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University of Witwatersrand, School of Architecture and Planning

LEVERAGING MARLBORO GAUTRAIN STATION PRECINCT (MGSP) FOR INCLUSIVE GREEN URBANISM IN THE GAUTENG CITY REGION

Taariq Ismail

A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Masters of Architecture in Sustainable and Energy Efficient Cities.

Johannesburg, 2017

DECLARATION

I declare that this research report is my own unaided work. It is being submitted to the Degree of Masters of Architecture in Sustainable and Energy Efficient Cities to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other University.

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Abstract

The MGSP has potential to be a space that develops into a precinct rooted within the principles of inclusive green urbanism. Currently the precinct is not adapting to its optimum potential given the opportunity of the Gautrain station.

With the advent of large mega-projects adjoining the precinct, an economically high income "triangle" is created with Alexandra in the centre. The value of the precinct is expected to gain momentum and the risk of socio-economic exploitation and gentrification can lead to spatial displacement of the low-income residents. This study intends to use the Precinct as a case-study in order to evaluate how one could leverage the surrounding urban development mega-projects to transform the MGSP in pursuit of enhanced inclusive green urbanism for the GCR and thus inform efforts towards integrated urban development with enhanced inclusive green urbanism as the primary goal. The sub-questions seek to understand the inclusivity value of the MGSP for the GCR; the MGSPs transformation constraining factors; and how best to transform the MGSP in a manner that mitigates the risk of gentrification and displacement. The methodology was based on a qualitative approach with primary data collected through interviews and secondary data captured from policy and planning reports and the relevant municipal and provincial policies.

The study finds that the MGSP has a high inclusivity and transformative value with vast potential for the Precinct to be transformed into a thriving inter-modal TOD precinct within Johannesburg and the GCR. However, limitations are noted, such as the uncertainty surrounding the vacant Frankenwald land within the precinct. In addition, private sector developers do not fully acknowledge their significant opportunity to contribute to the transformation of Alexandra.

If planned responsively, and especially within the framework of inclusive green urbanism, and specifically based on a TOD focus then the transformation potential for the precinct and the greater Alexandra areas is now ripe. This would optimise value and quality of life for its current and future residents.

Key words: Alexandra; Gentrification; Inclusive green urbanism; Inclusivity value; Inter-modal TOD; Mega-projects; Socio-economic exploitation; Spatial displacement; Transformation constraints; Transformation potential

For my Parents
Shahed & Rasia Ismail

A city is a battle suit for surviving the future – Matt Jones

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O, by the heavens and its rain. O, by the earth and its crack. I am but your humble servants. More than anything else, I need to thank the Almighty without whom nothing is possible. Thank you, Allah, for all the guidance, opportunities and challenges you have placed before me. I love you.

To my father and mother, from the bottom of my heart, I love you both for everything. You have made me the man I am, and I will forever be grateful. I am proud to be your son.

To each of my siblings, Zeenat, Layla, Afzal, Mohammed, Phatu and Ginny. Each of you have taught me something new about myself. You put up with me through all my long and winding stories and understand me on a level like no other. I will always love you.

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To the rest of my family, your encouragement, faith and words of wisdom have helped me to reach this point. You continue to encourage me to go further in life. I love you.

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Nomenclature / List of acronyms

ARP	Alexandra Urban Renewal Programme
BRT	Bus Rapid Transit
CO_2	Carbon Dioxide
COJ	City of Johannesburg
FEB	Far East Bank
GCR	Gauteng City Region
GPD	Gauteng Planning Division
Habitat III	United Nations Conference on Housing and Sustainable Urban Development
IDP	Integrated Development Plan
ITMP25	Gauteng Integrated Transport Master Plan 2025
JDA	Johannesburg Development Agency
MGSP	Marlboro Gautrain Station Precinct
MSA	Municipal Systems Act
NDP	National Development Plan
NMT	Non-Motorised Transport
OOP	Office of the Premier
RDP	Reconstruction and Development Programme
RSDF	Regional Spatial Development Framework
SANRAL	South African National Roads Agency Limited
SDF	Spatial Development Framework
TMR	10-Pillar Programme of Transformation, Modernisation and Re-industrialisation
TOD	Transit Orientated Development
UDF	Urban Development Framework

Chapter 1: Introduction and motivation for the study

1.1 Introduction

The introduction of the Gautrain in the Gauteng City Region (GCR) since 2010 has led to the rejuvenation and upliftment of many precincts and neighbourhoods surrounding the various stations. This is evident specifically within Rosebank, Sandton City and Hatfield precincts where the Gautrain is serving as a catalyst for transformation, development, increased investment in the precincts and the escalation of property prices (Ismail, 2015). Yet, as demonstrated by the Marlboro Station, not all Gautrain Stations and the respective surrounding precincts have received the expected revitalisation and value-gain benefit. Within the Marlboro precinct the Gautrain station has not replicated the success evident in other precincts such as Rosebank or Sandton City (ibid). The site and especially the location of the precinct surrounding the Gautrain station is not adapting to its optimum potential. Even basic planning urban principles such as densification or mixed-land uses championed by many local authorities, and especially the City of Johannesburg, are not being employed to complement the Gautrain as a form of public transport, infrastructure investment, nor does the area have an effective public realm around the station for socio-spatial use by residents or visitors. In addition, infrastructure and service provision as well as housing continues to stagnate in its degraded state (ibid).

The City of Johannesburg is pursuing a sustainable development agenda to achieve greater sustainability and inclusivity through mechanisms, with the most pertinent related to this study being Transit Orientated Developments (TOD) such that precincts and spaces that receive large infrastructure investment such as the Gautrain speed rail network, are expected to be revitalised and transformed to reflect the City's future aspiration. Yet, since the implementation of the Gautrain system, the Marlboro Gautrain Station precinct (MGSP) and its surrounding neighbourhoods are not manifesting the benefits of the Gautrain as a catalyst project. This is commonly explained to have arisen from the fact that a station was only placed in Marlboro as a political decision to obtain votes and appease the people of the precinct, especially in Alexandra. This was decided with the full awareness that Gautrain fares are too expensive to cater for the residents of the area, and especially for Alexandra residents (Puckiree, 2015).

In addition, within a short radius of the precinct are major urban development mega-projects such as Waterfall City, Modderfontein City, Sandton City/Rosebank and Frankenwald that are experiencing increased investment by private sector developers who are predominantly inward focused within their own boundaries. The mega-projects serve as anchor points within the City of Johannesburg forming a triangle within the MGSP with Alexandra Township at the centre. If the City of Johannesburg and national government as a whole intend to create a city that is sustainable for all, regardless of income groups, then measures need to be put in place to prioritise the Marlboro Gautrain Station precinct as a City Region opportunity and thus leverage these mega-projects such that private sector developers partner with the state to plan in a collaborative manner for, and contribute to the upliftment of the precinct and Alexandra in particular. The adjoining mega-projects need to be leveraged in a manner that they can make meaningful contributions to and improve on surrounding, marginalised, less desirable areas in order to facilitate a more equitable and inclusive city hand in hand with green city pursuits linked to TOD. If this is not strategically steered, then areas like the Marlboro Gautrain Station precinct are likely to continue experiencing challenges such as socio-economic deprivation or the low-income households becoming spatially-displaced over time as the mega-projects mature. This would most likely take the form of displacement through gentrification, thus driving current residents out of this prime and centrally located area. Such a process would lead to a perpetuation of the legacy of apartheid where low-income households become marginalised further into the urban periphery. If development was strategically managed a benefit would be enhanced inclusivity for the GCR as it mitigates its carbon footprint based on cumulatively enhanced public and non-motorised transport with Gautrain as one of the anchor modes while previously marginalised communities would benefit from cities that are inclusive, better proximity to opportunities, efficient transit options for mobility and access as well as an overall healthier lifestyle.

A key sub-concept within the field of energy-efficient and sustainable cities relates to green urbanism. Green urbanism is a conceptual model that seeks to facilitate zero-emission and zero-waste lifestyle of residents/organisations while promoting developments that are compact and energy efficient (Lehmann, 2010; Nassar, 2013). Green urbanism does not deal explicitly with issues of inclusivity. Within the scope of this research, inclusivity is a concept that seeks to incorporate all residents of Alexandra better into the GCR. As sustainability

(defined later in this report) is weighted on environmental, economic and social considerations, it is evident that green urbanism needs to factor in inclusivity situate within the scope of sustainability. This research utilises the concept of inclusive green urbanism as the conceptual model of green urbanism applied to all developments and residents across the city regardless of any social factors that may cause any divide in society or differentiated outcomes, that seek to facilitate a zero-emission and zero-waste lifestyle while promoting compaction and energy efficiency.

The township of Alexandra has faced many challenges over the years some of which are reviewed within this report. One of the most glaring issues from a town planning and sustainable city point of view is the single land-use residential development that is prevalent, with inadequate mixed land uses specifically around the MGSP. Further to this, the precinct and the greater area of Alexandra faces challenges related to poverty, extreme inequality, overpopulation, inadequate basic services, bulk infrastructure backlogs and poor infrastructure maintenance.

This study is therefore anchored on the potential of using the MGSP as a case-study on the potential of leveraging private sector developments towards the transformation of marginalised areas and community with inclusive green urbanism as the primary goal. The principles of inclusive green urbanism are thus applied towards appraising the potential of the precinct for transformation into a spatially just city region.

1.2 Background and rationale for the research

Looking into the area of Alexandra, what one currently experiences is a marginalised township with high levels of entrenched poverty and extreme inequality when compared to surrounding areas and especially the adjoining Sandton City area. Alexandra is classified primarily as an informal township with high population concentration and immense backlogs in basic services and bulk infrastructure (COJ, 2010b). The township has some of the highest densities within the City which in turn places great strain on the already inadequate infrastructure and service provision. This is conspicuously evident from key features of dysfunctionality such as inadequate road maintenance, shortfalls in social services such as healthcare and education as well as environmental conservation especially along the Jukskei River and the shortfall in the management of waste. Previous interventions under the

Alexandra Urban Renewal Programme (ARP) were sought to de-densify the township and address the needs of the poor. However, after several years of implementation, no discernible success has materialised relative to the initial goals of the programme. What one experiences within the township are insufficient economic and employment opportunities within the formal sector, which has resulted in the mushrooming of the informal sector (ibid).

Ismail (2015) presented possible futures for the MGSP based on best and worst case scenarios based on preliminary findings of a desk-top appraisal of the precinct within the context of energy for sustainable cities. Guided by the concept of inclusive green urbanism, interventions with regard to possible projects or programmes were conceptualised and appraised with a view towards making the precinct more sustainable while also enhancing inclusivity of the larger city region. Ismail's study (ibid) highlighted the need for further research on the MGSP specifically in terms of green urbanism and inclusivity in order to mitigate a worst-case scenario where the current residents face the risk of being spatially displaced and socio-economically exploited as a result of gentrification pressures.

The study takes note of the overarching agenda of the Sustainable Development Goals as a global agenda, the National Development Plan as a national agenda, the 10-Pillar Programme of Transformation, Modernisation and Re-industrialisation as a provincial agenda and the City of Johannesburg's policy imperatives as the local agenda, especially in relation to their implications on governing how urban/town planning by the state and city authorities should be pursued. Contrary to the principles of the broad frameworks above that speak to a more sustainable and collaborative approach to planning and development between government and the private sector, many private sector developers appear to plan their projects within a largely inward focused agenda which is mainly centred on their respective sites and not taking into account the impact that they could have on the wider surrounding areas. If the state intends on creating inclusive and sustainable cities, the planning and development of the cities need to be steered in a more integrated approach than is currently the practice. Possible initiatives, programmes or projects must be leveraged from the private sector/developers especially those developing close to formally disadvantaged township

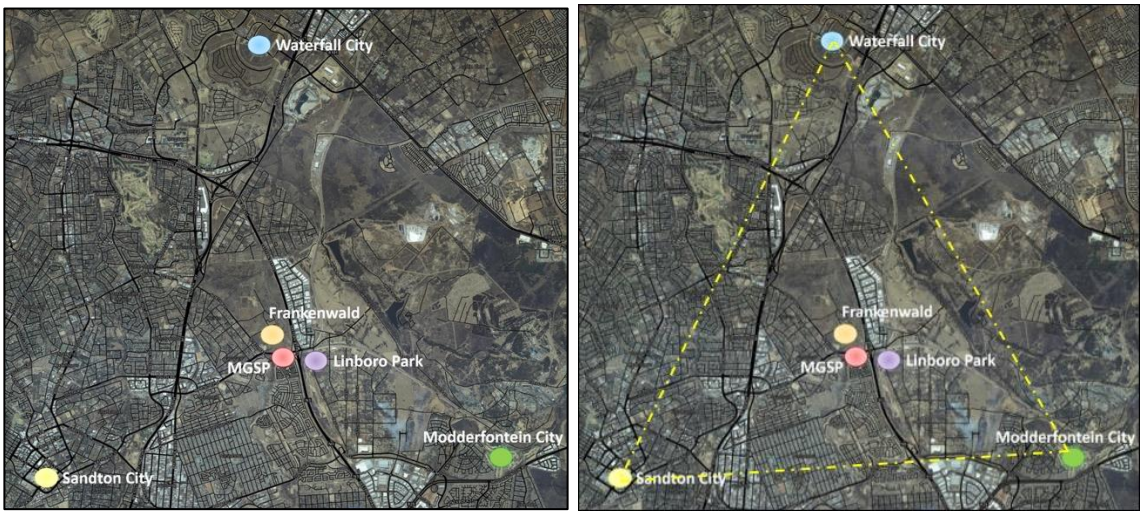


Figure 1: Map 1 indicates the location of Marbboro in relation to the identified mega-projects while Map 2 indicates the Marlboro Gautrain Station Precinct at the epicentre of the major economic and high income "triangle" made by the mega-projects (Source: Adapt from OpenStreetMap contributors, 2017)

1.3 Problem statement

In its current state and business-as-usual future trajectory, the MGSP remains as a "neglected" area of the Gauteng City Region despite the immense opportunity of the Gautrain station as an anchor for the precinct, a connector to a wider regional scale and a catalyst for greater development. With the advent of adjoining mega-projects around the precinct (with key examples such as Waterfall City, Modderfontein City, Frankenwald and Sandton City) starting to define an economically enhanced and high income "triangle" (see Figure 1 and 2), one can deduce that the value of the MGSP will gain momentum as the developments mature.

With the foreseeable increase in land and property value overtime, the development of the precinct needs to be directed in a manner that benefits the current residents and especially mitigate the risk of them becoming spatially-displaced over time.

1.4 Defining the site

The study is focused on the MGSP with the station as the key reference node. The station borders the N3 and Marlboro Drive interchange to the East and North respectively. Figure 2 and Figure 3 indicate the location of Alexandra on two different scales. The first is the regional location of the township within the City of Johannesburg. The second illustrates the MGSP location within the greater Alexandra area, with the MGSP circled in red.

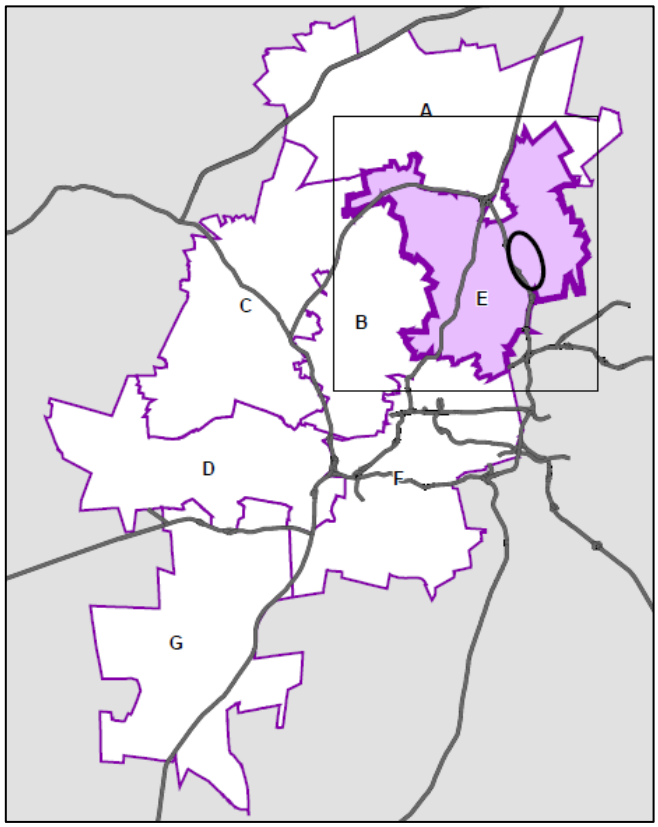


Figure 2: Site located in Region E of the City of Johannesburg (Source: COJ, 2010b).

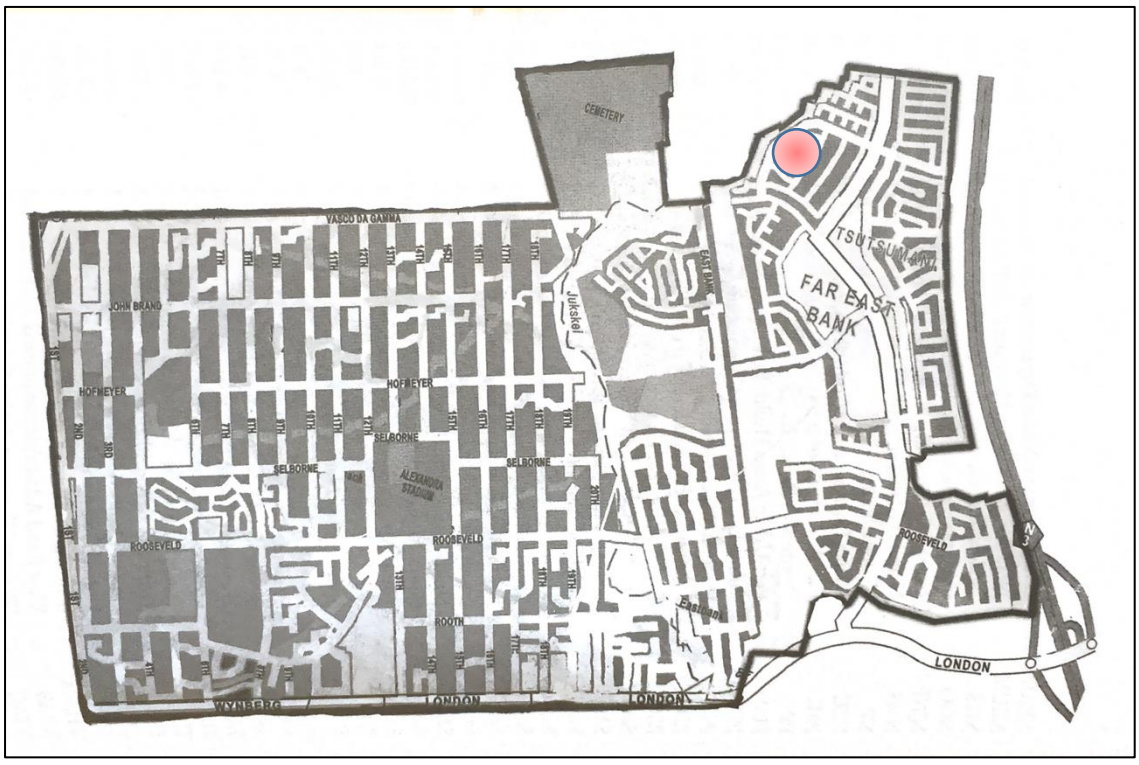


Figure 3: Map of Alexandra produced by the Alexandra Heritage and Tourism Committee (Source: Bonner and Nieftagodien, 2008)

1.5 Objective of the research

The goal of the study is to use the MGSP as a case study towards an understanding of how private sector developers could make meaningful contributions towards upliftment of a predominantly disadvantaged precinct in order to ensure more inclusive cities especially as cities and their respective economies commit to greening of infrastructure and lifestyles. This objective thus guides the study towards utilising the lens of inclusive green urbanism as the theoretical framework. The related objectives are to determine why transformation of the MGSP is not occurring spontaneously especially as in other Gautrain station precincts and to propose opportunities for the precinct in relation to the adjoining mega-project developments. By determining the intrinsic value of the precinct, recommendations are provided to better integrate the MGSP into the wider urban fabric of the City of Johannesburg and the Gauteng City Region in general. The final objective is to conceptualise and appraise a strategy to leverage private sector developers to get more involved in planning for areas beyond their project sites in pursuit of inclusive green urbanism for cities and respective city regions such as the GCR. The main research question substantiated through the study is as follows:

1.6 Research Question

How do we leverage the surrounding major urban development mega-projects to transform the MGSP in pursuit of enhanced inclusive green urbanism for the GCR and how could insight from such a case study inform ongoing efforts towards integrated urban development which optimises on both the socio-economic and resource/environmental conservation goals through urban development interventions for sustainable lifestyles?

1.6.1 Sub-Questions

- What is the inclusivity value of the MGSP for the GCR?
- What is constraining the transformation of the MGSP from its disadvantaged historical condition to a vibrant multi-modal public transport driven hub/node?
- How can one transform the MGSP in a manner that mitigates the risk of gentrification

and displacement such that its inclusivity value is enhanced?

1.7 Working hypothesis

The study expected to report that within a transformed GCR where public and non-motorised transport prevails (and hence a low-carbon footprint for the city region), the connectivity-value of MGSP would be further enhanced with even greater value arising from the adjoining mega-projects which would in turn hold the potential to make significant contribution towards inclusive transformation of the precinct in a manner that would mitigate status-quo socio-economic marginalisation and even more so mitigate against the dire threat of gentrification and spatial displacement of current low-income residents in settlements within the precinct and greater Alexandra area as the mega-projects take form and mature.

In order to test the hypothesis, the following conceptual diagram was conceptualised for this study.

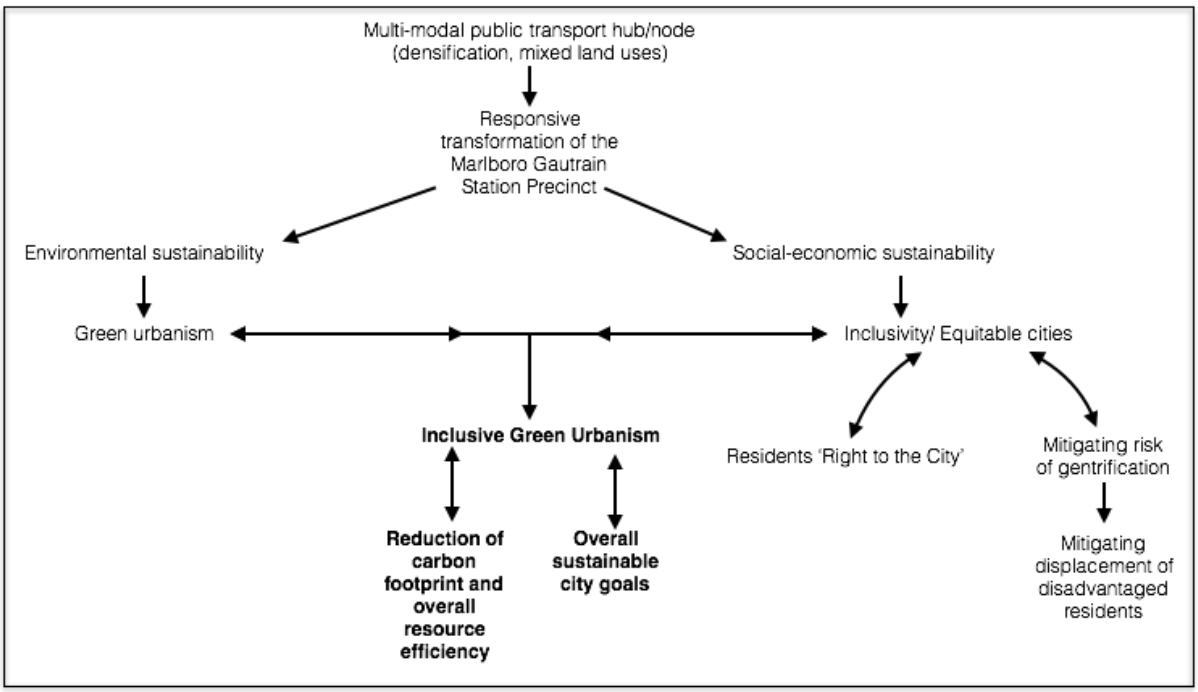


Figure 4: Overall conceptualisation of the study

1.8 Definition of key concepts

Displacement: Displacement within the context of this study refers to possible forced/ involuntary movement of local Alexandra residents (among others in the precinct) from the township that is their home. Displacement is viewed as a risk to the residents, and likely to occur through various means such as socio-economic exploitation and gentrification.

Gentrification: For this study, and from the current policy discourse of South Africa, gentrification is viewed as primarily a market-driven approach to improve and rejuvenate areas that previously were marginalised but now viewed as having immense land development potential and value. In doing so, disadvantaged residents affected by gentrification end up being socio-economically exploited and spatially displaced from their homes. Gentrification is not viewed in a positive light and despite arguments that argue it leads to socially mixed spaces with livable communities, reality has shown that it is a tactic that drives out pre-existing vulnerable and low-income residents and communities who can no longer afford to live where they are and are thus often shunted to less advantageous sites/locations of cities.

Inclusivity: Inclusivity within this research is a concept that means the incorporation of all residents (of Alexandra) and the township better into the GCR.

Inclusive Green Urbanism: Inclusive green urbanism is the conceptual model of green urbanism applied to all developments and residents across the city regardless of any social factors that may cause any divide in society or differentiated outcomes, that seeks to facilitate zero-emission and zero-waste lifestyle while promoting compaction and energy efficiency.

