

# Identification of low-cost housing locations in Buffalo City

'A city growing with you...'



*Bachelor Thesis*

*Steffie Hermans*

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## Preface

I am proud to present my bachelor thesis: The result of four months' research in Buffalo City, South Africa. This thesis is written as a final essay of the study Real Estate Management at the University of Applied Sciences Utrecht, with a specialization in Project Management.

I received a once-in-a-life-time opportunity to fulfill the last phase of my studies in South Africa, thanks to a partnership between Buffalo City Metropolitan Municipality (BCMM) and the University of Applied Sciences Utrecht (the University). For the existence of this co-operation, and the chance to do this, I have to thank Debby Goedknecht, Jur Jonges and Darby Gounden.

Many students are interested in one particular graduate subject, but this has never been the case for me. For me, it was more important to do a research project where I could help people and work with citizens of a country that could really use some new knowledge and support. With this report I hope to achieve this goal and hopefully my program can be used to give the poor population of Buffalo City a chance at a life with better living conditions. Besides my aim to help people that are in need of support, it was a great experience. During the last four months, I obtained knowledge and a perspective that a person will not easily acquire in the Netherlands, and I consider that to be of great value to both my professional and private lives.

I could not have written this paper without help and support. Therefore, I first have to thank Debby Goedknecht and Jur Jonges, my supervisors from the University, for their support, guidance and critical comments on my work and process. Secondly, I have to thank Heidi Jonkers, my supervisor from the housing department of the BCMM, for sharing her knowledge, ideas and for the guidance and support. Within the municipality, I have to thank the employees of the Housing Department, City Health, GIS, Waste and City Planning. Furthermore I have to thank the housing associations of East London and the citizens that I have questioned.

For giving me financially support, I have to thank 'Stichting EFL', Van Eesteren-Fluck & Van Lohuizen Stichting for their generosity. Stichting EFL is a foundation that manages the legacy of Van Eesteren-Fluck and Van Lohuizen, two inspiring urban planners, with inspiring thoughts. (see p. 9)



Special thanks goes to Darby Gounden, Head of International Relations in BCMM, for her support, trust and belief, for the opportunity she has given me and for the most pleasant stay a researcher could ever imagine. Last, but not least, I want to thank my family and friends, especially my mother, for always understanding and supporting me during my study, in- and outside the Netherlands.

East London, 31 May 2012,

Steffie Hermans



## Summary

### Inducement

This research is done by order of Buffalo City Metropolitan Municipality (BCMM), a municipality in the Eastern Cape province of South Africa. BCMM is experiencing problems with the living conditions of some citizens in the community, since a part of the population lives in expired and poor quality shacks.

After Apartheid ended in 1994, there was an enormous demand for houses and cities were growing fast in South Africa. The focus of the government was to build as many houses, as fast as possible, and therefore they did not have the luxury of time to do research about which locations were most suitable for housing. Consequently, many low-cost houses were built in inappropriate places, which resulted in several problems.

The housing backlog in Buffalo City is still not resolved and there is a housing shortage, especially for the poor population. Buffalo City counts almost 60000 shacks; and most of these are inadequate dwellings. The delivery of sustainable housing is a goal of the BCMM for the coming years, but they are experiencing problems with land identification.

To help the municipality with identifying land that is suitable for low-cost housing a program of requirements is made and tested on eight locations. The aim in this research is to give an answer to the following question: 'Which locations within Buffalo City are suitable for low-cost housing in the near future and what are the requirements for these locations?'

### Inventory

BCMM is situated at the Indian Ocean and consists of three urban cores, East London, Mdantsane and King William's Town. With 1.038.249 citizens, BCMM is the eighth biggest municipality in South Africa.

The unemployment rate of Buffalo City is estimated at 39,1%, resulting in many low-income households that are not able to provide for their basic needs for adequate shelter. These citizens need public-funded, low-cost housing.

Subsidized housing for the poor in South Africa consists of three different types, two rental options and one purchase option.

Reconstruction and Development Programme (RDP) units are standard houses of 40m<sup>2</sup>, with a garden, which are given away to households with an income below R3500 per month. BCMM counts 14.423 of these units and another 12.779 are planned to be delivered. Many occupiers are not satisfied with their RDP houses, considering the units too small and the locations inappropriate. Some people are so dissatisfied that they lease, or sell, their RDP units illegally.

Social Housing Institution(s) (SHIs) provide social housing for households with a monthly income between R2500 and R7500. The purpose of these companies is the development of affordable and good quality houses, with a maximum rent of 33% from the household income. The three housing associations of East London have a total of 1769 subsidized rental units, divided over six projects.

Community Residential Unit(s) are intended for households with an income up to R3500 per month. Many of these units were built during Apartheid, and many are currently neglected and need to be upgraded. BCMM has 2200 CRUs, many without water and sanitation. Many of these can be found in, or around, Duncan Village with rental fees below R400.

Most people in Buffalo City have a house, but the conditions of these houses are very different. Most people live in a house made of bricks (67,40%). 28% of the houses in BCMM are shacks, most of these are found in Duncan Village, a township in East London with 21.000 households. In the whole municipality 154 informal settlements can be found and the situation in most of these townships is pitiful. In 2007 74,3% of the households had electricity, less than half of the households had piped water inside the dwelling and two-thirds had a flush toilet.

There is a demand for 75.000 houses in the municipality's urban area in all categories, and another demand for 46.000 houses in rural settlements. The biggest need for urban houses is in East London. According to estimation the population will grow by 148.223 people between 2011 and 2020. Based on the above statistics it can be concluded that thousands of low-cost housing units will have to be built in the near future.

## Program of Requirements

The basis of this program is to ensure that new, low-cost housing projects will be built in suitable locations. In this program, municipal requirements, the prevailing laws and regulations, and wishes from future occupants and social housing institutions are aggregated in one, comprehensive program of requirements. There are also some general requirements regarding the land namely the need to keep expenses low, the quality of life high and to protect the environment.

Potential locations are assessed against these requirements and changes that would have to be applied to make the location suitable are considered. Sometimes changing the circumstances can be too expensive, unrealistic or time-consuming. In these cases the location is regarded as mostly unsuitable for low-cost housing in the near future.

The requirements are divided in four categories. The first category deals with the zoning scheme, land use requirements, coverage, erf size, density, building lines, height, parking and roads. In the land category, requirements regarding ownership, vegetation, ground level, floods, soil type, protected areas and status are considered. Thirdly, environmental requirements take into account noise, offensive odors, ground pollution, air quality and daylight. The last category considers the road network and all necessary amenities. Size and measurement requirements for the low-cost units are included within the program.

## Locations

Eight locations were tested for the program of requirements. In summary, it was found that four locations might be suitable for social housing, but the zoning scheme for all of them has to be changed. This is due to the fact that the municipality has limited land available with a residential zoning of 1 or 5. Social housing on land not zoned 1 or 5 will result in urban sprawl and does not consolidate the urban edge. Therefore this is not in line with the aims of the municipality and modification of the zoning scheme should be considered. To change the zoning scheme, the City Planning Department has to be contacted to start the procedure. In the end the council will decide if the rezoning will be approved or not.

Providing that the zoning scheme can be changed, and further research is done about the soil and ground pollution, the following locations will be suitable for a rental stock: Arcadia (illegally used by a driving school), Baysville (former landfill with a non-perennial river running through it) and Southernwood (one part does not belong to the municipality). Summer Pride can be suitable for RDP units, but further research has to be done about the two non-perennial rivers that are running through the property and the influence of the highway in the south of the area.

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## Abbreviations

BCMM	Buffalo City Metropolitan Municipality
SA	South Africa
EC	Eastern Cape
EL	East London
KWT	King William's Town
CRU(s)	Community Residential Unit(s)
SHI(s)	Social Housing Institution(s)
RDP	Reconstruction and Development Programme
R	(South African) Rand
MOSS	Municipality Open Space System
IDP	Integrated Development Plan
SDF	Spatial Development Framework
PoR	Program of Requirements
GIS	Geographic Information System
STATS	Statistics South Africa

## Definitions

**"1:100 year flood line"** - means that the change is 1% every year that the water of a river will reach this flood line.

**"Communal Open Space"** - means land or space that is intended for common ownership and for common use of the citizens of dwelling units and may include private roads that provide access to dwelling units.

**"Coverage"** - means the total percentage area of a site that may be covered by buildings measured over the outside walls and covered by a roof or projection.

**"Dwelling house"** - means a detached building containing only one dwelling unit complying with the National Building Regulations.

**"Dwelling unit"** - means a self-contained, interlocking group of rooms with not more than one kitchen, used only for the living accommodation and housing of a single family at an occupation ratio not exceeding three persons per habitable room.

**"Erf"** - means 'area of estate', a plot of land marked off for building purposes.

**"Flats"** - means a building containing three or more dwelling units for human habitation, together with such outbuildings as are ordinarily used therewith.

**"Formal housing"** - means permanent structures made of solid materials (bricks and mortar), located in formally established and planned housing areas

**"Ground floor"** - means the lowest floor of a building, which is not a basement.

**"Informal housing"** - means not permanent structures, even though they may have been inhabited for a considerable length of time. Mostly shacks in new or existing shack settlements on municipal land.

**"Low-cost housing"** - means dwellings for the poor, built with the minimum quality standards and funded by subsidies.

**"Non-perennial rivers"** - means a river that only flows after heavy rainfall, most of the time their riverbanks are dry. Some non-perennial rivers flow more often than others.

**"Occupant"** - means any person who physically inhabits a building, a structure or land.

**"Shack"** - means 'slums', inadequate shelter built by the poor, mostly made from timber and corrugated iron. Most shacks do not have sanitation, tap water and legal electricity.

**"Social housing"** - means a rental or co-operative housing option for low income households, which requires and provides institutionalized management in approved projects in designated restructuring zones with the benefit of public funding.

**"Storey"** - means a single level of a building, excluding a basement, which does not exceed a height of 3m.

**"Township"** - means a racially segregated area in South Africa established by the government during Apartheid as a residence for people of color.

**"Traditional housing"** - means a traditional hut or structure made of traditional materials. Thatched roofs and walls constructed of mud or timber, mostly in rural areas.

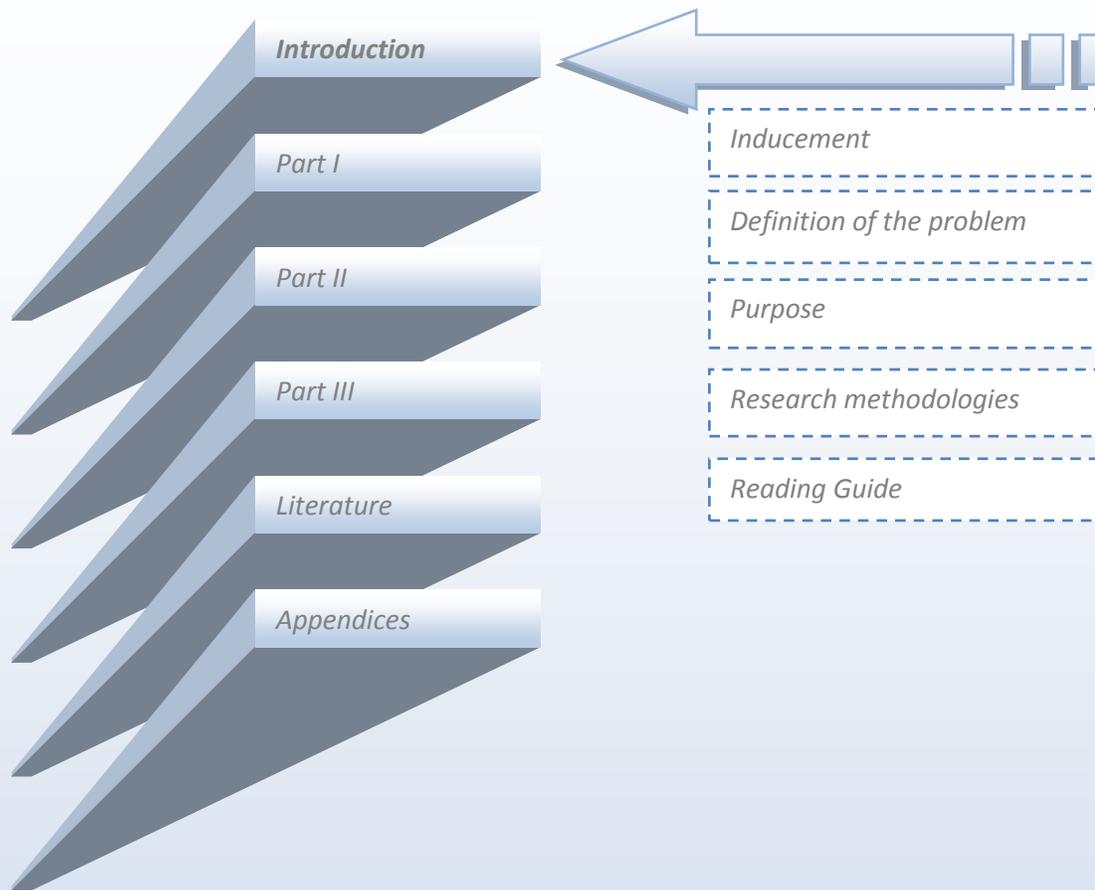
**"Urban Edge"** (in relation to the Municipality's Spatial Development Framework) - means a demarcated line that defines the zone within which the municipality will endeavor to upgrade levels of infrastructure over a period of time and according to available resources, to support higher densities of residential, industrial, and commercial development.

**"Zone"**, when used as a noun - means land set apart by a zoning scheme for a particular zoning, irrespective of whether it comprises one or more land units or part of a land unit.

**"Zoning"**, when used as a noun - means a category of directions setting out the purpose for which land may be used and the land use restrictions applicable in respect of the said category of directions, as determined by relevant zoning scheme regulations.

**"Zoning scheme"** - means the Buffalo City Zoning Scheme consisting of scheme regulations and a register, with or without a zoning map.

(BCMM, 2007) (Government of South Africa, 2008)



**“In order to make plans, which signify a true improvement, in which the dreamed fantasy, the ‘Wunschbild’, is also grounded in reality, it is necessary that the tendencies which are presumed to exist, really do exist.”**

Quote by Theo van Lohuizen

# Chapter 1: Introduction

## 1.1. Inducement

This research is done by order of Buffalo City Metropolitan Municipality (BCMM), a municipality in the Eastern Cape province of South Africa. The assignment originated through contact between BCMM (“Buffalo City”) and the University of Applied Sciences Utrecht. The assignment will be performed in the context of the project ‘minor PPP’, which stands for People Planet Profit, a program of the University of Applied Sciences Utrecht, with a few projects organized in South Africa.

Minor PPP focuses on researching sustainable urban developments and is directed at the improvement of living conditions in less developed areas. BCMM is experiencing problems with the living conditions of some citizens in the community and a part of the population lives in expired and poor quality shacks. Therefore the municipality needs help in meeting this challenge. The intention of this project is to establish knowledge, skills and experience transfer through a Dutch student exchange program, over the next five years. The purpose of the project for Buffalo City is to create sustainable housing for the poor, and to choose the right location for building new houses as a part of sustainability.

## 1.2. Definition of the problem

South Africa is, besides its beauty, known as a country with major problems such as high levels of unemployment, HIV and AIDS and poor general living conditions. There is an immense housing backlog in the whole country, especially in the bigger urban cores of South Africa. The government tries hard to solve these problems and step-by-step programs are being implemented to improve these issues. It is believed that, by solving the housing backlog and providing houses for poor people, a major part of these problems can be solved. The national government, therefore, embarked on several housing initiatives and has built millions of houses over the last 18 years.

While building these houses, however, some mistakes were made, especially regarding the location of these dwellings. After Apartheid ended in 1994, there was an enormous demand for houses and cities were growing fast. The focus of the government was to build as many houses as it could, as fast as possible. In an effort to address the

massive housing need, it did not always take the time to do research about which locations were most suitable for housing. Many low-cost houses were consequently built in inappropriate places, such as being too far away from amenities. This resulted in problems with transport and infrastructure, more poverty, social problems and fewer job-opportunities for the citizens of these areas.

The housing backlog is still not solved and there is a shortage of houses, especially for the poor population. The government is still building houses, but the process is not going fast enough. Buffalo City is one of those areas that is still struggling with a major housing backlog, especially quality, low-cost housing. Buffalo City counts almost 60.000 shacks; most of these are inadequate houses with no sanitation and legal electricity. (Wanklin & Naidoo Development Specialists, 2010) The living circumstances of most people living in these units are pitiful. Finding sustainable, low-cost housing solutions for a population this big remains a major challenge. Additionally, shack-dwellers endure the attendant consequential socio-economic problems of alcoholism, unemployment and crime. The scope of the problem is further specified in chapter 3.

The delivery of sustainable housing is a goal of the municipality for the coming years. But there are some problems that place meeting this goal at risk, such as:

- The process of land identification is slow and complicated
- There is restricted land available near the city center
- The informal settlements are growing (on municipal land)
- There are not enough funds for new primary amenities

(Wanklin & Naidoo Development Specialists, 2010)

## 1.3. Purpose

The municipality needs help with identification of land that might be suitable for low-cost housing. The mistakes that have been made historically cannot repeat themselves.

Therefore the goal of this research is to deliver a structured program that can be used to test locations. This program has to be a balanced combination between legislative regulations,

environmental aspects, municipal requirements, requirements from social housing institutions and wishes from future occupants. Also financial aspects have to be taken into account; the cost of building houses has to stay as low as possible, without an impact on the quality.

During this research, the program tested eight locations, with the aim of identifying at least one location that is suitable for low-cost housing. The ultimate aim of this research is to provide the municipality with a program it can use to identify several locations for housing within the municipality in the near future.

The core purpose of this research, then, is to answer the following question: 'Which locations within Buffalo City are suitable for low-cost housing in the near future and what are the requirements for these locations?'

#### 1.4. Research methodologies

The goal that had to be reached in the project was clear, but a methodology was required. A plan of approach was set out detailing what had to be done and how it was to be done. In this plan the main question was established and divided into four sub-questions, and each of these divided yet again into yet more questions. To arrive at the answer to the main question, all sub-questions needed to be addressed.

The first step after the plan of approach was to do the inventory. In this step answers were required to the following questions:

- What is the general situation in BCMM?
- What are the housing conditions in BCMM and how does the low-cost housing system work?

The input required to answer these questions was mostly desk research. However, in Buffalo City the necessary data is not readily available in writing. Therefore some field research was also required during this stage and social housing institutions and municipal employees were interviewed.

Stage two was to establish a list of requirements, setting out the specifications a location has to meet, to be suitable for low-

cost housing. The input for this phase was partly by more desk research, to establish, for example, the regulatory framework. In addition, the use of interviews of municipal staff and social housing institutions yielded important information. Finally, a vital dimension was obtained by questioning future occupants. It is important to note that, at this stage, it became clear that the demands of future occupants were unrealistically high and there is an expectation gap as regards subsidized housing.

By combining all these elements of information a balanced inventory program was devised, including a standard enquiry form and users' manual that can be used in every location.

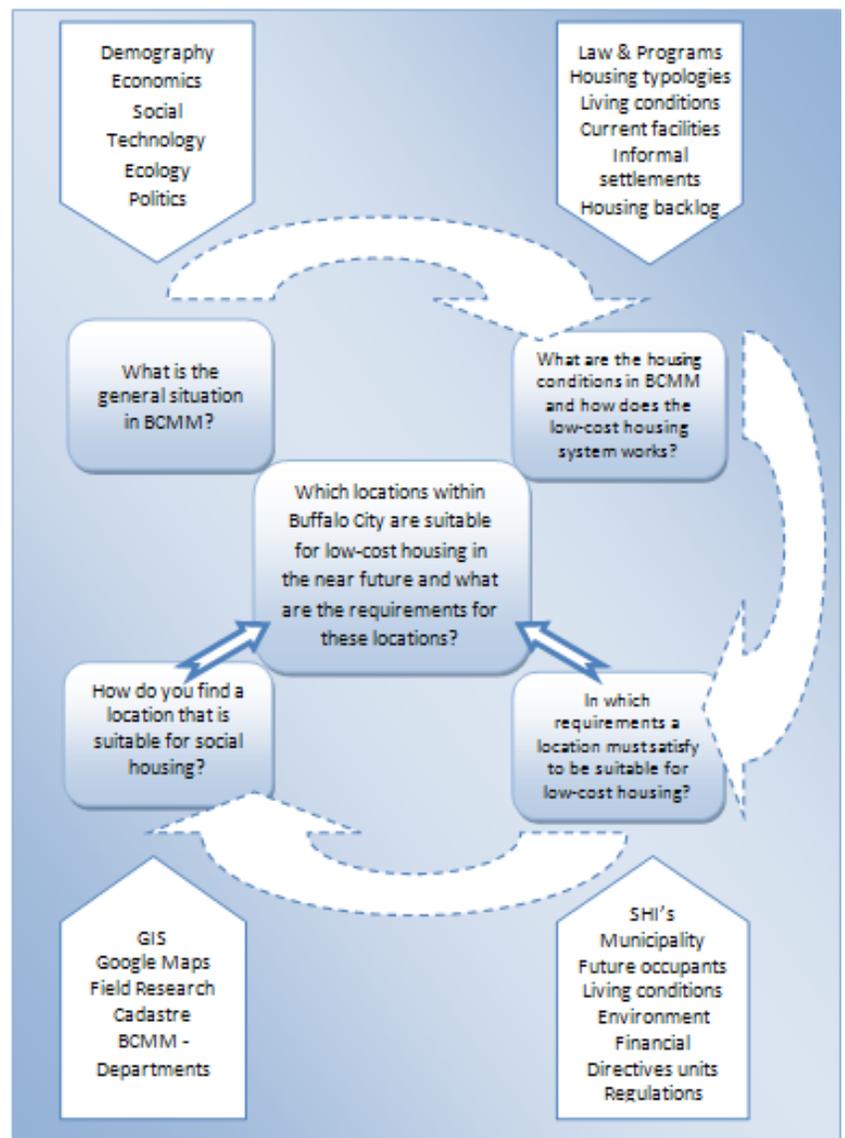


Figure 1.1. Schematic process

The third step was to search for locations that might be suitable for low-cost housing. A possible 85 locations were identified, mostly through satellite pictures. Of these, 60 were visited. The other remaining 25 could not be found, reached by road, or were in areas considered too dangerous to visit alone. From the 60 locations, a selection of eight properties was made; those with - at first sight - a good chance of suitability. Locations with steep slopes, thick vegetation, other developments etc. were dismissed.

The remaining eight locations were tested against the requirement specifications and the outcome of this process defined whether or not the areas were, indeed, suitable.



Figure 1.2. Selection locations

The last stage was to analyze all the information and answer the main question, and then gather all the data into one document, namely, this paper.

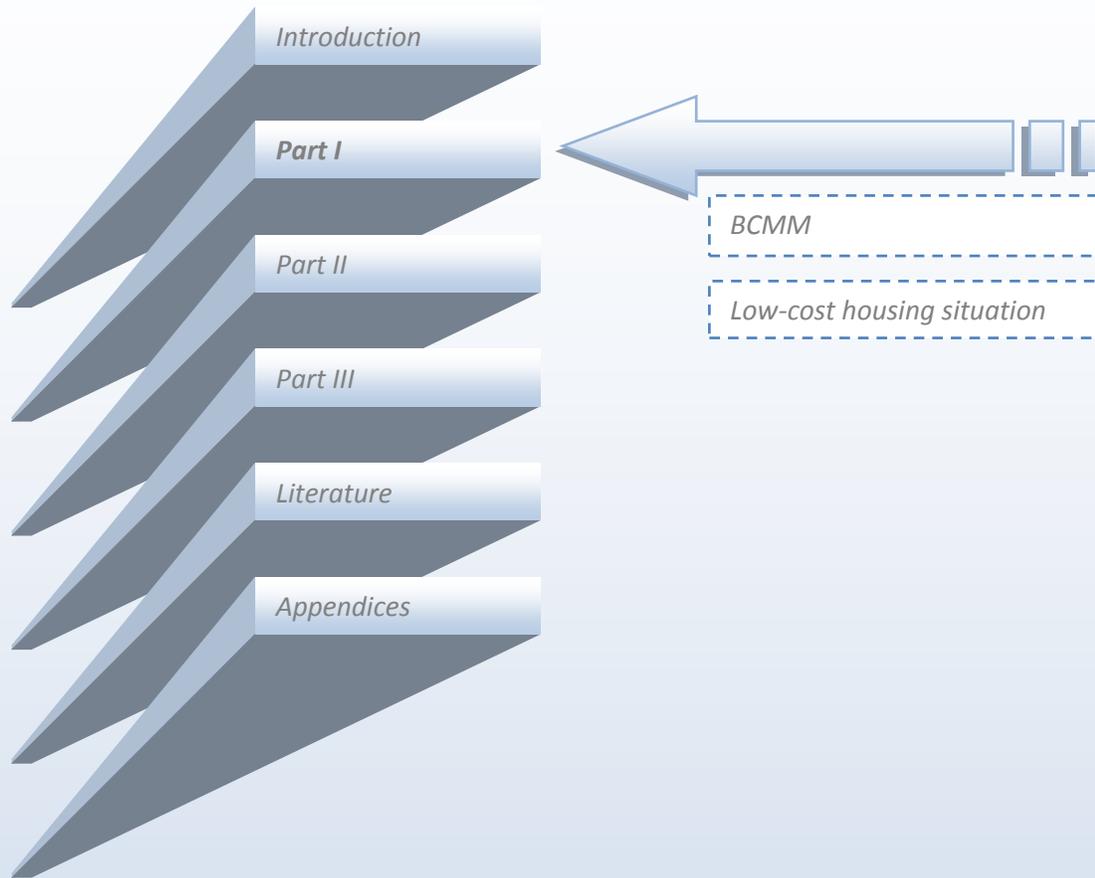
## 1.5. Reading guide

The report is divided into three parts and supported by Annexures: Part 1 deals with everything that has to be known before the program of requirements can be understood; it gives an overview of the current situation in Buffalo City. Chapter 2 provides demographic information, such as population and the city's developmental problems. Chapter 3 details the low-cost housing situation.

In part 2, an answer is given to the question: 'In which requirements a location must satisfy to be suitable for low-cost housing?' Chapter 4 provides detail on the program of requirements and in chapter 5 it is tested on four different locations. Chapter 6 discusses the procedure of changing a zoning scheme.

In part 3 an answer is given to the main question based on the input of section 1 and 2. Finally, a conclusion is drawn and recommendations to the municipality are made.

In the appendices more information about certain aspects can be found and the text contains references to the attachments.



