Spatial Planning and Densification: The Case of Glenwood, Ethekwini Municipality, South Africa

By

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A Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of Masters in Town and Regional Planning.

2021

Abstract

The study examined the concepts of spatial planning, in the form of land use zoning and densification, with the purpose of establishing possible solutions to the post-apartheid urban residential land use in practice. According to Twinam (2018) and Calder (2017), zoning is the subdivision of urban land for different use purposes, accompanied by specified lots and building regulations. The zoning regulations include permissible lot sizes, the floor area ratio (FAR), building height, lot coverage, and boundary set-backs. The lot size is indirectly proportional to the degree of densification, whilst other specified zoning elements are directly proportional to the degree of densification.

This study investigated the extent to which spatial planning encouraged densification and land use change in the suburb of Glenwood in the Ethekwini Municipality, South Africa. The use of a mixed methodology and triangulation provided pragmatic solutions to the spatial planning matters investigated in this study. Effectively, the study answered the question of how spatial planning encouraged/discouraged densification in the suburb of Glenwood. The examination of the South African spatial development legislative framework for the Ethekwini Municipality and the studying of the interface between the broader Ethekwini spatial planning objectives with Glenwood's lot zoning brought to the fore possible zoning alternatives for densification in the Glenwood area.

The national South African legislative policies that guide densification objectives in the Ethekwini spatial planning policy framework are mainly the Constitution (Sections 24, 25, 26 and 154), the Municipal Systems Act (Sections 23 and 25), the Spatial Planning and Land Use Management Act (SPLUMA) (Sections 7, 21, 25 and 28), and the Housing Act (Section 2). The policy objectives of these provisions directly and indirectly demand the densification in the inner suburbs of South African cities by virtue of the inner city suburban areas' proximity to areas of socio-economic vitality. For example, the Constitution prohibits any law that allows arbitrary deprivation of property in ways that prevent the redress of past racial immovable property discrimination. SPLUMA compels the scheme to promote economic growth, social inclusion, efficient land development, and minimal impact on public health and the environment. The Housing Act also directs higher housing development density to effect economical use of the land and services. The prescriptions cited are features of densification. Ethekwini's Spatial Development Framework (SDF) policies are conceived within this national legislative environment.

Amongst the Ethekwini SDF policies are the Ethekwini Densification Plan, the Berea Urban Core Extension Plan (BUCEP) and the resultant Ethekwini Land Use Scheme for the Glenwood area. The Densification Plan leaves unclassified densification levels in some of

the strategically located residential areas like Glenwood. The Berea Urban Core Extension Plan is a Local Area Plan (LAP) with the intention to retain the apartheid configured spatial arrangement in the Glenwood area, and the land use scheme for Glenwood demonstrates discouragement of densification outside the 400m buffer zone of a single provincial road, in this instance the R102. The limited attempts at densification in the Glenwood area demonstrate a contradiction between the national level spatial development policy prescriptions and the local level practical objectives. The findings from key informants' data and survey data also demonstrate relatively sparse spatial development in the Glenwood suburb. The Ethekwini Municipality's density gradient for Glenwood also contradicts the international trend observed from the Accra and Rome case studies. This study recommends a study of the Berea Urban Core Extension Plan, with the specified intent to densify the Glenwood and surrounding areas, with pro-active zoning results that promote pro-poor densifying of the residential developments in the area.

Declaration

University Of KwaZulu-Natal College of Humanities Declaration – Plagiarism

I, Solomzi Alexander Mnguni, declare that:

1. The research reported in this dissertation, except where otherwise indicated and appropriately referenced, is my original research work.
2. This dissertation or any part of it has not been and is not to be submitted for any other degree or examination at any other university.
3. This dissertation does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
4. This dissertation does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:
   4.1 Their words have been re-written but the general information attributed to them has been referenced.
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This dissertation as titled is my own work. It has not been submitted before for any degree or examination at any other university.

Student Signature : Date: 03 September 2021

Supervisor's Signature: _____ Date: _____

Acknowledgements

- My sincere gratitude goes to my wife, Loyi Mnguni, for her efforts in ensuring that family life continued smoothly during my study period.
- I send my regards to my family, particularly my siblings, my children, and my late parents, Mr Albert Livingstone Ndumiso Mnguni and Mrs Patricia Ntombentle Mnguni, for instilling in me the values and ethics that have led me to become the person I am today.
- I appreciate the intergenerational working relationship established with my classmates. It eased the journey and created long lasting social networks.
- Distinct appreciation is relayed to the participants who were at the core of this study; their friendliness and eagerness to assist was astonishing.
- Lastly but most importantly, my gratitude goes to my supervisor, Professor Hangwelani Hope Magidimisha. Without your relaxed guiding support this study would not have been possible.

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Chapter One: Introduction

1.1 Introduction

The spatial configuration of South African cities is based on apartheid spatial arrangement which created places of exclusion of certain racial groups to the benefit of others, relative to areas of opportunity (Harrison, Todes and Watson, 2008). The apartheid spatial configuration was based on master planning which was dominant in the period between the 1940s and 1970s (du Plessis, 2014). There is a dominant view in the planning literature that spatial configuration in South African cities remains segregated, with the continued reproduction of the apartheid socio-spatial arrangement (Harrison et al., 2008; du Plessis, 2014; Nel, 2016; Todes, 2017). Densification or compact city development is amongst the post-apartheid strategies adopted to reconfigure the apartheid city landscape. Figure 1.1 locates Glenwood, an Ethekwini Municipality suburb in South Africa, which the study uses to investigate the extent of the impact of spatial planning on densification.

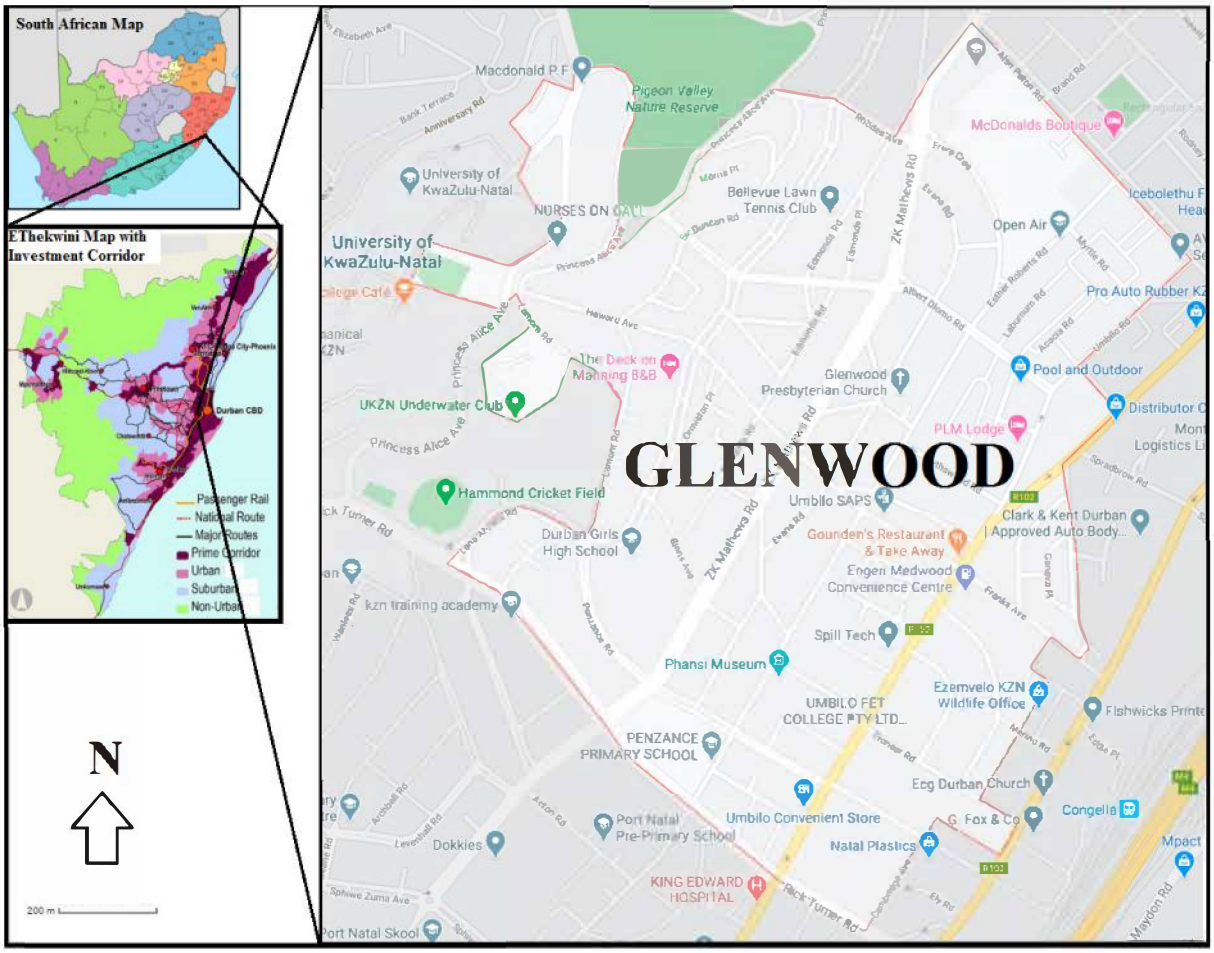

Figure 1.1: Glenwood Locality Map (Google Maps, 2020b; Ethekwini Municipality , 2019b)

This study examines the extent to which densification is carried out as a form of investigating the claims of disconnection between planning thoughts expressed in policies, and the emerging realities of continuity. Arguably, planning is about "the future vision and long-term aspirations of a community", whilst zoning "deals with immediate building issues" (Talen, Anselin, Lee and Koschinsky, 2016: 2). Zoning is an instrument that guides land use for the realisation of broader long-term spatial planning outcomes. Zoning is therefore a key instrument for the realisation of densification in places located closer to areas of opportunity.

This chapter introduces the study, provides the research methodology employed for the study, presents the outline of the study's chapters, and provides a summary of the content of each chapter. The research plan for the study begins with the problem statement. The aim, objectives, main question and sub-questions draw the lines upon which the problem of the relationship between the broader spatial planning objectives (densification) and local zoning are to be engaged.

1.2 Research Problem

The South African spatial planning system has been criticised for its failure to enforce the intended vision of integration and densification set out by the National Planning Commission (NPC) (RSA, 2011; Orange, 2014). According to Ethekwini Municipality (2019b), densification is encouraged in areas of opportunity and/or in areas with relatively higher infrastructure capacity. Glenwood, a previously whites-only suburb, seems to have both of the features for densification (Breetzke, 2009). The researcher's preliminary study observed a lower level of densification in the area. The observation was marked with a negligible presence of multiple dwelling properties, expressed as multiple-storey buildings, in the area northwest of the R102 provincial road. This area constitutes about three quarters of the suburb. One hundred and thirty-one properties were observed, on the suburb's main street (Z.K. Matthews Road) and on an access street (Askew Grove), and no property was seen to be a block of flats for multi-family dwelling, expressed as multi-storey buildings. The significant absence of multi-storey buildings raises spatial planning questions for the area, which are intricately linked to the municipal and national planning systems. According to Statistics South Africa (StatsSA) (2011), the Glenwood population density is 3289 persons per square kilometre whilst Umlazi, KwaMashu, Clermont, Chatsworth, and Newlands East have population densities of 8530, 8183, 7501, 4601, and 3549 persons per square kilometre respectively. This illustrates Glenwood's lower levels of population density in comparison to those in the historically African townships which are further away from the areas of economic opportunities.

Breezke (2009) posits that Glenwood's spatial planning is founded on apartheid's rigid, top-down master planning approach with racial and socio-economic differentiation objectives. The advent of the democratic period brought with it the transformation agenda for integration and planning approaches to disintegrate and reconstruct South African cities like Durban into socio-economically and racially integrated landscapes. The strategical location of previously white suburbs like Glenwood in terms of economic opportunities and services creates a demand for accommodation, which is also a demand for densification. The observed disjuncture between planning policy objectives and local realities creates a gap which this study seeks to investigate using the case of Glenwood.

1.3 Aim, Objectives, and Research Questions

1.3.1 Aim

The aim of this study is to investigate the extent to which spatial planning encourages densification and land use change in Glenwood, Ethekwini Municipality, South Africa.

1.3.2 Objectives

- To review the guiding legislative framework for spatial development in the Ethekwini Municipality.
- To investigate the relationship between the broader Ethekwini Municipality spatial planning objectives and local zoning at Glenwood.
- To evaluate prospective zoning changes for the Glenwood area.

1.3.3 Research question

How does spatial planning encourage densification in the Glenwood suburb?

1.3.4 Research sub-questions

- How does the South African legislative framework guide the spatial development in the Ethekwini Municipality?
- How do the broader Ethekwini Municipality spatial planning objectives relate to the zoning of the lots in Glenwood?
- What are the prospective zoning changes for Glenwood?

1.4 Methodology

1.4.1 Introduction

The section on methodology outlines the research design approach that the study uses. The section provides the sampling, data collection and analysis methods that the study uses. Justifications for the choices made on each of the design elements are clearly stated. The design elements are matched with the objectives.

1.4.2 Research design approach

The study uses a mixed methods approach to study the spatial planning and densification in Glenwood, a suburb in the Ethekwini Municipality. There is an interrogation of the spatial changes in terms of densification in the area. This involves the extraction of both subjective information for detailed data and objective information for measuring the extent to which physical changes may take place in the area. The study is carried out from a pragmatic paradigm standpoint. The intention of this pragmatic study is to develop practical solutions to social problems (Creswell and Plano Clark, 2011; Shannon-Baker, 2016; Brierley, 2017). The mixed method approach has been adopted so as to provide as much scope to the issue of the relationship between the demand for densification and planning as possible, whilst reducing methodological limitations when carrying out the tasks for the research. The study mixes qualitative and quantitative methods in its endeavour to evaluate the extent to which zoning accommodates the change in the land use of Glenwood, and provides the necessary validity and rigour for the project. Following the recommendation by Kumar (2019), this study adopts the sequential mixed methods approach since one method will be carried out after the other, rather than using both concurrently.

1.4.3 Sampling method

According to StatsSA (2011), the Ethekwini Municipality, within which the case study falls, has a population of 3,442,361 whilst Glenwood has 1864 dwellings and a population of 5395 persons. The study uses the purposive and stratified sampling methods to reach its findings. The study is hinged on the manner in which densification is managed, using the case of Glenwood. Transit Oriented Development (TOD) implies that densification intensifies along the main routes of any area (Ethekwini Municipality, 2018a). This makes transport routes and their levels an important variable in the densification (land use change) process.

Purposive sampling is used to select the local road most ideal for densification within this suburb. Ervens along Umbilo road, Z.K. Matthews road and Morris Place are selected. Umbilo road, with 66 examined lots, is a regional road and has the highest observed housing density. Z.K. Matthews road also with 66 examined ervens, is one of the widest, longest roads that run in the middle of the suburb and has a medium housing density in the suburb. Morris Place, with 4 examined lots, is one of the most localised roads in a least densified area. The study undertakes a survey of all the even numbered building plots along these roads, which amount to 136 properties. The even numbered plots are on the upper side of the east facing slope, with favouring sloping conditions for multi-storey buildings. The survey is a direct observation of the properties from the street, information from the Ethekwini Municipality's Geographic Information System (GIS) website, and the Google Maps

photographic images. The quantitative sampling method used is a disproportionate stratified random sampling (Kumar, 2020).

Key informants are purposively selected practicing professionals and community representatives (Pickard, 2017). The key informants are the municipal planner at the municipality's Land Use Management System (LUMS) strategic planning office, two private sector-operating professional planners, a municipal housing provision official, three different estate agency agents and the ward councillor for the ward in which Glenwood is located (Ward 33). The professional planners at the LUMS office and in private practice are sought to provide their views on the planning history, transformation and zoning possibilities for Glenwood.

1.4.4 Data collection methods

The study uses primary and secondary data collection methods which both constitute the qualitative and quantitative aspects of the mixed method, as Figure 1.2 illustrates. The primary data collection method is the direct observation of the current use of land and interview techniques. Secondary data are satellite images including the municipality's corporate Geographic Information System, spatial planning documents and scholarly documents.

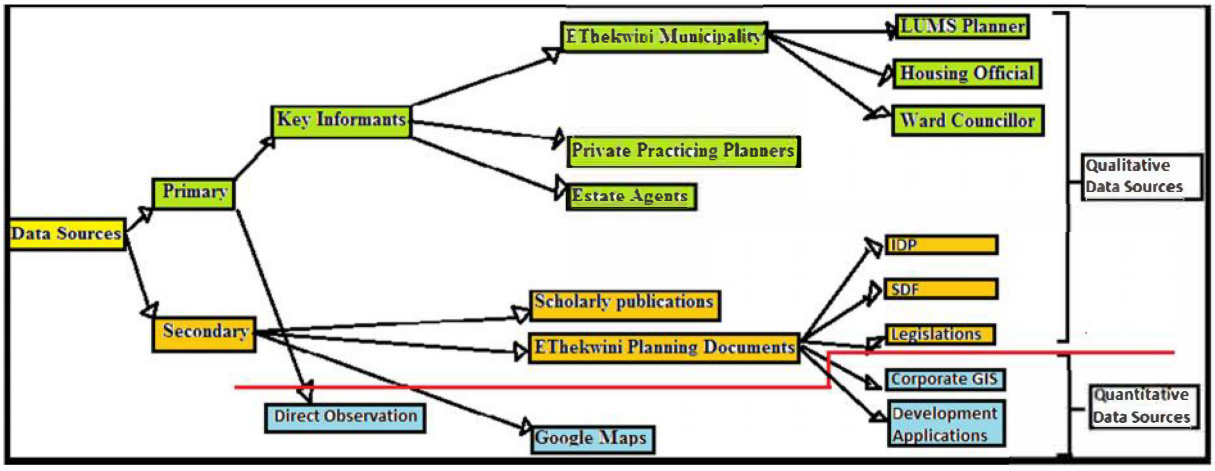

Figure 1.2: Data collection sources flow chart (Author, 2020)

1.4.4.1 Direct observation technique

The investigation uses the direct observation data collection method, where the researcher physically visits and records the activities taking place on the properties along Z.K. Matthews Road, as observed from the street. The description of the activity is viewed against the prescribed scheme for the area. The direct observation technique provides mainly

quantitative data. This technique is selected because of the technique's strength in providing a visual overview of the conditions of the study area, as the area physically exists. The researcher is, however, cognisant of the limitations of this technique in terms of its shortfall in highlighting the dynamics of the underlying factors leading to the outlook. Key informants' in-depth interviews and secondary sources are utilised as a measure to address these limitations. Initially the study intended to have individual interviews with possible non-owning poorer citizens seeking accommodative inclusion in the Glenwood area, however, these interviews have been excluded in compliance with the government's call for minimum social interaction in the wake of the COVID-19 pandemic.

1.4.4.2 Key informants in-depth interview technique

The research carries out in-depth interviews with the professional planner in the LUMS strategic planning section of the Ethekwini Municipality, two different private practicing professional planners, a municipal housing provision official, three different estate agency agents, and the Ward 33 councillor. Ward 33 is the smallest political demarcation in the study area. The professional planner at LUMS provides the government and municipal positions on spatial transformation, with particular reference to the Glenwood area. The private practicing planners provide views on the encounters with the policy implementation in spatial transformation by parties external to the government. The municipal housing official provides information about the housing demand in areas typical of Glenwood and how this demand is intended to be met. The estate agents provide information about the nature of the housing demand in the Glenwood area, to balance the views of the municipal housing provision official. The ward councillor provides the residents' official position on zoning in the area and how the position has been reached. In-depth interviews assist in providing improved interpretation and understanding of the underlying circumstances for the observed land use pattern in relation to the zoning regulations of the sites.

1.4.4.3 Secondary sources

Quantitative data of this study has mostly been sourced from the secondary sources. The secondary quantitative sources are mainly the photographic satellite images, the Municipality's corporate GIS data. The qualitative secondary sources are government spatial planning documents and scholarly documents. The research uses secondary sources to contextualise, enrich and verify the data from the primary sources. Data collection starts with examination of the sites using satellite images, and this gives a sense of the expectations and areas of note during the site visit for observation. The Corporate GIS provides the zoning information of the Glenwood plots. Government documents include the Statistics South Africa census data, the Ethekwini Municipality's spatial planning documents, and land-use-rights planning applications. Scholarly documents relate to earlier

research in the area and around the issues of the study. These sources are accessed from the spatial planning and housing development offices of the Ethekwini Municipality, non-governmental and/or community organisations like the South African Cities Network, and the University of KwaZulu-Natal (UKZN) library. Annexure 3 is the data collection tool for the secondary data. Comparable information from such sources provides the geographical, historical and socio-economic context for the primary data, and also helps to assess the validity of the primary data. Different sources of data are used to validate the data.

1.4.4.4 Schedule of research objectives and their related data sources

Table 1.1 provides an overview of how the objectives relate to the data sources for carrying out the study.

Table 1.2: Schedule of the objectives related to the data sources (Author, 2020)

	Objective	Data Sources
1	The review of the Ethekwini spatial planning policy framework - Establishing the densification objectives	Policy documents (The Constitution, SPLUMA, MSA)
		Scholarly sources (conceptualisation of densification)
		Key informants
2	Investigation into the relationship between the broader Ethekwini spatial planning objectives and local zoning at Glenwood.	Policy documents (zoning scheme, EM densification model)
		Physical observation schedule
		Key informants
3	Zoning possibilities for Glenwood	Policy documents (EM densification model)
		Scholarly sources (lessons learnt from experiences of other localities)
		Key informants views
		Survey indications

1.4.5 Data analysis

The quantitatively analysed data is the data on the number of properties that have intensified as part of the post-apartheid spatial transformation agenda; and the data on the development applications. A statistical analysis of the number of development applications towards densification versus maintenance of the status quo is carried out. The study utilises

the Excel computer programme to establish tables and graphs about the percentage response categories from the respondents. The quantitative results are contested with the qualitative results.

The study uses thematic analysis to analyse the qualitative data, as advised in Du Plooy-Cilliers, Davis and Bezuidenhout's (2014) four stages for organisation and interpretation of the qualitative data. The four stages are organisation, interpretation, and substantiation of the qualitative data carried out in an intertwined way, rather than linearly. Transcription occurs within 24-hours of each interview. The aim and objectives guide the development of the themes in the data organisation process. Data organisation entails identification of recurring words and concepts which form codes. The themes are created from the highest level codes and the data interpretation stage draws conclusions from the processed data. These conclusions are integrated with the quantitative data results for verification and consistency. The conceptual framework is integrated with the processed data. The explanation of the relationships found in the data and contextualising of the study within the framework constitutes the data interpretation stage. The truthful reporting evidenced with the extracted excerpts of raw data, a triangulation technique, and use of mixed methodology verifies the data obtained.

1.4.6 Rationale

Figure 1.1 (locality map) shows Glenwood's geographical location to be in close proximity to areas of economic opportunity. The convenient location includes location on the prime investment corridor, with access within a three kilometre radius to: the central business district (CBD); at least four shopping malls; the harbour; three railway stations; national roads (N2 and N3); a provincial road (R102) and two arterial routes (M4 and M7); the University of KwaZulu-Natal (UKZN); the Durban University of Technology (DUT); at least three high-service quality secondary schools; the Umbilo industrial area; and cargo storage facilities. It is also of significance to note the presence of a fast growing squatter settlement, Mayville, at the outer edges of the three kilometre radius from the Glenwood suburb. Mayville is the closest formalised African township to the CBD and forced organised occupation of environmentally preserved areas by residents in the surrounding areas has been of significance in 2019. The significance of this activity is indicated by the permanent presence of the municipal police guarding against further extension of squatter settlements into the area along Mary Thiphe Street since 2019.

The Glenwood zoning map (Ethekwini Municipality Corporate GIS, 2020) indicates the significant absence of parcels of land that are zoned as General Residential (GR). The City of Cape Town (2012) differentiates between single residential zones, defined as single

family dwelling houses in low-to-medium density neighbourhoods, and the general residential zones, described as urban living at higher residential densities. The presence of General Residential zoned plots is an expression of one form of densification. This form of densification is lacking in more than three quarters (north-western section) of the Glenwood suburb, regardless of the suburb's strategic location.

This study seeks to examine Oranje's (2014) claim about South African planning that is ill-equipped for spatial planning changes. The study examines spatial planning for neighbourhood change in a previously whites-only suburb, which can be classified as an upper middle class residential area. Revington, Moos, Henry and Harder (2018) point to the limited research on the role of planning in moulding housing markets. This study adds value to the examination of zoning as a densification measure that provides lower middle class housing markets for spatial justice and integration.

1.5 Fieldwork Challenges during Data Collection

The researcher encountered two main challenges when carrying out the research fieldwork. The challenges have been: COVID-19 regulatory and health risk environment, and the physical inaccessibility of the sampled lots for a full examination.

The COVID-19 environment compelled the researcher to change strategy from conducting face-to-face interviews with key informants to using virtual platforms, mainly WhatsApp for interviews. Security measures in the form of high walls and the physical layout of buildings rendered the backyards of the properties selected generally unobservable to the researcher. The physical inaccessibility challenge was foreseen and Google Maps and the Ethekwini Municipality's Corporate GIS have been used to overcome this shortfall in data provision.

1.6 Limitations of the Study

The study was planned to be carried out under normal socio-economic and environmental conditions without any foresight about the Covid-19 pandemic under which the data collection process was executed. The virtual communication platforms had to be relied upon for data collection with key informants. The sudden societal changes in response to the epidemic also prolonged the data collection process as participants would keep postponing the scheduled interviews. The qualitative aspect of facial expressions of participants could not be ascertained during the data collection process. The views are of the participants were nonetheless captured from the participants' verbal expressions.

1.7 Structure of the Dissertation

The dissertation has six chapters outlined in Table 1.2. A brief description of the content of each chapter is discussed after the table.

Table1.3: Chapter Outline (Author, 2020)

Chapter No.	Chapter Content
1.	Introduction and methodology
2.	Conceptual and theoretical framework
3.	Literature review
4.	Case study
5.	Study findings
6.	Summary of findings, recommendations and conclusion

Chapter One: The Introduction and Methodology

Chapter One introduces the study on spatial planning and densification. The chapter begins with background provision of South African cities' spatial arrangements and the adoption of densification as a spatial planning strategy for achieving spatial integration and justice. This section provides a definition of densification. The chapter proceeds to advance the general and specific purpose of the research, described as a contentious matter worth investigating. Key questions are outlined as the drivers for the research. There is also the methodology of the study which is included in this chapter. The chapter concludes by giving a general outline of the structure of the dissertation.

Chapter Two: The Conceptual Framework

Spatial planning views densification as a vital instrument for attaining spatial justice in cities. Chapter Two provides the theoretical framework for this study on spatial planning and densification. This chapter elucidates, first, the modernisation theory which helps guide the description of the conditions which shape the current landscape. Secondly, postmodernist planning provides an understanding of contemporary planning's theoretical trajectory. Thirdly, the collaborative planning theory is elaborated upon as a theory that guides both the frame of work and the implementation strategy of post-apartheid planning. These theories ground the arguments of the densification planning strategy and assist in bringing to bear the extent to which the policy positions reflect what is happening practically in places.

Chapter Three: Literature Review

This chapter reviews the literature from around the world with regard to urban densification as a spatial planning strategy. International case studies are reviewed, starting with

European work, then the review gets closer to the work on other African countries before closing in on the work on South African cities and the Ethekwini Municipality in particular. The review focusses on how spatial planning practices enforce (or defeat) densification. The review of spatial planning practices encompasses the examination of the spatial planning regulatory framework and local zoning activity. The review concludes with the discussion of Ethekwini's densification modelling.

Chapter Four: Case Study of Glenwood

The research findings are presented in Chapter Five. This chapter is basically divided into two major sections. The first section provides the general background of Glenwood, with the focus on the existing situation (socio-economic conditions and infrastructure provision). It is followed by a detailed presentation of the data on spatial planning as a guiding planning policy framework, and zoning as a measure of densification in Glenwood. However, there is no discussion about the findings in this chapter, other than just presenting the data from the field.