Inclusivity Value: The social and economic value of the precinct that attracts empowered residents to reside within a space leading to a strong sense of place, quality of life and identity for a range of residents or communities. These spaces are ideally dominated by a strong history and culture with low social stresses thus leading to a strong neighbourhood/city that is equitable, socially inclusive, economically thriving, sustainable, resilient and environmentally successful.

Spatial Transformation: Transformation of the apartheid spatial landscape, legacy and spatial economy in order to restructure the Gauteng City Region into an integrated and sustainable

province, leading to better resource consumption, economic growth and opportunities, linkages through better transit systems and infrastructure delivery (Gauteng Provincial Government, n.d.).

Sustainability: Socio-economic development in a manner that makes the best use of current natural resources of the world to achieve social justice and fairness, economic wellbeing and growth while securing the natural environment and ecosystems to meet human needs and requirements for future generations' (UN-Habitat, 2009a; Pieterse, 2011; Swilling & Annecke, 2012a; Weakley, 2013; Harrison et al, 2014).

Transit Orientated Development: TODs are nodes/hubs that are 24-hour high-density, mixed use inter-modal, pedestrian-friendly, safe and accessible spaces. Precincts that conform to TOD principles are walkable, compact, high density spaces centred on high quality interlinked transport options. The aim of TOD is to curb current urban challenges such as resource consumption and climate change by promoting dense, walkable spaces that are energy-efficient and are not single car, private, mobility orientated. This promotes better quality of life and environment, easier mobility on local and regional scaled, reduction in traffic congestion and pollution, reduction in spending on transportation, healthier lifestyles and communities, reduced urban sprawl and mixed-use spaces (van Niekerk et al, 2013; The Transit Oriented Development Institute, n.d.). TOD within the context of this research becomes an aspiration for the MGSP to transform into, and is a key part of inclusive green urbanism.

1.9 Limitations

The University of Southern California (2016) provides details on Limitations of Study and notes its importance as a way of informing/guiding future studies. Limitations provide the opportunity for the researcher to critically think through his/her research as well as self-evaluate the validity of the study. Limitations can be split into two categories, which are methodological limitations and limitations of the researcher with possible limitations under each section (ibid). These limitation categories were used to determine limitations of this study.

1.9.1 Methodology limitations

Notwithstanding the delays in ethics clearance which was received at the end of October 2016, all intended interviews were conducted. Interviews started in November 2016 and extended into December 2016. This placed pressure on the researcher to conduct interviews, analyse the interviews and produce the report. Furthermore, given the time constraints, time of the year, and each interviewees personal schedule, I was subject to the availability of the interviewees.

For this research, it would have been preferable to finalise the policy analysis prior to conducting the interviews. This would have assisted in tailoring the interview questions for each relevant person. However, time constraints necessitated that the policy analysis for secondary data be undertaken simultaneously with the interviews process.

When interviewing officials, the ability to verify everything that they say is a limitation. There are not always cross-references or double checks available. The interviewee can also be biased to or against their institution or against others and thus be prone to providing misleading information. It would be useful to interview more than one official from each public and private institution in order to get alternative points of views. Given the time constraints, this limitation could not be exhaustively addressed.

A further limitation of this study is the inclusion of, and analysis around accompanying transport options such as BRT/bus and taxi's. The focus of this research is on Gautrain as a major form of public transport infrastructure for GCR, and why it has not achieved a similar catalytic effect in the MGSP when compared to impacts on precincts such as Sandton City and Rosebank. To create the MGSP as a TOD precinct, multiple forms of public transport must intersect and this research acknowledges bus, BRT, taxis and walking/cycle lanes as some vital forms of transport that can accompany the Gautrain. However, the scope of this research is limited to how we can leverage the surrounding major urban development mega-projects to transform the MGSP in pursuit of enhanced inclusive green urbanism for the GCR.

1.10 Ethical considerations of the study

Ethical considerations are vital to the success of credible research. Careful note was taken with regard to ethical implications that applied to my conduct as the researcher and how to mitigate the potential conflict of interest given that at the time of the study I also served as an employee of the Gauteng Provincial Government and especially working within the GPD. As a planner in the GPD, I work closely with many officials at all levels of government on spatial planning matters. I provide input and comment on many provincial and local documents and related outputs. My role entails that I plan at a provincial scale while this study deals at a very localised level of planning. I needed to also safeguard against having my role influence my interviews or conducting the interviews from a provincial government spatial planning point of view. I need to also safeguard against the risk that my place of employment would influence on the collection of data and access to officials to be interviewed. All information obtained was through my position as a student at the University of Witwatersrand registered in the degree for a Masters of Architecture in Sustainable and Energy Efficient Cities and I did not conduct any interviews as employee of government. All respondents were explicitly made aware of my employment status with the GPD from the beginning of the interview and no information received was used for official work related purposes. Officials within the Municipalities, Provincial Government or Private Sector were not obligated to serve as participants. If I was unable to obtain an interview with a selected official, I sought out an alternative official with the pertinent/sufficient knowledge to respond to my interview questions. This part of the study was completed without difficulties in accessing adequately knowledgeable respondents.

I was mindful to mitigate the risk of taking a biased approach to all respondents from a sphere of government or private sector while at the same time ensuring I was accessing informed feedback and opinions. As an employee of the GPD I also had to mitigate against the risk of private sector interviewees using the interviews to pass blame on public service officials or government officials being overly critical of private sector participants. All the information obtained was sensitively handled before it was reported on this study in order to ensure confidentiality and anonymity.

1.11 Chapter outline

This study utilised a general conventional master's level research report structure for the most part. The introduction chapter starts by introducing the research by providing the rationale/motivation and background to the study. This is followed by a statement on the scope of the case study and motivation on its prioritisation. The problem statement is then articulated along with the aim and objectives of the study. This is followed by the main research question and sub-questions, followed by definitions of key concepts as well as limitations and ethical considerations which guided the study process.

Chapter 2 focuses on a literature review based on the key theoretical fields of the study and especially the concept of sustainability with a focus primarily on inclusive green urbanism. Two studies that take differing approaches to the concept were appraised. The first study (Newman, 2010) discusses green urbanism under the concept of innovations of green urbanism that were then split into seven functionality city types. This was followed by the fifteen guiding principles of green urbanism as proposed in Lehmann (2011). The literature review then appraises studies on additional concepts such as inclusivity, exclusionary spaces and finally appraising studies on gentrification, displacement and people's rights to the city. The chapter also provides appraisals of two case studies; the first case study focused on inclusive green urbanism experienced in Singapore while the second case study looked at The Jonathan Rose Company in New York and how they strive for equitable, socially inclusive, economically thriving and environmentally successful cities for all based on their approach to property investment and development. Chapter 3 constitutes a presentation on the methodology of the study. This guides the reader through the data collection and analysis process taken towards deriving findings of the study.

The study deviates slightly from the conventional structure from chapter 4 onwards. Chapter 4 provides secondary data on Alexandra and the MGSP with a focus on its inclusivity value and is primarily based on a policy analysis of various City of Johannesburg spatial frameworks and policies as well as desk-top and field studies conducted during a masters coursework under course code ARPL 7054 (Energy for Sustainable Cities, 2015). Chapter 5 focuses on presenting the primary data from the interviews conducted. This is split into three main, broader sections. This first section analysis site constraints looking at why Alexandra and the

MGSP has not transformed in a desirable manner into a vibrant public transport driven hub/node. This is followed by a section on 'How to Successfully Transform the Site' which sheds light on how to transform the MGSP in a more desirable manner. The final section is on the impact of neighbouring major urban developments looking at how surrounding Modderfontein City and Waterfall City impact on the site and how this can be leveraged. Following the presentation of both the primary and secondary data, chapter 6 provides a consolidation of sub-findings from chapters 4 and 5 tied with the motivation for the study and theoretical framework. From this, recommendations are proposed that try to take the MGSP further into a transformed space that is inclusive and sustainable.

Finally, chapter 7 concludes the research by summarising the study. In order to address the main research question: How do we leverage the surrounding major urban development mega-projects to transform the MGSP in pursuit of enhanced inclusive green urbanism for the GCR and how could insight from such a case study inform ongoing efforts towards integrated urban development which optimises on both the socio-economic and resource/environmental conservation goals through urban development interventions for sustainable lifestyles?

A comprehensive reference list is included followed by a section for annexure providing relevant additional documentation (illustrations/images and/or evidence that does not fit into the body of the text within the relevant chapters).

Chapter 2: Theoretical framework and literature review

2.1 Introduction

Monbiot (2014: 7) wrote that "*…we now know that the little we do is without environmental consequence. The amplification of our lives by technology grants us a power over the natural world which we can no longer afford to use. In everything we do we must now be mindful of the lives of others, cautious, constrained, meticulous. We may no longer live as if there were no tomorrow*".

Monbiot illustrates the extent to which the earth is becoming increasingly overburdened by human expansion in terms of numbers, consumption/production as well as lifestyle. Human growth and expansion has been made possible through technological advancements and innovation. It is expected that human growth in developing countries will triple the built-up urban area between 2000 and 2030 (Pieterse, 2011: 301) with the possibility of an additional 1.5 billion people on earth. This adds an additional burden to the backlog challenges which cities especially in developing countries have to contend with. The impacts and continued growth of societies and cities must be carefully managed, so as to not add to the burden facing a city's development, but rather create sustainable and resilient spaces for people to live.

Drawing from the above, the literature review analyses studies that assist in understanding and defining the concept of inclusive green urbanism which forms the theoretical basis for this research. In order to understand inclusive green urbanism, there needs to be a clear understanding of inclusivity and green urbanism. Simply put, inclusive green urbanism is the conceptual model of green urbanism applied to all developments and residents across the city regardless of any social factors that may cause any divide in society or differentiated outcomes, that seeks to facilitate a zero-emission and zero-waste lifestyle while promoting compaction and energy efficiency. This research topic seeks to enhance understanding of such outcomes for the MGSP, Alexandra and the Gauteng City Region. The literature analysed is broken into two main categorise. The first one is inclusivity while the second category is green urbanism which is an extension of the broader concept of sustainability. From this, one gets a clearer idea of why there is a need for inclusive green urbanism.

Prior to these concepts, it is important to understand some of the issues and concerns that cities in South Africa are dealing with. This assists in highlighting the need for inclusive green urbanism. Lastly, there is a discussion of two precedent studies relevant to the research.

2.2 Issues and concerns surrounding cities in South Africa

South Africa has experienced large scale changes since the transition from apartheid to a democratic regime. In the post-1994 South Africa, especially following the removal of the apartheid spatial segregation laws, cities and neighbourhoods changed to accommodate large scale growth and decline, equal human rights for all, freedom of movement of previously disadvantaged communities as well as migration. Nassar (2013) notes that with added access to cities came added challenges, and this is seen in the overall development of South Africa's cities. Even though cities are understood to be hubs of socio-economic opportunities (especially for the previously disadvantaged groups seeking a better way of life and opportunities) this has not always materialised for a majority of rural immigrants into cities hoping for a better quality of life (DED, 2011). In addition to this, resource allocation and development priorities in many parts of the city is primarily directed to the more affluent sections of society with impacts extending to the public realm (ibid).

Pieterse (2011) calls for South African cities to strategically address the challenges of urbanisation which will triple their urban built-up forms by 2030. Prevailing data indicates that current city boundaries are increasing and are expected to expand primarily due to urban sprawl. In Gauteng, many poor and previously disadvantaged residents are located in areas outside of the urban core away from jobs and economic opportunity resulting in informal settlements and new townships forming in a manner that places strain on municipalities efforts to cater for and supply services. Equally high potential agricultural land and the natural ecosystems are at a high risk as a result of the impacts of such sprawl. If cities are to continue to prosper, practitioners and policy-makers need to change the manner in which they guide urban development so as to ensure transformation towards integrated and sustainable cities (UN-Habitat, 2009a) within the existing built core. Nassar (2013: 339) emphasises that the integration of sustainability into urban development constitutes one of "the biggest challenge for cities and towns nowadays". This challenge is equally vital for the transition towards sustainable green cities.

From the discussion above, it is evident that cities in South Africa are facing two major challenges. The first is creating cities that are inclusive for all residents, providing equal opportunities, services and amenities regardless of race or income. The second challenge is to provide urban developments in locations that optimise government spending to the maximum and addressing the inclusivity challenges as a key part of sustainability. Chapter 1 provided a case for why Alexandra and the MGSP is an ideal location within Johannesburg and if not planned for correctly, the current residents can be socio-economically exploited or spatially displaced (Ismail, 2015).

2.3 Inclusivity and peoples 'Right to the city'

In the post-1994 South African context, inclusivity is vital for the transition of cities and the country as a whole given the history of segregation and marginalisation of non-whites during the apartheid regime. Non-whites were pushed out of cities to live in peripheral locations of townships and homelands and only allowed controlled access to cities. In the new democratic South Africa, many previously disadvantages residents migrate to cities for a variety of reasons and many of them have taken to the notion of 'the right to the city' which stems from the work of the French Marxist philosopher and sociologist Henri Lefebvre (Huchzermeyer 2014; Purcell 2014). In South Africa and across the global South, people have latched onto the notion of the right to the city as a motto or slogan as many have experienced some exclusion from the city and seek redress for what they deem to be their by rights (Huchzermeyer 2014).

When delving into Lefebvre's work on the right to the city one can say that it argues for a far more complex idea (Purcell 2014) which can only be fully understood through a systematic view of the author and his time as well as context. Lefebvre writes from a post-war European perspective and views capitalism and the structure of the market as being the source of many social ills and the deep inequalities (Huchzermeyer 2014; Purcell 2014). The right to the city as Lefebvre envisages constitutes a revolution and transformation aimed at moving away from the realities of the state to a utopian reality where the state is done away with and citizens rule themselves with the city being a social construct for all (ibid). Lefebvre's work can be seen as highly idealistic as he believes that people can take destiny into their own hands and thus shape the ideal city that is self-managed by its residents (ibid). In spite of Lefebvre's idealistic beliefs, the notion of the right to the city for all its residents is a strong

concept. In today's world, Lefebvre's convictions seem unrealistic given the significant role of the market and capitalism in general as well as the structure of governments across the world. However, two key points can be discerned from Lefebvre's writing. The first one concerns the need for inclusion of all residents in the development process towards a sustainable city. The second one is the importance of decentralisation of some aspects of the decision making processes for cities in order to allow for a more meaningful participation of the residents.

2.3.1 Inclusive urbanism and gentrification induced displacement

Ramon (2014) argues that whereas the current realities of our cities and spaces see the poorest people (who are also generally the most vulnerable) pushed out of cities we should continue striving towards a transformed city future which is not only inclusive but also participatory, democratic, equitable and collaborative. The Danish Architecture Centre (DAC) (2014) notes that David Harvey sees a need for major reconstruction and reconfiguration of urban life in order to solve environmental, social and economic issues facing the world today. While acknowledging that there is no single simple means of achieving a sustainable city goal across the world, he supports the approach of working on multiple facets of city life concurrently. He further notes that the cities we seek to create are directly tied to the people we intend to become and therefore the push for sustainable cities means people need to change and live more sustainably themselves.

On the additional question of, "…what are the challenges that top the to-do list in cities around the world" the DAC (2014) quotes Harvey's strong response as follows:

"*There is nothing worse than a passive and fearful consensus to preserve the status quo, which is clearly unsustainable in both environmental and social terms*"

From this, the idea of a sustainable city as one that is solidly integrated to social fairness has been systematically articulated. If a city is to be truly sustainable, it cannot at the same time be exclusionary on any of its residents by whatever reason or criteria.

As South Africa grapples with the apartheid legacy and exclusion nationally and in cities, it must in addition grapple with the eco-footprint of sprawling cities with equal effort and vigour. For the purpose of this study, the pursuit of inclusivity for cities connects to the now controversial strategy often referred to as gentrification which has become wide-spread in

urban policies around the world (Uitermark & Loopmans, 2013). The need to transform Alexandra is important and high on the agenda of the City of Johannesburg (seen further substantiation in Chapter 4 section 4.2), the challenge of gentrification of the township in the medium to long term can lead to spatial displacement of the current residents and perpetuate segregation as concluded by Uitermark and Loopmans (2013) work in Belgium.

Lees (2008) contests the views by scholars such as Altshuler, Lowry and Smith who champion gentrification as a means to catalyse benefits for lower income groups and the working class. Altshuler, Lowry and Smith argue that gentrification leads to socially mixed, liveable communities as opposed to Holcomb's stance that gentrification leads to displacement, segregation and social polarisation, while Uitermark and Loopmans (2013) indicate that the burden of gentrification is carried by the disadvantaged groups. Although ongoing policy discourse explores the approach of creating socially mixed communities, systematic evidence to back gentrification as a means to achieve such communities is limited (ibid). In contrast, most studies present gentrification and the advent of property investment in disadvantaged neighbourhoods through market forces as primarily exclusionary tactics.

For this study, and from the current policy discourse of South Africa, gentrification is viewed as a means to improve disadvantaged spaces while ultimately leading to the removal of the original residents. Gentrification is not viewed as a means of creating socially mixed spaces with liveable communities but rather as a tactic that ultimately leads to the driving out of communities often to the urban peripheries of cities. What is therefore needed is a rethinking of policies and alternative development approaches to gentrification (Uitermark & Loopmans, 2013).

2.4 Understanding and unpacking green urbanism

It is evident from Harvey's quote and the discussion in the section above, that when dealing with inclusivity we must be conscious of sustainability issues as the current status quo is clearly unsustainable as it leads to negative impacts on the environment and in social terms spatial displacement of vulnerable groups. This leads to the need for a clear understanding of sustainability in its totality. This section will go into and define sustainability as well as its challenges. This it leads to a discussion around green urbanism as a sub-concept of sustainability.

2.4.1 Defining and understanding the need for sustainable cities

The most widely cited definition of sustainability stems from the United Nation's 1987 Brundtland Commission report (Pieterse, 2011) where the current socio-economic development needs are pursued in a way that exploits natural resources to meet current human needs and requirements while simultaneously conserving the same resources for future generations to come and thus ensuring that they will be able to meet their own needs (UN-Habitat, 2009a; Pieterse, 2011; Harrison *et al*, 2014). Over time the definition's engagement and application has attracted diverse forms of criticism to the extent where several scholars deem it to be too simplistic (Pieterse, 2011).

Towards extending the sustainability challenge beyond environmental and resource concerns, Swilling & Annecke (2012a: 19) argue that "*in order to rebuild the cultural foundation for a more sustainable global civilisation, social scientist need to rethink progress and the future goal of development…. which are inescapably constrained by the finite nature of the ecological system within which these endeavors are embedded*" (2012a: 19). Weakley (2013) indicates further the need to factor in the social-justice component which entails the improving of the quality of lives of individuals, communities, and the eco-system (2013). The UN-Habitat gives added importance to economic growth as a component of sustainability on the basis that economic sustainability can (or should) lead to fairness and opportunity for all (UN-Habitat, 2009a). From these definitions, it becomes clear that sustainable development has its roots in our endeavour to secure natural resources and the environment, social aspects, justice and people's wellbeing as well as the economy and economic growth. The concept of sustainability is therefore emphasised as a goal or objective that societies should be striving to achieve in order to enhance resilience and prolonged existence of life on the planet (Harrison *et al*, 2014).

From the sustainability imperative, urbanisation and urban development needs to be in harmony with the natural environment. Attaining and conserving such harmony/balance has become increasingly difficult in both developed and developing countries, especially because the large ecological footprints of cities escalates the degradation and strain of the natural environment and resources. As a response, the brown agenda intends to optimise the "land use, engineering of waste systems, the minimizing of energy consumption and transport, the

reduction in use of materials, and the creation of an efficient built environment" (UN-Habitat, 2009a:115) but this cannot be to the detriment of the green agenda and natural environment. The green agenda has grown to encompass a more global or regional response to urban planning, and matters pertaining to the enhancement of the natural environment through cities (ibid).

The pursuit of the sustainability agenda through the sustainable development approach challenged the field of urban planning to become more cognisant of issues relating to poverty, wealth creation, natural and built environmental pressures, security of urban communities and social and cultural aspects (ibid). In spite of the systematic theoretical elaborations of sustainability, its translation into action (policies, programmes and projects) has nevertheless been slow. This is attributed to the rigid, formulaic, master planning approach that has shaped the discipline for centuries (UN-Habitat, 2009a). In line with the definition, the pursuit of sustainable urban development seeks to create cities that are economically productive, environmentally safe and socially inclusive (UN-Habitat, 2009a). These are the three categories of sustainability which Pieterse (2011) refers to as the triple bottom line of sustainability. However, Weakley (2011) argues that the categories are not mutually exclusive and must all be achieved in some form or manner in order to ensure urban development equilibrium. If one of these categories were to fail or there is more emphasis placed on one over the other, then a city ultimately transforms and becomes unsustainable (UN-Habitat, 2009a; Weakley, 2013).

2.4.2 Limitations of sustainable development in theory and practice

The sustainability agenda has received some criticism especially related to scope and priorities (UN-Habitat, 2009a; Pieterse, 2011; Swilling & Annecke, 2012b). This section of the literature review focuses primarily on the broader limitations of the concept of sustainability especially in the developing world where the primary focus by private sector is to make profits while government's role focuses on the provision of housing and basic needs such as services and amenities with hardly any consideration of the environmental impacts of cities. This means that the environment and green agenda only arises as an afterthought and is therefore often overlooked (UN-Habitat, 2009a). This limitation becomes important to this study as we

see later on in the report that market forces start to demand what is pragmatically feasible for developers.

Given that cities are ever changing and transforming over time (Weakley, 2013; Harrison *et al*, 2014), the goal of a perfectly sustainable city or a city in stable equilibrium is virtually unattainable. This is because cities are by nature always in a constant state of flux building upwards and outwards or in some cases shrinking. This highlights sustainability as an unachievable and ever elusive goal (Harrison *et al*, 2014). However, one needs to understand that despite the elusiveness of a perfectly sustainable city, sustainability is a goal that anyone who develops within space must strive to achieve. In addition to this, equilibrium across the three sustainability pillars of social, economic and environmental drivers is equally viewed as unrealistic based on the inevitable reality that one will always dominate out over the other two. In most instances, the economic driver is given greater weighting than the others (Pieterse, 2011) which is why anyone that develops in a city or in any space must be aware of the impacts they have, so that they take cognisance and start to think through how they plan. This is to ensure the longevity of their concepts and designs, and spaces are planned to be less negatively impactful on the environment and that residents live healthy lives. Many developers plan sustainable developments such as Modderfontein City, however, they become isolated within the broader city context as the officials indicate they prefer their development to continue growing to its own potential and were not as mindful as they should have been in terms of the impacts on surrounding areas.

A further limitation is the complexity of mastering sustainability in theory and practice. Harrison *et al* (2014) attributes the primary limitation to skills and education. Sustainability by its definition is simple but actively pursuing and achieving the goal in practice is complex and requires extensive knowledge and skills across multiple disciplines. Arising from a prevailing perception that it is simple, there is not enough education and training set towards comprehensively teaching practitioners how to deal with the skills and knowledge challenge it poses. The sustainability agenda therefore needs to form part of the broader education system in cities of the south in order to fully equip people with the knowledge and skills required to systematically pursue sustainability in the developing world and especially through sustainable cities (Weakley, 2013; Harrison *et al*, 2014).

The last limitation that will be dealt with is the weak democratic oversight and engagement in developing countries that impacts on sustainability (Pieterse, 2011). The Brundtland definition assumes that political dynamics are rationally driven, and these contrasts are significant to the prevailing understanding that politics by nature, is a field of competing powers and interests (ibid). Contestation arises between different actors or stakeholders in and out of government. The contestations can lead to compromises that result in "shallow policy decisions that generally reinforce the status quo in unsustainable and unjust situations" (ibid). With South Africa as a case in point, apartheid policy and planning practices have been sustained due to it having been deeply entrenched in society and the spatial form of cities and infrastructure provision with a legacy where the majority of the urban poor are located in peripheral areas or within informal settlements of major cities and urban cores where they face inadequate urban infrastructure and ineffective service delivery (Huchzermeyer, 2011).

Good services and infrastructure networks remain concentrated in strategic areas which cater for more affluent residents that make up a smaller portion of the urban/national population (Pieterse, 2011) while the urban poor remain in the peripheries due to their inaccessibility to affordable land or housing in the core areas of cities. The government then struggles to provide services and infrastructure extensions to the peripheries as it is not financially feasible. This in turn perpetuates the existing inequality gap (Turok, 2004) with the urban poor having to rely on their surroundings impacting negatively on the environment thus making South African cities less sustainable.

2.4.3 Green urbanism

Multiple studies have argued that cities which are socially and spatially just reinforce the principle of inclusivity and thus contribute towards sustainable city goals. Ellin (2012) and Kashef (2016) argue that the move towards a greener agenda is impossible without the accompanying social justice and social change (Gilbert, 2014). Liveable cities are sustainable cities which encompass a balanced approach to environmental as well as socio-economic imperatives. Within the ever-urbanising world which so far has proven to be ecologically destructive, the sustainability agenda and sustainable city discourse has recently taken prominence (Gilbert, 2014, Monbiot, 2014). Gilbert (2014) notes a claim by David Harvey who

argues that cities in and of themselves are not unnatural and should be viewed as products of their own natural growth.