**Part I: What are the housing conditions in BCMM and how does the low-cost housing system work?**

## Chapter 2: BCMM

South Africa is a multifaceted country, with impressive landscapes and a huge variety of flora, fauna and climatic zones. The country has a population of more than 50-million people (STATS, 2011), from a wide variety of backgrounds, languages, culture and religions, all living together on the same land. South Africa is marked by its history of discrimination, corruption and poverty. The country is subdivided into nine provinces, each with its own beauty.

### 2.1. General information BCMM

The BCMM, known as Buffalo City can be found in the Eastern Cape Province. With over 1-million citizens, it is the eighth biggest municipality of South Africa.

The BCMM was established in 2000 due to a national reformation. The municipality consists of two former municipalities, East London and King William's Town, together with some 280 other settlements. Bisho, the capital of the Eastern Cape, can be found in the municipality. It is, however, a small settlement. The municipality consists of three urban cores, East London, Mdantsane and King William's Town. In 2011 the municipality acquired a metropolitan status. (BCMM, n.d.)



Figure 2.1. The nine 9 provinces of SA (Lehohla, P., 2010)

The map in figure 2.2. gives an overview of the municipality. Its coastline at the Indian Ocean is 68 Kms long and counts 14 beaches. The municipality is named after the Buffalo River, finding its way to the sea in East London. The whole area covers 2,515 square Kms. (BCMM, 2011)

Buffalo City can be reached by road, rail, sea and air. East London Airport has flights to and from Cape Town, Johannesburg, Durban and Port Elizabeth. The municipality has connections to the N2, N6 and R72, the national roads.

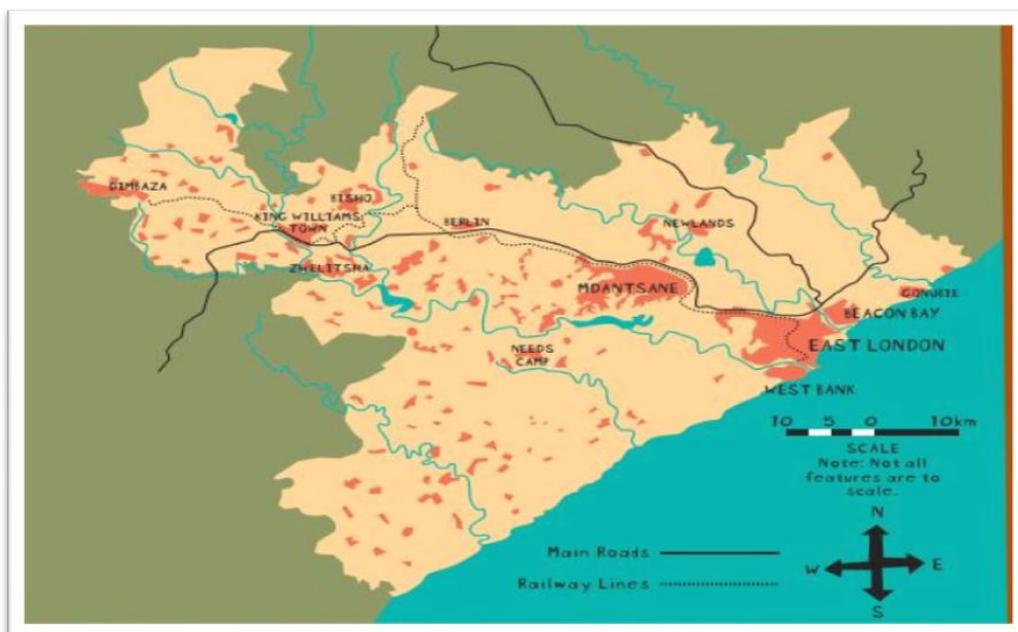


Figure 2.2. Map of BCMM (BCMM, 2011)

## 2.2. Population of BCMM

The estimated population of South Africa in 2011 was 50.586.757 and 6.849.958 (13,5%) of this is living in the Eastern Cape. This makes the Eastern Cape the second largest province, after Gauteng and KwaZulu-Natal. (STATS, 2011)

At the end of 2007, Statistics South Africa estimated the total population of Buffalo City to be 724.306 (701.895 in 2001 and 686.948 in 1996). But there has been some debate regarding possible under-counting of the population in Buffalo City, because people whose status is unknown were excluded from this counting since many are living in rural areas or informal settlements. In May 2011 the Umhlaba Consulting Group estimated that there are 780.287 people living in the urban area and another 257.962 people in the rural areas of the municipality, in total 1.038.249 citizens.

South Africa's population consists of many different cultures, with different backgrounds, languages and religions. The black Africans are by far the biggest population group in the country. Table 1 provides a subdivision of the various population groups.

**Table 1. Percentage distribution of population groups**

Population group	% SA	% EC	% BCMM
African	79,5	87,6	85,2
Coloured	9,0	7,5	7,2
Indian/Asian	2,5	0,3	0,3
White	9,0	4,7	7,4

(STATS, 2011)(BCMM, 2010)

Several languages are spoken in South Africa. The 11 official languages are: Afrikaans, English, Ndebele, Northern Sotho, Sotho, Swazi, Tswana, Tsonga, Venda, Xhosa and Zulu. The table below indicates the languages that are most common in Buffalo City, the Eastern Cape and South Africa.

**Table 2. Percentage distribution of languages**

Languages	% SA	% EC	% BCMM
Afrikaans	13,3	9,6	6,5
Engels	8,2	3,7	8,7
Xhosa	17,6	83,8	84,1
Other	60,9	2,9	0,7

(STATS, 2007)

## 2.3. Areas for improvement BCMM

The municipality is experiencing many challenging issues within its boundaries, but that is not different from the rest of the country. The biggest problems are unemployment, poverty, poor health, domestic and industrial waste, crime and housing. The municipality is working hard to solve these problems and tries to achieve this through the Integrated Development Plan (IDP). *"In this document, the Buffalo City Metropolitan Municipality is embarking on a development path that is meant to address the needs of our people, to create an environment that is conducive to economic growth, to alleviate poverty, to create a better life for our people, to bring meaning and respectability to the lives of the diverse communities of Buffalo City, and to transform metropolitan area into the kind of home that all aspire for."* (BCMM, quote by Ncitha, Z., 2011) The motto of the IDP is 'A city growing with you...'. A Spatial Development Framework is linked to the IDP, to support the development vision and to consolidate the urban edge.

### 2.3.1. Unemployment and income

The unemployment rate in South Africa is high and the monthly income of many people is barely sufficient to provide for food: one of the main causes of poverty. It is hoped that, by building low-cost houses, at least some form of poverty alleviation will be achieved. Because of unemployment many people are unable to afford decent shelter, therefore these numbers are important for the research.

Most numbers apply to the working age population, namely people between the ages of 15 and 64 years. In the table below are the percentages of the population who are of working age.

**Table 3. Percentage distribution of working age**

Age	0-14	15-64	65+
% of BCM (2007)	26,8	67,5	5,7
% SA (2011)	31,3	63,7	5,0

(BCMM, 2010) (STATS, 2011)

Not everybody of working age is economically active, however, such as students, housemothers and the disabled. The economically active group of people consists of paid workers and those who are unemployed, but seriously searching for a job. As stated previously, the unemployment rate in South Africa is high, especially among women. The

unemployment statistics of Buffalo City Municipality are not up to date, but the latest statistics (2004) show that the economically active population is smaller in Buffalo City than in the rest of South Africa. The current unemployment rate of Buffalo City is estimated at 39,1%. In table 4 the market status of the BCMM population is compared with the South African average.

**Table 4. Percentage distribution of market status**

Area	Economically active	Not economically active	Unemployment
BCMM(2004)	52,0%	48,0%	39,1%
SA (2010)	54,3%	45,7%	25,3%

(Lehohla, P., 2010) (BCMM, 2011)

By counting up the percentages, it can be calculated that 21,4% of all of the municipality's citizens have a steady job. 60% of the unemployed had lower-skill levels and had not progressed their education beyond grade 9. (BCMM, 2011) More numbers and information about the population, unemployment and schooling can be found in Appendix A.

Unemployment clearly results in households with no, or a low, income. The table below presents the annual household income in Buffalo City. Many households do not earn enough money to sustain themselves, given that the subsistence level is R1500 per household, and more than half of the BCMM households are living below this level.

**Table 5. Annual household income BCMM (2007)**

Income (month)	Population	% population
Unspecified	18 893	9,06
R1 - R400	18 677	8,96
R401 - R800	26 181	12,56
R801 - R1 600	62 514	30,00
R1 601 - R3 200	29 461	14,14
R3 201 - R6 400	25 179	12,08
R6 401 - R12 800	20 605	9,89
R12 801 and more	7 520	5,8
Total	208 389	100

(BCMM, 2011)

### 2.3.2. Health

Health in South Africa is considered to be a major challenge. Compared with other countries, more than 10% of the population has HIV and AIDS. (STATS, 2011) Also life expectancy in South Africa is low compared with some European countries. People with significantly compromised immunity owing to disease need adequate shelter, to keep them from getting sicker than they already are. More information and numbers about health can be found in appendix B.

### 2.3.3. Crime

South Africa has high crime levels, with more murders, robberies and rapes being committed annually than in the average developed country. Good shelter can help protect people from falling victim to such crimes. More information and numbers about the crime in South Africa can be found in appendix C.

## Chapter 3: Low-cost housing situation

This chapter gives an overview of the housing situation of the poor in South Africa. It explains how the system works, what housing facilities there are currently, what the living conditions are like, and an overview of the housing backlog.

### 3.1. Why low-cost housing?

In 1943 Abraham Harold Maslow, an American professor of psychology, developed a theory of what human beings need, named the hierarchy of needs. He divided our needs into five categories based on what we need the most. The first needs of human beings are, according to Maslow, the 'physiological needs'. These include breathing, food, water, sleep, homeostasis and excretion for without these needs human beings will die. After these needs, we desire the most for 'safety needs' including healthcare, financial resources, family and protection. One of the desires in this category is need for a shelter. (Maslow, A. H., 1943)

We need housing accommodation to protect us from wild animals, extremes of temperature, wind and rainfall and criminals. A shelter gives people privacy, protection and security; people need shelter for a good life quality.

Some people in South Africa cannot provide for the basic needs for shelter alone and need government support in the form of public-funded, low-cost housing.

### 3.2. Regulations and programs

Publicly funded housing is a relatively new concept in South Africa. The first housing programs for the poor were established 18 years ago, after Apartheid ended.

#### 3.2.1. Constitution

The most important and inviolate law in a country is its Constitution, and a Bill of Rights is included in the Constitution of South Africa. Article 26 of the Bill of Rights states that everybody in South Africa has the right to adequate housing, see framework on the right. (Constitutional Court, 1996)

#### 3.2.2. Housing policy

In 1994 the first housing policy was established by the new South African government; there was a lot of catching up to do after Apartheid ended. There was a housing backlog and the living conditions of many citizens were brutal. In this year the government approved the RDP, in terms of its White Paper on Housing. The purpose of this plan was to build 300.000 houses for the poorest of the poor each year, with a minimum of 1.000.000 houses finished in 1999. The low-cost houses were to be funded by the government and between 1994 and 2010, 2.700.000 of these units were built. (Wanklin & Naidoo Development Specialists, 2010)

#### 3.2.3. Laws

After the housing policy was established, laws were passed to ensure that South Africa's people have access to adequate housing. The most important laws pertaining to low-cost housing were the Development Facilitation Act in 1995 (made to speed up land development), the Housing Act of 1997 (which defines the responsibilities of municipalities, provinces and the national government with the aim to provide housing for the people that were most in need) and the Rental Housing Act of 1999 (which defines the relationship between landlords and tenants). (Paralegal Advice, 2011)

#### Article 26, Housing

1. "Everyone has the right to have access to adequate housing.
2. The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of this right.
3. No one may be evicted from their home, or have their home demolished, without an order of court made after considering all the relevant circumstances. No legislation may permit arbitrary evictions."

### 3.2.4. Breaking New Ground

Breaking New Ground (2004) is a program that ensures delivery of low-cost houses to address the housing backlog, especially for the poorest of the poor. The program seeks to replace or improve informal settlements as soon as possible. The program's aim is to replace them with different housing in better locations, with better job-opportunities and more primary amenities in the neighborhood. Providing tap water, sanitation and electricity is a must.

The program provides for faster delivery of housing by reducing administrative blockages and permissions. Within the program, housing consumers will also receive education about their right and responsibilities. In 2010 Breaking New Ground introduced the Housing Demand Database by to replace the current waiting lists for all houses provided by the government. (Paralegal Advice, 2011)

### 3.2.5. Housing Subsidy Scheme

The social housing program is an expensive one, therefore subsidies are provided by the government for social housing projects.

The total amount allocated to subsidies for housing for the poor was R15-billion<sup>1</sup> in 2010/2011. Every year this amount increases, with the amount reserved for 2013-2014 set at R17,9<sup>2</sup>-billion. (Burger, D., 2011) The Eastern Cape Province has an allocation of R2,27<sup>3</sup>-billion in 2012-2013 for Human Settlement Development, rising to R2,4<sup>4</sup>-billion in 2013-2014. (Sharpley, G., 2012)

The four most important subsidies in terms of the research are the individual and the institutional subsidies, the Community Residential Units Programme and the Urban Settlement Development Grant.

#### 3.2.5.1. Individual subsidy

The individual subsidy is used for building the top structure of low-cost houses. With the grant poor households can acquire ownership of a better house or they can use it to get a house-building contract. The amount of the grant is based on the current delivery costs of a basic house of 40 m<sup>2</sup>. (Burger, D., 2011)

<sup>1</sup> R15.000.000.000

<sup>2</sup> R17.900.000.000

<sup>3</sup> R2.270.000.000

<sup>4</sup> R2.400.000.000

The grant depends on the income of a household. If the income is less than R1.500 per month the subsidy will be R84.000. If the household income is between R1.500 and R3.500 the grant will be R81.521. Households with disabled or health-stricken members can get an amount for extra costs that they need for making the house suitable. The subsidy will not be paid to the householder, but to the developer of the house. If the price of the house is more than R84.000 the householder has to pay the balance, plus the transfer, bond registration and attorney's costs. (Paralegal Advice, 2011)

This subsidy is only intended for households with no income or a maximum income of R3500 each month. Other requirements for getting this grant are that the applicant has to be a citizen of South Africa and has to be older than 21 years. Singles do not qualify and applicants have to be married or live with a partner, or they have to be a single parent. This also has to be the first property the householder buys. The housing subsidy will only be given away once to an applicant and the names of both partners will be registered on the database. After a divorce people will not get a second subsidy, and neither can their new partners get one when they register together. (Paralegal Advice, 2011)

#### 3.2.5.2. Institutional subsidy

Non-profit organizations, such as qualified housing institutions, can apply for an institutional subsidy and when a project is approved they obtain the grant. The goal is to provide rentable and rent-to-buy houses for lower income households. The subsidy is paid to the organization and the conditions to obtain a grant are:

- The seller or tenant does not have to pay the full purchase price
- The units cannot be sold before four years after delivery
- The transfer has to take place within the first four years after receiving the subsidy
- The institutions also have to invest their own capital in the project  
(Burger, D., 2011)

The amount of this grant per household is R55.706 and the amount is not dependant on how many rooms the units have. Households which rent these houses can still apply for the individual subsidy if they want to purchase a house. (Paralegal Advice, 2011)

Social housing institutions can also apply for an infrastructure subsidy and capital project funding (Capital Restructuring Grant).

#### 3.2.5.3. *Community Residential Units Programme*

The municipality can have an own rental stock that it leases to low income households. People living in these units have to earn less than R3501; therefore the rent is low, around R400 per unit. If a municipality wants to build more of these low-cost units they can use the funding of this program. The subsidy will give funding for the capital costs of the units. The amount of the subsidy will be calculated to cover the total project development costs. The subsidy will not give funding for the cost of the land, because these units are usually built on municipal or provincial ground. The subsidy can also cover costs of maintenance and facilitation. The funding will be paid to the provincial governments out of capital project funding. (The Social Housing Foundation, n.d.)

#### 3.2.5.4. *Urban Settlement Development Grant*

This grant is for improving the access to basic services for low-cost houses. While the houses themselves can be built using the individual subsidy, the infrastructure can be paid for from this grant. Services that can be provided by using this grant are: infrastructures for water, sanitation, refuse removal, street lighting, solid waste connection and bulk infrastructure, and roads which support the planning, funding and development of human settlements. (Parliamentary Monitoring Group, 2011)

The municipality will get this grant directly from the national department. The amount of this grant in the financial year of 2011-2012 for the Eastern Cape is R926.072.000; of this amount R502.626.000 is allocated to Buffalo City. This amount will rise to R648.074.000 in 2014. (National Treasury Department, 2011)

### 3.3. Low-cost housing typologies

Subsidized housing for the poor in South Africa consists of three different types, two rental options and one purchase option, described in the following three paragraphs.

#### 3.3.1 Reconstruction and Development Programme

RDP Units are houses built in terms of the RDP. These houses are built with subsidies and are intended for households with an income below R3500 each month. The municipality gets subsidies from the government to develop these houses on municipal or provincial land; with this money the municipality hires a contractor to build the units. The municipality is responsible for the infrastructure in the project, but it can get an extra grant for it. Households that were approved for the individual subsidy can get these houses for free, providing the costs stay below the subsidy amount.

The RDP units are mostly houses of 40m<sup>2</sup> with two bedrooms, a kitchen, lounge and a separate bathroom. The units have to comply with the housing standards. According to the RDP these are: *“As a minimum, all housing must provide protection from weather, a durable structure, and reasonable living space and privacy. A house must include sanitary facilities, storm-water drainage, a household energy supply and convenient access to clean water. Moreover, it must provide for secure tenure in a variety of forms. Upgrading of existing housing must be accomplished with these minimum standards in mind.”* (Government of South Africa, 1994)

With the delivery of these houses to families comes a garden that they can use to grow vegetables or keep chickens. The average size of the land delivered with the RDP units is 30m<sup>2</sup>, but there is no standard. (Jonkers, H., 2012)

In appendix D can be found an example of a floorplan of a RDP unit. There can be differences in this plan, depending on the contractor.

### 3.3.2. Social Housing Institutions

SHIs provide social housing for households with a monthly income between R2500 and R7500. The purpose of these companies is the development of affordable and good quality houses for households with a lower income. The maximum rent for a dwelling unit is 33% of their income. These are Section 21 companies, so they are non-profit associations. Houses provided by SHIs are mostly units in storey walk-up buildings, in projects starting from 200 units each. (Jonkers, H., 2012)

### 3.3.3. Community Residential Units

Besides low-cost rental units from the SHIs a municipality can provide rental units, or CRUs. These units are built by means of loan funding, in terms of the previous Housing Legislation, for people that cannot afford to buy their own house. These houses are intended for households with an income up to R3500 per month and they need to qualify for an individual subsidy. The rent of these units is lower than units from a SHI. Many of these units were built during Apartheid, and many are currently neglected. (Scheffers, H., 2012)

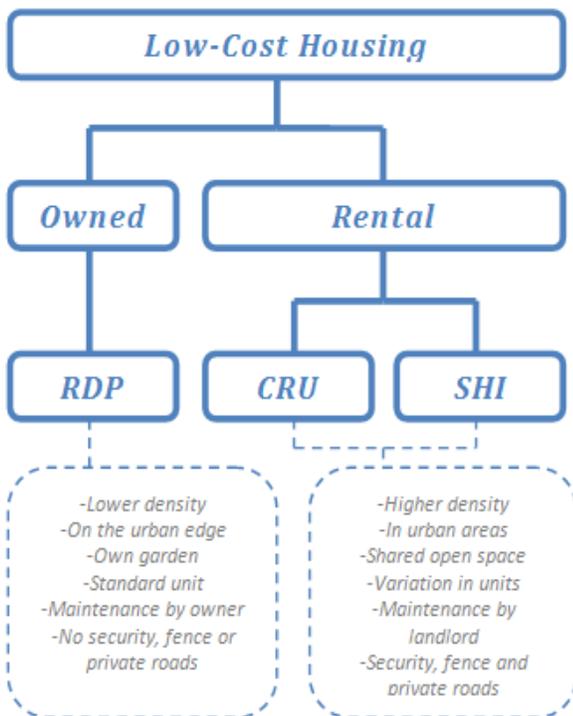


Figure 3.1. Three typologies of low-cost housing

### 3.4. Living Conditions

Most people in Buffalo City have housing, but the type and condition of these houses varies widely. Most people live in a house made of bricks. The table below shows the variety in housing typologies.

Table 6. Dwelling count by type in BCMM (2007)

Type	Count	%
Formal dwelling	138.789	67,4
Informal shack	51.022	24,8
Shack in backyard	6.632	3,2
Traditional	9.363	4,5

(Wanklin & Naidoo Development Specialists, 2010)

Not every household has access to electricity, but the number of households using electricity for lightning is increasing each year. In table 7 it can be seen that in 2007 almost three-quarters of households had electricity. There is however also illegal use of electricity in the city, especially in informal settlements.

Table 7. Percentage distribution of households by type of energy/fuel used for lighting

Energy/fuel	2001	2007
Electricity	62,9	74,3
Paraffin	34,5	23,8
Other	2,6	1,9

(BCMM, 2011)

More disturbing are the statistics about access to piped water. Less than half of the households had piped water in their houses in 2007, however the households with piped water in their dwellings is increasing. Many people do not have piped water on their own lot, but have a shared access point in the neighborhood. The table below shows the distribution of water source used by the households in Buffalo City.

Table 8. Percentage distributions of households by type of water source

Water source	2001	2007
Piped water inside the dwelling	31,4	47,8
Piped water inside the yard	27,4	18,4
Piped water from access point outside the yard	34,9	31,8
No piped water	6,3	2,1

(BCMM, 2011)

Unlike most households in Western European countries, only 66,7% of Buffalo City’s households had a flush toilet in 2007, see table 9. A number of households still use a pit latrine, which is a hole in the ground in a cubicle outside the main dwelling. More than 10% of the households do not have an own toilet, use public toilets instead, which are shared with neighbors. The remaining households use toilet facilities that are, for example, chemical toilets and buckets.

**Table 9. Percentage distribution of households by type of toilet facilities**

Type of toilet	2001	2007
Flush toilet	66,3	66,7
Pit latrine	18,7	16,6
Other	2,6	5,1
None	12,4	11,6

(BCMM, 2011)

### 3.5. Current low-cost housing facilities

Households with a low income, that cannot afford to purchase a house without a subsidy, need shelter. Some get the chance to occupy a subsidized, formal dwelling. Other people are not so lucky, however, and most of them are consequently forced to live in shacks. Most of these can be found in informal settlements.

#### 3.5.1. Informal settlements

In May 2011 Umhlaba Consulting Group conducted an overview of the housing situation in East London. They concluded that there were 154 informal settlements within urban areas and about 60.000 shacks. Most informal settlements are found in King William’s Town, East London and Mdantsane. The locations of all 154 informal settlements can be found in appendix E.

The biggest informal settlements in East London are Duncan Village (and surrounding) with 21.000 units, Mzamomhle with 2.500 units and Nompumelelo with 1.800 units. There are also many informal settlements in Mdantsane, but these are smaller and more separated. The situation in these settlements is pitiful, and more information about these townships can be found in appendix F.



Figure 3.2. Duncan Village (own picture)

### 3.5.2. Formal settlements

In this paragraph all the units that are built in BCMM with public funding are shown.

#### 3.5.2.1. RDP

Over the last 15 years many RDP units have been built all around South Africa and still there is a demand for yet more RDP houses. In Buffalo City 14.423 units have been completed and handed over (as at 23 February 2012). 12.779 units are currently being completed, while others are under construction and other projects are languishing. Most of the projects are (being) built by New Boss Construction, Khumbula Property Services and Khula Nathi Constructions. (Govender, D., 2012) The figure below provides an approximate indication of where the projects are.

Appendix G provides a list of current and planned projects.

However, not all households that obtained an RDP house are satisfied with the shelter; more than half of them are not. The main problem mentioned by the majority of households is that the houses are too small. (Kamman, E., Meyer, L., Makubalo, L., 2007) Other problems are that the distance to the city center or work is too great. Most people who apply for RDP housing do not have a car, and therefore a many informal settlements spring up near the city center, such as Duncan Village. Some people are attached to their former neighborhood and do not want to move to another area in order to obtain an RDP house.



Figure 3.4. RDP unit in East London (own picture)

In August 2011 it was made public that the B C MM encountered problems regarding the sale and renting out of RDP houses in that some households sold or rented out their RDP houses illegally. Sections 10A and 10B of the Housing Act 107 1997 stipulate that it is illegal for beneficiaries to sell or rent out their RDP unit in the period of eight years after obtaining the subsidized house. The household gets full ownership of the RDP unit after eight years, and only then they are allowed to sell them. This adversely affects the municipality's plans to decrease the number and size of informal settlements since, having illegally sold their dwelling, the legal owners of an RDP house revert to informal housing. Meanwhile, those who really need and want an RDP house are sometimes on the waiting list for years. (Sakati, S., 2011)

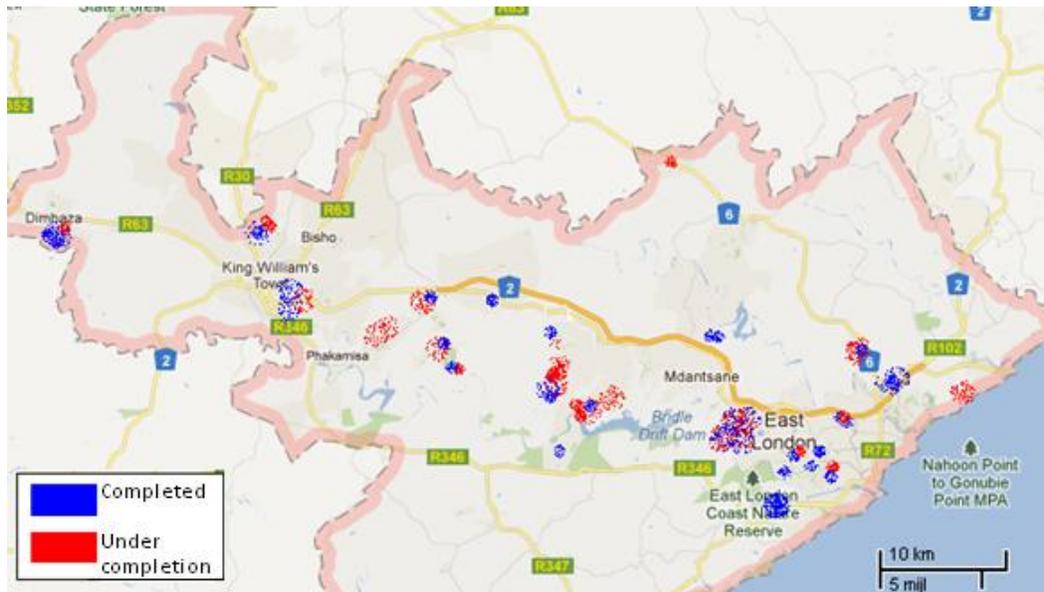


Figure 3.3. RDP projects in BCMM (Google Maps, modified)

### 3.5.2.2. SHIs

Buffalo City currently has three active SHIs, these are:

- Housing Association East London; HAEL
- Social Housing Company; SOHCO
- Own Haven Housing Association; OHHA

All of them have a few social housing settlements within the boundaries of East London. These associations have six projects, with 1769 subsidized rental units. Figure 3.6. shows where the housing projects can be found.

