim to achieve an utopian state of an efficient city that caters for the needs of all its residents within a highly liveable and competitive environment.

This is not a situation that will be achieved in the short or medium term, and it is therefore important to structure the process of densification in such a way that certain targets can be met within certain timeframes, and each small achievement contributes over the long run towards the ultimate goal of a sustainable human settlement.

The short term targets will therefore be built around the status quo in the city in terms of infrastructure, public transport, lack of incentive system, budget etc., and will endeavour to create a greater level of efficiency within the current constraints. The longer term targets are then based on the assumption that all the prerequisites for efficient, compact city are in place.

<table>
<thead>
<tr>
<th>Short Term Targets</th>
<th>Long Term Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Harnessing existing potential for densification</td>
<td>• Establish an urban form that promotes sustainability and efficiency</td>
</tr>
<tr>
<td>o Densification around existing employment or activity centres</td>
<td>• Create an institutional environment that supports the restructuring of the</td>
</tr>
<tr>
<td>o Densification and the creation of integrated public environments around existing,</td>
<td>metropolitan area</td>
</tr>
<tr>
<td>o Densification and the creation of integrated public environments around the proposed</td>
<td>o Incentives for residential densification and urban compaction should be</td>
</tr>
<tr>
<td>o Densification along existing, operational collector (main) bus routes.</td>
<td>developed, funded and implemented.</td>
</tr>
<tr>
<td>• Compile Spatial Development Frameworks so that the long term densification strategy</td>
<td>o An efficient, new bus system must be implemented along demarcated high priority</td>
</tr>
<tr>
<td></td>
<td>development corridors and activity spines.</td>
</tr>
<tr>
<td></td>
<td>o Enhance the capacity of the existing rail network</td>
</tr>
<tr>
<td></td>
<td>o Maintenance of corridors and nodes should be actively pursued.</td>
</tr>
</tbody>
</table>
Making Tshwane efficient, viable, convenient and attractive

<table>
<thead>
<tr>
<th>are reflected within those plans, but structure the implementation framework in such a way that only those areas that are viable in the short term are focussed on</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Facilitate the development of the correct housing typologies in specific areas</td>
</tr>
<tr>
<td>Create the necessary density thresholds to stimulate economic development at high potential locations.</td>
</tr>
<tr>
<td>o Local Government should invest in institutional housing</td>
</tr>
</tbody>
</table>

### 7. Immediate Recommendations

In order for the implementation of the Compaction and Densification Strategy to be taken forward, there are certain key drivers that need to be initiated, namely:

- The Regional Spatial Frameworks must incorporate the proposal made in this strategy
- Council must devise incentives and disincentives to promote densification and compaction
- The Infrastructural Budget must be aligned to the principles and needs that arise from increased densification of our city
- Strategic planning around the provision of infrastructure must align with the Regional Spatial Development Frameworks in terms of priority areas for densification.
- Institutional housing must be provided in co-operation with the above mentioned zones and strategies.