Chapter Five: Study Findings

The information obtained from the field and presented in Chapter Four comes under analysis in this chapter. The focus is to give insights into the nature of the findings presented above, by way of explaining in detail densification as a policy objective and the way in which the policy finds expression practically. The discussion is informed by the objectives, the literature in place and the data obtained from the field.

Chapter Six: Summary of Findings, Recommendations and Conclusion

This is the last chapter of the dissertation. Based on the overall research, this chapter proposes a number of recommendations for possible zoning alternatives as part of the Ethekwini Municipality's densification strategy. The chapter also summarises the whole research paper by highlighting the major issues raised in the dissertation. The researcher looks at various works of other researchers on this subject to perform this task. Limitations encountered during the research process are also outlined. The conclusion of the chapter gives an outline of the structure of the whole thesis.

1.8 Conclusion

The proposed research reviews the Ethekwini Municipality's current spatial planning framework, from the background of apartheid's segregated master planning spatial configuration, in an attempt to contribute to the studies of spatial planning and densification. Post-apartheid spatial planning promotes densification and compact city development as an

expression of spatial justice. Zoning is part of the means and expression for meeting densification objectives. The problem of the study is the failure of spatial planning to enforce the vision of integration and densification in strategically located places. The aim is to investigate the extent to which planning encourages densification as part of spatial justice in Glenwood. The modernist planning theory acts as a tool for analysis of the apartheid spatial arrangement. The postmodernist collaborative planning theory guides the interpretation and evaluation of the post-apartheid spatial planning implementation in the Glenwood area. The study uses a mixed research approach to accommodate the qualitative and quantitative aspects of its objectives. The sampling method is purposive sampling. Direct observation, in-depth interviews and secondary data sources pivot the triangulation technique for data collection. Univariate analysis of the quantitative data and thematic analysis (in the form of data organisation, interpretation and substantiation) of the qualitative data constitute the data analysis methods.

Chapter Two: Conceptual and Theoretical Framework

2.1 Introduction

This study of densification, as a spatial planning approach with the intent to contribute to the redress of urban issues particularly housing provision, calls for discussion of the main concepts and approaches that the study utilises. This chapter discusses the concept of spatial planning and densification as a spatial planning approach. The theoretical frameworks of modernist planning, postmodernist planning, and collaborative planning complete the chapter. These theoretical frameworks are selected to guide the study. Modernist planning is selected on the basis that the contemporary physical layout of cities seems to be an expression of persistent modernist planning activity. Postmodernist planning helps to guide the study as the contemporary theory of planning since spatial planning, and society as a whole, have evolved from the period of modernity. Collaborative planning picks the element of inclusivity in the postmodernist planning as the prominent contemporary planning feature to direct the study.

2.2 The Spatial Planning Concept

Spatial planning is referred to by various names at different times and places, like town and regional planning, town planning, city planning, urban and rural planning, regional planning, or planning (Taylor, 2010). Spatial planning has a horizontal or cross-sectoral dimension and a vertical or hierarchical dimension (Acheampong, 2019). The horizontal dimension under scrutiny is the land use regulation and housing areas, whilst in the vertical dimension it is the various government levels that act on the land use regulation of a local area. This study adopts the spatial planning concept as a general reference to land use regulation which covers both rural and urban areas, but with special attention to urban planning which refers to spatial planning in towns and cities. This subsection begins with discussing the meaning of spatial planning and proceeds to the benefits and shortfalls thereof. The zoning element of spatial planning is engaged with, followed by the expression of urban forms as a spatial planning expression and a conclusion.

2.2.1 The meaning of spatial planning

The study defines spatial planning as land use regulation, within the broader scope of land management, and it is characterised by legislation, by-laws and zoning markings (Silverman and Zack, 2007; Acheampong, 2019). The laws and regulations are supposedly agreed upon stipulations, through governing structures, about how pieces of land should be used so as to attain a commonly established purpose (Taylor, 2010). Spatial planning expresses

spatial and accompanying socio-economic arrangements. The spatial development stipulations are also generally tabled as maps, referred to as spatial planning or zoning maps. The socio-economic features of spatial planning include population density, permissible land use activities, and vegetation cover. Land use zoning (zoning) is an essential part of spatial planning and is given special attention below.

Spatial planning is as old as human existence within a society, but modern planning as expressed in the Western planning system dominant in urban areas is traced back to the period of industrial revolution in European countries. It evolved as a piecemeal activity in an attempt to combat the externalities expressed as the adverse effects of industrial development like congestion, health-related concerns, and mass movement needs and difficulties (Basset, 1922; Siegel, 1955). According to Fei, Cheng, Mao, Liu, and Zou (2017), Britain developed the first nation-wide land use zoning map in the world in 1930.

2.2.2 The benefits of spatial planning

Land use regulation provides efficient use of land, creates or maintains balance in land systems, and advances the sustainable use of land resources (Fei *et al*, 2017). Spatial planning, amongst others, assists communities to attain efficient and profitable use of land in ways that minimise the negative externalities from individual persons or groups which act to the detriment of the common goal. Lack of spatial planning is illustrated in the chaotic conditions found in widespread informal settlements in the dominant South African cities. These conditions are characterised by: the absence or poor waste management; difficult access to some properties; difficulty in providing bulk services; increased fire and health risks; community establishments within flood lines; various aspects of pollution; and general environmental degradation. Basset (1922) exemplifies the lack or absence of spatial planning with disorderly competitive building of skyscrapers, with each latest development seeking a better view to the detriment of neighbours with prior-built building structures. Spatial planning is intended to benefit all social classes as its absence or lack thereof affects all. The activity of planning is a vehicle for the establishment of common spatial community goals, as well as a guiding force to reach the set goals. Zack and Silverman (2007) posit that land use regulation is used to protect property values, to isolate nuisance uses, to assist service provision, and to prevent exploitation. Land use regulation provides order, defined by common community interests rather than by individual interests, to the spatial organisation undergirded by general welfare, health and safety concerns of all.

2.2.3 The pitfalls of spatial planning

Spatial planning limits the individual activities and choices of people under the regulations' jurisdictions. Land use regulations tend to create a hurdle to the provision of residential units (Broitman and Koomen, 2015; Jackson, 2016). Zoning for low-density in urban centres reduces the highly needed residential construction in these areas, and the resultant limited supply of housing pushes up the costs of housing. This outcome of high housing demand and high housing-access-costs benefits the primary housing owners of the area, to the exclusion of those in need of housing in the area. So in this case, spatial planning actually excludes the poor from housing in the area.

Spatial planning is in essence centred on zoning, a local level planning activity. Other sectoral areas either inform zoning or zoning directs them. This study does not underestimate the other aspects of spatial planning, but it is directly concerned with local level land use activity for housing provision through the concept of densification. It is for this reason that zoning is given special attention underneath.

2.2.4 Zoning as an element of spatial planning

Zoning is a rational spatial planning tool for the management of urban growth directions, leading to the overall shape of the urban area (Warren, 2009). Execution of the spatial planning regulations is realisable at the local level, and local authorities develop zoning policies, codes and maps in line with upper level government prescriptions to develop what is referred to as zoning ordinance. Zoning is the subdivision of urban land for various land use purposes, describing permissible and impermissible uses, as well as lot sizes and building regulations for each site (Basset, 1922; Calder, 2017; Twinam, 2018). Land is subdivided through a process ordinarily called 'districting', allocating each section of urban land for a particular dominant use. The common, but not limiting, land uses (zones) are residential, industrial, commercial, transportation, and open spaces and recreational areas. Some zones are compatible whilst others are not, like commercial is compatible with residential but not with industrial. Each of the use zones is further subcategorised, for example residential is further categorised into different densities. Zoning specifies the minimum lot sizes, floor area ratios (FAR), maximum building heights, lot building coverage and boundary set-backs (Calder, 2017). Use intensity, expressed as density, particularly for residential zones, is a major determinant of the applicable land use regulations in a given area. Zoning controls that encourage densification specify smaller lot sizes, higher FAR, bigger lot building coverage and a higher maximum building height. These various regulatory prescriptions are presented as different colour coded zoning maps overlaid sequentially on each other. There is an increasing call for densification as a better approach

to spatial planning. The concepts of urban forms and densification are central to this study and thus require attention to contextualise the study.

2.2.5 Urban forms as an expression of spatial planning

The mapped upper level zones of an urban area model the structure of the city. Figure 2.1 illustrates the various forms in which the zones may be arranged in a city. These forms are referred to as ecological urban forms, depicting organic zoning development as part of the natural growth of an urban area. The three classic ecological forms, labelled A to C, are: A. Burgess's concentric zone, B. Hoyt's sector, and C. Harris and Ullman's multiple nuclei models as illustrated in Figure 2.1. These spatial forms are only examples, as contemporary studies have illustrated that cities may take various forms which differ from what is depicted in the classic ecological models (Bertaud and Malpezzi, 2003).

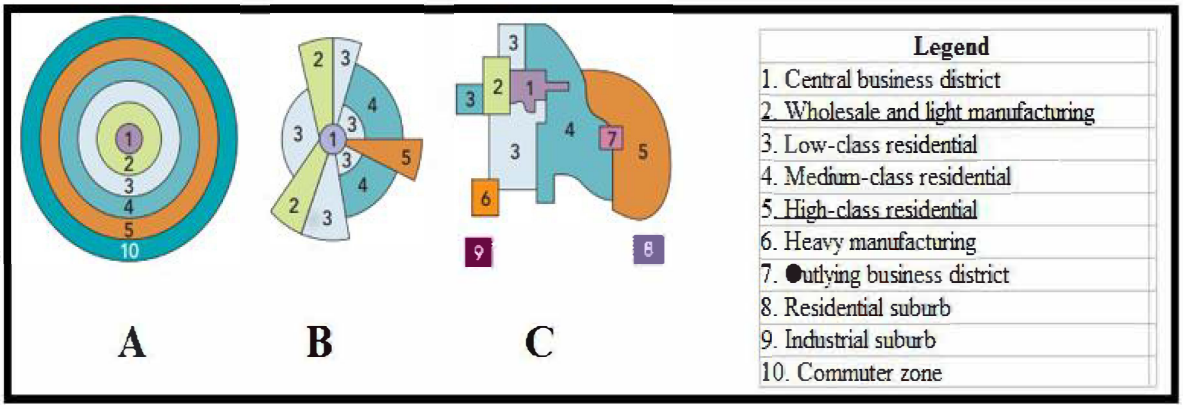

Figure 2.1: Urban Spatial Forms (Pacione, 2009)

These models have nonetheless stood the test of time in terms of closely resembling reality. All three models indicate the close location of a low class residential zone to the central business district; the core and the cause of the urban establishment. Imposition of any of these models in the Glenwood area as part of the Ethekwini Municipality's spatial planning system creates a misfit. Glenwood resembles the middle-to-high class residential zones labelled as 4 and 5 in the figure above. Glenwood's location is nonetheless mainly in the zones labelled 2 and 3, according to the modelling in Figure 2.1. Different zones and subzones implicitly define different levels of density and density gradient, which in turn informs the urban spatial structure. Figure 2.2 demonstrates Collin Clark's urban density gradient modelling. Authors like Berry, Simmons and Tennant (1963); Tse (1972) find Collin Clark's graphical modelling of an urban density gradient as generally fitting for residential urban density change. According to this theorisation, Glenwood, by virtue of its close location to the CBD, is expected to be more densely populated than other residential areas that are directly served by the CBD.

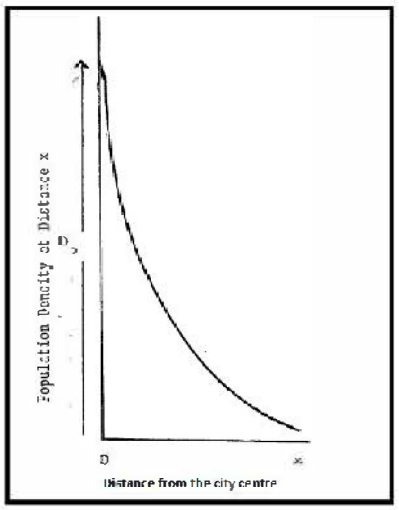

Figure 2.2: Clark's Urban Density Graphical Modelling (Tse, 1972)

2.2.6 Synopsis of the spatial planning concept

This subsection on the spatial planning concept provides the various names for this concept, as well as the horizontal and vertical applications of the concept. Modern planning has been defined and the origin of its modern version as an attempt to address the chaotic industrial city conditions has been outlined. Features of the chaotic industrial city conditions include overcrowding, poor health conditions and poor transportation channels. The study identifies the shortcomings of spatial planning as the interference with individual liberties and the tendency to reduce the stock of dwelling units. This subsection has also unpacked the concept of zoning as a tenet of spatial planning as the subsection proceeded to illustrate the relationship between zoning and urban forms. The arrangement of zones in the classic ecological urban spatial forms does not fit the land use zone for Glenwood.

2.3 Densification

Densification is important as a key tenet of the contemporary spatial planning approach. Some of the spatial planning studies express densification as a smart city or compact city development approach. The discussion of densification starts with its constructive core word, 'density'. The subsection proceeds to deliberate on the advantages, characteristics and critics of densification, before engaging in a discussion about the concept and its relevance to the study.

2.3.1 The meaning of density in spatial planning

Densification, as an act of increasing density or the proximity of individual items to each other, is defined in various ways. The main elements in defining density are specification of the individual items referred to and the context in which the individual items are conceptualised (Boyko and Cooper, 2011). Density is one of the main spatial planning

concepts which inform the nature of a land use regulatory framework in terms of the envisaged land use. Boyko and Cooper (2011) provide a simple spatial definition of density as the number of units in a given area, and further list 23 density contexts (forms). Amongst the density forms which Boyko and Cooper (2011) list are the city; metropolitan; net neighbourhood residential dwelling/population; parcel; building site coverage; floor area ratio; and habitable rooms per hectare density forms. City density, defined as the number of dwelling units divided by the entire developed area of the city, provides a general description of what is also referred to as the density gradient. A density gradient shows, on a graph, the number of individual spatial units (vertical axis) versus the distance from a city's centre (horizontal axis) (Turok, 2011; Broitman and Koomen, 2015).

The density forms have a gross aspect and a net aspect. The gross aspect refers to the whole area in the density calculations, whilst the net aspect refers only to the area which the specified context covers and thus excludes other parts of the area which the specified context does not cover. For example, a parcel land (A) measuring 64km^2 may have dwelling sites, road reserves, and recreational and environmental spaces, with dwelling sites covering only half of the area and also with living areas (houses) covering only a quarter of each dwelling site. If there are 256 dwelling sites in area A, then the gross residential density will be 256/64 = 4 dwellings/km^2 and the net residential density will be 256 dwellings / (0.5 * 64) km^2 = 8 dwellings/km^2. The building site coverage density in this case will be ¼ or 25 per cent of the dwelling lot. There is also density in terms of liveable spaces per site, mostly expressed as FAR. The floor area ratio (FAR) is defined as the built floor area on all floors, divided by the parcel area (ibid). This research concerns residential density in an already built up area and therefore adopts a density definition that encompasses residential site size, site coverage and FAR aspects. The study adopts the eThekwini Municipality's (2018a) definition which describes density as the process of increasing both the horizontal and vertical use of space on properties which is, in turn, also associated with higher allowable human population numbers. This definition sees densification as a process towards intensified land use and related building regulations in support of such intensification (Turok, 2011).

2.3.2 Densification: The activity to increase spatial density

Densification, as an approach in the act of increasing spatial density, is used as one of the urban planning approaches. Urban planning literature yields mixed views on this concept as an advisable and effective planning approach. Boyko and Cooper (2011) posit that many cities and countries have advocated for densification as a panacea towards sustainable urban planning. Broitman and Koomen (2015), on the other hand, argue that spatial

planners use densification as an approach to attain compact cities, control urban sprawl and achieve urban sustainability. Yunda and Sletto (2020) posit that densification practices adopted from the Global North may be drivers of social polarisation. McLaughlin (2012) adds that densification land use regulations impede the market-led natural community establishments as regulatory intents are to force people to locate in the detested polluted and crowded areas.

Turok (2011) distinguishes the different approaches to densification as state driven procedures, state – market stimulation, and household regulatory measures for behavioural and location choices. In the state driven procedures, the state acquires and provides the land for development or provides state subsidised houses, mainly for the low income earners. State-market stimulation uses land use regulations to encourage developers for intensified land use. The household regulatory measures for behavioural and location choices use monetary measures to influence the land use activities and choices of residents, for example higher taxes for discouraged development forms. Clearly from the foregoing, densification has its weaknesses and strengths, like many other approaches to human analytic and/or regulatory processes.

2.3.3 The case for densification to urban development

Densification helps to intensify the land use in urban areas (Leibowicz, 2017). Land use intensification improves the use of resources, more especially the existing infrastructure like roads, water supply, electricity, *et cetera*. A few resources thus get shared amongst many. Intensification helps to combat uncontrolled urban expansion and in turn preserves agricultural land necessary for near-city food production (Broitman and Koomen, 2015). The near-city food production on preserved agricultural land reduces the transportation costs of food (food miles) from points of production to points of consumption in the city.

According to Boyko and Cooper (2011), there are other socio-economic benefits of densification. These include: improved housing access and choice; it encourages the erection of low-cost, middle density housing and infrastructure in highly desired neighbourhoods; securing sufficient future supply of dwelling units; long term overall value increase of nearby detached houses; provision of access to urban services for efficient and economical use; improvement in the economic efficiency and employment opportunities of the city; and an increase in the threshold population for the support of local retail and service centres. The more social benefits of densification are: a reduction of social segregation and exclusion/ isolation; increased social interaction; crime reduction through round-the-clock neighbourhood watch and pedestrian activities; and an increase in urban centre vitality (Boyko and Cooper, 2011).

2.3.4 The critics of densification

Critics of densification argue that urban intensification promotes traffic congestion, poor environmental quality and general city centre overcrowding (Dempsey, 2010). The argument is that there is scientific evidence from marketing surveys which confirms a stronger preference for dwelling units (houses) with as much space in the house and garden as possible (ibid). Critics find the environmental benefits of densification to be outweighed by the malaise of densification regulatory policies. In this sense, most people prefer to live in the peace and quiet of partly rural areas than in the crowded cities. Vehicle usage does not diminish with densification, but pollution is increased because of traffic congestion which is also a consequence of vehicular concentration. Social relations are instead weakened with densification rather than strengthened and the crime rate also increases.

The more important argument, for this study, is that densification not only reduces house sizes and increases health risks but also reduces access to houses. The high demand for building sites in close proximity to the urban centre increases the prices for these sites. The high infrastructure renovation costs, coupled with high prices per unit area, diminish developers' appetites for these sites. Fewer housing developments in close proximity to the city centre then leads to ballooning house prices, which in turn excludes the poorer communities.

2.3.5 Discussion and relevance of the densification concept to the study

The matters of density gradient, densifying approaches and the mixed views about densification are the major concerns of this study. The researcher believes that these aspects of densification are better unpacked with a locally based analysis of land use regulations within the guiding framework of the national land use policies. The density gradient provides an outlook of the whole city in terms of population distribution. Population distribution, both currently and more so in the future, is better expressed with the distribution of the existing and allowable capacity of dwelling units. It is at this juncture that the target general form of the city becomes important, as this determines which areas match which levels of density. The envisaged densities are crafted in the form of land use policies and zoning ordinances, and the local suburban level expresses the realisation, or lack thereof, of these policies.

The approaches to densification are imprints of the country or city's land use policies, and this study puts forward that a country or city will not adopt a blanket approach and apply the same land use policy to all areas. Instead, the study presumes that the respective planning authorities will apply different approaches or a combination of some in the varying geographical areas across their jurisdictions. Apparently densification is viewed differently,

with some favouring the approach whilst others criticise the approach. The study re-focusses these diverse views to the arguments that surround the access to strategically located dwelling units and social segregation.

The proponents of densification argue that the approach leads to improved housing access and choice in the highly preferred areas. Critics however advance an antagonistic view that densification reduces access to housing and is coupled with smaller house sizes and smaller private open spaces. The reduced access to housing is mainly due to high prices, an outcome of expensive development costs and reduced developers' interest in such areas. Literature (Natrasony and Alexander, 2005; Dempsey, 2010; Turok, 2011; Chobokoane and Horn, 2015; Leibowicz, 2017) generally reveals the United States of America as a country with an anti-densification (urban sprawl) approach as a popular occurrence.

This study questions the applicability of the critics' views in terms of income category on which their argument is based. The first question concerns the claim that counter densification (urban sprawl) is a natural process, or the extent to which the various population groups have had a choice to locate themselves. The second question relates to the income groups referred to, and which most of them will prefer locating in the urban periphery where there is more space than in smaller dwellings in close proximity to areas of opportunity.

The researcher holds that the historical factors which led to the predominant population distribution in any city are important in the assessment of whether densification is a necessary and implementable tool or not. Consideration of this history brings to bear the question of whether densification thenceforth acts as a correction measure for the unnatural spatial arrangement, or whether it acts to further complicate natural developments that require restraint. For example, forced segregatory settlements are settlements developed on unnatural terms and restoration of the settlements in natural terms may include densification, even where and when such an approach brings with it some negative outcomes. Failure to regulate such a natural correction inevitably leads to unmanaged disastrous correction occurring on its own terms.

The critics' argument of a general preference for location in a commuter zone is mainly applicable to the affluent sections of the urban populations. This study argues that the occurrence of urbanisation itself is indicative of the mainly poor's search for livelihoods. The poor in the cities already live in crowded areas with deficient service provision, such as in squatter camps, slums and even on the streets. The issue of spacious dwelling units is of secondary concern to the poor, as their primary concern is for location in close proximity to where they can find work and for dwellings in these areas. For the poor, the absence of a

way to earn a living means that they cannot survive and may die from poverty. The study agrees with the critics' argument that the development of many smaller dwelling units closer to the CBD and sources of work inevitably leads to the relocation of the affluent from these areas to the urban periphery.

The study rejects the general applicability of the preference for urban peripheral location to all social income categories. The researcher also deduces that intensification, rather than sparsification (spatial dispersal), in and around urban centres is more natural. So for cities where the poor are in the majority, the expectation is that there will naturally be more residential dwellings for the poor than for the affluent in and around the urban centres. Glenwood, in the Ethekwini Municipality, is a typical example of such an area. These areas in the South African cities instead tend to be the reserves of the affluent, regardless of their proximity to the areas of opportunity, which inevitably bring with them relative congestion.

The study agrees with the critics that higher demand in and around the urban centre leads to higher costs of land acquisition and development. The researcher contends that land acquisition and development costs are only one part of the business economics equation which becomes complete with the incorporation of the return on investment (RoI). The expectation, with the advent of modern spatial planning, is that the state organs will balance this equation in a manner that benefits all (that is, the majority citizens, public service and private developers). This area is supposed to be addressed by utilising Turok's (2011) approaches to densification. Such balancing is supposed, in part, to be expressed in the zoning ordinances.

2.3.6 Synopsis of the concept of densification

This subsection on the concept of densification has explained the expression of density in spatial planning and how densification is carried out through zoning regulations. After explaining both the positive and negative implications of the principles of densification, the researcher has provided arguments that conclude that densification is more advantageous than disadvantageous.

2.4 Modernist Planning theory

Friedmann (1998) posits that the modern planning practice is a Euro-American rationalist conceptualisation. The Modern Movement is a feature of the early 20th Century, emerging as a response to the negative externalities of the industrial revolution of the 19th Century (Goodchild, 1990; Magidimisha, 2009; Haarhoff, 2011). Modernism is the theoretical frame of the period of enlightenment in Europe and is associated with Fordism characterised by specialisation, mass production, and standardisation. These features characterised city

establishment during the popular period of modernism. Modernist planning theory is the objective approach to the science of spatial planning, embracing universal morality and law (Irving, 1993; from Natrasony and Alexander, 2005). The modernist planning theory sees planning as an expert-centred and objective exercise performed with the intent to increase economic competitiveness and help improve the lives of the local communities (Flint, 2011).

2.4.1 The origin and purpose of modernist planning

Natrasony and Alexander (2005) trace the origin of modernist planning to what Jurgen Habermas refers to as the-project-of-modernity. These ideological and philosophical modern-project-traces find expression in spatial planning from the work of the likes of Swiss architect, Le Corbusier, widely influential in the modernist development approach of many cities (Haarhoff, 2011). Le Corbusier's work influence extends, but is not limited, to such areas as building designs or planning schemes in Paris, Stockholm, Geneva, Barcelona, Moscow, Marseilles, Algiers, Sao Paulo, Rio de Janeiro, Buenos Aires, and Chandigarh in India (Tungare, 2001). Modernist planning practices are also associated with the work of Howard and Wright (ibid). The modern movement in spatial planning originates from the Netherlands and Germany where the architectural and spatial planning ideas globally spread out (Haarhoff, 2011). According to Beauregard (1989:383 from Magidimisha, 2009), modernism is the product of ideas about knowledge and society which are entangled with "the rise of capitalism, the formation of the middle class, the emergence of the scientific mode of legitimation, the concept of an orderly and spatially integrated city that meets the needs of society, and the fostering of an interventionist state". Modernity subscribes to a rational approach where the basis of public decisions is scientifically gathered and processed information.

Modernism in planning surfaced as a theoretical mechanism for use to address the negative socio-spatial outcomes of the European industrial revolution (Magidimisha, 2009). The industrial revolution led to the establishment of disorganised spaces of production with disastrous health impacts and movement pathways. Modernist planning developed to reconcile the individualistic capitalist mode of production with its resultant socio-spatial ramifications. Le Corbusier (in Natrasony and Alexander, 2005: 7) further captures the purpose of modernist planning as development of "the harmonious city… planned by experts who understand the essence of urbanism. They [experts] work out the plans in total freedom from partisan pressures and special interests; once their plans are formulated they must be implemented without opposition".

2.4.2 Modernist planning in practice

The origin and purpose of modernist planning inform the character and underlying principles of modernist planning. The foregoing subsection presented modernist planning as a rejection of industrial city development and its accompanying features of overpopulation, pollution and living conditions hazardous to health. The spatial planning instruments, utilised as part of the modern project, constitute part of the modernist planning principles. Goodchild (1990) brings to the fore some of the modernist planning mechanisms that evolved with the intent to combat the industrial city development situation. These mechanisms are: spatial city division into different use areas, including the separation of industries from residential areas; suburban expansion; spacious transportation pathways; and garden city development accompanied by residential units that are spacious and have ample penetration by natural light.

The approach when executing the modernist planning mechanisms and objectives also constitutes modernist planning principles. The approach of modernist planning is characterised as objective; expert-centred; rational; searches for efficiency and orderliness; and regards the state as a trusted neutral actor that consistently fights for an egalitarian society. This study groups modernist planning principles into tenets of specialisation, standardisation and mass production, as per Natrasony and Alexander (2005).

Natrasony and Alexander (2005) provide the various overlapping sub-tenets of the three principles. Specialisation encompasses the top down approach of the claimed objective expert-centeredness, rationality and the search for efficiency and orderliness. The standardisation principle entails the drive for the creation of an egalitarian society; uniform development of roads and houses; lower density development; application of universal solutions; and disregard for the recipient communities in the process of the development of spaces rather than places. The sub-tenets of the principle of mass production are: the abrupt spatial reinvention; unbiased and consistently principled egalitarian driven interventionist state organs; mass production of dwelling units and roads to lower residential property market prices and increase middle class conditions; and massive profits for big business coalitions.

2.4.3 Modernist planning critics

Modernist planning theory helps guide city development to address the vices of the industrial city, but it is also criticised on a number of fronts. Natrasony and Alexander (2005) cite the centralist expert-centred approach, which treats the urban landscape as a blank object, as one of the main weaknesses of the modernist planning theoretical framework. Actually,

Natrasony and Alexander (2005) ground the critique on modernist planning on the Fordist paradigm tenets of specialisation, mass production, and standardisation.