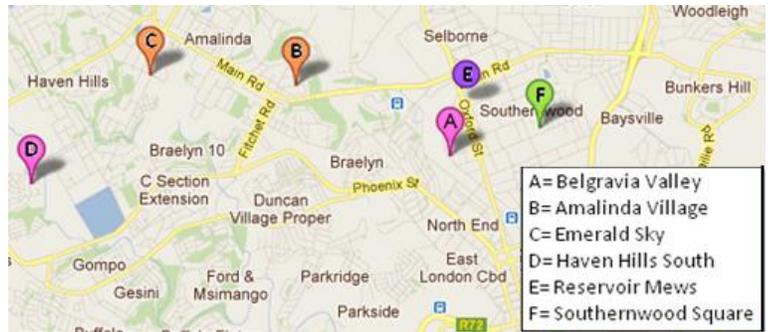


Figure 3.6. Social housing projects in East London (Google Maps, modified)



Figure 3.5. Haven Hills South (SHI) (picture by Jonkers, H.)

These units have rental fees varying between R740 for bachelor units up to R2650 for units with three bedrooms.

(Dillan, S., 2012) (Mhalunge, S., 2012) (Nofemele, L., 2012) (Tunzi, N., 2012)

More information about the individual SHIs and projects can be found in appendix H.

### 3.5.2.3. CRU

The municipality provides residential units, but the conditions of these houses are not as good as the condition of the association houses. All of the residential units were built more than 20 years ago, during Apartheid. Since then most of these houses have not been renovated. These houses were built for the poorest of the poor, so the rental fee is very low, lower than R400. (Scheffers, H., 2012)

The rental stock of these units in BCMM is 2200 and all of these houses are managed by the Housing Department. One of the problems is that some of these houses now are surrounded by informal shacks and many are situated in Duncan Village.

Therefore the management and control of these units becomes more difficult. A lot of these houses do not have sanitation or water supply inside the units and a whole neighborhood shares one water source.

One of the problems with the current community residential units is ongoing maintenance; many houses are dilapidated. If tenants have maintenance complaints, then they can complain at the housing help desk, but there are not enough funds available to repair every defect. Service and repairs are currently only done for items that are deemed urgent and necessary. Maintenance that is too expensive is not resolved at all. The maintenance department receives a budget of R2.500.000 each year for the municipality's social housing projects, but that is not enough to keep the units in a good condition. This problem is compounded by tenant neglect. (Jonkers, H., 2011)

Other problems with these units include the high unemployment levels, the non-payment of rent, illegal electricity use, health and safety related problems and overcrowding.

In Appendix I more information about the individual projects can be found.



Figure 3.7. Pefferville Flats (CRU) (own picture)

## 3.6. Housing backlog

### 3.6.1. Current

In 2007, 28% of the houses in Buffalo City were informal shacks and backyard shacks. Most of these are inadequate units without sanitation, legal electricity and piped water. Most of the households living in these shacks have no income, or a low income, and they do not have the money to purchase adequate shelter without government support.

In 2003 it was estimated then that there was demand for approximately 75.000 houses in the urban area of the municipality. The housing need is for all categories in the urban area, from poorer than poor, to rich, and for rental houses and freehold. However these estimations were without the need for rural settlements and it was estimated that there was a demand for 46.000 rural settlements. In 2010 the municipality believed these needs are much the same. The biggest need for urban houses is in East London, see table 10.

**Table 10. Housing Backlog in Buffalo City by area**

	Housing Backlog
East London	33.314
Mdantsane/Berlin	14.859
King William's Town	15.910
Other Urban	10.955
Rural	46.000
<b>Total</b>	<b>121.036</b>

(Wanklin & Naidoo Development Specialists, 2010)

There are no specific statistics about the housing shortage available, but at the time of writing the waiting list for CRUs and RDP units was about 40.000 households and 95% of these households earn less than R3500. (Scheffers, H., 2012)

### 3.6.2. Future

The population of South Africa is growing, which has a negative influence on the housing need. If there are no houses built, the housing backlog will become bigger, so the need for houses will keep growing. The last year a considerable number of houses were built in Buffalo City, but the housing backlog is still about the same. This is due to the growth in the number of residents in the city; between 2001 and 2011 the population increased by 143.241 people.

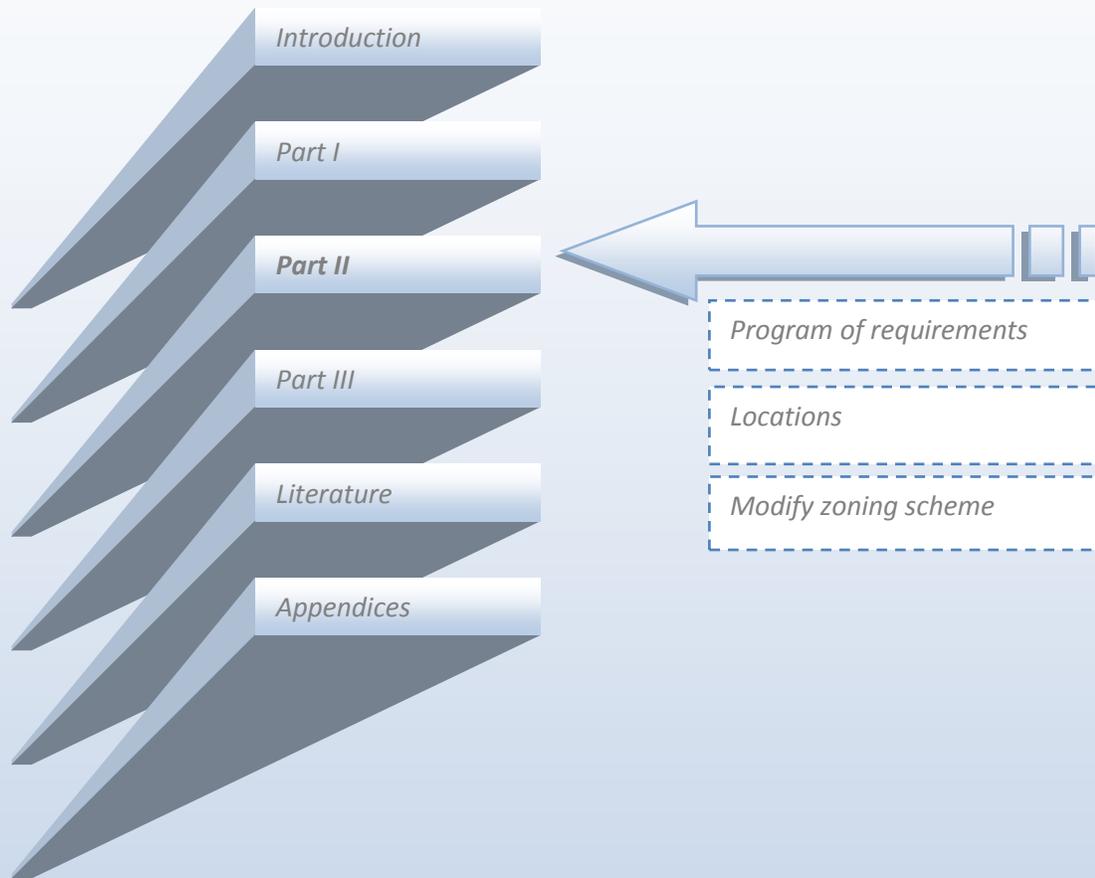
In May 2011 the Umhlaba Consulting Group estimated the number of citizens of Buffalo City and the future population. According to the Group the population will grow by 148.223 people between 2011 and 2020. (See table below). It can be deduced from this estimate that there will be an increased need for more houses in coming years.

**Table 11. Estimated population growth in BCMM**

	Urban Area	Rural Area	Total
<b>2001</b>	680.147	214.861	895.008
<b>2006</b>	728.493	235.427	963.930
<b>2011</b>	780.287	257.962	1.038.249
<b>2016</b>	835.757	282.653	1.118.105
<b>2020</b>	882.959	304.097	1.186.472

(Umhlaba Consulting Group, 2011)

According to Wanklin & Naidoo Development (2010) *“The HIV/Aids crisis is likely to result in a skewed demographic profile comprising relatively more elderly and orphaned children and fewer economically active adults, with the probable future need for more communal housing for the care of the elderly and orphans.”*



**Part II: Which requirements must a location satisfy to be suitable for low-cost housing?**

# Chapter 4: Program of Requirements

## 4.1. Establishment

The result of this research project is a guideline to ensure that new, low-cost housing projects will be built in suitable locations in the future. In compiling this guideline, requirements from the municipality, the regulations and by-laws as well as the needs and wishes of future occupants and social housing institutions have been aggregated into one program of requirements. There are also some general requirements regarding the land namely the need to keep expenses low, the quality of life high and to protect the environment.

Potential locations have been assessed against these requirements and changes that would have to be applied to make the location suitable are suggested. Sometimes changing the circumstances can be too expensive, unrealistic or time-consuming. In these cases the location is regarded as mostly unsuitable for low-cost housing in the near future. But this does not mean that the location is not suitable for

housing at all. The location still may be suitable for another dwelling house type.

The program is based on input from future developers, the municipality and the housing institutions. The desires and demands of future occupiers, households with an income between R0 and R7500, are gathered and analyzed. Their wishes are taken in account - especially the maximum desired distances to amenities.

How the program can be used to do research on a location, can be found in Appendix J. There is a guideline that explains each step, how to test it or how to get the required information. For the distance to amenities a 'scoreboard' has been devised. Adding the scores together will easily indicate whether a location is suitable for RDP units or for rental units.

The results of the findings can be reported on the inquiry form, which can be found in Appendix K. In this inquiry form an estimation of the number of units that fit the property has to be made. Requirements (such as from the zoning scheme) must be processed in these calculations. Obstacles such as rivers and steep slopes have to be taken in account in these estimations.

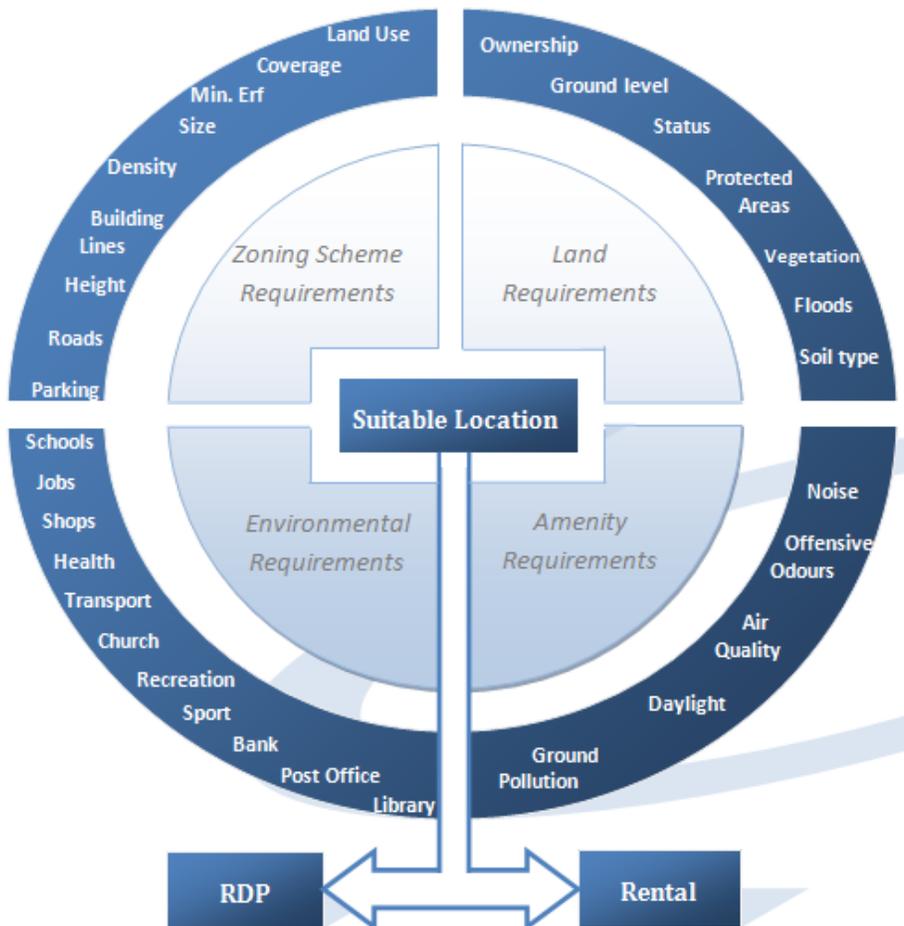


Figure 4.1. Schematic PoR

## 4.2. The program

### 4.2.1. Zoning scheme

Category: Zoning scheme		
Topic	Requirement	Specification
<b>Land use</b>	The zone has to be a residential zone 1 or 5.	The zoning scheme has to be a residential zone 1 or 5 before it is suitable for low-cost housing; otherwise the zoning scheme has to be changed to one of these.
Argumentation	Each 'zone' has its own use, a primary and consent use and its own requirements regarding to land use, type of buildings etc. Residential zone 1 is most suitable for RDP units and residential zone 5 is suitable for SHIs and CRUs. (BCMM, 2007) (Foster, R., 2012)	
	The most important requirements are set out in the following tables of this paragraph. This influences what kind of buildings fit the location the best.	
Impact	Medium, since if the zoning does not meet the requirement it can be changed. In Chapter 6 the procedure for changing the zoning scheme can be found.	

Category: Zoning scheme		
Topic	Requirement	Specification
<b>Coverage</b>	The maximum coverage of an area has to be looked up.	The maximum coverage that can be built on may not be exceeded.
Influence	This influences how big the footprint of houses and dwelling units can be in an area. If the percentage of the coverage is low there will be a lot of space for infrastructure, gardens, water and greening. If the maximum coverage is higher, it is allowed to build on a bigger percentage of the land, which will result in less open space. This can be used as a tool to calculate how many units can be built on the property.	

Category: Zoning scheme		
Topic	Requirement	Specification
<b>Minimum erf size</b>	The minimum size of an erf in an area has to be looked up.	The size of an individual erf cannot be less than prescribed in the zoning scheme. The minimum erf size cannot be more than 80m <sup>2</sup> for RDP units.
Influence	Some areas have a minimum erf size for buildings. Depending on this, it can be decided what kinds of houses are suitable for the location. The erf size of an RDP unit (and garden) is around 70m <sup>2</sup> . Storey walk-up buildings do not have their own erf size per unit.	

Category: Zoning scheme		
Topic	Requirement	Specification
<b>Density</b>	The requirements for the density have to be looked up.	The density requirements cannot be lower or higher than described in the zoning scheme (depending on the requirement).
Influence	Some areas have requirements as to the density. This influences how many households can live in an area. If the density is low there will be freestanding houses with an own garden; if the density is medium-high there will be 1 or 2 storey walk-up buildings or (semi) detached houses and if the density is high there will be multi-storey walkup buildings. A lot of people want to live near the city center; to fulfill this wish the density in these areas will be higher than at the boundaries of the city. Therefore RDP units can only be built in lower density areas. Higher densities in low-cost housing developments are encouraged by the SDF of the municipality.	

<b>Category: Zoning scheme</b>		
Topic	Requirement	Specification
<b>Building lines</b>	The minimum distance to a side line for building of an area has to be looked up.	The minimum distance to the side line cannot be exceeded.
	The minimum distance to a street line for building of an area has to be looked up.	The minimum distance to the street line cannot be exceeded.
	The minimum distance to a rear line for building of an area has to be looked up.	The minimum distance to the rear line cannot be exceeded.
<b>Influence</b>	This influences how many houses can be built on certain land and it must be used as a factor in the calculation of how many units can be built on the property.	

<b>Category: Zoning scheme</b>		
Topic	Requirement	Specification
<b>Height</b>	The maximum number of storeys in an area has to be looked up.	The maximum number of storeys in an area cannot be exceeded.
	The maximum height of buildings in an area has to be looked up.	The maximum building height in an area cannot be exceeded.
<b>Influence</b>	This influences how many houses and what kind of houses can be built on certain land. RDP units have one floor and CRUs and SHIs most often have three floors above ground level. Of all the residential zones, there are no zones that exceed a maximum height of three floors, but exemption can be made by council. (See appendix Q)	

<b>Category: Zoning scheme</b>		
Topic	Requirement	Specification
<b>Parking</b>	The parking requirements of an area have to be looked up.	The number of parking places cannot be less than prescribed in the zoning scheme.
<b>Influence</b>	This influences how many land and budget has to be available for parking in a project and will infect the project costs. Exemptions can be made by council. (See appendix Q)	

<b>Category: Zoning scheme</b>		
Topic	Requirement	Specification
<b>Roads</b>	The road requirements of an area have to be looked up.	Requirements to roads in the zoning scheme have to comply with the plan.
<b>Influence</b>	This influences what kinds of roads are preferred in the area and this can influence the project costs and housing typologies. Private roads for instance are not suitable within an RDP project but are a must for SHIs.	

#### 4.2.2. Land

Category: Land		
Topic	Requirement	Specification
<b>Ownership</b>	The land must be owned by the local or provincial government for CRUs and RDPs.	For CRUs and RDPs the owner of the land must be BCMM or the Eastern Cape Province.
	The land must be owned by the government or by a private owner for social houses from an institution.	For SHIs it is preferred that the land is owned by the municipality or province, they however can also purchase land from a private owner.
Argumentation	Purchase land from private owners will reflect in the costs of a house or building. Land owned by the local or provincial government will be suitable for low-cost houses to keep the expenses as low as possible. (Dillan, S.,2012) (Tunzi, N., 2012) (Jonkers, H., 2012) (Johannesen, M., 2012)	
Impact	High, since the costs to purchase land will be too high, therefore the houses will be more expensive and therefore not suitable for low-cost housing.	

Category: Land		
Topic	Requirement	Specification
<b>Vegetation</b>	The land cannot have high density vegetation.	It is preferred that the location is not covered with high density vegetation, such as forest.
	There cannot be indigenous or protected trees on the land.	Cutting, disturbing, damaging, destroying or removing an indigenous or protected tree is prohibited without a license.
	There cannot be virgin coastal thicket, coastal grassland or potential areas of conservation significance in on the land.	The municipality does not want to destroy virgin coastal thicket, coastal grassland or potential areas of conservation significance to build low cost housing.
	There cannot be critically endangered vegetation on the land.	There cannot be Cape flats sand fibs, Cape lowland alluvial vegetation, Cape vernal pools, central ruens shale renosterveld, eastern ruens shale renosterveld, elgin shale fynbos, ironwood dry forest, lourensford alluvium fynbos, lowveld riverine forest, mangrove forest, peninsula shale renosterveld, piketberg quartz succulent shrubland, ruens silcrete renosterveld, sand forest, swamp forest, swartland alluvium fynbos, swartland granite bulb veld, swartland shale renosterveld, swartland silcrete renosterveld, western ruens shale renosterveld or woodbush granite grassland on the land.
Argumentation	<p><b>BCMM Spatial Development Framework</b> Key areas of environmental concern include: 'Deforestation of forest areas, including coastal forest'. (BCMM, 2003)</p> <p><b>BCMM Integrated Zone Coastal Management Plan</b> (BCMM, 2005) <i>'No development within virgin coastal thicket, coastal grassland or potential areas of conservation significance within the nodal boundary.'</i></p> <p><b>National Forests Act</b> (Government of South Africa, 1998) <i>'Part 1 prohibits the destruction of indigenous trees in any natural forest without a license.'</i></p>	
Impact	Medium. If the location does not meet the requirement it still can be used as building ground, depending on the circumstances. It is possible that the progress will take more time and money. The value of the vegetation on the land has to be considered and if it can be built around.	

Category: Land		
Topic	Requirement	Specification
<b>Ground level</b>	Research must be done to assess if the ground level and slope suit low-cost housing.	The elevation and the slope of the land have to be suitable for low-cost housing. The slope of the land cannot be too big and the elevation cannot be too high or lower than sea level.
Argumentation	The municipal area contains many different height elevations therefore the land can be flat, uneven, hilly or mountainous. Flat ground is the easiest and therefore the cheapest, to build on. Uneven ground can have its benefits for storey walk-up buildings, because one floor can be built on a lower level. Therefore a building can have four floors, without needing an elevator or without changing the requirements for the maximum building height. Also building at great height can bring complications.	
Impact	Medium-high, depending on the ground level it could be decided that land is not suitable for low-cost housing. Uneven ground can be profitable for storey walk-up buildings, however. Sometimes only a part of a property is not suitable to build on, but can be used as open space.	

Category: Land		
Topic	Requirement	Specification
<b>Floods</b>	The proximity of rivers to the location must be researched and considered as a possible safety risk.	There cannot be rivers with a safety risk in the neighborhood. Rivers within a distance of 2 Kms have to be reported. Rivers within half a Km have to be checked. The location cannot be in the 1:100 year flood line. The distance from houses to the riverbank has to be at least 50 meters, but 100 meters is preferred.
	The existence of non-perennial rivers running through or near the location must be established.	Non-perennial rivers within the property or within a distance of 50 meters have to be checked. Housing cannot be built through or directly next to a non-perennial river center line.
	The location's distance from the sea and the high water marks must be established.	If the location is near the sea, the high water marks have to be at least 50 meters outside the location, but 100 meters is preferred. If the location is within half a Km of the sea further research is required. The distance to a coastal cliff must be at least 50 meters.
	The proximity of lakes to the location must be researched and considered as a possible safety risk.	There cannot be lakes with a safety risk in the neighborhood. Lakes within a distance of 1 Km have to be checked.
	The proximity of dams to the location must be researched and considered as a possible safety risk.	There cannot be dams with a safety risk in the neighborhood. Dams within a distance of 3 Kms have to be checked. A dam that can contain more than 50.000m <sup>2</sup> water and is higher than five meters can be a safety risk.
Argumentation	<b>National Water Act</b> (Government of South Africa, 1998) Chapter 12, Safety of dams and Chapter 14, Monitoring, Assessment and Information <b>Integrated Coastal Management Act</b> (Government of South Africa, 2008) <b>BCMM Integrated Zone Coastal Management Plan</b> (BCMM, 2005) When building near non-perennial rivers, mostly the vegetation around the non-perennial center line is assessed, to establish that the water does not come further than the bushes surrounding the 'river'. Non-perennial rivers never flow further than 32 meters of their centerline. (Becker, O., 2012)	
Impact	High, if the location does not meet the requirements it cannot be used for building, without big expense to alleviate the problems.	

Category: Land		
Topic	Requirement	Specification
<b>Soil type</b>	The soil has to be appropriate to dwelling construction.	The soil has to be appropriate to build on. Several types of soil are not appropriate to build on (or will involve big expense), these soils include: Sensitive slopes, exposed rocky headlands, fine grain sandy beach, wave cut rocky platforms, barren rock, mines & quarries, dongas & sheet erosion, wetland areas, swamps etc. All soil should be analyzed to establish whether it is suitable for the construction being planned. Not only is the soil composition important but also the depth of the load-bearing layers and the groundwater level.
Argumentation	The building ground soil must offer stability to a building. Ideally, the soil should not be unstable, not shift and does not expand during temperature changes or rainfall. If the soil is not good enough this can result in cracks or subsidence of the building. (Jansen, H. L., et al., 2005)	
Impact	High, because if the soil is not good enough the location cannot be built on without big expense to alleviate the problem. Some soil can only be used for certain types of housing, depending on the foundations.	

Category: Land		
Topic	Requirement	Specification
<b>Protected Areas</b>	The land cannot be a protected area or a MOSS (Municipal Open Space System)	The location cannot be in a protected area, including: Nature reserves, national parks, wilderness areas, protected environments, world heritage sites, specially protected forest areas, forest nature reserves, forest wilderness areas, mountain catchment areas. It is preferred that the land is not a MOSS.
Argumentation	<b>Protected Areas Act</b> , (Government of South Africa, 2003) <i>'No person may cut, disturb, damage, destroy or remove or receive a protected area.'</i> (without permission)  <b>National Forests Act</b> (Government of South Africa, 1998) <b>BCMM Integrated Zone Coastal Management Plan</b> (BCMM, 2005)	
Impact	High; in some circumstances housing can be built in some of the protected areas. This will however cost more time and money; therefore protected areas are most often not suitable for low-cost housing. A MOSS is always an open space zoning, therefore rezoning is necessary.	

Category: Land		
Topic	Requirement	Specification
<b>Status</b>	The land has to be undeveloped or the buildings on it have to be vacant.	It is preferred that the land is undeveloped. Any structures on the land cannot be in use.
Argumentation	If the land is developed there will be extra costs to demolish the current buildings and it will take more time. If the buildings on the land are still used, the process will take longer and will be more expensive.	
Impact	Medium-high; if the land is developed and the buildings are not vacant it depends on the kind, the number, functions and the volume of the buildings to assess whether the land is still suitable for a housing project. The costs will, however, be higher and the procedure will take more time.	

### 4.2.3. Environment

Category: Environment		
Topic	Requirement	Specification
<b>Noise</b>	There cannot be a lot of noise disturbances in the area.	The noise level in a residential area may not exceed 55dBA on daytime (06.00 – 22.00) and 45dBA on nighttime (22.00 – 06.00).
Argumentation	Noise can have a big influence on life quality; therefore the requirements have to comply with SANS 10117. (South African Bureau of Standards, 2008) (Government of South Africa, 1977)	
Impact	Medium-high. The local authority is allowed to build houses in an area up to 65dBA in daytime if they apply additional effective sound isolation on the houses. This will, however, result in higher building costs.	

Category: Environment		
Topic	Requirement	Specification
<b>Offensive odours</b>	The possible existence of offensive odors on the location must be established.	There cannot be offensive odors on the location.
Argumentation	<p>Offensive odors can affect the quality of life. Depending on the intensity and the kind of odor, bad smells can make life unpleasant.</p> <p>South Africa has no guidelines for controlling offensive odors. (Petzer, G. et al., n.d.)</p> <p>The municipality can, however, make contour lines, within which there can be no residential developments. That has been done for one location in East London, an abattoir in Cambridge (500m contour lines). (MacIntyre, A., 2012)</p>	
Impact	Medium, depending on the situation. There can be further research undertaken to reduce the odor at source.	