Included within the growth of cities and touched on in the definition of sustainability is economic growth. Cities, businesses and people all seek to achieve economic growth and prosperity. Many a time, the required growth has been to the detriment of the environment such that cities are now reaching a point where the luxury of economic growth and the push to addressing social issues cannot continue to impact on the environment and the limited natural resources (Swilling, 2011). The concept of decoupling is therefore a new manner in which to re-balance the relationships between economic growth, social aspects, the natural environment and resources (ibid). Practitioners need to think through the rate of growth of cities and decouple such growth/development from the negative impact on the environment. Swilling (2011) indicates that constant growth needs to be redefined and structured in order to ensure sustainable resource management. This entails a redress of how cities and infrastructure provision is planned and catered for. If done correctly, sustainable resource management can be achieved all the while sustaining steady economic growth and equality (Swilling, 2008).

Green urbanism is one such decoupling approach towards sustainability that seeks to address many of the environmental and resource dependencies of cities. Nassar (2013) refers to green urbanism as a conceptual model that envisages a zero-emission and zero-waste urban/city metabolism while promoting developments that are compact and energy efficient. The model emerged as a counter to the experiences of the industrialist city in order to facilitate a transition towards greater social and environmental sustainability (ibid). The model also envisages cities and spaces that are smart, secure and sustainable (Newman, 2010).

Green urbanism is important for South Africa as it presents a model of how to achieve cities and spaces that are compact and energy efficient and give off zero-emission and zero-waste. As discussed later in this report, the Alexandra township faces many challenges while also impacting greatly on the sustainability of COJ and the GCR. Green urbanism is a good concept that can be applied to the township to assist in transforming it into a desirable space for the current residents so that they are not socio-economically exploited or become spatially displaced, and thus facilitating for the MGSP to be transformed into an inclusive and vibrant

TOD hub. The following sections will look into green urbanism from the perspective of two authors, Newman (2010) and Lehmann (2011).

Green Urbanism from the perspective of Newman: Innovations in Green Urbanism

Newman (2010) argues that the characteristics of resilience (the latent ability to recover from disasters) are very closely tied to and overlap with the notions of green urbanism. This is reflected by the range of envisaged innovations of green urbanism which are categorised under seven exemplary city functionality types discussed below:

The renewable energy city: A renewable energy city is one that utilises renewable energy to reduce its ecological footprint, uses biological fuels and has an enhanced ecological function. To achieve a renewable energy city goal, there must be great commitment by all stakeholders at various levels of the city. The progression to achieving this innovation can be through a variety of means such as demonstration of energy efficiency technologies to showcase the appeal of green, utilising local and regional benefits such as wind and solar generation options for renewable energy, developing green building standards, using fiscal incentives and the push towards public transport, transit orientated developments (TOD) and non-motorised transport (NMT) (ibid)

The carbon-neutral city: Becoming a carbon-neutral city through a reduction in the usage of fossil fuels thus increasing dependency on renewable energy, towards offsetting carbon dioxide (CO_2) emissions (ibid).

The distributed city: A distributive city could be achieved by decentralising power and water systems to small-scale levels and neighbourhoods, but requires large community support. Having a neighbourhood based system is more efficient and can reduce the ecological footprint required to produce and distribute power and water. This intern helps to reduce the loss that can occur from the transportation of energy and water from the centralised systems over vast distances to the respective neighbourhood and home (ibid).

The biophilic city: The use of nature and natural processes as infrastructure is championed by the biophilic city. This requires that the production of energy, food and material be done locally and to form part of urban infrastructure development. Such infrastructure also known as green infrastructure makes use of the natural features and systems of a locality such as

wetlands and urban forests in order to generate benefits for residents and the city at large. Some of these benefits are clean air and water, climate regulation and food production amongst many others (ibid).

The eco-efficient city: Cities that are eco-efficient have changed the manner in which they function to become closed-loop systems. What the city produces is utilised internally and the water output is also used to benefit the city. This reduces a city's ecological footprint through the reduction of waste outputs and thus implying less input and resource requirements (ibid).

The place-based city: Understanding the locality and context of a city is important for its sustainability. Greater local knowledge can lead to strategies, programmes and policies that help to build a better local economy, develop a sense of place and identity, and foster a better community and quality of life (ibid).

The sustainable transport city: A city that has a well-functioning sustainable transport system is one that is walkable, transit orientated and has a public transport drive. These cities allocate majority of funding towards mass public transport utilising optimal densities and compaction to build good transit options and thus reducing the emphasis on freeway development which results in a drop in the dependency on private motor vehicles. The focus on developing pedestrian and bicycle friendly streets can lead to more attractive cities that are people and business friendly (ibid).

Transformation towards the pursuit of the seven city functionality types entails significant challenges and therefore cannot all be achieved at once. Planners and policy makers must therefore devise and develop strategies for each functionality type based on an interdisciplinary process that taps into collaboration amongst politicians, architects, engineers, planners, ecologists, psychologists and economists amongst a variety of other disciplines (Nassar, 2013).

Green Urbanism from the perspective of Lehman: 15 Principles of green urbanism

The movement and growth towards sustainability and green urbanism has been systematically substantiated by Lehmann especially through his recent book titled 'The Principles of Green Urbanism: Transforming the City for Sustainability' (Lehmann, 2010) and 'Green Urbanism: Formulating a Series of Holistic Principles' (Lehmann, 2011). The

publications provide an in-depth historical context of green urbanism stretching as early as 1902. The publications further disaggregate green urbanism into fifteen guiding principles that can be used to tackle the critical sustainable city challenges facing communities, neighbourhoods, districts and cities. In particular, Lehmann (2011) calls for a re-thinking around the manner in which "we design, build and operate in future our urban settlement". The principles provide a conceptual model/framework for a more integrated approach for local action to urban development while also emphasising the critical role for a holistic approach (Lehmann, 2010). Green urbanism thus requires a multidisciplinary and collaborative approach in order to address the challenges and concerns of transforming communities, neighbourhoods or regions and the way we think about the designing of urban development (Lehmann, 2010). Within the publications, there is a large focus on the 'How' and the fifteen principles must be applied and adapted to the specific local context and environment that one is working in (ibid). In addition to guiding city-level transformation, the principles would also be applied to smaller urban scales such as neighbourhoods, precincts and buildings preferably within brownfield developments (Lehmann, 2010). However, it must be noted that the principles do not all have to be pursued with equal emphasis across all cases, but rather calls for context guided prioritisation (Lehmann, 2011).

The fifteen guiding principles of green urbanism discussed below:

Principle 1 - Climate and context: Each development is a unique setting with its own history, culture, context, climate, pros and cons (Lehmann, 2010). Climate conditions, context, the ecological footprint, complexities, history, economy, geography, culture, politics and environment must all be understood, analysed and planned for if a practitioner intends on having the site becoming a development that encompasses green urbanism (ibid).

Principle 2 - Renewable energy for zero carbon emissions: This can be achieved through energy efficiency and by moving towards renewable energy or natural gas as a mixed energy fuel alternative, and through a reduction in fossil fuel usage such as coal and oil (ibid). Also part of this principle is the transformation of settlements or localities into energy producers and not merely as consumers (ibid).

Principle 3 - Zero-waste city: Creating a closed loop eco-system that uses a sustainable waste management system of converting waste into resources (ibid). This requires the reduction,

recycling, reusing and composting of waste. All waste and material flows must be understood in order to achieve this principle (ibid).

Principle 4 - Water: Cities must reduce their water consumption and utilize better alternatives for efficient water usage, while achieving a high level of quality not only for consumption by humans, but for aquatic habitats (ibid). Water is not only a basic right but a resource that must be handled with care. Societies must start to value water more and education can allow for better efficiency and collection through rain water harvesting for example (ibid).

Principle 5 - Landscape, gardens and urban biodiversity: Cities and developments need strong biodiversity characteristics, not only for beauty but as opportunities for leisure and recreation, natural lifecycle and healthy societies. Parks, public gardens, rooftop/agricultural gardens all lead not only to healthy cities but healthy societies, a value of the surroundings and social cohesion (ibid).

Principle 6 - Sustainable transport and good public space: compact and poly-centric cities: Developing localities with a predominant focus on mass transit systems linking into well-established non-motorized transport options helps to create a low impact transit system that is accessible and easy for all. Alternative energy means is also important as well as a reduction on private automotive dependencies. The transit system must be linked well with the surroundings (mixed land-uses) and public space. Options for bike and car rental schemes help to reduce individual car ownership (ibid).

Principle 7 - Local and sustainable materials with less embodied energy: There is a need to develop systems for consumption that rely on a shorter supply chain with access to material and technology within the locality. This is very similar to the concept of urban metabolism where consumption of resources is far more efficient and effective with lower to no waste outputs.

Principle 8 - Densities and retrofitting of existing districts: Strategic densification and infill development centered around mixed land-use areas can lead to regeneration and better Transit Orientated Developments (TOD) (ibid). This relies on the agenda of compaction, better linking of economic opportunities to people's homes (through green transit options) and reducing the carbon footprints of existing buildings (ibid).

Principle 9 - Green buildings and districts, using passive design principles: Retrofitting of existing building stock and developing new buildings along a green agenda towards lower-energy consumption and emissions, designing in a manner that takes into account the basic functionality of nature as opportunities (having buildings orientate north in the southern hemisphere) for better lighting and warmth, amongst other things (ibid).

Principle 10 - Liveability, healthy communities and mixed-use programs: Creating communities that are healthy, diverse and promote social sustainability and inclusion. This can be done through mixed land-use options that promote integration and cohesion (ibid).

Principle 11 - Local food and short supply chains: Having food supplied within the locality is important along with food security (ibid). This can be done through urban farming and agriculture that generates production for the communities (ibid).

Principle 12 - Cultural heritages, identity and sense of place: All spaces have a history, heritage and identity. As a result, the people have an identity associated with the space they live in. Spaces should be safer and healthier promoting an individual's heritage. In addition, these spaces must be clean, healthy and free of pollution (ibid).

Principle 13 - Urban governance, leadership and best practice: The success of green urbanism also rests on good urban governance with just and secure governance (ibid). Leaders must provide for all citizens equally, through strong management and political support (ibid).

Principle 14 - Education, research and knowledge: Training and educating people on sustainable living and behaviours goes a long way to creating sustainable spaces (ibid). Changing people's mind sets will change the manner in which people interact with their environment (ibid). The more sustainability conscious a community is, the more effort they are likely to put towards pursuing sustainable lifestyles and livelihoods (ibid).

Principle 15 - Strategies for cities in developing countries: The developed world functions vastly differently from the developing world with different challenges and contexts. Specific strategies for different cities in different parts of the world must be developed to take into account matters pertaining to, inter alia, urbanization and globalization. The same approaches and funding mechanism cannot be applied to all cities, and practitioners must consider and respond to individual context of space (ibid).

2.4.4 Drawing similarities between Newman's 7 innovations and Lehmann's 15 principles of green urbanism

There are very clear ties between the seven different city functionality types under Newman's proposal and the fifteen green urbanism principles under Lehmann. Figure 5 illustrates that while both authors take different approaches to green urbanism, there are clear linkages between the fifteen principles and the seven city functionality types.

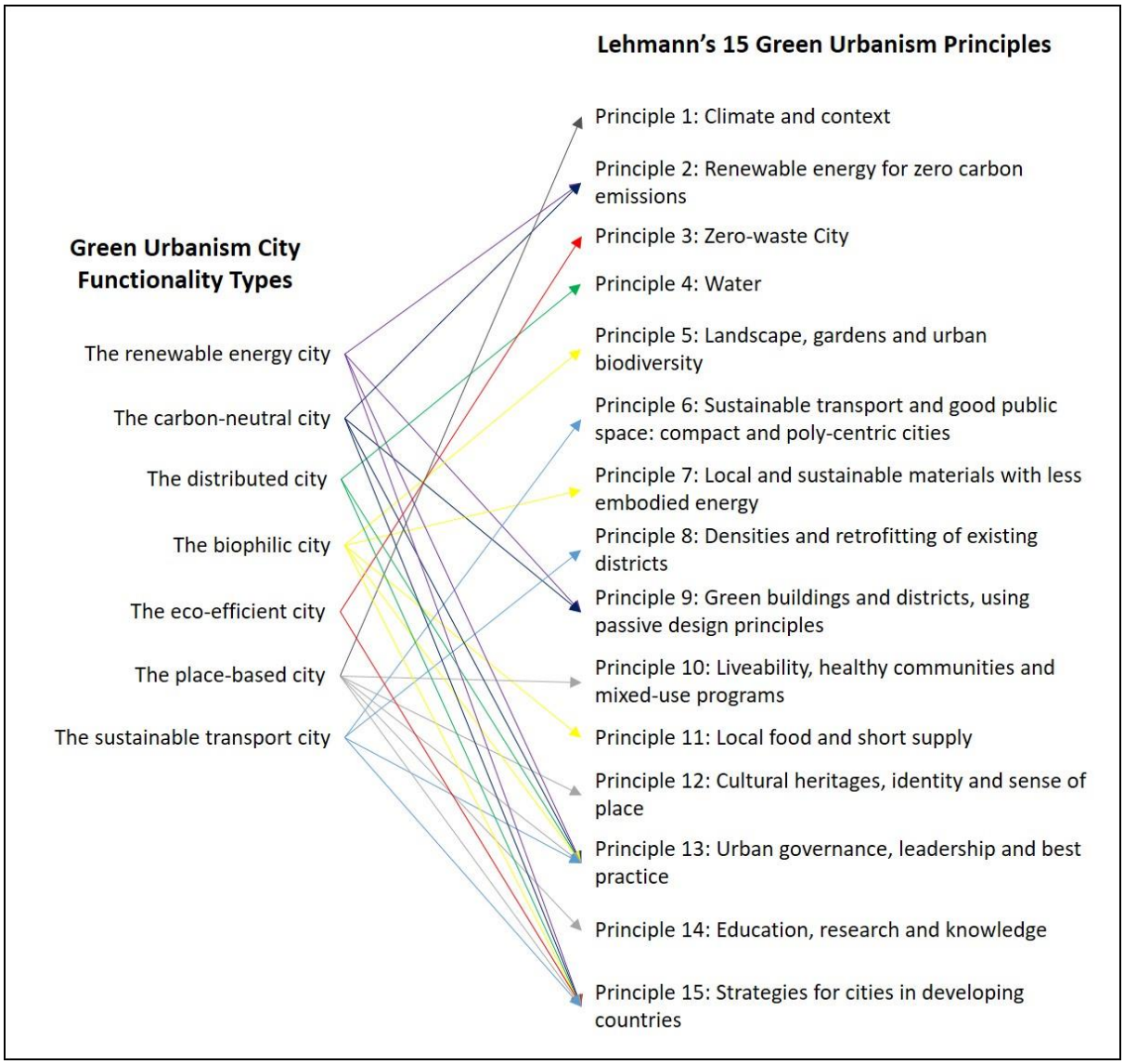


Figure 5: Drawing connections between Newman's 7 innovations of green urbanism with Lehmann's 15 principles of green urbanism (Source: adapted from Lehmann, 2010 and Newman, 2010)

Ellin (2012) and Kashef (2016) have argued that in order to for cities to be sustainable, those that plan for the cities must ensure that they create cities that are inclusive as well as socially

and spatially just. The transition towards a green agenda cannot be possible without social justice and social change (Gilbert, 2014). Liveable cities are therefore sustainable cities that aim to achieve a balance between the environmental, social and economic aspects of their residents' lives. South Africa has endured segregation and discrimination over several generations and as a result, the spatial and economic form of cities has reflected the negative consequences of apartheid spatial planning (Swilling, 2014). Vital to the realisation of green urbanism for South Africa is therefore the imperative of inclusivity for all people in order to ensure that legacy gaps between the segregated spatial form and societies in South Africa are remedied (ibid). This brings to the fore, the principle of inclusivity as a critical component of green urbanism for South Africa in particular. It is from this imperative that the study prioritises inclusive green urbanism as the relevant theoretical framework to guide the study.

2.4.5 Need for inclusive green urbanism

What emerges as the key to point within the discussions on green urbanism above is that there is not a clear and systematic connection to social issues. While Newman's 7 innovations of green urbanism and Lehmann's 15 principles of green urbanism seek to create cities that are green, resilient and resource efficient, neither of the two readings strongly brings forward the social element of sustainability. It can therefore be argued that their principles do not adequately guide cities that actively pursue inclusivity such as the case of South African cities. Therefore, this research bridges the gap between green urbanism and inclusivity through the notion of inclusive green urbanism.

Inclusive green urbanism is thus, the conceptual model of green urbanism applied to all developments and residents across the city regardless of any social factors that may cause any divide in society or differentiated outcomes while also facilitating zero-emission and zero-waste lifestyle especially through promoting compaction and energy efficiency strategies.

2.5 Precedent studies

This subsection appraises two good practice case studies that served as guidance/model for directing this research. They provide key reference points specifically applied within Chapter 6 when consolidating and analyzing the findings. The first one looks at green urbanism within Singapore while the second one focuses on green urbanism within the perspective of a property investment company (Rose Company).

2.5.1 Precedent study 1: Green urbanism in Singapore

This section focuses on a precedent study of Singapore based on the applicability of each of the seven functionality city types. Newman (2010) notes that Singapore offers a good example of an Asian city with regards to urban planning and development and then presents an assessment of the city in terms of the seven city functionality types, with highlights on where the city is as well as its critical gaps.

Green Urbanism City Types	Newman's assessment of Singapore
The renewable energy city	• PV in Singapore is growing • Becoming a solar hub in Asia in terms of the production and installation of PV • No clear renewable energy strategy or plan • Wind power is weak • There is a need to focus on solar energy • Can link into the broader regional renewable energy approach (Desertec Pan-Asian Energy Infrastructure) between China and Australia
The carbon-neutral city	• No overall strategy exists • CO_2 per dollar is decreasing, yet total CO_2 output continues to rise • Tourism and commercial sector stakeholders are committed to being carbon neutral • Government is committed to making the island of Pulau Ubin carbon neutral • No plans for carbon trusts or Carbon Management Authority • Carbon plan is needed
The distributed city	• Distributed city works best with a polycentric city urban form that Singapore has • Rudimentary governance structure that better enables small-scale energy, water and waste systems to succeed • Has a centralised sewer system, reticulated water supply system and city wide electricity grid • Joint efforts with China to develop the Tianjin Eco City in China that is based on a distributed system of infrastructure • New developments in Punggol, Pulau Ubin, Pulau Tekong and Changi Naval Base are testing out smaller scale infrastructure.

Green Urbanism City Types	Newman's assessment of Singapore
	• Good smart system controls such as electricity and ICT systems that will assist with making the distributed systems work
The biophilic city	• Adopted a new ethos to move away from being 'the garden city to the city in a garden' • Biophilic strategies: ○ Skyrise Greenery initiative (subsidies for roof, wall and balcony greening/ gardening) ○ Streetscape Greenery Master Plan ○ ABC Guidelines (water sensitive urban design) ○ Park Connector Network • A fruit tree planting programme • Community gardens programme • No urban agriculture strategy
The eco-efficient city	• Best eco-efficiency strategy in the world ○ full energy efficiency strategy for each sector ○ R&D grants and training in eco-efficiency ○ Almost 100% of construction waste is recycled ○ Leader in recycling sewage into potable water ○ All rainfall and storm water are collected in reservoirs ○ Industrial waste is minimized
The place-based city	• The human and social aspects of green urbanism are incorporated into policy through sense of place strategies • Each centre has a distinct and unique identity • The environmental identity is secured and people have access to water and park areas; • Landmark cultural icons have been restored • Cultural relevance of urban design and development frequently revaluated
The sustainable transport city	• Leader in the Asian region for sustainable transport strategies • Has a quality transit along all main corridors • Transit corridors are more efficient than private motor vehicles • Each TOD station has a well-managed dense built form • Pedestrian and bicycle strategies are lacking • Too much focus on congestion management • Electric car infrastructure is being implemented • Has an urban growth boundary to manage sprawl

Green Urbanism City Types	Newman's assessment of Singapore
	• Decline in urban densities by 11% • Car users are up by 13% and transit users decreased by 3% • Petrol usage per capita decreased by 10% - improvement in car efficiency and technology • Transit speed increased by 23% over car speeds • Car related accidents and deaths decreased by 40%

Table 1: Assessment of Singapore in terms of Newman's seven functionality city types of green urbanism (adapted from Newman, 2010)

From the table above, the assessment shows that Singapore is well on its way to becoming an energy efficient city state that can be proud of its green urbanism achievements even though it is not without flaws. There are clear gaps that need to be overcome in order to fully transform into a comprehensive success. With Singapore as a leader in green urbanism in the developing Asian region it can offer lessons to be adapted and applied to the South African context and especially for the City of Johannesburg.

The precedent study indicates that there are ways in which each of the seven functionality city types can be achieved. The most likely city type that would be relevant to this research is the sustainable transport city as this research is looking at the MGSP and how it can be leveraged into a vibrant multi-modal TOD. This will be expanded on in greater detail in chapter 6.

2.5.2 Precedent study 2: Green urbanism through a property investment company

Under its founding director Jonathan Rose, the Rose Company is a development and investment firm based in New York. The company strives to develop communities that encompass and enhance opportunities for all people (Jonathan Rose Companies, 2016a). Faced with the multiple challenges of rapid urbanisation and its consequences, Rose believes that in order to create social wellbeing within such cities, we need to start thinking about them differently (ibid). Rose believes that cities are dynamic spaces much like natural organisms that need to evolve and keep up with the times. In his book, The Well-Tempered City, Rose quotes Dr. Siegel's acronym FACES which stands for the following (Rose, 2016):

- F- Flexible,

- A- Adaptive,
- C- Coherent,
- E-Energised, and
- S- Stable.

In addition, Rose (2016) states that cities need to be places of individualism, and self-organise, and he compares them to harmony in music and in doing so, he argues that we can grow healthier communities and cities that are inclusive and simultaneously green especially by ensuring that the cities contain "green affordable and mixed-income housing, cultural, health and educational infrastructure, and advocates for neighbourhoods to be enriched with parks and open space, mass transit, jobs and healthy food" (Jonathan Rose Companies, 2016a).

Rose takes a hopeful and philosophical outlook on city building and his company prides itself on creating well designed, walkable, economically, socially and ecologically thriving precincts and neighbourhoods (ibid). Rose sees the potential in human engineering towards the crafting of cities that work towards the betterment of society by being more inclusive and equitable while learning and employing the regenerative capacity of nature (Jonathan Rose Companies, 2016b). The philosophy of the company's investment strategy is that we all need to realise that we are in this together and we all need to share a common vision. We can either build walls that deepen societal isolation and segregation or we can, as Rose calls it, temper our cities towards increased mutuality, prosperity and wellbeing for all (ibid).

The Rose Company believes that practitioners should not continue to perpetuate sprawl, damage to natural biodiversity, increase private forms of traffic, social degradation or escalating climate change. Instead they should rather be working towards creating diverse, healthy transit- served communities (Jonathan Rose Companies, 2016a).

The Rose Company proposes a new model for dealing with cities that pride themselves on regional knowledge, understanding communities better, creating a city that is adaptive, energy and waste efficient and climate change wise and orientated (ibid). In order to achieve this, the Rose Company under Jonathan Rose employs a transformative model of environmentally, socially and economically responsible planning for communities, buildings, cities and investments (ibid).

Rose proposes that for us to accomplish this, we must strive for the three basic tenets that Rose sees are essential for healthy cities (ibid):

- Protect their citizens
- Balance between human needs and natures preservation
- Create a landscape of opportunity that is equal for all

We see these three basic tenets come through in two examples of community involvement and participation in the development of cities in neighbourhoods discussed in the book (2016). The first is termed smart growth that prides itself on collective consensus and a strong collective moral authority (ibid). The first example is in Utah, where technical experts from a variety of disciplines as well as the community got together to workshop the vision for the city. This was a two-year long process with multiple workshop engagements with the aim of creating a vision for the city in line with what residents wanted. Different scenarios were pitched, the first being a business-as-usual approach which resulted in a model which was eventually overrun by urban sprawl. The second scenario developed a model that saw extremely high density transit orientated development. The third option was developed by the residents as am amalgamation of the other two scenarios that was developed by residents. The residents considered the aspects of the city that they most loved, cherished and enjoyed, such as mountains and the natural environment. They were then asked to develop a model for development, and what started to occur initially was developments that encroached on the aspects of the city that residents loved. As a result, residents started to rearrange the model to safeguard the natural environment. They were educated on the economy and started to understand the balance and dynamics between developments, the economy and the environment. Residents developed a third scenario that protected the elements that they cherished the most, which resulted in them naturally developing the city towards a more intense transit orientated model. This was termed the 3% strategy which saw 33% of all future developments occurring on only 3% of the land. Residents became empowered by this methodology and felt responsible for the collective vision for the city. Within 15 years, the development patterns within Utah started to drastically change towards achieving the vision set out by the community (ibid).

The second example also empowered citizens to plan for the common good and to take

responsibility for the city's development (ibid). This approach was weighted strongly on education of the public with the goal of achieving a wiser governance system. This approach employed graphics and visualisation to share the community's choices. Residents were given free range to develop a vision for their city as well as projected growth and land-use patterns with the only restriction being that all projected growth had to occur on the map. What initially occurred was a very loose knit, low-density pattern that led to sprawling developments encroaching on the natural environment such as mountains and the local hiking trails. Residents started to reorganise the future growth and development into mixed use centres that ended up being vibrant, denser and walkable. This process led to an empowerment of the residents much like the first example above (ibid).