According to Natrasony and Alexander (2005), modernist planning makes planning a field of specially trained individuals, exclusive of the human experiences of those living in the place being planned. The detachment of city inhabitants from the building of their cities creates foreign places in which the cities' inhabitants live. Specialisation also includes the establishment of spaces for special uses, like the separation of places of residence from places of industry (work), and places of vehicular movement from places of entertainment. The separation of spaces creates inefficiency in production in terms of time, travelling costs and pollution. The space becomes specialised to serve the purpose of the designer. The very definition of modernist planning as an objective science concerned with standardised road patterns, codes, plot ratios, percentages of open spaces, and setbacks reduces planning to artistic community induced work (Natrasony and Alexander, 2005). The specialisation aspect of modernism in planning earns modernist planning the alternate names of central spatial planning, master planning, and the development of blueprint plans (Magidimisha, 2009; Haarhoff, 2011).

The critique of mass production is combined with that of standardisation. The combination of these modernist aspects entails making cities repetitive monotonous spaces that defeat the illustration of the various sensibilities of the persons who constitute the city (Magidimisha, 2009). In essence, standardisation and mass production in spatial planning translates into the literal meaning of the design of a single unit which is then reproduced many times and at the same time. Standardisation and mass production in single dwelling units also translates into the development of many spacious units in terms of modernist planning. This leads to the development of suburbs as an extension of the urban area (urban sprawl). Criticism begins with the very description of standardisation, as a universalising force that pays attention to functional and efficient use of urban space (Magidimisha, 2009). The criticism is that spaces have unique qualities that cannot necessarily be generalised.

Modernist planning is personified in Moses, who sees urban development as being primarily about infrastructure provision rather than human sensitivities (cultural interests). Moses' approach to urban development has him characterised as being ego-centric, bullish, disregarding of local residents' concerns and a destroyer of traditional urban buildings and urban lives (Flint, 2011). Hoch (1990) posits that the rational origin of the planning discipline has held the discipline in shame, instead of appreciation, as its nature is of a rich heterogeneity which is incompatible with rationality. Regardless of the criticisms that the

modernist planning theory comes with, and the emergence of the new generation postmodernist planning theories, most of the sub-tenets of the principles of modernist planning remain prominent in the planning practice (Goodchild, 1990; Haarhoff, 2011).

2.4.4 Modernist planning theory and densification

Modernist planning arose out of the search to solve the issues of overcrowding and disorder as major problems of the industrial city (Magidimisha, 2009). In simple terms "overcrowding" is defined as "a state of being filled with more people or things than is desirable" (Collins Dictionary, 2020: Online), a state generally taken to be synonymous with the objective of densification. Nonetheless, densification as an approach to spatial planning goes deeper than this general outlook. Modernist planning utilises the principle of specialisation to enhance central planning systems for an efficient functioning city. Densification also seeks to achieve efficiency, but through intensified use of urban space (Leibowicz, 2017). The modernist planning principle of specialisation has zoning outcomes that call for spacious units (Tungare, 2001). However, the aspect of spacious units contradicts the intensification aspect of densification. The study, nonetheless, notes that modernist planning models display higher urban centre densities. Standardisation in modernist planning, expressed as uniform development, and universal morality and law do not contradict densification *per se*, as uniform development and universal morality and law can still be applied to intensify development. Also, with the principle of mass production: mass production of residential units, abrupt spatial reinvention, an egalitarian interventionist state, and disregard for the community can act as vehicles for attaining higher residential density outcomes. Some of these modernist planning sub-tenets are argued against (and generally discouraged) by the protagonists of densification, on the basis of social and spatial justice, but not that they defeat the needed outcomes for densification. This study finds some contradictions between modernist planning and densification. The issues of the bulldozer, a non-collaborative approach and the drive for spacious units are exemplary, and the decisiveness of the character of modernist planning is a much needed factor in effecting densification.

2.4.5 Modernist planning is South Africa

The heydays of modernist planning (1940s to 1960s) coincide with the period of the foundation of institutionalised apartheid (Haarhoff, 2011). The Witswatersrand University architectural students introduced modernist planning in South Africa from its European origin (Magidimisha, 2009). Modernist planning in South Africa emerged as a response to industrial excesses in cities, similar to the European context, however the South African modernist planning was adapted to also assist in the enforcement of the institutionalised spatial segregation of the apartheid government.

The Public Health Act of 1919 marks the early South African (SA) modern planning endeavours in the 20th Century (Mabin and Smit, 1997), and this Act empowered the Department of Health to perform land use zoning and subdivision. Planning had for some time excluded the indigenous population (Davies, 1981). Planning was carried out on the basis of Ordinances and development schemes like the Transvaal Ordinance of 1931 and The Slums Act of 1934, which gave powers to the local authorities (Mabin and Smit, 1997). The pre-World War II South African spatial planning was mainly concerned with segregation policy and infrastructure, and the South African modernist spatial planning developed in nourishment of these objectives.

Importation of the modernist planning theory was not wholesale; instead it was adopted and adapted (localised) to further the demands and objectives of the apartheid state. The selective adoption with adaptation applied to all three modernist planning principles. Starting with the sub-tenets of specialisation, the centralised expert-driven, bullish top-down (bulldozer) approach was adopted through exclusive parliamentary established legislations which gave power to the state organs to enforce whatever the national government deemed necessary. Blueprint plans were developed for the cities in a technocratic, rational manner. Efficiency, a sub-tenet of the specialisation principle, indicated with special purpose areas like spacious residential lots, a hierarchy of movement pathways and recreational areas was explicit in the town planning schemes for former whites-only suburbs. The presence of wide roads was a conspicuous occurrence in these suburbs. The efficiency tenet has a spatial expression of congestion in the African (and to a certain extent also for other so called 'Non-whites' groups) townships. This congestion in African townships was meant to attain a higher level objective, which was to reserve cities as whites-only areas where the presence of Africans was only to service whites and for them to return to their original rural areas thereafter. In this sense, African townships were not regarded as stable permanent settlements as such but as tentative makeshift areas for squatting (Davies, 1981).

The standardisation principle was evidenced with low density whites-only residential areas with constant lot sizes, lot coverage, setbacks and lot ratios for all areas meeting specified locational criteria (Davies, 1981). The zoning codes and associated maps were an illustration of the application of a universal solution in the South African apartheid government's spatial planning system. The typical housing units in the African townships were duplications of a single four-roomed house design, meaning that the townships were also standardised across the various South African cities (Haarhoff, 2011). The mass production principle was observable in the mass produced housing units in the areas of all of the population groups in South African cities. The difference with whites-only designed areas was that their views and interests were expressed in what was delivered and how it

was delivered, unlike in the African townships. The 1923 Slums Act paved the way for abrupt spatial reinvention. The mass production of infrastructure as the standard for the whites-only areas was thus a recognisable element for an egalitarian driven interventionist state, although only for one racial group (ibid).

Glenwood suburb is a typical example of a former whites-only designed area established from the modernist perspective. The above mentioned modernist principles of specialisation, mass production and standardisation are well expressed in Glenwood.

2.4.6 Synopsis of the modernist planning theory

Modernist planning theory is both procedural and substantive. Procedurally, modernist planning is defined as the objective approach to the science of spatial planning, embracing universal morality and law. Substantively, modernist planning is an objective science concerned with standardised road patterns, codes, plot ratios, percentages of open space, and setbacks. Modernist planning is borne out of the search for order in chaotic disorganised industrial city development, with the intent to facilitate easier healthy living conditions and transport movement, amongst others. Fordist features of specialisation, standardisation and mass production characterise modern projects, including modernist spatial planning. Modernist planning theory is deficient in the involvement of the local communities which the development plans affect. Modernist planning theory encourages urban sprawl, a general challenge for the cities in the 21st Century. Densification and modernist planning are both compatible and contradictory. In South Africa, modernist planning theory was used to intensify peripherally located African townships and sparsify (act to establish low density) conveniently located former apartheid whites-only suburbs, like Glenwood, that are closer to the city centres.

2.5 Postmodern Planning Theory

Postmodernity can be defined as: a broad framework encompassing a divergent range of theories; a cultural logic that promotes relativism and heterogeneity; a set of theories founded on a varied and versatile interpretation of structures and meaning in relation to modernity; and an arrangement of economic elements which yield different cultural, social and economic landscapes from the preceding modern forms (Allmendinger, 2001). The study seeks to understand a community's envisaged spatial changes and the informing elements and associated processes from a planning perspective in the contemporary period. The contemporary period is characterised by diversity and appreciates community participation and locality. The postmodern planning theory provides a functional interpretation and enquiry for the understanding and forecasting of spatial change processes in the contemporary period. The definition of postmodernity is elusive due to its multifaceted

nature, which renders it rather versatile. This difficulty is attributed to the fundamental principle on which it is predicated, which is its rejection of totality and appreciation of difference (Allmendinger, 2001; Ponzini, 2016).

2.5.1 Origin, purpose and critique of postmodern planning

Postmodernism expression includes post-modern conditions, post-modern times and post-Fordism (Goodchild, 1990; Allmendinger, 2001). Postmodern planning is at times considered as a planning activity encapsulated by the conceptualisation of postmodernism. The postmodern concept's foundation is on the work of Nietzsche, Foucault, Baudrillard and Lyotard, amongst others (Allmendinger, 2001). Postmodernism is a product of the fall of the unifying assumptions of modernity. The tenets of postmodernity are inclusivity, diversity, rejection of totality, and locality (Goodchild, 1990; Hoch, 1990; Allmendinger, 2001).

Postmodernism is theory adapted for the planning discipline, and Habermas introduced the postmodern concept to the planning discipline (Goodchild, 1990). Goodchild (1990) provides an evolutionary trace of the concept as having emanated from the philosophy discipline. The introduction of the concept in the planning discipline was initially met with rejection, based on the postmodern concept's incompatibility with universality. This illustrates the rational foundations of the planning field, which continue to persist. Postmodern planning evolved in the 1960s when the post-war rational approach was challenged with calls for more people-involving approaches to planning (Allmendinger, 2001).

Postmodern planning critiques the process of planning for its exposure to misuse for the enforcement of territorial control and the exclusion or repression of weaker groups. Planning has been seen to be utilised for socio-economic control and domination through inequity in the allocation of development resources, and as a tool for the enforcement of cultural dominance, such as that which happened in post-colonial states (Allmendinger, 2001). The founding principles of 'rejection of totality' and 'appreciation of difference' in postmodernism imply that all matters are taken into consideration, even self-defeating exercises on issues sought to be addressed (Harvey, 2012). Postmodernist planning, however, lacks the necessary rigour to adequately redress the deficient spatial expressions of its predecessor, modernist planning (Hoch, 1990). Postmodern planning is criticised for focusing predominantly on its theoretical tenets and neglecting the actual planning processes and structures (Allmendinger, 2001). The implication here is that there is a need for studies that develop a link between postmodern planning theory and planning practices.

2.5.2 Postmodern planning theory and densification

Friedmann (1998) categorises planning research as research that focuses on issues that concern contemporary matters, such as the socio-spatial processes involved in the production or planning of cities (as spearheaded by Lefebvre from Marcuse *et. al.* 2009). Contemporary planning matters are the planning issues in the postmodern period (Allmendinger, 2001). Boyko and Cooper (2011) make reference to the work of various authors to deduce that 'a compact city' has become the central spatial planning objective in many developed countries in the 21st Century. Clearly, there is a convergence between postmodern planning and densification, in that there is a high demand for densification in the planning of the postmodern period and that densification is thus one of the contemporary planning matters. Nonetheless, densification is a city production process.

The socio-spatial processes involved in the planning processes of city production (urban development) include urbanisation, regional economic growth and change, city building, cultural differentiation and change, the transformation of nature, and urban politics and empowerment (Friedmann, 1998). The description of urban forming processes cannot only be explained in terms of the market and state actors that exclude civil action like protests and campaigns of defiance. Civil society can be defined as "the society of households, family networks, civic and religious organisations and communities that are bound to each other by shared histories, collective memories and culturally specific forms of reciprocity" (Friedmann, 1998: 8). Civil society has the right to exercise power to claim their civil rights, and these rights were formulated by Lefebvre. Civil society's rights are freedom of speech, the right to be different, and the right to flourish by living healthy lives (Friedmann, 1998). The appreciation of difference is the key characteristic of postmodern planning. The appreciation of difference implies a rejection of universal truths, the appreciation of locality, and embracing inclusivity and diversity (Allmendinger, 2001). The key characteristic of densification, on the other hand, is land use maximisation. Land use maximisation alludes to integration for maximum social, economic and environmental outputs per unit area (Turok, 2011). The concept of integration in densification is important, both in the process as well as part of the densification outcomes. This is the point where postmodernism and densification converge most prominently. The integrative element of densification denotes an appreciation of difference.

Densification as a planning activity requires the state's deliberate, distinctive action plan for the intended outcomes (Yunda and Sletto, 2020). Also, the postmodernist's character of embracing contrasting and contradicting views weakens the theory's effectiveness in enforcing densification against the resilient modern planning arrangements.

Postmodernist principles of inclusivity, diversity, rejection of totality, and locality within the context of densification constitute the necessary tools for the analysis of South African city development processes and outcomes in the post-apartheid period. The exclusive nature of the apartheid city processes and landscape requires postmodern elements in the restructuring processes which will match the contemporary ways of living and doing things. The exclusivity, uniformity, totality, and superimposition on the local areas are well expressed by the existence of well-located and well-serviced former whites-only suburb enclaves which the post-apartheid planning system has to reconstruct. Glenwood is a typical example of the inner city, apartheid-created former whites-only suburban enclaves.

2.5.3 Synopsis of the postmodern planning theory

Postmodern planning theory is a group of theories on spatial planning in the post-modern time. The theory developed as an attempt to address the shortfalls of modern planning systems, and the distinguishing characteristic is the appreciation of difference, as per Lefebvre's conceptualisation. The distinctive areas of convergence between postmodern planning and densification are the appreciation of difference versus integration, and temporality versus the densification objective of a compact city. The main postmodern planning critique is the absence of rigour, which is the theory's dominating definitive component. Glenwood is a representative case for the studying of post-apartheid planning trends with the lens of the postmodern features.

2.6 Collaborative Planning Theory

Collaborative planning theory (CPT) is a strand of communicative planning with elements of structuration theory, and it is framed by Healey, using the British public policy and planning system as a case study, in the latter years of the 1990 decade (Healey, 2003). Other leading contributions to CPT are the work of Innes and Booher (Goodspeed, 2016). This sub-section provides an understanding of the meaning and principles of collaborative planning theory, its critiques, the theory's relationship with the densification approach, and its application to the South African context.

2.6.1 Understanding the concept of collaborative planning

Healey (1997) describes collaborative planning as a framework for the understanding and assessing of processes of governance, particularly for those concerned with the place and territory quality development. This public policy and planning approach prioritises the "place making" through genuine participatory mechanisms for all stakeholders affected or having an interest in the place. Healey's conceptual framework draws from Gidden's (1984 from Healey, 2003) structuration theory of structure and agency, and Habermas' (1984 from Healey, 2003) 'ideal speech situation' conceptualisations (Healey, 2003).

The features of collaborative planning are: the people's (stakeholders') thoughts about the place and their understanding of it as a regulatory object for development of the place; stakeholder involvement from the inception of the design stage; concern for quality improvement of the place and territory, rather than just of the people; an integrated place-making approach rather than an incoherent sectoral development approach; a generated development plan as a product of multi-stakeholder engagement rather than an elite/expert expression; the process management of multi-party strategic imagining, consensus building and arguments; and systemic prevention of the *fait accompli* approach instead of honest multi-stakeholder engagement (Healey, 1997). These features can be realised where there are institutional structures that seek to realise them. The institutional requirements are: stake-holder *egalibertè* (right to equality and freedom); the inclusivity of spatial planning processes as a responsibility of the public officials responsible for spatial planning; consideration of spatial qualities and development siting amongst the procedural criteria for development; increased independence and resource allocation that seeks to promote collaborative processes; and capacity building of the local and regional government structures (ibid).

Healey (2003) posits that the underlying principles of collaborative planning are: the view of planning as an interactive process; planning as a governance activity within economic, social, and environmental structuring forces; planning as an instrument for maintaining and enforcing the qualities of places and territories; and social justice, both in material outcomes and the processes (that is, on both substantive and process outcomes).

2.6.2 The critiques of the collaborative planning approach

Collaborative planning is premised on fair communicative techniques, but ideal communication as a fair process may not exist in reality. There is the acknowledgement that power-plays are inherent in social relations and that these can defeat the planning process. Those individuals with power can disguise their true motives and manipulate the planning process to benefit them. Some participants may even be targeted for being independent and vocal in the face of power during the planning process (ibid).

Healey (2003) raises and responds to the following critiques: The collaborative planning approach is criticised for over-emphasising just processes, in a way that overshadows the importance of just outcomes (Healey, 2003). Just processes sometimes yield unjust substantive outcomes (Fainstein, cited in Marcuse, Connolly, Novy, Olivo, Potter and Steil, 2009). Collaborative planning is also accused of lacking an underlying social theory, but this allegation does not seem to have grounds as the theory's proponent states clearly that it is founded on Gidden's (1984 from Healey, 2003) structuration theory and some aspects of

economics. Collaborative planning accepts the structuration theory and utilises it in its formulation, but rejects the structuration theory's position of a single structuring force, namely economic capital. Another critique is that it focuses on the dissolution of power and does not say much about what constitutes acceptable and substantive just outcomes. Healey (2003) responds to this critique by stating that power is inherent in social relations, and that the substantial outcomes are what stakeholder engagements determine them to be.

2.6.3 Collaborative planning theory and densification

A key tenet of densification is inclusion and integration (Dempsey, 2010). The process of densification, as a spatial transformation strategy, comes with inherent tensions which require direct confrontation amongst the contesting parties. Examples of such tensions are differences on the price and quality of buildings, allowable uses for residential properties, and spatial development priorities (Turok, 2011). The implications of varied costs, responsibilities, beneficiation and externalities to the public and private sectors translate to the need for clearly expressed platforms for deliberation. Consensus on the possible and acceptable (densifying) development in an urban area is the first step in realising the required spatial outcomes.

The legislative crafting of transformatory spatial policies, like densifying policies, is dependent on collaborative engagement. Clearly the realisation of the other principles of densification (maximisation of land use and economic outputs) are not possible without the success of the collaborative engagement. Collaborative spatial planning theory as an interactive, place making governance project for social justice is ideal for constructing a framework for the achievement of the inclusion and integration tenets of densification.

2.6.4 Application to the South African context

The South African planning approach closely resembles the collaborative planning approach in legislation, with local municipalities operating as process management institutions for multi-stakeholder engagements. The Integrated Development Plans (IDPs) are legally required programmes for local municipalities, as stipulated in the Municipal Systems Act No.32 of 2000 (Ethekwini Municipality, 2015). The IDP is the primary statutory tool for direct citizen participation in the transformation of their places (collaborative planning). The issue of power in communicative planning seems to display itself well in the South African urban planning landscape.

Sihlonganyane and Lewis (2016) raise the issue of South African planning transformation as having failed to deliver on its mission. At best, racial spatial divisions have been changed to social class spatial divisions. Cited evidence of this failure is the conspicuous urban sprawl

in South African cities, rather than compaction and integration; the increasing spatial inequality; and the lack of meaningful participation to signify inclusivity. In practice urban planning decisions remain centred on the Growth Management Strategy, the Geographic Information System (GIS), and the Capital Investment Management System. The move from the needs based Reconstruction and Development Programme (RDP) economic development approach to a privatisation-centred Growth, Employment and Redistribution (GEAR) economic policy and the prioritisation of market rationality rather than collective beneficiation acted as a self-defeating exercise in the quest for apartheid spatial redress. Many authors widely support Sihlonganyane and Lewis's (2016) assertions. For example, Desai (2010); and Ndlovu and Makoni (2014) have in different ways came to the same conclusion. The critical question is how to come up with a working approach to the issue. Localised inner suburban studies like Glenwood may assist by revealing the particularities of the collaborative attempts to transform the apartheid modernist-planned South African cities.

2.6.5 Synopsis of collaborative planning theory

The paper concludes that collaborative planning is an appealing and ideal notion. The challenge though, as evidenced in the South African context, is putting it into practice. It becomes almost impossible for those in power to let go of the power for the attainment of just equity outcomes. This provides a gap for further research on the nuances of these power relations for a transformative planning approach.

2.7 Conclusion

This chapter provides an analysis of the spatial planning and densification as basic concepts that undergird the study. The study adopts the modernist, postmodernist and collaborative spatial planning theories as the appropriate guiding tools for the study. The chapter analyses the concepts of spatial planning and densification on the basis of the concepts' meaning; pros and cons; and applicability to the South African cities' environment. The theoretical framework is discussed on the basis of origin, purpose, critique and application to the South African situation. Spatial planning is the land use regulation, as encompassed in land management and is marked by local societally developed legislations, by-laws and zoning stipulations. Spatial planning leads to spatial structuring and has benefits and disadvantages. Densification is a contemporary international planning feature most appropriate for South African cities where Glenwood suburb is located. Modernist planning theory shaped the current South African cities landscape, postmodernist planning theory directs the collaborative theory within which the current spatial planning South African legislative framework is situated. Contemporary guide to Glenwood development is the collaborative spatial planning theoretical framework.

Chapter Three: Literature Review

3.1 Introduction

This chapter opens with background information on densification as a current planning phenomenon. Density gradient is touched upon, before paying attention to the general planning policy arrangement of various countries. The general planning policy framework is contrasted with the general local zoning ordinances. The chapter proceeds to two international case studies and a South African case before concluding. The two international cases are composed of a 1st world country suburb in Rome, Italy, and a 3rd world country suburb in Accra, Ghana. The selection of these two suburbs provides the necessary lessons for this South African city suburb study, which has elements of both the Western and African cities' features.

3.2 Densification in Contemporary Planning and General Planning policies

Urban spatial planning in the 21st Century is marked with a fervour for densification in many cities around the world (Broitman and Koomen, 2015; Moroni, 2016; Calder, 2017; Leibowicz, 2017). Densification is implied in various contemporary city building approaches, namely compact city development, sustainable urban development and smart urban growth. The densification drive is in response to the strong opposition to intensified city development, which modernist planning sought to rectify as an industrial city excess in the 20th Century.

Yunda and Sletto (2020) contend that zoning regulations hold the key to the spatial development trajectory as they are the points of convergence between policy position and market drivers in the widespread private sector-driven urban development. Moroni (2016) posits that attention for densification must focus on the land use regulatory policies which encourage the density, rather than on the attainment of a city's density target. The call is for changes in land use policies so that they become policies that allow densification. Calder (2017), in a United States (US) study, found that there has been an increase in spatial planning regulations, in the form of restrictive zoning and land use rules. Calder (2017) expanded on this by stating that areas in the US with more restrictive regulations have housing stock that is limited in terms of provision, accessible pricing, and growth. The finding was deduced from a comparative study of federal funding to different states, relative to each state's land use regulations. Jackson (2016) also contends that the land use regulations in the category of zoning and general controls have the most impact on dwelling units' supply.

A density gradient is the spatial change in the number of individuals per unit area (Moroni, 2016). A density gradient in the spatial planning discipline can be envisioned from the understanding of the urbanisation process and outcomes. Urbanisation is the increasing percentage of the total population which lives in cities (United Nations Habitat, 2018). The relative number of people that live in cities globally is increasing through a process referred to as urbanisation (Borel-Saladin, 2017). Urbanisation is higher in developing countries than in developed countries, and the main driver of urbanisation is economic vitality which includes better employment opportunities in cities (Broitman and Koomen, 2015). Clearly, the outcome of urbanisation is the decrease in population density in rural areas and an increase in population density in cities.

The pull factors for urbanisation are not evenly distributed within the cities but they are normally concentrated at the centre. Alonso's bid-rent theory confirms the global trends of a negative density gradient extending from the city centre (Bertaud and Malpezzi, 2003; Turok, 2011; Koomen and Broitman, 2015). A negative density gradient implies that there is a decrease in population density with distance from the city centre. Turok's (2011) reasoning for this trend is that strong pull factors at the city centre increase land values and developers increase productive output per unit area in the form of multi-storey buildings, so as to realise a return on their investment. The low income earners and lower middle income earners then prefer a closer location to the city centre in an attempt to reduce their transport costs. The affluent relocate to the commuter zone since they can afford transport costs and other luxuries that come with bigger residential lots (Makoni, 2016). The basic instrument for densification in the different cities and countries is the manner in which the policy framework is structured.

Some common trends can be drawn from the manner in which policy framework is arranged even though different countries adopt different policy arrangements. Spatial planning as a territorial development exercise is a government activity (Acheampong, 2019). The nature of the state directs the structuring of the government's operations, including spatial planning. The state models range from unitary to federal state government systems, with a variety of other systems formed from blending elements of the two extremes. Differentiation of the state models is based on the manner in which power is distributed. The various government legislative state administrations derive the spatial planning statutes at various levels. The spatial planning governance structure in most countries has three basic levels, which are national, regional and local planning levels. Regional and local levels are at times further subcategorised. National legislative spatial planning instruments start with the Constitution and extend to parliamentary laws which provide the general guidelines on spatial development. The regional level carries out the directives of the national level of

government to oversee local level planning coordination and legislate for local level spatial development plans and processes. The local sphere is responsible for the actual zoning ordinances and other sectoral matters that are not specified in the national and regional competencies (ibid). The legislations from national to local level policies give cues to the development trajectory for an envisaged spatial arrangement.

3.3 The Case of Monte Sacro Alto in Rome, Italy

The case study of Monte Sacro Alto is explored as an exercise for the study's international experience in a developed country. The case is looked at from a situational and geographical background. The investigation proceeds to the various levels of the land use legislative framework, observed building outcomes and the implications of densification. The lessons learnt close the assessment of the case.

3.3.1 The structure of governance and planning legislative instruments

Monte Sacro Alto is in Municipality III of the Metropolitan City of Rome, in the Lazio Region in Italy. Figure 3.1 depicts the location of Monte Sacro Alto in Rome, Italy. According to Coppola, Papa, Angiello and Carpentieri (2014), the Metropolitan City of Rome has a population of about 2.8 million and a geographical area of 1,285.3km^2. This gives an average city density of 2178 persons per square kilometre. Coppola et al. (2014) identify the Termini central station as the centre of the city of Rome. Monte Sacro Alto is about six kilometres from the Rome city centre. Monte Sacro Alto has a population of about 32,223 and a surface area of 2.26km^2, which gives an average density of 14258 persons per square kilometre (Statista, 2020).

Italy is a unitary republic with administrative functions devolved from the national state to the regions, provinces, and municipalities (Colavitti, Usai and Benfiglioli, 2013; OECD, 2017). The city of Rome is in one of the ten Italian provinces and has a metropolitan status. The Italian Constitution is less market sensitive and more public interest protective (Colavitti et al, 2013). Although Article 117 of the Italian Constitution provides that the matter of territorial governance (spatial planning) is the responsibility of both the national state and regions, the Decree of the President of the Republic in 1977 provides for the town planning matters to be the exclusive responsibility of the regions (Colavitti et al., 2013). The outcome is a spatial planning system which resembles a federal state, in that planning is effectively carried out in the regions (OECD, 2017).

Figure 3.2 illustrates the organisation of Italy's spatial planning, and the relationship between the plans at the various planning levels. The lower level plans have to comply with the plans at the higher level of the organisational flow. Italian spatial planning's legislative regulation is

traceable back to the 1800s (Gabellini, 2008). The late 19th Century saw Law No. 2359 of 1865 that provided for general municipal planning schemes in the prominent cities such as Rome and Milan, and remnants of this law are still present in the modern planning system.