Category: Environment		
Topic	Requirement	Specification
<b>Ground pollution</b>	The land cannot be contaminated/polluted.	There cannot be pollution, hazardous substances in the soil or water on the location.
Argumentation	<p>White Paper on Integrated Pollution and Waste Management for South Africa (Government of South Africa, 2000) and Environment Conservation Act (Government of South Africa, 1989)</p> <p>The municipality does not register the quality of ground water, non-perennial rivers or soil in most parts of the municipality. (Katushabe, J., 2012)</p> <p>Pollution from landfill sites, agriculture, factories, mines etc. can make land unsuitable to build on.</p>	
Impact	Medium-high, contaminated land cannot be built on without decontamination. This will however be expensive. Depending on who has to pay for the sanitization, it can be decided if the location is still suitable for low-cost housing.	

<b>Category: Environment</b>		
Topic	Requirement	Specification
<b>Air quality</b>	The air quality of the location must be good and meet the required standards.	The air quality must be good offering ambient concentrations of ozone, the oxides of nitrogen, nitrogen dioxide, sulfur dioxide, lead, particulate matter with a particle size of less than 10 microns ( $\mu$ ) and the total suspended solids may not exceed the standard norms. These standard norms can be found in Appendix L.
Argumentation	Air Quality Act (Government of South Africa, 2004) Section 63, Ambient air quality standards, Schedule 2	
Impact	High, as residential housing of any kind cannot be considered if the quality of the air is not good enough. For future consideration, the quality of the air must be improved, whether or not the location is immediately being considered for a low cost housing development.	

<b>Category: Environment</b>		
Topic	Requirement	Specification
<b>Daylight</b>	There have to be opportunities for the daylight to reach the land.	It is preferred if the location is not totally surrounded by high buildings, mountains or other obstacles, that can block the daylight.
Argumentation	By using daylight the optimum energy can be saved. This aspect is important in the design of a dwelling unit, but also the choice of the location is an influence. Daylight can also contribute to a better quality of life.	
Impact	Medium; the land can still be suitable for social housing, but maybe the design and number of houses has to be changed.	

#### 4.2.4. Amenities

Category: Amenities		
Topic	Requirement	Specification
<b>Road network</b>	It is preferred that connections with the existing road network can be made with relative ease.	It is preferred that there is at least one (tarred) road within a distance of 100 meters of the location, with space for a new connection.
Argumentation	If the location is close to a connecting road expenditure on road infrastructure – and space – can be saved.	
Impact	Medium; if there are no roads in the location's area the costs for infrastructure will be higher. Depending on a grant and the size of the project, it can be decided if the construction of a new road is worth the investment.	

Category: Amenities	
Topic	Requirements
<b>Schools</b>	The maximum desired distance to a primary school is 1 km. For the rental stock the distance to a primary school cannot be more than 3 km.
	The maximum desired distance to a high school is 3 km. For the rental stock the distance to a high school cannot be more than 3 km.
	The maximum desired distance to a university or college is 10 km.
<b>Employment</b>	The maximum desired distance to job opportunities is 5-10 km. For the rental stock the distance to job opportunities cannot be more than 3 km.
<b>Shopping</b>	The maximum desired distance to a supermarket is 1-3 km. For the rental stock the distance to a supermarket cannot be more than 3 km.
	The maximum desired distance to a shopping center is 3-5 km.
<b>Health care</b>	The maximum desired distance to a clinic/doctor is 1-3 km. For the rental stock the distance to a clinic, doctor or hospital cannot be more than 3 km.
<b>Transport</b>	The maximum desired distance to transport is ½ km. For the rental stock the distance to transport cannot be more than 3 km.
<b>Church</b>	The maximum desired distance to a church is 3-5 km. For the rental stock the distance to a church cannot be more than 3 km.
<b>Recreation</b>	The maximum desired distance to recreation is 5-10 km. (playgrounds, parks, beaches, theatre, cinema, museum) For the rental stock the distance to recreation cannot be more than 3 km.
<b>Sport facilities</b>	The maximum desired distance to sport facilities is 3-5 km. For the rental stock the distance to sport facilities cannot be more than 3 km.
<b>Remaining</b>	The maximum desired distance to a bank is 3-5 km.
	The maximum desired distance to a post office is 3-5 km.
	The maximum desired distance to a library is 5-10 km.
Argumentation	Most people in the social housing circuit do not have money for a car or cannot spend a lot on public transport; therefore they mostly walk to their destination. The most important facilities have to be within walking distance, so that the households can save money on transport. For rental units the distance requirements to amenities in the neighborhood are stricter than for RDP Units. Input from: H. Jonkers, S. Dillan, N. Tunzi, Johannesen, M. and citizens with a household income below R7500 per month.
Impact	High. If there are not enough amenities within walking distance these have to be built, or the place is not suitable for social housing. Building amenities, however, is not always achievable and is expensive.

### 4.3. Directives RDP

Directives RDP	
<b>Dwelling Type</b>	Reconstruction and Development Programme Houses
<b>Target group</b>	Head of household has to be older than 21 Households consisting of at least two persons (couple with or without children, or a single parent)
<b>Household income</b>	Between R0 and R3500
<b>Monthly costs</b>	RDP House is provided free, with support of subsidies Only the costs for maintenance, water, electricity and other services

After delivery to the occupant, RDP units and their gardens are not managed by the municipality, but are the responsibility of the owner. Everybody is allowed to enter an area with RDP units, there are only public roads. Most occupants of RDP units do not possess a car, therefore considerable parking space is not required.

*'The minimum size of permanent residential structures to be provided by means of the housing subsidy is 40 square meters of gross floor area. Each house as a minimum must be designed on the basis of:*

- *Two bedrooms;*
- *A separate bathroom with a toilet, a shower and hand basin;*
- *A combined living area and kitchen with wash basin.'* (Government of South Africa, 2009)

An overview of the measurement requirements for an RDP unit can be found in Appendix M.

RDP units are delivered with the surrounding land; this will be around the 30m<sup>2</sup>. (Jonkers, H., 2012). Therefore the standard erf size will be around 70m<sup>2</sup>, the erf is however not surrounded by a fence or wall, and occupants must erect these themselves if preferred.

The density in RDP projects is lower, and the land in these locations is not optimally used. With the shortage of suitable land for housing close to the city center, these units will rarely be built inside the beating heart of a city. Therefore these houses are mostly located at urban boundaries and occupants have to be prepared to travel further for some amenities.

#### 4.4. Directives rental units

For social housing there are two groups of different landlords: The municipality and the social housing institutions. The municipal rental stock is focused on the poorest of the poor, while a housing institution requires that households have a source of income. The rental fees from a SHI are higher than for CRUs; projects from an institution can afford a bit more quality. Social housing institutions can sometimes afford to purchase land from private owners.

Directives CRU	
<b>Dwelling Type</b>	Community Residential Unit
<b>Target group</b>	Head of household has to be older than 21 Households consisting of at least 2 persons (couple with or without children, or a single parent) Also houses for seniors (65+)
<b>Household income</b>	Between R0 and R3500
<b>Monthly costs</b>	+/- R400 Excluding the costs for water and electricity

Directives SHI	
<b>Dwelling Type</b>	Unit from Housing Association
<b>Target group</b>	From single persons to households with children (households up to 10 persons)
<b>Household income</b>	Between R2500 and R7500
<b>Monthly costs</b>	Between R700 – R2500 Excluding the costs for water and electricity

The future projects of both will have about the same appearance: several units inside various blocks on a property. It is preferred to have a three-storey walk-up building, then there is no need for an expensive elevator and no permission for a deviating height has to be obtained. If land with a slope can be identified, it is preferred to build one level below the ground floor. The units inside the blocks will range between bachelor, one-, two- and three-bedroom units. The biggest demand is, however, for the two-bedroom unit.

Own Haven Housing Association is prepared to build a high-rise building, with between the eight and ten

floors, for maximum use of the location. In a new project they will no longer make basement levels. Many factors will be influence the design, but there is no need to have an exact design before identifying a location.

The size of the units is dependent on the number of rooms, and at this stage does not have to be determined. The minimum requirement is that each unit has a bedroom and a living room, which can be mixed use. The minimum size of a living room has to be 6m<sup>2</sup>. The rules do not indicate whether a habitable room must be of greater size than the minimum given if such room is to be used for multiple purposes, but for practical if not legal reasons this obviously would be desirable. The preferred minimum size is 12m<sup>2</sup>. The minimum size of the bedroom has to be 6m<sup>2</sup>, the preferred size however is 9m<sup>2</sup>. The overall plan area of any dwelling house shall not be less than 30m<sup>2</sup> in the case of any permanent building. The minimum height of one storey has to be at least 2,4m from floor to ceiling. (South African Bureau of Standards, 1990)

The units have to be surrounded by a communal open space that can be used by the occupants. There has to be place for facilities such as parking, laundry, sports and other activities. The housing associations prefer a parking norm between 0,8 and 1,0 place per household. The internal roads have to be private and the property has to be surrounded by a fence or wall. In some projects it will be a must for a public building inside the project, to meet the need to provide for (children's) activities.

The density in these projects will be higher than in RDP projects, therefore the ground will be used more effectively. These projects are aimed to be realized inside the city center, close to all needed amenities.

The individual wishes from the social housing institutions can be found in Appendix O. In Appendix N an overview of the requirements of the measurement of a rental unit can be found, divided into bachelor, one-, two- and three-bedroom units.

## Chapter 5: Locations

Eight locations were tested against the program of requirements. Two of these are surely not suitable for low-cost housing, Amalinda North and Amalinda South. Two other locations could be suitable for social housing, but the zoning scheme has to be changed and the chance of approval is lower than the chance of rejection. These two are Cambridge

West and Stoney Drift. All of them can be found in Appendix P.

The remaining four locations might be suitable for social housing, but the zoning scheme for all of them has to be changed. This is due to the fact that the municipality has barely any land available with a residential zone 1 or 5. The four locations are presented in this chapter.

### 5.1. Arcadia

#### 5.1.1. General

<b>City</b>	East London	
<b>Area</b>	Arcadia	
<b>Address</b>	Stephenson Street	
<b>Erf number(s)</b>	Part 1: 66986 Part 2: 56437	
<b>Income class</b>	Lower to middle	
<b>Size</b>	4,145 Ha	
<b>Maps</b>		
<b>Owner(s)</b>	69986: Local Municipality of Buffalo City (since 2009) 56437: Local Municipality of Buffalo City (since 2004) (GIS, 2012)	
<b>Picture(s)</b>		

(GIS, 2009)

### 5.1.2. Zoning schemes

The current zoning of the northern part is residential 3A. The building of dwelling houses on the property is allowed, but this zoning does, however, not meet the requirements for social housing or RDP units. The southern part is authority zone 1, which is for local municipality authority usage. (GIS, 2012)

### 5.1.3. Land

The lowest point of the property is 52m above sea level and the highest point is about 59m. The average slope on the property is between the 0,85° and 1,5°. (GIS, 2009)

The location is not at risk of floods since the closest non-perennial river is about 1km away, the Buffalo River is almost 1,5km away, the sea is about 2km away and there are no dams within 3km. (GIS, 2011)

The land is mostly vacant; a big part of the property is however in use for 'private' parking and by a driving school. Therefore there are some (half) tarred roads in the property. In the west are some parking places with fences around them, which convey the impression that it is private property. The whole property, however, belongs to the municipality and is being used illegally. (Bhika, B., 2012) The location does not have much vegetation, and alongside the roads there is only some high grass and a few bushes on the erf lines.

In the south, the property can be reached by Stephenson Street, with a connection to the R72 (one of the main roads in and out the city). West from the property is Oxford Street, the main road of the Central Business District. This street can be reached through two passageways.

### 5.1.4. Environment

There is a railway in the eastern part of the property and one of the main roads of the city is running close to the property, and these can produce noise. Before any building project proceeds the noise levels must be measured to ensure they are not too high. If they are found to be too high way to limit the noise on the property should be researched. There are currently no complaints about noise in the area, but there are not a lot of legal dwellers on the site. (McIntyre, A., 2012)

There were no disturbing facts established to indicate other environmental problems.

### 5.1.5. Amenities

All the required amenities are within a distance of 1,5km. The land is situated within a few meters of Oxford Street, therefore everything citizens need is within a few minutes walking distance. (GIS, 2011)

### 5.1.6. House

The location of the area is so close to the central business district, that high density housing would be preferred on a location like this. The location is not suitable for RDP units.

When the zoning scheme can be changed to residential zone 5, it is suitable for three storey walk-up rental units. 168 units will suite on erf 69986 and 708 on erf 56437 with a coverage of 40% in blocks of 12 units, with a building for security and amenities.

### 5.1.7. Remaining remarks

- Further research should be requested on:
- Soil. It needs to be established whether the soil is good enough to build on and what kind of foundations are needed.
  - Noise. Noise requirements, for day and night, should not be exceeded.
  - Ground pollution. Before building a sample of the ground has to be tested at a professional institution to ensure there is no pollution in the area.
  - Illegal use of the property by the driving school(s) and for 'private' parking.

Connections to the sewage and water mainlines are near to the property.

It is also an option to approach the owner of erf 69985 (figure 5.1) Dencor Trust, to assess whether a part of this property can be purchased. The owner does not use the whole erf and the fence is not on

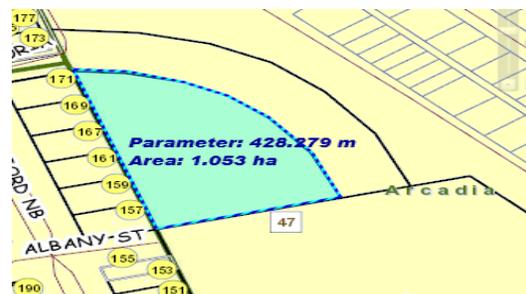


Figure 5.1. Erf 69985 (GIS, 2009)

the erf lines. A part of this property is also in use by the driving school.

### 5.1.8. Conclusion and advise

The property is perfect for low-cost housing if we are looking at the location being opposite to amenities. The location of the area is so close to the central business district, that high density housing would be preferred on a location like this, to encourage an urban city core. Therefore the location is most suitable for rental units, whether these are units from a housing association or community residential units. Building RDP units on this property will be a waste.

The zoning of the property is, however, not suitable for low-cost housing. A rezoning of the property into residential zone 5 has to be applied for. There probably will not be objections from surrounded households and the chance of approval is high. It is also possible to use the property for mixed uses, with business developments in the south, situated on Stephenson Street. Because the property is in the central business district, high rise buildings can be an option, therefore a permanent departure has to be asked.

Research into the possible rights of the driving school and 'private' parking should be undertaken. These parties will, however, probably not enjoy any occupational right.

## 5.2. Baysville

### 5.2.1. General

<b>City</b>	East London	
<b>Area</b>	Baysville	
<b>Address</b>	Glen Eagles Road / Iona Crescent	
<b>Erf number(s)</b>	11863 till 11871 and a part of 11925	
<b>Income class</b>	High	
<b>Size</b>	2,587 Ha	
<b>Maps</b>		
<b>Owner(s)</b>	Local Municipality of Buffalo City (since 1967) (GIS, 2012)	
<b>Picture(s)</b>		

(GIS, 2009)

### 5.2.2. Zoning schemes

The current zoning of the property is Open Space Zone 2, which is private open space but the land belongs to the municipality. Dwelling units will not be allowed to be built on the property without changing the zoning scheme. (GIS, 2012)

### 5.2.3. Land

The lowest point of the property is 41m above sea level and the highest point is about 58m. In the north and south are two steep slopes, see figure 5.2., it can be difficult to build on these. These slopes are about 18,5° and 22°. The average slope on the property is between the 0,4° and 3,6°, excluding the two steeper slopes. (GIS, 2009)

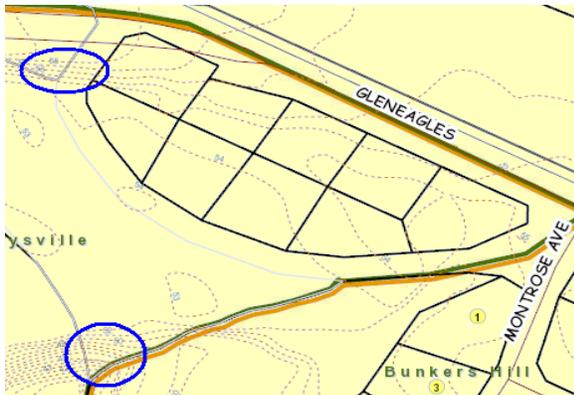


Figure 5.2. Steep slopes Baysville (GIS, 2009)

There is a non-perennial center line running through the location, see figure 5.3. The stream will probably stay in its riverbank, when there is water in it. A 1:100 year flood line has to be calculated for such rivers, otherwise no building is allowed to be built within 32m of the center line.

The closest main river and the sea are about 2km away and there are no dams within 3km. (GIS, 2011)

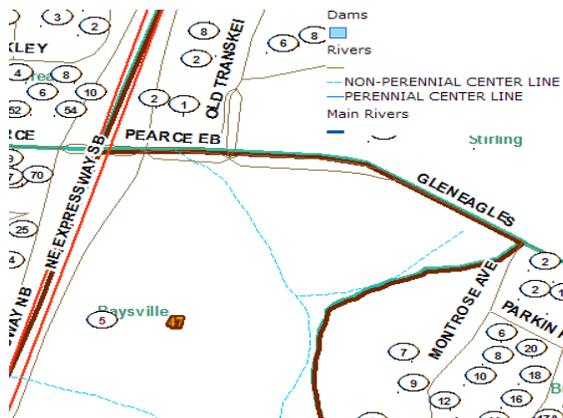


Figure 5.3. Non-perennial rivers Baysville (GIS, 2011)

The property is not protected, but it is part of the MOSS. However the corridor link is low and also the value of conservation, recreation, culture and productivity are low. The recommendation in the MOSS is potentially developable. (GIS, 2012)

The land is vacant and the property does not have much vegetation. It is mainly grassland with some bushes on the outer erf lines of the property.

In the eastern part is a road with a direct connection to Gleneagles Road, running north of the location. This is one of the bigger roads in the city with connections to North East Expressway and Oxford Street.

### 5.2.4. Environment

The property is a former landfill. Currently there is no sign of that fact when you are visiting the property; there are also houses directly next to the property. Probably the landfill closed many years ago. Further professional research into possible ground pollution is required. This landfill site is only used to dump building rubble. Once the location was a valley, but the intention was to even out/flatten the ground. (GIS, 2012)

There were no disturbing facts established to indicate other environmental problems.

### 5.2.5. Amenities

The property meets the requirements for a rental stock when the amenities are considered. Within 1,5 km there are a primary and high school, job-opportunities, a supermarket and other shops, healthcare, transport, a church, sport facilities, a bank and a post office can be found. A university can be found within 3 km and the library is just over 3 km away. (GIS, 2011)

### 5.2.6. House

Because the location is near high income households, and the zoning scheme has to be changed, it is not suitable for RDP units. The property is also within the urban edge and higher density development is preferred. Therefore the location is most suitable for a rental stock.

When the zoning scheme can be changed to residential zone 5, it is suitable for three storey walk-up rental units. 576 units will suite on the property with a coverage of 40% in blocks of 12 units, with a building for security and amenities. In this calculation building on the two steep slopes or within 20 meters of the non-perennial river should not be considered.

### 5.2.7. Remaining remarks

Further research requested on:

- Soil. It needs to be established whether the soil is good enough to build on and what kind of foundations are needed.
- Ground pollution. Before building a sample of the ground has to be tested at a professional institution to check if there is pollution in the area. The property was once used as a landfill site, so this research will determine if the area can be used as building ground.
- Further research into the existing non-perennial river is required and a 1:100 year flood line drawn by a professional. Otherwise no building will be allowed within 32m of the riverbanks. The location can still be suitable for social housing, but there is a possibility that fewer houses can be built.

Connections to the sewage are near to the property.



Figure 5.4. Erf 11927 (GIS, 2009)

A part of the bigger erf 11927 (figure 5.4), in the south-east of the property, is also suitable for social housing and in the possession of the municipality. The property is however a Public Open Space zone 1, and also has a MOSS on the property, but it is not assigned as potentially developable. A part of the property is however grassland, and does not have a high value compared to the rest of erf 11927. In the future, when the other part of the property is built on, a phase 2 on erf 11927 can be considered.

### 5.2.8. Conclusion and advise

The area is surrounded by high income households, therefore it may be not suitable for RDP units, but the area could be suitable for rental units. In a project offering rental units there is more control and it will thus not unduly disturb to the surrounding residents. When applying for an RDP project there will be many objections, but for a rental stock project the number of objections will probably be lower, but will still have to be taken in account.

The property is according to the zoning scheme a public open space and cannot be used for residential purpose. The property is also a MOSS, but not one with a high value. The MOSS says the location is seen as a potentially developable area. Therefore there will probably not be an objection from the Integrated Environmental Management Unit.

The zoning scheme has to be changed into residential zone 5, but there is a good chance that approval will be obtained. Objections from surrounding citizens can be anticipated, but the level of objection will be reduced if is made clear that a managed rental stock project is proposed, with negligible disturbance to the neighborhood.

## 5.3. Southernwood

### 5.3.1. General

<b>City</b>	<b>East London</b>
<b>Area</b>	Southernwood
<b>Address</b>	Part 1: 57 and 59 St. Marks Road Part 2: 68 and 72 St. James Road
<b>Erf number(s)</b>	Part 1: 12356 and 12355 (before: 72507) Part 2: 12435 and 12433
<b>Income class</b>	Middle
<b>Size</b>	Part 1: 1,01 Ha Part 2: 0,70 Ha
<b>Maps</b>	
<b>Owner(s)</b>	Part 1: F N O Developers PTY LTD(since 2005) Part 2: Local Municipality of Buffalo City(since 1975 and 1970) (GIS, 2012)
<b>Picture(s)</b>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Part 1:</p> </div> <div style="text-align: center;"> <p>Part 2:</p> </div> </div>

(GIS, 2009)

### 5.3.2. Zoning schemes

The current zoning of part 1 is Business zone 4; the primary use is not suitable for residential building. But the consent use of this property allows the building of dwelling units, with the same requirements as residential zone 5. Therefore it will be suitable for a rental stock.

The zoning of part 2 is residential 3A, so the building of dwelling houses on the property is allowed, but this zoning does however not meet the

requirements for social housing or RDP units. (GIS, 2012)

### 5.3.3. Land

The lowest point of the part 1 is 78 m above sea level and the highest point is about 80m. The average slope on the property is between the 0,95° and 1,9°. Part 2 has an average slope 0,95° and 1,4, with a lowest point of 75m and the highest of 77m. (GIS, 2011)

The location is not at risk of floods, the closest non-perennial river is about 200m away and the closest perennial river is about 2,5km away. The sea is also about 2,5km away and there are no dams within 3km. (GIS, 2011)

The land is vacant and the vegetation on both sections is neglected. The location does not have much vegetation and is mostly grassland with some bushes and trees. There are some places on the property with illegally dumped waste.

Part 1 can only be reached by St. Marks Road in the north. Part 2 can only be reached by St. James Road in the south. From there is a fast connection to Oxford Street, one of the main roads of the city.

#### 5.3.4. Environment

There are a few buildings surrounding the property with 2 to 4 storeys, but these are not disturbing the daylight on the property. There were no disturbing facts found that indicate other environmental problems.

#### 5.3.5. Amenities

All the required amenities are within a distance of 1,5km. The land is situated close to Oxford Street, therefore everything citizens need is within a few minutes' walking distance. Only a library is not within a 1,5km radius. (GIS, 2011)

#### 5.3.6. House

The location of the area is so close to the central business district, that high density housing would be preferred on a location like this. The location is not suitable for RDP units.

When the zoning scheme can be changed to residential zone 5, it is suitable for three storey walk-up rental units. 216 units will suite on part 1 and 156 units on part 2 with a coverage of 40% in blocks of 12 units, with a building for security and amenities.

#### 5.3.7. Remaining remarks

Further research requested on:

- Soil. It needs to be established whether the soil is good enough to build on and what kind of foundations are needed.
- Ground pollution. Before building a sample of the ground has to be tested at a professional institution to ensure there is no pollution in the area.
- The owner of part 1. Is he prepared to sell his property?

There are water mainlines and sewage connection around the property.

#### 5.3.8. Conclusion and advise

Part 1 is not in possession of the municipality. Therefore it is not suitable for RDP or CRU units. SOHCO and OHHA are however prepared to purchase land from a private owner. The owner has to be contacted to start negotiations. The use of the land is currently Business zone 4, so the consent use of the property can be residential. Therefore permission has to be asked with the council. The residential units that are allowed are the same as residential zone 5. These are good for social housing, except the parking requirements are too high. An exemption has to be obtained for these requirements. If both the owner of the property and the council are prepared to cooperate with the plans, it will be a perfect location for housing.

Part 2 is residential zone 3, therefore houses are allowed to be built on the property, but residential zone 3 does not, however, suit the requirements for social housing. Therefore the residential zone 3 has to be changed to residential zone 5. If this can be changed it will also be a perfect location for social housing. A high level of objection to this zoning change is not anticipated.

OHHA has built a high-rise residential building that opened earlier this year. They confirmed that they are interested in more projects with buildings between eight and 10 storeys. Because the property is not that big, a high-rise building will suit the location. Since the zoning scheme does not allow residential buildings higher than 3 storeys, an exemption has to be applied for and there is a good chance that this will be approved.

## 5.4. Summer Pride

### 5.4.1. General

<b>City</b>	East London
<b>Area</b>	Summer Pride
<b>Address</b>	-
<b>Erf number(s)</b>	Lower till middle
<b>Income class</b>	22462 and 3890
<b>Size</b>	8,975 Ha
<b>Maps</b>	
<b>Owner(s)</b>	Local Municipality of Buffalo City (since 1976) (GIS, 2012)
<b>Picture(s)</b>	

(GIS, 2009)

### 5.4.2. Zoning schemes

The current zoning of the property is residential 3A, the building of dwelling houses on the property is allowed, but this zoning does however not meet the requirements for social housing or RDP units. According to GIS the property is Multiply Zoning; after further research of the zoning scheme maps, it can reasonably be determined that the whole property has a Residential Zone 3A.

### 5.4.3. Land

The lowest point of the land is 142 m above sea level and the highest point is about 161m. The average slope on the property is between the 2,0° and 4,7°. (GIS, 2009)

There are two, non-perennial center lines running through the location. The stream will probably stay in its riverbank when there is water in it. A 1:100 year flood line has to be calculated for these rivers, otherwise buildings cannot be built within 32m of the centre line. (GIS, 2011)

The closest main river is about 400-500 m away and there are no dams within 3 km.