Rose illustrates the point that participation of communities and residents in decision making processes is vital to the prosperity of cities and neighbourhoods. In addition, Rose champions strategies for resilience and green urbanism (ibid). If cities are to be more resilient, there needs to be investment in water and electricity, food production, transportation and natural forms of infrastructure as well as waste management systems. If neighbourhoods in cities can reduce their energy consumption and localise their efforts, the trade-off in the long term will make more economic sense. Further to the arguments presented, the emphasis on quality of life emerges as a key priority. Rose argues that communities need to be healthy with less social stresses. This is because the quality of life of the residents impacts on the quality of the city as a whole. If a community is violent, the physical environment reflects the social threats (ibid). By striving for the ideals Rose suggests, we can repair and strengthen the urban fabric of cities and neighbourhoods which will lead to equitable, socially inclusive, economically thriving, sustainable, resilient and environmentally successful regions and cities for all (Jonathan Rose Companies, 2016a ibid). The relevance of insight from of this precedent study will be discussed in greater detail in Chapter 6 section 6.5.

2.6 Conclusion

Green urbanism describes cities and settlements that are smart, secure and sustainable (Newman, 2010) and the ability to be smart entails that the location can adapt to new technologies, secure means that they can adapt to changes and stress, and lastly sustainable in that they contribute to the overall concerns of sustainability especially in relation to

biodiversity and climate change mitigation (ibid). What is lacking in green urbanism (and especially for South African cities) is the link to the social aspects. Through this literature review the case has been made for cities especially in South Africa, to pursue inclusivity as a key component of green urbanism transformation. This has led to the notion of inclusive green urbanism that seeks to address the aim of green urbanism but adds the dimension of ensuring that each resident across the city, regardless of any social factors that may cause any divide in society or differentiated outcomes (race, income) get to be part of the transformation towards a better city and life without being socio-economically exploited or spatially marginalised.

When dealing with urbanism, and specifically inclusive green urbanism, it is obvious from the discussion above that they cover issues of liveability, inclusion, rights to the city and energy efficiency amongst others. South Africa's apartheid regime pushed the agenda of segregation and discrimination such that our cities, spatial form and planning, our economy, social amenities and facilities aligned to this agenda and this is counteractive to the desirable growth of cities that the country now aims to achieve (Gilbert, 2014). This adds a layer of complexity to South Africa's development and especially that of its many cities. By adopting inclusive green urbanism and ensuring that the goals are applied to all government and private sector programs for cities (policies, strategies, plans and design), South African cities and spaces can be well on their way to becoming zero-emission and zero-waste design, compact and energy efficient spaces that will have bridged across the gaps between their segregated spatial forms and societies of the past and present (Nassar, 2010; Swilling, 2014).

A holistic approach this needs to be pursued within a collaborative framework which engages multidisciplinary actors as well as communities and other stakeholders as primary role players. This also needs to be coupled with concrete knowledge of the surrounding built and natural environment, and sufficient baseline data in order to guide informed policies and strategies. However, given that sustainability is a never-ending goal, it should be clearly understood that the process is likely to entail ongoing adaptations and transformations rather than once-off solutions or interventions. Insight from the two precedent studies demonstrate that this can be systematically pursued and achieved.

Chapter 3: The research method of the study

3.1 Research methods

Yin (1994) states that there are several methodologies that one can apply when conducting research. This study applies a qualitative research approach in order to address a pre-existing knowledge problem or issue through a systematic inquiry that analyses current theory and knowledge of an empirically existing condition in order to understand patterns or trends (Hancock and Algozzine, 2006; Punch, 2009). This approach is often contrasted with the positivist quantitative approach which is primarily guided by hypothesis testing through statistically defined parameters but primarily based on a cause-effect relation of phenomena.

Qualitative research allows one to gather a variety of data, analyse and interpret the data in order to draw analytical observations and conclusions based on emerging patterns and discoveries. Given that there are diverse approaches to qualitative research that one can take, this study follows a case study approach. A case study focuses on an empirical context which presents the key attributes prioritised for the study, such that data collection and analytics get to be closely referenced to the empirical context as opposed to abstracted experimentation under controlled conditions (Yin, 1994). In addition, case studies allow for "intensive analyses or descriptions of a single unit or system bounded by space and time" (Hancock and Algozzine, 2006:11). Findings from such case studies are far more relevant towards influencing policies and procedures of the state and developers as well as future research (ibid). Primary data were collected through interviews with multiple property development and urban planners as respondents. Comprehensive policy analysis of current plans and frameworks for the site and the greater Alexandra township also required access to secondary data as described in detail in subsequent sections. Accompanying the primary data are images illustrate the point. Additional images that are not included in the body of the research report are contained in the Annexure section to reinforce the experiences of Alexandra and the MGSP.

3.2 Data collection

The discussion below illustrate the data needs and requirements of the study. They also outline the processes used to obtain the data (both primary and secondary). This helps to

articulate primary and secondary data needs, collection tools and analysis tools and process used.

3.2.1 Primary data: Interviews

Semi-structured interviews were conducted in order to obtain specific data from purposely sampled respondents from officials at the City of Johannesburg, the Gauteng Planning Division (GPD) at the Office of the Premier (OOP) as well as private sector developers of the mega-projects identified as part of the case study. Annexure A to C contains the list of interview questions for each category of respondent. Due to the nature of some answers and in order to ensure anonymity of respondents, the transcription of each interview is not attached. In accordance with the University of Witwatersrand's ethics clearance, all records have been saved on a secure computer where the data will remain for a minimum of 5 years and thereafter all information will be deleted.

The respondents under the municipal officials' category are those that deal specifically with spatial planning and processes related to major development application submissions and regional planning. They primarily operate at the Department of Development Planning and specifically in the Directorate of 'City Transformation and Spatial Planning'.

Other state official respondents were from the Johannesburg Development Agency (JDA) which is a planning, implementing, managing and facilitation organisation for area-based intervention programmes and projects under the City of Johannesburg. The respondents also included those who have worked specifically on the Alexandra Urban Renewal Programme (ARP) which sought to transform the township and its adjoining newly developed settlements into a mixed-use and vibrant neighbourhood.

In view of the fact that the surrounding major urban developments cover a vast area within the City of Johannesburg, this motivated for the focus of the study on enhanced inclusivity for the GCR as it mitigates its carbon footprint based on cumulatively enhanced public and non-motorised transport with Gautrain as one of the anchor modes, as well as better integration of the MGSP into the wide GCR urban fabric. In order to address this objective, it was necessary to interview a spatial planning official from the Gauteng Province. This role falls under GPD which is located in the Office of the Premier and constitutes a Development Planning Branch with an Integrated Development Planning Directorate that is the custodian

of provincial spatial planning. An interview with the identified respondent allowed for a regional perspective on the primary objective and research question of the study.

The targeted developers for interview data were Zendai Development SA (PTY) LTD who are responsible for the development of Modderfontein City and Attacq Waterfall Investment Company (PTY) LTD who are responsible for the development of Waterfall City. The related data were aimed at shedding light on market related drivers and rationale in order to guide this study and especially on the respondents' views on the MGSP and its possible future as well as how their own developments related to that future.

3.2.2 Secondary data from policy and related planning study reports

As part of the secondary data acquisition, policy analysis and appraisal of City of Johannesburg's spatial planning frameworks was done with a focus on:

- The City of Johannesburg's Spatial Development Framework 2001
- Regional Spatial Development Framework 2010/11 for Region E
- The Alexandra Development Framework 2002
- The Marlboro Urban Development Framework 2010
- The City of Johannesburg's Spatial Development Framework 2016

The desk-top review/appraisal of these documents allowed for data towards an understanding of the development intentions for Alexandra and the MGSP. The policies were expected to indicate the existing/prevailing planning processes and intended future state as well as their limitations.

Each policy/document was appraised/reviewed based on the criteria of information contained in terms of either Alexandra and surrounding settlements and/or the entire MGSP. What is evident is that the policy documents form a hierarchy of information; COJ's IDP and SDF provide a very broad overview for Alexandra and thus allowed for high-level perspective. The subsequent SDF provides greater detail on Alexandra and the MGSP thus providing a far more concretised understanding of what is required in the area through clearer development objectives. Through this appraisal/review it emerged that there is no significant contradiction on what is being intended across the policy documents in relation to Alexandra and the MGSP. In terms of the 2016 approved SDF, the criteria for analysis and secondary data extraction

was also included/covered in relation to Alexandra or the MGSP.

The criteria used for the desk-top and policy/planning reports grouped the data into four main themes so that information in line with that specific theme could be extracted. Each theme was looked at in order to understand the context of Alexandra and the MGSP in relation to the Alexandra Urban Renewal Programme; the township's cultural heritage, identity and sense of space; its transport, movement, linkage and accessibility opportunities; and a high-level understanding of the neighbouring nodal developments. The area of Frankenwald was not dealt with in this section of the study. Instead, it is analysed in the primary data section of this report under Chapter 5.

3.2.3 Data organisation

The data are organised and analysed under Chapters 4 and 5. Chapter 4 is primarily secondary data that draws on the policy analysis, historical context and preliminary reports discussed above in order to substantiate on the inclusivity value of the MGSP for the GCR. The data are presented in two parts where the first part focused on policy analysis and thus sets the scene by giving an understanding of what was planned and what is envisaged for Alexandra and the MGSP. The other part provides the history and current realities of Alexandra through a brief review of its history, culture, identity and sense of place as well as the Alexandra Urban Renewal Programme, transport and connectivity on a local and regional scale and the impact of neighbouring major urban developments.

3.3 Summary of data requirements per sub-question

The primary data are reported and analysed under Chapter 5. These data are in the form of interview responses. The presentation of the data is in three major sections. The first section focuses on what is constraining the transformation of the MGSP, while the second section discusses possible approaches towards successfully transforming the MGSP and the last one deals with the impact of neighbouring developments and how to leverage them towards enhancing the inclusivity value of the MGSP and Alexandra. Following the presentation of the data in Chapter 4 and 5, Chapter 6 provides a consolidation of all the data and analyses each in accordance with their respective sub-question in order to derive overall findings towards answering the main research question.

Research sub-question	Data needed and collection tools
Sub-question 1: **What is the inclusivity value of the MGSP for the GCR?**	Data were obtained from secondary sources such as: • The City of Johannesburg's Spatial Development Framework 2001 • Regional Spatial Development Framework 2010/11 for Region E • The Alexandra Development Framework • The Marlboro Urban Development Framework • The City of Johannesburg's Spatial Development, and Framework 2016 These frameworks were prepared by the City of Johannesburg or the Johannesburg Development Agency. Further secondary data required were from the book Alexandra: A History by Bonner and Nieftagodien as well as existing preliminary studies and reports drafted by students registered for the course ARPL 7054 Energy for Sustainable Cities in 2015. The existing preliminary studies and reports went into detail on specific aspects that were grouped under the following sub-themes: • Understanding the MGSP, • Unpacking the Alexandra Urban Renewal Programme, • Understanding the linkage and connectivity, and • Understanding the impacts of neighbouring nodal development.

Table 2: Data requirements for research sub-question 1

Research sub-question	Data needed and collection tools
Sub-question 2: **What is constraining the transformation of the MGSP from its disadvantaged historical condition to a vibrant multi-modal public transport driven hub/node?**	The forms of data required to address this sub-question were mainly primary data. Primary data: Interviews with government officials(City of Johannesburg, Gauteng Planning Division at the Office of the Premier) and organs of state (Johannesburg Development Agency) were conducted in order to gain data towards an understanding of why transformation of the MGSP has not occurred. Additional interviews were conducted with two private sector developers (one from Attacq Waterfall Investment Company (Pty) Ltd and the other one from Zendai Development SA (Pty) Ltd) in order to get a sense of why private sector developers do not direct invest in Alexandra and the MGSP in general.

Table 3: Data requirements for research sub-question 2

Research sub-question	Data needed and collection tools
Sub-question 3: **How can one transform the MGSP in a manner that mitigates the risk of gentrification and displacement such that its inclusivity value is enhanced?**	The last sub-question required primary data in order to address the question. Primary data: Interviews with government (City of Johannesburg, Gauteng Planning Division at the Office of the Premier) and organs of state (Johannesburg Development Agency) were conducted to get an understanding of how the MGSP can be transformed in a manner that preserves/conserves the inclusivity potential of the precinct. Additional interviews were conducted with two private sector developers (one from Attacq Waterfall Investment Company (Pty) Ltd and the other one from Zendai Development SA (Pty) Ltd).

Table 4: Data requirements for research sub-question 3

Overall research question	Approach and process towards the overall finding and conclusion of the study
How do we leverage the surrounding major urban development mega-projects to transform the MGSP in pursuit of enhanced inclusive green urbanism for the GCR and how could insight from such a case study inform ongoing efforts towards integrated urban development which optimises on both the socio-economic and resource/environmental conservation goals through urban development interventions for sustainable lifestyles?	By addressing each sub-question a narrative was formed that gave insight into the current state of the MGSP, its opportunities and constraints, what is blocking its potential to transform, and how it can become a precinct that achieves its inclusivity potential, while leveraging on the potential created by Waterfall City, Modderfontein City, Sandton City/Rosebank and Frankenwald.

Table 5: Data requirements for answering the main research questio

Chapter 4: Inclusivity value of Alexandra within the GCR

4.1 Introduction

This chapter provides secondary data evidence in order to substantiate on the Alexandra context and to evaluate the inclusivity value of the precinct especially in reference to the connectivity value entailed in the Marlboro Gautrain. The analysis and substantiation is presented in two parts. The first part constitutes a policy analysis of the following documents:

- City of Johannesburg's Spatial Development Framework (SDF) 2001 (which is reviewed and updated annually as part of the integrated development planning process),
- Regional Spatial Development Framework (RSDF) 2010 for Region E,
- Alexandra Urban Development Framework and the Marlboro Urban Development Framework, and lastly
- 2016 approved SDF.

This sets the scene by providing an understanding of what was/is envisaged for Alexandra and the several precincts in general and how that is likely to impact on its inclusivity value.

The second part constitutes the history and current realities of Alexandra Township. History plays a key role in a people's culture, identity and sense of place which constitutes a key pillar of green urbanism (Lehmann, 2010). In addition knowing what opportunities and challenges Alexandra is currently facing allows for better alignment of the township's future and its potential opportunities. The chapter then looks at the Far East Bank and the Alexandra Urban Renewal Programme (ARP). Other aspects of Alexandra and the MGSP that were examined include transport and movement linkage, connectivity and neighbouring major urban investment/development initiatives specifically Sandton City/ Rosebank, Waterfall City, Modderfontein City, Linbro Park and Frankenwald. This draws specifically from existing preliminary reports on the Far East Bank Extension 7 and the greater Marlboro precinct as well as levers of change or impact on the site. The preliminary reports emanated from desk-top and field studies conducted during ARPL 7054: Energy for Sustainable Cities under the masters programme Sustainable and Energy Efficient Cities, 2015. The reports were grouped under four main themes as follows:

- Unpacking the Alexandra Urban Renewal Programme,
- Understanding the MGSP,
- Understanding the linkage and connectivity, and
- Understanding the impacts of neighbouring nodal development.

This chapter captures and reports on the secondary data of the study. The consolidation of data and analysis from this chapter as with the primary data in chapter is presented in chapter 6.

4.2 Understanding the policy context governing Alexandra

Figure 6 depicts the hierarchy of plans in COJ. Each policy is explained in the following sub-sections.

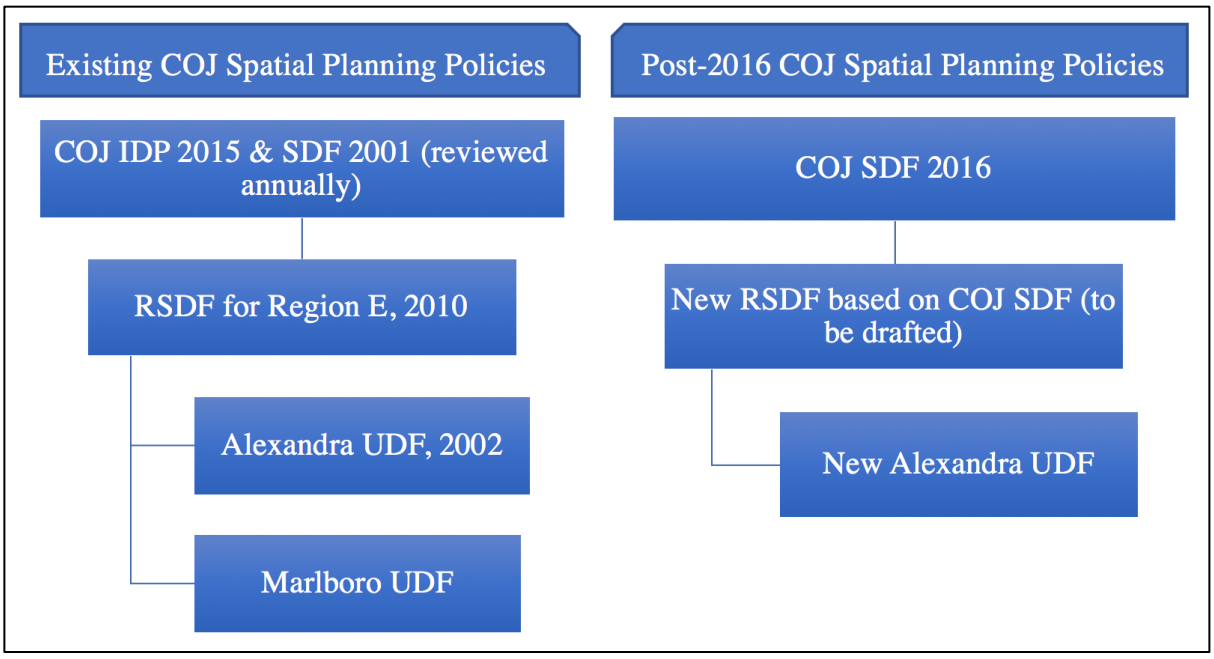


Figure 6: The hierarchy of spatial planning policies of COJ appraised for secondary data

4.2.1 The City of Johannesburg's Spatial Development Framework 2001

As for any other municipality in South Africa, the City of Johannesburg is bound by the Municipal Systems Act (MSA), 2000 (Act No. 32, 2000). In terms of the MSA 2000, the SDF is required as a core component of the Municipal Integrated Development Plan (IDP). Section 26 outlines the core components of an IDP (COJ, 2015) as follows:

" *An integrated development plan must reflect:*

a) the municipal council's vision for the long term development of the municipality with special emphasis on the municipality's most critical development and internal transformation needs:

b) an assessment of the existing level of development in the municipality, which must include an identification of communities which do not have access to basic municipal services;

c) the council's development priorities and objectives for its elected term, including its local economic development aims and its internal transformation needs;

e) *a spatial development framework which must include the provision of basic guidelines for a land use management system for the municipality*"

It is therefore clear that an SDF must be drafted for every municipality so as to serve the primary guideline for the development of the urban land in response to a clearly stated vision for the municipality as well as goals, objectives and priorities that seek to transform the apartheid city legacy that South African municipalities must deal with. Given that the SDF thus becomes the spatial representation of a municipality's spatial priorities and outcomes, an analysis of the SDF with specific reference to Alexandra serves to provide the initial perspective of the formal approach for the area and the precinct in general.

The City of Johannesburg had a Council approved SDF in 2001. Even though the SDF has been regularly reviewed annually, it remained very much unchanged till a full SDF review culminated in a revised Council Approved SDF in the early part of 2016.

The IDP provides a summary of the relevant SDF as an integrated part of the IDP 2016. It states that the City will utilise its strategies and policy guidelines to reorganise the municipality's apartheid legacy and fragmented urban form (ibid). When looking at the SDF, there is not much that one can find with reference to Alexandra or the MGSP. What one finds instead are very high level status quo statements, goals and priorities which indicate that COJ recognises the need to actively change the social and economic development of the city, improve quality of life, provide services and create environmental justice and specifically prioritise Alexandra township as a space where this needs to be pursued (COJ, 2010a).

Within the IDP/SDF, Alexandra is identified and classified as a marginalised area in serious need of upgrading, economic development and upliftment, as well as the creation of labour-intensive industries. The township's status as a single-use dormitory township is argued to be in need of urgent change to a space that is vibrant as well as promoting integration, while facilitating social mobility and settlement restructuring (ibid). The 2010 version of the SDF, reinforces the following major policy imperatives for the township and surrounding precinct (ibid):

- incorporate lower income housing into the greater precinct
- develop high densities
- develop an all-day all night node
- upgrade existing social facilities and develop additional ones
- secure the open space system especially along the Jukskei River
- develop a sustainable human settlement and
- promote business/economic/job opportunities

These policy imperatives indicate that COJ understands the challenges facing Alexandra as well as the need to transform the township and the opportunity the Marlboro Gautrain Station presents. What emphasises as a key concern is that the required effort to implement each policy imperative since 2010 is extremely weak or absent. In addition, given the fact that Alexandra remains as a high density township, the policy imperative to further develop higher densities can be viewed as a confusing goal. Rather, the focus should have been primarily on transforming the space to accommodate better the residents already living there in order to make it a vibrant node. What the policy imperatives indicate is that COJ's vision for Alexandra is that of a sustainable, vibrant and safe township that caters for all residents ranging across all income levels with spaces to live, work and play. Enhancing the future inclusivity value of Alexandra is of vital importance for COJ and the GCR in general.

Further on in this section we do see the importance of the public transportation system being highlighted/prioritised in the SDF. The Gautrain rapid rail and Bus Rapid Transit System (BRT) are prioritised as commitments from various levels of government towards achieving a world-class transit system that is efficient and accessible to all communities (ibid). Alexandra is therefore, a crucial space in the City of Johannesburg as it enjoys the co-presence of both the

MGSP, BRT (Alexandra – Randburg link) while non-motorised transport is also prioritised within the township. Latent opportunities are identified, as public transportation systems can be used to transform the fragmented City of Johannesburg's urban form and to create inclusive communities and spaces. Within the SDF COJ further recognises the crucial role of densification in support of these transit systems along with the need for mixed land-uses.

The IDP/SDF notes that Alexandra's population had increased from 188,032 in 1996 to 243,184 in 2001 (a 29% increase in five years). Although the township has remained a significantly high density residential space with Erven measuring approximately 250-350m^2 and 40-60du/ha the ARP aimed to further increase the density of the township (ibid). However, even though the township has the desirable densities which align with COJ's densification strategy around nodal boundaries, along transport routes and in spaces of focused public-sector investments (of which Alexandra is often highlighted as an example), the township and MGSP in general are not designated as transit orientated precincts in terms of the SDF. Alexandra has the required densities to support mass public transport options, but lacks supportive mixed land-uses, high intensity developments and spaces to accommodate TOD. The township therefore continues to be predominantly viewed as a residential township while Marlboro's nodal status is significantly undermined by its current classification primarily as a mono-use industrial township with residential uses.

4.2.2 Regional Spatial Development Framework for Region E, 2010

COJ drafted its initial Regional Spatial Development Frameworks (RSDF) for each of the seven Regions of the Metro in 2010. The RSDFs form part of the annexure section to the SDF which in turn constitutes part of the Council Approved IDP with the overall objective of providing the overarching spatial policy for the City (COJ, 2010b). While the SDF gives a city-wide, high level perspective on the spatial vision, RSDFs function as regional and local spatial strategy towards guiding growth and investment interventions at the meso- and micro-scale of the City. These tools provide a more grounded context with regard to development trends and challenges, localised objectives and guidelines for developments with regard to micro-level details on objectives, strategies and policies of the SDF and thus reflecting COJ's approved precinct plans (COJ, 2010b).

The township of Marlboro has always been a predominantly industrial/commercial node.

Competition from industrial developments in Linbro Park coupled with high crime rates, squatting as well as proximity to Alexandra has rendered the township to become uncompetitive which has in turn negatively transformed it into a "red-lined" zone where disinvestment predominates.

The RSDF 2010 does punt public transport and densification in strategic locations (ibid). In Region E, increased densification is called for within mixed use nodes, along mobility routes with the need to be accompanied by a range of housing typologies in order to allow for inclusive housing, especially for low-income residents. The Marlboro Gautrain Station (located close to Alexandra) is singled out as one of three nodes where significant densification needs to occur (ibid). Even though densification is prioritised, this runs contrary to the ARP which has called for de-densification in order to decompress what was perceived to be already excessive densities within the township. The contradiction seems to indicate that strategic de-densification is needed in some areas of Alexandra, but coupled with strategic densification in other areas of the precinct and especially for the areas around the Gautrain Station. This contradiction across policies and lack of clarity is concerning as it shows misalignment within COJ's policy frameworks.

COJ's RSDFs therefore distil their overarching policy positions per Sub-Area which in turn allows for more local level responses within each sub area in relation to micro-level objectives, strategies, interventions and guidelines. Sub-Area 16 covers the townships of Alexandra, the Far East Bank, their respective Extensions and other surrounding areas. From the onset, the RSDF states that the aim for Alexandra is to "maximise economic opportunities and provide an acceptable living environment' (ibid: 143). The development objective for Sub Area 16 is:

"*To reinstate Alexandra as a viable and sustainable residential suburb and to integrate the area with the rest of the City through the redevelopment of the transportation system and the construction of the Gautrain Rapid Rail Link*." (City of Johannesburg, 2010b: 143)

Sub-Area 16 has prioritised fourteen interventions with accompanying guidelines that seek to achieve the development objective stated above (ibid). The interventions fall into four broad categorises, which are: (a) housing related matters, (b) transportation, accessibility and

linkage, (c) Gautrain development, and (d) environmental considerations.

In terms of housing related matters, the interventions call for eradication of informal settlements in Alexandra with those people facing danger (in the form of threat and stress) from the poor locations and building structures that need to be relocated to more suitable spaces within Alexandra. All available land and existing structures (like hostels) must be re-developed in order to cater for a mixture of housing typologies especially for people falling within the low-income bracket (ibid).