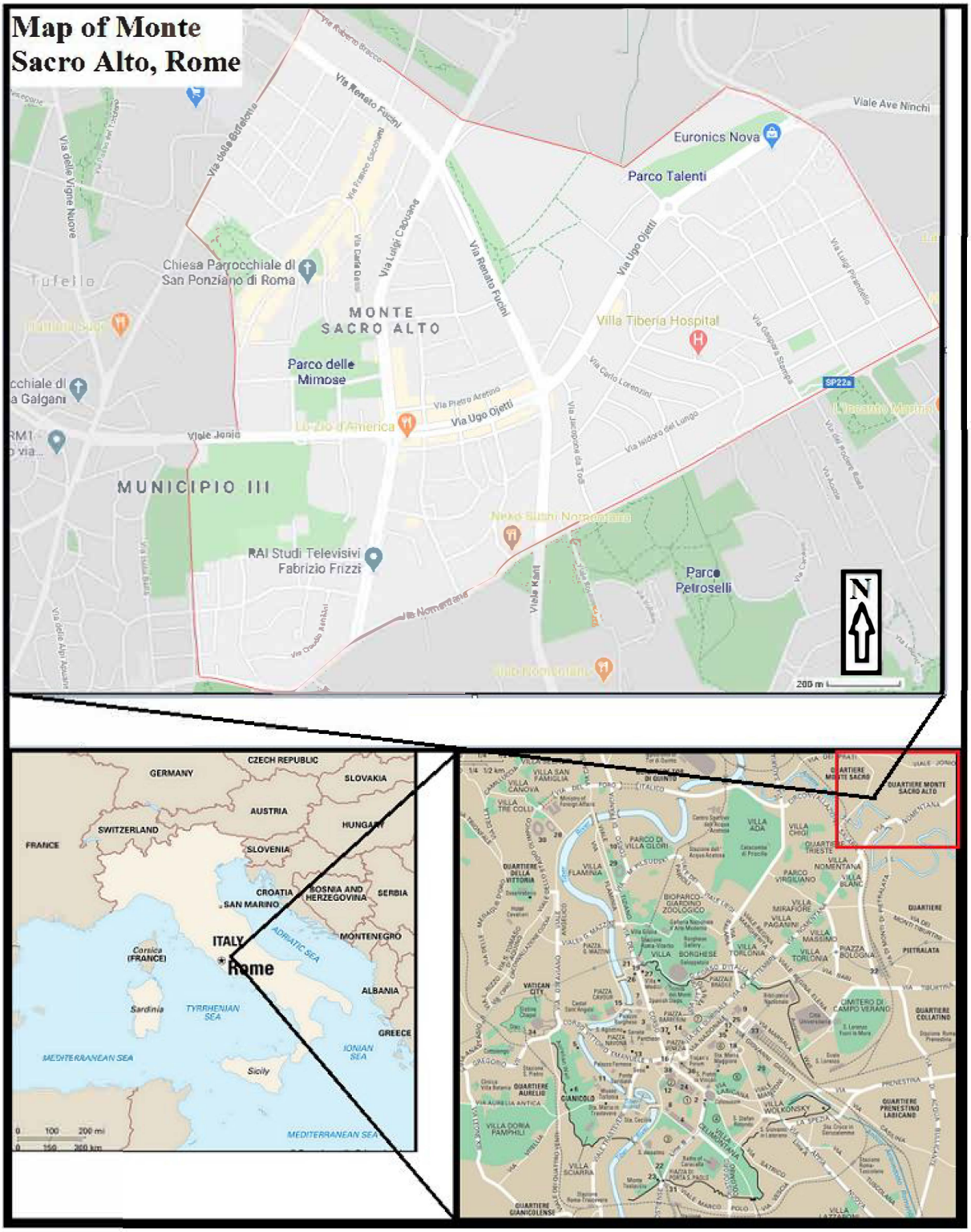

Figure 3.1: Locality Map of Monte Sacro Alto in Rome, Italy (Google Maps, 2020c)

Law No. 2359 of 1865 were the provision of infrastructure support, maintenance of the existent city systems, and the provision of city expansion systems (Di Zio, Montanari, and Staniscia, 2010). These elementary traces were observable in the leading National Urban Planning Law No. 1150 of 1942, which paved the way for the Legislative Decree No. 154 of 1945, important for the country's (cities') reconstruction programme. The important theme of locality and the process of city rebuilding in this reconstruction programme were marked by internal reconstruction with rebuilding, expansive reconstruction, and reconstruction as a complete re-organisation of a city (Gabellini, 2008).

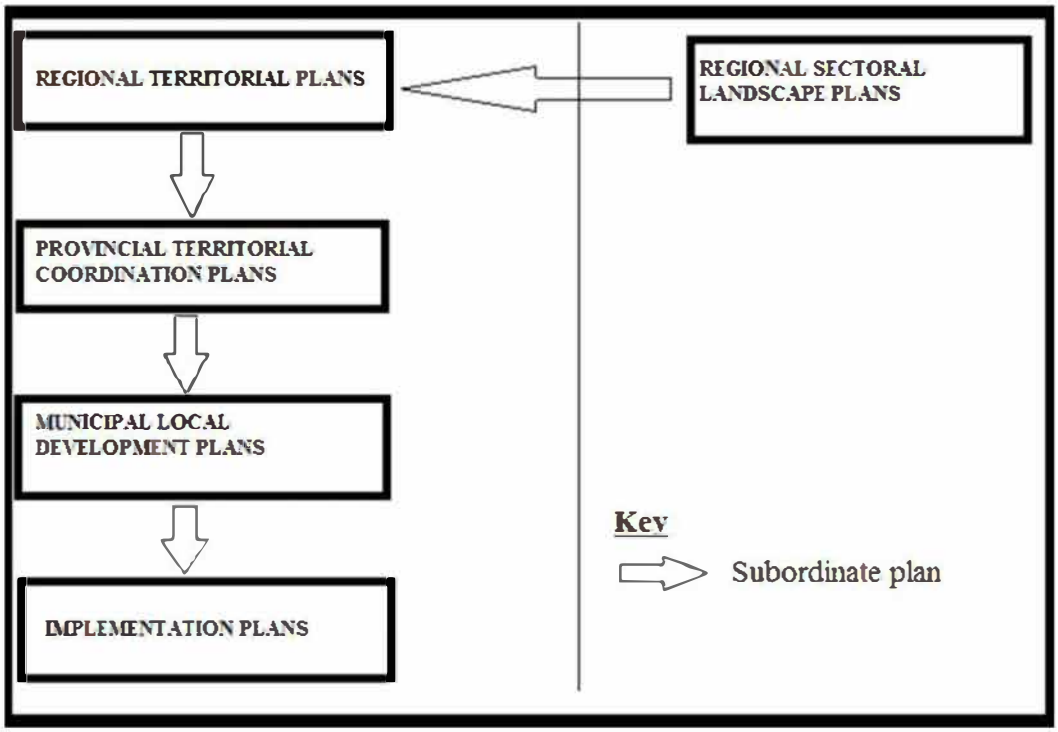

Figure 3.2: Organisation of Italy's Spatial Planning (OECD, 2017)

According to Di Zio et al. (2010), the Urban Planning Law No. 1150 of 1942 provided the legal basis for Rome's establishment of the 1962 City Master Plan (CMP). The objectives of the 1962 CMP were: breaking of the compact city layout; encouraging road transport usage; and city expansion with the creation of multifunctional, self-sufficient residential districts (Di Zio et al. 2010). Although the 1962 CMP's objectives sought sparsification, the legacy of the CMP was a compact, single-centred city with degraded surrounding peripheral areas and an inefficient connecting transport network. These outcomes were marked by: an increase in city centre vitality; incomplete work and disjuncture between the transport network and residential buildings; and an inefficient transport network between districts and also between the districts and the city. The 1995 Poster Plan, 1997 Plan of Certainties, sector specific plans and other in-depth plans provided alterations to the 1962 CMP and ultimately gave birth to the Metropolitan City of Rome's new 2008 CMP. The Poster Plan delineated the

city's spatial planning goals, whilst the Plan of Certainties provided a bridging framework that protected and linked current development work with the envisaged future spatial goals (Di Zio et al. 2010).

3.3.2 Zoning codes, zoning map and implications for densification

This study utilises distance from the city centre and two density indicators to explore the density gradient in the city of Rome. The two density indicators that this study uses are the observed building to lot cover ratio and the floor area ratio (FAR), as observed from the number of storeys in a building. The observation on Google Maps of the two density indicators provides cues to the zoning ordinance mapping for Monte Sacro Alto, which this study could not otherwise access.

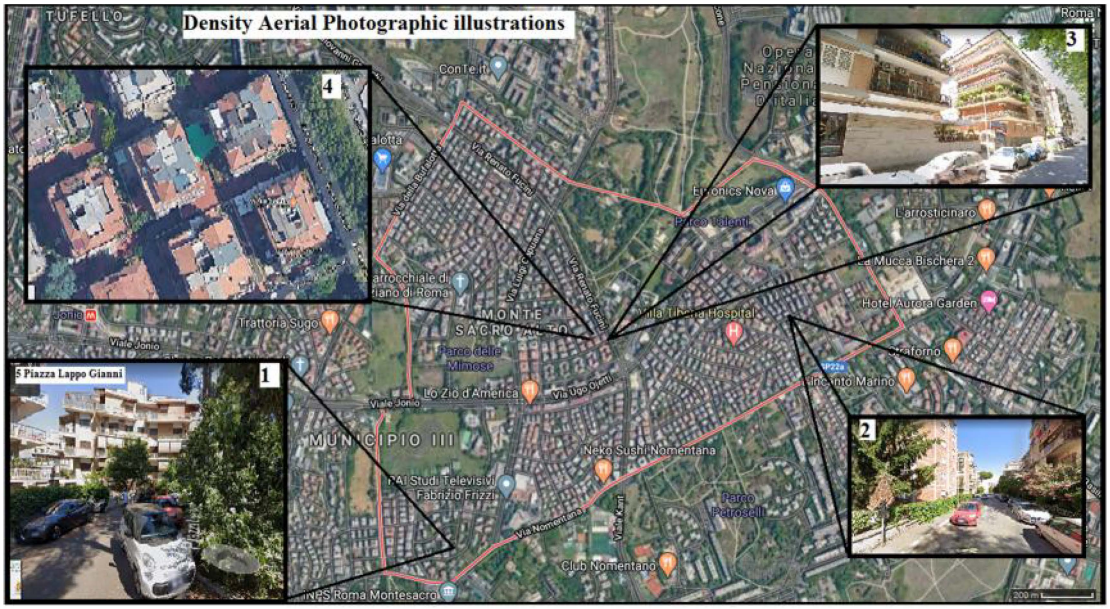

Figure 3.3: Monte Sacro Alto's Photographic Illustration of Density (Google Maps, 2020c)

Figure 3.3 illustrates the density in the suburb in three ways. The first one is in the base photograph which shows the land cover in terms of the spread of the built-up area from an aerial view. This provides the gross neighbourhood density. The second one is the illustrations in the insets one, two, and three. Insets one to three are a sample of explored sites indicating building heights. The building heights explored indicate consistency in terms of the number of floors, with an average of five floors each. As insets one to three indicate, the height of the buildings is irrespective of the site's location. These indicate the possible allowable building heights in the suburb (Google Maps, 2020c).

The third indicator is the building site coverage and building block coverage. The sizes of the sites and blocks are more or less the same size. Inset four in Figure 3.3, more clearly shown in Figure 3.4, shows the typical building block coverage and implied building site

coverage. The site size is calculated at an average of 30m x 30m = 900m^2. The building cover is computed as 25m x 20.64m = 516m^2. The building to lot cover ratio for this particular site is, from the foregoing, calculated as 516/900 = 57%. The variation of the building to lot cover ratio also seems to be limited. The study also considers the generally multi-storey nature of the buildings on the sites to assume maximisation of the allowable building lot coverage. The building lot ratio is depicted to be at 60%. The combination of the allowable building height and lot ratio permits the establishment of the average floor area ratio value. The floor area ratio is calculated as the building cover ratio of lot size repeated (multiplied) by the number of allowable floors, that is, the allowable floor area ratio = 60/100 x 5 = 3.

Figure 3.4: Monte Sacro Alto Illustrated Lot Cover Ratio (Google Maps, 2020c)

3.3.3 Lessons learnt from the planning case of Monte Sacro Alto in Rome, Italy

Spatial planning is the responsibility of the state, as spatial planning involves the arms of the state (legislature, executive and the judiciary) and the different levels (spheres) of governance. Rome is a typical city that has developed organically, modernised during the modernisation period, and continues to evolve in the postmodern period. The forms of building density which give rise to the density gradient closely resemble the expectations of a naturally developing city. The persistence of densification, regardless of modern spatial planning attempts to encourage dispersal and multi-nodal development, illustrates the spatial planning hurdles for planning goals that are inconsistent with the natural preference of the population. The examination of the case study takes note of the flow of the spatial planning regulatory framework, with the lower level regulatory body working within the confines of the upper level regulatory frameworks. The study derives, from Di Zio et al.'s (2010) assertion of

Rome's 1962 CMP having been established almost 20 years after the passage of the directing Law No. 1150 and finally being approved in 2008, that lag time between and within the different levels of planning administration easily cuts across generations. The period from the introduction of such a plan, to finalisation of the plan, the implementation of the plan and finally to the realisation of the outcomes of the plan, is often very long. The study realises that spatial plans are living documents which continuously evolve following their conception.

The density in Monte Sacro Alto illustrates the gentleness of the density gradient from the city centre to the surrounding suburbs that are also in the urban core. A suburb of a city with 2.8 million people, located at about 6 kilometres from the city centre, displays a population density of about 14258 persons per square kilometre. This level of density seems to have been achievable through less restrictive land use regulations, marked with a general building height of about 5 storeys, a 60% building to lot cover ratio which works out to a floor area ratio of about 3, and a gross developed land parcel cover ratio of about 80%.

The conceptual framework is another important consideration that the study observes. The modernisation period, from the late 19th Century to the mid-20th Century, has been most effective in executing the spatial planning vision. The reconstruction planning Legislative Decree No. 154 of 1945 demonstrates the resolute character of the modernist period. Further evidence is the period taken to establish the 1962 CMP from Urban Planning Law No. 1150 of 1942 (i.e. 20 years), compared to that taken to establish the 2008 CMP from the 1962 CMP (i.e. 46 years). Di Zio et al. (2010) declare the post 2008 CMP planning landscape as spineless, which unveils the contradictory nature of postmodernism and postmodern planning. More importantly, the case study reveals the need to address the inevitable existence of the dilemma in the balancing of public-private interest in spatial planning.

3.4 The case of Asylum Down in Accra, Ghana

The case study examines the spatial planning policy framework in relation to densification in the inner city suburb of Asylum Downs in Accra, Ghana. The section starts by going through the Ghanaian spatial planning policies and their application by the local sphere of government, with a subsection that geographically locates the suburb. The policy framework is then contrasted against the real spatial manifestation in Asylum Downs. Lessons learnt from the case study follow.

3.4.1 The legislative planning instruments

Asylum Down is an inner city suburb in Accra, the capital city of the Republic of Ghana. Figure 3.5 illustrates the location of Asylum Downs and Accra.

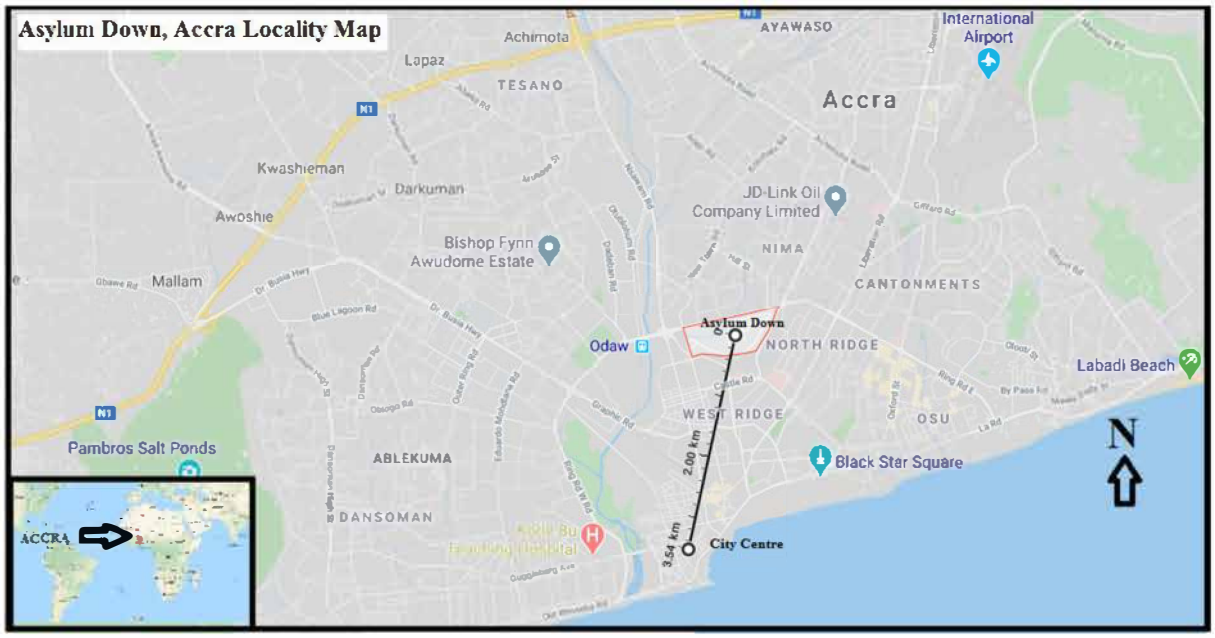

Figure 3.5: Locality of Asylum Down in Accra, Ghana (Google Maps, 2020a)

The Republic of Ghana is a decentralised unitary state that has evolved from 113 (1844 – 1957) years of British colonisation (Acheampong, 2019). Ghana's spatial planning is traceable to the early 20th Century, with the implementation of the First National Development Plan. The 1945 Town and Country Planning Act (CAP 84) benchmarked the imperialist planning system's influence over post-colonial Ghana's spatial planning regulations (ibid). The colonial powers introduced modernist planning in African colonies to enable easier extraction of resources, as well as protect the health of the imperialist agents (Fält, 2016). Both the post-independence and the pre-independence periods have a centralised planning system. The pre-independence planning lacked public participation and was exclusive. The post-independence planning has country-wide coverage with inclusive intent to service and improve the lives of everyone (ibid).

According to Acheampong and Ibrahim (2016), the Ghanaian planning structure has three administrative spheres of governance, which are the national, regional and local spheres, outlined in Figure 3.6. The main planning levels are the national and local levels, whilst the regional level serves mainly to co-ordinate and administer between the other two levels. The key planning institutions at the national level are the National Development Planning Commission (NDPC) and sector ministries in the form of departments and agencies. The responsibility of the NDPC is to prepare national development policies and plans, and to

provide guidelines for the preparation of sector and district plans. The sector ministries, departments and agencies establish the respective sector policies and plans like environmental, housing and transportation sector policies and plans. The regional level is composed of ten regional authorities; each consisting of a Regional Coordinating Council (RCC) and sector departments and agencies. The Local Government Act No. 462 and the National Development Planning System Act No. 480 mandate the regional planning authorities to monitor, coordinate and evaluate the Metropolitan, Municipal, and District Assemblies' (MMDAs) local governance activities. The MMDAs are composed of six metropolitan areas, forty-nine municipalities, and one hundred and sixty-one districts. The local governance institutions are the MMDAs and the respective sector departments, and they are responsible for the development of the Assemblies' jurisdiction areas and the preparation of district and local plans (Acheampong and Ibrahim, 2016).

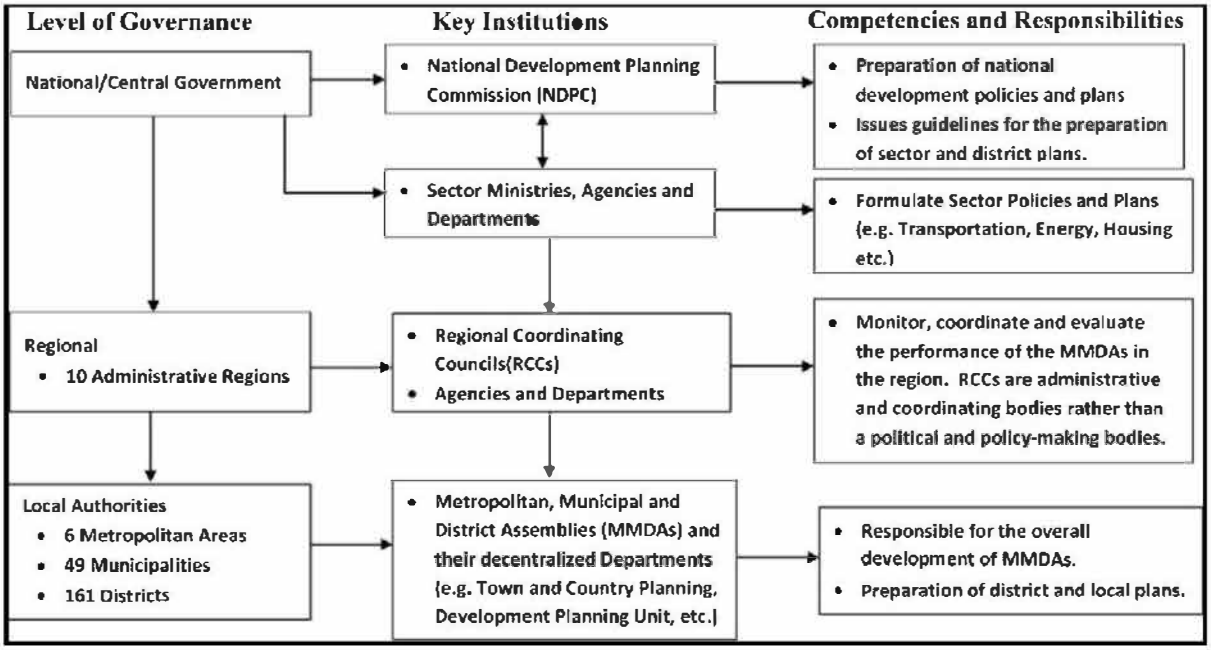

Figure 3.6: Ghana Planning Authorities' Structure and Responsibilities (Acheampong and Ibrahim, 2016)

Chapter 20 of the 1992 Republic of Ghana Constitution provides for the establishment, practice and development of a decentralised local government administration system. The distinct contemporary spatial legislative Acts are: the Local Government Act No. 463 of 1993; the National Development Planning Commission Act No. 479 of 1994; the National Development Planning System Act No. 480 of 1994; and the Land Use and Spatial Planning Act No. 925 of 2016 (Acheampong, 2019).

The Local Government Act No. 463 serves to mandate the local government on local governance and development. This Act also provides for the role of the regional governance

authorities in local government planning activities. The National Development Planning Commission Act No. 479 of 1994 instructs integrated planning, which encapsulates the development planning tradition, and the National Development Planning System Act No. 480 of 1994 specifies the legal basis of planning by the state organs. The Land Use and Spatial Planning Act No. 925 of 2016 determines the preparation of three-tier Spatial Development Frameworks (SDFs) as imperative planning instruments at national, regional and district levels (Acheampong, 2019).

The opportunity for policy intervention that advocates for densification falls within the mandate of the Spatial Development Frameworks. The Spatial Development Frameworks construct a development framework for environmental, social and economic activities in a spatial landscape. Inevitably areas of intense economic activity call for intense residential and population densities. The national government level has a Town and Country Planning Department that directs spatial planning and spatial activities' distribution options for local government planning activity. The determination of the intensity of residential areas, as an element of zoning ordinance development, is the responsibility of the district political governance level (Acheampong, 2019).

3.4.2 Local zoning and implications for residential densification

Ghana's Town and Country Planning Department (2011, from Acheampong and Ibrahim, 2016) outlines the general spatial layout of the country, the structure plans, and local plans for use at Metropolitan, Municipal, and District Assembly level. The structure plans give the form of the cities like Accra, and local plans describe the allowable use of a plot (ibid). The principle is that non-complying structures in a zone should not in any way change the dominant character of the zone. The Metropolitan, Municipal, and District Assemblies have Statutory Planning Committees that attend to applications for deviating structures, for approval or disapproval. Table 3.1 is an extract from the Republic of Ghana, Town and Country Planning Department's (TCPD) (2011) zoning guidelines and planning standards for local level use in the development of zoning schemes.

The Table 3.1 shows the colour coding for mapping of the different residential zones areas. Rural residential zones appear greenish, whilst urban residential zones appear yellowish on structural plan maps. The guidelines have six urban residential zones, namely residential areas A to E, and Z. Each of these residential zones has regulations outlined indicating permissible uses and prohibited uses, as illustrated in Table 3.2.

Table 4.1: Ghana's Colour Codes for Land Use Zones (Republic of Ghana, 2011)

Land Use/Zone	Symbol	Local Plan or Sector Structure Plan	Structure Plan
Rural			Light Green
Rural A	Ru A	Light Green	
Rural B	Ru B	Light Green	
Residential			Yellow Ochre
Residential Low Density	Re A	Pale Yellow Ochre	Pale Yellow Ochre
Residential Medium Density	Re B	Yellow Ochre	Yellow Ochre
Residential High Density	Re C	Dark Yellow Ochre	Dark Yellow Ochre
Residential High Density (Multi storey)	Re D	Dark Yellow Ochre	Dark Yellow Ochre
Redevelopment Zone	ReZ	Boundary marked by broken black line and land uses according to actual uses	Area delineated by broken black line

Table 3.2: Residential Zone B Development Regulations (Republic of Ghana, 2011)

Permitted Uses	Prohibited Uses
▪ Detached, Duplex, Row Houses ▪ Compound Houses ▪ Public Open Space ▪ Local Shop ▪ Basic education and Childcare Centre ▪ Community Facilities ▪ Places of worship ▪ Minor Government Business ▪ Limited road network to provide access ▪ Markets with repair workshops	▪ Major Industrial Development ▪ Major Commercial Development ▪ Mass Transportation ▪ Warehousing ▪ Major Sports Facilities ▪ Cemeteries ▪ Animal husbandry ▪ Stockyard

Table 3.3 sifts the regulations that relate to the various urban residential zones, indicating the extent to which these zones relate to densification. Residential zone A (Re A) is for the most sparse urban residential development. Residential zone B (Re B) is for medium density with mixed residential infrastructure. Residential zone C (Re C) is for high density settlements seeking to accommodate onsite upgrading of informal settlements. Residential zone C must be located near business centres and major transport routes to permit strategic location of the poor near livelihood opportunities.

Residential zone D (Re D) caters for high density residential development areas at and near the inner city, near business centres and major transport routes. This is the only residential zone where the guidelines specify permissibility of multi-storey buildings. Residential zone E (Re E) regulates for high density in the form of intensive community dwelling developments which include hostels and institutional accommodation.

Table 3.3: Overview of the City Residential Zones (Republic of Ghana, 2011)

Zone	Density	Purpose	Permissible Res. structures	Prohibited Re. structures
Re A	Low – 10 to 15 Dw/Ha; Plot size ≥ 500m^2	Maintenance of low density	Detached, Duplex, Compound Houses	Block of Flats
Re B	Middle - net 16 to 30 Dw/Ha;	Mixed residential area	Detached, Duplex, Row Houses, Compound houses	Non-specified
Re C	High - ≥ 30 Dw/Ha; Plot size ≥ 110m^2	Onsite upgrading of informal settlements; Near business centres and major transport routes; Permits strategic location of the poor near livelihood opportunities.	Detached, semi-detached houses Row & compound housing	Non-specified
Re D	High – up to 300 persons/Ha;	Intensive development in inner city; near business centres and major transport routes	Multi-storey flats & apartment buildings	Non-specified
Re E	High density No specified min plot size	Intensive community dwelling developments	Community dwelling: ≥ 6 room guest houses; hostels; barracks; institutional accommodation	Non-specified
ReZ	High density; No specified minimal plot size	Diversion from planning standards to accommodate informal settlement upgrading	Residential developments	Massive infrastructure development that relocates people

Residential zone Z (Re Z) provides for areas of deviation from the normal regulations because of their informal settlement nature. Both Residential zones Z and C seek to protect the poor settlements that are strategically located near livelihood opportunities. Residential zone Z provides more protection for the poor by prohibiting massive infrastructure development that relocates people. Residential zone Z, and to some extent Residential zone C, are the expression of Ghana's acceptance of the reality of the existence of poor households in the cities. Residential zone A prohibits high rise buildings, whilst Residential zone D regulates in favour of the high rise buildings, but regulations for Residential zones B, C, E and Z neither permit nor prohibit high rise buildings. The upper limit of 300 persons per hectare in the most dense zone, Residential zone D, demonstrates the zoning guidelines' call for lower general density in Ghanaian cities.