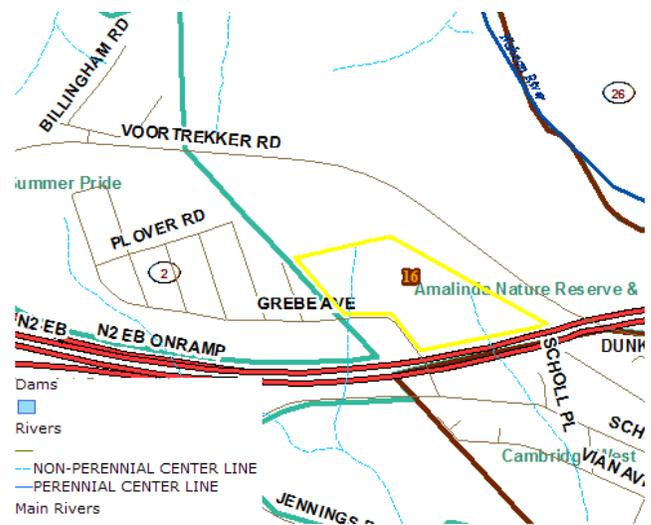


Figure 5.5. Non-perennial river Summer Pride (GIS, 2011)

The property is not protected, but it is part of the MOSS. However, the corridor link is low and also the values of conservation, recreation, culture and productivity are low. The recommendation in the MOSS is potentially developable. (GIS, 2012)

The land is vacant and the vegetation on site is neglected. The location does not have much high density vegetation, being mostly grassland with some bushes and trees. There are some places on the property with illegally dumped waste.

The location is surrounded by the N2, the R102 and a railway. The area has one connection to the city, namely Scholl Road. From this road the N2 and Amalinda Main Road can easily be reached.

#### 5.4.4. Environment

There is a railway in the northern part of the property and a highway in the south, and these can produce noise. Before any building project proceeds the noise levels must be measured to ensure they are not too high. If they are found to be too high way to limit the noise on the property should be researched. There are currently no complaints about noise in the area. (McIntyre, A., 2012)

There is an abattoir east from the property, about 2,5 km away. Occasional complaints about the odors emanating from this source have been received. The health department evaluated the situation and ruled that housing cannot be built within 500m of the abattoir. (McIntyre, A., 2012)

There were no disturbing facts established to indicate other environmental problems.

#### 5.4.5. Amenities

Not all the primary amenities are within in distance of 3 km, therefore the location does not meet the requirements for a rental stock. When the location will be used for rental units a high school, church and job-opportunities have to be developed closer to the property. The property can however be used for RDP units.

Within 1,5 km from the property a primary school, transport, recreation and sport facilities are found. A supermarket and healthcare are within the 3 km radius. Between 3 and 5 km from the property a high school, employment opportunities, a shopping center, church, bank, post office and library can be found. (GIS,2011)

#### 5.4.6. House

The location is at the moment not suitable for a rental stock, but for RDP units. Therefore the zoning has to be changed to Residential zone 1. On the property will fit about 850 RDP houses, with erven of 70m<sup>2</sup> and roads with a width of 6m.

#### 5.4.7. Remaining remarks

Further research requested on:

- Soil. It needs to be established whether the soil is good enough to build on and what kind of foundations are needed.
- Ground pollution. Before building a sample of the ground has to be tested at a professional institution to ensure there is no pollution in the area.
- Noise. Noise requirements, for day and night, should not be exceeded.

The influence of the highway between the property and the amenities has to be taken in consideration. There has to be thought given about blockades that prevent people from crossing the N2, to make shortcuts.

#### 5.4.8. Conclusion and advise

This location is not (yet) suitable for a rental stock, because it does not meet the requirements for amenities. When rental units are built on the property new amenities will have to be developed, at least a high school. The location is however suitable for RDP units, because the amenity requirements for these units are lower. It is also not a must that there is higher density development in this area.

The zoning scheme has to be changed from residential zone 3A to residential zone 1. There probably will be some objections from surrounding residents and these will need to be taken into consideration. The property is also a MOSS, but not one with a high value. The MOSS says the location is seen as a potentially developable area. Therefore there will probably not be an objection from the Integrated Environmental Management Unit. Due to the big housing backlog and shortage of available land there is a good chance that there will be approval. The property is also part of the Spatial Development Framework, which will increase its chances of approval.

## Chapter 6: Modify zoning scheme

Within Buffalo City there is almost no vacant land available close to the city centers with the right zoning for low-cost housing. The municipality is aware of this issue and has introduced a special City Planning Procedure to change components of the zoning scheme.

Since there are hardly any locations available with residential zone 1 or 5 rights and the municipality sees the housing backlog as one of its priority problems, applications to change the zoning scheme are fairly easy agreed on. The same approach applies for exemptions for the parking requirements, as these are most often too high for low-cost housing. (Foster, R., 2012)

The application procedure for rezoning land within the municipality works (in summary) as follows:

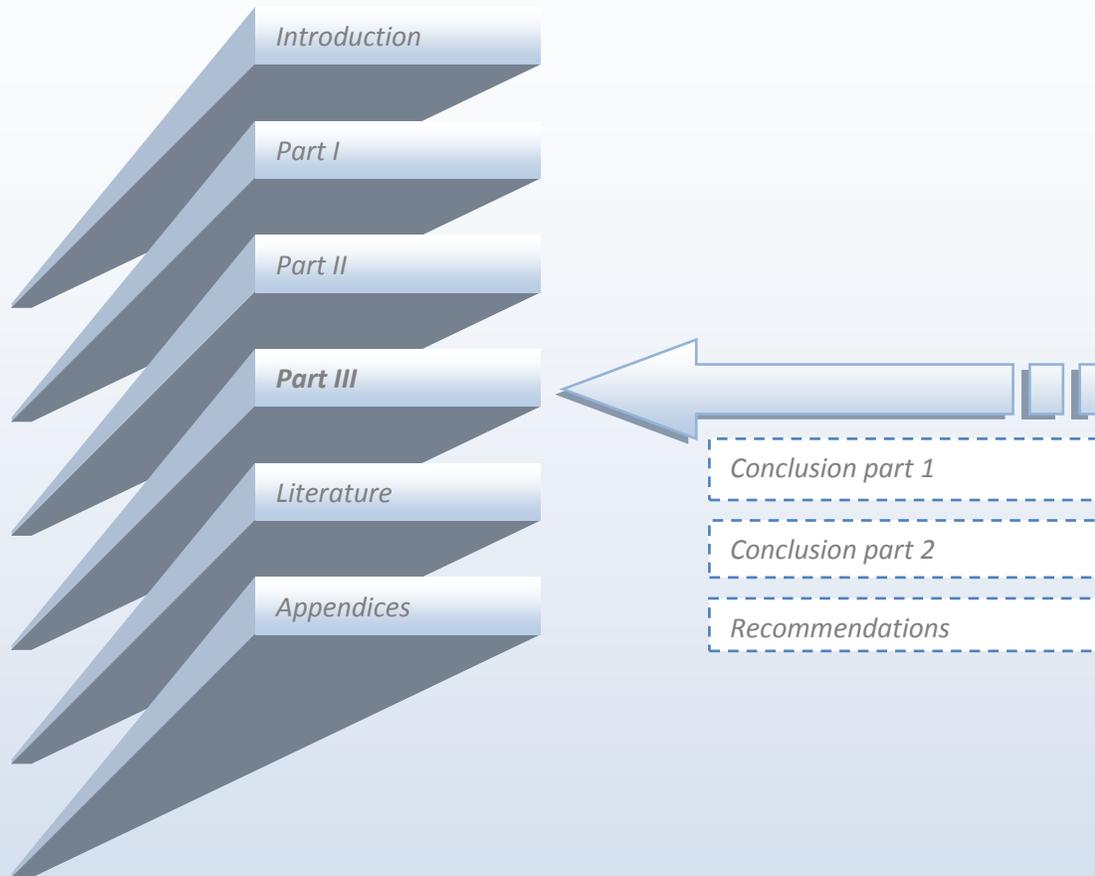
- An applicant submits, with the required information, a change in land use application to the City Planning Division for consideration.
- The City Planning official acknowledges receipt within two weeks.
- The City Planning official informs Corporate Services within one month to advertise the proposal in the local newspaper. The City Planning official is also required to serve notices on all affected and interested parties by means of registered mail. The closing date for objection or comment should be 21 days from the date the notice was published.
- The rezoning application is to be circulated to all affected Municipal Departments (Note: also to the Integrated Environmental Management Unit, which decides about MOSS), as well as Provincial

and State Departments, if required) and the affected Ward Councilor.

- At the end of the advertising period the City Planning Official is to submit any objections to the applicant as well as the Ward Councilor for comment.
- The applicant can give comment to the objections. The objection, as well as the applicant's comment thereto, is also to be forwarded to the relevant affected Municipal Department(s) for comment.
- If objections were received (from public or municipal departments) and/or if the application falls outside an approved SDF, the application is to be tabled before Council for consideration.
- Once Council's decision is known, the objector and applicant are to be notified, by means of registered mail, of Council's decision and their respective right to appeal against Councils' decision and / or conditions of approval to the Premier, within 14 days from the date of the notice.
- If no objections were received and the application is in line with a SDF, the Director of Planning and Economic Development has the delegated authority to approve a rezoning application. Note that the applicant should be informed of his right to appeal against the rezoning conditions of approval to the Premier.

The procedures for changing the consent use of a property and for exemptions (such as building height and parking norms) are slightly different. These procedures can be found in Appendix Q.

(Kotzee, A., 2012)



**Part III: Which locations within Buffalo City are suitable for low-cost housing in the near future and what are the requirements for these locations?**

## Chapter 7: Results

The result of this research is an answer to the question: 'Which locations within Buffalo City are suitable for low-cost housing in the near future and what are the requirements for these locations?' Four locations have been identified as suitable, provided that the zoning scheme can be changed and the requirements are defined.

### 7.1. Conclusion part I

A section of the citizens of Buffalo City are living in inappropriate houses, because they cannot afford to purchase decent housing and there are not enough publicly funded dwellings. One of the main reasons why not all citizens can afford a house is poverty, mainly caused by high unemployment and low household incomes. The municipality also experiences problems with crime and health, therefore the protection of quality shelter is even more necessary.

Laws, regulations and programs are made to reduce the housing backlog and the shortage of low-cost housing is a key issue. Funds are made available, but the process of building dwellings is still not going fast enough to keep up with the growing population.

Within the municipality there is currently a subsidized housing stock of 14.423 RDP units, 1769 units from a social housing institution and 2200 CRUs. However not all of these units can be identified as appropriate housing, and most of the units from the municipal rental stock are neglected and need to be upgraded. There are also complaints about construction of the RDP units, mainly caused by mistakes made in the past. A big part of addressing the housing issue is that units are illegally sold or leased, and this can largely be blamed on the fact that some of the units are built in unsuitable locations.

The remaining populations which cannot purchase adequate shelter without support are mostly living in shacks, with poor living conditions.

The municipality has a current housing backlog of 121.000 dwellings in all categories. There is a demand for at least 40.000 RDP units and CRUs. A growth of the population of 148.223 citizens between 2011 and 2020 is expected; therefore the demand for dwellings will increase. Based on the above statistics it can be concluded that thousands

of low-cost housing units will have to be built in the near future.

### 7.2. Conclusion part II

The results of part II can be divided in two sections answering the main question.

#### *What are the requirements for locations to be considered suitable for low-cost housing?*

To ensure that new, low-cost housing projects be built on suitable locations, a program of requirements is made. Potential locations have to meet these requirements or changes have to be applied to make the location suitable. Sometimes changing the circumstances can be too expensive, unrealistic or time-consuming.

The requirements a location has to meet to be suitable for social housing are:

- The zoning has to be a residential zone 1(RDP) or 5(rental stock)
- The municipality or the province has to be the owner of the land, but exceptions can be made for the housing institutions
- The land cannot have high density vegetation or protected/endangered species
- The elevation and the slope of the land have to be suitable for low-cost housing.
- The location cannot be at risk for floods
- The soil type has to be appropriate to build on
- The land cannot be a protected area or a MOSS
- The land has to be vacant
- The noise level at the location cannot be too high
- There cannot be offensive odors on the property
- The land (soil or water) cannot be polluted
- The air quality on the location has to be good
- There has to be enough daylight on the property
- There has to be a nearby road network with space for a new connection
- There have to be primary amenities in the neighborhood (different requirements for RDP or rental stock)

Within the municipality there are, however, hardly any locations available with residential zone 1 or 5 rights. And not one of the different zonings allows construction of buildings higher than three storeys. This will result in urban sprawl and it does not consolidate the urban edge. Therefore this scenario is not in line with the aims of the municipality.

### *Which Locations within Buffalo City are suitable for low-cost housing in the near future?*

Locations that meet the requirements of the program are probably suitable for low-cost housing. However, the program tested eight locations and none of these fitted immediately, because of the zoning requirements. If the zoning scheme can be changed the following locations will be suitable:

- Arcadia will be suitable for a rental stock, providing that further research is done on the soil, noise, ground pollution and the illegal use. This property will also be suitable for high rise buildings.
- Baysville will be suitable for a rental stock, providing that further research is done on the soil, ground pollution and the non-perennial river.
- Southernwood will be suitable for a rental stock from a social housing institution, providing that the owner of part 1 is prepared to cooperate and that the soil is suitable and not polluted.
- Summer Pride will be suitable for RDP units, providing that further research is done on soil, ground pollution, noise, the non-perennial rivers and the influence of the highway.

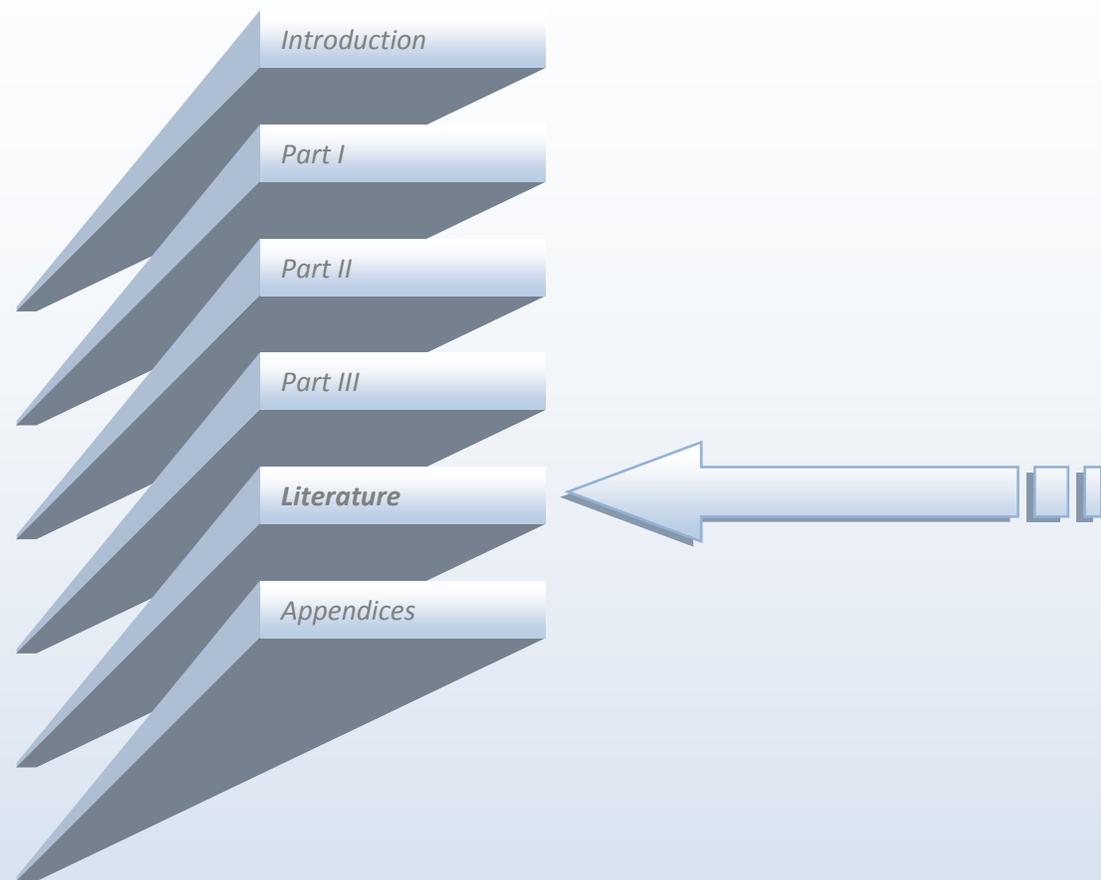
### **7.3. Recommendations**

The aim of this paragraph is, based on my research, to provide some recommendations to the BCMM. In the past months I came across additional problems in regard to low-cost housing, some within the powers of the municipality, some out of their reach. In summary, my advice to the municipality is:

- Complete the location studies. Establish whether the four identified locations are indeed suitable for low-cost housing. This is dependent on the outcome of further research into aspects and components that I could not investigate given the time, knowledge and available resources. If the outcomes of this research are positive, modifying the zoning scheme procedure can be started.
- Reconsider the Zoning Scheme. There is not enough land available for low-cost housing and there are not enough properties with residential zone 1 or 5 within the municipal jurisdiction. This is in conflict with the aims (IDP and SDF) of the municipality. To speed up the process in the future it is important that locations be considered for rezoning ahead of time.
- Build in higher densities. To reduce the urban sprawl and develop a stronger urban edge, there has to be higher density development. Land close to

amenities has to be used to the maximum. Also, problems with transportation can be reduced.

- Manage waiting lists at the social housing institutions. The waiting lists at the social housing institutions are not properly organized. OHHA agreed on this and said it is going to work on this aspect. The current waiting lists of all three the institutions do not give an overview of the real demand for social housing.
- Skewed housing. There are maximum income households being initially legally allowed to live in social housing projects; these incomes are however not re-checked again after a few years. Therefore (judging by the cars in front of the houses), many of the households earn more than they are allowed in order to qualify for the houses they occupy. People with lower incomes need these houses with a lower rent much more than those 'milking the system'.
- Information systems. During my research this was a bottleneck. Important information is not readily available through the internet or brochures. Improving the gathering of and dissemination of information system may encourage more private initiatives.
- Upgrading the CRUs. Although the municipality knows most of their rental stock is neglected, I still want to recommend upgrading these units. This is probably not in the powers of BCMM, because funding from the province is too limited.
- Elderly homes. More research into the care of the elderly is required across all income classes.
- Illegal selling and leases RDP units. Finally, research is urgently needed into the illegal selling and leasing of RDP units within the first eight years of award, and firm decisions and actions decided upon to address this, based on research findings.



**“In a quality city, a person should be able to live their entire life without a car, and not feel deprived.”**

Quote by Paul Bedford

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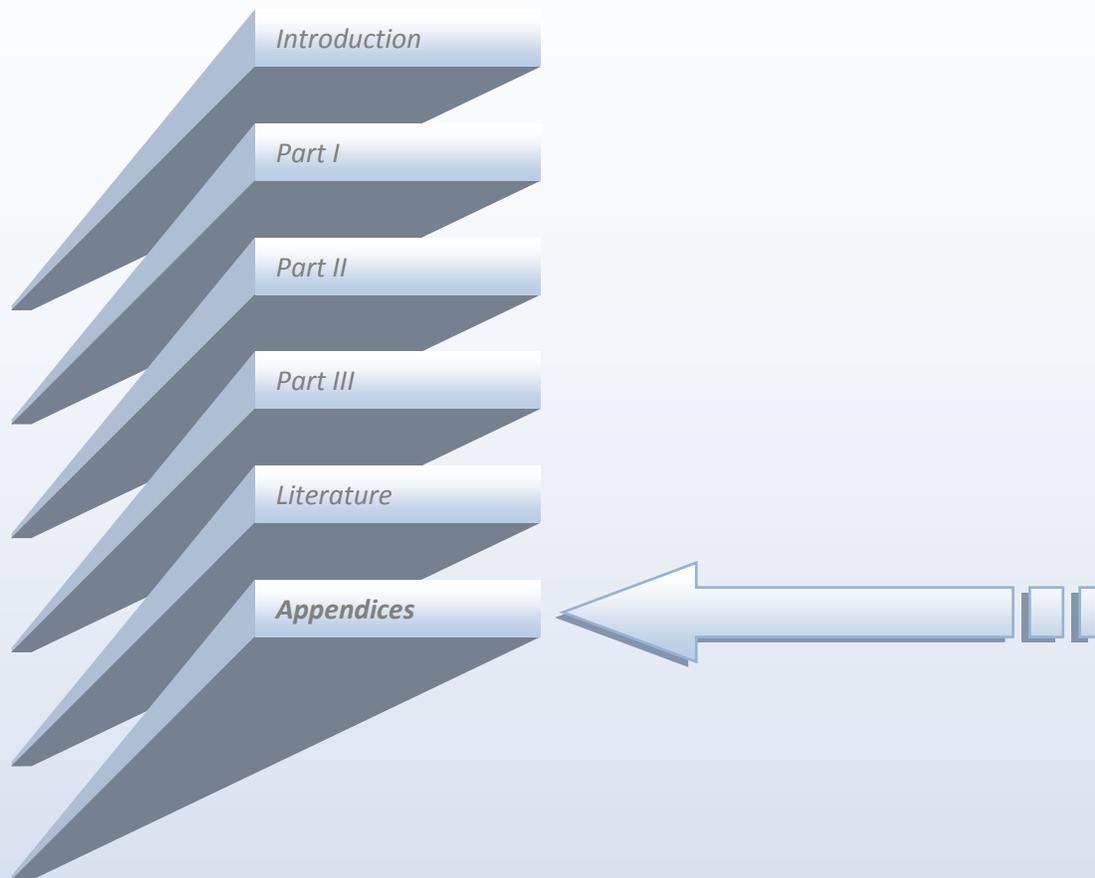
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**“We need to draw lines in the ground and say, ‘The concrete stops here.’ That forces people to build in and up, rather than out - and there’s nothing wrong with high, dense urban environments as long as they’re planned correctly. They can be extremely livable. They tend to require less transportation, fewer sewer lines, fewer power lines, fewer roads and more tightly packed structures, which in and of themselves are more energy efficient.”**

Quote by Patrick Moore

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## Appendix A, Population

### Estimated population growth rates of South Africa

	2001-2002	2005-2006	2009-2010
African	1,65	1,31	1,24
Coloured	1,37	1,15	0,94
Indian/Asian	1,52	1,63	1,64
White	-0,38	-0,44	-0,49
Total	1,40	1,113	1,06

(Lehohla, P., 2010)

### Estimated population growth in Buffalo City

	2001	2006	2011	2016	2020
Urban Area	680.147	728.493	780.287	835.757	882.959
Rural Area	214.861	235.427	257.962	282.653	304.097
Total	895.008	963.930	1.038.249	1.118.105	1.186.472

(Umhlaba Consulting Group, 2011)

### Births in South Africa

Year	Number of births	Children per woman
2001	1 170 773	2,92
2006	1 131 306	2,64
2011	1 059 417	2,35

(STATS, 2011)

### Average Age in South Africa

		1-14	15-29	30-44	45-59	60-74	75+	Total
South Africa	Male	7969880	7315171	4980498	2660464	1291137	297886	24515036
	Female	7842388	7358828	5273352	3295918	1763980	537255	26071721
	Total	15812268	14673999	10253850	5956382	3055117	835141	50586757
Total %		31,3	29,0	20,3	11,8	6,0	1,7	100

(STATS, 2011)

### Average household size

	Eastern Cape	South Africa
1996	4,9	4,6
2007	4,1	3,9

(STATS, 2007)

### Estimated provincial migration stream between 2006 and 2011 (Eastern Cape)

	Out-migration	In-migration	Netto Migration
Eastern Cape	329 714	114 899	-214 815

(STATS, 2011)

### Religion in South Africa

Religion	Population %
Christian	73,52
Non-religious	8,08
African traditional religion	15,0
Other	3,4

(Religious intelligence, 2008)

### Working age population Buffalo City and South Africa

Age	0-14	15-64	65+
% of BCM (2007)	26,8	67,5	5,7
% SA (2011)	31,3	63,7	5,0

(BCMM, 2010) (STATS, 2011)

### Population of working age (15-64) by market status in SA

Gender	Date	Total	Not Economically active	Workers	Unemployed	Unemployment rate %
Man	March 2001	12 847 000	4 194 000	6 666 000	1 986 000	23,0
	Sept. 2006	14 240 000	4 984 000	7 609 000	1 647 000	17,8
	June 2010	15 005 000	5 751 000	7 094 000	2 160 000	23,3
Woman	March 2001	14 418 000	6 496 000	5 827 000	2 095 000	26,4
	Sept. 2006	15 759 000	7 554 000	5 992 000	2 212 000	27,0
	June 2010	16 394 000	8 595 000	5 647 000	2 152 000	27,6

(Lehohla, P., 2010)

### Market status of population in Buffalo City and South Africa

Area	Economically active	Not economically active	Unemployment
Buffalo City (2004)	52,0%	48,0%	39,1%
South Africa (2010)	54,3%	45,7%	25,3%

(Lehohla, P., 2010) (BCMM, 2010)

### Population compared to the employment per province (June 2010)

	WC	EC	NC	FS	KZW	NW	GT	MP	LIM	Total
Population %	10,45	13,50	2,17	5,46	21,39	6,43	22,39	7,23	10,98	100
Employed X 1000	1 869	1 243	258	776	2 362	775	3 690	867	903	12742
% employed of total	14,67	9,76	2,02	6,09	18,54	6,08	28,96	6,80	7,09	100

(Lehohla, P., 2010)

### Unemployment rate per population group of working age(15-64), June 2010

Population Group	Unemployment rate%
Black African	29,5
Coloured	22,5
Asian/Indian	10,1
White	6,4
Average South Africa	25,3

(Lehohla, P., 2010)

### Highest level of education obtained amongst persons aged 20 years and above

	No Schooling	Some Primary	Completed Primary	Some Secondary	Completed secondary	Higher
SA 1996	19,3	16,7	7,5	33,9	16,4	6,2
Sa 2007	10,3	16,0	5,9	40,1	18,6	9,1
BCM 2007	11,0	14,6	7,8	35,9	21,2	9,5

(BCMM, 2010) (STATS, 2007)

## Appendix B, Health in South Africa

Health in South Africa is considered to be a problem. Compared to other countries there are a lot of people infected with HIV. Also the life expectations in South Africa are low compared to some European countries.

### *HIV in South Africa*

Year	HIV Population	% HIV	% AIDS deaths
2001	4 210 000	9,4	40,5
2006	4 870 000	10,2	52,3
2011	5 380 000	10,6	43,6

(STATS, 2011)

More than 10% of the population has HIV. The median time for HIV infection to death is 10,5 years for men and 11.5 years for women. HIV is one of the main reasons for the lower life expectation, see table below.

### *Life expectations in South Africa*

Year	Life expectancy at birth		
	Male	Female	Total
2001	52,1	57,8	55,1
2006	50,1	54,2	52,3
2011	54,9	59,1	57,1

(STATS, 2011)

Especially people with a lower resistance need good shelter, to keep them from getting more sick then they already are.

## Appendix C, Crime in South Africa

In South Africa is a lot of crime, there are more murders and rapes than in the average country. Good shelter can protect people for some kind of crimes. But there are not much numbers about crime available. The numbers about homicides are probably reliable.