The interventions call for public transport which can be seen as a lever for opportunities in Alexandra as well as a means to provide linkages to economic and employment opportunities elsewhere in COJ and the GCR. In addition, the upgrading of existing routes is presented as an opportunity to strengthen Alexandra's surrounding and broader regional linkages and integration thus opening it up to further opportunities. The classification and upgrading of Marlboro Drive to a Mobility Roads category will also go a long way in creating appropriate linear development linking with the Gautrain Station. This would help towards the development of the Gautrain Station Zone as a multi-modal hub in the region (ibid).

4.2.3 The Alexandra Development Framework

The current Development Framework for Alexandra was drafted and approved in 2002 as a physical plan to guide the redevelopment process in line with the ARP (ibid). This plan focused on three key areas as follows:

- Management and direction of physical growth of Alexandra,
- Direction of public funding in line with the ARP
- Direction on how best to upgrade the natural and the built environment

Drawing heavily on COJs SDF, the Alexandra Development Framework seeks to create employment and economic opportunities, provide a safe, clean and healthy environment for residents, reduce crime, provide sustainable social/urban services, varied housing options and to relocate poorly located settlements to better suited land (ibid).

In 2017, the JDA has entered a process of developing an Urban Development Framework for Alexandra which will help to guide spatial planning in the township in a sustainable manner through directing government spending appropriately (Monyai, 2016). The framework will

provide a vision and principles for guiding development of the area towards an enhanced local economy, strengthen social factors and thus create overall sustainable development for the township (ibid).

4.2.4 The Marlboro Urban Development Framework

The Marlboro Urban Development Framework provides the developmental intention of the MGSP (van Niekerk et al, 2013). It draws heavily from the SDF and the relevant RSDF. The framework argues for a broad range of high density housing typologies for low income residents and the upgrading and improvement of social facilities as a strong touchstone within the policy, especially around the Gautrain Station node (ibid). The intention of the Gautrain node is to become a compact 24-hour mixed use transit orientated development node that is pedestrian-friendly, safe and accessible to all (ibid).

4.2.5 City of Johannesburg's new spatial vision: Spatial Development Framework 2016

COJ's IDP for the metropolitan area calls for an increase in the quality of life for residents in the region, with active efforts to incorporate the sustainability agenda into the area, have more job opportunities, and finally make the Alexandra area more inclusive with better urban governance as one of the facilitating mechanisms. From a spatial planning point of view, the newly approved SDF calls for broader principles of spatial transformation and inclusion (especially through connectivity) of the region into the wider city network and processes as well as opportunities. In addition, greater densification and compaction is to be pursued for the area while being especially coupled to improved public transport.

The updated SDF thus prioritises the imperatives of compaction and increased densities with a range of housing typologies and options, the need for user-friendly spaces, the importance of building a unique and distinctive community around mixed land uses and TOD and a shift away from private car options in favour of public and NMT transport (COJ, 2015a).

A core objective of the SDF (COJ, 216) is to create COJ as a spatially just world class African city. This is to be pursued through the compact polycentric growth model guided by five key values of equity, justice, resilience, sustainability and urban efficiency in order to cater for a current population of 4.3 million to a future of 7 million residents by 2040. The SDF positions the Johannesburg Central Business District (CBD) as the major core of the city which would be dynamically linked to key strategic sub-centres through efficient public transport. The core and sub-centres will be dense mixed-

use spaces while integrated with the protected natural environment (ibid).

The SDF notes that Sandton is a key sub-centre with sub-node Alexandra as a marginalised area of importance and whose transformation is to be prioritised. The planned transformation is expected to come through the continuation of the ARP as well as the inclusion of Alexandra as key part of the Aerotropolis Corridor (ibid). There is a strategic connection between O.R. Tambo International Airport (within the City of Ekurhuleni) to the northern section of the City of Johannesburg. This corridor connects the airport to Randburg, through Sandton City, Alexandra, Frankenwald, Linbro Park, and Dries Niemand (ibid). This Aerotropolis Corridor constitutes of an amalgamation of a transit corridor, directing investment around the Gautrain and BRT stations, and a development corridor directing strategic development towards strategic land parcels. This proposed corridor is aimed at creating and strengthening the regional logic while considering current development dynamics to direct growth within the City and thus reduce pressure drivers currently contributing to peripheral expansion and sprawl. COJ's interventions and strategies towards the implementation of the Aerotropolis Corridor are expected to have specific impacts on Alexandra and its surrounding areas as follows (ibid):

- The development of the western part of the Aerotropolis Corridor from Randburg to Sandton City is envisaged as a transit corridor. This section will have a focus on developments around existing and proposed BRT and Gautrain Stations with the objective of creating a stronger linkage between Alexandra to the eastern section of Johannesburg through Sandton City
- The leveraging of current and proposed infrastructure such as the Gautrain, BRT and the Corridors of Freedom
- Concentration of mixed-use inclusive development in areas such as Modderfontein City and Frankenwald, especially through application of legal and financial tools, and
- The use of inclusionary zoning mechanisms to leverage the private sector to develop a mix of affordable and social housing within higher-income housing developments

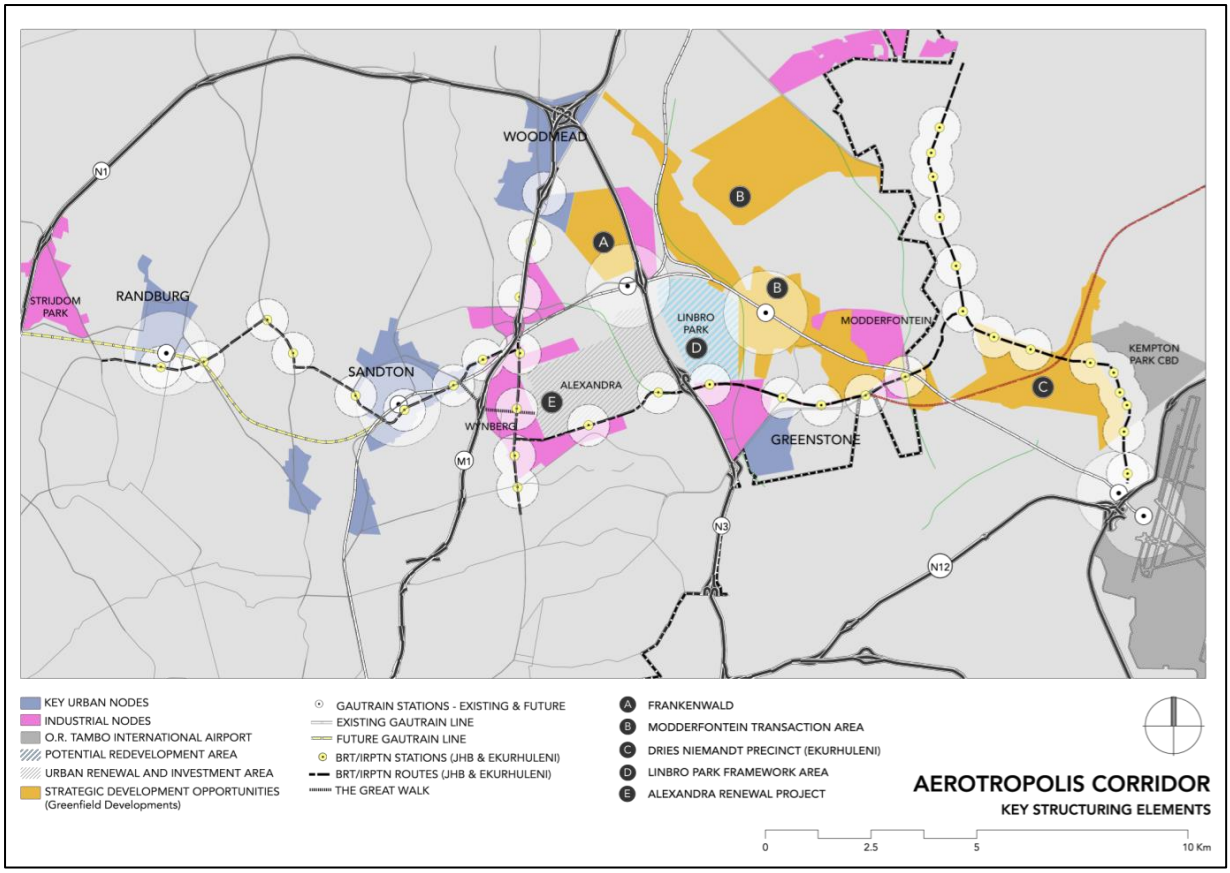


Figure 7: Key structuring elements of the Aerotropolis Corridor (Source: ibid)

From this updated SDF for COJ, one can clearly sense the emerging realisation of the strategic significance of Alexandra not only within Johannesburg, but also at a regional level, especially given its central location along the Aerotropolis Corridor. Alexandra is clearly a strategic area within the City of Johannesburg poised for major development and investment. Being a marginalised area now getting prioritised for transformation not only makes it imperative for it to develop in a manner that secures tenure/access for the current residents while also increasing the inclusivity value for Johannesburg and the GCR in general.

4.3 Alexandra's historical context and current realities

This section of the report provides an understanding of the history of Alexandra, how the Far East Bank developed, the transport and linages, as well as a review of the surrounding major developments.

4.3.1 Cultural heritages, identity and sense of place

As Lehmann (2010) argues, people develop an identity that is strongly associated with the

area and space they reside in. To understand this identity and the impact it plays on people's psyche and choices, the context of the residents and their living space need to be systematically understood. Whereas the greater Region E of COJ (within which Alexandra is located) is predominantly characterised by high concentrations of wealth in precincts such as Sandton, areas like Alexandra display the extreme polarity of inequality, with the township housing largely low-income people and poor communities. Figure 8 clearly illustrates both the infrastructure and socio-economic affordance differences between Alexandra and Sandton City. Understanding the history that has led to the current context is a good way of starting to comprehend the strong sense of identity among the residents as well as the enormity of the challenge one faces in any attempt to transform the township and its precinct through an inclusive approach. Equally, the lost opportunity cost entailed in the status-quo emerges to be obscenely unbearable.



Figure 8: A view depicting the dichotomy of Alexandra and Sandton City (Source: Ngwenya, 2002)

Alexandra has a long and winding history (that has been well captured by Bonner and Nieftagodien (2008)) which goes as far back as 1904 when the first urban settlers located in the area (Forster, 2015). Alex, as Alexandra is colloquially termed, is one of the oldest and sole surviving townships that was home to the historically influential black urban society and

has thus developed a unique flavour and ethos. “Even when it was being ground down under the heel of high apartheid, the township clung to this identity” (Bonner and Nieftagodien, 2008: 1). It can boast as being the melting pot of political traditions and culture that birthed African nationalism in the 50s, the civic culture in the 80s, numerous political inquiries, boycotts as well as xenophobic violence (ibid). Figure 9 and 10 illustrate two differing occurrences in Alexandra. The first showcases the community coming together to protest privatisation within the township while the later shows instances of violence in the township. However, even though the sense of community constitutes a strong force within the township, it can also turn volatile at times as seen in the xenophobic attacks that sporadically ignited in 2008 and several times in the years since (Forster, 2015; Makhu, 2015).

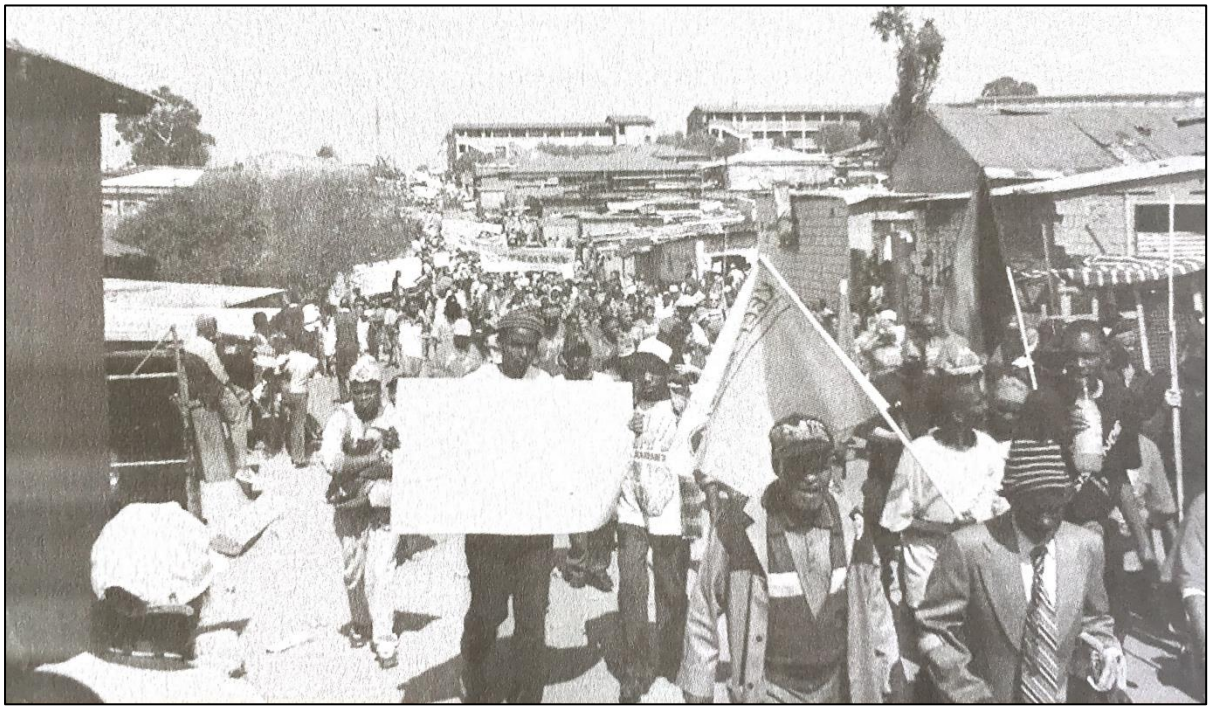


Figure 9: A social movement march in Alexandra against privatisation (Source: Bonner and Nieftagodien, 2008)



Figure 10: A man believed to be a foreigner stabbed during the 2015 xenophobic violence in Alexandra (Source: Sutherland, 2015)

Because of its history and its locational-advantage, the township has turned into one of the most densely populated townships not only in Johannesburg but nationally in South Africa (Forster, 2015). This growth in population size goes as far back as 1947 when some of the first population explosions occurred in the township (Bonner and Nieftagodien, 2008). This increase can be seen in Figure 11 below, showing the beginnings of the immense densification of Alexandra that would continue till today. Its ideal location is an attraction for many first-time as well as within-the-city migrants looking for opportunities in Johannesburg, especially due to its proximity to Sandton City and other closely located economic nodes such as Linbro Park. This attractiveness is further reinforced by the prevailing connectivity and transport linkages even though they are far from adequate (Forster, 2015; Makhu, 2015).



Figure 11: Densification boom in Alexandra during 1974 (Source: Bonner and Nieftagodien, 2008)

Creating and deepening a sense of place for residents is one of the critical responses for sustainable cities (UN-Habitat, 2009a) and therefore, possibly in this single dimension, we can see that Alexandra's rich history plays a significant role in its functionality as a place for its residents. By tapping into the heritage, identity and sense of place correctly, positive outcomes can be generated towards different forms of investment by residents and external investors towards creating an environment that has increased quality of life for all (ibid). In addition, Alexandra has a high heritage value in terms of buildings with historical significance (COJ, 2010b).

4.3.2 The development of the Far East Bank

The Alexandra Masterplan as developed in the 1980s earmarked the land on the East Bank of the Jukskei River for residential development. From 1981 till around 1984, a mere 260 dwellings were constructed. Thereafter, further housing delivery halted due to funding challenges and political tension. Alexandra did not receive any further attention until around 1995 when South Africa bid to host the All Africa Games in 1999 and Alex was prioritised to host the athletes' village on the Far East Bank. This brought in funding that would contribute to some level of revitalisation for the greater Alexandra area (Forster, 2015). The

accommodation for the All Africa Games saw the development of 7,500 square meters of housing that took the form of freestanding units, semi-detached units and simplexes at a cost of around R80 million. Once the All Africa Games were completed the housing development was to be transferred to residents of Alexandra with approximately 1799 units being transferred to qualifying residents (ibid). Unfortunately, the scale of development was primarily meant for athletics and therefore did not match the scale of housing backlog of the township (ibid).

4.3.3 The Alexandra Urban Renewal Programme and the Far East Bank

The Alexandra Urban Renewal Programme (ARP) was initially intended as a seven year, government subsidised programme at a budget of R1.3 billion. It was aimed at improving the socio-economic profile of the township especially through addressing the services backlog (Forster, 2015; Makhu, 2015). In collaboration with national government, the Gauteng Department of Housing championed the ARP with the intention of alleviating the economic, social and spatial dysfunctionality along with addressing the extremely high densities and lack of services in order to create a functionally integrated settlement (ibid).

Forster (2015) and Makhu (2015) looked at the impact of the ARP on the Far East Bank with specific focus on Alexandra Extension 7 which is located immediately south of the Marlboro Gautrain Station. As part of the ARP, there was critical need to address densification through structured formal means and the land, vacant at the time, was utilised for temporary relocation of residents that occupied informal shacks along banks of the Jukskei River. A flooding cycle of the river in 2002 saw many residents displaced and the Far East Bank was deemed ideal for temporary relocation. Once the relocation was completed in 2003, the temporary accommodation was removed and the Extension 7 site remained vacant. In 2006 the Far East Bank Extension 7 development began with the delivery of subsidised Reconstruction and Development Programme (RDP) housing which was completed in 2008 with a total of 1,407 densely packed units which were allocated to existing Alexandra residents as the primary beneficiaries. Residents received title deeds for their homes at no cost except for the subsequent monthly municipal services payments. Establishment of the value of each unit at the time “including the infrastructure for services and a raft foundation to limit cracking of the structures” was estimated at R100 000 each (Forster, 2015:9). Despite

all that the ARP intended, the Fat East Bank is still characterised by poorly constructed homes, an inadequate level of services, overcrowding in public spaces as well as indoors (Forster, 2015; Makhu, 2015)

The key factor in the ARP's failure to achieve its objectives can be traced to the fact that it transformed in to a politically driven programme and ended up as a housing delivery project rather than the intended urban renewal programme (ibid). As a result, both the residents and external evaluations view the ARP as a failure that did not meaningfully contribute to the well-being of the community. Backlogs in service delivery in areas such as housing and education still prevail along with inadequate investment into the economic growth of the area (ibid). The series of figures below show a glimpse of the state of decay in the Far East Bank, and especially around the area surrounding the Gautrain station.



Figure 12: The state of road and water infrastructure along Laduma Street outside the Gautrain Station (Source: Ismail, 2017)



Figure 13: Two images of litter pilling up along Laduma Street outside the Gautrain station (Source: Ismail, 2017)

Much of the 2008 xenophobic attacks has been attributed to contestation surrounding housing allocations within Alexandra. The violence resulted in serious injuries of foreign nationals as depicted in Figure 10, and the destruction of property and assets such as the burning car in Figure 14 (ibid).



Figure 14: The state of Alex after a night of xenophobic attacks (Source: Ludbrook, 2015)

4.3.4 Transport and movement linkage and connectivity

Alexandra has three major linkages which allow for ideal connectivity on a regional (Gauteng), and local (neighbourhood/precinct) scale. These linkages are the Gautrain and BRT system (regional scale), and the Great Walk which is a pedestrian and bicycle bridge that will connect Alexandra to Sandton City (small scale).

The Gautrain Rapid Rail infrastructure/service is a R30 billion project that aimed to act as a catalyst of change to bolster economic growth, jobs and development by linking Johannesburg and Pretoria (Puckiree, 2015; Thomas, 2013). Coupled with the idea that it would facilitate alleviation of vehicle congestion (traffic jams) within the GCR, amongst other environmental benefits, the project was envisaged as a means towards a better quality of life across the GCR (Gautrain Management Agency b, 2011; Puckiree, 2015). The network construction commenced in 2006 with the first link between O.R. Tambo International Airport and Sandton City completed in 2010, and by 2012, the final link to Park Station in Johannesburg CBD was completed (Gautrain Management Agency d, 2010; Puckiree, 2015). Although it has so far attracted significant investment (local and international), a deeper consideration reveals how it is contradicting to deepening segregation through unaffordability by a majority if commuters (Puckiree, 2015).

A concern of the project is that it was never intended to service the wider population as it was targeted for the middle-to-higher income brackets who are more likely to be owning and driving personal vehicles for commuting. It is therefore emerging as an example of mass public transport that highlights the deepening poverty and inequality in South Africa, and especially in our cities. Due to inadequate ridership and revenues from commuters to date, the provincial government continues to reallocate funding for infrastructure projects and allocations to municipalities in order to cover the shortfall towards Gautrain's operational costs (ibid). Even with this indirect subsidy to the concession operator, the poorer commuters that already rely on public transport may never afford the high fares of the Gautrain (ibid). In addition, despite the location of the station close to Alexandra, the name given to the station is Marlboro Gautrain Station. Equally, a majority of the residents of Alexandra cannot afford to use the Gautrain for their commuting needs and therefore, the station which was seen as a 'station for the poor' and 'a lever for social change' ends up serving as a perpetual reminder

of what is out of reach for a majority in the community (ibid). It was observed from a site visit that there is a disconnection between the Gautrain station and the Far East Bank. For example, the station is heavily walled and serves as a barrier isolating the internal working of the station from the local residents. It was also noted that there are warning signage around the station as with many others (see Figure 15). While the sign may appear at other stations, it's the appearance outside the Marlboro station, coupled with the perception of crime and violence that makes the warning far more concerning.



Figure 15: The wall of the Marlboro Gautrain station with a warning sign indicating the area as a crime hotspot (Source: Ismail, 2017)

In recent years, the government has seen the value of having an integrated transport plan in order to create a more inclusive and sustainable transport network (Daras, 2015). The Gauteng Integrated Transport Master Plan 2025 (ITMP25) positions rail as the backbone of the network and proposes extensions to the current Gautrain routes (ibid). It also seeks to have a compact and densely settled province which prides itself on TOD service for all. The

new routes are expected to connect strategic areas so as to complement population dynamics, economic patterns, growth and development (ibid). In response to the anticipated expansion, the updated SDF for Johannesburg proposes a future Gautrain Station in Randburg which would help to reinforce the Aerotropolis Corridor (COJ, 2016).

The BRT system is one of the key priorities for COJ transforming the city into a world-class transit system that is efficient and accessible to all communities (COJ, 2010a). COJ views Alexandra as a crucial space for the BRT which sees the system integrating into the Gautrain network around the MGSP and thus providing access to the greater regional linkage through to Randburg. From a site inspection conducted in 2015 it was noted that there were no BRT lines from the MGSP. If COJ intends on creating this world-class transit system, it is crucial that the MGSP gets direct BRT links into the township.

At a micro-scale, the proposed Alexandra-Sandton foot and cycle route (also branded as the Great Walk) forms part of the COJ's Corridors of Freedom programme. Once completed it will link the Sandton node, one of the richest urban precincts in South Africa, with Alexandra which is home to some of the poorest households in the country as seen in Figure 16 and Figure 17 below (Moahloli, 2015). With the aim of combating the challenges faced by the apartheid planning legacy, coupled with the Non-Motorized Transport (NMT) Framework and COJ's Complete Streets Initiative, a safer, easier corridor/ walkway is envisaged (ibid). Approximately 10 000 people traverse the 5.2km commute daily to get to Sandton from Alexandra (ibid) which entails having to cross the M1 highway without safe crossings thus contributing to the high levels of fatalities. The walk across the bridge, along with landscaping and furniture, traffic and speed calming measures as well as lighting and scenery are envisaged to make the walk more pleasurable and safer for pedestrians and motorists alike (ibid). The bridge was expected to be completed by August 2016 but, but after suffering a collapse setback, a new target date has been set for 2017 (ibid).



Figure 16: Layout of the bridge for the Great Walk from Alexandra to Sandton (Source: Moahloli, 2015b)



Figure 17: Artistic depiction of the Great Walk bridge across the M1 (Source: Moahloli, 2015b)

4.4 Understanding the context of the neighboring major urban developments'

As indicated on Figure 2 the Marlboro Gautrain Station is centrally located between the greenfield mega-development projects of Waterfall City, Modderfontein City and the established node of Sandton City. The location of these major urban developments creates a triangle that is envisaged to become economically concentrated with increasing middle to

high income households moving into them. As this pattern unfolds over time, it can be expected that property values around the MGSP and the greater Alexandra area will gain momentum as the developments mature. In addition to these two confirmed mega-projects, the location of Frankenwald to the north and Linbro Park to the east, as well as Alexandra forming part of the envisaged Aerotropolis Corridor, Alexandra can be expected to experience a large boost in its locational advantage. In order to access the inclusivity value of the MGSP and greater Alexandra area, these neighbouring nodes and major urban developments are further appraised in the subsequent sub-sections.