Figure 3.7 illustrates the nature of the Asylum Down neighbourhood structures. These building structures are typical of the Residential zone E regulatory specification of the national zoning guidelines. Northwards from the city centre, Asylum Down is a neighbour to the Cantonments and Nima suburbs characteristic of Residential zones A/B and zone C respectively. Spatial planning regulatory compliance and enforcement seems to be low, according to a number of scholars (Yeboah, 2000; Falt, 2016; Offei, Lengoiboni and Koeva, 2018; Korah, Cobbinah and Nunbogu, 2017; Acheampong, 2019).

Figure 3.7: Asylum Down Neighbourhood Structures (Adapted from Google Maps, 2020a)

3.4.3 Lessons learnt from the planning case of Asylum Down in Accra, Ghana

The Ghanaian spatial planning, with the applications observed in the Asylum Down suburb of Accra, appears to affect Adebayo and Ogunleye's (2014) claims that spatial planning with calculated density objectives is a tool for social and economic redress. The national zoning guidelines illustrate a clear reflection of the social and economic fabric of the population.

The densification strategy prioritises the poor through the Residential zones C, D and Z. These regulations also protect the strategically located destitute communities from the obvious gentrification processes that tend to displace these communities further away from areas of opportunity. The content expressed in the guidelines indicates the drive for the use of spatial planning by intensification to nurture economic vitality and reduce social and economic exclusion. There is an admission of the need to upgrade the majority poor's living conditions, which is defeated by limited means. This defeated intent is consistently reflected in the regulatory framework. Konadu-Agyemang (2001); Fält (2016) and observations on Google Maps reveal Accra as a truly African city whose majority population is poor, in line with the Ghanaian and African population at large.

Adebayo and Ogunleye (2014) cautions that improperly managed densification can have very bad effects, something that may relate to the implementation of the guidelines in the Accra suburbs. The implementation of the guidelines seems to be lacking as Fält (2016) bemoans the forced removal, with no relocation, of the destitute in Mensah Guinea, Accra central in 2014; and Acheampong (2019) and Korah et al. (2017) declare the planning system to be weak and ineffective. The study acknowledges that spatial plans on paper do not necessarily translate to their envisaged realities.

3.5 Spatial Planning and Densification in South African Cities

The contemporary South African cities have evolved from an urban sprawl perpetuating racially exclusionary modernist colonial and apartheid spatial planning. Densification is amongst the instruments sought to address the apartheid distorted spatial landscape (Chobokoane and Horn, 2015). In South African cities, densification is observable in the form of increased occupancy rates, particularly in the inner city; growth of high density informal settlements; redevelopment of land in the inner suburbs to higher densities; an increase in medium density townhouse complexes; and backyard shack establishments, mostly found in the townships (Harrison and Todes, 2015). The observed densification patterns are mainly not a policy driven outcome.

3.5.1 The challenges of densification in South African cities

The challenges of policy implementation for densification lie not only in historical and policy gaps and/or enforcement but also extend to socio-economic, cultural and personal attributes (Chobokoane and Horn, 2015). The persistent apartheid spatial configuration is the historical factor that challenges the densification strategy. The post-apartheid relaxed urban spatial policies on urban sprawl encourage the cities' sprawling effects and defeat densification. The local governments' imperative for social housing provision, which is basically about quantity targeting that lacks spatial specifications, illustrates the policy

deficiency for densification. Chobokoane and Horn (2015) also cite the inadequate local level policy framework and enforcement for spatially based racial integration. The structural factor of the spreading out of urban matters across different government departments with limited integration amongst the departments impedes the implementation of densification in South African cities. The preference for free standing houses with spacious yards is both a personal and cultural attribute that hinders the densification agenda. Another important densification challenge in South African cities is the combination of the private sector-driven urban development and the high land values in the inner suburban areas that are closer to areas of opportunities (ibid).

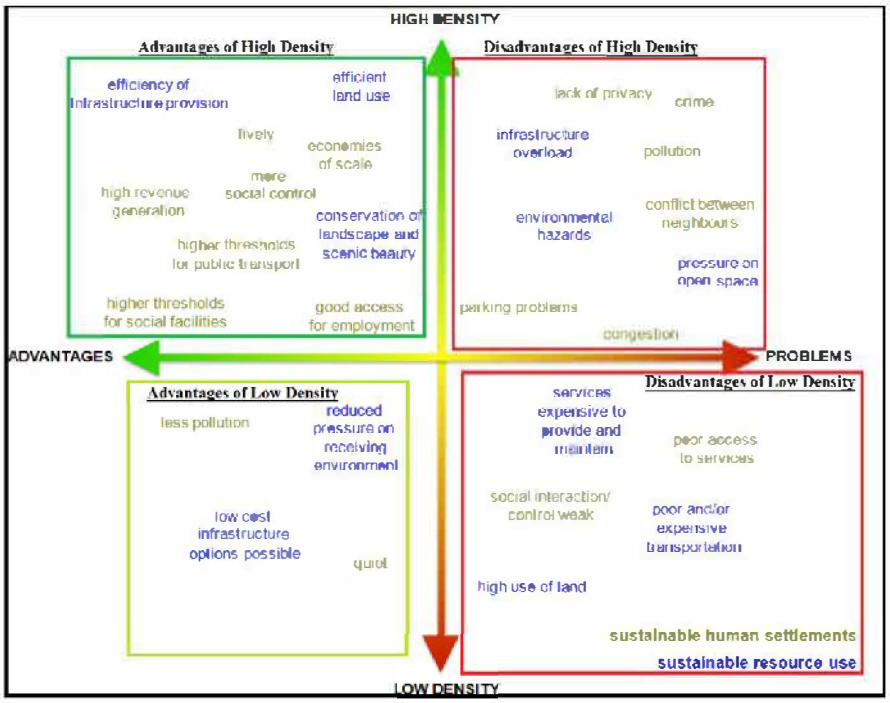

Figure 3.8: Advantages and Disadvantages of Various Residential Densities (Ethekwini Municipality, 2013)

The adapted Ethekwini Municipality (2013) extract in Figure 3.8 summarises the pros and cons of both high and low residential densities. High density advantages, amongst others, are efficient land use and infrastructure provision; good access to employment; high thresholds for public transport; and high revenue generation. High density disadvantages are pressure on space; congestion; pollution; infrastructure overload; parking problems, *et cetera*. The outcome of the densification challenges is densification that occurs outside the policy framework, with spatial manifestations that are not in sync with the national policy objectives. Although the informal high density settlements (sporadically located in the inner city areas) help accommodate the poor in the South African cities, the private sector spatial

development mostly excludes the poor from the inner suburbs and better areas of opportunity.

3.5.2 Ethekwini Municipality town planning

3.5.2.1 The Landscape of Ethekwini post-apartheid planning

The Ethekwini Municipality's spatial planning is typical of South African post-apartheid cities (Magidimisha, 2009). The main objective of the post-apartheid spatial policy framework is to address the unjust spatial divisions of the apartheid period. The post-apartheid spatial planning agenda is better understood from the basis of what constitutes the colonial and apartheid city arrangement. South African conceptualisation of an urban settlement is characteristically of a white urban settlement. The indigenous African population instinctively refers to the urban areas as the whites urban areas (in IsiZulu '*idolobha lisesilungwini*'). Davies's (1981) account of this conceptualisation is with regard to the origin of the South African cities as alien African cities lacking the indigenous African traditions. Originally, the presence of Africans in African cities was only for providing labour services for the benefit of the rightful urban residents, non-Africans - particularly whites.

Apartheid spatial planning in South African cities excludes Africans (and therefore the majority poor), both in the planning process and in the envisaged city planning outcomes (Davies, 1981). The establishment of the African townships near urban centres had the intention of providing temporary accommodation for the African migrant workers, rather than providing a permanent place of residence (ibid). The 1918 Spanish flu epidemic and related health concerns led to the execution of formal spatial planning. The 1923 Native (Urban Areas) Act, the 1937 Native Laws Amendment Act, and the 1950 Group Areas Act are the prominent legislations which guide spatial regulation in the African (urban) residential areas; a planning system that departs significantly from the general city plans for a white's city.

Table 3.4: 1957 African Residential Forms in Durban (Davies, 1981)

Housing form	Percentage
Informal housing	34
Family housing in townships	17
Barracks and compounds	32
Domestic quarters in white residential areas	18

The South African cities are therefore a modernist white minority rule crafted landscape designed to maintain and secure the privilege of the white population. Table 3.4 provides

the breakdown of the 1957 Durban African residential conditions. The core-periphery racial urban modelling reached near perfection in Durban towards the end of the white's minority rule (Davies, 1981; Schensul, 2008). In 1996, 75 per cent of the Durban Africans lived in peripheral African townships (Schensul, 2008). Figure 3.9 demonstrates, with visual mapping, the spatial configuration of the apartheid city that shaped Durban's spatial organisation.

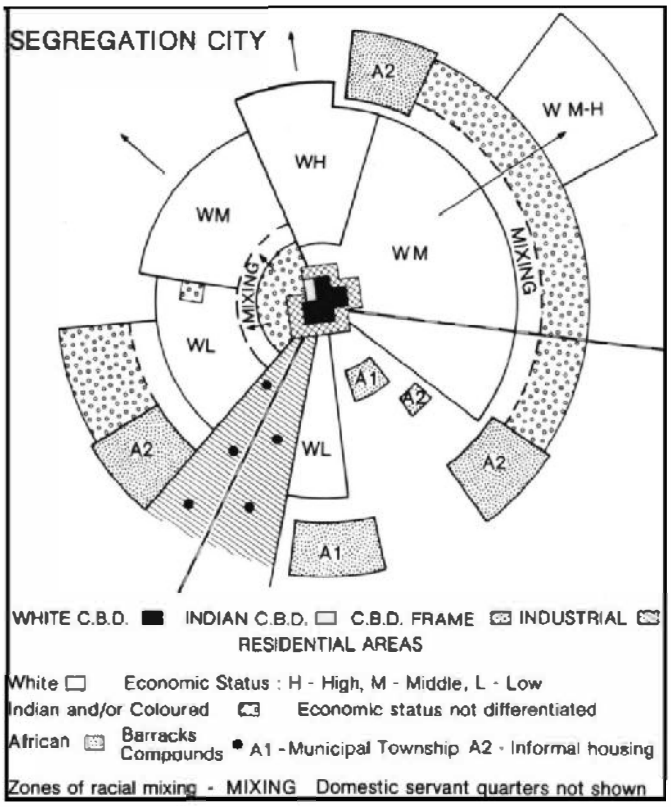

Figure 3.9: Structure of the South African Apartheid City (Davies, 1981)

The attempts of post-apartheid spatial planning to address the apartheid spatial distortions seem not to be succeeding in terms of including the majority poor in areas of opportunity; the inner city suburbs in particular (ibid). Schensul's (2008) illustration of the African poor's continued residential exclusion in the inner city gives a perfect example of racial to social class exclusion. The Post-apartheid spatial planning effectively removed policies that sought to exclude Africans from the inner city, but the city's restructuring process has shifted to become private sector driven (Harrison and Todes, 2015). The current spatial development policy framework (starting from the Constitution to local SDFs) promotes densification but seems to lack effective implementation at the local level (Turok, 2011). Ethekwini is a multi-nodal city with transit oriented development, and the Durban city centre is the urban core of the metropolitan city.

According to Statistics South Africa (2011), the Ethekwini Municipality is the third biggest metropolitan municipality in South Africa. The Ethekwini Municipality is located on the South African East Coast. The municipality has a geographical surface coverage of 2297km^2 and a population of 3 442 361 persons (StatsSA, 2011). Ethekwini is divided into four spatial planning regions, which are the Central, North, South, and Outer West planning regions (Ethekwini Municipality, 2013). The central planning region has the second highest population growth, with a 2030 projection of 1.25 million from 1.1 million in 2013, as shown in Figure 3.10 (Ethekwini Municipality, 2013). Figure 3.10 maps the distribution of the Ethekwini population across the spatial regions, as well as the projections for 2030. The Ethekwini Municipality has since included a densification strategy as part of the municipality's spatial development strategy (Ethekwini Municipality, 2013).

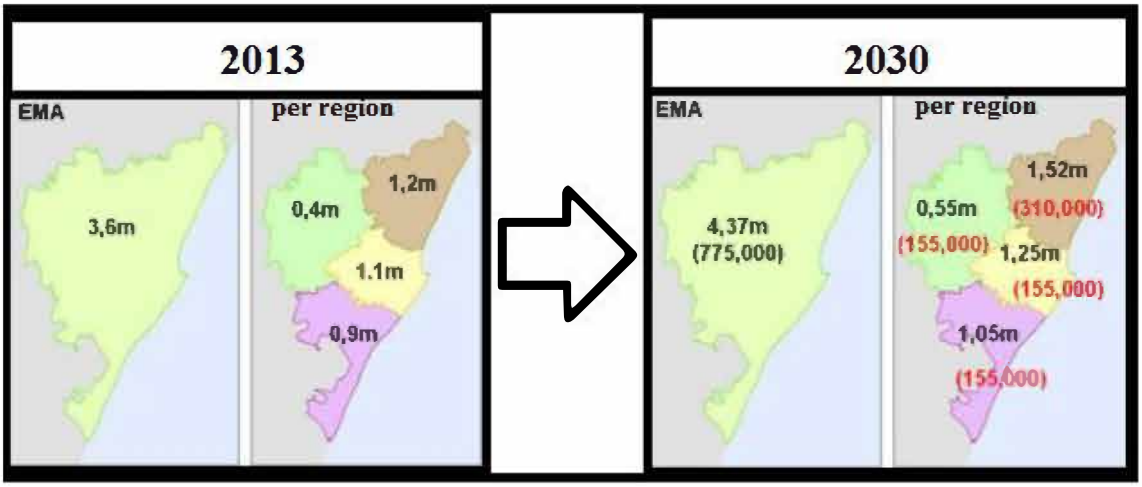

Figure 3.10: Regionalised and Projected Ethekwini Municipality Population 2013 to 2030 (Ethekwini Municipality, 2013)

(Numbers in brackets indicate the growth, a difference between the 2013 and 2030 projections)

According to Table 3.5, Ethekwini's growth projections for housing demand by 2030 indicate that an equal number of new units will be required to match the growth in three of the four regions, with the exception of the North Region. The North region has a projected 2030 housing demand for 77 200 units, whilst the other regions will require a projected 38 600 units each (Ethekwini Municipality, 2013). The North region's expected growth in housing demand by 2030 is almost double that of the other regions, including the central city core. The Ethekwini Municipality's growth trend in the projected housing demand by 2030 contradicts the study's assumption of a higher housing demand in the inner city core, an assumption that is based on international trends in major cities.

Table 3.5: Projected Ethekwini Municipality Residential Land Parcel Budget per Region (Ethekwini Municipality, 2013)

SPATIAL PLANNING AREA	GROWTH	RESIDENTIAL LAND REQUIREMENTS		
	2030	Low	Medium	High
	New Units	1-15 du/ha	15-40 du/ha	80-150 du/ha
Central Region	38 600	2 573ha	965ha	257ha
South Region	38 600	2 573ha	965ha	257ha
North Region	77 200	5 147ha	1 930ha	515ha
Outer West Region	38 600	2 573ha	965ha	257ha
Ethekwini Total	**193 000**	**12 867ha**	**4 825ha**	**1 287ha**

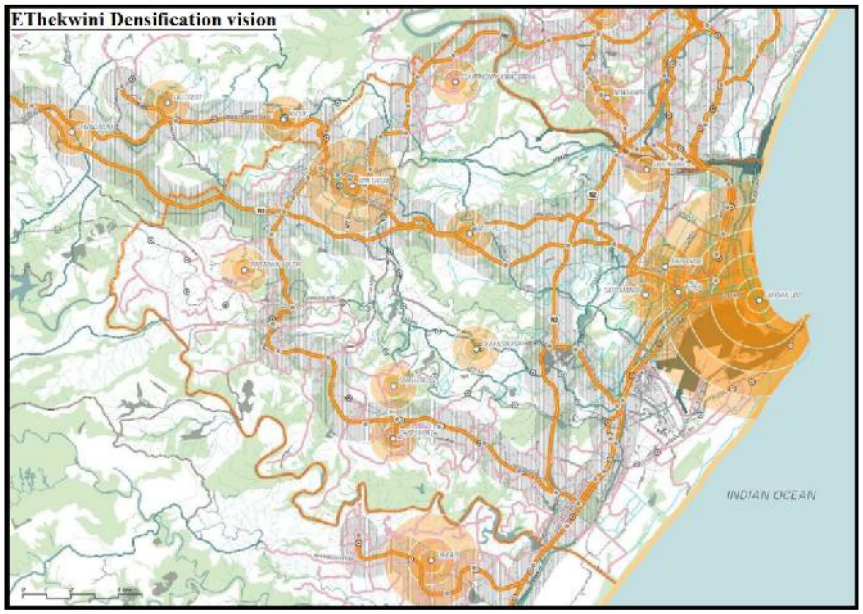

Figure 3.11: Mapping of Ethekwini's Densification Vision (Ethekwini Municipality, 2013)

Ethekwini's densification land use planning is premised on three main features: natural areas (slope and environmental sensitivity or DMOSS areas); proximity to development nodes; and proximity to transit routes (Ethekwini Municipality, 2013). The Ethekwini Municipality uses the three variables to map out the municipality's densification vision in Figure 3.11.

3.5.2.2 Legislative planning framework in South Africa

Densification as a tool for inclusivity is observable in various spatial planning related legislations. These legislations are listed in Table 3.6, with each legislation's indicated directive on residential densification, and these are further discussed below.

Table 3.6: Spatial Planning and Related Legislations on Residential Densification

Legislative Act	Year	Residential Densification Directive
The Constitution (Act No. 108)	1996	Provides for protection of the environment; redress of past racial imbalances; access to adequate housing; local municipalities' sustainable provision of services; inclusivity; and promotion of social and economic development.
Municipal Systems Act (Act No. 32)	2000	Compels the local municipality council to urgently submit a participatory generated IDP and an SDF with transformational development objectives in line with the constitutional imperatives of progressive rights, including housing access.
Spatial Planning and Land Use Management Act No. 16	2013	Requires a local municipality's land use scheme in its SDF to promote economic growth, social inclusion, efficient land development, and have a minimal impact on public health and the environment.
Housing Act No. 107	1997	The general housing principles of all spheres of government must, amongst others, promote- the process of racial, social, economic and physical integration, which includes higher density in respect of housing development to ensure the economical utilisation of land and services.

The demise of apartheid rule required an overhaul of the country's legislative framework for inclusive governance. The end of apartheid coincided with the period of diversity and inclusivity in international trends, as illustrated in the Italian policy shift (Gabellini, 2008). The post-apartheid government adopted a quasi-federal constitutional state model with a government arrangement of three spheres, which are the national, provincial and municipal government spheres (RSA, 1996). The municipal sphere of governance is, in certain areas, further categorised into district and local government municipalities. The metropolitan areas

have the district and local municipalities fused together and classified as Category A municipalities (ibid). Spatial planning policies are directed from the Constitution through spatial planning laws and related sectoral laws at national level to provincial administrations and affected at local government levels. Planning legislations and related policy objectives seek to match the international policy environment in which the post-apartheid environment was conceived (ibid).

The Constitution, Act No. 108 of 1996

Chapter 2 (The Bill of Rights) and Chapter 7 (Local Government) of the Constitution have relevant sections that inevitably direct housing densification in the inner city suburbs (RSA, 1996). Chapter 2, Section 25, delegitimises any law that permits arbitrary deprivation of property or law that prevents measures to redress past racial discrimination on immovable property. Chapter 2, Section 26 gives everyone the right of access to adequate housing. Chapter 2, Section 24 advocates for environmental conservation that inherently promotes economic and social development. The interface between the state and its citizenry is generally at the local government level. Chapter 7, Section 152 states the objectives of the local government sphere to include governance inclusivity and promotion of social and economic development. The implication of this provision on densification is the expectation that the previously excluded in areas of opportunity will have their concerns reflected in the measures of spatial inclusion. The right of access to housing, coupled with environmental conservation, pushes for densification in the areas of socio-economic vitality (ibid).

Local Government: Municipal Systems Act, No. 32 of 2000 (MSA)

The purpose of the Act, amongst others, provides for systems that capacitate local municipalities to progressively work for local community social and economic elevation that includes affordable universal access to essential services. Considering the legacy of apartheid's spatial landscape of skewed service provision, intensification in the areas with already established infrastructure becomes a viable vehicle for the foregoing purpose of the Act. Section 23 of the MSA declares local municipalities as one of the vehicles for the realisation of the constitutional rights in Sections 24 to 27 and 29 of the Constitution, with some of these discussed under the Constitution Act.

The main instrument that the Municipal Systems Act uses to affect its purpose is the provision for the establishment of local municipal Integrated Development Plans (IDPs). Section 25 of the Act stipulates that a municipal council, in a circumscribed time frame during its elected term, must adopt a single, inclusive and strategic municipal development plan in the form of an IDP. Amongst the core components of the IDP is the Spatial Development Framework (SDF) that has to include the municipality's land use management

system guidelines. The SDF becomes the spatial expression of the IDP. The development and amendments of zoning schemes, which in turn indicate the presence or absence of intent for densification as a transformatory tool, constitute a vital part of the SDFs in cities (RSA, 2000). The Spatial and Land Use Management Act covers this aspect of the SDF and land use schemes more clearly.

Spatial Planning and Land Use Management Act No. 16 of 2013 (SPLUMA)

The purpose of this Act includes serving to address past spatial and regulatory imbalances (RSA, 2013). This purpose is also expressed in the objectives of the Act as a set-up for spatial planning and land use management for redress of the imbalances of the past, and social and economic inclusion.

The four components of the South African spatial planning system are: preparation and adoption of SDFs by the national, provincial and municipal government administrations; land use management development principles, norms and standards; land use management including land use schemes; and processes for land development applications (RSA, 2013). Recognising that densification as a form of land use management is dominantly a municipal activity, SPLUMA describes municipal planning as the compilation, approval and review of IDPs that include SDF and land use schemes. The review includes determination of the character, extent and intensity of land use in areas that fall outside the scope of national and provincial responsibilities.

The land use management principles, norms and standards guide and act as objects of the IDP review, and its associated SDF and land use schemes. The development principles are: spatial justice; spatial sustainability; efficiency; spatial resilience and good administration. Intensification in inner city suburbs is more clearly implied in the principles of spatial justice, efficiency and good administration stated in Chapter 2, Section 7 of the Act as:

- *The principle of spatial justice, whereby— (i) past spatial and other development imbalances must be redressed through improved access to and use of land; (ii) spatial development frameworks and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation; (iii) spatial planning mechanisms, including land use schemes, must incorporate provisions that enable redress in access to land by disadvantaged communities and persons; …*
- *The principle of efficiency, whereby— (i) land development optimises the use of existing resources and infrastructure; …*
- *The principle of good administration, whereby— … (ii) all government departments must provide their sector inputs and comply with any other prescribed requirements during the preparation or amendment of spatial development frameworks; … (iv) the*

> *preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, include transparent processes of public participation that afford all parties the opportunity to provide inputs on matters affecting them*; … (RSA, 2013; Chapter 2, Section 7).

The Act also directs municipal SDFs to have a short-term (5 year) development plan in a written and spatial representation format, and a long-term (10 – 20 years) spatial growth and development plan, with identified spatial structuring and restructuring elements, including nodes and the development corridors of the municipality. These plans must "*include estimates of the demand for housing units across different socio-economic categories and the planned location and density of future housing developments*" (RSA, 2013: Section 21(f)).

These SDF provisions serve as the landscape on which land use schemes are developed or reviewed. SPLUMA (RSA, 2013) directs municipality land use schemes to include provisions that promote affordable housing in residential land development. The schemes are also compelled to promote economic growth, social inclusion, efficient land development, and have a minimal impact on public health and the environment (RSA, 2013: section 25). Section 28 of the Act permits municipalities to rezone land use schemes to affect the municipal development goals.

Housing Act No. 107 of 1997

The purpose of the Housing Act, amongst others, is to create a framework for a sustainable housing development process (RSA, 1997). The Act acknowledges housing as a vital component of IDPs; that housing is a key sector of the economy; and that housing is important for the nation's socio-economic welfare. The Act's general housing principles constitute the framework for sustainable housing development processes.

These general housing principles provide for all government levels on five aspects that relate to inner city housing densification. The five areas are prioritisation of the poor's housing needs; provisions for housing development; progressive goals; delimitation of housing development; and environmental consideration. All government spheres must prioritise the housing development needs of the disadvantaged. The provisions on housing development are that it be based on the IDP and that there must be certainty that housing choice is maximised within the allowable means. The principle on progressive goals requires the spheres of government to promote: integrative processes in terms of race, social, economic and physical aspects; and *"higher density in respect of housing development to ensure the economical utilisation of land and services"* (RSA, 1997: Section 2). The last two principles provide for government administrations not to discourage housing development in urban or

rural areas, whilst also taking measures to limit the impact of housing development on the environment. As much as these principles do not specify the location where housing development needs to be encouraged, the study regards that it is inconceivable that the principles can be pursued without densification in the inner city suburbs.

3.6 Conclusion

This chapter provides an understanding that spatial planning is predominantly a legislative based exercise informed by societal activities and envisaged development trends. The international experience demonstrated in Rome and Accra's inner suburbs shows densification in the inner city suburbs. The South African city arrangement seems stark in the apartheid spatial legacy that excludes poor Africans from the inner city suburbs. The main challenge to densification in South African cities appears to be implementation at the local municipality level. Prominent South African legislative instruments that relate to housing, planning and densification are: the Constitution; the Local Government: Municipal Systems Act; the Spatial Planning and Land Use Management Act; and the Housing Act.

Chapter Four: The Case Study of Glenwood, Ethekwini Municipality

4.1 Background Spatial Information on Glenwood

Glenwood is one of the constituents of the Durban central suburbs of the greater Ethekwini Metropolitan Municipality. Glenwood is one of the core areas in the central spatial region (CSR) of the Ethekwini Municipality. The CSR constitutes the socio-economic heart of the municipality, contributing 56 per cent of the municipality's GDP, and is the municipality's biggest creator of employment (Ethekwini Municipality, 2019b). The main attributes that undergird the CSR's economic strength are: the local to national accessibility of the CBD through a variety of transport modes; its industrial and commercial infrastructure; an advantageous climate; and the beachfront and the harbour, amongst others (ibid). The legacy of apartheid's low density residential development with excess infrastructure and natural environmental pressure in the area poses a challenge for densification.