### *Homicides per 100.000 people in South Africa*

	1994/1995	2002/2003	2010/2011
<b>Eastern Cape</b>	76,8	52,1	47,3
<b>South Africa</b>	66,9	47,4	31,9

(Institute for Security Studies, 2011)

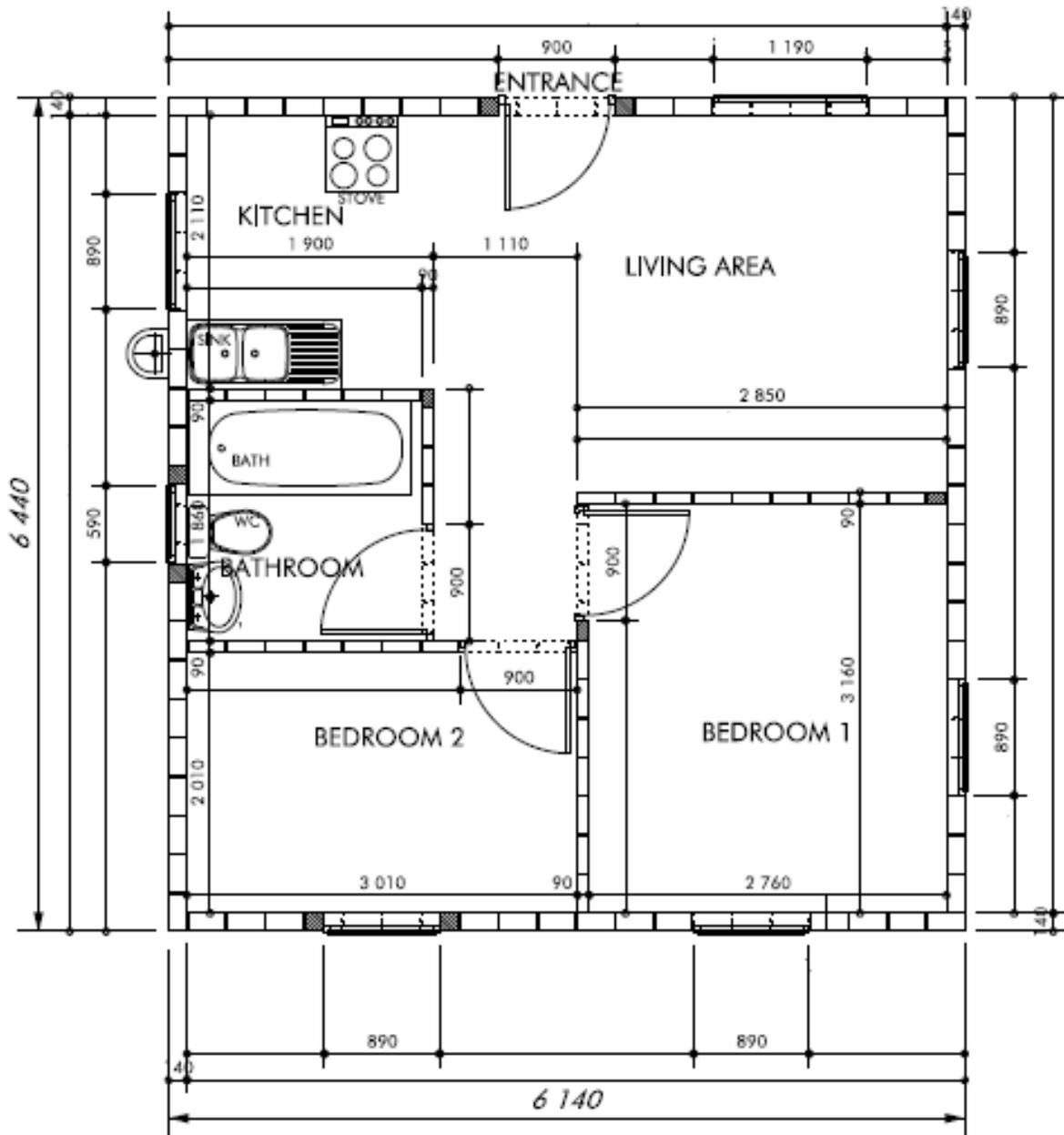
In South Africa live 50.586.757 people, so according to the table 16.137 peoples have been murdered in 2010. The number of homicides in the Eastern Cape is much higher than the average of South Africa, the highest of all provinces in 2010/2011.

The statistics say a lot of different things about rape in South Africa, most numbers are not reliable. One thing can be said and that is that rape is a big problem in the country. An Article by Lee Middleton gives an indication of the problem:

*'Human-rights organizations estimate that over 40% of South African women will be raped in their lifetime and say that only 1 in 9 rapes are reported — which is to say that the average South African woman is more likely to be raped than complete secondary school. A survey by South Africa's Medical Research Council in June 2009 found that 1 in 4 South African men admitted to having "had sex with a woman when she didn't consent," and 46% of those said they had done so more than once.'*

(Middleton, L., 2011)

## Appendix D, Floor plan RDP unit

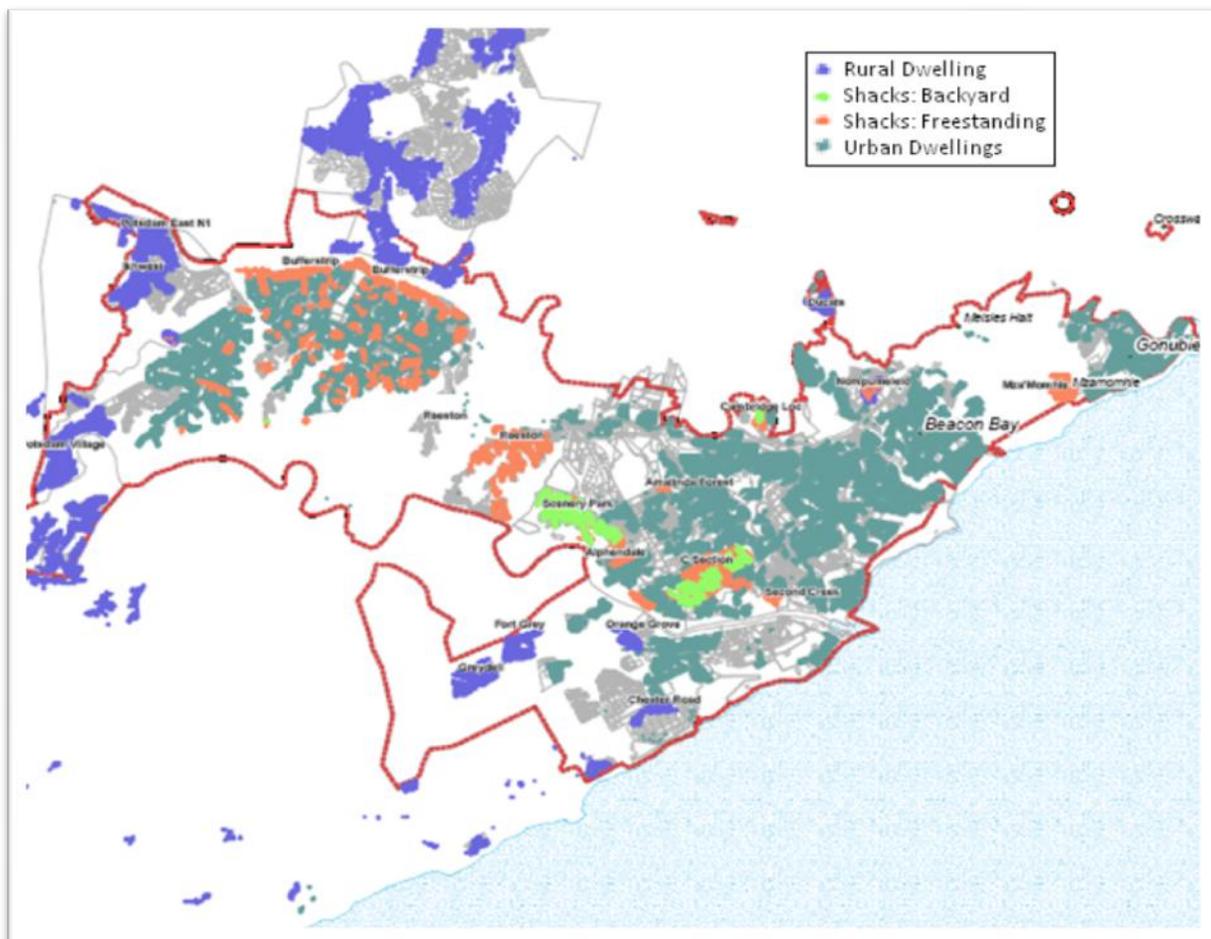


(Concrete manufacturers association, 2011)

## Appendix E, All informal settlements BCMM

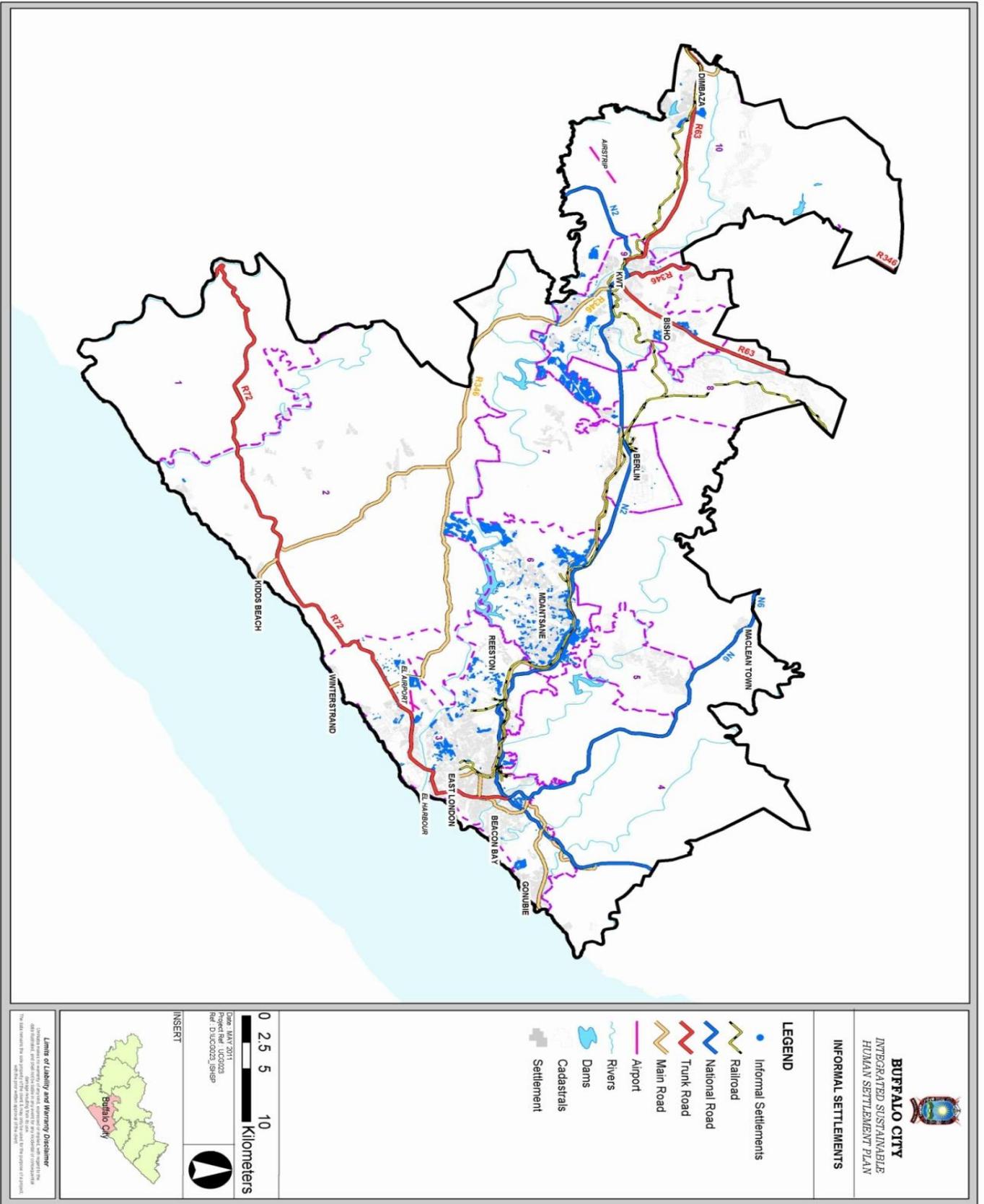
Shacks can roughly be divided in two categories, backyard shacks and informal shacks (not on their own property). In the figure below the rural dwellings are shown in blue, light green indicates backyard shacks and orange indicates informal shacks. (Umhlaba Consulting Group, 2011)

Most shacks, 60%, are informal ones in informal settlements. Of all rented shacks more than 75% of these are found in backyards. And of the whole rental stock in the country, 21% are shacks. The average rent that a household pays per month for a shack in a backyard is R147, and for a shack in an informal settlement this is R103. (The Social Housing Foundation, 2008)



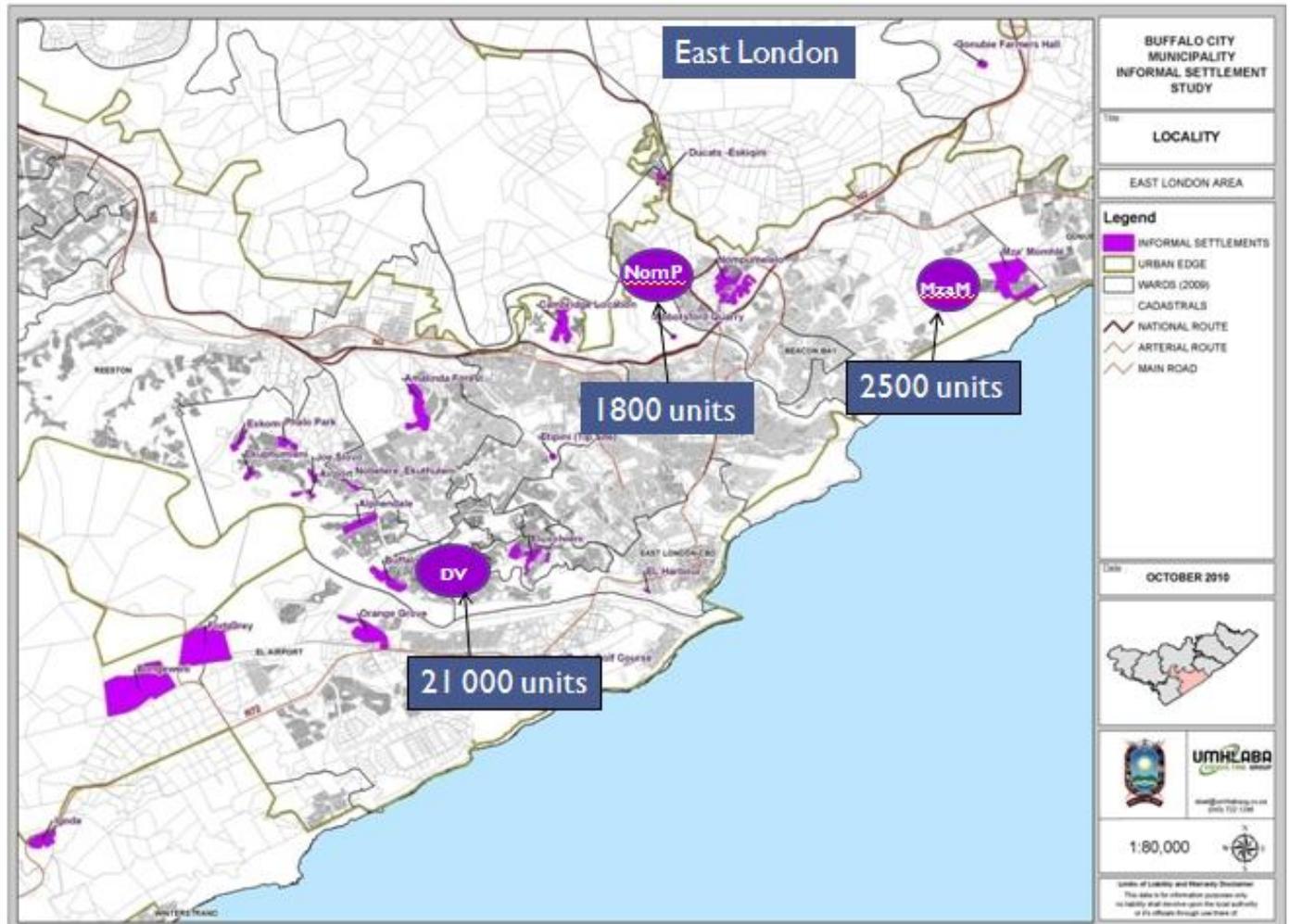
(Umhlaba Consulting Group, 2011)





## Appendix F, Townships

The biggest informal settlements in East London are Duncan Village (and surrounding) with 21.000 units, MzamoMhle with 2.500 units and Nompumelelo with 1.800 units. In Mdantsane are also a lot of informal settlements, but these are smaller and more separated.



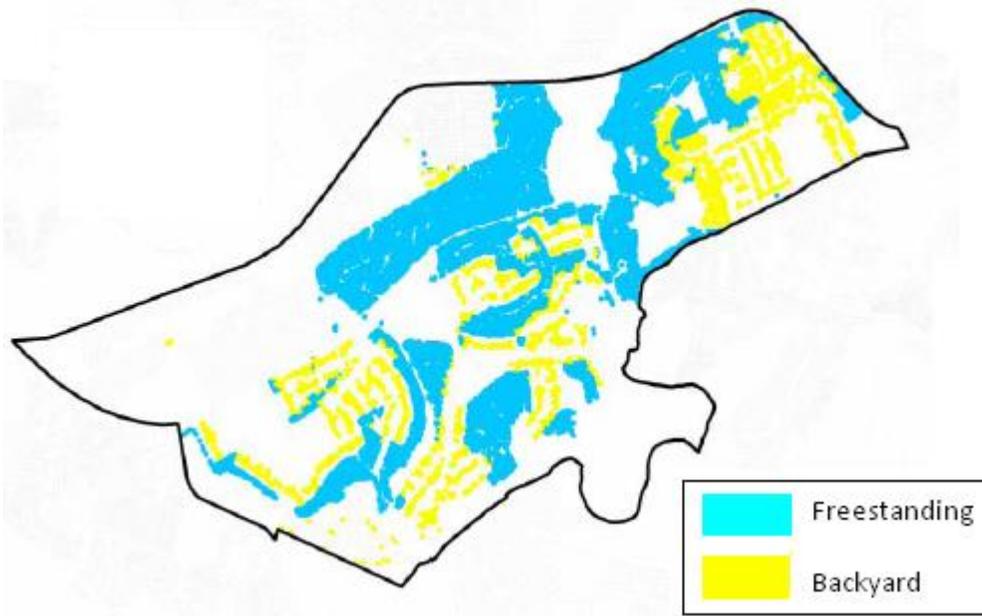
(Umhlaba Consulting Group, 2011)

### Duncan Village

Duncan Village is a township near the city center of East London, one of the oldest in South Africa. In 1960 the apartheid government tried to remove the township to Mdantsane, 25 kilometer away, but the residents did not want to leave. The location in relation to the city center is one of the reasons why there are living so many people in this township in particular, the Central Business District of East London can be reached in several minutes by foot. Amenities like schools, shops, healthcare and job opportunities can be found in the area, which is the reason that makes Duncan Village 'popular'.

The Reconstruction and Development Programme recognized Duncan Village in 1994 as a high priority project. In the last 12 year there were several attempts to improve the area, but not with great success. One of the problems is that Duncan Village keeps growing, new children are born every day and people keep moving to the city for job opportunities. The number of informal shacks is rising, but the municipality tries to move people out to RDP units. (Wiseman, S., 2006)

At the moment Duncan Village counts about 21.000 units, giving shelter to approximately more than 100.000 people. The density is between 55 units to 193 units per hectare. 6.000 of the dwellings are formal ones, 15.000 are informal houses. 3.500 of the informal units are backyard shacks and 11.500 are freestanding shacks. (Wiseman, S., 2006)



Most of the houses in this area are shacks, mostly built from corrugated iron and timber, sometimes from old bricks and clay.

The houses do not have a water point inside, but there are several shared points in the neighborhood. Most of them do not have own sanitary and use the public toilets in the area.

The state of these facilities however is wretched, some parts are worse than others. Two decades ago 250 people shared one toilet block in the C-section, but now about 750 residents are using this facility and one water tap for all of them. But now this toilet is flooding and the whole area is stinking, the water is flowing through some of the nearby houses. People have to find other ways to do their needs, resulting in dirty conditions. (Mukhuthu, Z., Jacob, B., 2011)

A few of the residents use legal electricity, but most of them do not have it. It is estimated that there are over 10.000 illegal connections in this area. (Mntengwana, T., 2009) Most people have a television in their shacks.

The circumstances in this area are really bad, in appendix 4 can be found some pictures of Duncan Village for an impression of the conditions.

Duncan Village knows a lot of problems, the poverty is high, just as the crime rate is. Sometimes there are outbreaks of diseases, fires and floods, with a high impact because of the density rate. Other problems are HIV, hunger, drugs and alcohol abuse, rape and assault.

The unemployment in this area is extremely high, in 2001 the census declared that 75,5% of the households had no regular income, 21,1% had an income between R1 and R1.600 per month. Merely 3,5% of the households have an income above R1.600. (Wiseman, S., 2006)

Last August there was one of those destroying fires in Duncan Village, more than 800 people lost their shack and belongings in the fire. One man died during this disaster. (Mukhuthu, Z., 2011)

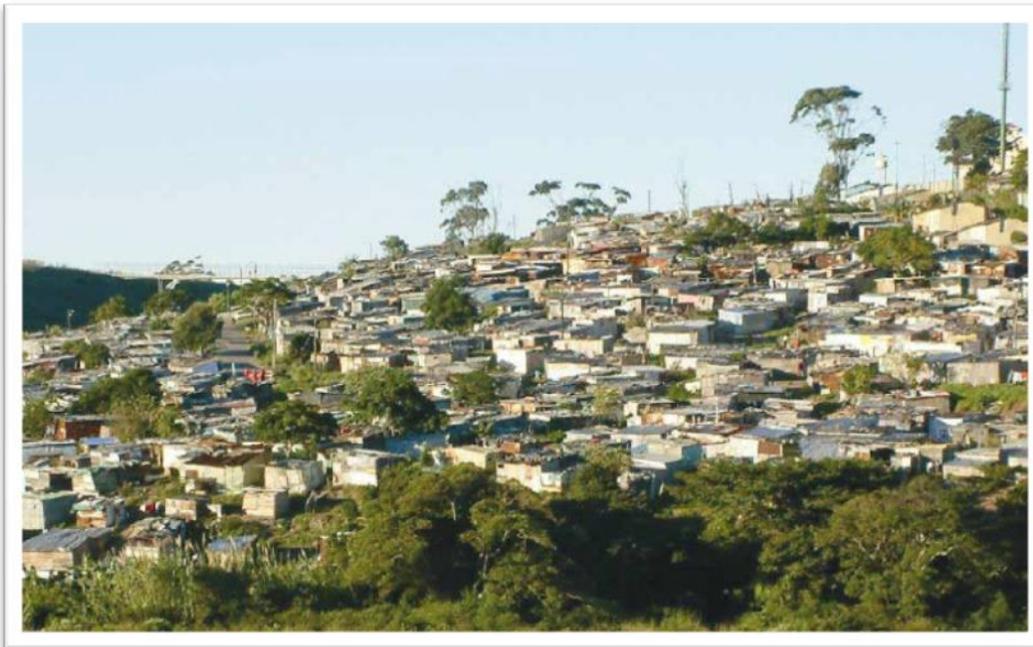
Some people in this area are desperate to get a RDP house, in the beginning of 2012 some residents made a point. Twenty-three families illegally occupied some new (not fully finished) RDP units for a weekend and wanted to force the municipality to give them these houses. They are tired of waiting for a house, but they knew these units were not meant for them. Other residents in the neighborhood claimed that they were the rightful owners of the houses and the police had to step in. (Mukhuthu, Z., 2012)

As a result of the requests in the Housing Demand Database the government was able to identify the most important projects for social housing. Duncan Village was appointed as one of the eight biggest priority projects in South Africa. Therefore the government made a grant available of R382.970.000 for the year of 2011 till 2014. (Department of Human Settlements, 2011)

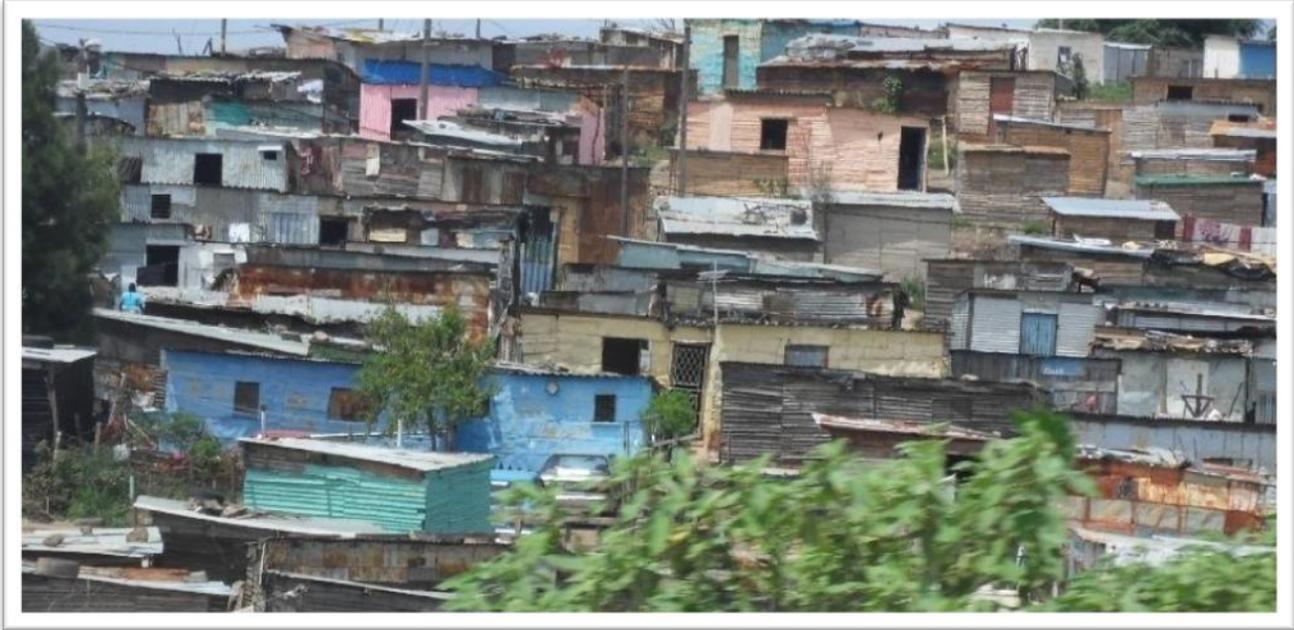
The circumstances in this area are really bad, see these pictures of Duncan Village for an impression of the conditions.