4.4.1 Sandton City/ Rosebank

The secondary data underpinning this subsection is abstracted from a desk-top study report undertaken in 2015 (Ansell, 2015). Rosebank and Sandton City are two of the more important nodes of Johannesburg. They are seen as the predominant zones of the city in terms of development and investment with property values increasing annually, hand-in-hand with increasing investment targeting the nodes (ibid). Sandton City is a mixed-use node of metropolitan importance which serves as the home to the Sandton City Shopping Centre with retail and commercial spaces, several office blocks and high density residential development in form of apartments and townhouses. Rosebank is a smaller scale node but similar to Sandton City (ibid). Both nodes are located along Oxford Road that extends to become Rivonia Road within Sandton. Both nodes host Gautrain stations and both stations have proven to be the most catalytic of all the stations of the network in relation to the development of surrounding precinct. In the case of Rosebank, the station has led to a rejuvenation of the area (ibid). They are also located close to networks of regional and local importance thus making them ideal spaces for commercial and residential investment. COJ has already planned for BRT connections for Rosebank and Sandton City with construction underway for the Louis Botha connection to Katherine Street in Sandton City (ibid). Rosebank and Sandton present ideal locations for major infill and upgrade development centred around TOD (ibid).

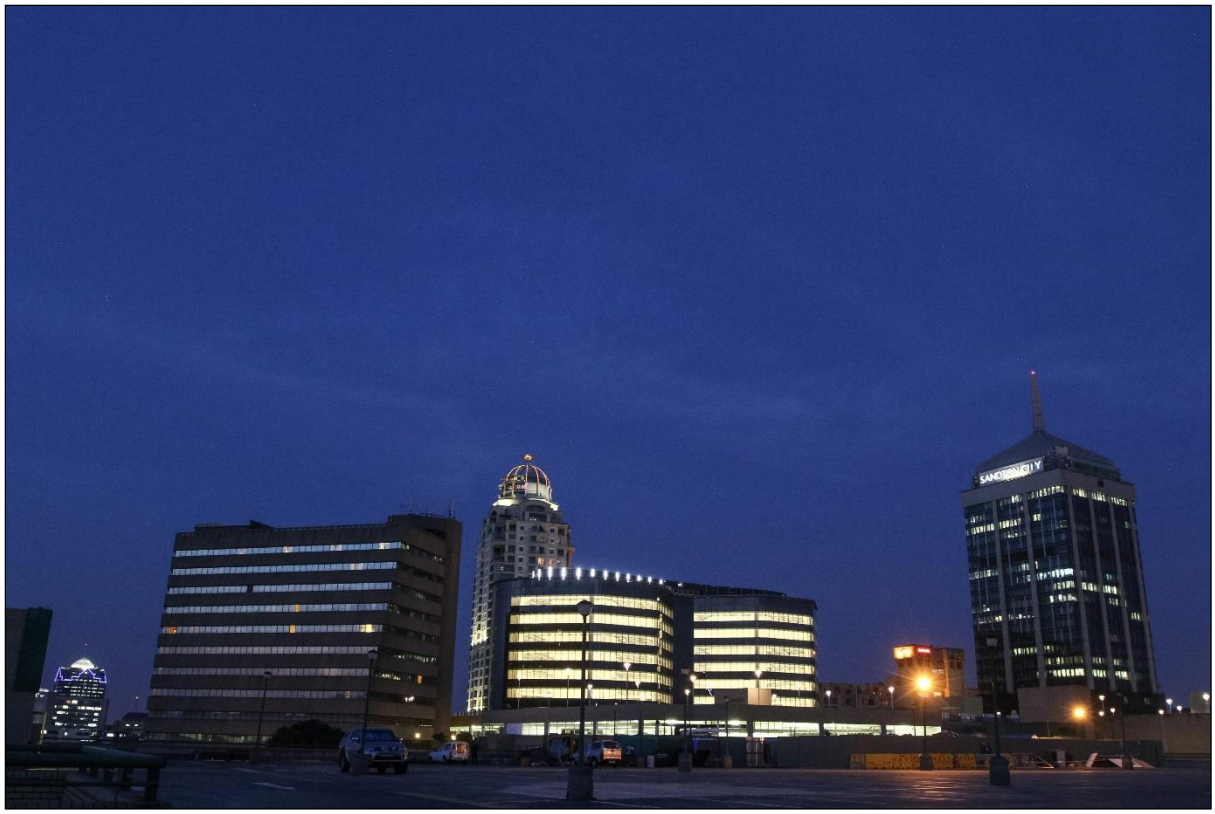


Figure 18: Sandton City Shopping Mall, COJs biggest economic hub and the richest mile in South Africa (Source: Hutton, 2014)

4.4.2 Waterfall City

As one of the mega-development projects, Waterfall City constitutes a greenfield urban development through a collaboration of diverse investors including Waterfall Investment Company, Century Property Development and Atterbury. The development comprises 2,300 hectares of land located in Midrand, Johannesburg. The area is prime space for infill development between Johannesburg and Pretoria with upwards of 15,000 sectional title units amongst many other housing and commercial development options. The entire development is being phased over 15 to 20 years with the Waterfall Shopping Centre as an anchor development, and expected to become operational by early 2016. The entire development is estimated to cost around R71 billion and is destined to become a new central business district (CBD) for the GCR.



Figure 19: Mall of Africa, the focal point of Waterfall City and the proposed CBD of Gauteng (Source: SAPeople Staff Writer, 2016)

As a high-end market orientated development, first-time buyer prices for houses stretch as high as R4 million to well over R5 million with vacant stands starting at R2.5 million. At this range of cost and prices, it is evident that the inclusivity criteria are not being prioritised for the development. One thus argues that ultimately, Waterfall City is destined to become yet another exclusive medium to high income precinct of COJ and GCR.



Figure 20: Elaborate houses constructed within one of the estates in Waterfall City (Source: Ismail, 2017)

4.4.3 Modderfontein City

Modderfontein is a new greenfield urban development initiative by a Chinese company, Zendai, and will be located within close proximity to Marlboro. A new Gautrain Station is proposed within the city centre of Modderfontein City. The station will open it up to regional linkages with the aim of integrating with Rea Vaya (COJ's BRT system), and promoting NMT (Ismail, 2015). The development is touted to ultimately rival London, Hong Kong and New York City with intentions to transform the predominantly vacant land into vibrant neighbourhoods that promote principles of live, work, play and growth primarily based on a mixed-use approach. The developers have agreed to develop Modderfontein City along the principles of compaction, TOD, integration into the greater COJ, job creation and poverty alleviation. Given its significant scale as a focused investment opportunity for Johannesburg over the next 15 to 20 years, Modderfontein City has the potential to rival Sandton City and therefore the development needs to ensure that it complements COJ's aspirations towards transformation into a sustainable and inclusive green city (ibid). If such complementary goals are attained, the inclusivity performance for the GCR in general would be significantly boosted.

4.4.4 Linbro Park

The secondary data for this subsection is derived from a desk-top based report by Bruni (2015). Although it is still zoned primarily for agricultural use, other minor uses for the area include industrial developments, low density residential units, along with small business, commercial and retail (ibid). Linbro Park's location, especially in relation to the major M1 highway makes it an ideal location which is prime for redevelopment. COJ's IDP calls for Linbro Park to be developed into a mixed-use industry/ commercial/ residential/ business/ retail node. In addition, the RSDF calls for large-scale redevelopments for the township which would specifically offer opportunities towards de-densifying Alexandra through allocating affordable housing developments in Linbro Park. The township is seen by COJ as a zone of opportunity (COJ, 2010b). In spite of this immense promise, the area faces multiple challenges which range from fragmented interests with response to the vision for the area, and the adjoining landfill (now closed and undergoing rehabilitation) which is negatively perceived to be undermining property value of the housing developments nearby (ibid). Equally, the area is experiencing inadequate public transit options with heavy dependence on private cars and

urban services are in a state of dysfunction as well (ibid). Much of the land currently zoned for agricultural use would require lengthy rezoning procedures through township applications in order to allow for aligned development rights (ibid). Even though the landfill closed in 2006 after 27 years in operation, the decreased property values have not started to reflect a positive trend yet. Overall, this area has a vast untapped potential that would have positive spin-off effects on Alexandra and the MGSP in general, if planning and implementation approaches are sensitively managed (Bruni, 2015).



Figure 21: The development vision for Linbro Park (Source: Bruni, 2015)

4.5 Conclusion

Based on the preceding appraisal, it is evident that Alexandra and the wider MGSP has a high 'inclusivity value' for COJ and the larger GCR. It is centrally located within the GCR as well as in close proximity to many areas with growing employment opportunities such as Sandton City and Linbro Park, amongst others, which most likely present the biggest factor for residents to remain in Alexandra. This is reinforced through optimal linkages on a local (Great Walk) and regional scale (Gautrain, BRT and freeway systems) thus giving the township and precinct easy access to the rest of the GCR.

While the township has been marginalised and poverty has persisted and is by now entrenched (social facilities and amenities are also in a poor state) there are opportunities to

transform the space towards making it a more spatially, economically and socially cohesive township. Whereas, the Gautrain Station is currently isolated from the rest of the township, the extreme densities within Alexandra can be more strategically analysed as they are optimal for the MGSP to be transformed into a vibrant, mixed land-use, economic and tourist destination with a multi-modal transit hub at the centre. The abundant vacant land is a big draw for new residents as it presents space for housing options yet the MGSP and Alexandra has not yet significantly transformed in a manner which aligns to its potential. This is substantiated in chapter 5.

Although the policy review indicates that there are already exists responsive processes and principles within the COJ, it is also apparent that regardless of the strong policy intention there are limitations on COJ's ability to substantially transform Alexandra and the MGSP in line with the appraised potential. While town planning principles seem to have been systematically considered within the IDP and SDF processes, it is still evident that the translation through major investment/development projects is not being systematically pursued. Chapter 5 provides greater insight into COJ's limitations towards transforming Alexandra and the MGSP as well as why major transformative private-sector investment/development projects are not occurring within the precinct.

The appraisal of the history and current realities of the precinct reflects uniquely strong trends and patterns. In particular, it becomes evident that Alexandra has a very strong cultural heritage, identity and sense of place that is deeply embedded among the residents and their communities. It is also evident that there is a drive towards a rejuvenation of the township through the ARP even though, this too is falling short of its envisaged outcomes.

It is important to note that densification of Alexandra coming through many of the policies discussed above is counter to the reality of the township which is extremely dense in terms of population. What is required for Alexandra and the MGSP is strategic densification in some areas with others actually requiring de-densification. It can be assumed that the reason for the contradiction over densification/de-densification could most likely be due to a lack of more specific studies and analysis of the prevailing/changing realities of the area. COJ is in the process of conducting a nodal review where they analyse the entire COJ. One could assume

that the outcomes of such a study will add further to our understanding of the dynamics of the Alexandra area.

In addition, the appraisal shows that Alexandra and the MGSP have strong opportunities with regards to linkages, connectivity and access, with Gautrain providing unique regional connections to the Johannesburg CBD, Midrand, O.R. Tambo International Airport and Pretoria, even though affordability constraints create an exclusionary barrier for the Alexandra residents. There are opportunities to create a vibrant mixed-use TOD precinct that centres on the station as Alexandra has the optimal densities to support the related demand for services. There are also small/neighbourhood scale linkages providing access to Sandton City through the forthcoming Great Walk pedestrian and bicycle bridge. A clear shortcoming with regards to transportation is a lack of government funded affordable public transport options for the residents.

Lastly, the neighbouring major urban developments within Sandton City and Rosebank, Waterfall City, Modderfontein City, Linbro Park and Frankenwald (as further substantiated in chapter 5) have the potential to integrate better the Alexandra and the Marlboro Gautrain Station precinct with the added advantage of enhancing the inclusivity performance of such developments.

As defined in chapter 1, this study sees inclusivity value as being the social and economic value within Alexandra and the MGSP in general, and this value possibly serving as the key pull factor attracting residents to the township and sustaining their commitment to remain as residents within the locality. The appraisal further demonstrates that there are various positive and negative draws and aspects of Alexandra and the MGSP. Lastly, the community of Alexandra has a very strong identity that is tied to the township's deep and unique history especially in the struggle against apartheid. As a result, many of the residents who have been living in the township for generations want to remain there.

Chapter 5: Determining the constraining and transformative factors of the MGSP

5.1 Introduction

The analysis of the interview data collected as the primary data was guided by the theoretical framework as substantiated in Chapter 2. The structure of this chapter is guided by the sub-questions developed in order to answer the main research question. The sub-questions form the basis for each section of this chapter with findings underpinned by the analysis of the interview responses coupled with the sub-findings reported in Chapter 4.

The derivation of sub-findings is pursued through two trajectories. This first one seeks to understand the limiting factors that have kept the MGSP from transforming in a manner like the other Gautrain station nodes/ precincts such as Sandton, Rosebank and Hatfield among other TOD infrastructure and service nodes. The second trajectory seeks to determine how best to transform the MGSP in a manner similar to the other Gautrain station precincts mentioned above, while at the same time transforming the precinct primarily for the well-being of current residents. The data are therefore analysed under the following two sub-questions:

- Sub-question 2: What is constraining the transformation of the MGSP from its disadvantaged historical condition to a vibrant multi-modal public transport driven hub/node?
- Sub-question 3: How can one transform the MGSP in a manner that mitigates the risk of gentrification and displacement such that its inclusivity value is enhanced?

The sub-findings reported in this chapter as well as the secondary data are consolidated towards overall findings and conclusions are reported in Chapter 6.

5.2 Key respondents

Primary data were obtained through interviews with officials from COJ, the Gauteng Planning Division (GPD) in the Office of the Premier (OOP) and from the private sector developers. The officials interviewed were purposefully sampled as follows:

- Respondent A: City Transformation and Spatial Planning at COJ,

- Respondent B: ARP at the JDA,
- Respondent C: the GPD, OOP,
- Respondent D: Attacq Waterfall Investment Company (Pty) Ltd,
- Respondent E: Planning and Design at Zendai Development SA (Pty) Ltd.

5.3 Constraining factors to the transformation of the MGSP

5.3.1 Transformation of the MGSP

It has been argued in previous sections of this report that the MGSP has not been transforming in a manner like the other precincts or areas surrounding the Sandton, Rosebank and Hatfield stations. When the question was posed to Respondent B, as to why he thought the precinct had not been transforming like other Gautrain station precincts, he indicated that "I think that's not correct". Respondent B does not see Sandton City, Rosebank and Hatfield as being spaces that have transformed much, because they were already mixed use nodes with very strong retail, office and business functions. But on the other hand, respondent A reconfirmed this notion when she indicated that both Sandton and Rosebank were established regional nodes with their own pre-existing energy and environments before the Gautrain impact occurred. Both Respondent A and B stated that all that the Gautrain has done in those spaces was to provide additional incentives for further development and enhancing what was already underway within the precincts. What is problematic with the MGSP is that there are opportunities to transform the precinct into a TOD as it has the accompanying densities, yet the mixed land-use component that would make the precinct a viable vibrant space or economic hub is missing. While Sandton City, Rosebank and Hatfield may have been established regional nodes with pre-existing energies, they have been able to capitalise on the Gautrain and taken their precincts further.

In contrast, the respondents pointed out that in the Alexandra township case, housing delivery has remained as the primary priority. At the time of planning the Gautrain station, much of the surrounding land was vacant. Since the completion and operation phase of the station, the precinct has transformed as Respondent B observes. While other Gautrain station precincts have seen increases in retail, commercial, business and residential uses, Alexandra has not experienced similar effects. The township further developed to accommodate these large densities through formal and informal residential developments with very little formal

retail, commercial and business uses. One needs to also understand that the property market/ economy around the MGSP and greater Alexandra areas does not inspire private sector confidence/investment. From site visits to Alexandra and the MGSP, it was observed that development occurs contrary to the norms and standards of COJ. The haphazard nature of Alexandra's development, large migration and sheer number of residents have most likely been a deterrent for private sector investment into the township. As a result, most likely Alexandra will have to grow at its own rate and developed for the residents, as the residents saw fit. This must have further reinforced poor confidence in the township from a private sector point of view, as big businesses would not quickly invest in a township that is largely left to its own devices and development patterns. The Gautrain station does present a possibility for structured planning and development in accordance with norms, standards and by-laws of COJ.

5.3.2 Frankenwald uncertainty and indecisiveness

Some of the uncertainty around Alexandra and the MGSP has to do with uncertainty over the future of the Frankenwald land which has been under litigation for approximately 12 years and as a result has been left vacant with no clear development taken. Respondent A views this litigation to have led to indecisiveness around how to develop much of the surrounding areas. Respondent B provided a brief history as to the issues around the Frankenwald land:

> In 2002 the University of Witwatersrand (Wits) applied for and was granted a basket of rights on the land. Objections were received from the Waterfall Estate Trust and the matter ended up at the High Court against Wits. As the land was donated to Wits, it was not to be used for any other purpose than educational. Respondent B is of the opinion that the objection by Waterfall Estate Trust was "a straight forward commercial objection to protect Waterfall developments proposals at the time". Since Waterfall City and especially Mall of Africa have been completed, Frankenwald poses no material challenge to the Waterfall Estate Trust and hence the matter before the High Court was withdrawn. It is interesting to note, according to Respondent B, that the matter never sat before a judge.



Figure 22: Images of the vacant Frankenwald land (Source: Ismail, 2017)

According to Respondent B, had Wits been able to plan for the development of the Frankenwald land, transformation may have occurred sooner. What had happened in the interim was that Waterfall City and the Far East Bank Extension 7 have developed with Modderfontein now seen as a future growth point within Johannesburg. All this had impacted on the spatial conceptualisation of the MGSP. Respondent A gave the view point that the development energy around the MGSP and the broader area is slowly building up and possibly where the potential for development was lacking in the past, the development potential is now ripening. Respondent B indicated that COJ adopted a motion stating that it must engage with Wits, Provincial Sector Departments and National Department of Rural Development and Land Reform in order to buy the Frankenwald land for housing of Alexandra residents. Failing to attain such a mutual understanding, "the Executive Mayor may explore methods of expropriation processes". Respondent A was firm in the notion that COJ prefers to develop the land in conjunction with Frankenwald investors and stakeholders.

Respondent A is concerned with the current land use rights applicable to the Frankenwald land. Currently the site has approved development rights that are extremely low-key relative to its prime location opportunity or potential. For example, the site is only allowed approximately 40 dwelling units per hectare which is considered low density according to updated IDP/SDF goals. If the current or future owners decide to develop in terms of the site's current rights, it will hamper the broader development of the region based on prevailing understanding of the potential by COJ which creates opportunity for intensifying densification for the site's development.

5.3.3 City's uncertainty

Respondent A feels that the limited development around the MGSP is mainly due to ongoing discussion around what should occur. The uncertainty around the Frankenwald land had led to some form of uncertainty on COJ's part. Added to this, COJ owns multiple portions of land around the precinct which have not been utilised for development as yet. Respondent A indicated that the COJ wants to transform the node into a TOD, and there are multiple development visions for the area (currently, COJ is on their fifth version of the vision). Respondent B notes the pressure that Alexandra faces to provide housing opportunities and further argues that this will have a huge bearing on how the node will develop, but he "doesn't want to see a sea of just housing for the poor". This will not help the situation of the poor at all. Rather there should be a development that is inclusionary with housing opportunities for all income levels that is properly integrated with non-residential uses such as retail, commercial, clean industry and offices.

Respondent A highlighted the discussions around the types of economic activities that should occur in the area. She indicated that trying to straddle the line between what could be established from a market perspective and what should be established in order to integrate with the current community needs is difficult. The forms of economic activity needs to be inclusive and address the needs of the local residents.

A fear that both Respondent A and B have is that if conceptualisation around the MGSP is not done correctly and inclusively, the residents living in the low-cost housing area (Far East Bank Extension 7) in particular could be approached by developers. The developers will buy the land and develop it to its full market potential which will ultimately lead to exclusion of the local residents.

One of the more apparent challenges to the development of the land is the policy context from COJ. Chapter 4 section 4.2 gave an understanding of the various policies that relate to Alexandra and the relevance for MGSP. The SDF, as reviewed and approved in 2016, reflects a more intense focus on Alexandra's opportunities and potential. The RSDF objectives as approved in 2010/11 and the Development Framework for Alexandra as approved in 2002 provide greater detail. Only now (in 2016) has the JDA embarked on a process of developing an Urban Development Framework for Alexandra. What is apparent is that in terms of a

hierarchy of policies, not all policies feed into or align with each other. In addition, the RSDFs came after the Development Framework for Alexandra. With the advent of the updated 2016 SDF for COJ, all preceding policy documents need to be reviewed and updated in order to ensure alignment. As such, the new 2016 SDF which provides direction for Johannesburg's development and high level guidance for Alexandra now co-exists hand-in-hand with an outdated urban development framework aligned to the older SDF also providing guidance for Alexandra. Respondent B indicated that there would need to be a review of the RSDF and other planning documents, but that will follow upon the expected review of the Growth and Development Strategy expected to commence in 2017. Initially, the study took the assumption that the lack of desired expectations or its materialisation in Alexandra and around the MGSP was primarily due to financial constraints or implementation challenges. However, after responses from Respondent A, it was clear that the timing of development in Alexandra and around the MGSP has most likely matured. The potential to develop and transform the Alexandra area was not as ripe as it is currently. The responses indicated consideration of only market forces in Alexandra with little consideration of the inclusivity needs of the residents.

From a provincial point of view, Respondent C is of the opinion that Provincial Government led initiatives have not necessarily been successful when championing inclusivity and green urbanism despite this being a key aspect in the objectives of many provincial policies. Much of this is due to urban municipal planning being a competency under local government mandate. What Provincial Government needs to do is "capitalize on municipal direction and initiatives" in order to ensure that they (municipalities) push a transformative agenda.

5.3.4 Private sector's lack of incorporation of Alexandra into their planning and development

When interviewing officials from the private sector, a concerning trend picked up is around the extent to which Alexandra factors into their investment and development decisions. Waterfall City and Modderfontein City are approximately within 10 km radius from the MGSP. If one were to walk from either Waterfall City or Modderfontein City, bearing in mind the constraints in terms of the existing road network (M1) the distance is negligible. Despite the proximity of Alexandra to both mega-urban developments, Respondent E stated that they

have not given any real consideration to the spatial linkages between Modderfontein City and Alexandra beyond the view of seeing them in terms of 'labour force'. Whereas there is no doubt that if Modderfontein City is a success, it will provide job opportunities for surrounding areas such as Alexandra, Respondent E sees no further gains for such areas and thus goes on to note that Modderfontein City should be developed to its own potential while Alexandra and Frankenwald should be redeveloped within their respective potential. Respondent E is also aware that the MGSP can be viewed as a competing station relative to the proposed station for Modderfontein City. In addition, Respondent D indicated that Alexandra was not a major concern when developing Waterfall City. For the developers of Waterfall City, Tembisa was the more pertinent marginalised township that they chose to focus on as it is approximately 13km away, and not the township of Alexandra.

With regards to creating spaces that are inclusive for all, we see that the private sector does not give as much weight to inclusivity (as reported by Respondent D) as COJ policies and infrastructure investment priorities require. This is due to market perceptions around inclusivity as emphasised by Respondent D who specifically responded that the market is normally wary of inclusivity. This response serves both as a key historical signification of why development/investors might have avoided the precinct all along, and equally the risk of gentrification/displacement if the attraction of the precinct matures beyond the sensitive threshold for such investors.

5.4 Successfully transform the MGSP

5.4.1 Understanding the locality

In order to successfully transform space, it is vital to understand the local context of the area in question as well as its broader surroundings. According to Respondent C, this principle applies "whether you call it morphological structure or nodal structure that surrounds it, whether it be small scale nodes or higher end all the way from the CBD of Johannesburg, Sandton City, Kempton Park, Modderfontein, Woodmead and the like". Respondent C indicated that in order to improve Alexandra and the MGSP one needs to understand the synergies between the site and neighbouring areas in order to capitalise on opportunities they may have, be it employment or transport opportunities. This helps to better integrate

areas with less opportunities or vitality into the wider urban fabric and thus facilitate the leveraging of potential with more advanced areas.

On the strategic nature of Alexandra, in COJ's 2016 SDF, the Inner City is the predominant metropolitan core for Johannesburg's structure. The SDF identifies three principal sub-centres for Johannesburg in support of the metropolitan structure as follows: Sandton City, Soweto and the Modderfontein node, which encompass a broader area that includes Frankenwald, Linbro Park and the MGSP (COJ, 2016). This clearly indicates the prime significance of the MGSP within the broader Johannesburg's development trajectory.

5.4.2 Gautrain station

Respondent A and B clearly see the potential for the development across the Gautrain station nodes in general and especially the MGSP which is ideally located within the greater Gautrain network between "Midrand and Johannesburg, on the way to Pretoria and on the way to Ekurhuleni". Respondent A sees the importance of the MGSP as a catalyst in terms of providing wider GCR connectivity as seen in Figure 7. The development of the precinct into an intermodal, TOD hub and the proposed linkages with COJ's BRT and rail are of importance. This should provide the critical impulse to intensify and densify the area and also guide development rights to fall in line with more intensive use aspirations. Respondent B further notes the need for large-scale high density residential developments at scale as envisaged in the precinct plan in order to provide opportunities for young job seekers to access/afford early foothold in the property market while being centrally located within the Gautrain system and the greater GCR. Given the MGSP's connectivity opportunity, a resident in the precinct would thus enjoy access to employment opportunities across the entire GCR. In addition to the residential densification, Respondent B envisages more retail development which would add a mixed use character to the MGSP. Respondent B narrated his ideal scenario for the precinct as follows:

> *"A person on their way home from work, gets off at the Marlboro Gautrain Station. They need groceries, and just as they leave the station, there are a variety of retail options. The person buys what is needed for home, gets into their car makes their way home."*

According to Respondent B, this would be similar to what has been done at the Pan Africa Mall in Wynberg where people get off taxis in the afternoon and make their way through the mall as they go home. As they make their way, they do all their required shopping.