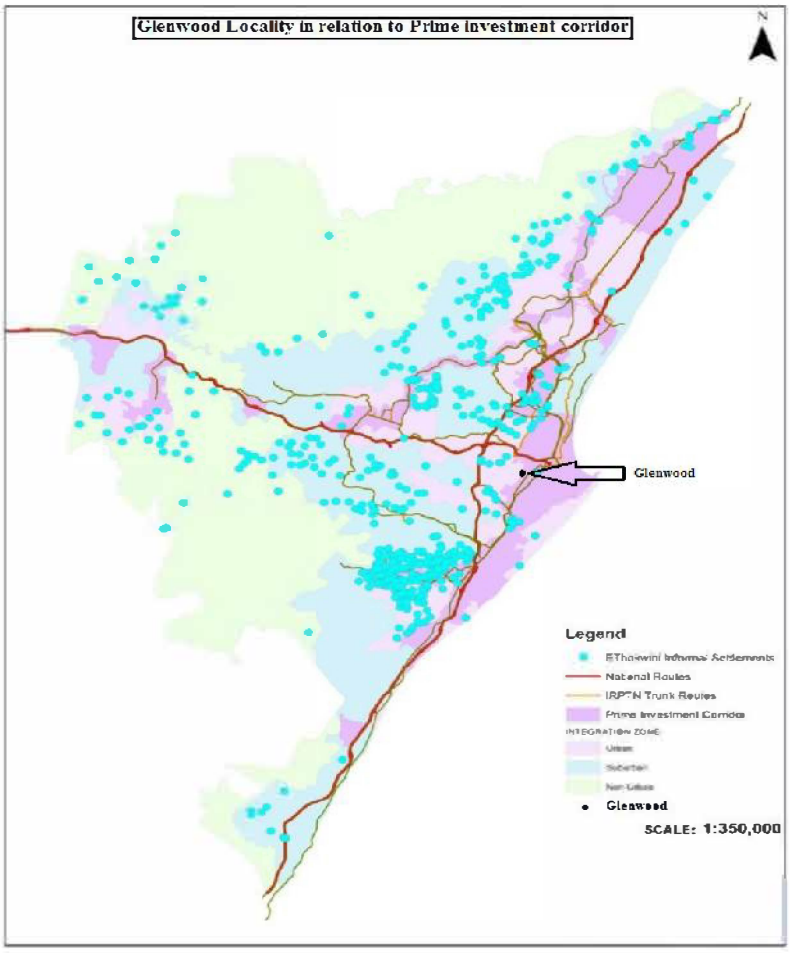

Figure 4.1: Glenwood's Location Relative to the Ethekwini Municipality's Investment Corridor (Ethekwini Municipality, 2019b)

Glenwood is strategically located to the south west of the city centre, on the border between the city centre and the general major city investment corridor, as Figure 4.1 demonstrates. Glenwood suburb is part of the bigger Berea North and South area within the Ethekwini Municipality CSR, composed of suburbs that surround the CBD. Glenwood forms part of the Berea suburbs together with Umbilo, Carrington Heights, Glenmore, Westridge, Bulwer, Musgrave, Overport, Morningside, Essenwood, Windermere and Greyville. The CBD functions are spilling over into these areas, leading to changes in land use schemes to encourage densification and multi-purpose use of properties. Glenwood was previously a whites-only reserved area, and it is located about three kilometres away from the CBD, to the south west.

4.1.1 Socio-economic profile

Table 4.2 shows that in 2011 Glenwood's population was 5395 and the population density was 3289 persons per square kilometre. The population density of Glenwood is significantly higher compared to the population density of the entire Ethekwini Municipality and to that of the urban central part (Durban) of the municipality.

Table 4.1: Ethekwini and Glenwood: Comparative Key Statistical Data (StatsSA, 2011)

Record Description	Ethekwini	Durban	Glenwood
	2011		
Total population	3,442,361	595,061	5395
Population density	1502 p/km^2	2634 p/km^2	3289 p/km^2
Average household size	3,4	2,8%	3,0
Formal dwellings	79.0%	83,7%	97.7%
Young (0-14 years)	25,2%	19,4%	19,0%
Working Age (15-64 years)	70.0%	73,7%	71.0%
Elderly (65+ years)	4,8%	6,9%	10.0%
Dependency ratio	42,8	35,7%	39.9%
No schooling, aged 20+ years	4,2%	2,0%	2.0%
Higher education, aged 20+ tears	12,3%	21,9%	39.0%
Matric, aged 20+ years	37,1%	39,5%	36.0%
Flush toilet connected to sewerage	63,4%	85,1%	96.0%
Weekly refuse removal	86,1%	94,8%	98.7%
Piped water inside dwelling	60,2%	79,4%	97.4%
Electricity for lighting	89,9%	85,5%	99.0%

The difference may, in part, be attributed to the absence of wide-scale natural reserve features in the study area compared to the wider municipal area. Glenwood compares relatively fairly with the averages of the statistical attributes of its surrounding areas. The Ethekwini Municipality and Durban are also significantly outdone by Glenwood in the following: the percentage of formal dwellings; the number of the elderly relative to the total population; the percentage of those with a higher education; and general service provision like electricity, sewerage connected flushing toilets, piped water inside dwellings, and weekly refuse removal. The relative higher percentage of the elderly is, however, slowly changing as younger buyers replace older sellers in the area, as the report by Lightstone in Table 4.2 demonstrates. The relative ranking of the foregoing attributes indicated puts Glenwood in an advantaged position.

Table 4.2: Glenwood Property Values from Comparative Sales (Lightstone, 2018; 2020)

Record Description	Figures	
	2018	2020
1. Owners with 11 years or more of ownership	49%	47%
2. Median freehold property sales value	R1,675M	R1,572M
3. Median sectional title property sales value	R580,000	R546,000
4. Recent sellers 50 years old and above	23%	54%
5. Recent buyers below 50 years old	76%	80%

According to Lightstone's (2020) comparative sales valuation reports, there is an indication of older residents' flight attributable to realignment of the post-segregation spatial arrangement. Nonetheless the suburb remains stable as residential ownership of more than ten years still constitutes 49 per cent and 47 per cent of the ownership in the suburb, as at 2018 and 2020 respectively (ibid). Table 4.3 shows that the median freehold and sectional title values for properties sold are R1, 675,000.00 and R580,000.00 for 2018; and R1,572,000.00 and R546,000.00 for 2020 respectively. Table 4.2 demonstrates that the age of residential ownership is decreasing as younger residents replace older residents through the sales process. Recent sellers who are 50 years old and above constitute 23 per cent and 54 per cent respectively, whilst recent buyers below 50 years old constitute 76 per cent and 80 per cent respectively for 2018 and 2020. The Lightstone (2018; 2020) reports also indicate no newly registered properties on the sales reports.

The comparison in Table 4.3 of the household incomes for the Glenwood and Ethekwini Municipality households for 2011 demonstrates the dominance of the middle income earners in Glenwood. Glenwood has a relatively high percentage of no-income category

households, but a lower percentage of low income category households. However, almost 30 per cent (29.94%) of the households have a household income of more than R307,200.00 per annum. The green shaded row is the median income category in the area.

Table 4.3: Comparative Income Composition in Glenwood (StatsSA, 2011)

Income Category	Ethekwini	Glenwood	
	%	%	Figures
No income	4,2%	10.2%	191
R 1 - R 4800	6,2%	1.3%	25
R 4801 - R 9600	14,3%	1.3%	24
R 9601 - R 19200	16,9%	5.2%	96
R 19201 - R 38400	**13,4%**	8.8%	164
R 38401 - R 76800	10,7%	10.2%	191
R 76801 - R 153600	8,6%	15.8%	**295**
R 153601 - R 307200	5,7%	17.2%	320
R 307201 - R 614400	2%	17.5%	326
R 614401- R 1228800	0,6%	8.6%	160
R 1228801 - R 2457600	0,3%	2.8%	53
R2457601 or more	4,2%	1.0%	19

The 2011 median household income in Glenwood is in the upper sections of the R76,801 - R153,600 income category (at about R135,000.00) per annum. Households with a R76,800 annual income and below constitute 37 per cent of the suburb, whilst less than 13 per cent of the households have an annual income of less than R19,200 (StatsSA, 2011). The suburb is therefore regarded as a middle-to-high income residential area. The high no-income category for Glenwood at 10.2 per cent versus the Ethekwini Municipality at 4.2 per cent can be attributed to the significant presence of the student population in the area.

4.1.2 Public facilities in Glenwood

The community is generally well serviced in terms of access to facilities, with some of the services located within the geographical area whilst those not found within the area are in the neighbourhood immediately next to the Glenwood area. The relatively better public facility provision is illustrated by the presence of schools. There are 1025 (19% of 5395) children of the 0 – 14 year category in the area, which is serviced by 4 schools; 2 primary and 2 secondary schools. Table 4.4 and Figure 4.2 show that the other public facilities in the Glenwood area are: a police station; three open spaces (parks); three sporting facilities; a

municipal office; and two higher education institutions (Further Education and Training [FET] colleges). There are also thirteen places of worship. Clearly, the capacity of the public service facilities in the area exceeds the need of the immediate population of the area.

Table 4.4: Public Facilities in Glenwood (Ethekwini Municipality, 2020; Google Maps, 2020)

Type of Public Facility	Number of the Public Facility
Schools	4
Higher education institutions	2
Places of worship	13
Parks	3
Sporting facilities	3
Police station	1
Municipal offices	1

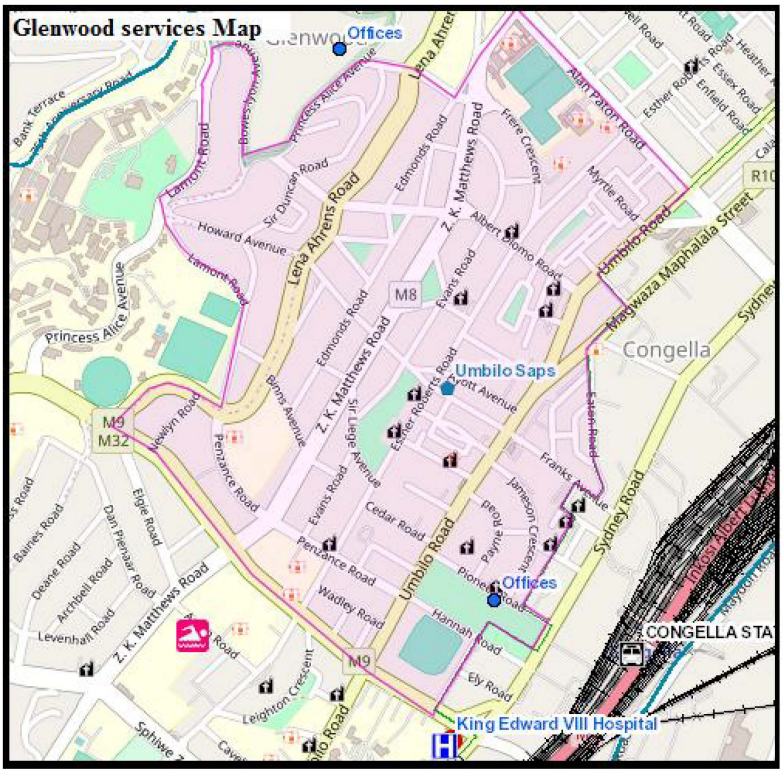

Figure 4.2: Glenwood Services Map (Ethekwini Municipality, 2020b)

The Ethekwini Municipality uses transport as one of the indicators for determining densification suitability. Glenwood is served by a regional road (Umbilo Road) which cuts across next to the eastern boundary of the area. Umbilo Road is a public transport route linking the area with the city centre. Perpendicular to Umbilo Road is also a trunk road (Rick Turner Road) at the western boundary, which links the area to the University of KwaZulu-

Natal's Howard College campus, and the national roads (N3 and N2) at one end and the harbour on the other end. Opposite Rick Turner Road, on the northern boundary, is Alan Paton Road. Umbilo, Rick Turner, Alan Paton, Lena Ahrens, and Z.K. Matthews Roads are significantly wide with road reserves of about 30 metres in width. There are also about five significant west-east and another five significant north-south roads that cut across the area, with road reserves from about 15 to 30 metres each.

4.1.3 Land use planning in Glenwood

The theoretical framework that guides land use in the Glenwood area has evolved from modernist to postmodernist planning, with particular emphasis on the collaborative planning aspect of postmodernist planning. The spacious roads, exclusivity (specialised), and the repetitive (standardised, mass-produced) housing units reflect Glenwood's colonial and apartheid modernist spatial planning origin. Figure 4.3 illustrates the modernist planning and housing character of Glenwood.

Figure 4.3: Glenwood's Modernist Housing Character (Ethekwini Municipality, 2020)

Ethekwini Municipality's IDP informs the SDF, which determines Glenwood's current land use change or land use preservation. The Glenwood community contributes directly to the formulation of Ethekwini Ward 33, which is considered or incorporated in the final IDP of the Municipality. The IDP and SDF establishment processes illustrate the postmodernist collaborative nature of the current Glenwood land use planning. The municipality's Planning

and Land Use Management by-law of 2017 (Ethekwini Municipality, 2017) is the local legislative guide in the implementation of the municipality's package of plans in Figure 4.4.

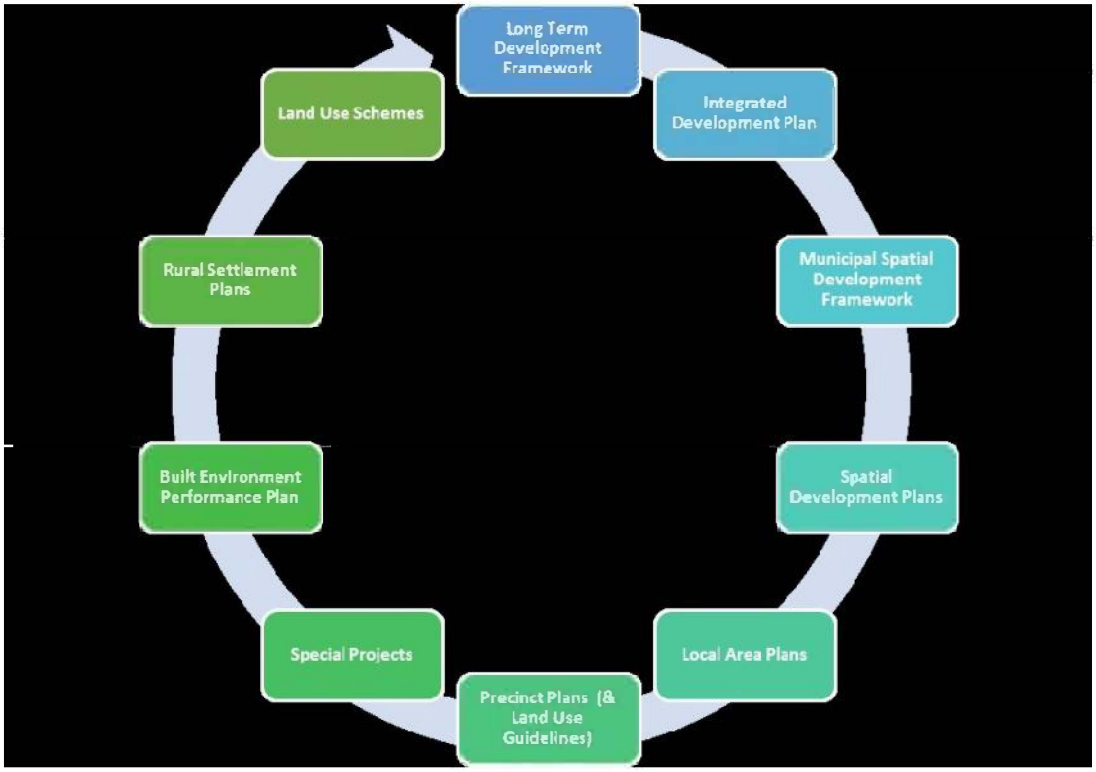

Figure 4.4: Ethekwini Package of Plans (Ethekwini Municipality, 2019b)

The Ethekwini Municipality has enacted four land use schemes for each of the spatial regions. Glenwood's land use is determined by the municipality's central spatial region land use scheme. Table 4.5 presents extracts from this land use scheme, showing the density attributes of the residential zones.

Table 4.5 helps to illustrate the zones that encourage or discourage residential densification. The study identifies 17 urban residential zones in the central scheme. These residential zones are: five general residential; four integrated public transport network associated zones composed of one residential and three mixed use; two mixed use; one intermediate residential; one medium density housing; and four special residential zones composed of SR 180, 400, 900 and 1200 zones. The general residential (GR) and integrated public transport network (IPTN) associated zones permit higher densification, with GR 5 having the least limiting regulations. GR zones are dominant in the city centre, whilst IPTN-associated zones are for areas within 400 metres of the municipality's IPTN system. Mixed use zones are mainly commercial and residential integrating development structures. The GR and mixed use zones both reserve the ground level for business use and therefore restrict residential use to floors that are not on the ground level.

Table 4.5: Main Residential Zones in Ethekwini's Central Scheme (Ethekwini Municipality, 2019)

Zone	Density Purpose	Density attributes					Permissible Residential Structures
		DU/Ha	Min Lot size in m^2	Height : storeys	Coverage	FAR	
GR 1	High	Net A/90	900	N/A	50%	1.2	•Boarding House •Dwelling House •Flat* • Hostel •Multiple Unit Development •Retirement Centre
GR 2	**High**	**Net A/55**	**900**	**N/A**	**50%**	**1.2**	**•Boarding House •Chalet Development •Dwelling House •Flat* •Hostel •Multiple Unit Development •Retirement Centre**
GR 3	High	Net A/55	900	N/A	40%	1.3	•Boarding House •Chalet Development •Dwelling House •Flat* •Hostel •Multiple Unit Development •Retirement Centre
GR 4	High	Net A/90	900	N/A	40%	1.6	•Boarding House •Chalet Development •Dwelling House •Flat* •Hostel •Multiple Unit Development •Retirement Centre
GR 5	High	N/A	900	59° [a]	100 %	7.0	•Flat* •Boarding House •Chalet Development •Dwelling House •Hostel •Hotel •Multiple Unit Development •Retirement Centre
IPTN MU 1	High	N/A	N/A	N/A	N/A	5.0	•Flat* •Boarding House
IPTN MU 2	High	N/A	N/A	6–8	N/A	3.0	•Flat* •Boarding House
IPTN MU 3	High	N/A	N/A	4-6	N/A	1.5	•Flat* •Boarding House
IPTN-R	High	N/A	N/A	4	60%	2	•Dwelling House •Flat •Hotel •Multiple Unit Development*
MU1	High	1/90m^2	400	4	50%	1.0	•Boarding House •Dwelling House •Flat* (not on ground floor)
MU 2	High	Net/55	N/A	6	80%	1.5	•Boarding House •Dwelling House •Flat •Multiple Unit Development* (Residential restricted to 3rd & 4th floors)

Zone	Density Purpose	Density attributes					Permissible Residential Structures
		DU/Ha	Min Lot size in m^2	Height : storeys	Coverage	FAR	
IR	High-medium	1/90 m^2	240	4	50%	1.2	• Dwelling House • Multiple Unit Development • Flat
MDH	Low-medium	1/325m^2 Net area	650	2	50%	N/A	• Dwelling house • Multiple Unit Development
SR 180	High-medium	1/180m^2	180	2	75%	N/A	• Dwelling House • Multiple Unit Development (• Boarding House • Retirement Centre)
SR 400	**Medium**	**1/400m^2**	**400**	**2**	**50%**	**N/A**	**• Dwelling House • Multiple Unit Development (• Boarding House • Retirement Centre)**
SR 900	**Low**	**1/900m^2**	**900**	**2**	**50%**	**N/A**	**• Dwelling House • Multiple Unit Development (• Boarding House • Retirement Centre)**
SR 1200	Low	1/1200m^2	1200	2	40%	N/A	• Dwelling House • Multiple Unit Development (• Boarding House • Retirement Centre)

Note: All height restrictions are subject to the general height limitations of the area above mean sea level; () – special consent category;

* - Residential units not permitted at ground floor level; [a] – Angle from the opposite street;

GR – General Residential; IPTN MU – Integrated Public Transport Network Mixed Use; IPTN-R – Integrated Public Transport Network Residential;

MU – Mixed Use; IR – Intermediate Residential; MDH- Medium Density Housing; SR – Special Residential.

The intermediate residential, medium density housing and special residential zones are mainly for single dwelling houses meant for differentiated densities across the areas. The intermediate residential density attributes closely relate to those of the GR zones, whilst medium density housing closely relates to the special residential (SR) zoning stipulations. The minimum SR lot size (and the accompanying parameters in the scheme) is inversely proportional to parcel density. Hence, SR180 provides for the highest density in the SR zones, whilst SR1200 caters for the lowest density. The study arranges these zones, in terms of highest to lowest density, as: intermediate residential, SR180, SR400, medium density housing, SR900, and SR1200.

International experience, as in the Accra case study, demonstrates the zoning for the poor's housing provision through zones for smaller minimum lot sizes, higher lot coverage and multiple unit developments in the form of hostels/dormitories and flats. SR180 best caters for the poor in the SR zones category. On the other hand, intermediate residential zoning seems to better accommodate organic upgrading of single residential lots to multiple residential lots.

Table 4.6: Glenwood's Relative Major Land Use Consumption (Ethekwini Municipality, 2020)

Land Use Zone	Approximate % Consumption
Housing Incorporating Zones	
Special Residential 400	40%
Special Residential 900	12%
General Residential 2	6%
Other Prominent Zones	
Open space	5%
Educational	12%

Figure 4.5 maps the land use in Glenwood, as per the Ethekwini Municipality's CSR land use scheme and Table 4.6 shows the approximate major land uses in Glenwood, as extracted from the map. The residential zones observed in Glenwood are GR1, GR2, SR400 and SR900. GR1 is only about 1000m^2 (0.06%) and is not included in the major land use consumption table. The mainly housing catering zones constitute about 60 per cent of the area (58% in Table 4.6's actual) inclusive of road reserves. The GR2 zones are immediately along Umbilo (R102) Road, which implies that these developments may also be considered

as IPTN associated developments. The housing density zones then drop to SR400 and to SR900 at the north-western boundary of the area.

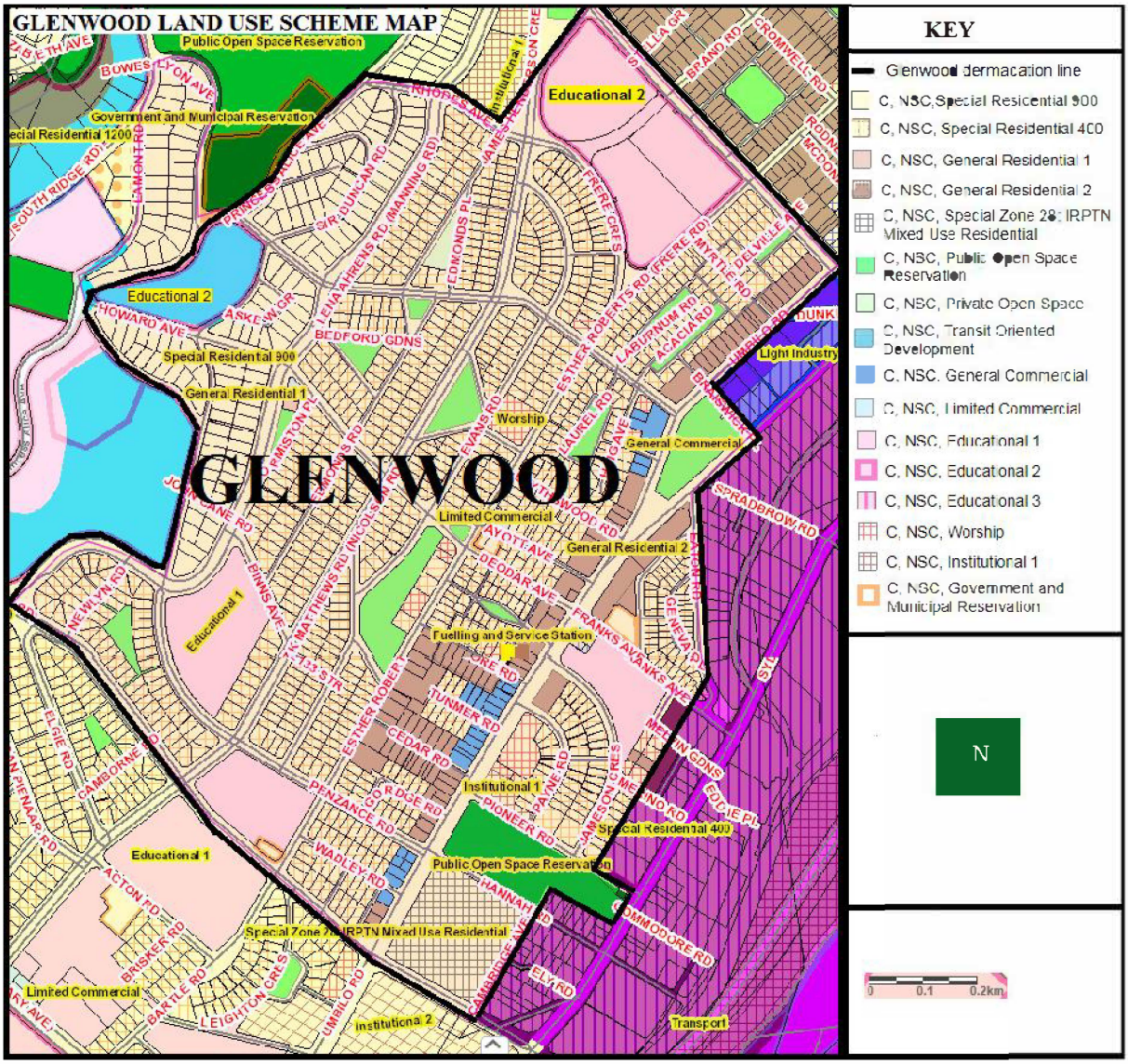

Figure 4.5: Glenwood Land Use Map (Ethekwini Municipality, 2020)

4.2 Conclusion

This chapter provides the background information on Glenwood through submission of the locality, socio-economic profile, public facilities available, and land use planning of the area. Statistics South Africa and Lightstone reports reveal the population density, the rejuvenating population age, and the scarcity of new developments in the area. The excess capacity in the public facilities available like schools and transport routes encourage sharing of the services with other areas further away from the study area. There has been an evolution of the spatial planning theoretical guide for Glenwood, from the modernist to the postmodern collaborative theory. Glenwood land use is subjected to Ethekwini's Central Scheme with 17

urban residential zones mostly in GR, IPTN and SR zones. The study area identifies three of the seventeen residential zones as significantly present in Glenwood, namely the SR400, SR900 and GR2 zones. These residential zones are distributed as follows: SR400 - 40 per cent, SR900 – 12 per cent, and GR2 – 6 per cent of the land, and together they comprise of almost 60 per cent of the total Glenwood land parcel.

Chapter Five: Study Findings

5.1 Introduction

This chapter presents an analysis of the collected field data that relates to spatial planning and densification in Glenwood. The analysis is based on the information gathered from both primary and secondary sources and analysed both quantitatively and qualitatively, as described below. The chapter begins with a detailed account of the composition and delimitation of the data sources and the manner in which the analysis is carried out. The study objectives then guide the crafting of the following subsections which are: the Ethekwini Municipality's urban spatial development policy framework; the interface between Glenwood's local spatial expression and the broader Ethekwini spatial densification policies; and the application of the densification principles in Glenwood. These objectives are established as the main themes of the qualitative data. A summary closes the chapter.

5.2 Composition and Description of Data Sources

Table 5.1 provides an overview of the composition of the data sources that provided the content for this chapter. As indicated earlier, the data sources were both primary and secondary sources. The primary field data was obtained from physical field observations and key informants. The physical field observation was integrated with a secondary data study focussing on Umbilo Road, Z.K. Matthews Road and Morris Place. The profession, public/private practice, age and place of residence inadvertently influenced the views of the key informants in the study. Table 5.1 and the charts in Figures 5.1 to 5.4 provide a pictorial view of the key categorical attributes of the primary data sources.

The key informants were a municipality planner, a municipality housing official, two planners in private practice, three estate agents, and a ward councillor. The municipal planner was a white male aged between 56 to 65 years who resided outside the study area. The municipality housing official was an African female in the age group of 26 to 35 years who resided in the study area. The first private practicing planner was a white male aged between 56 to 65 years who resided in the area surrounding the study area. The second private practicing planner was an African female aged between 26 to 35 years who resided outside the study area. The ward councillor was an African female in the age group of 26 to 35 years who resided in the study area. The estate agents were two African males and one Indian female, all in the age group of 36 to 45 years; the African males resided away from the study area whilst the Indian female resided within the study area. These key informants provided the qualitative information based on their experiences in the matters that related to the study during the performance of their daily work tasks.