(Wiseman, S., 2006)



(Wiseman, S., 2006)



(Own picture, 2012)



(Own picture, 2012)



(Wiseman, S., 2006)



## Mdantsane

Mdantsane is a township, 25 kilometers from the city center of East London near the N2 to King William's Town. It is the second largest township of South Africa, after Soweto, the census of 2001 said there were living 175.509 people in Mdantsane (STATS, 2001), the estimated population is however 250.000 people. (Spiropoulos, J., 2010)

The history of Mdantsane started back in the 1960's during the apartheid. The black African provided cheap labor in the white areas, so they were needed near the city. In 1962 the racist government made cheap homes in Mdantsane for the black population and they removed black Africans from the East Bank areas in East London. First there were made 300 houses and in 1963 the first people moved in Mdantsane. Between 1964 and 1970 thousands of families were forced to go live in the new born township and was seen as a homeland for the black population. (Chocolat Negro, n.d.)



After the apartheid in 1996 people were free to live where they wanted, but the roots of the area still are present. The census of 2001 said 99,84% of the population were black African and 99,2% of the people talked Xhosa. (STATS, 2001) At the (Own picture, 2012) much changed about those numbers. Other remarkable statistics are that 55% of the population is female and that 40% is younger than 15 years. 42% of the working population is unemployed and has no income at all. 35% of the working population has an income below R1.000 per month. (Nyatela, D., 2007)

The housing backlog in Mdantsane is extreme and that is not the only problem, there is a need for schools and more healthcare facilities. In the township the number of HIV and AIDS is high and the safety en security is low. Public transport is an issue in the area and in some parts there are problems with storm water management and the supply of water. (Nyatela, D., 2007)



(Own picture, 2012)

Mdantsane is a township with shacks and with formal houses. The shacks in Mdantsane are divided all over the township in smaller informal settlements. The density is lower than in Duncan Village, therefore most shacks have some space around their unit for chickens and vegetables.

## Mzamomhle

Mzamomhle is a township located between the richer suburbs of Beacon Bay and Gonubie, near the Indian Ocean. The township contains approximate 2500 units, but there are no statistics available about the population.

Mzamomhle is known as the 'perfect haven for criminals'. Citizens of the township complain about that everybody can settle in this area, there is no social cohesion. A lot of people in the township do not know each other, there are a lot of shack dwellers from other townships. Therefore crime is a big problem in and around this area. The crime in Gonubie and Beacon Bay are partly blamed on the township, according to residents the 'masterminds' were in Mzamomhle. (Fengu, M., 2011)

Other big problems are alcohol and drugs related, even children seem to use it in this area. Also the overpopulation is an issue, the area was originally meant for 500 households. (Fengu, M., 2011)

5 July 2011 was a bad day for the township, storms and heavy rainfall caused floods in the area. Approximately 4000 people in Mzamomhle were affected by the floods, their houses and possessions were destroyed. (Mukhuthu, Z., 2011)



(Fengu, M., 2011)

## Nompumelelo

Nompumelelo is a township located at the inland boundaries of Beacon Bay. The area has about 1800 units and it is estimated that there live about 9000 people. There are both formal and informal houses. In some parts of the area is no taped water and (public)sanitary available.

For the last decades the township was used a lot by people to reduce the distance to their work each day. In the weekend the population is remarkable smaller than on working days, most of these people leave in the weekends to their houses in rural areas. (Nompumelelo Stakeholder Forum, 2009)

The neighborhood has problems with crime, unemployment, alcohol and drugs.

1200 RDP units have been built in this area, but there were some problems with the quality of the units and the sewerage in the area. (Mabindla, N., 2006)

## Appendix G, RDP projects in BCMM

### *RDP units in Buffalo City*

Project description	Total no. of units	Completed and handed over	Currently under completion
Airport Phase 1	838	838	0
Airport Phase 2A	840	840	0
Airport Phase 2	195	195	0
Alphendale	339	339	0
Amalinda Simanyene	93	93	0
Berlin/Lingelitsha	411	411	0
Braelyn: Ext 10	649	649	0
Cambridge Phase 1	198	120	78
Cambridge Phase 2	222	222	0
Dimbaza South	776	776	0
Dimbaza Phase 2	290	59	231
Dongwe	300	193	107
Ducats	625	195	430
Egoli	382	382	0
Ilitha South	439	114	325
Lilyvale	88	0	88
Macleantown	77	0	77
Manyano and Tembelihle	850	0	850
Mdantsane: Chris Hani	304	304	0
Mdantsane: Zone 18cc Phase 1	427	148	279
Mdantsane: Zone 18cc Phase 2	1500	0	1500
Mekeni Street, Haven Hills South and Competition Site	323	0	323
Mzamomhle	540	0	540
Ndevana	988	0	988
Needscamp	300	300	0
Nompumelelo	1199	1199	0
Parkridge	136	136	0
Potsdam Kayelitsha	246	217	29
Potsdam Unit P Stage 1	500	500	0
Potsdam Unit P Stage 2	2003	0	2003
Reeston Phase 1&2 Stage 1A	1000	1000	0
Reeston Phase 1&2 Stage 1B	1000	950	50
Reeston Phase 1&2 Stage 1C	500	500	0
Reeston Phase 1&2 Stage 1D	1764	678	1086
Reeston Phase 3 Stage 1	796	796	0
Reeston Phase 3 Stage 2	2500	0	2500
Sweetwater's Phase 1	800	800	0
Sweetwater's Phase 2	800	800	0
Sweetwater's Phase 3	620	0	620
Tshabo Phase 1 Rural Housing	500	117	383
Tyutyu Phase 1	300	88	212
Tyutyu Phase 2	373	293	80
Z Soga Phase 1	171	171	0
<b>Total</b>	<b>27.202</b>	<b>14.423</b>	<b>12.779</b>

(Govender, D., 2012)

## Appendix H, Social Housing Institutions and projects

### HAEL

Housing Association East London is an association that has currently only one project in South Africa, Belgravia Valley Phase 1 and 2. This project counts 438 one-, two- and three bedroom units. The design is two and three floor flats. The units were delivered in 1998, the first association housing project in Buffalo City and till 2007 the association was supported by the Dutch. (Jonkers, H., 2011)



(Jonkers, H., 2011)

Application requirements for the units are the following:

- The maximum household income is R15.000 per month
- At least one of the tenants must be working in Buffalo City Metropolitan Municipality
- The unit has to be the primary house
- The household is not allowed to have another property in or around East London
- It is not allowed to use the unit as student housing

All the units are rental only, merely 30% (131) of the tenants has a household income lower than R3.500 each month, and these are subsidized and pay less rent. In the table below are the rental fees given. (Nofemele, L., 2012)

#### *Rents per month by unit and income*

Unit type	1 bedroom	2 bedroom	3 bedroom
Income <R3.500	R1.710	R2.070	R2.350
Income between R3.500 and R15.000	R2.085	R2.360	R2.650

(Housing Association of East London, 2011)

HAEL is interested in building Belgravia Valley Phase 3, they have already found the land and made the plans. The project will have 300 units, most of them will be 2 bedroom units and some 1 and 3 bedroom units. But the project is on a hold because the housing association is waiting for funding. (Mhalunge, S., 2012)

### SOHCO

This association is not only active in Buffalo City, but also in Cape Town and Durban. Amalinda Housing is the department in Buffalo City. This association has currently two completed projects in East London, Amalinda Village and Emerald Sky. (SOHCO, n.d.)

The first project of SOHCO was Amalinda Village, the project was delivered in 2002. (Tunzi, N., 2012) In 1999 there was cooperation with the Flemish government, who supported the building of this project. This project currently has 598 units, consisting of 65 one-, 493 two- and 40 three-bedroom units. The structure of the project is a range of blocks with 12 to 20 units each, these blocks are situated around an open space in the middle. The design of the units is made in a way that sunlight can be used at the maximum. In the project there are open spaces for recreation of the tenants. There are a lot of facilities in the neighborhood, shopping centers, industrial areas and a hospital. Education and



(Jonkers, H., 2011)

recreational services are within a distance of five kilometers. (SOHCO, n.d.)

The rental fees in Amalinda range from R2.165 to R3.097 including water each month, electricity can be bought prepaid. From the 598 units 150 units are occupied by the first tenants, these rent-to-buy options cost R43.000 for a one bedroom unit and R63.000 for a two bedroom unit. The tenants have an option of buying the unit after 4 years, they do not have to pay the whole amount at once. The requirements to apply for these units are that the income of the household is between R5.500 and R13.000 and that you are a South African citizen. However the income is only checked when moving in, after that it is not checked anymore. (Tunzi, N., 2012)



(Jonkers, H., 2011)

applicant had some other property, therefore it is possible that parents rented a unit for their children. To prevent this the association only checks on the households when there are suspicions that there live students. (Tunzi, N., 2012)

At the moment the association is building Emerald Sky Phase 5, which will count 180 units. The units will be delivered in September 2012. The design from the project will be the same as the other phases. By applying for these units will be checked if the applicant has other property, if they have than they do not qualify to live there. (Tunzi, N., 2012)

The other project in East London is Emerald Sky, located near Amalinda Village, with the same design and access to facilities, it counts 480 units. There are bachelor, one and two bedroom units (SOHCO, n.d.). In 2009 the first 480 units were handed over, at the moment there are another 180 units built. The rentals in this project depend on the income of the household, the lowest fare is R1.020 including water and the highest is R2.706. The requirements for these units are that the household has an income between R3.000 and R8.120 and (but these is also only checked when moving in) that the applicant is a South African citizen. (Tunzi, N., 2012)

In both projects student housing is not allowed, it is not possible to apply for a house when you are under the age of 21. However in these projects was not checked if the

## OHHA

OHHA is active in East London and Port Elizabeth and started working as a housing association in 2002. With support of housing association Eigen Haard, from Amsterdam, the Netherlands, OHHA established to manage their first rental stock. Their slogan is 'Providing sought-after, well managed rental homes'. OHHA also offers help on management services to other parties, such as private landlords. The association has 3 social housing projects. OHHA has 5 other housing projects, but these are non-subsidy houses. (OHHA, 2012)

The first project of Own Haven was Haven Hills South delivered in 2003. The project has 258 units divided into two and three storey blocks. The units exist out of one-, two- and three-bedroom flats. Only 32 units are subsidized. The units were built for around R120.000 each, with a subsidy lower than one fifth of the building costs. The rental fees for this project can be found in the table below. (Dillan, S., 2012)

*Units by number and rent Haven Hills South*

Kind of unit	No. units	Rent per month
1 bedroom	30	1.296
2 bedroom subsidized	26	1.559
2 bedroom not subsidized	151	2.030
3 bedroom subsidized	6	1.848
3 bedroom not subsidized	27	2.176



(Jonkers, H., 2011)

The housing project of Reservoir Mews had 429 units and houses the offices of the OHHA itself. This project is located near the central business district, medical services and near schools. The design also exists out of three and four storey blocks. The units were completed in 2010 and 2011. There is bachelor and 1 and 2 bed roomed units. The rental fee depends on the household income, a primary unit is for incomes between R2500 and R3500 and a secondary unit is for households with an income between R3500 and R7500. In the table below is the overview of the rent per unit. (Dillan, S., 2012)

*Units by number and rent Reservoir Mews*

Kind of unit	No. units	Rent per month
Bachelor	85	740
1 bedroom Primary	106	864
1 bedroom Secondary	60	1944
2 bedroom Secondary	157	2430

The costs to deliver the newer units were much more than the first project, around R400.000 each. But the subsidy increased also a lot, around 50% was paid by the government with an institutional subsidy, a subsidy for the infrastructure and a subsidy from the national government.



(Own picture, 2012)



(Own picture, 2012)

Southernwood Square is a project with one of the few higher buildings in town. 249 units are settled in a two and three storey blocks with one tower of 9 floors situated in the middle. The last units were delivered in January 2012. There are one-, two- and three-bed roomed units. The rental fee depends on the household income, a primary unit is for incomes between R2500 and R3500 and a secondary unit is for households with an income between R3500 and R7500. In the table below is the overview of the rent per unit. (Dillan, S., 2012)

*Units by number and rent Southernwood Square*

Kind of unit	No. units	Rent per month
Bachelor	55	756
1 bedroom Primary	55	864
1 bedroom Secondary	21	1944
2 bedroom Secondary	107	2430

Some of the units are vacant, this is because there is time between household moving out and new families moving in. (Dillan, S., 2012)

The requirements to live in the subsidized units of the association are that the income of a household is between R2500 and R7500. In these projects students are allowed to live, however a parent has to sign the deal and has to meet the requirements. In these flats not only citizens from South Africa are allowed, but people all over the world, but they have to prove that they are sustainably employed. South African citizens however have priority. (Dillan, S., 2012)

The last years the income of a household was only checked when they moved in, now OHHA wants to change this and wants to check it once a year. (Dillan, S., 2012)

OHHA also wants to improve the system of the waiting list. At the moment it is more a list of people who paid the deposit and are waiting to move in. More than 3000 people have said they wanted a house from OHHA in the past years. (Dillan, S., 2012)

OHHA said they are not going to build or develop more houses this year, they need the rest of the year to stabilize and improve their waiting list. They have some projects on their eyes, but they will do further research in 2013. (Dillan, S., 2012)

## Appendix I, Community Residential Units

### Total number of Community Residential Units in Buffalo City

Area	Number of units	Remarks
D-Hostel (Duncan Village)	414	Hostels
B-Hostel (Duncan Village)	398	Hostels
C-Section (Duncan Village)	750	One-room emergency
Gracia Flats (Cambridge)	136	Flats
Pefferville Flats (Duncan Village)	443	Flats
Sunnymead (Gonubie)	20	Senior cottages
Kings Park (King William's Town)	35	Senior age cottages
Henry Street (King William's Town)	4	Semi detached

(Scheffers, H., 2012)

### Projects

<p><i>D-Hostel</i></p>	<p>Built around 1990</p>  <p>(Jonkers, H., 2011)</p>	<p>1 (216) and 2 (198) roomed units            Rental fee: average R263 per month            15m<sup>2</sup> each unit            No sanitary or water inside the house, but shared in the neighborhood            Prepaid electricity, but also a lot illegal</p> <p>About 1000 families are staying here, major overcrowding            High unemployment, non-payment of the rent            Will be demolished for redevelopment            Some units collapsed during floods</p>
<p><i>B-Hostel</i></p>	<p>Built in the 1950's, upgraded in 1997</p> <p>1 (96) and 2 (302) roomed units            Rental fee: average R263 per month            20m<sup>2</sup> or 45m<sup>2</sup> each unit            The 2 roomed units have a toilet and shower            the 1 roomed units have no sanitary, water inside the house            Prepaid electricity, but also a lot illegal</p> <p>No roads between the units, ambulances and fire trucks can not come here            A lot of non-payment of the rent</p>	 <p>(Own picture, 2012)</p>
<p><i>C-Section</i></p>	<p>Built as emergency units in 1958            1 roomed units            Rental fee: R250 per month            15m<sup>2</sup> each unit            No sanitary or water inside the house, but shared in the neighborhood            Prepaid electricity, but also a lot illegal</p>	

Very dilapidated and overcrowded, the units are surrounded by informal shacks  
 Maintenance is difficult, because there are too many informal shacks  
 The intention was that these units were being used for approximately 10 years, now they are already used for over 50 years



(Jonkers, H., 2011)  
 (the brick structures are the formal units, hardly visible through the informal shacks)

*Gracia Flats*

Built in 1976  
 1, 2 and 3 bedroom units  
 Rental fee: average R431 per month  
 45m<sup>2</sup>, 60m<sup>2</sup> or 75m<sup>2</sup> each unit  
 Sanitary and electricity in the units

Vacant units are allocated  
 Problems with the leaking roof,  
 electricity, plumbing and safety

(Own picture, 2012)



*Pefferville Flats*

Built in 1973  
 Bachelor, 1 and 2 bed roomed units  
 Rental fee: average R297 per month  
 Sanitary and electricity in the units

Poorest of the poor, non-payment of the rent, resulting in a lack of general maintenance  
 There are problems with health and safety



(Jonkers, H., 2011)

<p><i>Sunnymead</i></p>		<p>Built around 1990          1 and 2 bedroom units          Rental fee: average R272 per month          The qualifying maximum income is 2 pensions, that is currently R2040</p>
<p><i>Kings Park</i></p>	<p>Built in 1984          24 single flats, 8 double flats and 3 4-roomed flats          Rental fee: average R320.40 per month          The qualifying maximum income is 2 pensions, that is currently R2040</p>	
<p><i>Henry Street</i></p>	<p>Built around 1970          Old railway cottages renovated in senior flats          Double flats, with separate entrance          Rental fee: average R320.40 per month          The qualifying maximum income is 2 pensions, that is currently R2040</p>	

(Jonkers, H., 2011)

(Jonkers, H., 2011)

(Jonkers, H., 2011)

(Scheffers, H., 2012)

All rental fees are excluding water and electricity, but including maintenance to the top structure and insurance for fire.

## Appendix J, Guideline Program of Requirements

### Zoning scheme

Category: Zoning scheme	
<b>Land Use</b>	<ol style="list-style-type: none"> <li>1. Find out what the erf numbers are in the New City Map. (<a href="http://bcm-gis02/GISText10/">http://bcm-gis02/GISText10/</a>)</li> <li>2. Type in the erf numbers in GIS text, the zoning code is shown on the first page. (<a href="http://eltlc-gis1/Intranet/Gistext4/Home.php">http://eltlc-gis1/Intranet/Gistext4/Home.php</a>)</li> <li>3. Look up the code in the BCM Zoning Scheme Regulations of 2007 for its meaning and all the requirements in the zoning.</li> <li>4. When the code is Multiply Zoning, it can be looked up in the BCMM Land Zoning Map of 2006.</li> <li>6. Contact the City Planning Department for uncertainties.</li> </ol>

### Land

Category: Genral	
<b>Ownership</b>	<ol style="list-style-type: none"> <li>1. Find out what the erf numbers are in the New City Map. (<a href="http://bcm-gis02/GISText10/">http://bcm-gis02/GISText10/</a>)</li> <li>2. Type in the erf numbers in GIS text, the current owner is shown on the first page together with the registration date. (<a href="http://eltlc-gis1/Intranet/Gistext4/Home.php">http://eltlc-gis1/Intranet/Gistext4/Home.php</a>)</li> <li>3. Sometimes former owners are also in the system.</li> </ol>

Category: Land	
<b>Vegetation</b>	<ol style="list-style-type: none"> <li>1. Field research</li> <li>2. Go to the GIS Environmental Map of the municipality (<a href="http://bcm-gis02/EnviroGIS/">http://bcm-gis02/EnviroGIS/</a>)</li> <li>3. Select layers:           <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <input checked="" type="checkbox"/> sanbi_biodiversity_June           <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> EC125VegetationType</li> <li><input checked="" type="checkbox"/> EC125Biomes</li> </ul> </div> </li> </ol>

Category: Land	
<b>Ground level</b>	<ol style="list-style-type: none"> <li>1. Field research (is the land flat, uneven, hilly or mountainous)</li> <li>2. Go to New City Map (<a href="http://bcm-gis02/GISText10/">http://bcm-gis02/GISText10/</a>)</li> <li>3. Select layer: (in map contents)           <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <input checked="" type="checkbox"/> City           <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Contours_1Metre</li> </ul> </div> </li> <li>3. Make a copy for the inquiry form</li> <li>4. Calculate the average degree of slopes on the property. Calculator: <math>\tan^{-1}</math>(difference in heights / length between the contours) (measure lengths in New City Map)</li> <li>5. Find out if the elevation/altitude is not too high to build on or below sea level.</li> </ol>

Category: Land	
<b>Status</b>	<ol style="list-style-type: none"> <li>1. Visit the landsite and do field research. Check for any buildings (or remainders), structures and roads</li> </ol>

### Category: Land

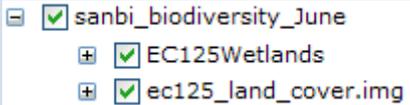
#### Floods

1. Field Research
2. Go to the GIS Wards Basemap of the municipality (<http://bcm-gis02/basemap/default.aspx>)
3. Select layers for an overview of dams and rivers:  


The screenshot shows a GIS layer selection window. At the top, 'riv\_dams' is selected with a checkmark. Below it, three sub-layers are listed, each with a plus sign and a checkmark: 'Dams', 'Rivers', and 'Main Rivers'.
4. Go to New City Map (<http://bcm-gis02/GISText10/>), and measure the distance to dams, rivers, lakes and the sea.
5. Check Plan 1, Constraints: Environmental of the Spatial Development Framework. (Areas Susceptible to Possible Flooding) (<http://www.buffalocity.gov.za/municipality/sdp.stm>)
6. Look at the history of the water. Check if it ever flowed outside its banks and how big the flow was. For rivers: Look up if there is a calculation of the 1:100 flood line.
7. Look at the distance to the water and how high the location is compared to the water and make an estimation of the risk.
8. For non-perennial rivers: look at the vegetation around the center line. How far do the bushes reach outside the line? These are the river banks.
9. When there are any suspicions that the water can be a risk, consult a professional to calculate the 1:100 flood line for rivers.

### Category: Land

#### Soil type

1. Find out what kind of soil covers the location, through field research, or
2. Check Map B5, Current Environmental Situation of the Integrated Development Plan, or
3. Check Map B10, Land cover of the Integrated Development Plan (<http://www.buffalocity.gov.za/municipality/idp.stm>)
4. Go to the GIS Environmental Map of the municipality (<http://bcm-gis02/EnviroGIS/>)  
Check for wetlands, water bodies and mines, select layers:  


The screenshot shows a GIS layer selection window. At the top, 'sanbi\_biodiversity\_June' is selected with a checkmark. Below it, two sub-layers are listed, each with a plus sign and a checkmark: 'EC125Wetlands' and 'ec125\_land\_cover.img'.
5. Do research if the soil can be used to build on and what kind of buildings can be build on it (what kind of foundation).
6. If there are uncertainties, consult a professional. Before building the soil always has to be analyzed.

### Category: Land

#### Protected Areas

1. Go to the GIS Environmental Map of the municipality (<http://bcm-gis02/EnviroGIS/>)
2. Select layers:  


The screenshot shows a GIS layer selection window. At the top, 'sanbi\_biodiversity\_June' is selected with a checkmark. Below it, three sub-layers are listed, each with a plus sign and a checkmark: 'EC125Protected\_Areas', 'EC125MarineProtectedAreas', and 'bcm\_conserv\_moss'. Under 'bcm\_conserv\_moss', two more sub-layers are listed, each with a plus sign and a checkmark: 'environment.SDE.env\_ecosystem\_process\_moss' and 'MURP\_MOSS\_DRAFT'.
3. Go to GISText and type in the erf numbers, look at the environment page if there is a MOSS on the property (<http://eltlc-gis1/Intranet/Gistext4/Home.php>)

## Environment

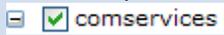
Category: Environment	
<b>Noise</b>	<ol style="list-style-type: none"><li>1. Field research, check if there are any circumstances that produce noise. Like industry, bars, highways and railways.</li><li>2. Check Plan 2, Constraints: Controlled Areas of the Spatial Development Framework. (<a href="http://www.buffalocity.gov.za/municipality/sdp.stm">http://www.buffalocity.gov.za/municipality/sdp.stm</a>)</li><li>3. Check Plan 8.4, West Bank Industrial Cluster of the Spatial Development Framework. (<a href="http://www.buffalocity.gov.za/municipality/sdp.stm">http://www.buffalocity.gov.za/municipality/sdp.stm</a>)</li><li>4. Check East London Airport Noise Contours. (When the location is on the West Bank)</li><li>5. Contact Alan MacIntyre, of BCMM Environmental Services, City Health(extension: 2928). Ask about complaints and measurements.</li><li>6. If there are suspicions that the noise level is reached, it has to be measured by a professional.</li></ol>
Category: Environment	
<b>Offensive Odours</b>	<ol style="list-style-type: none"><li>1. Field research(look for abattoirs, industry, agricultural areas, landfill site, polluted water)</li><li>2. Check Map B7, Pollution of the Integrated Development Plan. (<a href="http://www.buffalocity.gov.za/municipality/idp.stm">http://www.buffalocity.gov.za/municipality/idp.stm</a>)</li><li>3. Check Plan 2, Constraints: Controlled Areas of the Spatial Development Framework. (<a href="http://www.buffalocity.gov.za/municipality/sdp.stm">http://www.buffalocity.gov.za/municipality/sdp.stm</a>)</li><li>4. Check Plan 8.4, West Bank Industrial Cluster of the Spatial Development Framework. (<a href="http://www.buffalocity.gov.za/municipality/sdp.stm">http://www.buffalocity.gov.za/municipality/sdp.stm</a>)</li><li>5. Measure the distance to Cambridge Abattoir(at least 0,5 km)</li><li>6. If there are suspicions about the odor not being good enough a professional has to be consulted.</li></ol>
Category: Environment	
<b>Ground pollution</b>	<ol style="list-style-type: none"><li>1. Check Map B7, Pollution of the Integrated Development Plan. (<a href="http://www.buffalocity.gov.za/municipality/idp.stm">http://www.buffalocity.gov.za/municipality/idp.stm</a>)</li><li>2. Check the history of the location, find out what activities were done on the property (industry and agriculture). Find out if there were used hazardous substances in these activities.</li><li>3. Check if there are any underground tanks or barrels.</li><li>4. If there are any suspicions of pollution a professional has to be consulted for further research.</li></ol>
Category: Environment	
<b>Air quality</b>	<ol style="list-style-type: none"><li>1. Look if there are any signs that can lead to bad air quality (industry and a lot of roads)</li><li>2. Contact Alan MacIntyre, of BCMM Environmental Services, City Health(extension: 2928)..</li></ol>
Category: Environment	
<b>Daylight</b>	<ol style="list-style-type: none"><li>1. Field research, look what kinds of buildings are surrounding the landsite and were the sun comes up and goes down. (north is the sun side on daytime)</li><li>2. Also mountains should be taken in account.</li></ol>

## Amenities

### Category: Amenities

<b>Road network</b>	<ol style="list-style-type: none"><li>1. Visit the landsite and do field research.</li><li>2. Look at land maps where the roads are going.</li><li>3. Look if there is space left to connect the property to the road.</li></ol>
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### Category: Amenities

<b>Amenities</b>	<ol style="list-style-type: none"><li>1. Look for each amenity through field research</li><li>2. Go to the GIS Wards Basemap of the municipality (<a href="http://bcm-gis02/basemap/default.aspx">http://bcm-gis02/basemap/default.aspx</a>)</li><li>3. Select layer: </li><li>4. Check if the amenity is in the neighborhood and calculate what the distance is over roads. (measure distance in New City Map)</li><li>5. Fill in the table on the inquiry form.</li><li>6. Find out what score the location has and if missing amenities can be made in the area (when necessary). The minimum score for rental units has to be at least 225 points, for RDP units at least 160 point.</li></ol>
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## Remaining

### Category: Remaining

<b>Sewage</b>	<ol style="list-style-type: none"><li>1. Go to New City Map (<a href="http://bcm-gis02/GISText10/">http://bcm-gis02/GISText10/</a>)</li><li>2. Select layers: (in map contents)</li></ol>
<b>Water mainline</b>	 <ol style="list-style-type: none"><li>3. Make a copy for the inquiry form.</li></ol>

## Appendix K, Inquiry form

### Name Location

#### General

City	(East London, King William's Town, Mdantsane, ...)
Area	
Address	
Erf number(s)	
Income class	
Size	... Ha Copy of New City Map
Map	Copy of New City Map
Satellite picture	Copy of New City Map (or other source)
Owner(s)	
Picture(s)	

#### Zoning schemes

Use	Zoning		
	Primary use		
	Consent use		
Coverage allowance			
Minimum erf size			
Density			
Building lines	Min. distance to the street		
	Min. distance to the side		
	Min. distance to the rear		
Maximum height	Max. storeys		
	Max. height (m)		
Parking			
Roads			
Other			

## Land

<b>Ground Level</b>	Lowest point: Highest point: Average slope is between ...° and ...°.		
	Copy of New City Map		
<b>Floods</b>	Rivers	{description}: non-perennial rivers, perennial, main rivers	
	Sea	{description}	
	Dams/lakes	{description}	
<b>Protected areas</b>	(and MOSS) {description}		
	Copy of Environmental Map		
<b>Vegetation</b>	{description}		
	Copy of Environmental Map		
<b>Soil type</b>	{description}		
<b>Status</b>	{description}		
<b>Road network</b>	{description}		

## Environment

<b>Noise</b>	{description}	
<b>Offensive odours</b>	{description}	
<b>Air quality</b>	{description}	
<b>Daylight</b>	{description}	
<b>Ground pollution</b>	{description}	

## Amenities

	< 1,5 km	1,5 – 3 km	3 – 5 km	5 – 10 km	10 – 20 km
<b>Primary school</b>	25	15	0	-10	-10
<b>High school</b>	25	20	10	0	-10
<b>University/College</b>	15	15	10	10	5
<b>Employment opportunities</b>	25	25	15	10	5
<b>Supermarket</b>	25	20	10	0	-10
<b>Shopping center</b>	20	20	15	10	5
<b>Clinic/doctor or Hospital</b>	25	20	10	0	-10
<b>Transport</b>	25	15	0	-10	-10
<b>Church</b>	20	20	15	5	0
<b>Recreation</b>	20	20	10	10	0
<b>Sport facilities</b>	25	25	15	5	0
<b>Bank</b>	25	25	20	10	5
<b>Post office</b>	20	20	15	5	0
<b>Library</b>	20	20	15	10	5

<b>Total points:</b>
<b>Amenities with a score of 0 or less:</b>
<b>Amenities not within 20 km:</b>
<b>Comments:</b>

## House

<b>Max. total building ground in m<sup>2</sup></b>	Size, excluding distance to erf lines, steep slopes, rivers etc.
<b>Max. total footprint</b>	Calculated with the max. Coverage %

### RDP (example of calculation)

De sites of an RDP house are about 70 m<sup>2</sup>, this calculation is made for an erf size of ...m by ...m. The roads have a width of ...m in this calculation.