Whereas Respondent B's ideal scenario is a good option, it would benefit from greater non-motorised infrastructure and connectivities. This would translate into a scenario where the person gets off the train, buys what they need for home, and walks or cycles a few hundred meters to their residence or recreation area. In addition, the precinct would benefit by transforming into a 24-hour precinct providing evening/night activities and entertainment for residents thus making the precinct a vibrant node for the region as a whole. This would be a push in the right direction towards a better Alexandra and the MGSP. Currently local residents experience a huge barrier for entry into the Gautrain system because the fare remains unaffordable for most of them.

5.4.3 Transport, access and linkages

From all the interview responses, the use of transport infrastructure and services in support of access and linkages to surrounding areas comes through as important for the upliftment of Alexandra and adjoining areas. Equally the transformation of the MGSP towards a TOD is a priority for COJ. Furthermore, opening up the Gautrain Station with linkages to the north and south provides opportunities to connect the Frankenwald land with the Far East Bank Extension 7 among other catalytic effects. The Frankenwald land has the potential to develop into a development catering for higher income levels than has been catered for within Alexandra. Developing around the station in a way that provides for linkages aimed at revitalisation of the Far East Bank Extension 7 as well as Alexandra as a whole would go a long way in integrating and transforming Alexandra to the rest of the precinct and the GCR at the larger scale.

Respondent C further reinforces the importance of transport opportunities as a way to integrate marginalised spaces into the greater urban fabric by saying that:

"*planning public transport almost as the backbone of how these areas function … [goes a long] way in addressing social cohesion, accessibility [and] integration*"

Respondent D stated that public transport provides access and linkages to job opportunities and would open up Alexandra to the larger opportunities within the East Rand (even as far as Ekurhuleni Metropolitan Municipality). This is reiterated by Respondent E who observes that public transport would have economic benefits to surrounding areas. Respondent A gave additional insight on COJ plans to develop a north-south transport corridor connecting through Louis Botha to Sandton. There are key discussions now on how to connect to the east with Ekurhuleni Metropolitan Municipality and Ivory Park to which the Marlboro Gautrain Station will play a key role.

On another response by Respondent A, another current concern with the Gautrain station is that it remains an isolated structure even though COJ had in the onset requested engagements with Province and those designing the Gautrain Station to construct it in a manner that will allow for engagement with both the northern and southern sites and their related development opportunities. All attempts at engagement by COJ were not responded to and hence the station developed into its current isolated and hidden form.

5.4.4 Inclusivity and green urbanism opportunities

Respondent A asserted that COJ has prioritised transformation of the city towards inclusivity and sustainability but she notes that there are deep challenges towards achieving the envisaged goals. She re-emphasised that spatial inclusivity is important and that connecting Alexandra to the northern areas is key. There are ongoing discussions around how to create a physical connectivity with the northern areas, for the future development of the precinct (particularly with the University of Witwatersrand that owns the Frankenwald land) as this would facilitate the creation of opportunities for enhancing residential offerings which still remains as one of the priorities for the city. In addition, the provision of inclusionary housing, social housing and subsidised housing are important within the area. However, this needs to go beyond the current offering within Alexandra which is predominantly geared towards opportunities for lower income households.

Respondent A notes that with newer developments, the investors and developers now appreciate the opportunities of public transport in connecting their sites with the rest of the City. The private sector is therefore more willing to engage with COJ on matters of infrastructure provision and public transport services for the City.

Respondent B states that if inclusivity and sustainability policies are applied to the MGSP, then obviously, it will contribute significantly towards the materialisation of the latent potential/opportunity towards transformation into an inclusive space. The question of sustainability for Respondent B comes down to the energy efficiency of the Gautrain system itself as it is deemed to be energy-efficient in the sense that it has taken a large amount of private car passengers off of the road given its reported ridership of 160,000 passengers per day. On the other hand, the trains run on electricity from Eskom which is coal generated. Coal generated electricity is not sensitive to carbon-emissions reduction according to Respondent B, and is therefore likely to reinforce prevailing resource consumption and pollution challenges. What needs to be done in order to further enhance the energy-efficiency of the system is to integrate the BRT system into Gautrain and create an inter-modal transport system.

When looking at private sector's weighting of inclusivity and sustainability as development or investment criteria, it is clear that it reflects a highly inward focused agenda such that while they may be keen to develop their properties in a sustainable way (primarily with regard to the green agenda), inclusivity is a factor that they do not give much attention to. As a key example of Waterfall City, rather than plan for enhanced inclusivity within the development, the developers saw it more prudent to prioritise linkages between Thembisa and the new developments thus perpetuates the perception of the township as a labour camp. Respondent D indicated that if Waterfall City was to include inclusionary housing, it would be approximately 120 000 units for lower end bonded housing. What was seen as a better option was to build the K60 road that linked Thembisa to Waterfall City as well as opening up linkages to Fourways and Rivonia. This translates to 800 000 people with enhanced access to the major economic hub now emerging within the development. In addition, Mall of Africa made provision for a taxi rank that provides a safe space for pickup and drop-offs within the mall in a safe, secure, private and clean environment. This is an example of better initiative by a big private sector developer to improve access. Similar initiatives can be proposed to better connect and link Alexandra and the MGSP to Modderfontien City and Waterfall City. What is a concern with this approach is that it does not make any efforts to transform Johannesburg into an inclusive city. The outcome of this approach would end up having pockets of wealthy residents located within specific locations around the city while pockets of lower income

groups locate in their own space and this fails to go far enough towards enhancing inclusivity. This is why there needs to be negotiations between the state and private developers around inclusionary housing, social housing or subsidised housing options within private sector-led major urban development project in order to start to creating a mixing of income levels within such development.

5.5 Impacts of neighbouring developments

5.5.1 Engagement with the private sector

When it comes to mega projects, engagement between the state and the developer is vital. Respondent C gave her experience with Modderfontein City being developed by Zendai Development SA (Pty) Ltd where the respondent feels that the engagements entailed an intensive process and was quite unique compared to similar engagements of this type for other large scale developments, such as Steyn City or Waterfall City. In terms of outcomes, the engagements appeared to be far more fruitful according to the respondent even though they tended to be more on a compliance approach in order to appease the requirements of COJ. Respondent E from Zendai Development SA (Pty) Ltd reiterated the extensiveness of the collaboration on Modderfontein City. She indicated that it was important to have all stakeholders feel that the master plan being developed was a partnership and thus owned by all involved. Respondent D noted that the collaboration approach of COJ on Waterfall City was primarily orientated towards a legislative mandate. He indicated that they have a good relationship with COJ especially around bulk infrastructure planning and development. Respondent D indicated that in the development of Waterfall City, they took into account interests of those beyond their development. For example, R25 million was spent on water channelling measures from Allendale Road to slow down the run-off into the Jukskei River which would cause major flooding downstream. Respondent D noted that their engagement with Provincial Government was limited to high level matters with, and specifically around roads.

Respondent A was more cautious on the topic of engagement with the private sector. She noted that many developers are eager and excited to engage with COJ at the beginning of their planning process because they tend to be more aspirational and visionary in their plans. Respondent A stated that, very quickly the market forces start to demand what is

pragmatically feasible, which usually means that development ambitions and ideas subsequently get watered down. As a result, many of COJ's goals such as public good, broader efficiency and inclusivity end up being viewed as "frightening" and therefore side lined by most private sector investments and developers.

A concern with negotiations between COJ and developers is that what is discussed is not always followed through or brought to fruition. Respondent A reiterated the case of Waterfall City where there was a plan to have a city centre much like Melrose Arch, but better. Somewhere along the way in the elaboration of the plan, the idea transformed into what is now Mall of Africa as the materialised outcome which is far short of what was originally envisaged.

5.5.2 Leveraging the private sector

Respondent A sees the private sector contribution to the development of public spaces and amenities as an important way to have the private sector participating more effectively toward the upliftment of less advantaged precincts surrounding the sites of major developments and investments. If there are outdoor spaces such as parks with quality amenities that can be frequented by all, this can go a long way in fulfilling such goals. She added that she has been engaging with the private sector specifically in the opportunity of creating better parks. What Respondent A has noted is that developers prefer to create their own privately controlled open space, and as a trade-off on COJ allowing this, they commit to developing a park within a marginalised area instead.

Respondent B believes there has been mixed success of the private sector contributing to the upliftment of less advantaged precincts. The only example of a success that he is aware of is the Pan Africa Mall in Alexandra Township. This was because the private sector could make a profit off the development. Pan Africa Mall was a private public partnership (PPP) between the private sector together with government for the development of the mall at a cost of R377 million. Of this cost, the private sector contributed R120 million. The commercial and retail portion of the development is private sector owned and driven while the taxi rank and holding facilities above the retail section was government led. Respondent B sees this as a success story as it was able to get the private sector involved unlike in most instances, where the private sector steers away from such opportunities especially within disadvantaged areas.

“The private sector is not always willing to stick their neck out and take risks around the inclusivity agenda” especially if it has to do with housing delivery, because of the perceived risk of negative market reaction. The private sector needs to be involved in inclusionary housing development projects, especially through rental stock, because government cannot meet this need on its own given the limited resources and multiple competing priorities.

Respondent B stated that there needs to be mechanisms to get more reliable and systematic private sector participation in inclusionary strategies. He illustrates the possibility of regulatory means as a manner in which to leverage the private sector to steer developments in a certain direction that would optimise benefits for surrounding areas. This can be done through conditions in development applications which could make the land subject to certain development obligations. Respondent B notes the importance and power that land holds. He gives the suggestion that government could determine the overarching objectives on land and development outcomes within certain areas, apply development controls and conditions and then sell that land to the private sector to develop the land in line with those controls and conditions. This gives government more leverage over both the land as well as the private sector developer, as opposed to a private firm applying for a rezoning or township establishment and requesting rights that they want and government merely approving those rights. Respondent B does note that negotiations over voluntary or mandated responses by private sector developers is often protracted and laborious, but if government owns the land they at least have a leg to stand on. This would require that the government purchase the land in strategic areas and develop detailed precinct plans as well as spatial frameworks. Government could then request proposals for the land and sell it off to developers who would commit to develop in line with the objectives of the precinct plan and spatial frameworks.

The use of service contributions is a further mechanism suggested by Respondent B. He notes that it has been successful in the past towards dictating and directing development priorities with public good outcomes in mind. Under this approach, the private sector is offered a reduction in service contributions to be paid for a specific development if in return they demarcate for example fifteen to twenty percent of the total housing stock to inclusionary housing units. Through this approach, COJ demonstrates its willingness to forfeit revenue from service contributions in order to incentivise private sector developers/investors to accommodate certain parameters that would ultimately make the respective developments

more inclusionary. Respondent B notes that this was historically done under the old Roodepoort City Council where, in order to compete with Sandton City for development in their area, Roodepoort made provisions in their Town Planning Scheme that incentivised office related developments into the municipality through a reduction in service contributions.

Respondent C proposes a different mechanism to get the private sector involved with planning for spaces in close proximity to their major developments even though she expresses reservation that this might be viewed as a "pie in the sky idea". She suggests a form of cross-subsidisation. If a large scale development is in close proximity to a marginalised area, then there should be an equity stake, where the developer of the large scale development pays service contributions and the like, but a portion of that money gets ring-fenced and allocated to the upliftment of the neighbouring marginalised area. This requires regulatory change and buy-in from the private sector, but it could be hard to effect according to the respondent. Unfortunately, Respondent A indicated that this is not possible under prevailing COJ practice as the council has existing budgetary mechanisms for allocating funds to projects and programmes in the City.

Further to the regulatory transformation approach proposed by Respondent C, she also noted that government must ensure that large-scale types of developments do not close off access opportunities for neighbouring areas. Many developers develop gated residential communities, gated office parks, or gated mixed use developments that only allow access to a certain category of residents. This contradicts the inclusionary principles which calls for equal access for everyone. Physical access to and from, as well as movement through, should also come in the form of accessible public transport connections to the major developments from the surrounding areas. For example, constructing a K-route between Thembisa and Waterfall City is all well and good, but affordable public transport service options should also be implemented. Public transport has an important role to play as a backbone of how all areas function. If done correctly, accessibility and integration of public transport between areas would significantly assist in enhancing social cohesion. Lastly, Respondent C was of the opinion that the private sector needs to provide affordable residential components and entry level economic opportunities to a broader scope of the market within their own

developments over and above any other interventions they may contribute to within adjoining disadvantaged communities.

Respondent C noted that gentrification and displacement are real threats that Alexandra will have to face, and COJ must deal with this strategically and consistently. Respondent C thus proposed a theory to deal with this. She proposed the formation of body corporations within Alexandra and its adjoining townships. The owners of land should form their own body corporates where they can decide collectively on how best to develop their portion of Alexandra either through full scale interventions or piecemeal incremental transformations. This would allow the residents to collectively influence how best to transform Alexandra for the current residents as a stand-by scenario (master plan for an area) would not necessarily evolve into the required outcome as it would be a slow process and not really transformative. However, Respondent C does note the difficulty in this as it may not be as feasible as envisaged due to a lack of ongoing consultations towards a consensus by the residents in the body corporate, or on how to pursue the collectivisation of the parcels of land.

5.6 Conclusion

From the interviews conducted, one gets a better understanding of the inclusivity value/potential of Alexandra area and the MGSP and possible ways in which the potential could be pursued. Firstly, it is evident that there are multiple factors that constrain and limit the intrinsic transformation of the township and precinct through its own dynamics and resources. Even though some level of transformation is already underway, it has been limited primarily to only residential densification and neither mixed-use nor economically stimulating, inclusive or sustainable. Added to this, there has been a fair share of uncertainty that has kept the precinct from transforming at the right pace or direction. On the one hand, there is uncertainty with regards to the Frankenwald land. The bottlenecks which have developed with regards to the Frankenwald land, especially over the last 15 years has led to a stagnation of stimulating development within Alexandra and in the MGSP. On the other hand, we also observe that COJ does not demonstrate certainty on what it envisages for the precinct. The development potential in the past was not necessarily geared towards developing the MGSP. The time for development given all the constraints has now led to an

opportune time for the optimal development of Frankenwald, the vacant land parcels, the MGSP and the greater Alexandra area.

It is also evident that there is an apparent failure by the private sector to acknowledge its potential for positive contribution to Alexandra's transformation for enhanced inclusivity. We see that both Waterfall City and Modderfontein City consider Alexandra far removed from their areas of investment and therefore considering it to be of no central concern.

In order to transform the MGSP and the greater Alexandra area, it is vital to understand the context of the township and its role in the greater COJ. History, environment, morphology, the community and several other factors play a key role in the ongoing transformation of the precinct. It is therefore of vital importance that before any interventions are proposed, a full context of Alexandra and how it fits into COJ's urban development should be further investigated. This would assist towards crafting recommendations for interventions that are best suited to the precinct and its residents in order to mitigate the perpetual risk of displacement due to gentrification, and that additional opportunities open through improved connectivity of residents to the greater GCR.

The data collected from the respondents reinforce the view that the Gautrain station remains the sole critical driver for anticipated transformation. In particular there is significant potential in the Gautrain station as a catalyst for further development of the precinct and if the public transport component is responsively leveraged the MGSP could transform into an intermodal/TOD precinct benefiting residents and the GCR mainly because public transport has the potential to address broader issues of social cohesion, accessibility and integration by leveraging opportunities across varying city-scales.

Finally, data from private sector respondents indicated that there is no meaningful appreciation of Alexandra's value in their investment decisions. This can be attributed to the limitations of developers being inward focused and defining their interests in extremely narrow perspectives and especially by not risking negative market reactions towards inclusive developments. As an example, developers of Waterfall City would rather create linkages with Thembisa and provide ease of movement between the two rather than include affordable housing within Waterfall City itself. This indicates that far more detailed mechanisms and interventions are needed in order to leverage meaningful private sector contribution to

inclusive green urbanism. Even though some mechanisms were proposed by the respondent, they would need to be investigated further if one is to really transform the MGSP and Alexandra in particular through meaningful contributions from adjoining private-sector developers and investors.

Chapter 6: Consolidation of overall findings

6.1 Introduction

Chapters 4 and 5 presented both the secondary and primary data as well as the preliminary analysis. The secondary data gathered on Alexandra and the MGSP substantiated on the inclusivity value based on policy analysis of various COJ spatial frameworks and policies as well as diverse desk-top and field studies sourced from related reports. The primary data in Chapter 5 further substantiated on the research sub-questions along three broader sections which are: understanding the site constraints (specifically, why Alexandra and the MGSP has not transformed in a desirable manner into a vibrant inter-modal public transport driven hub/node), followed by a section on how to transform the site successfully in order to make it a more desirable space for residents and finally on the potential impacts of the surrounding private sector mega-developments on the site.

The purpose of this chapter is to give a consolidation of Chapters 4 and 5 tied together with the theoretical framework presented in Chapter 2. This seeks to consolidate a substantiation on the three sub-questions of the study as follows:

- What is the inclusivity value of the MGSP for the GCR?
- What is constraining the transformation of the MGSP from its disadvantaged historical condition to a vibrant multi-modal public transport driven hub/node?
- How can one transform the MGSP in a manner that mitigates the risk of gentrification and displacement such that its inclusivity value is enhanced?

By addressing each sub-question, the chapter works towards answering the research question as stated here:

How do we leverage the surrounding major urban development mega-projects to transform the MGSP in pursuit of enhanced inclusive green urbanism for the GCR? How could insight from the case study inform ongoing efforts towards integrated urban development which optimises both the socio-economic and resource/environmental conservation goals through urban development interventions for sustainable lifestyles? From the sub-findings and overall finding, recommendations towards a transformative approach for transforming the MGSP is proposed.

6.2 Consolidating the inclusivity value and role of the MGSP

As discussed in Chapter 4, Alexandra and the MGSP has a high 'inclusivity value'. The factors that work in Alexandra's favour with regard to high inclusivity value are as follows:

- Alexandra's elevation in status as part of the Sandton City node in the new COJ SDF 2016
- Its location within the GCR and COJ resulting in optimum proximity to employment opportunities,
- Local and regional linkages making Alexandra easily accessible,
- High densities which can support the MGSP as a multi-modal public transport hub,
- Availability of land for the development of mixed land uses including housing provision for the growing demand in the area and COJ in general, and
- A strong identity based on its culture and history.

When coupling this with what was discussed in Chapter 5, we see a reinforcement of these factors. Alexandra's optimal location in relation to neighbouring nodes, especially Modderfontein City, is vital as COJ recognises this broader area as one of the principal sub-centres of the municipality. The analysis of the spatial policies preceding the new COJ SDF 2016 indicate a good vision for Alexandra, however, the realities of the township show a different picture. The success of Alexandra and the MGSP will be determined by COJ's ability to successfully implement the 2016 SDF as well as draft RSDFs, UDFs and Precinct Plans that can carry through the importance of the township without contradicting each other. What is also required is a substantial study into the area to flesh out the opportunities and challenges of the current reality that are facing the residents.

Further to this is the capitalisation on proximity to transport and employment that comes through, and this only solidifies Alexandra as space with a high inclusivity value for the residents. In addition, much of the discussion around Frankenwald and the uncertainty and indecisiveness for its development is seen as a restrictive factor to the broader development of Alexandra. This vast open space in fact presents an opportunity for Alexandra and the MGSP redevelopment. Alexandra had many threats and challenges as discussed in Chapter 4. Given the surrounding developments' prominence, the timing for redevelopment of Alexandra has matured to the point where government cannot just sit back and let this

opportunity pass by. The current owners of Frankenwald must be decisive in the planning of what should be developed in the area and engage with COJ in order to ensure alignment of visions and plans. What needs to be done, is to find methods and mechanisms for the transformation of Alexandra through the leveraging of the private sector investment towards creating a space that is sustainable and inclusive while mitigating the risk of displacing or excluding any of the current residents through gentrification. If this fails, then as a last resort, the city could consider the expropriation of the Frankenwald land in order to ensure a more transformative impact on its development. The land cannot continue to sit vacant as doing nothing hampers the development of the MGSP as a whole.

6.3 Constraining transformation of the MGSP into a vibrant inter-modal public transport driven hub/node

Alexandra and the areas surrounding the MGSP had received large scale residential densification and intensification with minimal accompanying mixed land uses, transportation or formal economic growth. From the policy appraisal in Chapter 4 it is evident that there are also contradictions across policies in terms of densification. This only further highlights the need for a consolidated study into the current realities of the township. The constraining factors that have led to Alexandra and specifically the MGSP not transforming at a more urgent rate into a vibrant inter-modal public transport driven hub/node can mainly be attributed to a lack of willingness or fear from the private sector to invest in the township. We also see that the private sector developers responsible for Waterfall City and Modderfontein City have not factored Alexandra into their planning processes. This shows private sector's unwillingness to consider investment, leveraging on, or strengthening the linkages with the township and thus highlights a failure on COJ's part in directing the developers towards thinking beyond their respective developments and thus start to prioritise impacts on marginalised areas in close proximity. This highlights why engagements between the state and private sector are so vital towards the success of COJ in transforming into a city that effectively addresses the legacy of apartheid and not just perpetuating it. If this is not systematically addressed, then vulnerable and poor residents could end up being socio-economically exploited and spatially displaced.

In addition, the stagnation in the development of Frankenwald due to litigation matters halted many plans to develop the vacant land. COJ was equally unable to plan appropriately given this large uncertainty of what would happen on Frankenwald. Nonetheless, the advent of the mega urban projects surrounding the site as well as the end of the legal matters surrounding Frankenwald has opened up opportunities to develop Alexandra and the MGSP in a transformative manner. It is the form of development that needs to be structured accordingly and as discussed in the section above, if the owners of the land are unable to progress on a holistic and integrated approach, then COJ could consider expropriation of the land.

6.4 How to transform the MGSP

As discussed above, the timing for the development and transformation of Alexandra and the MGSP has now reached its peak. As a way forward, the critical challenge is to structure this development and transformation in a manner that leads to a multi-modal mixed land use TOD hub that caters for all the current residents, opening up further opportunities for the area, while also leveraging on the opportunities of the surrounding mega-urban projects and related private sector investments. The first step would therefore be to take into account the residents and their needs. It would not be ideal to have a master plan applied to the area while not in line with the realities of the current residents. Planning for the area cannot be to the detriment of the residents and the creation of a vibrant inter-modal public transport driven hub around the Gautrain station needs to be aimed at the current residents all the while aiming to improve on their needs. If the past is any indication (and especially with insight from the ARP), residents of Alexandra do not take well to a top-down approach to planning and implementation. Plans need to be work-shopped with residents as well as with the private sector in order to get full buy-in of all parties and thus plan the precinct accordingly. This is the only way to ensure that the precinct is planned for the people towards safeguarding and securing their interests and not have them displaced through gentrification. We have seen from the precedent study 2 that engagements between developers and communities can succeed and this should be applied within Alexandra.

COJ needs to develop some form of process or mechanism that makes it mandatory for the private sector take into account, in their planning areas beyond their site in terms of possible

impacts. Plans should only then be approved by COJ if the impacts are positive or the neighbouring areas can leverage off such developments in order to transform them in a positive manner. Such developers need to provide evidence that their intended development will not harmfully impact on the sustainability or social cohesion of neighbouring/nearby marginalised areas.

6.5 Applicability of precedent studies to the MGSP and Alexandra

The theoretical framework used for this study is based on green urbanism as discussed in Chapter 2. Two precedent studies were appraised in order to exemplify green urbanism in Singapore and in a property investment company in the United States of America.

Precedent study 1 of green urbanism in Singapore provides an example for the applicability of the seven functionality city types as discussed by Newman (2010). What became evident from the appraisal is that there are methods of achieving each of the seven functionality cities. This study envisages the MGSP transforming into a vibrant inter-modal public transport driven hub and the most appropriate functionality city type out of the seven would be the sustainable transport city. We see that Singapore has achieved this city type through various means. The city state has created high quality, sustainable transport strategies along all main corridors which provide greater transport efficiency as opposed to the opinion of private motor vehicles. This efficiency has led to public transit speeds increasing by 23% over car speeds. COJ is championing the Corridors of Freedom which is therefore a shift in the right direction. Planning around each of the TOD stations should be managed well in order to optimise densities and the built form.

In Singapore such an approach has ultimately led to a decrease of petrol usage by 10% per thus capita creating a more energy efficient and sustainable city as well as a reduction in car related deaths by 10%. There is also a push towards more innovative forms of planning and design as seen through the implementation of electric car infrastructure being rolled out. The shortcoming in Singapore's sustainable transport city is its lack of pedestrian and bicycle strategies, an intervention which COJ has been trying to implement over the last few years. Singapore presents a good model to learn from in order to have the MGSP become a sustainable space within the GCR.

COJ is emphasising a push towards a sustainable transport approach through Gautrain and BRT but there are many challenges to this such as high ticket prices of Gautrain and low BRT ridership during off-peak periods as well as poor integration with taxis which are a predominant means of transport for a large proportion of the population. COJ spatial strategies and policies do emphasise this but as it stands now, implementation is slow, especially given the current fiscal constrains government is facing. COJ should study Singapore's strategies and analyse their applicability to the Johannesburg context and how they can be applied at a localised level such as Alexandra with the MGSP as the central hub of the TOD.