Table 5.1: Sources of Data Collection (Author, 2020)

Data source category	Participant Occupation	Quantity
Primary	Researcher's physical observations	1
	Municipal Planner	1
	Municipality Housing Official	1
	Private Sector Planners	2
	Estate Agents	3
	Ward Councillor	1
Secondary	Statistics South Africa	N/A
	Lightstone reports	N/A
	Ethekwini Municipality planning documents (IDP, SDF + policies)	N/A
	Google Maps	N/A
	EThekwini Municipality Corporate GIS	N/A
	Ethekwini Municipality LUMS Development Applications database	N/A
Total		15

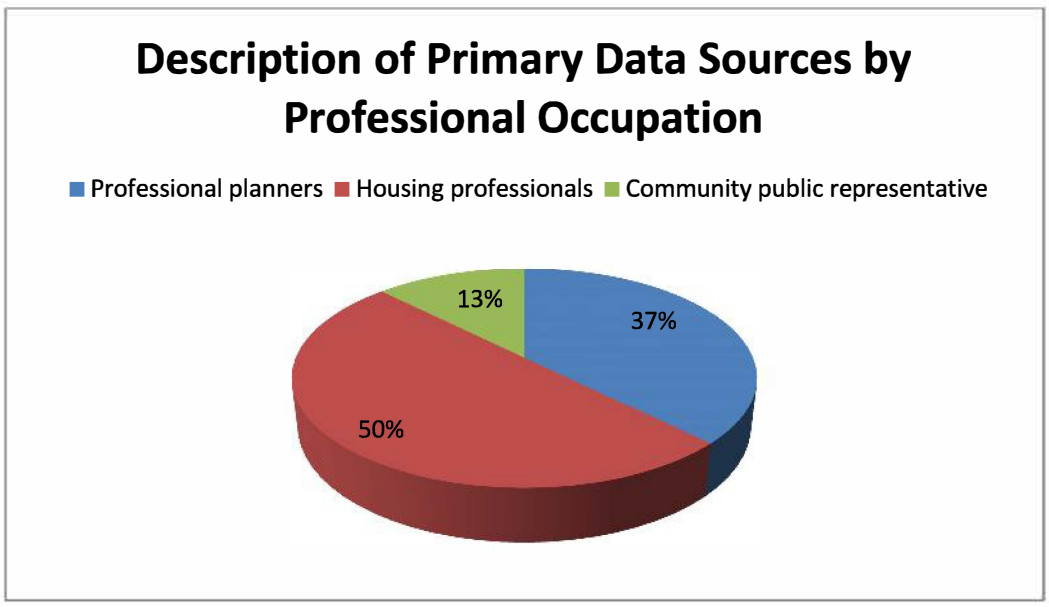

Figure 5.1: Description of Key Participants by Professional Occupation (Author, 2020)

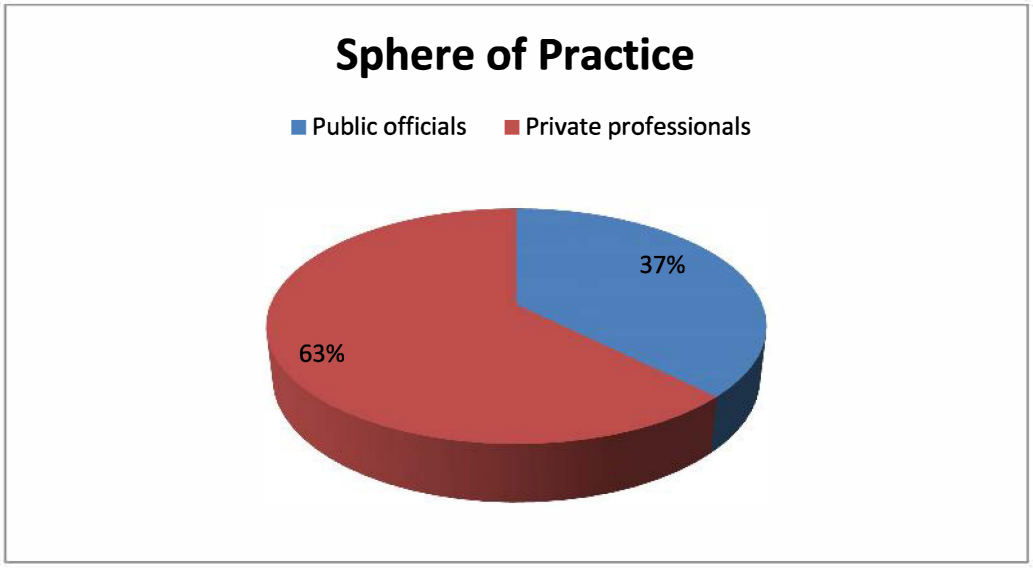

Figure 5.2: Respondents' Composition by Work Place (Author, 2020)

Table 5.2: Description of Primary Data Sources by Age (Author, 2020)

Age Category	Number	Percentage
26 to 35 years	3	37.5%
36 to 45 years	3	37.5%
46 to 55 years	0	0%
56 to 65 years	2	25%
66 years and above	0	0%

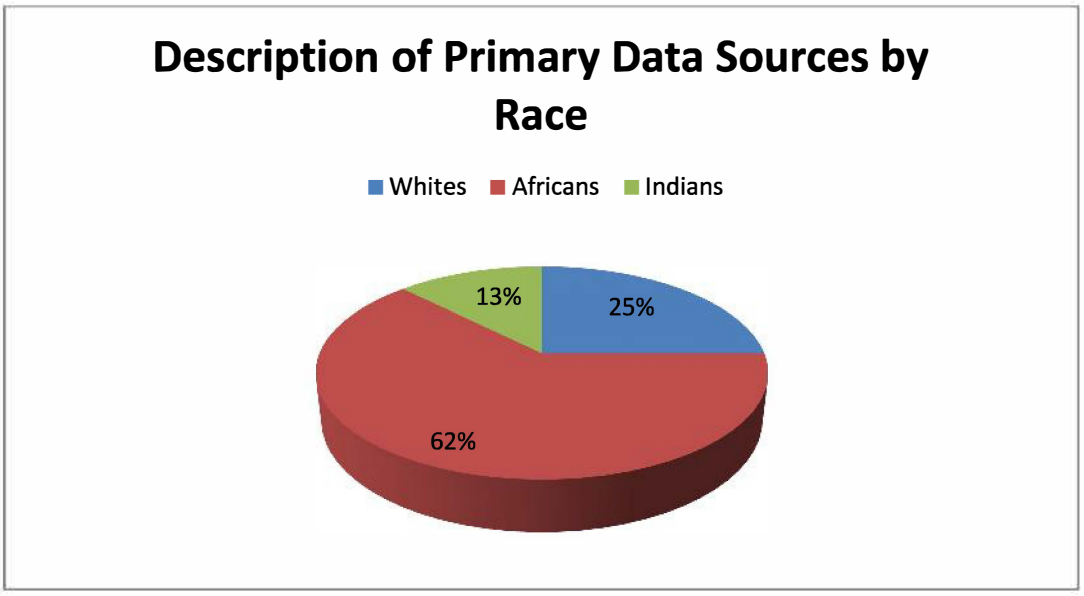

Figure 5.3: Racial Composition of the Key Informants (Author, 2020)

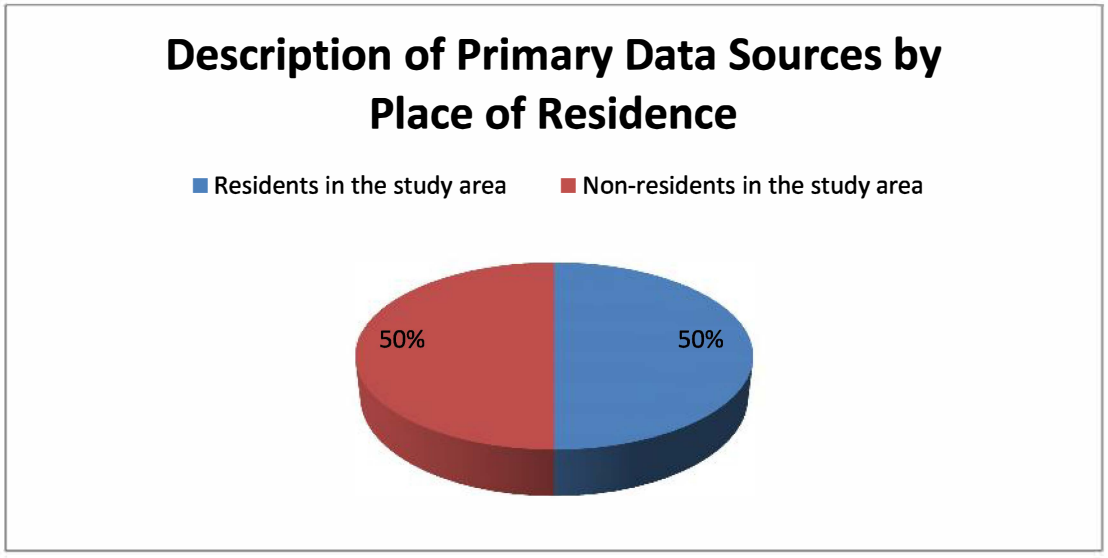

Figure 5.4: Participants' Composition by Place of Residence (Author, 2020)

The secondary data sources included statistics from Statistics South Africa; Lightstone property sales valuation reports; Ethekwini Municipality planning documents (IDP, SDF and legislative policies); Google Maps images; Ethekwini Municipality Corporate GIS images; and the Ethekwini Land Use Management Systems (LUMS) development applications database. The input of the planning documents into the study was discussed towards the end of Chapter Three and in Chapter Four, which ended with the type of residential zones in Glenwood. The study used Ethekwini Municipality's (2020) Corporate GIS and Google Maps (2020a) images to establish a survey of the extent of the Lot density in terms of lot coverage, building heights and floor area ratios, as Figure 5.5 illustrates.

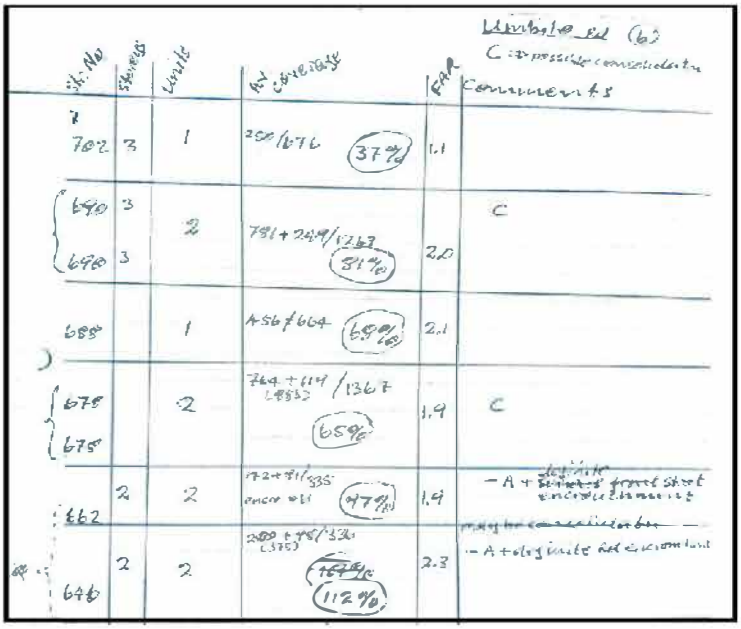

Figure 5.5: Illustration of Lot Analysis from Secondary Sources (Author, 2020)

The data from the images sourced was verified, as much as was possible, with physical observations undertaken by the researcher. The survey of the Ethekwini Municipality's Land Use Management Systems development applications database provided evidence of the extent of the expression of the wishes of some of the residents.

5.3 Ethekwini Municipality Urban Spatial Development Policy Framework

The study found the key subthemes of the Ethekwini urban spatial development policy framework to be: key policies that drove property development; the objectives of the policies; and the views on achievability of the policies' objectives.

5.3.1 Key policies that drive property development in the Ethekwini Municipality

Density, a constructive core word for densification, is a major determinant of the envisaged urban land use, and is presented as a land use scheme (Boyko and Cooper, 2011). Turok (2011) defines densification as a process which includes land use and building regulations, towards intensified land use. Chapter Three and Chapter Four discussed the policies that affect densification in South African cities and in the Ethekwini Municipality in particular: The policy directives set out in the Constitution (RSA, 1996) are detailed in the MSA (RSA, 2000), SPLUMA (RSA, 2013) and the Housing Act (RSA, 1997) at the national level. The IDP and SDF (RSA, 2013 and RSA, 2000) then provide the framework for the establishment of town planning schemes at the local government level, following the SPLUMA process.

The key informants' data revealed the key policies influential to Ethekwini's spatial development in the post-apartheid period to be the SPLUMA, the IDP, town planning schemes (Ethekwini Municipality, 2019a), the densification policy, and social housing programmes. SPLUMA was stated as the main spatial development policy by all of the professional planners, whilst the housing professionals and the community representative focussed on the social housing programmes as the main development drivers for densification in the Ethekwini Municipality areas. Social housing programmes were identified in the form of the Finance Linked Individual Subsidy Programme (FLISP), the Reconstruction and Development (RDP) housing programme, and council flats (Social Housing Regulatory Authority, 2011).

The Town Planning Scheme policies were prominent in the responses of the municipality officials in both the planning and housing spheres. The planning officials presented the schemes as the local level representation of SPLUMA, whilst the Housing Official presented these schemes as the creation of restructuring zones for densification. The following extract demonstrates the housing official's perspective:

> *We [as Ethekwini Municipality Housing Department] have got different programmes. The one that I'm doing is social housing. What we do is: before we implement social housing, there are restructuring zones that get approved by the national…. So those restructuring zones, they also follow a process.... They have to check whether there are any existing amenities within the area. The job opportunities; are they there? The schools; are they there? And all that stuff, before they even say: OK, this is going to be the restructuring zone for the social housing* (Housing Official).

The creation of these restructuring zones can be described, in town planning terms, as the identification of strategic areas (in terms of resource availability) for rezoning with the intent to facilitate densification in ways that prioritise social housing provision. Turok (2011) terms this as the state-driven densification approach. The municipal planning official cited and expanded on the municipality's densification policy as a strategic spatial development policy, as the extract underneath demonstrates:

> *There are densification policies that are vital to our future sustainability of Durban…. So it is better to rebuild a city in a small footprint than to rebuild a city in an enormously big footprint. So, the densification is trying to reduce the amount of the expansion of the city, which is going to make the sustainability of the city over a long period of time* (Municipal Planning Official).

This view confirmed that the Ethekwini Municipality was following the international trend described by Boyko and Cooper (2011); Broitman and Koomen (2015) of adopting densification in the mix of their development approaches for sustainable urban planning,.

5.3.2 Ethekwini Municipality Spatial Planning Policy Objectives

The Ethekwini Municipality utilises the densification strategy guidelines as its guideline document for densification (EThekwini Municipality, 2018a). According to Davies (1981), the formation of apartheid cities, including Durban, located African settlements further than ten kilometres away from the city centres. Considering that Africans are the majority population, the outcome of the Group Areas Act has been the development of dense settlements at the urban peripheries. The municipality's densification strategy seeks to address this and involves densification around two types of nodes; level one and level two nodes. According to the municipality's densification strategy guidelines (EThekwini Municipality, 2018a), the CBD is an example of a level one node with a permissible five kilometre radius for densification, whilst neighbourhood nodes have a two kilometre radius for the same.

The municipality's densification strategy modelling is, however, silent on densification in the areas between the five kilometres and ten kilometres radii that are outside of the eight

hundred metre buffer zone around the IPTN routes and service centres. It is these areas that fall within Davies' (1981) apartheid areas that excluded Africans. The use of Ethekwini densification strategy with the highlighted shortfall results in the preservation of modernist apartheid designed spatial areas where social class exclusion replaces racial exclusion. The peripherally located African development centres like Umlazi and Bridge City are classified at the same level as the Durban CBD. The impact of this on the town planning scheme is that it encourages densification in less densely populated suburbs surrounding the CBD in the same way as in the already densely populated peripherally located and economically depressed African townships. Encouraging densification in KwaDabeka seems much easier than encouraging densification in Glenwood in the densification strategy guidelines.

The study found more convergence in the participants' responses under this subtheme. According to the participants' responses, the municipality's spatial planning policy objectives were hinged on postmodernist and collaborative theoretical approaches. The main intents of the policies identified were: inclusivity; integration; justice and redress of the apartheid arrangement; promotion of access to resources; public participation; and flexibility. Respondents reported an unjust apartheid spatial arrangement executed by means of the modernist planning theoretical tenets of brutality and efficiency, with outcomes of exclusivity and unfair public resource allocation.

The densification approach and the postmodernist and collaborative planning theories intersect on the tenets of inclusivity and integration. All of the respondents expressed these tenets as some of the policy's objectives, albeit in different ways. A Private Planning Practitioner stated:

> *They [municipal authorities] are trying to be more **inclusive** but I don't think they are being very practical, otherwise they wouldn't have already scrapped about three of them [policies], and now we got SPLUMA* (Private Planning Practitioner 1).

A community representative expressed the following view:

> *I think the government has tried in their way to have RDP houses more closer to the city, or more closer to well developed areas or areas that have not been developed before* (Community Representative).

The tenets of inclusivity and integration were more clearly expressed in the Planning Professionals' responses. The element of public participation was prominent in the responses of the Planning Professionals and almost absent from those of the Housing Official. The official Community Representative's (Ward Councillor) responses indicated a

limited understanding of the public's role in shaping the spatial planning instruments and implementation, and she viewed the matter to be the exclusive responsibility of the Municipal Planning Officials. The element of public participation was an implementation mechanism for the principle of inclusivity, which inadvertently encapsulated the element of flexibility.

5.3.3 The views on the achievability of the Ethekwini Municipality's spatial planning policy objectives

The general views of the participants confirmed the continuation of Davies' (1981) apartheid city spatial arrangement. The reasons for the failure to attain the densification objective closely related to Chobokoane and Horn's (2015) explanation of relaxed post-apartheid urban spatial policies which were characteristic of post-modernist planning.

There were two respondents with the view that the Ethekwini Municipality's set policy objectives had been met, whilst all of the other participants' responses indicated that there was only limited success in the attainment of the set policy objectives. The following extracts indicate the participants' expressions on this matter:

> Private planner 1: *They [Ethekwini Municipality officials] haven't been able to take their action into achieving their set objectives* (Private Planner 1).
>
> Private planner 2: *I'm just not too sure about the implementation of the Integrated Development Plans, because not much has taken place on the ground. It looks lovely on paper in terms of what they have planned, but we haven't really seen much on the ground* (Private Planner 2).
>
> Official planner: *But success of the post-apartheid city, I don't think there has been…. I don't think that post-apartheid policies or frameworks have been successful and may be the slow integration of communities and trying to go for just provision of services and facilities* (Municipal Planner).
>
> Housing official: *The available programmes post-apartheid have been successful because we have different projects where actually they are located in good areas* (Municipality Housing Official).
>
> Estate agent 3: *I would say they [the municipality] are 100 per cent achieving it [the municipality policy objectives]* (Estate Agent 3).

Reasons cited for the limited success in the attainment of the municipality's set spatial policy objectives included: tedious development processes; incapacity for decision making; Amafa policy requirements; corruption; and standardised application of the rates billing system per

geographical locality. The study established the next theme from the participants' responses and paid attention to the second objective of the study, which examined the relationship between the Ethekwini Municipality's spatial planning policy frameworks and the spatial planning in the suburb of Glenwood.

5.4 The Interface between Glenwood's Local Spatial Expression and the Broader Ethekwini Spatial Densification Policies

The study identified three subthemes for this theme, which were: the strategic locality of Glenwood for densification purposes; Ethekwini Municipality's policy position on Glenwood's densification; and expressions on the extent of the housing densification in Glenwood.

5.4.1 Strategic locality of Glenwood for densification purposes

Ethekwini Municipality's (2019b) SDF regards the municipality's Central Spatial Region, within which Glenwood is located, to be the socio-economic spine of the city. All of the respondents shared this view as they equally considered Glenwood to be a suitable, well-located suburb in the municipality for densification purposes. The Ethekwini Municipality's (2019b) SDF cited the harbour, transport, and the industrial and commercial infrastructure as some of the main factors contributing to the socio-economic vitality of this area, and further pointed to the presence of excess infrastructure in the area. The participants supported the densification consideration, mainly on the basis of the proximity of the area to a variety of amenities. The amenities cited were the central business district; the harbour; universities; major transport routes (both road and rail - IPTN); and shopping centres. The lower cost of living provided by the area was also cited.

A resident estate agent posited that:

> *My understanding of Glenwood and the way it was designed is that Glenwood has some of the best schools in Durban, and in terms of density we have more schools here (Estate Agent 3).*

The views shared by the participants indicated the need for sharing of the public resources that already existed in Glenwood. The perception conveyed was that the area had more resources than the immediate community really needed. This perception was demonstrated in the previous chapter by Statistics South Africa's (2011) report when the demographic analysis was viewed in conjunction with the educational institutions found in and around Glenwood. The strategic locality of Glenwood for densification purposes was also endorsed on the basis of the socio-economic quality of the area, as participating Private Sector Planner 2 declared:

Glenwood, I think, has been strategically planned and located for the densification model. The main thing that I believe when you densify is to ensure that people are able to live, work and play in that area, and that is what it [Glenwood] has done (Private Sector Planner).

The participants linked their views to the municipality's spatial policy positions for the Glenwood area.

5.4.2 The Ethekwini Municipality's policy position on Glenwood's densification

Chapter Four demonstrated the Ethekwini Municipality's package of plans in Figure 4.4. The package of plans began with the Long Term Development Framework as the driving force of the municipality's Integrated Development Plan and Spatial Development Framework. These in turn interactively and more progressively directed the local level spatial objectives, including the Local Area Plan. Land Use Schemes are the end product in the Ethekwini Municipality's package of plans (Ethekwini Municipality, 2019b).

There was some divergence of views amongst the participants as to whether the Ethekwini Municipality's spatial policy encouraged or discouraged densification in the Glenwood area. The participants who were in favour of densification in Glenwood backed their viewpoint with policies and what they believed were positive factors in relation to the policies. These included the Berea Urban Core Extension Plan (Iyer Urban Design Studio, 2012); the Students' Precinct Plan (which the study could not verify its existence); the Integrated Public Transport Network Corridor Development (Ethekwini Municipality, 2018a); the flexibility in the application of the town planning scheme's regulations in the area to allow densification; and the incorporation of Glenwood into allocated areas for housing restructuring zones (Ethekwini Municipality, 2019a). Some respondents, however, felt that an aspect that discouraged densification and residential inclusivity in Glenwood was that the municipality's rates-charging system was area-based rather than household-based.

The Estate agent 3, the Ward Councillor, the Private Sector Planners 1 and 2, the municipality's Housing Official were all residents to the study area and generally shared a view that the municipality's policies were actively trying to encourage densification in the area. The Municipal Planner also shared this view. The only resident-participant with a differing view from that of the other resident-participants from the Glenwood area was one of the Estate Agents. This Estate Agent expressed the view that instead of encouraging the movement of people into Glenwood where services could to be found, the municipality should instead provide services to their areas where they lived so that they would not have to move to gain access to such services. The view of taking services to the where people

are rather than encouraging relocation to areas with better services is also shared by the municipality and planning officials.

The provisional restructuring zones published in 2011 included Glenwood as one of the city's surrounding inner city suburbs to be rezoned, but then Glenwood was excluded from the final restructuring zones gazetted in 2017 (Social Housing Regulatory Authority, 2011; 2017). The zones actually gazetted for restructuring in the Ethekwini Municipality in 2017 were listed as: Cornubia, Bridge City, Newlands, Phoenix, Chatsworth, and KwaMashu and its surroundings (Social Housing Regulatory Authority, 2017). The view that Glenwood was to be incorporated into the zones to be restructured was thus no longer consistent with the policy directive at the time of this study. There was also the view by some of the participants that Glenwood had council flats as a form of densification. The study considered this view as a common error amongst the general Ethekwini Municipality population, of referring to the Berea South area as Glenwood. The council flats in question were located outside of the Glenwood area, although they were still in the same Ward 33.

The eastern edge of Glenwood is bordered by the IPTN of Umbilo Road. The IPTN programme is a nationally funded long-term transport infrastructure development programme, targeting mainly metropolitan municipalities which include the Ethekwini Municipality (Treasury Department, 2018). The Ethekwini Municipality uses the IPTN plan to project and direct future spatial development patterns through Local Area Plans and subsequently Town Planning Schemes. Densification is encouraged along the major IPTNs, with specifically established 400 metre wide densifying zones along these routes (Treasury Department, 2018). This densifying move seemed not to have been fully affected yet in Glenwood, as one participating Municipal Official stated:

> … *There would be a lower requirement for parking and for higher density avenues 400 metre wide that would surround the IPTN corridors. Those have not been totally finalised in the Glenwood area (Municipal Planner)*.

The Berea Urban Core Extension Plan is the Ethekwini Municipality's spatial review of the Berea (Berea North and Berea South) suburbs, which include Glenwood. Iyer Urban Design Studio (2012:11) states that "the Brief [for the establishment of the Berea Urban Core Extension Plan] explicitly requests he retention of the current character of the areas, while simultaneously acknowledging changed demands and trends".

The proposals in the Berea Urban Core Extension Plan (Iyer Urban Design Studio, 2012) find clear expression in the 2019 Ethekwini Municipality Central Spatial Region planning scheme, which also provides for Glenwood. The stated Brief request for the development of

Glenwood (as part of the Berea) constitutes the objectives of the Local Area Plan for the area, as in the Ethekwini Municipality's package of plans. The intent for the retention of the previously apartheid established spatial arrangement with continuing exclusion of the poor in the Glenwood area is quite significant in the statements of the policy. Densification, inclusion and integration are mainly in terms of permissible business land use rights. The study thus found a contradiction between the national and the Ethekwini Municipality's planning objectives of densification in strategically located areas and the directive for this in the municipality's Berea Urban Core Extension Plan. This extension plan displays the critique of collaborative planning about the inherent power-play as those with power (mainly the affluent) manipulated the processes in order to attain their own preferred outcomes. Taylor (2010) asserted that spatial planning laws and regulations were supposedly agreed upon stipulations by governing structures about how pieces of land should be used so as to attain a commonly established purpose, however, this seemed not to have been the case in Glenwood.

The study argued that the extension of permissible land use rights to incorporate non-residential business activities served the interests of the residents of the area, rather than encouraging accommodation of the previously excluded in the area who were mostly poor black Africans. A non-resident participating Estate Agent 1 stated:

> *I would say that there is no strategical location of lower middle class. The status quo has prevailed since inception. There has never been any alteration or any restructuring…. It gradually becomes those who can afford to come to the area of Glenwood (Estate Agent 1).*

Other than the removal of the legislative barrier of the Group Areas Act, there were no significant policies for inclusion of the poor in the residential mix in Glenwood. This was the view shared by all of the Estate Agent participants. This view was supported by Schensul's (2008) modelling of the move from racial to social class exclusion that inevitably implied the exclusion of the African poor from the residential areas of the inner city.

5.4.3 Evidence (review) of housing densification in Glenwood

The data for this subtheme was sourced mainly from: the interview responses; the land use analysis performed in the previous chapter; the housing survey analysis from the Ethekwini's Corporate Geographic Information Systems and physical observations; and a survey of the development applications submitted.

The interview responses demonstrated agreement amongst the respondents that the Glenwood area was mostly already developed, with limited municipal land available for

further densification through government subsidised housing establishments. Despite the, lack of available vacant municipal land, respondents felt that there was still room for further densification in the area. The Municipality Housing Official declared:

> *"The change for more densification [in the form of multi-storey buildings] can only happen if there are available land parcels in the Glenwood area. And another one, most of the buildings that are there are privately owned properties, so converting them is not going to be something that can be done by the government. But it can be done by the individuals that are staying there.*

Other respondents suggested that some of the unused or underutilised parks could be used or partly used to establish social housing developments.