A total of ... units can be covered (maximum) in this calculation. The total footprint will be ... Ha.

In this calculation the density will be about ... units per Ha.

### Rental units (example of calculation)

The number of rental units that fit on a property is depending on the design! This is an indication.

No. of floors: 3

Units per floor: 4

Units per building: 12

Average size of units: 42 m<sup>2</sup>

Non rentable size per floor: 42 m<sup>2</sup>

Footprint building: 210 m<sup>2</sup>

Buildings for security: 30 m<sup>2</sup>

Building for amenities: 100 m<sup>2</sup>

Coverage of ...% = ... m<sup>2</sup>

Around ... units will fit the property when these rules are used.

In this calculation the density will be about ... units per Ha.

## Remaining remarks

No research done on ..., because...

Further research requested on ..., because... (Noise measurements etc.)

Remaining observations:

- Distance to water main line and sewage (Copy of New City Map)
- History property
- Dangerous roads in the area

## Conclusion

Not suitable for low-cost housing, because...

or

Suitable for low-cost housing, provided that ... (outcome further research, or that a new school has to be built etc.)

Most suitable for (RDP/CRU/Housing association), because ...

## Appendix L, Ambient air quality standards

Citation from Air Quality Act (Government of South Africa, 2004)  
Section 63, Ambient air quality standards, Schedule 2

- 1. Ambient concentrations of ozone ( $O^3$ ) may not exceed-*
  - (a) an instant peak of 0.25 parts per million measured at 25°C and normal atmospheric pressure; or*
  - (b) a one-hour average of 0.12 parts per million measured at 25°C and normal atmospheric pressure.*
  
- 2. Ambient concentrations of the oxides of nitrogen ( $NO_x$ ) may not exceed-*
  - (a) an instant peak of 1.4 parts per million measured at 25°C and normal atmospheric pressure;*
  - (b) a one-hour average of 0.8 parts per million measured at 25°C and normal atmospheric pressure;*
  - (c) a 24-hour average of 0.4 parts per million measured at 25°C and normal atmospheric pressure and the 24-hour limit may not be exceeded more than three times in one year;*
  - (d) a one-month average of 0.3 parts per million measured at 25°C and normal atmospheric pressure; or*
  - (e) an annual average of 0.2 parts per million measured at 25°C and normal atmospheric pressure.*
  
- 3. Ambient concentrations of nitrogen dioxide ( $NO^2$ ) may not exceed-*
  - (a) an instant peak of 0.5 parts per million measured at 25°C and normal atmospheric pressure;*
  - (b) a one-hour average of 0.2 parts per million measured at 25°C and normal atmospheric pressure;*
  - (c) a 24-hour average of 0.1 parts per million measured at 25°C and normal atmospheric pressure and the 24-hour limit may not be exceeded more than three times in one year;*
  - (d) a one-month average of 0.08 parts per million measured at 25°C and normal atmospheric pressure; or*
  - (e) an annual average of 0.05 parts per million measured at 25°C and normal atmospheric pressure.*
  
- 4. Ambient concentrations of sulfur dioxide ( $SO^2$ ) may not exceed-*
  - (a) a ten-minute average instant peak of 0.191 parts per million measured at 25°C and normal atmospheric pressure;*
  - (b) an instant peak of 500 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) measured at 25°C and normal atmospheric pressure;*
  - (c) a 24-hour average of 0.048 parts per million or 125 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) measured at 25°C and normal atmospheric pressure;*
  - (d) an annual average of 0.019 parts per million or 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) measured at 25°C and normal atmospheric pressure;*
  
- 5. Ambient concentrations of lead (Pb) may not exceed a one-month average of 2.5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).*
  
- 6. Ambient concentrations of particulate matter with a particle size of less than 10 microns ( $\mu$ ) in size ( $PM^{10}$ ) may not exceed-*
  - (a) a 24-hour average of 180 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and the 24-hour limit may not be exceeded more than three times in one year; or*
  - (b) an annual average of 60 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).*
  
- 7. Ambient concentrations of total suspended solids may not exceed-*
  - (a) a 24-hour average of 300 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and the 24-hour limit may not be exceeded more than three times in one year; or*
  - (b) an annual average of 100 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).*

## Appendix M, Measurements Requirements RDP

Category: house		
Topic	Requirement	Specification
<b>Interior RDP</b>	At the minimum a house has to have a bad room	The minimum preferred size of the bad room is about 4 m <sup>2</sup>
	At the minimum a house has to have a living room with a kitchen area	The minimum size of a living room has to be 6 m <sup>2</sup> . The rules do not indicate whether a habitable room must be of greater size than the minimum given if such room is to be used for multiple purposes, but for practical if not legal reasons this obviously would be desirable. The preferred minimum size is 12 m <sup>2</sup> .
	At the minimum the house has to have a bedroom	The minimum size of the bed room has to be 6 m <sup>2</sup> , but the preferred size is 9 m <sup>2</sup> .
	At the minimum the house has to have a second bedroom	The minimum size of the bed room has to be 6 m <sup>2</sup> .
<b>Size</b>	A house shall have dimensions that will ensure that such space is fit for the purpose for which it is intended	The overall plan area of any RDP house shall be not less than 40 m <sup>2</sup> .
<b>Garden</b>	A RDP unit will be delivered with a garden.	The size of the garden will be 30 m <sup>2</sup> .
<b>Height</b>	The minimum height of one story has to be at least 2,4m from floor to ceiling.	The minimum height from floor to ceiling has to be at least 2,4m in bedrooms and habitable rooms.
	A RDP house has to be a free standing house.	A RDP house has one floor.
<b>Density</b>	RDP houses have to be low density projects.	In a RDP project the density has to be low. The units are freestanding units with only a ground floor and an own garden.
Argumentation	<p><b>SANS 10400-C Dimensions</b> (South African Bureau of Standards, 1990)  <i>'Any room or space shall have dimensions that will ensure that such room or space is fit for the purpose for which it is intended. The floor area of any dwelling unit shall not be less than that necessary to provide one habitable room and a separate room containing toilet facilities.'</i></p> <p><b>Second Edition Environmental Implementation Plan, April 2009</b> (Government of South Africa, 2009)  <i>'The minimum size of permanent residential structures to be provided by means of the housing subsidy is 40 square meters of gross floor area. Each house as a minimum must be designed on the basis of:</i></p> <ul style="list-style-type: none"> <li>• <i>Two bedrooms;</i></li> <li>• <i>A separate bathroom with a toilet, a shower and hand basin;</i></li> <li>• <i>A combined living area and kitchen with wash basin.'</i></li> </ul>	

## Appendix N, Measurements Requirements Rental Units

Category: house		
Topic	Requirement	Specification
<b>Interior bachelor unit</b>	At the minimum a house has to have a bad room	The minimum preferred size of the bad room is about 4 m <sup>2</sup> .
	At the minimum a house has to have a living/bedroom with a kitchen area	The minimum size of a living room has to be 6 m <sup>2</sup> . The rules do not indicate whether a habitable room must be of greater size than the minimum given if such room is to be used for multiple purposes, but for practical if not legal reasons this obviously would be desirable. The preferred minimum size is 12 m <sup>2</sup> .
<b>Size</b>	A house shall have dimensions that will ensure that such space is fit for the purpose for which it is intended	The overall plan area of any dwelling house shall be not less than 30 m <sup>2</sup> in the case of any permanent building.
<b>Interior one bedroom unit</b>	At the minimum a house has to have a bad room	The minimum preferred size of the bad room is about 4 m <sup>2</sup> .
	At the minimum a house has to have a living room with a kitchen area	The minimum size of a living room has to be 6 m <sup>2</sup> . The rules do not indicate whether a habitable room must be of greater size than the minimum given if such room is to be used for multiple purposes, but for practical if not legal reasons this obviously would be desirable. The preferred minimum size is 12 m <sup>2</sup> .
	At the minimum the house has to have a bedroom	The minimum size of the bed room has to be 6 m <sup>2</sup> , but the preferred size is 9 m <sup>2</sup> .
<b>Size</b>	A house shall have dimensions that will ensure that such space is fit for the purpose for which it is intended	The overall plan area of any dwelling house shall be not less than 30m <sup>2</sup> in the case of any permanent building.
<b>Interior two bedroom unit</b>	At the minimum a house has to have a bad room	The minimum preferred size of the bad room is about 4m <sup>2</sup> .
	At the minimum a house has to have a living room with a kitchen area	The minimum size of a living room has to be 6 m <sup>2</sup> . The rules do not indicate whether a habitable room must be of greater size than the minimum given if such room is to be used for multiple purposes, but for practical if not legal reasons this obviously would be desirable. The preferred minimum size is 12 m <sup>2</sup> .
	At the minimum the house has to have a bedroom	The minimum size of the bed room has to be 6 m <sup>2</sup> , but the preferred size is 9 m <sup>2</sup> .
	At the minimum the house has to have a second bedroom	The minimum size of the bed room has to be 6 m <sup>2</sup> .
<b>Size</b>	A house shall have dimensions that will ensure that such space is fit for the purpose for which it is intended	The overall plan area of any dwelling house shall be not less than 30 m <sup>2</sup> in the case of any permanent building, but the preferred size is at least 40 m <sup>2</sup> .
<b>Interior three bedroom unit</b>	At the minimum a house has to have a bad room	The minimum preferred size of the bad room is about 4 m <sup>2</sup> .

	At the minimum a house has to have a living room with a kitchen area	The minimum size of a living room has to be 6 m <sup>2</sup> . The rules do not indicate whether a habitable room must be of greater size than the minimum given if such room is to be used for multiple purposes, but for practical if not legal reasons this obviously would be desirable. The preferred minimum size is 12 m <sup>2</sup> .
	At the minimum the house has to have a bedroom	The minimum size of the bed room has to be 6 m <sup>2</sup> , but the preferred size is 9 m <sup>2</sup> .
	At the minimum the house has to have a second bedroom	The minimum size of the bed room has to be 6 m <sup>2</sup> .
	At the minimum the house has to have a third bedroom	The minimum size of the bed room has to be 6 m <sup>2</sup> .
<b>Size</b>	A house shall have dimensions that will ensure that such space is fit for the purpose for which it is intended	The overall plan area of any dwelling house shall be not less than 30 m <sup>2</sup> in the case of any permanent building, but the preferred size is at least 50 m <sup>2</sup> .
<b>Height</b>	The minimum height of one story has to be at least 2,4m from floor to ceiling.	The minimum height from floor to ceiling has to be at least 2,4m in bedrooms and habitable rooms.
	A three to four storey walk-up building is preferred.	It is preferred to have a building with a ground level, a first and a second floor, and a level below the ground floor. It is preferred that there is no need for an elevator.
	High rise buildings are preferred.	There is also a demand for high rise buildings, between eight and ten floors.
<b>Density</b>	The density of CRU's and housing association houses has to be medium to high.	The density in the project has to be medium to high, to use the ground maximal with low costs.
Argumentation	<b>SANS 10400-C Dimensions</b> (South African Bureau of Standards, 1990) <i>'Any room or space shall have dimensions that will ensure that such room or space is fit for the purpose for which it is intended. The floor area of any dwelling unit shall not be less than that necessary to provide one habitable room and a separate room containing toilet facilities.'</i>	

## Appendix O, Wishes Social Housing Institutions

Category: OHHA	
	Wish
<b>Height</b>	OHHA prefers to build more high buildings, between 8 and 10 floors. They also want to build blocks without an elevator of three storeys, but they do not want to build a basement level anymore.
<b>Inventory</b>	Own Haven wants bachelor units and units with one and two bedrooms. They do not build units with three bedrooms. The bachelor and one bedroom units will be about 31 m <sup>2</sup> , the unit with two bedrooms will be about 42 m <sup>2</sup> . In the bachelor unit maximum two people are allowed to live, in the unit with one bedroom two people and a baby are allowed to live and in the unit with two bedrooms four people and two babies are allowed to live.
<b>Balconies</b>	Having balconies is not a must, but will be depending on the design.
<b>Outdoor space</b>	OHHA prefers to build the houses in a park. There is no minimum space per unit that is required. Around the blocks OHHA wants a playground, laundry lines and garbage cages.
<b>Parking</b>	The parking requirement will be about 1 parking place per unit, not more. Maybe it can be less, depending on the project.
<b>Fence en security</b>	The project has to be surrounded by a fence or wall. OHHA wants one way in to the projects and security. Depending on the size of the project and the surrounded roads there can be a second entrance.
<b>Ownership</b>	OHHA prefers to purchase land from the municipality or province. But they are also capable of purchase land from private owners.
<b>Amenities</b>	There is no standard for the distance to amenities, it is however preferred that the important facilities (schools, healthcare, employment, and supermarket) are within 2km. Transport has to be within half a kilometer, as close as possible to the gate.
<b>Size</b>	A project has to count at least 100 units, but only when the location is perfect. Otherwise projects are preferred to be around 250 units or bigger.

(S. Dillan, 2012)

<b>Category: HAEL</b>	
	Wish
<b>Height</b>	When the land is flat a ground floor, first and second level is preferred. When the land is inclined a basement level, ground floor, first and second level are preferred. These building heights are preferred because then there is no need for an expensive elevator.
<b>Inventory</b>	HAEL does not want bachelor units, their focus is on units with two bedrooms. In these units live about six people. The size of these units will be between 46 m <sup>2</sup> and 52 m <sup>2</sup> . Units with one bedroom will be at least 38 m <sup>2</sup> and units with three bedrooms will be up to 62 m <sup>2</sup> .
<b>Balconies</b>	The current units from HAEL do have balconies, in the new units they rather do not build balconies anymore.
<b>Outdoor space</b>	HAEL prefers to build the houses in a park. There is no minimum space per unit that is required. Around the houses HAEL wants places to braai, a playground, laundry lines, garbage cages and a 'learning center'. The learning center will be a daycare for children after school where they can do their homework and read, like a library, and also for playing with other children.
<b>Parking</b>	In the current houses the parking norm per unit is 0,8. In a new project they will also use this standard, because a lot of people do not have a car.
<b>Fence en security</b>	In the new project HAEL wants one way in to the area, which will be surrounded by a fence. There will be 24-hour security.
<b>Ownership</b>	HAEL can not afford to purchase land from a private owner. They can only build a project when the land is given away by the municipality or province.
<b>Amenities</b>	Because people do not have enough money to spend on a car or on public transport the amenities have to be close. Preferred is that any schools, healthcare, shops, work and churches are within 3 kilometers.

(N. Tunzi, 2012)

<b>Category: SOHCO</b>	
	Wish
<b>Height</b>	When the land is flat a ground floor, first and second level is preferred. When the land is inclined a basement level, ground floor, first and second level are preferred. These building heights are preferred because then there is no need for an expensive elevator.
<b>Inventory</b>	The biggest demand is for two bedroom units and bachelor units. Bachelor units are 30 m <sup>2</sup> and there live up to two people in. One bedroom units will be 35 m <sup>2</sup> , with mostly four people living in it. In two bedroom units live between the 5 and 7 people and are about 42 m <sup>2</sup> . There is no big demand for units with 3 bedrooms.
<b>Balconies</b>	The current projects do not have balconies. In a new project can be balconies, but it is not a must.
<b>Outdoor space</b>	SOHCO prefers to build the houses in a park. There is no minimum space per unit that is required. Around the blocks SOHCO wants places to braai, a playground, laundry lines and garbage cages (close to the blocks). In the new project SOHCO want a crèche, a freestanding building inside the project.
<b>Parking</b>	SOCHO wants one parking space per unit.
<b>Fence en security</b>	The project has to be surrounded by a fence, it is preferred this one is made from bricks. SOCHO wants one way in to the projects and security.
<b>Ownership</b>	SOCHO wants to purchase land from the municipality or province. But if they have the funds they can also purchase land from private owners.
<b>Amenities</b>	Because people do not have enough money to spend on a car or on public transport the amenities have to be close. Preferred is that any schools, healthcare, shops, work and churches are within 5 kilometers.

(Johannesen, M., 2012)

## Appendix P, Locations

### Amalinda South

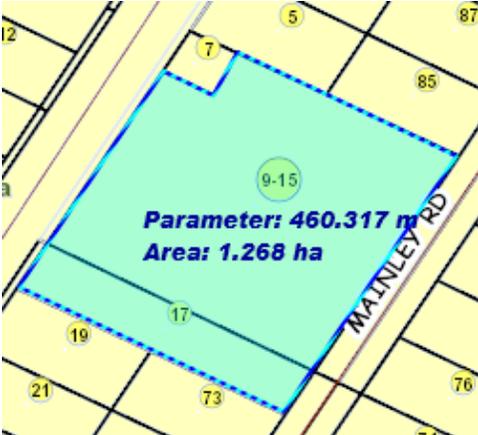
City	East London
Area	Amalinda
Address	1A and 1B Longacre Road
Erf number(s)	1716 and 1717
Income class	Middle
Size	4.938 Ha
	
Owner(s)	Republic of South Africa (since 1969)

Zoning	Zoning	INS1 (institutional zone)
	Primary use	Place of instruction, school, place of assembly, day care center
	Consent use	Place of worship

The property is from the national government, they reserved the property to build a primary or a high school. There are however two primary schools within 1km and a high school about 2km away. But east from the property will come a lot of new developed houses in the near future, so it will be probably necessary to build new schools within a few years.

The property is not suitable for housing, because it is an institutional zone. Given the circumstances, a changing of the zoning scheme will probably not be approved and will not be a good idea. A new school will be needed in the neighborhood.

### Amalinda North

City	East London
Area	Amalinda
Address	Rosedale Road
Erf number(s)	1670 and 1622
Income class	Middle
Size	1,268 Ha 
Owner(s)	1266: Vosloo Jacob Pieter B-E 1671: Pentecostal Protestant Church East London Assembly

Zoning	Zoning	1266: POS1 (Public open space) 1671: INS2 (Institutional)
	Primary use	1266: Public open space 1671: Place of worship, church, parsonage, place of assembly, day care center
	Consent use	1266: Certain associated structures and activities 1671: Place of instruction

The zoning scheme does not meet the requirements and the property is not in hands of the municipality. Erf 1671 is in use as a place of worship, on the erf is a tent that is used for religious purposes. The property is not very big and will not be worth the trouble. This location is at the moment not suitable for low-cost housing.

## Cambridge West

City	East London	
Area	Cambridge West	
Address	Colley Avenue	
Erf number(s)	4266	
Income class	Middle	
Size	1,852 Ha	
Owner(s)	Local Municipality of Buffalo City (since 2003)	
Zoning	Zoning	POS1 (Open Space, Public Open Space)
	Primary use	Public open space
	Consent use	Certain associated structures and activities



This location is not far from the most important amenities and the land itself is suitable to build on. But in the current zoning residential units are not allowed. Years ago there was an application for changing the zoning scheme of the location into a residential zone. This was partly approved for the houses built in the south/west of the property, on New Man Cress. There was however a lot of objection for changing the whole property into a residential zone. Because in the history of the property was applied to change the zoning scheme into a residential zone and there was a lot of objection then, there can be expected to a lot of objection again. The location is however not in use for activities, the grass is way too high and there is not done maintenance to the property. Because of the grass being this high, thieves and robbers can hide in it.

The location would be most suitable for a rental stock and less for RDP houses. With a coverage of 40% 420 units will fit on the property. But before building the zoning scheme has to be changed, and this can bring a lot of disturbance in this case.

## Stoney Drift

City	East London	
Area	Stoney Drift	
Address	24 Chelsea Street	
Erf number(s)	3443 2419(part)	
Income class	Low to middle	
Size	4,39 Ha 	
Owner(s)	Local Municipality of Buffalo City (since 1962)	
Use	Zoning	POS1 (Open Space, Public Open Space)
	Primary use	Public open space
	Consent use	Certain associated structures and activities

The property is close to the important amenities and in the south it is situated at Amalinda Main road, with a lot of job-opportunities. Close to the property two other social housing projects are developed.

The northern part of the property is not suitable for low-cost housing, because there is a non-perennial river running through this part (and there is more vegetation around it). The property is a MOSS, a public open space, the recreational, cultural and productive value of this land are however low, but the property is maintained. There has to be applied to change the zoning scheme into a residential zone, this however will bring problems. The Environmental Integrated Management Unit will probably object, because the property is maintained and is in use as a park.

There can be tried to apply for changing the zoning scheme of the southern part of the property. It is most suitable for community residential units or units from a social housing association. Then the area can be designed in a way that it still looks open and green, with a lower footprint. The change of approval is higher with a design like this, than that it is for RDP houses.

If a new zoning for the location is made, without erf 3443, with at least 32m distance to the non-perennial stream and with a distance of at least 5m from the roads, the remaining property will still be 2,505 Ha. With a footprint of 30%, still 420 dwelling units can be built with a height of 3 storeys.

## Appendix Q, Zoning Changes

### Consent use

The application procedure for consent use works (shortly) as follows:

- The applicant is to place a notice in the Daily Dispatch twice, once a week for two consecutive weeks. The applicant is required to serve affected owners of properties with a registered letter of intent applying for consent use. The closing date for objections should be 21 days after the date of the first publication and letter.
- After the notices are published and served, the applicant has to submit a formal application for Council's consent to the City Planning Division with the required documentation.
- The application has to be sent to the following departments for comment: Health, Traffic, Traffic Engineering Branch, Fire department and the ward councilor.
- If any objections are received in response to the notices placed in the Daily Dispatch, these objections are to be sent to the applicant who should discuss them with the objectors with a view to having them withdrawn, which must be done in writing, failing which the applicant must then submit his comments regarding the objections.
- The objections and the applicant's response thereto would then be submitted to the various Directorates / Departments for their comment and then finally to council for its final decision.
- It is to be noted that the Director of Planning and Economic Development has the delegated authority to approve all special consent applications that comply with the requirements of the Buffalo City Zoning Scheme and should it not comply the application must be put forward to Council with the recommendations by the City Planning Division for consideration.
- There is no right of appeal on a consent use

### Exemptions

The application procedure for permanent departures in land use restrictions works (shortly) as follows:  
(Including changing the building height and parking requirements)

- An applicant submits, with the required information, a request for permanent departures to the City Planning Division for consideration.
- The City Planning official informs Corporate Services within one month to advertise the proposal in the local news paper. The City Planning official is also to serve notices on all affected and interested parties by means of registered mail. The closing date for objection or comment should be 21 days from the date the notice was published.
- The application has to be sent to the following departments for comment: Health, Traffic, Traffic Engineering Branch, Fire department and the ward councilor. (And in some cases to the department of Roads & Transport)
- If an objection is received, the City Planning Official is to request comments on the objection from the applicant as well as the Ward Councilor. The objection is also to be forwarded to the relevant Municipal Department for comment.
- If objections were received (from public or municipal departments) and / or if the application is not in line with the requirement of Buffalo City Zoning Scheme, the application is to be tabled before Council for consideration.
- Once Council's decision is known, the objector and applicant are to be notified, by means of registered mail, of Council's decision and their respective right to appeal against Councils' decision and / or conditions of approval to the Premier, within 14 days from the date of the notice.
- It is to be noted that the Director of Planning & Economic Development has the delegated authority to approve a departure application that complies with the requirements of the Buffalo City Zoning Scheme.

(Kotzee, A., 2012)