The second precedent study looked at green urbanism in the Rose Company which is a property investment company based in the USA. We see that the company has a community development orientated stance when they develop. Rose Company does not try and impose plans, strategies and projects on residents, but rather tries to work with them to manage multiple challenges in order to create social wellbeing within cities. We see green urbanism principles shine through the Rose Company's approaches and philosophy which prides itself on creating well designed, walkable, economic, social, ecologically thriving, equitable, inclusive and socially just precincts and neighbourhoods. The company employs a stance of 'we are in this together' and aims to include all stakeholders in decision making processes which leads to adaptive, energy efficient and resilient developments and precincts based on three tenets of a healthy city which are:

- Protect their citizens
- Balance humans and nature
- Create a landscape of opportunity that is equal for all who go there

Rose's presentation of two key examples of community participation in planning for their precinct is important. Alexandra is a township with a strong history, culture and community. Taking an approach of smart growth but ensuring that the community and residents actively plan for the township and specifically how the MGSP should develop is key. The empowerment and education of citizens especially those impacted by with social and economic poverty, can only benefit if they are given the means to better their lives and spaces. Within the South African context, this will require a strong will from government and

the private sector in order to plan with, and be patient with the residents of Alexandra. Ultimately, allowing for the residents to engage on decision making that benefits the community through guidance and direction can lead to cities and neighbourhoods that are equitable, socially inclusive, economically thriving, sustainable, resilient and environmentally friendly. There also needs to be a shift in mind-set from an economic point of view. The monetary effects on COJ may seem exorbitant now, but if planned correctly, in the long term the city would not have to spend further towards providing services and amenities to residents that have been forced to locate in peripheral areas and the burden on the environment and resource consumption would be mitigated.

There is a great deal that the private sector in South Africa can learn from the Rose Company. Current private sector approaches, as seen through the interviews, do not factor in the impact of their development on Alexandra which is very closely located to their developments. Furthermore, the engagement with government by the developers of Waterfall City was very limited while the developers of Modderfontein City were forced into engagement with the COJ. In South Africa, government should take the lead and not be directed by private sector developers. COJ should look into development policies and by-laws that mandate the private sector to engage in a manner akin to that of the Rose Company. While being forceful with the private sector may not be ideal, if government can work together with the private sector to plan spaces better then maybe South Africa, COJ, Alexandra and the MGSP can be transformed into sustainable and energy efficient spaces that prides itself on inclusivity of all people from all income groups and backgrounds.

6.6 Lessons learnt from the MGSP for ongoing integrated urban development efforts

For any and all future developments, there are key lessons that can be learnt from this study. The four most important lessons are understanding the site context, understanding the site in relation to the broader surrounding dynamics, the importance of TODs and ensuring inclusive green urbanism is in the minds of practitioners from the onset of planning. As shown in Chapter 4, Alexandra has a very unique and rich history that has played a vital role in shaping how the township has developed. Policy makers and planning professionals that intend on intervening in the area must immerse themselves and understand what makes up Alexandra and the MGSP at its core. We have seen from Lehmann (2012) that residents have

a strong sense of identity and connection to specific places. Residents of Alexandra have undoubtedly developed a strong connection to the area and this is further reinforced through a location that facilitates access to diverse hubs/noted for employment opportunities.

Secondly, practitioners must broaden their understanding of a space in relation to its surrounding areas. This can be onerous when planning for a specific site and having to take into account developments outside of the site boundary. Yet, what we have seen from this study is that Alexandra is heavily impacted on and will be impacted on in the future by what is happening in Waterfall City, Modderfontein City, Sandton City and Frankenwald. While Waterfall City, Modderfontein City and Sandton City have made Alexandra an ideal space for residents seeking employment, Frankenwald has in many ways constrained the development to an extent. Understanding the dynamics of spaces beyond the site is clearly vital for all future developments as this will help to better plan for future developments and their linkages to the wider area.

Access, connection and linkages are vital to the survival of townships especially in the South African context where many townships are located on the periphery. Having transportation linkages is an important opportunity for marginalised spaces to better access opportunities. It is very important for transport to be present in the form of affordable mass public transport and NMT. When this is Couple this together with planning principles set to create TOD nodes, spaces like Alexandra and future developments can grow into vibrant and strong areas for residents.

Lastly, it is of importance to plan for a space bearing in mind inclusive green urbanism. It needs to form the foundation of all planning right from the onset. Whereas every principle or city type needs to be achieved, if inclusive green urbanism is present in the minds of practitioners, then the planning and execution will be directed towards being an inclusive and green urban space. In addition, practitioners should not plan spaces as stagnant areas but should instead make appropriate solutions and interventions that can be adapted and reinvented as and when the need arises thus ensuring spaces and their residents are sustainable and resilient.

6.7 Recommendations

Spatial transformation of Alexandra and MGSP is vital but needs to be handled with care and caution so as not cause displacement, segregation or social polarisation of current residents through gentrification (Lees, 2008). We have seen the importance of dealing with cities and marginalised spaces in a new light given the outcomes of the United Nations Conference on Housing and Sustainable Urban Development (more commonly known as Habitat III) held in Quito, Ecuador in October 2016 (Habitat III, 2016). Habitat III called for a New Urban Agenda that acknowledges the opportunities and challenges of the increasing world population and attempts to address these through planning, design, finance, development, governance and management means as proposed by the New Urban Agenda (ibid). Part of Habitat III's vision calls for the right to the city for everyone, so that all citizens have equal rights, adequate human settlements, socio-economic opportunities and urban mobility. This cannot be done without all levels of government working together in partnership with all stakeholders (ibid). The Quito Implementation Plan for the New Urban Agenda makes commitments to transformative sustainable urban development that are deeply rooted in the aspects of sustainability dealt with in Chapter 2 under the literature review. Addressing issues within social, economic and environmental dimensions and integrating them would be vital to the Agenda's prosperity (ibid). Habitat III pushes for commitments to achieving social inclusion, ending poverty, securing people's rights to land and public open space, inclusion and leveraging natural and cultural heritage, urban prosperity, housing options for all, transformative economies, access to education, knowledge and skills, promotion of investment, and environmental sustainability and resilience (ibid) and these are all encompassed within green urbanism. There needs to be a push to ensure that green urbanism is implemented within all policies and frameworks of government when dealing with areas such as Alexandra and other similar areas.

Alexandra cannot be planned like any other space within Johannesburg or the GCR. It has a rich history and its residents are strongly tied to this history. It has a strong sense of community and activism that should be treated as an opportunity. Working with the people for the people on decision making related to planning and development is key. We have seen from Respondent C that having all stakeholders involved in the planning phases of Modderfontein City helps to make the masterplan a plan for all. This is the approach that

needs to be taken with the development of the new Alexandra Urban Development Framework being driven by the JDA (Monyai, 2016). The proposed Alexandra Urban Development Framework needs to have a strong participatory focus that deals with the following among other issues:

- Developing community structures/ body corporations
- Financial and regulatory mechanisms for transformation
- Leveraging the private sector
- Public transport, urban mobility, access and linkages

6.7.1 Developing community structures/ Body corporations

From the interviews, Respondent C proposed a possible solution to ensure negative aspects of gentrification do not lead to displacement, segregation or social polarisation of residents in Alexandra. The key highlight of the solution is that residents need to be empowered in order to create structures within Alexandra that allow them, in conjunction with the COJ, to develop their land in the manner that is best suited for them in line with city policies and development objectives. This could take the form of body corporations or estates formed together by the owners of the land. Even though there would be challenges with this approach, if done correctly, they can collectively decide how best to develop in a way that optimises on what they already own.

6.7.2 Financial and regulatory mechanisms for transformation

It was discussed extensively within Chapter 5 (interview analysis and findings) around the possibility of using service contributions as a mechanism to develop marginalised areas like Alexandra. There are two approaches to this mechanism. The first one is similar to how the previous Roodepoort City Council engaged with the private sector. By providing incentives for developers that allows them to pay less service contributions as a trade-off for including a percentage of their housing stock for inclusionary housing. The second mechanism would be to ring-fence a portion of service contributions from developments for surrounding marginalised areas. This approach would require regulatory and legislative changes and amendments but can go a long way in having the money generated by the private sector contribute to the upliftment of nearby marginalised areas.

6.7.3 Leveraging the private sector

Respondent B gave the example of Pan-Africa Mall as a successful public private partnership. Going forward, there should be more public private partnerships between government and the private sector on large scale projects and human settlements being developed around the GCR whereas this can be difficult when private sector keeps focus on maximising financial gains, negotiations between the two parties can lead to some form of mutually beneficial agreements where both sides could reap optimised benefits. Plans need to be discussed and agreed on, and related contractual agreements should spell-out the financing options for the various components of the project. This would allow for both parties to utilise their skill-sets, resources and assets in order to deliver on projects for the benefit of all residents and the GCR.

Government and COJ could also start looking at a land banking approach whereby they buy up strategic parcels of land within key areas around the GCR. These spaces need to be ideally located close to public transport, economic opportunities and social amenities. COJ can then apply the relevant land use measures (e.g. rezoning) and development controls to the parcel of land and then sell it to private sector developers to develop the land accordingly.

6.7.4 Public transport, urban mobility, access and linkages

The last recommendation is possibly the most important for the MGSP. We have seen the importance of public transport as a backbone for connecting spaces to opportunities, and especially marginalised areas, in order to address social cohesion, accessibility and integration. The creation of the MGSP into an intermodal, vibrant public transport driven hub/node is vital. We need to develop strong will from all stakeholders (private, public and community) in order to achieve this goal as well as transform the mind-set of all to view public transport in a positive light. Plans and frameworks need to take a strong stance towards developing the precinct as a TOD. This would transform the precinct into a walkable, compact, high density space that centers on high quality interlinked transport options. TODs assist in curbing current urban challenges such as resource consumption and climate change by promoting dense, walkable spaces that are energy-efficient and are not single car, private, mobility orientated. We see many benefits from this approach such as a better quality of life

and environment, easier mobility in the precinct and around the GCR, reduction in traffic congestion and pollution, reduction in spending on transportation, healthier lifestyles and communities and reduced urban sprawl and mixed-use spaces, amongst others (The Transit Oriented Development Institute, n.d.).

Chapter 7: Conclusions

7.1 Introduction

The study demonstrates that the MGSP has not enjoyed the kind of transformation akin to the precincts surrounding the Gautrain stations in other nodes such as Rosebank, Sandton City and Hatfield. As a catalyst for transformation, development and increased investment for the site and the greater Alexandra Township, the outcomes have fallen short of envisaged outcomes in terms of what the precinct could and should be. The MGSP still stands as a sterile and primarily residential space with dysfunctional public realm around the station with no socio-spatial amenities. With all this in mind, the study explored the way we can leverage the surrounding major urban developments in order to transform the precinct with enhanced inclusive green urbanism for GCR as the primary goal. In attempting to address this, the research was broken down into three sub-questions as follows:

- What is the inclusivity value of the MGSP for the GCR?
- What is constraining the transformation of the MGSP from its disadvantaged historical condition to a vibrant multi-modal public transport driven hub/node?
- How can one transform the MGSP in a manner that mitigates the risk of gentrification and displacement such that its inclusivity value is enhanced?

Each sub-question attempted to answer a different aspect of the overall research question. Sub-question 1 addressed the inclusivity value of the MGSP by giving a clear understanding of the Alexandra context through a policy analysis of various COJ's spatial frameworks and policies as well as deriving an understanding of the history and current realities of Alexandra. Sub-question 2 looked into why the MGSP has not transformed into a vibrant public transport driven hub/node while sub-question 3 looked into the mechanisms through which transformation of the precinct into a more desirable space could be pursued without the risk of gentrification and displacement.

7.2 Consolidating the theory

South Africa is pursuing a change in its urban form towards ensuring that cities become hubs of social and economic opportunities for all (DED, 2011; Nassar, 2013), as opposed to the historical pattern where resource allocation and development has been targeted more on

affluent sections of society (Nassar, 2013). In addition, the GCR is seeing an increase in investment/development of major human settlements projects (often referred to as new cities). In order to plan for a better GCR and COJ, GCR need to address pertinent issues of integration in order to counter segregation while incorporating green-related sustainability interventions into spatial planning for the GCR (UN-Habitat, 2009a). Sustainability becomes an important factor as it focuses attention towards balancing the environmental and social aspects of justice with people's wellbeing, especially through economic growth. Given that this will remain a complex challenge for a while, sustainability is not without its criticism and limitations which planning needs to contend with as it engages with the task of incorporating the sustainability agenda into creating liveable cities that pursue a dynamic balance across socio-economic needs for well-being within environmental limits (UN-Habitat, 2009a; Pieterse, 2011; Ellin, 2012; Swilling & Annecke, 2012b; Kashef, 2016). One such facet of the sustainability discourse is green urbanism that promotes greater social and environmental sustainability through the transformation of cities towards forms and spaces that are smart, secure and sustainable (Newman, 2010; Nassar, 2013).

This study has appraised two dominant approaches to green urbanism. The first one addresses innovations in green urbanism as substantiated in Newman (2010) under seven exemplary city functionalities which are:

- Renewable energy city,
- Carbon-neutral city,
- Distributed city,
- Biophilic city,
- Eco-efficient city,
- Place-based city, and
- Sustainable transport city.

The second dominant approach to green urbanism is substantiated through the fifteen principles of green urbanism by Lehmann (2010 and 2011). Lehmann's approach presents the fifteen guiding principles to create sustainable urban developments (eco-estates), which are:

- Climate and context

- Renewable energy for zero carbon emissions
- Zero-waste city
- Water
- Landscape, gardens and urban biodiversity
- Sustainable transport and good public space: compact and poly-centric cities
- Local and sustainable materials with less embodied energy
- Densities and retrofitting of existing districts
- Green buildings and districts, using passive design principles
- Liveability, healthy communities and mixed-use programs
- Local food and short supply
- Cultural heritages, identity and sense of place
- Urban governance, leadership and best practice
- Education, research and knowledge
- Strategies for cities in developing countries.

The study has demonstrated the clear connections between Newman's (2010) and Lehmann's (2010; 2011) approaches to green urbanism. In addition, the literature review provides an illustration in the form of a table that draws connections between Newman's seven innovations of green urbanism with Lehmann's fifteen principles of green urbanism.

From there, the notion of inclusivity is addressed through the concept of the right to the city based on the work of Lefebvre which is appraised through two main points which are the need to be inclusive of all people and decentralisation of city functions in order to allow citizens greater power and choices (Huchzermeyer 2014; Purcell 2014). This aligns with the notion of green urbanism principles which also touches on the decentralisation of city powers (Newman, 2010). From this the study substantiates on inclusive urbanism as an extension to green urbanism in order to demonstrate that a sustainable city is one that is rooted in social justice with fairness as a key criterion. In order to create socially fair and just cities, practitioners must be aware of the positive and negative impacts related to gentrification. In several instances globally, policies in pursuit of socially mixed communities have ultimately

resulted in gentrification which in turn results in a displacement of the vulnerable residents (Lees, 2008).

7.3 Research approach

In order to conduct this research, a qualitative approach was taken. This allows for the gathering of a variety of data which are then analysed and interpreted in order for observations and conclusions to be drawn (Hancock and Algozzine, 2006). The case study focused on the MGSP which required two forms of data collection tools and field work. The first one was primary data in the form of interviews and the second one was based on the appraisal of policies, frameworks, reports and books related to Alexandra and the MGSP in order to generate secondary data. The key limitations of the study were classified into two broad categories. The first one was around methodological limitations while the second one dealt with limitations of the researcher. Nonetheless, all the critical data that were intended for this study were ultimately collected and analysed.

7.4 Determining Alexandra's inclusivity value

Alexandra and the MGSP's inclusivity value was determined by conducting a policy analysis of various COJ spatial frameworks and policies and understanding of the history and current realities of Alexandra. The policy analysis looked at, examined and analysed the following frameworks:

- City of Johannesburg Spatial Development Framework 2001 which is annually reviewed,
- the Regional Spatial Development Framework 2010 for Region E,
- the Alexandra Urban Development Framework, and
- the Marlboro Urban Development Framework

This review indicated that there are good planning processes and frameworks within COJ but also that they are limited in their ability to substantially transform Alexandra and Marlboro. We see that COJ has a solid grasp of town planning, forward and scenario planning for the Alexandra area, yet, the desired expectations and outcomes have not been realised.

In order to understand the history and current realities of Alexandra I reviewed the study by Bonner and Nieftagodien (2008) which provided information on cultural heritages, identity and sense of place within Alexandra. I then examined the development of the Far East Bank and the ARP. Other aspects of Alexandra and the MGSP that were examined include transport and movement linkage, connectivity and neighbouring major urban developments with specific focus on Sandton City/ Rosebank, Waterfall City, Modderfontein City and Linbro Park. Most of this information was accessed from several reports submitted as requirements for the course on Energy for Sustainable Cities (Masters course in Sustainable and Energy Efficient Cities programme, 2015). The reports aimed towards an understanding of Alexandra and the MGSP in relation to four key themes as follows:

- The Alexandra Urban Renewal Programme,
- The MGSP,
- Linkage and Connectivity of Alexandra, and
- Understanding the impacts of neighbouring nodal developments.

What was evident from the reports is that there is vast potential within Alexandra and especially around the MGSP, to be transformed into a thriving township within COJ as well as a key node within the GCR.

7.5 Site constraints

The analysis of the interviews indicated that Alexandra and the MGSP have not transformed into a vibrant public transport driven hub/node as expected, for a variety of reasons. It was evident that even though the space has transformed, the transformation only took the form of residential densification. There was no mixed-use character developed around the Gautrain Station and little to no viable economic stimulation. This can be attributed to a lack of willingness from the private sector to make long-term investment in the precinct. Other factors that have led to the stagnation of economically driven transformation has to do with uncertainty surrounding the Frankenwald land to the immediate north of the Gautrain Station. The legal disputes that placed a halt to any development of Frankenwald lead to great uncertainty that crippled any further development of the MGSP. Coupled with the uncertainty around Frankenwald was further uncertainty by COJ. Based on primary and secondary data,

COJ did not know exactly how it intended to pursue the development of the MGSP. Lastly, we saw that the private sector does not fully acknowledge the potential impacts of their developments on Alexandra. In particular the developer of Waterfall City and Modderfontein City do not consider the integration of Alexandra as they are of the opinion that it is far removed from their site and is therefore not a major concern despite the township being a mere 10km away.

7.6 How to successfully transform the site

Responses to the interviews shed light on how the transformation of the MGSP could be strategically ensured. It is apparent that a good understanding of the history, environment, morphology and the community of Alexandra are important, especially if one wants to integrate the township into the GCR. Planning an ideal township and intermodal TOD around the Gautrain Station will not succeed if it is not geared towards the current residents and their needs. If it is tailored for the residents in the area, then it will cater to them, draw in investment and will assist in mitigating the possibility of gentrification and displacement. It became clear that the Gautrain station could serve as a strong catalyst for such a transformation. Therefore, recommendations need to take advantage of the station and develop it for the current residents. A major factor for the transformation is transport, especially in terms of access and linkages. Public transport and connecting people to opportunities would go a long way in opening up Alexandra to the larger opportunities and thus improving the lives of the people. This links to the Gautrain station which should be leveraged and the precinct made into an intermodal node. This would go a long way in addressing broader issues of social cohesion, accessibility and integration. Lastly, we see that if inclusivity and sustainability are taken seriously and implemented systematically within the precinct, it can be transformed into a sustainable energy-efficient and inclusive space.

7.7 Impact of neighbouring major urban developments

The last area of opportunity would be for COJ to engage developers and make it mandatory to have their plans factor in regional implications of major urban development. Data from interview of respondents reflected that engagements by Zendai Development SA (Pty) Ltd with regard to their development of Modderfontein City, were mandatory as it was a compliance based approach and required by COJ. However it bore fruitful discussions in terms

of future developments need to follow similar engagements but open up discussions onto regional implications for surrounding marginalised areas such as Alexandra. The developer of Waterfall City made efforts to link Thembisa, another marginalised area like Alexandra by constructing the K60 road that linked Thembisa to Waterfall City thus enhancing linkage and access. This is an example of the private sector making some effort towards uplifting a marginalised area. What is required in addition to this are clear mechanisms to leverage the private sector to do more be it through regulatory means or cross-subsidisation. Regulatory mechanisms can take the form of controls and conditions that leverage the private sector to steer developments towards a direction that benefits surrounding areas and communities as well.

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Annexures

Annexure A: List of interview questions for Respondent A and B

1. How does your spatial planning unit go about drafting precinct plans for the Marlboro area?
2. How was the Urban Development Framework for the Marlboro Gautrain station precinct developed?
3. With the Gautrain station as a catalyst project, what did the City envisage for the Marlboro Gautrain station precinct?
4. Why do you think the Marlboro precinct is not transforming like other Gautrain station precincts (namely Sandton, Rosebank and Hatfield)?
5. What are the opportunities and potentials for the Marlboro Gautrain station precinct and greater surrounding area?
6. With the City of Johannesburg's Spatial Development Framework council approved in the first half of 2016, what is envisaged for the precinct?
7. To what extent does the concept of both inclusivity and city sustainability play within the City and how do you see this contributing to make the Marlboro Gautrain station precinct an inclusive space for the current residents while becoming a sustainable and energy efficient transport node for the Gauteng City Region?
8. How fruitful have engagements with the private sector been on mega-urban development projects?
9. How do you see private sector contributing more effectively to the upliftment of less advantageous precincts surrounding their site?
10. What means are there for the City of Johannesburg to bring in developers (such as those developing Frankenwald and Modderfontein City) to develop their sites in a manner that has positive spin-off effects for the current residents living within the Marlboro Gautrain station precinct and greater surrounding area?

Annexure B: List of interview questions for Respondent C

1. Regional integration is vital for the success of the Gauteng City Region. How can ideally located precincts such as Marlboro and Alex be transformed into improved and inclusive and sustainable precincts for all in the City?
2. How does provincial planning champion and persue strategies and interventions of inclusivity and green urbanism?
3. How fruitful have engagements with the private sector been on mega-urban development projects?
4. How do you see private sector better engaging on the upliftment of less desirable areas surrounding their development?
5. How do you see private sector contributing more effectively to the upliftment of less advantageous precincts surrounding their site?
6. What mechanisms are there or that could be in place to help mitigate the concerns and negativity that gentrification and displacement can play?
7. What means are there for the City of Johannesburg to bring in developers (such as those developing Frankenwald and Modderfontein City) to develop their sites in a manner that has positive spin-off effects for the current residents living within the Marlboro Gautrain station precinct and greater surrounding area?

Annexure C: List of interview questions for Respondent D and E

1. How did the firm go about planning for your development?
2. What consideration does your firm have with regard to the impact on neighbouring/adjoining spaces?
3. How can your developments contribute to the upliftment of the Marlboro Gautrain station precinct and Alexandra in particular?
4. How concerned is your firm with green urbanism?
    - If not, what are the reasons for not having a focus on green urbanism in your project?
5. How concerned is your firm with inclusivity?
    - If not, what are the reasons for not having a focus on green urbanism in your project?
6. What initiatives are underway by your firm towards factoring in either green urbanism or inclusivity?
7. How do you engage and/or collaborate with the City of Johannesburg or the Gauteng Province on your mega-urban development projects?
8. What suggestions do you have that could strengthen the collaboration between your firm and City of Johannesburg or the Gauteng Province to secure the interests of less privileged areas?
9. Given your ongoing development initiatives within proximity to the Marlboro Gautrain station, what inclusivity initiatives are possible for the adjoining less advantaged areas like Alexandra and the Far East Bank?

Annexure D: Additional Photos of Alexandra and the MGSP








Annexure Picture 1: The degraded state of road, drainage and water infrastructure in Alexandra (Ismail, 2017)



Annexure Picture 2: A calm street in Alexandra with well-kept road paving (Ismail, 2017)







Annexure Picture 3: Street trading in Alexandra (Ismail, 2017)



Annexure Picture 4: Cars driving through a red robot (Ismail, 2017)


Annexure Picture 5: A makeshift lounge outside a house opposite the Marlboro Gautrain Station (Ismail, 2017)





Annexure Picture 6: Structures built in contravention of building line restrictions (Ismail, 2017)







Annexure Picture 7: Some housing typologies in Alexandra (Ismail, 2017)





Annexure Picture 8: Litter lining most of the streets in Alexandra (Ismail, 2017)



Annexure Picture 9: Vacant land outside the Marlboro Gautrain Station (Ismail, 2017)



Annexure Picture 10: Looking towards the landfill in Linbro Park from the FEB Ext 7 (Ismail, 2017)



Annexure Picture 11: The Marlboro Gautrain Station from the FEB Ext 7 (Ismail, 2017)


Annexure Picture 12: A view of the FEB Ext 7 from Frankenwald (Ismail, 2017)



Annexure Picture 13: A view of the FEB Ext 7 with the Joburg World Class African City sign (Ismail, 2017)


Annexure Picture 14: The Wits owned Frankenwald land (Ismail, 2017)

Annexure E: Ethics Clearance Form

[redacted]

SCHOOL OF ARCHITECTURE AND PLANNING
HUMAN RESERCH ETHICS COMMITTEE

SCHOOL of ARCHITECTURE & PLANNING

CLEARANCE CERTIFICATE
PROTOCOL NUMBER: SOAP113/20/07/2016

PROJECT TITLE:	Leveraging the Marlboro Gautrain station precinct for inclusive green urbanism in the Gauteng City Region
INVESTIGATOR/S:	Taariq Ismail (Student No. 319926)
SCHOOL:	Architecture and Planning
DEGREE PROGRAMME:	MArch in Sustainable and Energy Efficient Cities (March SEEC)
DATE CONSIDERED:	19 September 2016
DECISION OF THE COMMITTEE:	APPROVED
EXPIRY DATE:	19 September 2017

CHAIRPERSON
(Professor Daniel Irurah)

DATE: 16.09.2016

cc: Supervisor/s: Prof. Daniel Irurah

DECLARATION OF INVESTIGATORS

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to endure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

Signature **Date** 5 October 2016

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