The land use planning subsection in Chapter Four revealed both the scarcity of undeveloped spaces and the sparsification in the Glenwood area, which the respondents reflected on in their responses. The 5 per cent of open space reported in the approximate land consumption tabled in Table 4.6 showed the limited availability of undeveloped land. The 6 per cent GR zoned, 40 per cent SR400 zoned, and 12 per cent SR900 zoned land approximated the gross Glenwood land consumption and absence of other densifying residential zones like SR180, medium density, and IPTN associated residential zones and substantiated their views of sparsification within the already developed areas.

Further in-depth examination of the densification activity on the privately owned developed Glenwood lots referred to by the participants was carried out with a survey analysis of 136 lots in the area. The examined lots were spread out along three roads: Umbilo Road, Z.K. Matthews Road and Morris Place. Umbilo Road had the most GR zoned lots, Z.K. Matthews Road only had SR400 zoned lots, and Morris Place only had SR900 zoned lots (Ethekwini's Corporate Geographic Information Systems, 2020). Physical observation revealed that the lots on the western side of these roads, particularly on Umbilo Road and Z.K. Matthews Road, were on the upper slope and had denser developments than those on the lower eastern side of these roads. The lots on the western side of these roads were then selected with the intent to confirm or reject the densification claims in the Glenwood area.

Table 5.3 provides a summary of the general examination of the existing developed lots along the selected roads. The aspects explored in the examination were: the number of units on each lot; the number of storeys (floors) in the building/s (unit/s) on each lot; the building to site coverage percentage areas; and the floor area ratios. The summary in Table 5.3 presents the averages along each of the three roads, as well as the averages of all of the lots examined. It is important to note that within each lot: the number of storeys in the

building units was not averaged, but the highest number of storeys in any building on the site was used to average the height levels of the units. The floor area ratios were calculated for each building structure examined on each site and then averaged as the different floor area ratios of the different sites. The outcome of this was that the calculation of the average floor area ratios of the average number of storeys per building yielded a different averaged floor area ratio value as the directly averaged floor area ratio values were supposedly more accurate.

Table 5.3: Summary of Lot Examination Survey on Selected Glenwood Roads (Author, 2020)

Road name	No of examined units	Average Storeys	Average no. of units/lot	Average Coverage	Average FAR
Morris Place	4	2	2	29%	0.4
Z.K. Matthews Road	66	1.3	2.5	38%	0.5
Umbilo Road	66	2.3	1.9	52%	1.1
All 3 roads	136	1.9	2.1	40%	0.7

According to Table 5.3, the average site coverage for Morris Place, Z.K. Matthews Road and Umbilo Roads was 29 per cent, 38 per cent, and 52 per cent respectively. This demonstrated site coverage intensification from SR900 dominated areas to SR400 dominated and to GR dominated areas, as expected. The general site coverage of 40 per cent implied there was ample space for further intensification, from this perspective.

The actual site coverage and number of units per site could not be verified physically due to limited access to the properties and this study therefore relied upon the photogrammetry from the Municipality's GIS and Google Maps facilities. The average number of units per site was 2, 2.5 and 1.9 for Morris Place, Z.K. Matthews and Umbilo Roads respectively. The middle Glenwood area displayed more densification in terms of the number of units per site than the upper and lower sections of the suburb, regardless of the previously indicated lesser site coverage value compared to the lower section. This alluded to bigger and fewer building developments along Umbilo Road and many relatively smaller building units along Z.K. Matthews Road.

The average number of storeys per building was 2, 1.3, and 2.3 along Morris Place, Z.K. Matthews Road and Umbilo Road respectively. The Morris Place sites, as spacious SR900 sites, were expected to have fewer average storeys per building than those on the other

roads. This outcome was attributed to the affluence of the owners of these properties who gave little consideration to increased vertical building costs in comparison to their desire for garden space. A much higher average number of storeys per building were expected along Umbilo Road than the average value of 2.3 seen in Table 5.3, since this road constituted part of the IPTN system. The average number of 1.9 storeys for the sites examined in Glenwood demonstrated the enormous capacity available for further densification in the area.

The average floor area ratios were 0.4, 0.5, and 1.1 respectively for Morris Place, Z.K. Matthews Road and Umbilo Road. These floor area ratios increased from the SR900 lots towards the predominant GR lots along Umbilo Road, as expected. The average ratio of 1.1 for Umbilo Road was significantly low for an area marked for intensive densification in a strategically located area with high demand. As such the established average 0.7 floor area ratio for all of the sites examined demonstrated the availability of space for further development. The low average floor area ratios were consistent with the relatively lower number of average storeys per building and site coverage, which are the building blocks of the floor area ratio values.

Since the lots along these roads represented the various characteristics of the lots in the suburb, the averages of the three roads were taken to represent the Glenwood residential housing character. All of the indicators in this survey pointed to limited intensification on the building lots in the Glenwood area.

The development applications survey exhibited the respondents' views of the flexibility of the scheme's regulations. The survey considered 192 applications from the register of applications submitted to the Ethekwini Municipality since the effective date of the 2017 Ethekwini Spatial Planning By-Law.

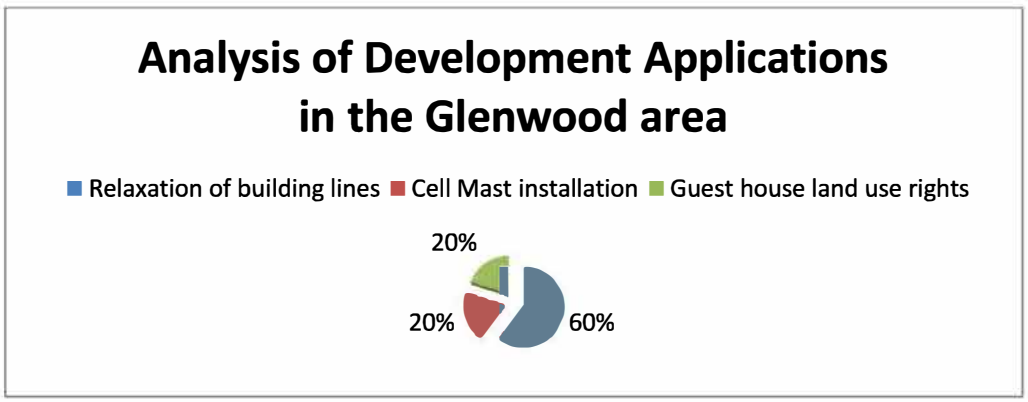

Figure 5.6: Recent Glenwood Development Applications: Categorical Chart (Author, 2020)

The applications covered the entire urban part of the Ethekwini Municipality, and of these only five applications were from the Glenwood area. Three of the five applications were for building line relaxations, one was for the installation of a cell mast, and the other one was a guest house land use rights application, as the chart in Figure 5.6 illustrates. None of these applications had been declined or were likely to be declined because of the Land Use Management System. The indication from the Municipal and Private Planners regarding the applications for the relaxation of building lines was that they were usually approved, but the guest house application would need to meet the parking requirements, amongst others, before approval was granted. These applications evidenced the move towards densification in the development of Glenwood, albeit at a slow pace. The absence of applications for large scale developments in the Glenwood area on this applications register triggered questions about the underlying causal effects of this state. The discussions and data presented in this subsection presented Glenwood as a fully developed area with limited public land available for further densification. Nonetheless, the privately owned land showed ample capacity for more densification in the area.

Unlike the case study of Accra in Ghana, the Glenwood residential land use zones excluded some of the more pro-poor land use zones, like SR180. However, no evidence could be found which revealed zoning as a deterrent to densifying developments, and this proved the validity of the claims on the flexible application of the zoning scheme regulations. Despite this development, there was also another claim from a Private Planner which related to the municipality's lack of proactivity on spatial planning activity. In this aspect, the study found Glenwood to be a well-established, relatively sparse area with zoning regulations that, despite being flexible, were not proactive enough to significantly increase residential intensity. None of Turok's (2011) approaches to densification and inclusivity of the majority poor were observable in Glenwood. Turok's (2011) densification approaches were state driven procedures; state – market stimulation; and household regulatory measures for behavioural and location choices.

5.5 Application of Densification Principles in Glenwood

The applicability of spatial planning activity for directing the community in organising itself to set up and implement common community spatial development programmes based on general welfare, health and safety concerns for all was clearly stated in Chapter Two (Basset, 1922; Siegel, 1955; Taylor, 2010). There was no evidence detectable in the Glenwood area of the zoning regulations playing a pivotal role in densifying the spatial development trajectory (Moroni, 2016; Yunda and Sletto, 2020) because of policy objectives and market drivers. Both case studies in the literature review revealed higher allowable

densification scenarios for suburbs like Glenwood, relative to the city centre. The density gradient from the city centre to the surrounding suburbs appeared to be gentler than was the case from the CBD to Glenwood. The Accra case demonstrated zoning regulations that were more accommodative of the poor in the area immediately surrounding the inner city than those demonstrated in the Ethekwini Municipality's zoning regulations for Glenwood. The way to achieve densification in Glenwood appeared to be conducting of an LAP study with densification objectives distinctly stated, rather than utilising the Berea Urban Core Extension Plan. The Ethekwini Municipality's densification guidelines also lacked a directive that sought to address the peculiar density gradient structure of the city to bring it more in line with international trends. The incorporation of graduated density standards guidelines for areas beyond the currently stated density buffer zones was another way to address the steep density gradient anomaly from the city centre to the inner suburban areas.

A general view amongst the participants was that Glenwood was already a fully developed area, with limited options available to increase the densification in the area. That said though, there was also the reality which one of the participants reflected on:

> *What we're experiencing right now in Durban is – we are looking at the rise of informal settlements, which comes from the lack of formalised housing and the needs of people from surrounding areas outside of the metropolitan area because of the employment opportunity (Estate Agent 1).*

This reality is expressed in the contrast between Figure 5.7 and Figure 5.8, showing the typical residential environment in Glenwood and in an informal settlement that developed in Mayville; which is the closest African township to the city centre.

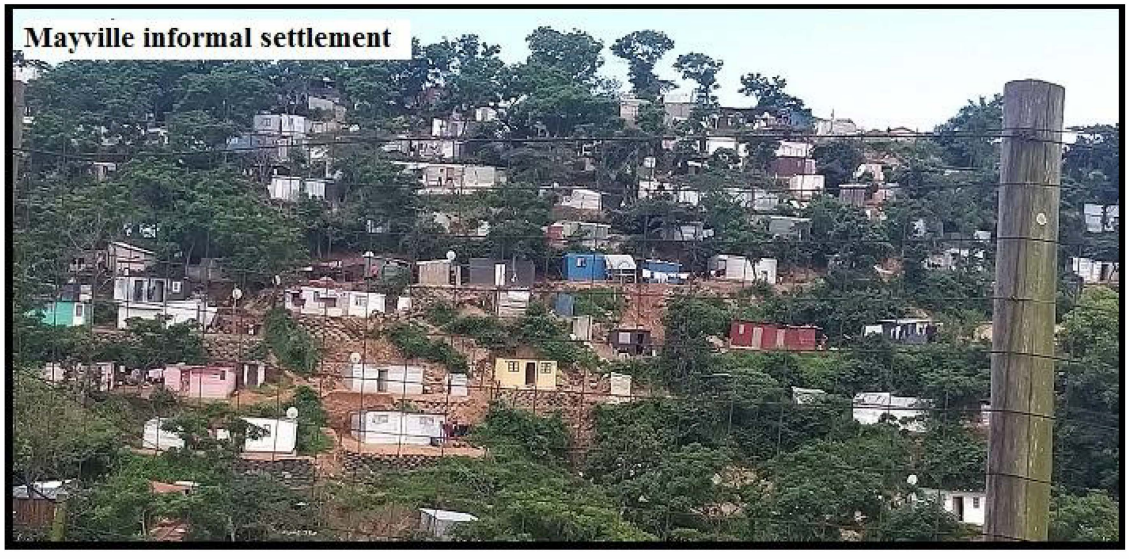

Figure 5.7: Newly Established Informal Settlement in the Mayville-Bonela Area (Author, 2020)

Figure 5.8: Typical Housing and Street Environment in Glenwood (Author, 2020)

The Glenwood and Mayville areas were within walking distance from each other. This reality undermined the very basics of spatial planning as it demonstrated the actions of the natural settlement forces against the artificial spatial planning forces. This was also evidence that the poor would inevitably relocate closer to areas of opportunity and that the responsibility for directing this relocation to areas that typically served the poor's purposes remained with Spatial Planning Practitioners and Municipality Officials. This demonstrated the limited influence by the poor on collaborative spatial planning mechanisms.

It was within this context that the participants raised possible strategies that could assist to further increase inclusivity and densification in the Glenwood area and thus prevent undirected settlement developments. A range of strategies were explored, including: having a proactive spatial development framework for densification; building more council flats (social housing facilities) on the limited government owned land like parks; rationalising parking requirements to densify developments; raising awareness for realisation of the flexibility contained in the scheme regulations; rezoning of certain areas like the IPTN zones; application of a household based rates-costing system to allow subsidising of the poor in well located areas; and increasing the Finance Linked Individual Subsidy Programme (Social Housing Regulatory Authority, 2011) bracket for areas like Glenwood to allow residential penetration by the lower middle class.

The following are two extracts showing how the participants expressed these views. A participant declared that:

> *Create a facilitating framework and encourage people to go out and do things. I have seen them swing between being proactive, not very often, but they [municipal authorities] are going back to wanting to do nothing more (*Private Sector Planner 1).

This input suggested that the municipal authorities responsible for spatial planning were generally more reactive than proactive. This view was in addition to a view of the lack of capacity within these authorities. An Estate Agent participant added:

> *I think certain provisions should be considered for zoning in a place where development is in connection with low-income earners and middle class so it can allow more buildings. So consider more heights such that people can be able to build, more low-income earners' properties. It should also come with strict regulations so that we do not overcrowd the area and end up having too much population, because we might end up having a challenge with electricity, water and sewage* (Estate Agent 1).

There is limited evidence of the local government's proactive attempts to enforce the realisation of a full capacity development with social class inclusivity in the Glenwood area. This finding thus supported Schensul's (2008) assertion that the African poor were still being excluded from the inner city, and the only actual evidence of the local government's proactivity towards densification was the flexibility with which it applied the Land Use Scheme's regulations. The study also identified the prescripts of the Berea Urban Core Extension Plan (Iyer Urban Design Studio, 2012) as an expression of the motivating forces behind the relatively low densification and social class inclusionary levels in Glenwood. The study also realises consistency between this plan and the current Land Use Zoning Scheme for Glenwood. Since the two inform each other this consistency was expected but then, if that being the case, densification in Glenwood is therefore discouraged as the recommendations of the Plan demonstrated.

5.6 Conclusion

The composition and description of the data sources was based on the primary and secondary data sources. The primary data sources were the researcher's physical observations and key informants' responses to questions. The chapter provided charts and tables to clarify the composition of the key informants and to contextualise their responses. The secondary sources were site surveys and an analysis of the municipality's register of the applications for development in the area. The main themes established were: the Ethekwini Municipality's urban spatial development policy framework; Glenwood and the Ethekwini

Municipality's spatial densification policies; and the application of densification principles in Glenwood.

Ethekwini Municipality's urban spatial development policy framework subthemes were: key policies for property development; the objectives of the policies; and views on the attainment of the policy objectives. The key policies cited were SPLUMA and the town planning schemes; the municipality's IDP; the municipality's densification policy; and the Social Housing Programmes like the Finance Linked Individual Subsidy Programme and the Reconstruction and Development housing programmes. The policy objectives demonstrated that on paper, the Ethekwini Municipality's post-apartheid spatial policies were converging with densification, postmodernist and collaborative planning theories on the principles of inclusivity and integration. The prominent view amongst the respondents, however, was that success of the policy objectives was limited. Reasons put forward for the limited success included: decision making incapacity, expansive development processes; the hindering effect of the Amafa Programme; and the standard area based municipal rates-costing system.

The subthemes on Glenwood and the Ethekwini Municipality's spatial planning densification policies were: the strategic locality of Glenwood for densification purposes; the municipality's policy position on Glenwood's densification; and the review of the residential housing densification in Glenwood. All of the respondents viewed Glenwood as being strategically located in the Ethekwini Municipality for densification purposes. Substantiating reasons for this view were that Glenwood allowed for a lower cost of living due to its proximity to the CBD, the harbour, universities, the IPTN, and shopping centres, in terms of reduced transport costs. The Ethekwini Municipality's policies cited as affecting densification were the Berea Urban Core Extension Plan; the Student Precinct Development Plan; the IPTN; Housing Restructuring zones; and flexibility of the Land Use Scheme's regulations. The Berea Urban Core Extension Plan appeared to be the most effective working policy for Glenwood; however its mandate of retaining the area's character contradicted the densification objective in Glenwood as a strategically located area. There was general agreement amongst the sources that Glenwood was mostly a developed area with a scarcity of public land for intensive government-subsidised housing development projects. The study estimated Glenwood's open space to be at 5 per cent and the gross residential consumption to be at 58 per cent; distributed as 40 per cent SR400, 12 per cent SR900, and 6 per cent GR zoned areas. Site survey analyses along Umbilo Road, Z.K. Matthews Road and Morris Place provided estimated averages of 40 per cent site coverage, 1.6 storeys per site, and a floor area ratio of 0.7. This indicated low densification on the privately owned lots. Examination of the register of development applications found that no applications had been

submitted for major development in the area, but three applications had been submitted for the relaxation of building lines and a guest house's land use rights.

In light of the housing demand in this well located area closer to areas of opportunity, the study sought strategy ideas from the respondents for possible further densification of Glenwood. These strategies constitute part of the recommendations contained in the following chapter.

Chapter Six: Summary of Findings, Conclusion and Recommendations

6.1 Introduction

This chapter concludes the study. It opens with a summary of the key issues, proceeds to recommendations and closes with a conclusion.

6.2 Summary of Key Findings

The study's findings were directed by its aims and objectives, as well as the motivating reasons for carrying out the study. The aim of this study was to investigate the extent to which spatial planning encouraged densification and land use change in Glenwood, Ethekwini Municipality, South Africa. This aim was achieved by: reviewing the guiding legislative framework for spatial development in the Ethekwini Municipality; investigating the relationship between the broader Ethekwini spatial planning objectives and local zoning in Glenwood; and evaluating the prospective zoning changes for the Glenwood area. The motivation for the study was the researcher's perception that Glenwood's residential density contradicted the natural urban settlement pattern of decreasing urban density gradients from the urban core and the Ethekwini Municipality's densification policy.

The study identified the Ethekwini Municipality's leading guiding spatial development legislative frameworks to be SPLUMA (RSA, 2013), the Municipality's densification policy (Ethekwini Municipality 2013; 2018a), the IPTN Corridor Development Programme (RSA, 2018), its package of plans (Ethekwini Municipality, 2019b), and its Social Housing Programmes (Social Housing Regulatory Authority, 2017). The objectives of these policies were inclusivity and integration; the tenets of the postmodernist planning approach. The expression of these policies in the Glenwood area was found to contradict this set of policy objectives, however. Social Housing Programmes were determined to be either non-existent or inaccessible to the poor and lower middle class in the Glenwood area. Other spatial planning legislations in the Ethekwini Municipality were the Land Use Scheme's regulations, informed by the Local Area Plan, and Glenwood's Local Area Plan was contained in the Berea Urban Core Extension Plan (Iyer Urban Design Studio, 2012).

The study found the Berea Urban Core Extension Plan to be premised on ensuring retention of the spatial character of the area. The spatial character of the area was, in itself though, a legacy of the apartheid modernist planning of exclusivity and sparsification. The most effective policy to have achieved any degree of inclusion in the area was observed to have been the removal of the Group Areas Act, and Glenwood's character as a sparsely

populated reserve for a protected racial group remained the same, just with the racial element replaced with the social class element (Schensul, 2008). Glenwood has thus become a protected, sparse floor area ratio developed reserve for the affluent. It was established that Glenwood is strategically located and well suited for densification purposes, but also relatively sparsely developed. The average building height of two storeys and coverage of 40 per cent in an area where the applicable scheme has options for a floor area ratio of 7.0 with up to 100 per cent coverage does not demonstrate willingness to encourage densification in the area.

6.3 Recommendations

Chapters Three, Four and Five provided context and the existing urban spatial arrangement matters in Glenwood in terms of densification and housing provision. The recommendations made here are premised on Turok (2011) and Chobokoane and Horn's (2015) assertions. Turok (2011) states that densification constitutes part of the post-apartheid spatial development policy framework, but there is a lack of local level implementation to this end in Glenwood. Chibokoane and Horn (2015) add that the current local government's imperative for social housing provision, which is basically about providing quantity housing that lacks spatial specifications, illustrates the policy's deficiency in achieving densification. This study thus provides two recommendations, which are: acceptance of the reality of human urban spatial arrangement; and proper zoning for pro-poor housing provision as a transformatory mechanism for inclusivity and equity.

6.3.1 Acceptance of reality

The human settlement distribution develops over time and creates patterns which can be related to many other settlement development patterns to establish natural tendencies. The ecological urban development models by Burgess, Hoyt, and Harris and Ullman (Pacione, 2009) have been developed upon this principle, as organic forms of development. The important element consistent in them is the existence of a CBD dominated by low class residential zones, and the presence of the other residential zones in the areas immediately surrounding the CBD (ibid). The CBD is the point of attraction that led to the development of the city in the first place. The population densities in the CBD and in the surrounding areas will remain denser for as long as the attractive activities continue in the CBD (Broitman and Koomen, 2015; Harrison and Todes, 2015). Congestion and other disadvantages of densification naturally repel the affluent to outlying areas, and since the affluent have the means they are likely to develop other newer economic centres in these outlying areas (Tse, 1972). The relocation of the poor to dominate the surroundings of the CBD and the CBD itself is thus a natural phenomenon and any contrary move is only implementable with the

assistance of security enforcement in the form of police, security agents and/or the army. Land use zoning is a tool, either for management and directing of the natural settlement processes or for opposing these processes (Calder, 2017). The foregoing is the first reality that needs to be acknowledged. The other reality is that Glenwood's modernist sparsification modelling continues to exist, as the study has shown (Ethekwini Municipality, 2019a; Ethekwini Municipality, 2018a; StatsSA, 2011).

6.3.2 Densification through zoning for pro-poor housing provision

Land use zoning that manages and flows with the natural processes creates more residential zones for the poor than for the affluent in areas like Glenwood. Densification in cities is, in essence, the management of naturally occurring processes in ways that mitigate the negative externalities of a dense settlement. The majority of the people in Third World countries and cities are poor, and the poor will inevitably find ways to access areas that will provide them with a better means of living whenever such areas are rendered inaccessible to them. It is for this reason that zoning for more pro-poor housing developments is imperative for the sustainable development of inner city suburbs. Traffic congestion is one of the most cited negative aspects in the argument against densification. Zoning for pro-poor housing must therefore involve discouraging private vehicle usage and substitute that with public transport. Currently in Glenwood, Planning practitioners cite parking requirements as the main hurdle blocking densifying development applications. This hurdle may be overcome with the encouragement of pro-poor developments without parking facilities, as the sites in the area are within walking distance of public transport routes. Other strategies for zoning for pro-poor housing development have been cited as: rezoning the IPTN areas for a higher floor area ratio residential mix; using some of the space in the recreational parks for the development of social housing; changing the area based rates-costing system to a household income based system; and proactive rezoning of the residential lots towards higher floor area ratio zones. The obviously acceptable up-zoning development applications need to be readily zoned as such (Harrison and Todes, 2015).

6.4 Conclusion

The examination of Turok's (2011) approaches to achieve densification, namely state driven procedures, state-market stimulation, and/or household regulatory measures for location choices, revealed that Glenwood has been using household regulatory measures for anti-densification purposes. Since the South African state adopts a combination of state driven strategies and market driven strategies, a befitting approach for Glenwood land use zoning will be state-market stimulation. The local municipality should use land use regulations, in the form of zoning and lowered rates for multi-dwelling establishments, to encourage

developers for more intense development. Unfortunately such a move will work against the interests of the ruling class, and the elite will resist and continue to manipulate planning to protect and further their spatial interests and privileges (Harrison and Todes, 2014).

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8. Annexures: Research Tools and Table of Sections on Objectives?

8.1 Question Guide for Key Informants

The following relates to the Glenwood suburb in the Ethekwini Municipality.

1. Background: The views on the historical spatial planning in Glenwood.

1.1 What is your view about the apartheid settlement arrangement?
1.2 What would you regard as the driving forces of the apartheid spatial settlement?

1.3 What would you view as the objectives of the apartheid spatial planning?
1.4 How would you describe the extent to which apartheid spatial planning succeeded in attaining its objectives?
1.5 What would you regard as the strengths and weaknesses of the apartheid spatial planning?

2. The current guiding legislative framework for the Ethekwini Municipality.

2.1 What would you view as the objectives of the post-apartheid spatial planning?
2.2 What policies guide the current planning trajectory?
2.3 What you would you regard as the theoretical framework which undergirds the post-apartheid spatial policies?
2.4 To what extent would you regard the post-apartheid spatial planning as succeeding in attaining its objectives?
2.5 What would you regard as the strengths and weaknesses of the post-apartheid spatial planning?

3. Relationship between the broader planning policy framework and the local zoning in Glenwood.

3.1 What is your view about densification in the strategically located places for attainment of the current planning policy objectives?
3.2 How strategic would you regard the location of Glenwood for densification purposes?
3.3 To what extent would you regard densification in Glenwood to be maximised?
3.4 How would you describe (strengths and weaknesses of) zoning in Glenwood, relative to the attainment of current planning policy objectives of densification and integration?

4. Possible zoning alternatives for Glenwood.

4.1 How else can zoning in Glenwood be changed to better meet current planning policy objectives?
4.2 EThekwini Municipality (2018) uses criteria of 20% - policy influence; 40% - movement and access influence; 20% - urban character; 15% - land availability; and 5% - environmental constraints for densification purposes. How would you describe the appropriateness of the densification criteria used by the Ethekwini Municipality?
4.3 What changes would you consider necessary for the densification criteria, so as to better realise policy planning objectives?

4.4 What would you regard as the other hurdles for better spatial justice and integration achieved through transformation in areas like Glenwood?

4.5 In totality, how would you regard the effects of current planning in Glenwood in the continuum of continuing spatial configuration and changing spatial configuration? (More change or more continuity?)

5. Other: Do you have any other relevant issue that you would like to add to the study?

6. Biographical Details

6.1 Gender: Male ☐ ; Female ☐

6.2 Age group:

Age group (years)	Participant's category
15 to 25	
26 to 35	
36 to 45	
46 to 55	
56 to 65	
66+	

6.3 Population group:

African ☐ ; Indian ☐; Mixed race ☐; European ☐; Other ☐

6.3 Residency: Glenwood local ☐ ; Further out of Glenwood local ☐

8.2 Street Survey Observation Sheet

Street Name : _____

Street No.	No. of Storeys	No. of dwelling units	Average building coverage	Comments

8.3 Survey - Development Applications

Street Name: _____

Street No.	Purpose of Application (Comment)			Approved	
	Densification	Not Sure	Sparsification	Yes	No

8.4 Table of Study Chapters responding directly to the objectives

Objective	Study Chapter and subsection
1. Review of guiding legislative framework for Spatial Development in the Ethekwini Municipality	- Chapter 3 (3.2.2; 3.4.2 & 3.5.3) - Chapter 5 (5.3) - Chapter 6
2. Investigation of the relationship between the Ethekwini Municipality's spatial planning objectives and local zoning in Glenwood	- Chapter 4 (4.1.3) - Chapter 5 (5.4) - Chapter 6
3. Evaluation of prospective zoning changes for the Glenwood area	- Chapter 2 (2.1.6; 2.3.6; 2.3.7; 2.4.3; 2.4.4; & 2.5.5) - Chapter 5 (5.5) - Chapter 6